Robert Winstanley-Chesters

Fish, Fishing and Community in North Korea and Neighbours

Vibrant Matter(s)

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Robert Winstanley-Chesters
University of Leeds
Leeds, West Yorkshire, UK

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Prefatory Notes

Romanisation is one of the greatest challenges when it comes to coherent writing and scholarship focused on the Korean peninsula. There are currently at least four separate romanization strategies for converting Korean Hangeul (한글) or Chosŏn'gŭl (조선) script into an English language context. Both Koreas, of course, use entirely different approaches and have changed these approaches over time. North Korean romanisation style refers to Pyongyang and Kim Il Sung, whereas South Korea's current Revised Romanisation strategy (in its 2008 form), refers to Pyeongyang and Kim Il-song. There is an extraordinary amount of politics and ideology in the use of these different strategies and it is an issue for all scholars when quoting from text produced in both current Korean nations to either choose one over the other, or to Romanise according to the source of the quotation, place name, person or text. This book, therefore, adopts a strategy as far as possible of objective multiplicity. This, of course, inevitably breaks all the usual patterns of uniformity in documents and is contested as a technique, certainly not problematic, nor free of ideology or presumption. In the case of historical Korean names, places, concepts and nations, the book uses the McCune Reischauer romanization strategy created in 1937 by George McCune of the University of California, Berkeley and Edwin Reischauer of Harvard University. While McCune essentially crystallises some of political imperialism, academic elitism and Orientalism of the twentieth century and complicates written Korean with judicious and at times excessive use of diacritic marks, it is a comprehensive system of romanisation that avoids the politics and ideology of the present. When using Korean names, places and concepts in North Korea, the book uses the North Korean romanisation strategy. When using Korean names, places and concepts in South Korea the book uses the Revised Romanisation strategy from 2008. On occasion when a term or name is important to both, on the first instance in a chapter the book includes both romanisations. Following the tradition instigated by Prof. David Mason the book uses the spelling *sanshin*, when it comes to traditions of Korean mountain deities and *sanshingak* when it comes to their places of veneration. These are only capitalised at the beginning of a sentence and have no plural nor separate gendered forms. When it comes to non-English language names, places, concepts and terminology, the book

includes the original Korean/Chinese/Japanese script on the first instance in a chapter. This book, written by a citizen of the United Kingdom of Great Britain and Northern Ireland uses spelling conventions from that nation when it comes to the English language. The book as possible uses a form of the Chicago Manual of Style (16th Volume) for referencing, end noting and other style issues.

A further note should be made of the tendency of North Korea's national newspaper, *Rodong Sinmun* to delete its' online archives with regularity each year. Thus, links which are referenced in this book for 2017 or 2016 (and in the future 2018 and 2019), may no longer work. The author of this book keeps a copy of all articles used from *Rodong Sinmun* and would be happy to furnish any interested reader with a copy upon request.

Contents

Chapter 1
Watery Introductions

Abstract The book's introductory chapter outlines its ambitions, aims and objectives. Fish, fishing and fishing communities are perhaps among the most opaque and little-studied developmental ecosystems. Equally, North Korea is one of the most difficult to study and confusing research sites on the globe. In introducing this book, its shape and objectives, this chapter aims to give a coherent and comprehensive sense of how this opacity and difficulty might be overcome and managed. In particular, the chapter engages with the literature of vibrant, lively and non-human matters, as this is the lens through which the author seeks to explore the realm of fish, fisherpeople and fishing. Following the work of scholars such as Jane Bennett and Sarah Whatmore, the interactions and exchanges that mark out such a complex 'web of life' will be explored in a wide variety of scales, sites and situations. Vibrancy and liveliness of such fishing matter(s) will be considered in the context of both abundance and scarcity, vitality and degradation within this book and an introduction sensitive to thoughts and theories, which might bind these varied situations together is important to that consideration. Vital to this watery introduction to will be a sense of the nature of the web of life within which these vibrant matters function, especially in the political and politico-social sense of that web, focusing as it does on North Korea, a national polity possessed of its own peculiar, distinct and local form of politics. While Jason Moore, who coined the notion of the 'web of life' used within this book, sought to unpack the place and role of nature within a web of capitalist life, of course, North Korea is anything but a conventional space of capitalism. This book roots its analysis of Pyongyang's ideology within that produced by Heonik Kwon and Byung-ho Chung, which holds it to be characterised by a theatric or charismatic politics recognisable to both Max Weber and Clifford Geertz. Finally, this introduction engages with the methodologies and literature of fishing histories and geographies across the globe. The watery terrains of this book, therefore, from North Korea and its neighbours are complex assemblages of the symbolic, constructed and co-produced as well as the concrete and the vibrant.

Keywords North Korea · Geographic literature · Fishing · Heonik kwon and Byung-ho chung · Vibrant matters

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> 'By emulating the working spirit of the People's Army which made a new history of 'sea of gold,' the fishing sector should drastically bolster up the fishing industry and land a huge haul, thus supplying a large amount of fish to enrich the people's diet.'[1]

Kim Jong Un's New Year Address of 2015 was not the first time a North Korean leader had focused on maritime resources and products of the sea within a key statement of national intent, but it is certainly a moment in which fish are front and centre of North Korea's political narrative. The wider world, however, seemed not to notice. Most readers of this book will know North Korean political narratives for different material reasons. In fact, North Korea would have most readers know its political narratives for different material reasons. For many years, North Korean materials which the world has known and which the world has been globally concerned about, have been its military, fissile and nuclear. Global news media (and the South Korean government) have been woken early in the morning by sights of North Korea's latest ICBM heading skywards as dawn breaks, Kim Jong Un watching with glee, cigarette in hand.[2] At other moments North Korea has shown off the material of conventional and nuclear war as it passes through Kim Il Sung Square in endless procession.[3] The world has also been transfixed as the concrete of the Yongbyon Nuclear Reactor has crunched back to earth in a burst of noise and dust as it was sacrificed for diplomatic necessity.[4] At still other times, the world has been transfixed in the misery, pain and degradation of the North Korean public as they scrabbled grass from the ground and bark from the trees to offset starvation and famine[5] or read of the moments and material of incarceration, torture and capture in weaponised works of literature and advocacy designed to delegitimise Pyongyang as an authentic governmental power.[6]

The materials which this book is concerned with have been seldom considered, seldom seen in writing and analysis of North Korea. This book considers fish, fishing infrastructure and communities focused on their extraction in North Korea. As much as fish and fishing in North Korea have generally been ignored by history and academic writing, they have long been important to Pyongyang's political and developmental agenda. They have also long been important to Pyongyang's geopolitical and diplomatic ambitions; fish, fishing resources and capabilities were elements in interactions between North Korea and the Soviet Union, for instance, as far back as the 1960s. North Korean fishing endeavours were conversely important to discourage in the minds of various Pacific fisheries commissions and organisations. Fish and fishing have also long been important to families, local political units and communities in North Korea. In recent times, this importance has only

[1]New Years Address (2015).

[2]North Korea Confirms Successful New Ballistic Missile Test (2019).

[3]Haas (2018).

[4]Sang-han (2008).

[5]Starving North Koreans Forced to Survive on Diet of Grass and Tree Bark (2019).

[6]Harden (2013).

increased during times of economic decline and food shortages, fish have become useful as stores of value which little or no input from the state or bureaucratic institutions. Extraordinarily this has led to the phenomena of 'ghost ships' in which developmental communities not expert in fishing matters have been pressured to go to sea with disastrous results as fishing boats and their crews have washed up on the beaches of Hokkaido and elsewhere, dead.[7]

North Korea may be part of a peninsula, but it is not an island. Its politics has never been disconnected from wider challenges facing the world and this book examines fish, fishing and fishing infrastructures in that nation in the context of both global climate change and environmental crisis. That the world's oceans are ecologically dying is a cliched truism which unfortunately is oft-repeated in global and political and media narratives, but which is for the most part entirely true. Acidification of the waters of the world caused by increasing levels of Carbon Dioxide in the atmosphere is but the latest challenge to befall the creatures of those waters.[8] While acidification so far appears to have a disproportionate long-term impact on species requiring calcified shells and exoskeletons, such as corals, rising water temperatures and rapidly shifting gyres and currents bringing temporary hot spikes could wipe out such animals in the short term.[9] Rising sea temperatures are evidenced as having begun to shift fish populations and their migration routes across the globe so that fish species appear in parts of the ocean they have never been seen in before.[10] Spider crabs and other predatory crustaceans have also, due to these changing temperatures, begun to colonise new territories across the world, depleting and devastating maritime species who have not through evolution developed a defence or response to them.[11] Global TV audiences have similarly been horrified and transfixed by programmes such as Blue Planet II, which not only recounted some of this but also considered the sheer catastrophe of plastic and other non-biodegradable pollutants in our oceans.[12] Awareness of seascapes subject to extreme degradation such as the space known as Great Pacific Garbage Patch, where tens of thousands of tonnes of plastic and other material in suspension in the water column have accumulated in the middle of the Pacific Ocean through the actions of the North Pacific Gyre, has been growing and impacting on both fish populations and fishery communities.[13] North Korean fishers would be subject to the denudation of the seas as a result of all of this; the commons which provides such a free opportunity for the institutionally and infrastructurally challenged nation is much reduced and diminished having a huge impact on any potential catch.

[7]McCurry (2015).
[8]Orr et al. (2005).
[9]Walther et al. (2002).
[10]Hoegh-Guldberg et al. (2007).
[11]Thatje et al. (2005).
[12]Calderwood (2018).
[13]Evan et al. (2012).

As huge as these external environmental factors have been and will be on the seas of the globe their current impacts pale into significance when it comes to the past impacts of fishing and fishing technology itself. As fishing strategies and technologies have developed over the past couple of centuries, fisherpeople and fishing communities have moved from subsistence-level coastal exploitation to the industrial harvesting of the deep oceans. Once limited by the size of boats, by the utility of maps and charts, by the vagaries of weather and tide, contemporary fishing enterprise traverses the globe guided by satellite and digital technologies literally scraping what remains of the flora and fauna under the surface from the oceans. Fishing has even begun to fish down the genus and species divides and seek new markets for oceanic life forms that humans would never have considered consuming in the past, but now simply are forced to, given the unavailability of past favourites. North Korean fishing will also find itself subjected to the paucity of catch now available in its seas and in any others available to it. Pyongyang's difficult history when it comes to technological and capacity development will see it challenged when it is only those nations and enterprises with the most advanced and functional technology that will have any sort of advantage in the future.

This book, is therefore focused primarily on a problematic sovereign space, which has long sought to deploy dangerous and disruptive materials in both its own defence and for hypothetical offence. It is also focused on another material of great interest to North Korea This is a material which has not only always been problematic for North Korean institutions to best harness or extract, but which is now subject to depletion and diffusion across the globe in a way which could not have been imagined in 1948 when the nation was founded. This author has in past writing sought to explore the history of other materials and products in North Korea's developmental history, which similar to fish have been important to its political and ideological narratives and perceived as vital to its governmental offer and institutional functionality.[14] Forests and timber, as well as minerals including coal, uranium and molybdenum, have been seen in this way by North Korea's governments over the decades among other examples.[15] Much writing on North Korea and its politics has it that history, ideology and ethnic identity are the greatest materials so far as Pyongyang is concerned, and it is these materials which almost above everything else shape and impact life in that nation.[16] In a sense, this would have it that North Korea is a state of politics to the exclusion of everything else. While on the face of it this can appear true—as politics and ideology do have a tendency to seep very deeply into the everyday lives and social frameworks of North Koreans—this book suggests that other physical materials play a real role in the web of functionality and authority that Pyongyang uses in order to assert its legitimacy as a government.

[14]Winstanley-Chesters (2014).

[15]Winstanley-Chesters (2018b).

[16]Myers (2010).

But how do materials themselves play a role in the politics and authority of a nation, especially non-sentient materials and particularly in a nation which places such importance in the physical legacies of its rulers? This book, and this will be explained in a later chapter in greater detail, essentially holds that materials and material objects themselves are capable of and bestowed with power and agency in the political and functional frameworks and ecosystems that make up a nation. Two particular bodies of thought are useful in understanding this idea. First, that of Jason Moore on the role and place of ecological elements and ecologies in what he terms 'the web of life.'[17] Moore's work resolves primarily around the place of ecology and ecological materials within the functioning and intersections of Capitalist models and modes of government, economics and society. That Coltan you have in the mobile phone which you rent from a multinational corporation and from which other multinational corporations extract your personal data and information, selling them to other corporations in order that they might advertise other products (such as other mobile phones), to you, by virtue of the value generated by both tangible and intangible assets (which are themselves both traditional and very new), becomes lively and active as a material in global politics.[18] In Coltan's case, it is the material both lively enough to enslave indigenous populations for its extraction and to generate wars and armed conflicts such as the Second Congo War that have cost many human lives and disrupted political and economic development as well as societies for decades.[19] Minerals and ecological materials can be extremely lively and energetic in these webs of life and it is this author's assertion that Moore's model does not necessarily have to work exclusively in political and economic systems that might classified as a capitalist or even post-capitalist. It is quite possible that non-capitalist or anti-capitalist webs of life could have similar energies at work and North Korea might just be such a case.

Aside from the work of Moore and ecological elements and materials in these webs of life, this book secondarily utilises the work of philosopher Jane Bennett and those Human Geographers such as Sarah Whatmore who have extended her ideas into the home discipline of this author. Bennett suggests that non-human and non-sentient creatures, physical materials, tectonic and forces such as gravity be considered vibrant matter.[20] At the most basic and reductive level, this vibrancy can be related to the vibrancy of particles in the atomic nuclei of all elements which make up the universe. Unless reduced to Absolute Zero (0 on the Kelvin scale of temperature or −273.15 °C), these particles continue to move around each other, in a sense vibrating. However, these creaturely and material energies are much more than that, they are energetic and vibrant in multiple ways. As the study of human biology develops scientists become more and more certain that the separation between human and nature, between in here and out there is not only diffuse, but

[17]Moore (2015).
[18]Bleischwitz et al. (2012).
[19]Ayres (2012).
[20]Bennett (2010).

impossible. Human beings are not one creature but an assemblage, network and symbiotic community of human DNA, viruses, bacteria and other forms of life.[21] Sometimes esoteric players in this community such as the feared Free Radicals (unpaired ions) which appear to spark diseases such as Alzheimer's and Parkinson's as well as perhaps play a key role in the ageing process itself, cause death and destruction for the human body, but mostly humans simply could not live without these silent, lively partners.[22] The vibrancy and liveliness of such materials make human life as we understand it possible. So it is with other life forms, objects, forces and materials, the processes they support or contain, the value they hold, the impact they have, the capabilities granted by them make them either vital to include with the processes of political, economic, technological or social life, or fundamentally necessary to avoid. This vibrancy, therefore, has power, what Bennett terms 'Thing Power,' through which and by which these materials and objects support or disrupt the functioning of human life and human politics or development.[23] Bennett also suggests understanding this power as a distributed sense of agency among non-human things, agency no longer as Descartes and much post-enlightenment philosophy would have it rooted in the human individual, but distributed across and into the planet, no longer dependent on the individual for its projection.[24]

Surely such a concept cannot work within the framework of North Korean politics, a nation so wholeheartedly rooted in human stories and the power and agency of a person and their relatives? How can the story of Kim Il Sung as father of the North Korean nation and 'man as the master of all things' and capable seemingly according to national narrative of almost single-handed defeating the Japanese colonial forces and the combined forces of the United States, United Nations and Republic of Korea during the Korean War, fit within this idea? Heonik Kwon and Byung-ho Chung have in the past categorised North Korea's ideological framework as being one of Charismatic Politics, closely connected to a Theatric politics as recognised by Clifford Geertz in sixteenth-century Bali.[25] Through the performance and reperformance of past moments of political or ideological importance, North Korea's political leaders and regime reconnect to the authority of vital moments of authority and revolutionary energy. This energy can be then re-materialised in the present to support North Korea's government and political system at a time when it is much less successful and functional.[26] Readers might think that such materializations might only involve the person of Kim Il Sung during the period of colonial struggle against the Japanese in the 1930s, or family

[21]Eloe-Fadrosh and Rasko (2013).
[22]Richardson (1993).
[23]Bennett (2010).
[24]Bennett (2010).
[25]Kwon and Chung (2012).
[26]Winstanley-Chesters (2015).

members of his such as Kim Chong Suk, his wife at the time.[27] However, non-human objects and materials have played a key role in some of this charisma and theatre throughout the history of North Korea, and have captured some of the energy of that political charisma. Boulders, rocks and trees in the mountains and wilderness of the north of the nation proved almost cosmologically helpful during battles against Japanese forces in the North Korean narratives. Indeed, they were so helpful that the stories which recount the travails of Kim Il Sung and his guerrillas suggest that in some way these material objects were supportive of the future North Korean leader's struggle. Kim Il Sung and his first wife, Kim Chong Suk's relationship was first acknowledged in North Korea's historical narratives by the side of a lake, underneath a copse of birch trees.[28] While no humans are alive who were present at this moment which is of extreme importance to North Korean politics (because Kim Jong Il and the entire national dynasty springs from this meeting and this relationship), and therefore capable of serving as witnesses to the moment, the trees themselves are. Thus, the birch trees which once shaded the picnic held by the guerrillas in between skirmishes with the Japanese and have a place in the background of this important photo in the lives of Kim Il Sung and Kim Chong Suk are the only witnesses to the moment are used by North Korea in the complex network of commemorative moments in the nation; they stand in for humans and themselves project some of the charisma of that moment.[29] In more recent years at the death of Kim Jong Il, a variety of flora and fauna in North Korea was said to have participated in the mourning, bears were seen following what had once been the Dear Leader's path, red-necked cranes adopted mourning postures and there were even instances of migrating birds simply falling dead from the air at the exact moment of his death.[30] Just as the birth of Kim Jong Il in 1942 was marked in North Korean historiography by a star in the sky, his death even involved more geologic and basic forces as the ice covering Heaven Lake/Ch'ŏnji (천지) on top of Paektusan/Baekdusan (백두산)was said to have cracked as he died and the rocks around his signature inscribed on the side of the moment glowed red.[31] One does not need to be a human citizen of North Korea to channel some of the charisma of its politics and history.

