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Common-Pool Resource Depletion and Dictatorship

North Korean Coastal Fishing in the Age of Marketization

ABSTRACT This article seeks to explain the dynamics of resource depletion in North Korea's fishery. We utilize insights from the common-pool resource (CPR) literature and show how theories from comparative politics that explain why states sometimes do not formalize property rights but prefer their informal exercise can be fruitfully applied to North Korea's fishery. Utilizing a process tracing methodology, we demonstrate that the North Korean state possesses the necessary capacity to limit resource depletion, but has largely failed to do so. We argue that broad access to the commons maintains relations of enmeshed dependence between the dictator and those utilizing the fishery, balancing regime social control concerns with the party-state's need for revenue. Further, in recent times, foreign actors have been allowed into the sector, providing a lucrative source of revenue without creating issues for internal control. We consider the alternative explanation that the North Korean state lacks the capacity to prevent CPR depletion, but demonstrate its implausibility given the preponderance of available evidence, not least the response of the regime in Pyongyang to the COVID-19 pandemic, where it has demonstrated considerable capacity to control the country's fishing fleet.

KEYWORDS fisheries, marketization, North Korea, common-pool resources, enmeshed dependence

INTRODUCTION

The last two decades have seen the severe depletion of fish stocks within North Korean waters. A highly visible confirmation of this is the growing number of the now-infamous "ghost ships": North Korean boats washed up on the Japanese and Russian coast, often with dead or dying crew members aboard. In 2019 alone, some 150 abandoned wooden ships were found on the Japanese coasts (*Maritime Exclusive*, 2020). Most of these ships had been fishing, often illegally, in violation of the Japanese Exclusive Economic Zone (EEZ) near the Yamato Bank in the East Sea (Sea of Japan). Indeed, the Japanese EEZ area in recent decades has become a major operational ground for North Korean fishermen. The boats, designed for coastal fishing, were poorly suited for such long-distance expeditions. They often suffer mechanical failure and then are either abandoned by the crew or drifted haplessly to the shores of Japan or Russia.

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One might assume that a state that presides over such an ecological and human catastrophe must be incapable of preventing it. Yet, the North Korean state has proven adept at preventing the emergence of any autonomous organizations outside the structures of the party-state (Kwak, 2016, 2018). It has also created and maintained an effective set of mechanisms to prevent those without proper authorization from accessing the country's fisheries (Ward et al., 2021). And during the COVID-19 outbreak, the North Korean authorities have managed to all but completely stop coastal fishing. Thus, we argue that the authorities deliberately decided to tolerate overfishing until they no longer wished to.

In this article, we attempt to explain why the regime's policies and changes in North Korea's political economy have given rise to this ecological disaster. Bringing together a model of common-pool resource property rights developed in Sikor et al. (2017) with insights from the political economy of comparative authoritarianism, we argue that the North Korean state maintains a weak property rights regime partially in order to increase revenue, but largely because doing so nestles its subjects in a system of enmeshed dependence (Albertus et al., 2018; Albertus, 2021), making them reliant on state forbearance (Holland, 2017). Enmeshed dependence involves the tolerance of ideologically suspicious market structures that remain largely illegal (Lankov et al., 2017; Ward et al., 2021). Additionally, the regime has cultivated an alternative to this delicate domestic compromise in the form of direct foreign involvement in the sector via the direct sale of fishing rights to China. This provides quick "cash for use" that supplements revenues generated by domestic actors. In seeking to maximize revenues, however, the regime has allowed the problem of overfishing to emerge and rapidly worsen, while also ensuring that the community-based solutions associated with sustainable CPR management cannot develop (Ostrom, 2006).

Utilizing a process tracing methodology, we demonstrate how the North Korean regime presided over expanding market access to the North Korean fishery, first by domestic actors and then also China. We consider the major potential alternative explanation, namely that the North Korean state has presided over unsustainable governance of the commons because it lacks the capacity to do otherwise. However, we argue that given the preponderance of evidence, including the government's response to the COVID-19 pandemic, this is unlikely to be the case. We conclude with a summary of our argument. We bring together new theoretical insights from the comparative authoritarian literature with the existing literature on common-pool resource (CPR) management. Thus, we demonstrate how two distinct theoretical approaches can be utilized together to make sense of CPR management problems. We show how authoritarian states may choose to manipulate property rights to maximize social control and rents given limited resources, and how their policies may prevent the emergence of sustainable community-based sustainable solutions to CPR governance issues.

LITERATURE REVIEW

A common-pool resource is commonly defined as a resource that is generally easily accessible for people near it (not easily excludable), but whose consumption detracts

from that of others—that is, it is “rivalrous” (Dietz et al., 2002). The fishery is one of the paradigmatic examples of the potential consequences of poor/nonexistent CPR management (Gordon, 1954).

Following the pioneering work of Ostrom, discussions about the management of CPRs often stress the importance of a community-based solution to the governance of the commons, and this framework has informed a wealth of empirical studies (Cox et al., 2010). A substantial portion of the existing CPR literature focuses upon decentralization as a potential solution to sustainability issues (Satria & Matsida, 2004; Velez et al., 2010). Decentralization can act as a positive force whereby communities are allowed to exercise control rights, and it can determine who controls CPRs and how (Ribot et al., 2006), though such an approach is no panacea (Andersson & Ostrom, 2008).

Importantly, Ostrom (2006, pp. 244–245) notes that in order for CPRs to be well managed, users should have a low discount rate with respect to future benefits from the resource, and trust and reciprocity should be high between users. Yet, as we explore further below, the North Korean system is actually designed to ensure that this will never happen, since trust and reciprocity between autonomous social actors is antithetical to the survival logic of the North Korean party-state. One of the pathologies that this system gives rise to is a high discount rate, which means future cash flows are far less valuable than money today: the state seeks to maximize revenues now, as do those working in the industry.