This book will explore these non-human possibilities in North Korean politics and their role within the networks of its charismas. There will not be many trees of, but plenty of fish, fishing infrastructure and fishing technologies. The book will explore the histories and geographies of fishing on a global scale, before considering fishing in East Asia and the Pacific, with a deeper level of focus on North Korea, finally recounting fieldwork there and in neighbouring nations. While Korea, as readers will discover has not historically been a nation at home in the

[27]Winstanley-Chesters et al. (2016).

[28]Ibid.

[29]Ibid.

[30]Kim Jong Il Death (2011).

[31]Ibid.

deep sea, efforts made by the Western countries and the peninsula's former colonial master, Japan in the late nineteenth century in tandem with developing technologies such as steam power, iron and steel manufacturing and onboard refrigeration extended the distance from the coast that fishing could be successfully achieved.[32] Nations such as the United States, the Soviet Union, Canada and Japan, from 1919 in possession of Germany's former South Pacific territories, with these nineteenth-century technologies and further developments in the twentieth century within both the pre-1939–1945 war and Cold War periods would develop what Carmel Finley has termed an 'Empire of Fishing' in the Pacific.[33] These were of course, in fact, several opposing empires, but these nations would see to it that no space or territory in the Pacific Ocean was without the extractive touch of industrial fishing and places once thought of as highly peripheral to global politics such as the Bonito Islands and Samoa became integral to both industrial and military complexes.[34] During the Japanese colonial period, Korea's Government General followed similar patterns of fisheries infrastructure development as that of mainland Japan. There were a series of fisheries stations and fisheries research institutions built on the peninsula as part of the network of institutions already existing in Japan (and other colonies such as Formosa (Taiwan).[35] While much of this infrastructure was lost in 1945, and many of the larger fishing boats sailed for mainland Japan in the weeks following the end of Japanese colonial rule, Korean sensibilities regarding the sea had changed somewhat.[36] Following the stasis of the 1950s under the Syngman Rhee administration, South Korean fishing boomed in the 1960s and 1970s and the southern half of the peninsula became one of the global fishing giants.[37] North Korea could not look on and disregard this since capabilities and capacities in the deep sea had not only become a mark of a developed, modern, powerful nation, but one which its rival in the Cold War had become a master of. If North Korea was to be a legitimate nation, with political and governmental authority of the type necessary in this era of competition it would need to become a fishing nation, need to build a fishing empire of its own.

North Korea's efforts to do just this, to extend the reach of its fishing institutions out into the Pacific, to develop fisheries research and infrastructure which would help it do this and to find both home and foreign markets for the fruits of its efforts at sea are some of the key elements of this book. The importance of fishing and fisheries science including ship and infrastructure building to Kim Il Sung and to later North Korean leaders is considered in this book, building on past writing by its author.[38] This is also the case with the effort that North Korean institutions have

[32]Sarhage and Lundbeck (1992).

[33]Finley (2011).

[34]Nishi (1968).

[35]Supreme Commander for the Allied Powers (1946).

[36]United States Army Forces Pacific (1946).

[37]Sala et al. (2018).

[38]Winstanley-Chesters (2016).

made to incorporate fishing and fishing capabilities into its political and ideological makeup and frameworks. North Korea's charismatic politics necessarily has to provide a space for each developmental sector and all the materials and products which each sector generates. Fishing is in a sense something of a diffuse and opaque exercise. Fishing people go out into the endless sea and cast their nets, lines, hooks and other technologies into the depths hoping to extract a living product, which acts in mysterious and confusing ways. When one factors in the vagaries of the weather, the tides and all the mishaps and dangers that can happen at sea the exercise can appear even more opaque. Even with the technologies now available to the modern well-resourced fisherperson, there may be days and nights when the nets come up empty, the radar is misunderstood and the opportunities are lost, the fish simply cannot be found. How could this randomness and occasional disappointing lack of success be included within a political and developmental frame which essentially is predicated on a modernist assumption and desire for ever-increasing capability and capacity? How could a politics and ideology of supposedly rationalist certainty connect with the realities of danger, confusion, disappointment and mistakes at sea.? This book explores these and other interesting challenges for North Korean politics and development, challenges which, it perhaps might not surprise the reader have not been met entirely successfully. However, fishing capabilities and capacities are in 2019 still an important part of North Korea's governmental offer. Kim Jong Un, the current leader of North Korea, third in the dynasty, is still pictured visiting fisheries stations, still is pictured holding up a fish, standing on a fishing boat, briefly visiting the inside of a refrigeration unit full of frozen slabs of Pollack.[39] He does this because to make these visits, to make these connections with this industry of the sea is important symbolically and practically to assert his role as leader of the nation, head of the dynasty and his hope for the developmental future and food supplies of his people.

All this is not to say that this book is entirely about North Korea. Although Pyongyang's efforts at sea and the place of vibrant, energetic fishing matters within its politics and ideology are the key elements of this authors writing, it is not the only nation involved. While North Korea to this day insists on its politically vital sense of self-reliance as a nation as one of the key governmental planks of its being, it has of course never been entirely self-reliant on anything. North Korea has never been so much as an island, in common with John Donne's hypothetical individual from his seventeenth-century English poem 'Devotions upon Emergent Occasions.' North Korea was part of a complex network of geopolitical and economic connections during the Cold War, a difficult member of the family of international Communism and an at times complicated member of the Non-Aligned Movement.[40] North Korea was often a difficult partner for other nations, but it

[39]Kim (2015).

[40]Krishnan (1981).

saw itself as a member of a global group of nations which were brought together by a commitment and energy to overthrow the shackles of colonialism and a sensibility best described as Liberationism.[41] While this could on occasion involve non-state actors such as the Black Panther Party in the United States, for the most part, North Korea engaged nation states.[42] To this day, North Korea remembers its links of socialist and anti-colonial solidarity with nations such as Cuba, Venezuela, Bolivia, Syria and Palestine.[43] North Korea was also deeply connected to the Soviet Union and the People's Republic of China. Pyongyang gained a great deal in aid in kind, technical and developmental support from both of those nations during the Cold War, often playing one-off against the other at times in which the two had a geopolitical disagreement.[44] Soviet and Chinese technical specialists and bureaucrats helped support North Korean agriculture, forestry and hydrology as well as many other developmental fields.[45] It would not be surprising, therefore, if nations such as the Soviet Union and other neighbouring nations were connected to North Korea's maritime history and if North Korea had not engaged them in order to develop its fishing industry. Given North Korea's general history of geopolitical connection, these connections were not easy, and this book recounts, in particular, some difficult moments between Pyongyang and the Soviet Union over fishing rights and collaborations.[46] In this process of considering North Korean fishing in a manner which does not separate it from other contexts and the wider frames of fishing history and geopolitical development in the Pacific and East Asia, this book also attempts to think beyond the strictures of the nation state and its institutions. To do so, it considers life in fishing communities in North Korea, and in particular, one fishing community, long included in the political and ideological narratives of that nation, but bestowed with a very complicated geographical position. However, the book also looks beyond North Korea and encounters fishing communities and their infrastructures in neighbouring nations, especially those unfortunately gifted by circumstance-complicated or challenging environments. In particular, the book explores fishing communities on the Liaodong Peninsula of the People's Republic of China, Gageodo island in South Korea and Primorsky Krai in the Russian Federation, both not far at all from North Korea and both in a complicated environmental and political framework.

[41]Ibid.
[42]Young (2015).
[43]Haggard.
[44]Bradbury (1961).
[45]Koh (1978).
[46]Winstanley-Chesters (2018).

1.1 Literature and Methodologies

Readers will hopefully have got the sense that this book is ambitious, whether it is ambitious as North Korea's historical efforts to develop its fishing capabilities and capacities to be a nation of the deep sea is debatable of course, as debatable as most things about North Korea. Such an ambitious book requires a framework of academic literature and methodologies behind its core desires and themes. This section as might be expected, will start with North Korea itself and writing and thinking on that nation. I do not aim to give a comprehensive outline of writing on North Korea, because this book does not aim to be a comprehensive or holistic guide to the nation itself. A key feature of writing or thinking on North Korea is that more than most nations of the globe, such work focuses primarily on its leadership, military and security history. North Korea's place in the Japanese colonial breakdown, the Korean War, the Cold War, potential future hot wars against the United States and its potential desire for a unilaterally forced unification with its estranged southern sibling. Very few pages and very little academic effort have/has been expended in considering other aspects of North Korea's history, economy and social makeup. Only recently have writers begun to attempt to consider 'everyday lives' in North Korea, primarily because those lives are for external writers and analysts so hard to reach and connect with. This book is not the first to consider the nation's developmental history in the English language, but it is certainly the first to consider North Korean fishing histories and fishing communities.

Writing on North Korean political and ideological history was first rooted in the academia of the Cold War. Works such as those by Chong-Sik Lee, Robert Scalapino and Dae-sook Suh although politically and ideologically tinged themselves serve as valiant first efforts at unpicking the histories of North Korea's political elite and leadership dynasty. Suh's history of Korean Communism, in particular, is an extraordinary piece of scholarship tracing the intellectual development of those who would later form the political leadership of the nation. Pyongyang and Kim Il Sung's leadership would be sorely tested and nearly destroyed by the Korean War. As soldiers from the Republic of Korea actually managed during the war to dip their feet in the Amnok/Yalu (압록강/鸭绿江) River, North Korea was very nearly destroyed during the conflict and conflagration. The entry of the People's Republic of China into the war in the guise of what was known as People's Volunteers saved the future North Korea, but it also simply added yet another multinational aspect to it. The Korean War is often in the United Kingdom termed 'the forgotten war,' but in academia it has seldom been forgotten. Writing such as that by Bruce Cumings with his two-volume *Origins of the Korean War* rooted the conflict in the geopolitical and ideological frameworks of the Cold War. It was a hot war in a period which was scarcely ever entirely cold, a geography of war in which proxies and alternative forms of the main players in the primary exercise could test each other's limits and boundaries. Not even the date of the outbreak of the war, nor who actually started it is entirely clear, but instead dependant on the ideological position of either writer or reader. Early writing on the

Korean War has it almost exclusively focused as conflict involving the United States, China, North Korea and South Korea, with perhaps bit parts for the United Kingdom and Australia and ghostly appearances by the Soviet Union. More contemporary histories of the Korean War and this early period of North Korea's existence such as those by Wada Haruki, Li Narangoa and Tessa Morris-Suzuki and later writing by Cumings has put other nations, actors and landscapes into the fray. Japanese merchant shipping crews, Mongolian Horses and the ecosystem of the peninsula itself have taken a place in the narratives of the conflict and its resolution. The Korean War was, after all, a catastrophically destructive conflict for nature and the environment. The United States carpet bombed North Korean cities and deployed napalm and a myriad of other defoliants and toxic chemicals for the first time on its landscapes, chemicals which would later become a great deal more famous in Vietnam. The United States aerial bombardment of North Korea was in the league of the bombing of Dresden, Vietnam and the later moments of shock and awe in the Gulf War, wantonly destructive. Supreme Court Justice William Douglas recounted that essentially the United States Air Force ran out of targets to bomb.[47]

The terrible desolation of the Korean War, although mitigated in narrative terms for North Korea's historiography by the fact that essentially while as a nation it may not have won, it certainly did not lose the war, and a war that had been against the most powerful nation on earth, put development there back by many years. Much of North Korea's industry and infrastructure was completely annihilated, as was much of its natural environment. As destructive and disruptive as this was, the despoliation allowed for a narrative of ideological leadership to be developed which extends into the future to this day. Contemporary scholars of North Korea such as Andrei Lankov recount that the Korean War also extinguished the lives of a great number of Kim Il Sung's enemies and those of his political system. In 1953, Kim Il Sung was one of the few North Korean political leaders left standing and his power as unified by the final eradication of any other local intellectual groupings by the purge of the Yanan faction of Communists in 1956 (prior to this and the Korean War, North Korea's political intellectuals had been a mixed bag of influences and traditions which reflected the complicated histories of left-wing political development in Korea).[48] Kim Il Sung and the infrastructure both practical and ideological of the Korean Workers Party added elements of overcoming and triumphant survival against all the odds to previous narratives of guerrilla revolutionary struggle to their nationalist historiographies. North Korean politics has in a sense been living off these energies for many decades since, and they are in part the answer to the question posed sometimes by Americans, 'why do the North Koreans hate us so much?' Writing by Lankov, Szalontai and others details the political and ideological history of these times when North Korea rebuilt itself in the middle of competition within the Communist or Socialist bloc between the Soviet Union and Maoist China. This history includes a great deal of developmental playing off of

[47]William Douglas quoted in Hasan (2019).

[48]Lankov (2002).

one against the other, and North Korea's usage of external finance, technical, material and bureaucratic support from both sides. All the while the ideological framework around North Korea's politics and ideology has developed along particularly local and distinctive lines.

Much media and popular writing would always suggest that North Korea, its regime and leadership follows an ideology of Communism or Socialism. While Kim Il Sung and the leadership clique which surrounded him in the 1930s and 1940s and which became the governing class of North Korea certainly did claim at the time to be inspired by Marxist–Leninism and early writing by Kim Il Sung certainly references Marx and Communist ideology.[49] After 1945, North Korea also incorporated mentions of Marxist–Leninism into its constitution and attempted to follow classical models of central planning and land reform in its first decades.[50] North Korea, however, soon claimed that Kim Il Sung had developed an entirely new ideology. While Juche may not be entirely unfamiliar to analysts of East Asian ideology, similar ideas appearing for example in the writings of Japanese philosophers during the colonial and precolonial periods and even under Park Chung-hee in South Korea, North Korea has adopted the notion of self-reliance very enthusiastically in its political and historical narratives.[51] As one might expect there are contrasting and competing views as to the coherence and content of Juche. Han S. Park of the University of Georgia offers an attempt at a systematic analysis of the core elements of the philosophy, essentially describing a set of four or five overarching principles through which political, social and economic development could be undertaken. These include a belief in the power of humanity over nature and the universe (expressed as 'man is the master of all things'), radical collectivism, political transcendence (a loyal citizen can live forever with the leader), self-reliance and the primacy of the Kim family in the nation and system.[52] Others such as the contrarian literary critic Brian Reynolds Myers assert that Kim Il Sung's grand idea is not original at all, but instead a product and continuation of Imperial Japanese ethno-fascism.[53] Still others like Gi-Wook Shin suggest that Juche is a continuation of the more radical Korean blood nationalism of Sin Ch'aeho (신채호) and Ch'oe Namsŏn (최남선). The contemporary consensus is agglomerating around the position of Andrei Lankov that North Korean ideology is a sort of national Stalinism with a strong ethnic commitment. This author would suggest that North Korean ideology whatever it represents is strongly aspirational in form and so quite flexible and reflexive when it comes to developmental matters.

North Korea has never really been ideologically pure, sound or committed when it comes to developmental matters and analysis by this author has shown that in nearly all economic fields Pyongyang has always been prepared to adopt new

[49]Lankov (2014).

[50]Winstanley-Chesters (2014).

[51]Kim (2004).

[52]Park (2002).

[53]Myers (2012).

patterns of management and organisation, only to dump them or attempt something different a couple of years later. North Korea was very concerned following 1945 and the Korean War to imitate the patterns of economic development seen in the Soviet Union, before abruptly switching to the model of the Great Leap Forward offered by Maoist China, only to completely about-turn when it became clear that this was leading to disaster in China itself.[54] In the 1960s and 1970s, North Korea ploughed a developmental middle path between both communist superpowers and other anti-colonialist nations of the Non-Aligned Movement.[55] North Korea even attempted to export its developmental strategies in all fields to countries across the globe such as Grenada, Guyana, Libya, Syria, Guinea-Bissau and Zimbabwe.[56] North Korean Friendship Farms still litter the planet in developing nations and Juche Study Groups from places which have been developmentally touched by the hand of Pyongyang still come to North Korea to pay homage on important political holidays and to offer their plaque to the basement of the Juche Tower.[57] Scholars such as Kuark, Prybyla, Koh and Young have recounted the travails of North Korean development and international connections across the decades.[58] North Korea itself has given a detailed and occasionally critical commentary of its work in fields such as forestry and agriculture, a commentary which this author has sought to unpick in previous writings.[59]

North Korea's historical developmental narrative, of course, would be subject to fairly intense change after the collapse of what has been termed World Communism across the globe. The loss of the nation's major international partners (if not exactly allies) such as East Germany and the Soviet Union in the early 1990s crippled North Korea's economic system.[60] Environmental degradation caused by the impact of that economic collapse, institutional management and a series of damaging weather and climate events brought about the near-complete fragmentation of the North Korean developmental and political system, leading to wide-scale famine and malnutrition.[61] Many writers and analysts suggested that this would be the time not only for developmental collapse, but an almost inevitable unification of the peninsula because of the disappearance of North Korea. In fact North Korean developmentally 'muddled through' (as theorised by the work of Marcus Noland), and learnt some new strategies from Non-Governmental Organizations (NGOs) and agencies of the United Nations which sought to help the nation through this difficult

[54]Kuark (1963).

[55]Krishnan (1981).

[56]Schaefer (2009).

[57]Mongolian Delegation Visits Tower of the Juche Idea (2019).

[58]Kuark (1963), Prybyla (1964), Koh. (1974). Chuch'esong in Korean Politics (1974). North Korea: Old Goals and New Realities (1977, 1978). Koh (1988). North Korea in 1987: Launching a New Seven Year Plan (2015).

[59]Winstanley-Chesters (2019).

[60]Oh (1999).

[61]Noland et al. (2001).

period.[62] Notions of ecological conservation, sustainability, organic agriculture, low-carbon economics and industry were learnt and deployed by North Korea to both get through the economic difficulties and to bolster its own legitimacy as a nation in the era of climate change—this includes connecting to the United Nations Framework Convention on Climate Change (UNFCCC) process and attempting to gain accreditation for Clean Development Mechanism (CDM) projects (as considered by Benjamin Habib).[63] Sustainable or environmentally friendly practices such as solar and wind power generation have been predicated by some scholars as part of a wider framework of the North Korean state withdrawing from a great deal of its previous commitments to its citizenry at this time. The collapse, for instance, of the rationing or Public Distribution System for food gave space for the growth of what have been called guerrilla markets and an entirely separate system of food distribution, led by the North Korean public.[64] North Koreans have also invested in solar power cells and small-scale wind generation technology to mitigate the failures of the wider electricity grid.[65] Tolerance of these private enterprises has led to a mistaken sense that North Korea is going through a reform period, but it has also led to the possibility for individual citizens to extract value from their own labour and to develop a savings pot. Most of these citizens are, of course, connected to the elite of the Workers Party or the Korean People's Army (KPA) and their offspring (known as Donju-in (돈 주인),[66] who in tandem with investors and entrepreneurs from China have begun to make radical changes to the urban and build infrastructures of Pyongyang with new apartment complexes and leisure facilities spring up across the city.[67]

So far, none of the entrepreneurial spirit and environmental conceptual development has intersected with North Korea's fishing sector. There is very little writing in English on the subject, other than that by the author of this book, but what there is suggests that North Korean fishing and fishing infrastructure while long a priority of the state, has never developed in quite the way anticipated by it. Once the preserve of fisheries cooperatives, now fishing has been placed in the framework of the Korean People's Army and the benefits and value of the sector accrue to it. While brief glimpses of the power of this sector were seen, bizarrely for example at the death of Kim Jong Un's uncle Jang Sung Taek in 2014, who it is rumoured had co-opted the value stream for the shipping of North Korean fish to China, which had once been in the control of the KPA, the sector and its communities is for the most part opaque.[68] The scarcity and paucity of histories and writing on fishing and fishing people were one of the things that surprised me when

[62]Noland (1997).
[63]Habib (2015).
[64]Lankov et al. (2008).
[65]Makinen (2019).
[66]Evans (2018).
[67]Bermudez and Marie (2019).
[68]Choe and Sanger (2019).

I first started researching and thinking about fish and fishing people and places. While there is indeed a body of writing on fishing in Europe and North America, particularly on the herring fisheries of the eighteenth and nineteenth century, the Grand Banks and Whaling histories there is very little about Asia or the Pacific. I will recount what there is in greater detail in Chap. 2 of this book, but in outline fishing development as seen by this author is rooted in the work writing on fishing histories and development of Japan, the United States, Canada and the Soviet Union/Russian Empire/Russian Federation. These include fascinating works by Carmel Finley, Ryan Tucker Jones, William Tsutsui and David Howell on the construction of maritime and extractive empires in the Pacific, as well as the extraordinary work by Smith on the development of fisheries statistics and fisheries technology.[69] Both of these in tandem have essentially stripped the sea and the seabed of its life for economic gain in a manner which on the face of it is hard to imagine. Writing on other East Asian fishing communities and the vibrant matter in their lives such as that by Edward Norbeck on the communities of Japan's Inland Sea is equally important in conjunction with writing by Brandt on Korean fishing communities and the extraordinary work of Han Sangbok on the South Korean island of Gageodo (가거도), which became one of the field sites for this book.[70]

As a Human Geographer, field sites, be they land focused or sea based are encountered in a thick web of disciplinary history and theoretical framing. In particular, this author and this book have been deeply influenced by the work of Denis Cosgrove on symbolic landscapes (particularly important in the case of North Korea), Noel Castree on social and political landscapes, Neil Smith on notions of uneven or complicated development and Erik Swyngedouw on liquid politics and the place of hydrology within developmental dreams and strategies.[71] This book is also influenced by the work of Jamie Lorimer on non-human charisma and by developing work on geographies of ruin and ruination.[72] Given our environmental crisis and immanent ecological collapse, our planet in a sense is in ruins, and when it comes to the sea and the sea bed, this is doubly true. However, I do not wish to be entirely and overwhelmingly doom-laden about this fact, as things in a state of ruins can also revert to not being ruins, finding new means of being, new purposes, new accommodations with the wider web of life. I suggest that while one ecosystem may well be dying or on the verge of extinction, this does not mean that another will not take its place. This is what it is for things to be vibrant and lively (as Bennett, Whatmore and others suggest), to have power and agency in that web of life (as anticipated by Moore).

[69]Finley (2011, 2017), Ryan Tucker Jones. 2014. (1741–1867), Tsutsui (2013), Howell (1995).
[70]Norbeck (1972), Sangbok (1977).
[71]Cosgrove (1984), Noel (2001), Swyngedouw (2015).
[72]Lorimer (2015).

An equally important element for a Geographer's work is to get out into the field and to encounter that web of life in the flesh so to speak. This book represents a number of encounters in the field, not just in North Korea, but in the countries and communities which have similar places in the landscape of politics and of fishing which neighbour it and share commonalities of both culture and difficulty. China's Liaodong peninsula is close to North Korea and close to the historical narratives which have impacted on the Korean peninsula as well. Liaodong was colonised by the Japanese Empire, but before that Dalian and Lüshün were colonised by the British and then for a longer period by the Russian Empire. Dalian's old Russian quarter still exists amidst the energy and power of the new China. Dalian is even building new aircraft carriers for the PLA Navy with which China will expand its power across more of the world's oceans. Dalian in history was a fishing town, and fishing and fish have been rather offset by its new economic realities. The old fishing harbour and rail lines which once connected Dalian with colonial Korea now sit derelict behind a new Langham Place development. While the People's Republic of China certainly has a complicated and difficult political structure for many, it is complicated in a different way entirely from North Korea. Fishing communities in and around Dalian fish virtually the same stretch of sea and estuary as North Korean fishers encountered by this book, in this sense they must be impacted by similar environmental and climatic issues as their colleagues across the border. The author of the book made fieldwork visits to Jinshitan (金石滩) and fishing communities near Lüshün (旅顺). These fishers were focused primarily on small fish and shellfish close to shore and along the main road from Dalian proper to Lüshün, there were a number of communities focused on seaweed and seaweed preparation. These were subjected to the obvious encroachment of speculative urban development, and in Jinshitan's case, tourist development. Such development radically alters the value of land, and those interested in such development often in contemporary China have the ear of local government and institutional authorities which means that they have much greater priority than smaller communities whose assets have little value and do not fit into the development models which are the goal of much contemporary Chinese governmentality. Further afield from Dalian in the neighbouring county, Wafangdian City (瓦房店市), the author made a visit to Tong Shui Gou (通水沟) village, a community highly peripheral to the county organisation so less pressured by urban development. However, Tong Shui Gou's fishers (who feature in the cover image for this book), appeared locked in a double bind. On the one hand, this community which focused primarily on shrimps and other crustaceans appeared to struggle under the control of middlemen, very familiar from Korean history, who set the prices, managed distribution and presumably supplied credit facilities. These men, dressed in black leather would dictate prices virtually by the minute in the bitter wind as the catch was loaded. On the other what the community managed to extract from the sea was very obviously heavily polluted. When pulled from the sea, the fishermen's catch was full of plastic and other waste and detritus and the shrimps and other small fish damaged and degraded.

Environmental challenges were faced also in an entirely different field site for the research which forms part of this book. It was important to this author to consider an alternative Korean fishing community, one at diametric opposites to the fishing places and industry of North Korea. So, in tandem with legendary anthropologist and scholar of Korean fishing villages, Han Sangbok the author visited Gageodo, the most southwestern island of South Korea. Gageodo is five hours sailing from the port of Mokpo at the far southwest of the Korean Peninsula. While this seems a long way from a Korean perspective (very little these days is that many hours distant from somewhere else on the peninsula), the island used to be almost impossibly remote. During the Japanese colonial period, the authorities built a lighthouse as the only contribution of this period and did not leave policemen or a military garrison on the island. In 1968 when Professor Han Sangbok first visited it took five days by a series of different steamships to get to the island.[73] Gageodo used to be extremely peripheral and was in common with Tong Shui Gou in the present beset by middlemen, known as *Kaekchu* (객주) in Korea. These credit holders reduced the developmental capability of the island substantially, maintaining it in an undeveloped state well into the latter half of the twentieth century.[74] It is apparently only with the coming of mobile phone technology that Gageodo's fishing people were able to invest as they chose. Government investment was slight until the 1970s and the fishermen still had to haul their boats up a pebble beach to rest at the side of the main village street. However, Gageodo today was found very different, vital strategically due to its proximity to the main Chinese shipping lanes huge amounts of public money have rebuilt the harbour infrastructure and reclaimed much of the land. The fishing community there appears vibrant, however it also is challenged by environmental changes. Stronger storms, more violent winds and extraordinarily in evidence during the visit of the author of this book, drought on an island in the middle of the sea that entailed Mokpo district authorities shipping bottled water to the fishermen as their tanks and wells had run dry. While Gageodo has become much more important and less peripheral to South Korea's institutions and received a great deal in the way of infrastructural development and support which has transformed the communities capabilities and the geography of its harbour and coastline, the island is subject to some of the same complications as Tong Shui Gou.

North Korean fishing communities themselves are harder to reach and harder to do fieldwork in. This author has spent a number of occasions undertaking field trips to North Korea and some have been more successful than others. I often suggest to academics interested in visiting that nation that it is, in fact, easy to visit North Korea, if you have the right amount of money, but it is difficult for that visit to be anything more than simply a series of staged interactions with images and statues of Kim Il Sung and other key figures in the nation's political hagiography. Readers

[73]Han (1977).

[74]Duus (1998).

might want to consider the work of Campbell (2015) on these circumstances.[75] It is far harder to make a visit of empirical use to an academic and to extract functional and useful data from that visit. Such a visit requires connection and it requires complicated negotiation with internal organisations in North Korea, all of whom can say no at any point (because saying no in North Korea is much easier than saying yes, as nothing bad happens that an individual will be responsible for if they say no), or change any plan or field visit at any time. This means that field trips of academic value to North Korea are not impossible, but do require flexibility and a great deal of patience. I have made such trips to forestry and coastal reclamation projects in the past, and these trips were of empirical value, but they were not to natural or organic communities. Each was to an epistemic or technical or research community embedded in a wider framework of a developmental sector.

This book aimed to consider a particular community in the fishing sector of North Korea, Sindo (신도군), a small fishing cooperative formed in the 1970s from fishing communities elsewhere in North Korea. This community was vital and important once in North Korea's developmental and political narratives, in the news, on the front cover of *Rodong Sinmun*, the national newspaper, and subject to a visit from Kim Il Sung. However, North Korea's institutional gaze has a tendency to move on, and Sindo was soon forgotten, drifting down the list of developmental priorities, but as this is a North Korean community unable to repurpose itself or find a new geographic place. It was trapped on the semi-reclaimed marginal land at the mouth of the Amnok/Yalu river as it had always been up to and through the famine period of the 1990s and nearly up the present day. In recent years, the fishing infrastructures and desires of North Korea's central government have picked up again, and fishing has been reorganised into the institutional frameworks of the Korean People's Army. Fishing in North Korea was to be undertaken through a series of KPA Fisheries Stations and the boat and shipbuilding capacities of the nation, such as they are were to be deployed to support these stations. Previous cooperatives like Sindo were rather left out in the cold by this repurposing of the fishing sector, and this pressed hard on these communities and limited their ability to catch and supply their quotas for regional and local government further. Sindo, in particular, has been impacted in a different way by the environmental changes that have impacted fishing communities on the Liaodong Peninsula. Increased storm activity and sea-level rise has begun to impact on the reclaimed land on which the community is based as well as reducing the catch available and making fishing in the area more dangerous. Sindo, however, has been a difficult field site to engage with and to encounter, a fact that makes it no less central to not just the fieldwork of this book, but the analysis and conclusions that ultimately are made by the author.