Much of the existing literature on North Korean fisheries focuses on the exogenous shock of growing Chinese fishing, both legal and illegal, within North Korean waters (Gao, 2019; Park et al., 2020). The available analysis of the marketization of the fisheries sector has demonstrated that market actors have become embedded within state institutions to varying extents (Lankov et al., 2017; Ward et al., 2021). But there has been no attempt as yet to account for the role of North Korean state policy and its effect on CPR management. We contribute to the existing literature on the issue of North Korean fisheries depletion by examining the role of the North Korean central authorities and the institutional framework that they have fostered in the governance of the fisheries CPR. We also demonstrate how recent work on the political economy of property rights in authoritarian systems can help shed light on the North Korean case and, more broadly, can be fruitfully used in analyzing CPR governance issues.

In the next section, we offer a framework for the analysis of property rights within the North Korean fisheries CPR and then a set of concepts to analyze how they are actually distributed to aid analysis of the North Korean case.

FRAMEWORK

A framework developed in Schlager and Ostrom (1992) delineates the different bundles of rights associated with CPRs. Sikor et al. (2017, pp. 338–340) have further built upon this framework, delineating three different bundles of rights. First-order rights (use rights) are broken down into direct and indirect use rights. Direct use rights grant direct benefits from a common resource pool, that is, catching fish. Indirect use rights connote

the acquisition of indirect benefits from the right to use a resource, like grants to owners of forests. Second-order rights (control rights) include the right to manage the resource and how it is used (management rights), the right to determine who has use rights (exclusion rights), the right to monitor how the resource is used and its overall state (monitoring rights), and the right to market and sell the resource (transaction rights). Third-order rights (authoritative rights) consist of two rights: the right to determine the scope of the exercise of control rights (definitional rights), and the right to give control rights to particular actors (allocation rights). These categories allow us to systematically analyze how the North Korean CPR is controlled and used, and the role that the state plays in this process. We give a summary of how these rights are allocated in North Korea in Table 1.

TABLE 1. De Facto and De Jure Distribution of Property Rights in the North Korean Fishing Industry

	Type of rights	North Korean case
Authoritative rights (third order)	Definitional	Central government's regulation of the fishing industry, e.g., safety standards, environmental standards
	Allocation	Central government's allocation of fishing rights to particular local entities
Control rights (second order)	Management	Ministry of Fisheries and other regulators' de jure authority to monitor and control fishing
	Exclusion	Local entity's discretion in the issuance of fishing boat registrations
	Monitoring	Government agents (coast guard, police, etc.) who monitor access to the sea
	Transaction (direct use)	1. Central government's rights to allocate catch under the plan 2. Local entity's right to feed workers/right to sell on the international market 3. Individuals who exercise their right to sell their fish on the domestic market
	Transaction (indirect use)	1. Central government's right to receive revenue from local entities 2. Local entities' de facto right to receive portion of revenues generated from boat operators
Use rights (first order)	Direct use	1. Local entities' right to obtain revenue from sales of fish (from Phase 2, de jure) 2. Individuals' de facto right to profit from sales of fish
	Indirect use	Local entities that receive boat licensing payments from individuals (from Phase 2, de facto)

Source: Authors' reconstruction from interview testimony, existing literature, and North Korean official sources. Type of rights from Sikor et al. (2017).

The distribution of property rights exercises considerable influence on how actors within a social context choose to behave (McGinnis & Ostrom, 2014). In North Korea, the state has not legalized private property outside the household, and property rights are either retained by the central government or delegated to local entities. This is what we will call state firms, collective farms, military units, and other organizations that are part of the civilian state, the military, or the party but, one should keep in mind, often have interests that differ considerably from those of the central bureaucracy. CPR-related property rights can be delegated or retained by the central government.

Where CPR governance institutions are weak, and outcomes suboptimal, one might assume that the state lacks the capacity to build and maintain stronger institutions that would lead to better outcomes (Agnew et al., 2009; Larson & Soto, 2008; Österblom et al., 2010). In such a view, governance issues arise from the state's inability to regulate the use of the commons. However, in regard to North Korea, we will demonstrate below that the state efficiently enforces some regulations while ignoring others. This aligns with observations of Holland (2017), who notes that states and leaders sometimes deliberately choose not to enforce regulations, instead making their subjects dependent on continued forbearance.

Authoritarian regimes seek to control society through a number of means. One involves regulating and controlling access to property rights in order to create relations of dependence. Property rights are less likely to be formalized by authoritarian regimes, because codification breaks such a system by which the state enmeshes social actors in relations of dependence (Albertus et al., 2018; Hassan & Klaus, 2020). The North Korean regime's management of its fishery very much fits with such an explanation. Property rights in North Korea are publicly held, and local entities entrusted with such rights in theory do not have the right to sell or otherwise alienate them to other entities or individuals. Yet, such practices are widespread, though subject to occasional crack-downs. Such a distribution of property without rights enables the state to accrue political rents like states that do not create formal land property rights (Albertus, 2021, pp. 91–92). In the North Korean case, property allocation decisions are made by the leadership and subject to change in a highly centralized process of decision-making (Choi, 2011). Accordingly, local entities, or even market actors with full and formalized property rights, would break this chain of vertical dependence. We demonstrate below how a distribution of property with weak or nonexistent rights is designed to foster enmeshed dependence, and how this has contributed to intense competition and rapid depletion of CPR resources.

METHODOLOGY

We rely on methods proposed by Beach and Pedersen (2013, pp. 29–32) in examining how certain mechanisms—activities engaged in by actors—have given rise to certain effects amid certain causes. They distinguish between four types of evidence used in process tracing: pattern, sequence, trace, and account (Beach & Pedersen, 2013, pp. 99–100). We largely rely on trace and account evidence—that is, documents from which

we can infer the existence of particular mechanisms (traces) and interview accounts that demonstrate the existence of particular processes (accounts). We also provide some suggestive pattern evidence—statistical data—about the effects of government policy.