Having given an account of the aims and objectives, outlooks, literature and methodologies as well as the field sites and field approach behind this book, I will briefly give an account of the remaining chapters following this introduction. In the Chap. 2, the book gives more details of the geographies and histories of fishing,

[75]Campbell (2015).

fishing people and fish. As in a sense, this introduction has already hinted at, fish, fishing and fishing communities are under-researched in both historical and geographic sense. Even in the field of anthropology, an academic discipline with a concern for the edges and outliers in human development, fishing communities, their societies, traditions and histories have not received much in the way of exposure or interest. This chapter, therefore, outlines what can only be a partial and incomplete focus on the wider global histories and geographies of fish and fishing. The chapter also considers the methodologies, collection methods and theoretical frameworks behind those studies and research which exists. For the most part, histories and geographies of fish and fishing have been extremely focused on the northern hemisphere. Histories of European fishing development and stocks abound, especially those focused on the traditions of the Cod and Herring fisheries prior to the twentieth century, and to the area around Newfoundland's Grand Banks. European fishing and its colonialist, modernist and capitalist technologies as they were deployed in the pursuit more globally of whales and seals are also quite abundant. Histories and geographies of fishing in the Pacific, Africa and South East Asia are few and far between, however those that are encountered within this chapter are considered for their methodologically approach to the study of fishing communities and territories outside of the traditions of European or Western fishing practice. Given the author of this book's primary focus on the landscapes and spaces of the Korean Peninsula and in particular North Korean fish, fishing and fishing community histories and geographies of Chinese and Japanese fishing are of particular interest and transfers of technology, spiritual mythology and cultural tradition with those of Korea are vital to this chapter. Finally, this chapter explores the history of Korean fishing traditions and practices, considering what material exists from the records of the pre-1907 Chosŏn state, as well as the material gathered by Japanese academics and colonists during the period from 1907 to 1945. These are combined with the few but vital studies of Korean fishing communities in more recent times, including those of Gageodo.

Having outlined the theoretical background behind the notion of matter and matters as vibrant or lively already in this introduction, the Chap. 3 utilises the framework provided by Jane Bennett, Sarah Whatmore and others to more deeply explore what its deployment within the context of this book would mean. Contrasting recent work on the intersection between human form and matter and the bacterial and viral realm, an intersection which is inescapable for humans and has begun to suggest a meshing and merging of humanity's apparently independent nature with other, unexpected forms of nature, the chapter considers the co-production of fishing communities and terrain by fish as much as by fishermen. The changing form and shape of fishing resource, as well as the individual and collective behaviours and strategies of fish, both in their normal efforts and energies to survive and in the particular efforts to escape the fishermen will be considered within the scope of this co-production. Fish and other creatures of the sea and of the seabed themselves, therefore, are held to be active, agential and energetic participant in the web of life which includes not only themselves, but the human communities who prey on and exploit them. Bennett and others have also extended their

theorisation to include the mineral, non-sentient and non-living inhabitants of our world, and this chapter also includes the physicality of the infrastructures and technologies utilised by fishermen and fishing communities to ensnare, capture, track and coral their object species. The functionality of such materials, as well as their availability and development and the natural decay given the difficult terrain and elements provided by the sea can have an extraordinary impact on the relations between fish and fishermen, negating or increasing the agency and capabilities of both. Finally, and extending from that, the Chap. 3 considers knowledge, the development of knowledge, culture and tradition as vibrant, if ephemeral matters with a real impact on both fish and fishing human.

Chapter 4 focuses directly on North Korea. With the political theorisation surrounding the politics and ideology of Pyongyang outlined in this introduction in mind, the chapter explores the intersections between fish and fishing and the developmental agendas of Kim Il Sung, Kim Jong Il and now Kim Jong Un. Tracing the focus on fishing and fishing resource and the connections and enmeshing with the different periods of North Korean political and industrial development, the chapter explores this periodisation and impacts on the lively matters of North Korean fish and fishing. This history and geography reach back to the pre-history of North Korea, examining the transformation of fishing and fishing infrastructures during the period of Korea's opening up and the colonial period under Japanese occupation. Unlike Japanese fishing practices, traditional Korean fishing was focused on the shore and the near sea, Koreans did not historically venture out into the deep sea or the wider oceans. While Japanese colonialism developed Korean fishing practices in a more extensive and technological manner, North Korean fishing following the Liberation in 1945 was still technologically and infrastructurally challenged. This became worse following the Korean War of 1950–1953, and North Korea's fishing practices and rights have since then been challenged by the post-War status quo of maritime demarcation, in particular the Northern Limit Line and more contemporary practices of sanctioning and restriction which are also produced by geopolitics.[76] Pyongyang has, therefore, continually fought to extend its fishing reach, with seemingly little success, but fish and maritime resources have become much more important to North Korea following the crisis period of the early 1990s. Fish in recent North Korean history have become vital to the provision of food given the collapse in soil health and agricultural capacity and also once an important element of economic exchange given their non-sanctioned status until 2017. Following United Nations Security Council (UNSC) resolution 2371 in August of 2017, fish and maritime products have now been problematized as other North Korean matters and materials[77] and this will also be considered by the chapter.

While North Korea may certainly be unusual in contemporary politics, an outlier when it comes to organisation of state, economy and society, the author of this book

[76]Kim (2017).

[77]United Nations (2017).

believes it is a mistake to consider it unique or *sui generis*. As this introduction has asserted North Korea its politics, development and no doubt lively matters cannot be separated from the wider streams of history, nor from the influence and connections with neighbouring nations. This is, of course, both true historically as much as it is true in the current era. While fishing practice and development as we will see in following chapter is certainly difficult in contemporary North Korea and specific communities under Pyongyang's rule, communities and fishing geographies nearby to North Korea are themselves also beset by difficulties and challenges, of both environmental and political natures. It is important, therefore, for this book to engage with lively fishing matters and materials in these neighbouring or connected nations. Chapter 5 engages in particular with three case studies, which the author of this book has completed fieldwork exercises in during the period of this book's production. First, the chapter journeys to the island of Gageodo, the most southwestern island in South Korea and the closest South Korean community to China. As has been introduced in this introductory chapter, Gageodo's fishing community has always been challenged by its geographic isolation and distance from the political institutions of Korea, whether contemporary South Korea, historical Chosŏn or colonial Chosen. Its community, however, has continued to fish, in spite of this isolation, the co-option of their efforts historically by tradition *Kaekchu* middlemen, and the pressure of tourist development (Gageodo is now very famous for sport fishing) in current times. Similarly pressured are the fishing communities nearby Dalian on the Liaodong Peninsula in China, just to the northwest of North Korea. Dalian city is subject to spectacular levels of speculative urbanism and attendant levels of pollution and environmental degradation. Whole areas of the city and its surrounding rural hinterland have been captured by the forces of new capital and speculation and reconstructed in such a way as to exclude less profitable and more old-fashioned enterprises as fishing. However, fishing communities continue to exist, as well as fish, reconfiguring their fishing geographies and infrastructures to take into account the new economic and social realities of twenty-first-century China. In these local case studies, a complex meshing of lively political, environmental and economic mattes generate and co-produce fishing geographies and landscapes which will certainly be useful in the following chapters' consideration of a particular North Korean fishing community.

Chapter 6 of this book focuses on Sindo island, which is in the mouth of the Amnok (Yalu in Chinese) River at the border between North Korea and the People's Republic of China. Reclaimed from the estuary of the river in 1971 a cooperative of fisherpeople from older fishing communities and enterprises along the western coast of North Korea was created to serve as a model community and model example of development at this time. Kim Il Sung himself made repeated visits between 1971 and 1976, during a period when North Korean politics sought to reconfigure landscape and developmental possibility through a series of what are called 'Great Nature Remaking Projects.' North Korea's fishing industry was to be reconfigured so as to focus on resources further out to sea, fishing practice and knowledge was to be further developed and a series of cooperatives were to be the institutional basis for the sector. By the 1990s fishing cooperatives such as Sindo

had been forgotten in the collapse of North Korean capability and bureaucracy and in the 2000's the fishing industry has been co-opted by the Korean Peoples' Army and a network of fishery stations dedicated to industrial fishing and resource production built. This meant that Sindo became even more peripheral to the political and institutional mind. This chapter considers the strategies the fisherpeople of Sindo use or do not use to maintain their livelihoods and connections to the vibrant and lively fishing matters that once sustained and gave impetus to them. Are these strategies informal life politics, or other forms of engagement with the wider web of maritime life? Furthermore, in light of North Korea's accumulation of conservational paradigms of management during the 1990s and early 2000s, even in the maritime or aquacultural world, this chapter explores the relation between Pyongyang's politics and the reality of fishing and maritime ecosystems. In Sindo and in other places within North Korea are fishing matters as vibrant and energetic as local political sensibility and aspiration are lively.

Having encountered the vibrant matters of fishing communities close to North Korea, as well as the reality of fishing and fishing life in North Korea at Sindo, framed by the histories and geographies of fishing landscapes throughout East Asia and beyond this Chap. 7 final draws this book to a lively conclusion. Fish and Fishing for North Korea have become vitally important again in current years, important in both abundance and absence. North Korea has this in common with much of the world's fishing terrain, precarious resources familiar in global histories of fishing such as those of the collapse of Newfoundland and the Grand Banks cod fishery, the disappearance of the herring from Southwest England and the depletion of much of Africa's fishing stock in recent years. As climate change, ocean temperature and acidification and a number of other elements of global environmental crisis develop, fish and fishing will become still precarious. Fish themselves may be energetic and vibrant materials but that will not stop them becoming another element of the impending and ongoing global extinction event of the Anthropocene/Capitalocene. That does not, however, mean that fish and fishing terrains will lose their agency or the impact upon human life and developmental practice. On the contrary fish and maritime resources in their absence could become even more vibrant, their diminution in the web of life of the sea and land making them more powerful and valuable as they become more scarce. Scarcity and absence, of course, are common in the life and practice of North Korea, and this chapter and book conclude with a discussion of the role of these themes at their connection with the realm of fish and fishing. The chapter also includes discussion of a particular outcome of North Korean developmental policy and the pressures of extraction as they apply to local communities, an outcome of the most macabre and unexpected kind. The informal life politics expressed in the actions and interactions of fishing communities in North Korea are very much concerned it seems with the navigation of landscapes and terrains of lack, scarcity and difficulty. Their webs of life, however, do not diminish in liveliness with these restrictions, but through the blended and distributed agency perhaps familiar to Bennett, Whatmore and fishing communities nearby such as at Dalian maintain their energy and vibrancy.

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Chapter 2
Geographies and Histories of Fish and Fishing

Abstract While many developmental sectors and their communities have sparse historical or geographic records, recent works on environmental history and historical geography have sought to fill in some of the gaps. Work on histories of forests, pollution and some land mammal and reptile species has contributed a great deal in the effort to move the realm of history beyond that of human experience. Fish and fishing, however, are certainly under-researched in both a historical and geographic sense. Even in the field of anthropology, an academic discipline with a concern for the edges and outliers in human development, fishing communities—their societies, traditions and histories—have not received much in the way of exposure or interest. This chapter, therefore, outlines what can only be a partial and incomplete focus on the wider global histories and geographies of fish and fishing. For the most part histories and geographies of fish and fishing have been extremely focused on the northern hemisphere. Histories of European fishing development and stocks abound, especially those focused on the traditions of the Cod and Herring fisheries prior to the twentieth century, and to the area around Newfoundland's Grand Banks. Histories of colonialist, modernist and capitalist technologies as they were deployed in the pursuit globally of whales and seals are also quite abundant. Histories and geographies of fishing in the Pacific, Africa and Southeast Asia are few and far between: however, those that are encountered within this chapter are considered for their methodological approach to the study of fishing communities and territories outside of the traditions of European or Western fishing practice. Fish and fishing community histories and geographies of Chinese and Japanese fishing are of particular interest and transfers of technology, spiritual mythologies and cultural traditions which intersect with those of Korea are vital to this chapter. Finally, this chapter explores the history of Korean fishing traditions and practices, considering what material exists from the records of the pre-1907 Chosŏn state, as well as the material gathered by Japanese academics and colonists during the period from 1907 to 1945. These are combined with the few seminal studies of Korean fishing communities in more recent times, especially that of Gageodo, South Korea's most southwestern community which itself has been a fieldwork site for the author of this book during its formation.

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Keywords Fishing histories · Korean fishing · Chinese fishing · Japanese fishing · Gageodo

2.1 Introduction

Historically grounded analyses and studies of fishing communities are few in number but the majority of those that exist focus on whaling practices and histories and fishing in the North Atlantic. While it might be expected that colonial or postcolonial histories would seek out and uncover the stories of fishing communities and spaces, this generally has not been the case. This may be because the object of these communities' enterprise and interest and often the communities themselves are remarkably transient and temporary. Fish and maritime resources often disappear or reappear with little rhyme or reason, the communities that seek them then being forced to move or reconfigure their life practices and home lives in order to catch up with their targeted resource. In our age of industrial exploitation, climate change and environmental crisis this has become common and with rising sea temperatures can only become more so. Research focusing on the history of the modernisation of fishing and the science of fishing catch and capacity as well as the statistics of fishing is rare. Research into the collection, collation and analysis of fishing statistics and the availability of resource has developed enormously since the eighteenth and nineteenth centuries and will primarily be encountered by this book in the next chapter. Modernisation, for the most part, means capitalisation and commodification as much as it does colonisation or imperialism, and the same has been true of fishing. Fishing communities have seen the practices and technologies with which they engage their prey radically change, and the sense of what is knowable about fish and fishing has been part of that change. Historically, fishing was an exercise rooted in chance and fortune as much as expertise and skill. It was impossible to know whether the fish would be in the water where they were normally caught, impossible to know whether weather or currents would have an impact on the catch from any particular boat. However, fisheries science and the development of statistical methods and the field known today as fisheries management sought to make the unknowable and the mysterious quantifiable and rational. Fisheries management and fisheries science transformed fish from intangible nomads in an abstracted terrain, into a reliable resource. Work from the United States and Europe on species such as Cod, Haddock, Whiting, Herring and even large Whale species from academics such as Johan Hjört,[1] Walter Garstang[2] and Archibald Huntsman[3] has produced theories of optimum catch, maximum resource and steady-state yield. What is unique about this research and the field of fisheries

[1]Hjört (1914).

[2]Garstang (1900).

[3]Hunstman (1918).

management and science has been the historical scale of failure and degradation incurred by the resource with which it was concerned. Populations of fish the world over have been decimated and destroyed by scientific fishing including global Whale populations, Cod fisheries on the Grand Banks and the Canadian Pacific Salmon fishery. These destructions have been rooted in the assumptions and presumptions developed by fisheries science in recent history that the volume of fish in an ocean was something that could be potentially understood, the holding and reproduction capacity of a fish population known to great detail and fish detached from their wider ecosystems. Contemporary fishermen must now fish 'down the food chain', down the trophic level, compete for much smaller fish (to the extent that historical accounts of the size of fish seem somehow fantastical), be subjected to extreme restrictions on fishing days and by-catch as well as adopting semi-legal and colonial methodologies of extraction to obtain the resources of nation's unable or unwilling to maintain or manage their own fish stocks (European Union exploitation of West African fisheries for example).