We utilize interview accounts gathered from 11 former North Korean fishermen and North Koreans who worked in the industry post-1990. They can be regarded as “highly knowledgeable informants who view the focal phenomena from diverse perspectives” (Eisenhardt & Graebner, 2007, p. 28). In addition, we also provide documentary evidence from North Korea, including laws, speeches from the leadership, and internal documents that deal with the problems of overfishing, and the role of markets.

THE GROWTH OF NORTH KOREAN COASTAL FISHING (LATE 1980S TO 2020S)

Phase I (Late 1980s to 1991). Until the late 1980s, North Korea was a highly centralized state socialist economy where most private entrepreneurial activities were both illegal and rare (Ward & Green, 2020). Hypercentralization created significant inefficiencies that the state sought to overcome through greater capital investment and widespread use of economies of scale. In the fishing industry this led to a rapid rise in the size of vessels and their potential range (Various, 1990, p. 242). This industrialized fishing fleet was reliant on Soviet oil subsidies (Eberstadt et al., 1995), so the collapse of the Soviet Union created severe shortages of fuel and rendered most of the ships non-operational. The central authority tried to readjust, but with little success. In December 1991 Kim Il Sung (2010) said: “These claims that one cannot catch fish because there is not enough fuel is nothing but an excuse. One can catch fish even without fuel. One can do small-scale fishing, using rowing boats when there is no fuel” (p. 531).

State policy emphasized deep-sea industrial fishing, whereas coastal fishing was largely done by small boats, usually with wooden hulls, which belonged to fishing “cooperatives” and “side-work units” of the SOEs and other state institutions. Fishing side-work units occupied a somewhat special and ambiguous place in the pre-1990s system. From the late 1950s, state-owned enterprises (SOEs) and military units, if located near the seacoast, were allowed and even encouraged to establish their own side-work fishing units whose declared goal was to provide seafood to SOE or military unit personnel (directly or through in-house canteens). This was much lauded as an embodiment of the “self-reliance spirit.” The level of state supervision over the side-work units was lower, so these had some direct use rights (to feed their workers with the catch) and limited transaction rights (to sell at slightly higher prices within the state commerce system).¹

From then, SOEs and other local entities were increasingly encouraged to find ways to maintain their core capacities while providing their employees with food and other necessities through such production (Ward & Green, 2020). Faced with growing supply shortages as Soviet aid was cut in the late 1980s and early 1990s, the regime devolved or expanded access to use rights over a growing number of resources to local entities, some of which had or obtained permission to engage in fishing. This decentralization allowed

1. On the North Korean fisheries system under Kim Il Sung, see Ward (2018).

private fishing to gradually emerge (Chu, 2009; Yun, 2013, p. 133), as will be further explored below (see Phase 2). In this initial phase, the devolution of some use rights coincided with the start of a transformation in the structure of the economy as markets, hitherto strictly controlled and small in scale, began to grow (Lee, 2003; Yang, 2001).

Some local entities—largely those with considerable political clout—had a recognized need to acquire hard currency to import essential inputs and hence were given rights to set up so-called “foreign currency earning offices” and/or foreign trade companies (FTCs) (Yang, 2008). A certain amount of the foreign currency earnings from these operations had to ultimately be remitted to the central party-state, with rights withdrawn and managers punished, even potentially executed where targets were not met, while the rest was left at the local entity’s disposal (Yang, 2008; Kwak, 2016; Lankov et al., 2017).

Hence local entities—via their side-work units, or FTCs—became able to exercise *de facto* transaction rights with respect to resources that they had acquired *de jure* use rights. Some market transactions appear to have been legal, but most local entity production was supposed to be sold via the state commerce system (Choi & Koo, 2003). This process is set out in Figure 1, which summarizes the causal mechanisms and effects in Phase 1.

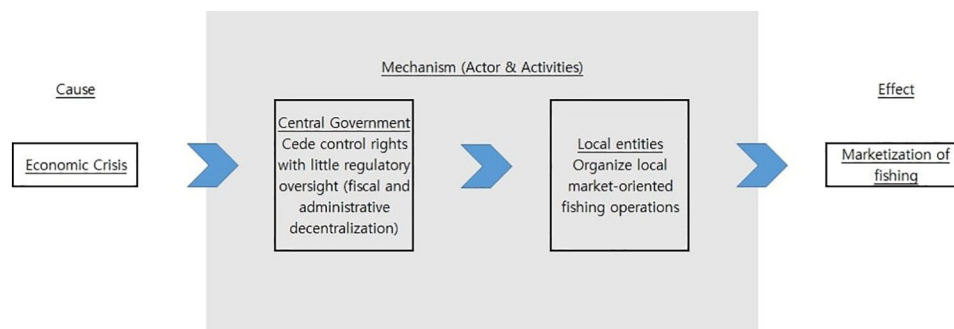


FIGURE 1. First phase (late 1980s to 1991).

Many state-owned enterprises (SOEs) and local party and state agencies, hitherto with little autonomy, began to act with increasing independence, often neglecting government regulations, some of which were enforced poorly if at all (Yang, 2001; Lee, 2003). However, on paper old regulations and laws remained largely unchanged. Hence, this nascent new order existed in an unofficial “gray zone”—ignored most of the time by the central government, but still dependent on its forbearance for its continued existence (analogous to what Holland [2017] describes). Local entities would set up side-work fishing units, and exercise *de jure* use rights with respect to the country’s fisheries to feed their workers. In reality, these units would normally sell their catch at the market, and the profits would fund purchases of food and other daily necessities (R1, R10).² In principle, “local entities” often had no or limited rights to do so, but the authorities chose to exercise forbearance in regard to these activities.