2.2 Early Moments of Fishing

Fishing began close to the shore, in shallow water, often not even in the sea but in ponds, lakes and streams and the more benign watery spaces across the globe. It is certain that fishing started early, for humans quickly moved to the edges of the continents as well as residing in the great grasslands and plains of their first epoch. Technologies involved in fishing did not even involve getting into the water or travelling across it for many centuries, early fisheries being content to spear or net their quarry from close at hand. Prior to the evolution of Homo Sapiens, Homo Neanderthalis are said to have been skilled at fishing for river fish such as salmon and trout by hand, even constructing rudimentary blockades of stone across rivers[4] and they may have caught seagoing salmon when fishing close to the sea in estuarine rivers.[5] When Homo Sapiens did appear some fifty thousand years ago they began to develop weaponry and tools such as lances and spears to catch both fish and wild animals. The Arignac of contemporary Southern France added barbs to their equipment which signified perhaps a predilection or preference towards fish.[6] In the mid-period of the Neolithic, it seems that harpoons with a detachable point had been invented, but there is no evidence of hooks—these would not appear until the Maglemose culture in the Jutland Peninsula between 10,000 and 6000 years ago.[7] Sahrhage and Lundbeck suggest that along with the huge mounds of mollusc shells from this culture (reaching a height of three meters and a width of

[4]Sarhage and Lundbeck (1992, p. 5).
[5]Ibid.
[6]Ibid, p. 6.
[7]Ibid, p. 8.

some fifty meters), and contemporaneous cultures in Scotland were bones from species such as Herring, Flounder, Cod and Haddock which suggests that fishing people from these places had already taken to the sea in some form of boat and pushed off from the shore.[8] When this technology and invention was first made cannot be known exactly, though pine dugout canoes which would have been seaworthy have been found in the Netherlands and in Scotland and dated to around 8300 years old.[9]

Middens and mounds of the discarded shells of sea creatures play a huge role in dating and considering the material left behind by early cultures living by the sea. In Australia, shell middens left behind by the Eora tribe who lived in what is now the Sydney area were even integral to the first material development of the settler-colonial project later to become the modern nation present there today. Settlers following the arrival of the First Fleet in 1788 found when wanting to build more substantial buildings or infrastructure, that there were no easily accessible repositories of conventional limestone to use as mortar in construction projects. Middens built up over millennia were used instead, ensuring the material generated by countless generations of aboriginal shellfish catchers and fishers was repurposed by an invading culture that would virtually displace them with the material culture of European Australia.[10] Moving backwards to earlier colonisations, human settlement across what is now the Bering Strait into the Americas resulted in Native American and Inuit cultures across the northern reaches of the continent which quite quickly gave birth to the Kayak (or Qajak in East Greenlandic).[11] Kayak usage in Greenland, Western Canada, Ellesmere Island and elsewhere was hugely important for the development of strategies and techniques to catch larger prey at sea such as whales and seals.[12] To this day, Kayak is symbolic in Greenland of a particular cultural–spiritual interaction with the sea, in which the capturing of whales is in some senses for Inuit communities the returning of ancestors to the land. Colonisation by Denmark and Scandinavian culture has had a devastating social impact on Greenland, as well as the developing challenges of climate change, the almost abandonment of the kayak and hunting lifestyles being a sign of this.[13] However, with the rise of Greenlandic nationalism and revived and coherent Inuit notions of sovereignty in the 1980s, the kayak was rediscovered by younger Greenlanders and a number of Qajak clubs were founded to enable a new generation in learning the skills of their construction and navigation; these clubs were called (in East Greenlandic), '*Qajak Atoqqilerparput*' or 'Kajak, we are beginning to use it again.'[14] Inuit and other communities of the north developed a fishing

[8]Ibid, p. 9.
[9]Ibid, p. 10.
[10]Myers (2000).
[11]Sarhage and Lundbeck (1992, p. 18).
[12]Ibid.
[13]Petersen (1995).
[14]Heath (1985).

culture based on technologies of the detachable harpoon, recoverable spears, slings and hooks.

Fish hooks remained fairly simple in the north initially, but double and multiple hooks were developed in the tropical and southern parts of the world.[15] While single curved hooks for fishing may have been developed in the subarctic and then spread south to mainland Europe, what is now Russia and even the islands of Japan, northern China and Polynesian islands, it is suggested that compound and multiple hooks developed separately in cultures to the south.[16] Mesopotamian, Sumerian and ancient Egyptian and Indian fishers developed more complicated hook technology and this travelled throughout the world, integrating with northern traditions around Lake Baikal and also impacting on southern Chinese cultures via a connection with Malayan culture.[17] When it comes to China, heavily influential on the development of Korean culture and social practice, its extensive coastlines and complicated river systems, rich with fish and marine life prior to the modern period, inspired some of the earliest pieces of boat building technology.[18] The boxy form and flat bottom of the junk, derived perhaps from earlier forms of technology such as the raft, is extremely familiar to the popular imagination of premodern Chinese coastal, river and sea culture. Sahrhage and Lundbeck describe it as 'probably the oldest real plank boat, dating back several thousand years'.[19] Junks set to sea along the coast of China it seems after 1000 BCE, through development in their design with the addition of the now traditional upward bows. The Shang culture slightly earlier than that (fifteenth century BCE), produced artwork which equated fish and fishing catch with prosperity and auspiciousness—to the extent that images of fish even began to be used as stores of value and copper and bronze coins in the shape of fish replaced shells as currency, before coinage assumed the now conventional round shape.[20]

When it comes to Japan, Korea's other close cultural and political neighbour, its for the most part unforgiving topography and geography as well as complicated coastline and lack of extensive coastal shelf (Japan's place on the plate tectonic boundary as part of the Pacific Ring of Fire, means that the shelf rapidly drops off to deep trenches on the islands' Pacific side). Its human culture, therefore, did not have the option in ancient times to develop technology and capability as had been the case in China in river systems and in shallow seas. Sahrhage and Lundbeck suggest that initial development of things like hooks and fishing gear in Japan was influenced more by influences from the Eurasian North (via Russia, Sakhalin and the tribes of the Bering strait), that cultures coming from the south.[21] It appears Stone Age inhabitants of the islands were concerned with both the growing of rice and

[15]Sarhage and Johannes (1992, p. 9).
[16]Ibid, p. 15.
[17]Ibid, p. 9.
[18]Ibid, p. 29.
[19]Ibid, p. 30.
[20]Ibid, p. 32.
[21]Ibid, p. 32.

fishing, as Sahrhage and Lundbeck recount.[22] Early Ainu settlers of the islands shared similar preferences for shellfish and molluscs, such as Abalone as did Aboriginal Australians, leaving large mounds and middens of shell fragments. These early Ainu also had a technological tradition of using bamboo grass sewn together to make boats and rafts, which could be used near to coasts and caught salmon, herring and sardines. チェプ (cep or ciep), the Ainu word for fish, according to Sahrhage and Lundbeck, could also be used synonymously with the word for food.[23] Fishing in open water only widely developed in ancient Japan around the inland sea area, familiar later to Norbeck and other scholars of fishing in Japan.[24]

Staying with Japan, fishing history, geography and development is often portioned into the sea and other fishing practices and whaling, practices of both being quite different from each other and impacting in quite different ways spiritually and culturally. This makes some sense with the benefit of hindsight given the fact we know that in fact whales and fish are two different classes of living creature. Moving to the Medieval period following the establishment of the Kamakura shogunate (鎌倉幕府) in 1185, technology and institutional infrastructure focused on fishing developed quite rapidly. First in the inland sea, then in the open waters surrounding the Japanese islands fishers sought new species and used new forms of nets and fishing practice such as seine and drag nets. This meant that fish such as Cod and Mackerel were now accessible. Fishing in freshwater areas also seems to have developed, with evidence of extensive traps on Lake Biwa, and Sahrhage and Lundbeck report the development in the thirteenth century of a network of guilds and other mercantile organisations focused on the trading of fish and fish products.[25]

Japanese coastal and sea fishing development, as with much else in the country was deeply impacted by the Tokugawa period (1603–1867) government decisions under the third Shogun, Iemetsu between 1633 and 1639 to instigate the Sakoku 鎖国 (closed country), policies.[26] The Tokugawa Shongunate (徳川幕府) feared invasion and co-option by outside forces having heard of Spanish and Portuguese expansionism across the Pacific in North and South America and because of pressure put on social cohesion by the past work of Francis Xavier and the Jesuit missionaries (inspiring the Shimabara rebellion of 1637/1638).[27] Sakoku policies are framed by the historical literature as placing Japan and the Japanese people into a period of seclusion from the rest of the world and restricting any influence or connection with foreign nations. Japanese people were not allowed to leave the nation, and the punishment for transgression of this was death.[28] To make travel to

[22]Ibid, p. 175.
[23]Ibid.
[24]Norbeck (1954).
[25]Ibid, p. 176.
[26]Laver (2011).
[27]Sebes (1979).
[28]Laver (2011).

foreign lands even more impractical, the shogunate banned boats any larger than 50 tonnes, which meant that not only that large ferries or trading ships became problematic, but also that fishing boats could not be developed, equipped and capable to navigate deep or distant seas.[29] The reality is more complicated as trading links with the rest of the world were maintained, but in a highly restrictive fashion through specific clans and locations (the Chinese at Nagasaki were allowed to trade with China and through the Dutch East India company with the rest of the world, the Matsumae clan in Hokkaido with the Ainu, the Sō clan of Tsushima with Korea and the Shimazu clan of Satsuma with the islands of the semi-independent Ryukyu Kingdom), and the same is true when it came to fishing.[30] The restrictions on large boat size meant that fishers developed new practices and technologies for coastal and sea fishing based on small boats and traps. Rather than going out to sea, fishers in Japan began to specialise in fish populations which migrated past Japan, of which there were many, rather than seeking out more distant groups of fish. In particular, nets which could be deployed in small boats directly from the shore focused on sardines.[31] Traps were also developed to captures species of tuna and in Hokkaido herring and migrating Salmon. Influenced by practices perhaps from Polynesia, Kagoshima fishermen even began to target Skipjack Tuna by a pole and line method.[32] Much of this fish was exported through the restricted routes prescribed under the Sakoku system to China (via principally Nagasaki). A desire to dominate and colonise the Ainu and the weakness of Imperial Russia in the east prior to the treaties of Aigun and Nerchinsk and the Kamchatka expeditions meant that even during the Sakoku period Japan's fleet of small coastal fishing boats exploited the seas around Sakhalin, the Kuriles and the Sea of Okhotsk.[33]

Whales and whaling in Japanese history, as suggested earlier, are in a different class of developmental engagement, just as whales are a different class of creature. It is important to consider the geographic position of Japan, ocean currents which pass by it and the useful (from a whale's perspective), presence of close and well-located ocean trenches. Jakobina Arch's extraordinary work on the place of whales in Japanese cultural and developmental geography recounts the journeys of species such as North Pacific Right Whale, Gray Whale and Humpback Whale along the continental shelf past the Japanese islands, using the Kuroshio, Tsushima and Oyashio currents. Arch describes from these whale's perspective how the Japanese archipelago serves as both useful landmarks en route between summer and winter feeding grounds, and originally, a safe place to feed on material upwelling from the deep oceans at the continental shelf and the zooplankton generated by warm water at the confluence of different currents.[34] Omura Hideo, as recounted by

[29]Sarhage and Lundbeck (1992, p. 176).
[30]Kazui and Videen (1982).
[31]Sarhage and Lundbeck (1992, p. 176).
[32]Ibid.
[33]Ibid.
[34]Arch (2018, p. 25, 26).

Arch, suggests that more than way markers along their route, such whales used the Seto Inland Sea during the fifteenth–eighteenth century as a calving ground for whales mid-migration, though even at this period before the development of whaling technology this would be unlikely.[35] Toothed whales such as Sperm Whales and the different Beaked Whales would also have passed, at a slightly further distance to the islands but were not targeted by Japanese boats until the nineteenth and twentieth centuries. It is hard to say when exactly the Japanese began to target whales from their shores. Arch suggests that some form of dolphin hunting had existed back to the Jōmon period (縄文時代), some five millennia previously, but in the sixteenth century what she terms coastal whaling began.[36] Given the topography and geography of the Japanese archipelago such whaling developed directly from the shore with a network of observation posts on cliffs and hills in whaling areas to spot and track pods and groups of whales. Once quarry was spotted a boat powered by oars would set off in pursuit with around 13 crew, including 8 oarsmen. Arch recounts that for the first two centuries of Japanese coastal whaling these boats would surround a whale and throw harpoons at it until the animal became exhausted.[37] At this point, a man known as the Hazashi (羽刺) would leap from the lead boat with a long knife onto the whale's head and dispatch it with a final blow. Unsurprisingly, assuming the role of Hazashi was both a great honour among the crew and their community, and extremely dangerous for the individual involved. The dead whale was then lashed to a number of the boats and returned to the beach for processing.[38]

This early coastal whaling in Japan had mainly targeted Right Whales moving along its shores, but the impact of such enterprise, or changes in the current meant that over the course, of two centuries the numbers of animals passing by declined. Accordingly, Japanese whaling communities were forced to adapt and in 1675 introduced a new method and technology. From this point two types of boats set to sea: the harpoon boats were now joined by boats which were the same length, but much wider to make space for large sets of nets.[39] These net boats would set a net a couple of miles out to sea, which would be held up by a number of boats. This large net essentially served as curved wall through which whales would not be able to pass and along which they could be funnelled to a group of harpoon boats which would finish them off. This did allow for the capture of different, faster species of whales, but was not useful in deeper water.[40] Arch records that communities on the Bōsō Peninsula, for instance, did not use the new technique because the water was deep off the coast there and the whales they encountered would simply dive under

[35]Ibid, p. 31.
[36]Ibid, p. 49.
[37]Ibid, p. 50.
[38]Ibid, p. 52.
[39]Ibid.
[40]Ibid, p. 53.

the net to avoid capture.[41] It is important, therefore, to reiterate the importance of geography and topography in this pre-modern whaling undertaking in Japan. High ground was necessary, therefore, for communities to be able to spot their whales, and a good piece of shoreline important both to launch the number of boats required as well as to process the dead whale once returned from the sea.[42] It cannot be understated how, prior to refrigeration or the use of ice, it was incredibly important for whaling communities and enterprises anywhere on the globe to return the carcass to land and cut it up as soon as possible. The size of whales and the physiology mean that once dead the thermally insulated nature of their bodies means that degradation and despoliation quickly occur and potentially valuable meat and blubber can very easily become rancid and useless.[43]

Just as the Inuit of Greenland and Canada found whales and whaling spiritually significant through connection to their ancestors and spirit realm, so these large cetaceans resonated in Japanese cultural landscapes. While no whaling communities or cultures in Japan suggested that the whales they caught might be connected in some way to their ancestors, the animals themselves were framed within the spiritual networks of Buddhist practice. Although modern science has taught us that whales are in fact not fish, knowledge of this time held that of course, since they were in the sea, they were fish indeed. Given that fish were exempt from some of the dietary strictures and other practices that accrued over time in Buddhism it was more or less acceptable to eat them, even when it was not acceptable to eat other animals. Arch even records the helpful linguistic reconfiguration of animals some distance from the coast, but sharing the rich colour meat of whales, such as wild boar as 'mountain whales.'[44] Whales themselves and their bodies would be problematic, even for the communities that sought them. Buddhist principle required that all things on the earth have the opportunity to be alive and therefore upon death to become 'little Buddha's'. Not knowing the anatomy of whales or ways to sex them, hunts would on occasion capture and kill a pregnant female. Cutting open the whale and revealing the foetus, Arch records how some communities returned the baby whale to land unprocessed and buried it in the local temple grounds.[45] Thus, the whale would have an opportunity to be integrated into the spiritual nexus, and the fishers themselves might avoid the karmic issues involved with their, even unintended spiritual and cosmological wronging of the animal. Extraordinarily, not only did these communities bury these unborn whales in the temple grounds, but they were a real part of the commemorative landscape and geography of the temples, accorded the designation 'mizuko' 水子 or 'water-child' (to this day the term for a stillbirth in contemporary Japan) and a

[41]Ibid, p. 52.
[42]Ibid, p. 53.
[43]Sarhage and Lundbeck (1992).
[44]Arch (2018, p. 92).
[45]Ibid, p. 158.

gravestone marker and connection to the worship practices of the Bodhisattva Jizō (who was particularly important to those suffering and the unborn).[46]