2. To protect the interviewees, we are referring to them by numbers. The list of interviewees can be found in Appendix 1.

The state continued to define regulations (definitional rights), and indeed began a process of rule-writing for the fisheries CPR during Phase 2 (see below). The allocation of use rights and monitoring of access to the sea remained within the central government purview, and these rights were rigorously enforced (Ward et al., 2021). This systematic and thorough enforcement of sea access rights (to be discussed below) was necessary for local entities to exercise their rights of exclusion. Transaction rights were exercised de facto during this period, whereas later they would be partially de jure granted (see Phase 3).

Local entities were in competition with one another for scarce resources, and the existing party-state institutions as well as mechanisms of the planned economy were designed to facilitate competition and conflict over resources rather than interagency cooperation. Such competition and conflict, as well as powerful and effective coercive institutions (Kwak, 2016), has meant that under conditions of decentralization, the trust and reciprocity between users that are needed for cooperation on fisheries conservation, as Ostrom (2006) points to, did not arise. Local entities saw one another as competitors for the revenues and food required to ensure the survival of their personnel, while the central party-state sought to lessen its fiscal burden and potentially capture some of the resulting revenues. Needless to say, the local entities, having their own interest, tried to minimize the amount they sent to the central government.

Phase 2 (1992 to 2003). Whereas the late 1980s was a period when local entities first began to engage in semiprivate fishing operations, the spread of markets and the entry of market actors into business relations with local entities became more widespread after 1991–92. As the economic crisis worsened, and marketization accelerated, North Korean individuals accumulated capital and expertise, while in the coastal areas fishing came to be seen as a highly lucrative activity (R2, R8, R5). R1 recalls how even as early as the mid-1980s she, then a recent arrival to a fishing village, was immediately warned by the experienced locals: “Do not eat seafood, seafood is money!” Indeed, in some areas, few kinds of economic activities could compare with fishing in terms of potential profitability. Private trade networks and markets also began to grow (Ward et al., 2019; Ward & Green, 2020), creating manifold opportunities for the profitable sale of the catch (R1, R4, R7).

At the same time, local entities were still required to meet revenue targets ultimately set by the regime (Lee, 2003; Ward, 2020a). Thus, as a source of welfare for workers and as a source of revenue for the local entities and central bureaucracy, fisheries became an increasingly crucial resource that local entities were induced to exploit, using both side-work units and FTCs (Lim, 2008, p. 126). Moreover, local entities began to sell licenses to individuals that allowed them to exercise de facto use and transaction rights. The allocation of property rights is summarized in Table 1.

The state’s capacity to monitor was key to ensuring that domestic actors within the industry remained in a position of enmeshed dependence on the state. Due to security reasons, sea access in North Korea has been strictly limited since the 1960s. Common people have not even been allowed to enter many beaches, which have largely remained fenced off with barbed wire, patrolled, and, in some localities, dotted with landmines

(there are a small number of beaches where swimming is possible under control of guards). Access to port facilities has also remained off-limits for people who have no proper access permits. Such measures were taken to prevent North Koreans from fleeing the country, and also to thwart the possible penetration of the country from outside. Seen as vital for regime survival, these strict sea access regulations were enforced systematically and thoroughly even in the worst days of the crisis (R1, R2, R5, R9, R11). Whereas the state has often taken a lenient approach to market activities, the regime has seen the systematic enforcement of sea access rules as a vital condition for its own security and long-term survival.

From the early 1990s, many North Korean individuals, looking for profitable investment, began to build, purchase, or order boats for coastal fishing. Their numbers increased significantly in Phase 2, which reflected the growth of North Korean private business in general. A new midsized wooden fishing boat, equipped with a Chinese engine, around 2000 could be ordered from a private carpenter/shipwright for \$800–1,000 (R2, R5, R10). By North Korean standards, this was a considerable sum, but still within the reach of affluent people. A stint of work overseas (as a lumberman in Russia or as a construction worker in the Gulf), or income from some mildly successful local business, might generate enough money for such an investment (Lankov et al., 2020). As the 1990s advanced, the number of individuals who could afford a ship grew, following the rapid growth of the informal market economy.

However, due to the above-described sea access restrictions, acquiring a boat was not sufficient. Any aspiring private boat operator, having acquired a boat, had to also register their boat with some local entity (its side-work section or affiliated FTC)—otherwise, it would not be allowed to leave port. As R9 noted: “In order to venture into the sea, one has to have some registration, unconditionally.” The local entity would issue papers that claimed the boat was actually the property of the local entity, and such papers, being presented to numerous sentries and inspectors, would allow the boat and its crew to venture out to sea. To this day, for an inspiring private individual, such registrations remain the only way to acquire sea access permits and, hence, engage in fishing. In exchange, the *de facto* owner regularly pays the local entity a fixed fee and exercises transaction rights directly with respect to the catch. The reliance on the fixed fee reflects the inability of the officials and local entity managers to monitor the daily activities of the boat owners. Interviewees noted that they could easily find ways to evade the monitoring of their catch and sales (R1, R2, R5, R9, R11). As R2 put it: “They [the local entity managers] have no way to know how much I caught, and what exactly I caught.” So the local entities do not even engage in such futile attempts and settle for a fixed fee. The fee would normally be 20–30% of what we both expected the revenues to be, and could be renegotiated occasionally, following changing conditions.

The state’s ability and willingness to enforce its monitoring rights over access to the sea is a cornerstone of the registration system, but this ability demonstrates that the state has enough resources and determination to control and regulate those parts of CPR use it considers vital. Registration with a local entity can be seen as a peculiar form of licensing—and it is used widely across the North Korean economy (Yang & Yun, 2016).

These processes of decentralization and marketization are captured in Figure 2.

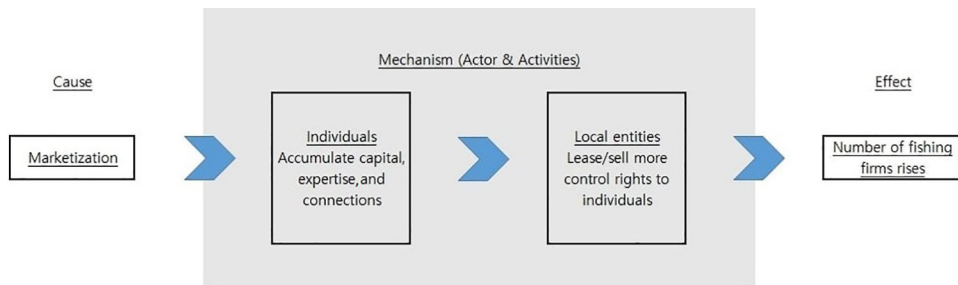


FIGURE 2. Second phase (1992 to 2003).

From the central party-state's point of view, however, marketization, while creating sources of vitally necessary revenue, also unleashed potentially politically dangerous social forces. In the mid-1990s, when decentralization and marketization began in earnest, the party/government created "anti-socialist activities extermination groups" whose mission was to eradicate "deviations" from the legally approved norms that were deemed excessive (Ch'oe et al., 2010, pp. 9, 20). From time to time, campaigns were conducted by the central bureaucracy against cooperation between local entities and individuals, with local entity managers and/or individuals being dismissed or imprisoned (Kwak, 2012, p. 44; Ch'oe et al., 2010, p. 49; Chu, 2009). These campaigns, once again, show that the North Korean state was not monolithic, with interests of the central bureaucracy and local companies often being in conflict. Stories of arrests, property confiscations and even occasional executions circulated widely. These rumors, combined with the technically illegal nature of the business model, reminded the users—both local entity managers and market actors—that their mode of operation might be tolerated for the time being, but they were dependent on the forbearance of the state that could take away these unformalized *de facto* rights at any time (R5, R11).

At the same time, however, the fast growth of living standards in China from the 1990s produced an increasing demand for seafood and a lucrative potential source of revenue. The per capita consumption of seafood in China nearly quadrupled in 30 years: from 3.1 kg in 1985 to 11.4 kg in 2016 (Crona et al., 2020, p. 34). This created a new market for the North Korean fisheries: trade with China rapidly grew after 2000, with seafood being one of the most important export items (Kim, 2017, p. 166). It was common knowledge that the North Korean catch largely ended up in China (R1, R4, R5, R10, R11). Indeed, in 2012, the South Korean foreign trade analysts estimated that 98.1% of all North Korea's seafood exports went to China at the time (Ha, 2015).

Two major events occurred in the later part of this phase. The North Korean government moved to legalize a range of market transactions involving individual traders and local entities under a range of measures promulgated in the 2002–4 period when the North Korean government was following a more reformist and pro-market policy line (Han, 2019). This somewhat broadened the scope of *de jure* transaction rights that local

entities involved in fishing could exercise. And, around the same time, in 2002, a decision was made to allow even lower-level military units to establish their “fishing bases” whose production was supposed to be sold overseas to generate forex revenue, and this further intensified competition (Sö, 2007, p. 87).

Ironically, in the same year, the then-highest organ of state, the National Defence Commission (NDC) issued an order that introduced strict penalties for those who damaged fisheries resources (Kim et al., 2012, p. 62). There were also visible attempts to create a regulatory framework through which to exercise management and monitoring rights, as evidenced by laws passed and revised post-1995. But formal statute without enforcement has not resulted in effective governance of North Korean fisheries. The Ministry of Fisheries and other regulators’ authority are supposed to monitor and control fishing. However, inspections of the catch are rare or nonexistent, so fishermen are free to harvest as much seafood as they can and can operate in any part of the sea, except areas off-limits because of naval and other military activity (R9, R10). Thus, the state chose not to exercise its management and monitoring rights to an extent required to prevent overfishing. This does not mean it had no ability to do so: when rules were related to the issues the state considered vital for its survival, these rules were enforced efficiently. In this case, the central bureaucracy understood the significance of the ongoing fishing activities as a provider of revenues as well as a factor contributing to the social stability—that is, by providing livelihoods to many North Koreans—while reserving the right to crack down on market activities at any time.

Phase 3 (2004 to 2019). As noted above, in the early 2000s, the North Korean government adopted a set of pro-market reforms that expanded the scope of legal market transactions between households and also between state firms. There was visible growth in the size of North Korea’s market system over much of Phase 3 (Ward & Green, 2020). However, there was no attempt to create a firmer legal basis for individual involvement in the fishing industry during this time, and after a brief period of pro-market reforms, the North Korean government became increasingly anti-market once again. In 2010, however, the government again moved back toward a policy of tacit market toleration and then restarted reforms (Han, 2019).

The second change distinctive of Phase 3 was the emergence of Chinese fishing in North Korean waters. At the beginning of this period, in 2004, the North Korean government signed a fishing agreement with China and began the sale of fishing rights (direct use and transaction rights) to the Chinese companies. In 2004, there were 42 Chinese ships fishing for squid in the North Korean EEZ near the East Coast (Öm, 2009, pp. 39–40). Their numbers grew rapidly, and according to the official Chinese data, the annual number of Chinese fishing ships operating in the region approximated 600–900 in the 2010s, with total catch of squid by Chinese vessels would approximate those of Japan and South Korea combined from all their surrounding seas (Park et al., 2020, p. 3). Chinese ships, especially those fishing for squid, tend to be much larger than North Korean vessels and are much more efficient (Park et al., 2020, Supplementary S7). Interestingly, after 2014, the Chinese authorities ceased to publish data on ship numbers—likely because the issue became politically sensitive.