Chinese early fishing practices are, as already been said, perhaps less clear at sea than those of Japan and focused more heavily on inland waters and fishing. While China has always been blessed with extensive river systems, in ancient times these river systems and their hydrologies were even more extensive and problematic due to their dramatic floods and flow switches.[47] The Yangtze and Huang Rivers, in particular, were problematic, changing their course a number of times in early Chinese history. Primarily constructed during the Sui dynasty (隋朝) (581–618), the Grand Canal and its various diversions and cuttings sought to both provide a functional transport route for trade through the empire as well as to take pressure off the overall system of hydrology.[48] Prior to the construction and even on occasion after it, the agriculturalists of plains China were forced to become freshwater fishermen for at least part of the year as the rivers would flood and their fields and cover their houses. These families had to live on boats during the inundations and live off whatever they could catch from the water. The waters that flowed around them were highly productive, later producing some 500,000 tonnes of fish at the peak of fishing in the 1950s.[49] There was also unsurprisingly extensive development of aquaculture, quite early in Chinese history. Sahrhage and Lundbeck, for instance, record that 'written records of fish culture date back as far as the era of the Shang (商) and early Zhou (周) dynasties (twelfth–eleventh centuries BC).[50] Such developmental practices required an extensive institutional, bureaucratic and legal framework and accordingly there were a variety of restrictions and licencing systems. There were also closed and open seasons on fishing. Aside from the pure bureaucratic elements there was a rich body of culture relating to fish culture and practice. The Rites of Zhou (周禮), from the second century BCE, for instance, has long descriptions of the use of fish as 'royal food', sacrificial practices and offerings and how one might give fish and fish products to guests in an auspicious way.[51] Even Mencius, one of the most important early Chinese philosophers, spends a little time in his writings warning 'against overfishing by casting too many nets in small ponds'.[52]

Carp fishing, in particular, was the key focus of early Chinese freshwater aquaculture, that was until the rise of the Tang dynasty (唐) in 618. The first ruler of the Tang, Emperor Gaozu (唐高祖), unfortunately for carp fishermen, was born Li Yuan. Since the vernacular name for *Cyprinus Carpio*, the Common Carp was 鯉 and sounded similar to 'li' the entire industry around the most common and popular

[46]Ibid, p. 164.
[47]Lee and Kong Jian (2007).
[48]Needham (1986)
[49]Sarhage and Lundbeck (1992, p. 219).
[50]Ibid.
[51]Ibid, p. 220.
[52]Ibid.

species of river fish in the country was banned. Sarhage and Lundbeck record the sudden interest in the rest of the carp family such as the Grass Carp, Black Carp and Silver Carp among a number of species and a number of varieties of bream.[53] However these various alternative fish species do not appreciate stagnant water, preferring running river water. Accordingly, new technologies developed into an entirely new industry focused on the management of fish fry. It is suggested this trade began as early as the Song dynasty (宋) (960–1276) and spread across China and Southeast Asia, from as Sarhage and Lundbeck suggest 'from the river Amur in the north to Thailand and Malaya in the south'.[54] Pregnant fish were caught in rivers and then their eggs were harvested and kept until the larvae emerged. New varieties of boats were developed with wells built into them in which fish larvae could be transported across wide distances (wells which mirror later technologies for the transportation of live fish). Similar practices were maintained in this industry until the twentieth century when new artificial spawning technologies were developed.[55] Aside from fish, at the coasts and in estuary waters other industries such as mariculture focused on shellfish and other small sea creatures such as shrimps developed. During the Ming dynasty (大明), oyster farming was invented followed by the farming of mussels and development of seaweed production, the like of which is still seen very frequently in contemporary China and was certainly encountered by the author of this book during fieldwork in 2016.

This activity in China's inshore waters must have been ongoing in some way in earlier centuries, as the seas surrounding the nation are historically very rich. China's coasts span from the cold waters of the far north next to the Korean peninsula to the subtropical seas south of Hainan and what is familiar to the Chinese of the present as waters of the 'nine dash line'. Currents feeding on the Pacific drive in migratory fish, and the enormous volume of organic material dispersed into the sea from China's rivers, historically provided rich feeding grounds for a variety of species, both warm water and cold water specialists. China's rivers have been famous for a variety of intriguing freshwater dolphins, but marine dolphins and other large fish such as tuna of various kinds were plentiful. Cod, Herring and Flounder, familiar from the north could be caught, as well as Croaker and Hairtails. Unlike Japan, Chinese coastal and inshore fishers were blessed by an extensive area of continental shelf in what are called in English, the Bohai Sea (渤海 or Pohai Sea), the Yellow Sea (known as the West Sea to Koreans) and the East China Sea. These close and coastal fisheries were exploited by communities which utilised the early invented Junk and Sampan, along with a large variety of other technologies. These included harpoons, weirs and diversions, a multiplicity of nets and lines, mostly organised and directed from the shore in conjunction with offshore boats. Moving further offshore multiple boats would manage larger seine nets in order to catch croaker and other more substantial species. Lundhage and

[53]Ibid, p. 221.

[54]Ibid.

[55]Ibid, p. 216.

Sundbeck also recount other developing practices and strategies such as 'light to attract fish and noise to scare fish into the nets'.[56]

Before the advent of industrialised and mechanised fishing in the nineteenth and twentieth centuries, therefore, the Chinese coast had extensive areas of fishing in the Guandong, Fujian and Zhejiang provinces as well as Shandong and Liaodong peninsulas. There was a huge ecosystem of communities engaged in all sorts of production, such as the preparation and extraction of fish products, drying, salting and all other elements of maritime industry.[57] This was organised into guild and cooperative style enterprise at times. Similar to what will be encountered in Korea, Chinese fishermen and fishing communities required the support of commission traders, money lenders and other financial and material networks in order to raise capital and buy materials to invest, manage the ebb and flow of finance in the fishing year and either get a reasonable price for their product, or get it to market. Accordingly, there were networks of bureaucracy and licencing, often connected to local government or regional power brokers. Sometimes this was fair and the system functioned well. At other times, especially when new dynasties or new political structures were being formed, the processes and structures which upheld the enterprise could collapse in ways which disadvantaged those involved. Micah Muscolino, has produced extensive analysis of the Zhoushan archipelago in Hangzhou Bay off the coast of contemporary Ningbo and the complications of fishing there.[58] This area was particularly good for fishing, Muscolino describing how 'the front formed by the mixing of these various water systems (various ocean currents and Yangzi river) creates an environment capable of supporting a diverse array of marine life. These waters fertilize plankton that provide abundant nutrition for fish and other forms of marine life, which feed organisms further up the food chain…'[59] Because of this, it was hugely important, but this abundance itself created problems and the area became a magnet for pirates, both local and foreign between 1530 and 1560 which eventually caused the area to be seen as politically vulnerable and dangerous to the nation and settlement on the islands was forbidden. Complicated restrictions were placed on the size of boats built in the area and the distances they could travel from the shore. In 1644, the Qing dynasty (大清) also forbade settlement on the islands in the peninsula, but fishing communities did not fully accept such restrictions. Fishing people would occupy land as close as possible to the fishing grounds, and local institutions would often let them fish in the areas restricted, for a fee. After all local institutions and bureaucracies were reluctant to lose the extensive potential profit from such a valuable fishing ground. Muscolino later describes the intersection in this area between colonial interjections, technological development and conflicts over dwindling resources in what are termed 'fishing wars' around the Zhoushan.[60]

[56]Ibid, p. 222.
[57]Muscolino (2009).
[58]Ibid, p. 16,
[59]Ibid, p. 96.
[60]Lee (2018).

One might even describe contemporary interactions around the South China Sea and particularly the interactions between Hainan fishermen and Vietnamese fishermen as potential fishing wars. Both sides claim the fishing grounds in between the two nations as very long-standing spaces of mutual exploitation, going back many hundreds of years. While geopolitics may see the concrete developments on reefs and other islets in the area as representing a much more threatening form of expansionism, fishers apparently see interjections over sovereignty and control in the area as part of a much longer competition for fishing rights and technological domination. While this does not and has never promised to become a 'fishing war' of the most dangerous or florid kind, it is symbolic of the pressures present in Chinese fishing histories. In a future chapter, a sense of these pressures can be glimpsed from the top of Gageodo island (가거도), as South Korea security and marines watch and listen for Chinese infiltration into contemporary Korean waters. Historical fishing in both Japan and China while undertaken in a very particular and definite framework of statehood and society was radically transformed by the processes unleashed and wrought on both nations by the colonial projects of European nations. The nineteenth century essentially began in Chinese and Japanese fishing communities as it always had done with the Junk and the Sampan, but it would quickly be reconfigured by extractive technologies and frameworks of a very different kind.

The early fishing history of the Korean Peninsula is unlike the complex history of fishing in China and the richly detailed example of Japanese coastal development. Fishing development on the peninsula is, even by the standards of other aspects of Korean history, fairly unclear. This is not because there was no fishing in Korea before the modern period, or that either the bureaucracies of Chosŏn (조선) or Koryŏ (고려) were not interested in fishing or concerned to tax it, rather that the materials and documents of the period have not yet been researched or have become inaccessible. This is, of course, the case when it comes to forestry matters in Korean history, which contrary to colonial Japanese perspectives and much writing in the past are becoming much clearer since collections in the Kyujanggak (규장각) or royal library/archives have begun the process of being analysed and Chosŏn's kingdom of pines revealed.[61] However, Korean historical work and cultural memory certainly suggest that for reasons at times similar to those found in Japan, Korea was late to exploit its coasts and waters.

Fishing and coastal development in Korea is intricately linked to the complex religious and cultural history of Korea. Buddhist practices integrated into Korean society during the Koryŏ and Koguryŏ (고구려) eras meant that, as was the case in Japan (as Jacobina Arch found was the case with wild boar through their transformation into 'mountain whales'[62]), eating animal flesh and animal products became highly problematic. Buddhism on the Korean peninsula derived originally

[61]Arch (2018, p. 92).

[62]Williams (2008).

from the Mayahana approach, which objected strongly and categorically to the eating of any living thing. This approach went further than the more familiar instructions to reject ten particular meats, namely, humans, elephants, horses, dogs, snakes, lions, tigers, leopards, bears and hyenas.[63] These animals were considered unacceptable because, according to scripture, they would react to the smell of their own kind's flesh, and therefore have their senses stimulated in a way which was not in tune with Buddhist theology or morality.[64] Mayahama Buddhism took this one stage further to suggest that the issue was fear, a dangerous and simply not divine sense, which could be encouraged or developed by the eating of animal products. Buddhism as practiced in Korea was soon deeply integrated into the practices and functions of the state, becoming a state religion, and sought to unpick those aspects of Buddha's teaching or extrapolations from them that would be unhelpful to social order or the functioning of state institutions.[65] This form of Buddhism became known as Seon Buddhism (선) and the conventional modern form of the religion practiced in Korea today is a development or offshoot of that order, known as the Jogye Order (조계종). Because of the stipulations of Seon theology, fishing and the killing of fish and other marine life became entirely forbidden and restricted, an act of blasphemy against the Buddha and social order.

When Koryŏ was replaced by Chosŏn and the Yi dynasty in 1392, Buddhism had long since begun to decline, both in institutional and public influence. Buddhist monks and their houses it appears had come to be regarded as corrupt and a new rational was required for the moral underpinning of both the state more generally and its institutions more specifically.[66] While the teachings of Confucius had been in existence for many centuries it was at this point that Korea adopted a very distinct approach to Confucianism. This was undertaken through the reordering of state and royal bureaucracies and the processes through which aristocratic and institutional classes (later to be known as Yangban), could demonstrate their rights and credibility.[67] Civil Service Examinations had been absorbed from Chinese institutional practice as early as 958 under the rule of King Kwangjong (광종), but while they were initially used to reduce the power of families and clan houses and to underpin the ascendancy and power of the crown, following 1392, the Kwagŏ (과거) as they were known essentially became only accessible to aristocratic classes and Korea developed what is known as a scholarly elite bureaucracy.[68] This was organised on Confucian principles, but these principles had become neo-Confucian following the teachings of Zhu Xi, and later Korean scholars such as Cho Kwangjo (조광조), Yi Hwang (이황) and Yi I (이이).[69] Neo-Confucianism was very tightly

[63]Ibid.
[64]Grayson (2013).
[65]Ibid.
[66]Deuchler (1992).
[67]Ibid, p. 15.
[68]Ibid, p. 24.
[69]Ibid, p. 89.

focused on social ordering and complex organisation of state ritual which included a restrictive class based system.[70] Below the Yangban were the Chung-in (중인) (middle people) and the Sangmin (상민) (common people). All theoretically could take part in the examinations and serve the institutions of government or accrue property, but in reality the benefits of social class only served the Yangban, aristocratic class.[71] Below Sangmin, there were the Ch'ŏnmin (천민) (vulgar common people), Paekchŏng (백정) (untouchables or unclean) and Nopi (노비) (slaves or serfs). These classes had a long history which stretched back into the Buddhist period of Korean history, but became even more distinct during the Yi dynasty.[72] Fishing, as a tradition that involved the killing and preparation of fish was never likely to rank highly in this ordering following the stipulations of Buddhist tradition, but became more or less problematic at various moments in the period.[73] At times those who were counted as fishermen or gathers of products of the sea were counted in the Sangmin, and sometimes within the Ch'ŏnmin class. Those that actually killed and prepared fish products or took shellfish and prepared them, however, found themselves in the Paekchŏng class. Thus, contact or relationships with fishing people for people in other, higher classes or the development of trade or enterprise with them was further complicated by social strictures.[74] This meant that fishing communities were often at some distance or remove from other villages and towns in historical Korea and they were extremely low down the list of institutional priorities for the institutions of Chosŏn.

In spite of the restrictions of Korea's Buddhist traditions and the complex ordering of both Confucian and neo-Confucian traditions, all of which complicated historical relations between fishing people, fish and the social and cultural structures of the nation prior to modernisation, there is one further element of spiritual practice which impacted on its fishing communities. While both Buddhism and Confucianism established rigorous frameworks for religious and cultural practice on the peninsula, they did not entirely replace earlier animist and geomantic traditions.[75] One of the clichés when it comes to describing the landscape of Korea is that it is very mountainous (like 'rolling seas' according to one early adventurer).[76] This is, of course, true and has been true for many epochs in geologic time and this topography has certainly impacted on Korea's agricultural development. The various mountain ranges and uplands of the peninsula also heavily impacted on Korea's early spiritual development. A real sense of geomancy developed, perhaps influenced by similar development in what would become China, which is even today

[70]Palais (1981).
[71]Ibid.
[72]Ibid.
[73]Chang et al. (2015).
[74]Ibid.
[75]Grayson (2013).
[76]Cressey (1963).

influential in Korean culture. A notion eventually called Paektutaegan/Baekdudaegan (백두대간), articulated best by the seventeenth-century scholar Yi Chung-wan (이중환), held that spiritual energy flowed through the Korean peninsula using the mountain ranges as networks and conduits.[77] This sacred energy, ki/chi (기/氣) served as a form of life force for the nation and its natural environment, and accumulated at various points in the nation's mountains. Access to this spiritual power could be obtained at these points by what became known as mountain spirits, Sanshin/Sansin (산신), who both embodied the spirit and the mountain at the same time.[78] A complex network of Sanshingak (산신각) or mountain spirit shrines existed, and in part still exists through which local populations could intercede with or access a little of the energies of this network.[79] As is clear from the name, Paektusan/Baekdusan (백두산), now on the border with China and North Korea, the sacred mountain and site of Korea's genesis mythology was the fulcrum point of the entire network. Other readings from China have Paektusan/Baekdusan as a conduit for the spiritual energy from the much more sacred and powerful Mount Wutai (五台山), now in Shanxi province. Both Paektusan/Baekdusan and the wider network of the Paektutaegan/Baekdudaegan later become central to Korea's national sense of selfhood in the age of modern nation states and while Sanshin and Sanshingak are not quite as important as they used to be, their geomantic echoes connects to traditions of auspicious social practice and the role of topography more widely in the nation's culture to this day.[80] Geomancy does not, of course, revolve entirely around mountains, and it would be surprising if similar traditions had not developed at the coast or beyond it. For traditional or early Korean spiritual traditions, as with Chinese, the sea, its coasts and waters were the domain of one of the Sea Dragon Kings. While in China, these serve as both water and weather gods, connecting to the points of the compass in the widest traditions, in Korean coastal traditions they become unified as a single King.[81] This spiritual vision of watery geomancy has the waters not as a place of control, but of dangerous chaos. Thus, Korean coastal communities and by extension the peninsula's wider culture were wary of the sea, which needed placating.[82] Before the modern and colonial periods, this placating was done by a highly complex, but in reality little researched, network of ritual and practice which is very rarely glimpsed in the contemporary era. Just as in the mountains, communities would visit and intercede with Sanshin at Sanshingak, coastal and fishing communities would have Sea Dragon King temples and visit auspicious places along the coast where spiritual energy resided.[83] This often meant that particular coastal rocks or islets were extremely significant, that there were areas of sea or coast which could not

[77] Yi (2018).
[78] Mason (1999).
[79] Mason (2011).
[80] Ibid.
[81] Buswell (2009).
[82] Underwood (1934).
[83] Ibid.

be visited or only visited at certain times. It also means that Korean traditional fishing boats were organised in particular formats and decorated with shamanic signs and charms and that their sails were as much for coordinating spiritual messages as they were for catching the wind.[84] While such traditions survived for many centuries so that communities could navigate dangerous or inauspicious physical and spiritual landscapes, they, of course, were also very much a drag factor on any practical development of the industry and further isolated Korean fishing people from wider society and any connection with external influence.