For the central government, the sale of use rights (and, by extension, transaction rights) to the Chinese is a profitable source of resource rents. The entry of new players who are capable of making cash payments to the central bureaucracy is welcome. Chinese operators do not depend on government forbearance, since they do not operate in the legal gray zone. However, as foreigners, they still remain controllable: their licenses can be canceled at any moment and with little political problems—the North Korean government is known for its propensity to unilaterally revise or cancel contracts with foreign entities whenever it sees fit (Ward et al., 2019).

The exact content of the deals between the regime and Chinese fishing firms remains secret, but some details have leaked. In 2007 and, again, 2010 it was reported that the Chinese paid between \$25,000 and \$37,000 per ship per year for the right to fish inside the North Korean EEZ (Öm, 2009, p. 40; YTN, 2010). Given that 600–900 ships operate in the area, the sale of fishing rights to the Chinese every year brings from \$25 million to \$33 million to the coffers of the North Korean central government. This is a considerable amount of money by its standards.

The available data from South Korea and Japan leave no doubt that the fisheries depletion is considerable. Data indicates that the rate of depletion has accelerated exponentially since the late 2000s. The major catch is Japanese flying squid *Todarodes pacificus*, a valuable commercial species. The total South Korean catch in the areas of the East Sea (Kangwon province, North Kyongsang province, and the city of Ulsan combined) between 2009 and 2019 went down nearly sevenfold, from 122,400 tons in 2009 to 18,100 in 2019 (see Table 2).

TABLE 2. Total Catch of Coastal Japanese Flying Squid in South Korean and Japanese Waters (in thousands of tons)

Year	2009	2011	2013	2015	2017	2019
Catch in South Korean waters	122.4	88.5	80.0	65.1	32.9	18.1
Catch in Japanese waters	76.9	51.4	39.9	32.5	34.5	24.2

Source: Statistics Korea (www.nso.go.kr) and Japan Fisheries Agency (<http://abchan.fra.go.jp/digests2019/index.html>)

Though no precise data from North Korea is available, data in Table 2 is highly suggestive of massive depletion of the fisheries CPR in North Korea as well as the Yamato Bank area. It is indirectly confirmed by export statistics: seafood exports have been rapidly declining—both as a percentage of total exports and in absolute terms—from 2005 onward (Kim, 2017, p. 166). Interviewees also agree that problems of overfishing became more serious after the early 2000s, and blame overfishing on the Chinese, or locals, or both (R2, R3, R5, R10). Here we are not seeking to apportion blame. However, interviewees agree that the fast-progressing depletion of North Korean coastal waters is a major factor behind North Koreans' growing presence in Yamato Bank. The first signs of the problem appeared in the late 1990s. When an FAO (1998) fact-finding

mission met the North Korean officials, it encountered explicit complaints about seafood depletion and overfishing. Since then, the situation has worsened, pushing North Korean fishermen farther away from the coast.

Rapid growth in the number of Chinese fishing vessels operating in North Korean waters, and the continued marketization in a country without clear property rights, have combined to create an ecological tragedy. However, competition between local entities for scarce resources generates revenue for the regime, and decentralization has also meant that the regime has effectively outsourced much of its prior welfare responsibilities to local entities. In the early 2000s, Kim Jong Il ran “a more decentralized, post-totalitarian, institutionally plural state” (McEachern, 2010, p. 13). But since 2011, the structure of power in Pyongyang has shifted back toward the party and away from such (limited) pluralist arrangements (MacEachern, 2019). This does not appear to have had much impact on how usage and transaction rights are exercised within the fishing industry domestically, though, but the distribution of foreign trade rights and some local entity’s access to foreign exchange may have impacted (Park, 2014).

These processes are captured in Figure 3.

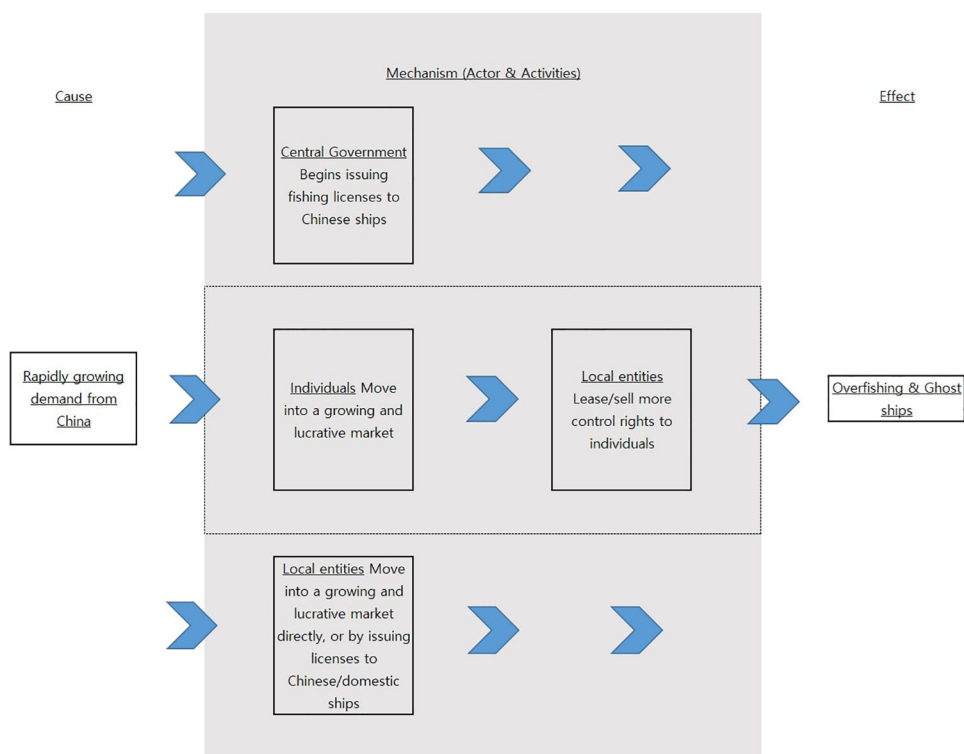


FIGURE 3. Third phase (2004 to 2019).