Beyond the complexity of the nexus of purely spiritual or cultural matters and development, observers/scholars must also contend with the extreme reluctance of the Chosŏn government to develop what might be called conventional mercantilism in Korea. This difficulty with economic development and the connection between people engaged in practical development or extraction, (such as fishermen) is also demonstrated by the restrictive and exploitative system developed of commission tradesmen and bondholders, who financially complicated the daily and yearly life of fishing communities, the *Kaekchu*.[85] For a great deal of Chosŏn's history, trade or mercantile exchanges meant interactions which were either counter to the social order, or were with foreigners, who were problematic in an entirely different way.

Chosŏn had dynamic and extremely problematic and complicated relations with its neighbours. While historically Korea was capable of interacting with China in what is considered a superior, suzerain relationship, known as Zongfan guanxi 宗藩关系 (in Chinese, 'serving the great', later transformed in the pejorative Sadaejuui/Sataechuŭi/사대주의 by Korean nationalists), Relations with Japan had long been problematic.[86] The Hideyoshi invasions of the Korean peninsula between 1592 and 1598 damaged catastrophically the relationship between Korea and Japan, already challenged in the Muromachi (室町時代) and Sengoku (戦国時代) periods by Japan's inability to reign in pirates from the Japanese mainland and the Ryukyu islands which harassed the peninsula's coasts and islands.[87] In spite of these difficulties, Korea and Japan sought to negotiate their way through and past the issue and in 1426 Japanese fishermen were allowed to settle in specific Korean ports such as Dongwae, Ulsan and Changwon. In 1442, the two countries came to a more comprehensive and formal agreement about fishing grounds and other fishing matters.[88] However, things became problematic yet again after the relaxation of restrictions encouraged a large number of Japanese fishermen to move to Korea, and a trade in local cotton to Tsushima Island developed—both elements of this were lucrative and the Chosŏn government bestowed a number of tax breaks on the Japanese traders.[89] By the turn of the sixteenth century, the reduction in income for

[84]Ibid.
[85]Ki-Jun (1976).
[86]Lewis (2014a).
[87]Robinson (2013).
[88]Ibid.
[89]Seyock (2005).

the farmers led to the petitioning of institutions. When King Jungjong came to power in 1506, he rescinded the tax breaks which created real pressure on authorities in Japan and sparked eventually what has become known as the Disturbance of the Three Ports in 1510.[90] This military altercation between several thousand Japanese troops sent by the governor of Tsushima as they attacked the ports generated a military response from the King, and resulted in the death of the Japanese governor.[91] This, of course, led to the complete cessation of any further engagement in fishing matters between the two countries and the abandonment of the previous agreements. Japanese fishermen continued to harass and exploit Korea's waters to quite an extent, so much so that fishers served as pilots and guides during the Hideyoshi invasions of 1592–1598.[92] Following Japan's disastrous military adventures, relations between the two countries did not recover for many centuries. Japanese fishermen were banned from Korea's coasts and waters, and much more resource dedicated to protection of the peninsula's boundaries by the Chosŏn government.[93] By 1639, Japan had instigated its Sakoku policy of national isolation which restricted the distance fishermen could travel from the nation's shore, The policy further meant that conventional journeys and trade with foreign nations was forbidden and, in the case of Korea, any further interaction and exchange managed through the Sō clan of Tsushima.[94] No further Japanese fishermen were really seen in Korea's waters until after the mid-nineteenth century opening of Japan by the American Commodore Perry and his 'black ships.'

While left alone by the Japanese, for a couple of further centuries, Korean fishing communities did not really take advantage or were able to capitalise on the reduction in pressure from abroad. In the seventeenth and eighteenth centuries Korean fishing remained much as it had one in earlier centuries, focused mainly on the shore, on shellfish, peripheral to the nation's interests and conception of itself and any governmental priorities and beset by the complexities and restrictions placed on communities by the commission tradesmen.[95] Perhaps in the historical mind of Korea, and now in the contemporary national sense of self, there is only one exception worth mentioning, that of the female divers of Jeju Island (제주도).

Haenyŏ/Haenyeo (해녀) or sea women are something of an aberration in Korean cultural history, which has been primarily, thanks to the influence of Confucianism and neo-Confucianism, patriarchal.[96] The fact that these sea women and their ancestors are geographically based on the island of Jeju could well have something to do with the unusual cultural production of the Haenyŏ, Jeju being peripheral

[90]Lewis (2014b).
[91]Ibid.
[92]Lewis (2014a).
[93]Ibid.
[94]Laver (2011).
[95]Sangbok (1977).
[96]Gwon (2005).

historically to the institutions of Chosŏn Korea and still fairly remote from the mainland. Nevertheless, originally the divers of the island were male, but only became female between the seventeenth and eighteenth century. This appears to have been partly to do with the development of Confucian social and organisational principles, which restricted men from engaging in such activity and the impact of burdensome tax policies which demanded payment in abalone from citizens near the coasts of the nation. It seems as if it did not make sense to use men to obtain this tribute, or that women were more available and capable in the process than men.[97] As it is the Haenyŏ were regarded in Chosŏn social norms as extremely low, suggested by some almost to be slaves, owned by the local government authorities in Jeju: 'their husbands were even prohibited from participating in the educational circle (*hyangkyo*), which was a symbol of high status').[98] In 1814, reforms to the tax system meant that the abalone requirement was reduced, but Haenyŏ continued their diving through the nineteenth century and into the colonial period. Japanese development in Jeju, which is much closer to the Japanese mainland than much of mainland Korea, and the imposition of capitalist logics in that development mean that sea products became much more valuable, including those that the Haenyŏ dived for. Haenyŏ were freed from any tribute or connection to the precolonial authorities and became wage labourers.[99] Japanese businesses even spot hired them to work as divers on the Japanese mainland, and elsewhere in colonial Korea, even at islands near Incheon.[100] After the end of colonialism and the era of divided Koreas, Haenyŏ became semi-legendary characters in Korean contemporary culture. The unusual sea women of Jeju, quite aberrant in comparison to much of Korea's other cultural forms, became representative of both the pluckiness of Koreans, but also the nation's claim to ancient and continued existence.[101] In 2014, the South Korean government even had the Haenyŏ placed on the UNESCO Intangible Cultural Heritages list.[102] While the numbers of Haenyŏ has been reported for many years as being in decline and potentially soon to be extinguished as a tradition, they are still very much tangible. Whatever the future for the Haenyŏ, they are rare survivors of Korean coastal and fishing cultures of the past.

Jeju island would be one of the first locations, at which the long period of relative quiet between Korean and Japanese fishing and coastal communities came to an end. Robert Neff reports that developing technology such as underwater breathing apparatus meant that Japanese divers coveted the Abalone, Sea Cucumber and Oyster resources of Jeju and in the 1870s began to poach in Korean waters from the Haenyŏ. In an attempt to placate both sides, Korea and Japan even signed an agreement in 1883 which allowed reciprocal access to coastal fishing grounds for

[97]Ibid.
[98]Ibid.
[99]Ibid, p. 6.
[100]Ibid.
[101]Ibid.
[102]Sang-Hun (2014).

both nations.[103] In fact this agreement it seems placated no one, and the Haenyŏ actually refused to go to water with so many Japanese present, and the Japanese fishermen simply coveted more resources and further land, by 1887 even occupying a small island off Jeju named Gapado (가파도) and using it as a base for raiding coastal communities nearby.[104] By the early 1890s, whole scale violence had broken out on Jeju with much resistance from locals to the Japanese interlopers and similar levels of aggression from the Japanese.[105] The desire of the Japanese (and even Chinese fishermen), to co-opt and appropriate the potential of Korean fisheries, displacing the local population and fishing communities in this last decade of the nineteenth century, certainly did not bode well for events soon to come on the peninsula.

2.3 Fishing and Colonisation

The fishing communities and cultures described so far, and even those only described in outline were of course soon to be impacted by the new forces of capitalism and colonialism. Japan and Korea are something of a special case in Asian fishing, given that Japan colonised Korea rather than both having been colonised by a European or American power. The extensive maritime cultures of China were heavily impacted by the impositions of extraterritoriality of the treaty port era, Western powers setting up new institutions and enterprises all along its coast. While the Dutch had long been engaged in connections with Southasian territories and developmental communities, for the most part these had involved spices and materials from the land.[106] Fish and products of the sea had been long complicated to ship and trade across great distances, but by the nineteenth century, steamships and refrigeration promised real changes to potential maritime economies. Such changes came first to Japan whose economy and political structures had been forced open by the powers of colonialism and upended in the turmoil of the Meiji restoration (明治維新). The Sakoku restrictions were quickly lifted and in 1867 the stipulations on the size of ships and whether they could go beyond the coast into the deep sea were abandoned.

It would take another two decades before extensive change occurred as Japan's population was still too small due to Tokugawa policies and cultural traditions surrounding abortion and infanticide which allowed poor families to deliberately keep their families small, To support an extensive fishing industry and the local class system in which fishing people had low status (though not as low as in Korea), meant that when it was finally abolished in 1870 many fishing people partially

[103]Neff (2018).
[104]Ibid.
[105]Ibid.
[106]Nawawi (1971).

abandoned the sea to work in agricultural settings.[107] However, improved technology and the reduction in restrictions on boat size and distance meant that inshore fishing began to place an impractical burden on fish stocks and catches actually began to decline.[108] Accordingly the government of Japan's first modern Prime Minister Ito Hirobumi in 1887 instituted legislation which sought to engage deep-sea fishing by bestowing subsidies on sailing ships of more than 30 tonnes.[109] Later this legislation was extended to cover steamships of over 50 tonnes. Steam fishing ships were soon added to the fleet, the first two being imported into Japan in 1897 and by 1899 Sahrhage and Lundbeck report that there were some '3000 locally built vessels and 37 sailing and two steam-driven ships of European type'.[110] This new offshore fishing industry aimed for all manner of fish including Herrings, Sardines, Anchovy, Mackerel and Squid focusing heavily on the northern seas around Hokkaido. The yield of the Japanese industry exploded with the development of new technology such as gill nets, cotton made nets, and the purse seine nets which were imported from America in 1882.

Hokkaido became an extremely important jumping off ground for Japanese forestry interests following Japan's final colonisation of the island and subjugation of the Ainu in the 1870s.[111] Developing pressure on fish stocks to the south meant that fishermen had already explored north to Sakhalin and the Kuriles, even into the Sea of Okhotsk by the middle of the eighteenth century (this all being home territory in the Japanese mind).[112] While Imperial Russia had claimed the east coast of Siberia and Primorsky Krai from a weakened Qing dynasty China in the nineteenth century, there were still few Russians in the area to compete.[113] The Russo-Japanese war of 1904–1905 and the Treaty of Portsmouth which followed it gave Japan complete dominance in the seas and ceded to them the Kuriles and southern Sakhalin (which was named Karufuto (樺太庁) by the Japanese).[114] Japan even gained fishing concessions in Kamchatka and the northern end of Sakhalin and a 1907 agreement between the two nations allowed Japanese companies to establish processing plants on the Russian coast, especially in Kamchatka and reserved much of the offshore for their boats, while granting river mouths and bays to the Russians.[115] By 1910, thousands of Japanese fishing boats and ships were focused on various types of salmon off the coast of Siberia and northern Sakhalin and as Sahrhage and Lundbeck again report over 'Japanese canneries on Russian territory

[107]Sarhage and Lundbeck (1992, p. 172).
[108]Ibid, p. 175.
[109]Ibid, p. 176.
[110]Ibid. p. 179.
[111]Lu (2016).
[112]Sarhage and Lundbeck (1992, p. 183).
[113]Ibid.
[114]Ibid.
[115]Ibid.

produced between 60 and 90% of all tinned salmon, which was mostly exported and sold on the world market from this region'.[116]

Salmon were not the only quarry for the Japanese and in 1905 Japanese business and fishing boats began to focus on King Crabs, following the development of canning technology and safe curing of crab meat.[117] However by this point the Trans-Siberian Railway and reconfiguration of Russian priorities meant that more Russians and more Russian boats were fishing and crabbing in the area and disputes began to break out between fishing people of the two nations.[118] This encouraged the Japanese to engage in further infrastructural and technological development and by 1920 factory ships for fish processing had been developed which meant that Japan no longer needed as many shore stations.[119] In 1930 some 19 factory ships, each accompanied by 2 or 3 ships for laying nets and another 12 smaller boats to haul them back in worked the waters off Kamchatka, canning some 600,000 cases of King Crab, which represented some 30 million crabs.[120] This hugely impacted on crab stocks. In 1927, the mother ship and factory ship method was deployed on the stocks of salmon and within 4 years some 13 factory ships and 100 smaller ships were deployed off Kamchatka.[121] Such activity again began to create tension between the now organised and capable government of the Soviet Union which had established a fisheries interest in Vladivostok and was concerned to not only compete with the Japanese but to reclaim its own seas from them.[122]

Japanese fishing interests had also begun to develop trawl and drag net fishing, following the first imported steam trawler in 1908 (imported from a ship builder in Swansea, Wales).[123] More than 130 further trawling boats were in place over the next 4 years and their impact was sudden and dramatic, causing the inshore waters of Japan to be restricted to them.[124] The trawlers then worked in the East China Sea and Yellow Sea, both bodies of water that were fairly shallow with flat beds, perfect for trawling with a focus on fish like Croaker and Sea Bream. In 1920, Japanese companies introduced bull trawling, new technology with long trawl wings and greater capabilities in the extraction of species preferred by the home market.[125] Tokyo's developing Imperial project meant that bases and processing plants could be constructed for the processing of fish caught by these trawlers in Liaodong and in Formosa (Taiwan), as well as on the Korean peninsula. However, Korea's inshore waters were actually restricted so far as the trawling companies were concerned, as

[116]Ibid.
[117]Ibid.
[118]Ibid.
[119]Ibid, p. 184.
[120]Ibid.
[121]Ibid.
[122]Ibid.
[123]Ibid, p. 186.
[124]Ibid.
[125]Ibid.

local stocks were too fragile.[126] Soon the seas of China began to be depleted themselves and the Japanese trawlers focused north to Kamchatka and the Bering Sea in the early 1930s before going completely global and travelling to the waters around Australia, the Gulf of Thailand, the Arabian Sea and even off the coast of South America after 1937.[127]

Finally, Japanese development came to Tuna fishing. Bonito in particular are historically significant to Japanese cooking providing for many centuries one of the primary elements of the fundamentally important broth underlying many of the nation's most popular dishes.[128] There is an absolutely extraordinary process involved in the traditional preparation of Bonito flesh which has many steps and takes an extremely long period of time. For much of Japanese history, Tuna fishing was a coastal enterprise, using pole and line techniques from open boats taking advantage of those populations of Tuna that past the home islands using the currents. However in 1913, new technologies and boat construction practices came to the Tuna industry and they were given motors and their range increased.[129] Japan's gain following the 1914–1918 war of German's South Pacific territories around Palau and the Marshall Islands meant that these new boats could be used in an area of prime Tuna fishing, and new technologies and practices were deployed in these South Pacific fisheries. By the 1920s, boats were capable carrying 200 tonnes and, now equipped with refrigeration, they could sail great distances across the Pacific and the world and fish across the seasons.[130] New developments in long lining in which lines could be miles long and allowed practical fishing of the Albacore Tuna, a fish of the deep sea and the mid oceans. Yellowfin Tuna exploitation was begun in the early 1930s with mother ships and supporting boat fleets which did not need to be anywhere near land and were truly part of an industry of the deep oceans.[131]

Readers will perhaps wonder where China was in this narrative of technological and capacity development following the interventions of modernity and colonialism. The reality of China's experience, in both late Qing and pre-1949 Republic of China iterations was that its fishermen were hemmed in both by the power of the Japanese Empire, Western colonial and capitalist powers and the weakness of Chinese government institutions of the time.[132] While shipping and logistics companies and institutions certainly developed around coastal ports in China, almost exclusively at places like Macau, Hong Kong, Lüshün, Tianjin, Dalian and many others, they did not serve Chinese interests.[133] Instead they were concerned with the trade in materials of real interest to European businesses and institutions,

[126]Ibid.

[127]Ibid, p. 187.

[128]Ninomiya (2015).

[129]Sarhage and Lundbeck (1992, p. 189).

[130]Sarhage and Lundbeck (1992, p. 189).

[131]Ibid, p. 191.

[132]Strauss (1998).

[133]Taylor (2002).

which did not include during the period its fish and sea products. Trawling was introduced to China by Japanese trawlermen in 1912 after they had been restricted from accessing the home waters of Japan and set up business in Shanghai, attempting to exploit what remained of the stock in Chinese home waters.[134] Inspired perhaps by these pioneers and the pressure placed on fishing resources by Japanese interests from Japan, traditional fishing boat technologies such as the Junk and Sampan had motors installed in the 1920s and then by 1933, fishers in Shanghai had managed to import nine steam trawlers.[135] This meant that Shanghai, such as it was would become the main site of fishing infrastructure and development prior to 1949.[136] Both Japanese imperialism and the struggles of the Chinese civil war meant that much of even this small level of development was lost or destroyed so that by the end of the war Sahrhage and Lundbeck record that 'only 600 small wooden trawlers were available, left by the Japanese'.[137]

2.4 Fishing Infrastructures of Chosen: Korean Colonial Fishing Development

Japan's fishing development was really a product of its imperial and colonial periods, when capitalist logics and rapidly developing technology powered its fishing and other interests ahead across the globe. Much developmental reorganisation was undertaken when Japanese authorities began to implant themselves on the Korean Peninsula following the 1907 Protectorate Treaty, seeking to reconfigure Korean institutions and practices not only to accept the power and authority of Tokyo's institutions, but also those logics of capitalism and state enterprise. When it came to fishing and fishing infrastructure, the second report of His Imperial Japanese Majesty's Resident General from 1909 found matters extremely wanting: 'The three sides of the Korean Peninsula are washed by the sea, and its coast line extends to about 6000 nautical miles, so that the marine products of the country should be abundant. While the maritime products annually obtained in Japan, which has about 8000 nautical miles of coast, amount to 100 million yen, the annual products in Korea reach only 6 or 7 million yen. The inadequacy of these products in Korea is undoubtedly due to the backwardness of fishing industries and lack of effective administration'.[138] The Resident General, and, after 1910, the Government General, were extremely concerned about the lack of regulation of Korea's waters, in particular the presence of poachers of all nationalities and potential overexploitation of whales and other valuable creatures of the sea. In 1908/1909, before

[134]Sarhage and Lundbeck (1992, p. 217).
[135]Ibid.
[136]Ibid.
[137]Ibid.
[138]His Imperial Japanese Majesty Resident General (1909).

Korea was annexed and became Chosen, the Resident General saw to it that the legislative framework around fishing rights was completely rewritten and the government departments reorganised with Japanese bureaucrats imposed and Korean staff placed within a better structured hierarchy.[139]

In 1909/1910, the Resident General established a new nationwide fisheries association which integrated all the local fisheries associations that existed at the time. The national association was also able to give local associations subsidies of some 5000 yen each to purchase new Japanese nets and fishing equipment in order to make some initial progress on improving both the catch and the quality of life and income of fishermen. The Japanese, in particular, appeared appalled by the tiny incomes generated by Korean fishermen, given the potential resources at their disposal. These subsidies to local and national associations were placed on an annual basis after the annexation of Korea, in 1910. In this year, Japanese fisheries authorities were now able beyond simply improving the capabilities and practices of Koreans themselves, but to import Japanese fisher families to the peninsula. The report for the 1910/1911 season from the new Government-General of Korea (Chosen), reported that to make this possible, Japanese provinces and other authorities had been buying land on the Korean coasts for resettlement. This had meant that by the end of 1910 some 45 villages for Japanese fishermen had been established, containing 1600 families with a population of some 6200.[140]

By 1921, there were over 12,000 Japanese citizens living in Korea whose job was solely focused on fishing or the preparation or production of fish products.[141] The Government-General had also sought to import Japanese methods of salmon farming on the Korean peninsula, introducing fry to rivers and training Koreans to look after young salmon.[142] The Government-General had also sought to diversify the products generated by its colonies fishing industry, investing in infrastructure and technology to produce glue derived from fish bones and to export washed seaweed and other products of the sea to Japan. By the early 1920s, research and academic organisations from the colonial mainland had also begun to implant fisheries experts into the various fisheries associations established since annexation. In 1920, the Government-General had established the first experimental fisheries research station connected to the wider network on the home islands of Japan. This station served as the base for a steam-powered research ship to undertake a geologic survey of the Korean coastline and coastal shelf.[143] This development of the Korean fisheries sector and the research surrounding it was focused not only on implanting colonial imperatives into this developmental field, but also really improving the viability of Korean fishing, so that it would pull its financial weight in the empire. After the sense of disbelief at the moment of annexation that a nation with such an

[139]Ibid.

[140]Government General of Chosen (1911, p. 2018).

[141]Government General of Chosen (1921).

[142]Ibid.

[143]Ibid.

extensive coastline could only derive 8 million yen value from the sea, the Government General reports are delighted to report that by 1921 this had been increased to over 45 million yen.

By the late 1930s, Supreme Commander of Allied Powers (SCAP) reports dating from after the collapse of the Japanese empire in 1945 and 1946 show that Korea had some seven core fisheries research stations on the peninsula, which were part of a network of such stations extending beyond the core of the Japanese home islands to Korea, Formosa (Taiwan), the Liaodong peninsula and the South Pacific Mandate.[144] Government General documents from 1934 and 1937 show that the fishing catch from Korean waters, expanded enormously from 1910, had reached a peak in 1931 and then become slightly erratic, before fishing effort was increased to maintain the upwards curve.[145] It was also necessary in 1936 for the Government General of Chosen to obtain a quasi-military cutter to protect the waters of Chosen from infiltration from fishing poachers from China and to control fishing boats from the Japanese mainland. 1934s Government General report suggests that by that point there were some 116,000 people engaged in fishing, primarily Koreans themselves (though undoubtedly the Japanese immigrants would have taken the bulk of the share from the sea and profits—Koreans wages tended to be around 40% of those for a Japanese worker), which was a huge expansion in the peninsula's once-moribund industry. Whether those fishermen really made a living from the sea in a way which had not been the case before is not clear, and whether the traditional cultural practices which accrued to fishing on the peninsula had been done away with or dissipated is not clear, and these issues are certainly not mentioned in the reports and other documentation. Readers will see perhaps the answer in a later section, that relating to research with a very long temporal scale on the island of Gageodo, which in the late 1960s still encountered some of the practices of watery geomancy familiar from a Korea of the 1860s. Japanese colonial authorities certainly made great efforts to reconfigure the fishing industry of the peninsula. Their own conclusions, however, have less to do with practical matters rather than an assimilationist tendency familiar from elsewhere in the colonial project: "These and other efforts towards improvement of the fishing industry have already been productive of good results. Nothing however has contributed more to the recent progress of Korean fisheries than the increased immigration of skilled Japanese fishermen…'[146]

Fishing from the Korean peninsula was sacrificed like so many other elements of colonial developmental policy in the late 1930s and early 1940s to the military priorities of the Japanese Empire. A reading of the colony's history between 1933 and 1945 sees much of the effort in the colony being directed at producing military materiel and imperial subjects for Tokyo. Boats were commandeered for the war effort and towards the end of the war in 1943, 1944 and the first half of 1945 it

[144]Supreme Commander for the Allied Powers (1946a, p. 37).

[145]Government General of Chosen (1934).

[146]Ibid, p. 116.

became virtually impossible to set sea for fishing because of the risk of bombing. Accordingly, both Japanese and Korean fishing catch and the value of any products produced by the industry collapsed.[147] While Korea was not bombed like the Japanese mainland, much of the research infrastructure dissipated in this period, and following the capitulation of the Empire to the Americans in August 1945 and the liberation of the Korean peninsula, Japanese fishing companies and crews saw to it that a huge percentage of the Korean fishing fleet was quickly extracted to the Japanese mainland.[148] It would take the combined powers of the Supreme Commander of Allied Powers and later the US Army Military Government in Korea several years to return some of the fleets and enable Korea to begin fishing again at anything like the extent to which it had before the war.[149] This interestingly is in stark contrast with the fishing industry of the Japanese mainland, which SCAP was very concerned to return to strength and within 18 months had reclaimed much of its former waters in the South Pacific and former whaling grounds in the Antarctic.[150] Readers will see from this account, that we have a great deal of information and detail from the colonial and institutional perspective from this time, but little if anything from the fishermen's perspective.

2.5 Fishing in Asia and the Pacific

15 August 1945, would bring the Japanese Imperial period to an end, and its empire of fishing would be, for a short period at least brought to an end. The Korean peninsula gained a sort of momentary independence before being occupied by both the United States and the Soviet Union. In 1948, the two Koreas we know today came into being, both of them were for some years singularly unsuccessful when it came to deep-sea fishing. Japan, the United States, Canada (and eventually the Soviet Union) would in the 1960s and 1970s come to dominate not just the seas they had once controlled, but would develop a global stranglehold over fishing resources. These countries would do so through new technologies and statistical theories related to fishing that this book will cover in the following chapter. These theories have only in the last decade or so been considered in a historical framework for the Pacific ocean, part of as Carmel Finley has suggested 'a new empire of fishing'.[151] Fish and fish products in this new empire become even more abstracted, but no less vibrant, important lively matters. While individual fish and other animals are rather lost in the planetary scale metrics of such development, they are no less energetic.

[147]Supreme Commander for the Allied Powers (1946b).
[148]United States Army Forces Pacific (1946, p. 30).
[149]Ibid.
[150]Supreme Commander for the Allied Powers (1946b, p. 68).
[151]Finley (2011).

Historically fish were no less vibrant a matter on the Korean peninsula following 1945 than they had been previously during the period of Japanese colonisation, but it does appear that fishing activity retracted somewhat to the level prior to 1910. When it comes to either available historical records or academic focus on the peninsula or even Japan, following the end of the war there is considerably less to contextualise this study. In Chap. 4, this book attempts to construct, in something of a first, a fishing history of North Korea, which follows on from the larger scale historical perspectives offered by this chapter. There is a missing link of sorts between 1945 and North Korea of our present or at least recent decades and that is writing and research focused on fishing communities in Asia and in Korea specifically in the recent past.

Fishing communities of the Asian or Korean near present have been subjected to much of the geopolitical reconfiguration and technological change seen in this chapter so far. The vibrant matters of fishing are a product of a number of the processes of modernity, colonisation and commodification seen so far. Japanese fishing communities as they are now, for instance, developed during the late nineteentth century and early twentieth century when Japan itself was under great pressure to modernise its bureaucracy, politics and industry having been opened to colonial forces in the 1860s. Japan then projected its own colonial influence on the South Pacific having been granted some of the former German territories in the Pacific by the League of Nations in 1919, known as the South Pacific Mandate. Japanese industrial tuna and other fishing boats would rigorously exploit the waters of Palau, the Marshall Islands and others, developing new technologies, science and statistical sensibilities in the period before the outbreak of the Pacific War in 1941. For the most part this practices and projections sound like the development of industries at a national scale, far from the coastal communities of the past that Arch wrote about and whose lives are so intriguingly intertwined with the journeys and bodies of the sea creatures they seek.[152] When it comes to research done on the ground into specific fishing communities in Asia or Korea after 1945 examples are rare.

Such research is rare but hugely important. This research behind this book very much sought to explore the reality of those engaging with the lively, energetic and problematic materials of fishing as it is lived now on the Korean peninsula, and primarily, of course, North Korea. When it comes to Korea, material which addresses communities in those nations neighbouring it and whose histories prior to 1945 this chapter has just explored, will be very important. Even more important would be material which focuses on Japan Korea's former colonial master. Edward Norbeck's 1954 study of Takashima, a small fishing community in Okayama Prefecture on the Inland Sea was, therefore, profoundly important for the author of this book in conceptualising East Asian geographies of fishing community.[153] The Seto Inland Sea as previously shown was perhaps the place where earlier

[152]Arch (2018).

[153]Norbeck (1954).

inhabitants of those islands now known as Japan first took up fishing.[154] Protected from the dangerous currents and storms of the seas off the coast, the Inland Sea served as a nursery for Japanese fishing history. Interestingly in spite of the huge amount of change and development undertaken on the oceans during Japans' Imperial period and in its colonies such as Korea, little seems to have changed in Takashima. Takashima's fishermen in the 1950s appear to continue past their historical subsistence level fishing on the Inland Sea (there is no deep water fishing undertaken by this community), but had abandoned a huge repertoire of past spiritual and ritual practices perhaps familiar or expected of Japanese extractive communities, and recorded by Arch in whaling communities in the north of the country.[155] Perhaps impacted by the new practices of Imperial subjectivity during the militarist and war periods, and the tumult of occupation and the dramatic changes generated by new technologies brought by modernity, Norbeck's community appear resilient in their pursuit of the lively matters of fishing, but without much of the spiritual landscape which similar communities were once surrounded. The Fishermen of Takashima were in Norbeck's time able to continue making a living on the inland sea just as the web of life offshore was radically changed by technology and politics.[156]

It could, therefore, be imagined that fishing communities of the Korean Peninsula following their own colonisation and modernisation might too have been dramatically influenced by these processes. This is undoubtedly true in many developmental fields in postcolonial South Korea. Practices and processes in other developmental fields have been dramatically reconfigured by technologies brought in or imposed by the Japanese in fields such as agriculture and mining.[157] Japanese studies on traditional Korean developmental practices during the colonial period, and those produced by the Government General of Chosen (some of which have been explored in this chapter), often assert the peripheral nature of Korean fishing practices, as well as the fact that traditionally Korean fishing was done primarily around its coasts, its fishermen rarely venturing further afield into the deep sea, nor having the technology or craft to do so.[158] Statistics from the Government General suggested an explosion of fishing capacity and catch during the colonial period undertaken through the importation of Japanese practices and technologies onto the Peninsula.[159] However there are no, as far as this author is aware, extant histories or studies of fishing communities during Korea's colonial period currently available in the English language. There is in fact only scarce material on nonurban geographies of the postcolonial young Korea. A sense of the changes wrought by Japanese and Government General policies on peripheral Korean fishing communities, however,

[154]Arch (2018, p. 31).
[155]Ibid.
[156]Norbeck (1954).
[157]