The regime’s reluctance to create de jure property rights and continued use of “anti-socialist campaigns” speaks to the leadership’s chosen logic of survival (Ward, 2020b). The regime has sought to keep local entities, markets, and market actors in a position of

enmeshed dependence, forcing market actors within local entities to compete for resources in order to maximize rents for the regime, and subjects market actors to sporadic harassment, expropriations, or worse. To borrow the words of Albertus et al. (2018, p. 40), these actions seek to position “the regime between the masses and the resources they need to flourish,” and the regime is remarkably successful in its endeavor.

THE COVID-19 EPISODE AND ITS SIGNIFICANCE

The end of the Phase 3 was marked by the outbreak of the COVID-19 pandemic and the introduction of United Nations sectoral sanctions that, among other things, made it illegal for UN member states to import seafood from North Korea. To get around these new bans, North Koreans began to use a range of smuggling techniques, including ship-to-ship transfers. Seemingly, neither North Korean sellers nor (largely Chinese) buyers cared much about their operations being now seen as illegal under international law (Harashima, 2018). The COVID-19 pandemic, however, had a much greater impact and became, essentially, a natural experiment testing some of the ideas we suggested above.

It is not clear at the time of writing whether the pandemic will lead to major long-term changes in the structure of the North Korean fishing industry. However, COVID-19 demonstrates with remarkable clarity that the North Korean state possesses the necessary capacity to stop fishing in its waters, but decided to practice forbearance toward overfishing for much of the period reviewed herein.

The North Korean government took the pandemic very seriously and began to enforce quarantine measures that had few if any parallels in their strictness worldwide. Since February 2020, almost all interactions with the outside world have ceased, and foreign trade has nearly completely stopped. From summer 2020, the authorities began to claim that the virus can be brought to the country from the sea, through seafood and even flotsam. Thus, locals were banned from approaching the coast or collecting anything on the beach even in the localities where beaches used to be accessible (Kang & Pak, 2021; Asia Press, 2021; also confirmed by authors’ contacts among the expat community in Rason district). Against such a background, in 2020, the authorities made a decision that small fishing ships, the backbone of the fishing industry, should not be allowed to venture out to the sea at all, while larger fishing ships would be subjected to numerous rules and restrictions (Asia Press, 2021). This was confirmed by the National Intelligence Service (NIS), South Korea’s intelligence agency, and through satellite imagery (Jung, 2021).

Subsequent events demonstrate that the new rules were enforced efficiently. In 2020, only one North Korean ship was intercepted in the Japanese EEZ by the Japanese Coast Guard, while in 2019 there were 4,007 such cases (Kentaro Furuya, 2021). North Korean fishing ships whose troublesome presence had been a feature of these waters since the beginning of the Phase 3, disappeared virtually overnight. There was also a dramatic decline in the number of ghost ships, the abandoned North Korean fishing ships washed away on Japanese shores. In six months from October 2020 to March 2021, only 13 such ships were discovered, whereas for the same period of 2019–20 there

were 141 discovered ships—an impressive tenfold decrease (Kyodo, 2021). This decline reflects a similar level of decline in the number of North Korean small boats present at the sea.

From the central government's point of view, the COVID-19 quarantine is an issue of paramount importance. Therefore, the dramatic decline in fishing activities demonstrates once again that the government possesses the capacity to enforce regulations and bans that are related to issues it takes seriously, that is, issues related to regime survival.

It would appear that the natural experiment of COVID-19 is far from over. It will be instructive to see how the state reacts to the eventual end of the pandemic and return to normality. It is unclear as of now whether the regime's response to the COVID crisis will have a lasting impact on the way the fishing industry is managed. On the one hand, the regime may have decided that the industry can be more aggressively managed in future, even after the COVID crisis has passed, with a less lenient approach to market actors and "profiteering" by local entities. On the other, though the state certainly has demonstrated the capacity to control the industry, it has yet to find alternative means by which to provide for the welfare of many who rely on it. Hence, due to welfare concerns or for fear of unrest, Pyongyang may allow the pre-pandemic status quo to reemerge.

ALTERNATIVE EXPLANATIONS

As Bennett (2010) notes, a process tracing design should include due consideration of alternative explanations in order to demonstrate the convincingness of inferences made. Perhaps the most intuitive and compelling alternative explanation as to why a state would not prevent an ecological disaster is that it does not have the capacity to begin with. Much of the available scholarship on the management of fisheries assumes this to be the case, with literature dedicated to better institutional design (Rudd, 2004) and capacity building (Espinoza-Tenorio et al., 2011). The underlying assumption is that institutions are not weak by design, and capacity needs to be created because it does not exist.

In the North Korean case, there is some evidence to suggest that the regime is not happy with the consequences of the current arrangements. In 2010, Kim Jong Il (2010) issued orders demanding local entities not facilitate illegal registration of boats, allegedly associated with a rise in the number of disappearances and deaths at sea. While in 2011, he (2015, p. 526) complained about local entities under the security forces engaging in fishing operations that seriously breached environmental regulations. In 2015, the National Defence Commission and Ministry of State Security issued a joint announcement that indicated an impending crackdown on private involvement in the industry (Asia Press, 2015).

The worries, at least sometimes, extended to the Chinese fishermen as well. In 2007, Kim Jong Il complained that North Korea's fisheries authorities were not exercising appropriate management and monitoring of Chinese vessels, just "opening up the seas" to them. He claimed that they were indiscriminately issuing permits in exchange for cash, and not checking the species being caught or the equipment (nets) being used (Han, 2019, pp. 414–415). The claim has been confirmed by our interviewees (R9, R10).

However, Kim Jong Il's 2007 complaints had little if any impact and remained an isolated episode.

Indeed, there is little evidence that such a crackdown had real effects—unlike the actually efficient crackdown that followed the COVID-19 outbreak. Thus, some of the official pronouncements are likely made to reconfirm the state's negative attitude to private fishing, but are not carried through due to the established tradition of forbearance.

Additionally, the central government has proven adept at managing allocation rights to ensure individuals outside the state cannot access the seas on a regular basis for commercial purposes (Ward et al., 2021). Thus, the available data indicates that the major cause of environmental degradation is the sheer number of ships involved, with the willing sale of use and transaction rights by the regime to Chinese firms exacerbating this disaster. The state clearly possesses capacity to stop this, as 2020–21 events demonstrated, but has chosen revenues and competition over effective management.

CONCLUSION

Utilizing insights from the CPR literature and new theoretical developments in the political economy of property rights in authoritarian states, we have demonstrated how the North Korean regime has allowed an ecological and human tragedy to occur within its fisheries CPR. Our findings also demonstrate that the informal exercise of property rights, common to many post-communist authoritarian countries, can create perverse incentives with respect to the management of common-pool resources. Further, more broadly, we have shown how authoritarian regimes may manipulate property rights with respect to common-pool resources in similar ways to those demonstrated in the comparative authoritarian literature on land property rights (Albertus, 2021).

The decentralization of North Korean fisheries began in the late 1980s when local entities (SOEs, military units, etc.) located in the coastal areas received the right to fish (use rights) and began to exercise transaction rights. These activities soon came to involve individuals who bought licenses from local entities. Most of their activities remain technically illegal, so the government exercises forbearance, allowing the local entities to generate revenue and food that is partially used to feed their employees, while also staging sporadic crackdowns. Such activities brought cash revenues to the government, while also providing a basic livelihood to the local population in many coastal areas where few other sources of income are available.

Forbearance is selective in two important regards. First, some restrictions are enforced thoroughly (control over sea access, seen as vital for the state security), whereas others are normally ignored (the illegal use of markets, the illegal sale of licenses, etc.). In 2020–21, during the outbreak of the COVID-19 pandemic, the authorities introduced and then successfully enforced a near-total ban on fishing. This confirms that North Korea is not simply a weak state without the capacity to stop overfishing.

The central government also encourages competition between the local entities while also fostering the sense of insecurity. The result is a high discount rate: local entities'

managers and their private partners personally benefit from fishing activities but do not see it as a lasting and sustainable endeavor, but rather hope to get maximum profits within the shortest period of time.

The central government also sells licenses to the Chinese fishing companies that, like local entities, are seen as a source of quick cash (the central bureaucracy also has a high discount rate). Since Chinese operators are outsiders with little if any interaction with the locals, selling licenses to them does not imply any direct risk of a breakdown of the enmeshed dependence between market actors, local entities, and the central government.

The political environment makes it impossible for the boat operators (as well as license-issuing local entities) to organize self-governing associations whose existence is essential for sustainable management of the commons (Ostrom, 2006). In North Korea, any kind of grassroots self-organization is deemed politically unacceptable and cannot be tolerated by the authorities. This situation is somewhat similar to what can be observed in Colombia, where the local right-wing militias take the same attitude to self-organization (Torres Guevara et al., 2016). This means that a community-based solution to the governance of the commons, much emphasized in Ostrom's approach, is not universally applicable due to the forced absence of the autonomous "community" as such. Further, the case of Indonesian forestry under Suharto also shows how authoritarian states sometimes forcibly deprive local communities of usage rights, while empowering actors favored by the autocrat to engage in overexploitation of a valuable common-pool resource (Fleischman et al., 2014). Clearly, though there are aspects to the North Korean case that are unusual or even sui generis, forbearance, property without rights, and the use of violence to prevent collective organizing appear to be far from unique in CPR governance. We believe the North Korean case demonstrates how the study of common-pool resources can be enriched with ideas developed in the study of the political economy of authoritarian regimes.

Indeed, in a situation where long-term prospects are unclear and business is dependent on selective and withdrawable forbearance, competition is encouraged while any kind of grassroots coordination is blocked. Decentralization over usage rights along with continued central control over allocation rights has sped up the further deterioration of common-pool resources. This indicates that the efficiency of CPR management is to a large degree dependent on the general political environment, since some types of the authoritarian regimes, due to their ability to control grassroots activity and a high discount rate, can be destructive for the state of common-pool resources. ■

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APPENDIX 1: TABLE OF Interviewees

Number	Interview date	Gender /approx. year of birth	Period working in industry	Position	Year of leaving NK
R1	16.09.04	F 1960	1989–2006	Boats owner (with spouse)	2006
R2	16.11.27	M 1965	2003–11	Boats owner	2011
R3	17.03.18	F 1960	1997–99	Seafood trader	2000
R4	17.04.01	F 1970	1995–2005	Seafood trade company manager	2012
R5	17.04.08	M 1960	1995–2003	Foreign trade company branch manager	2012
R6	17.04.22	M 1980	1995–2008	Diver, fisherman	2008
R7	17.04.29	F 1990	1998–2005	Seafood trader, seafood company worker	2006
R8	17.05.13	F 1990	2000s	Net making	2009
R9	17.05.20	M 1980	2000–2003	Fisherman	2013
R10	20.08.20	M 1980	2002–6	Boats owner	2006
R11	16.08.20	M 1960	1989–96	Boats owner	2002
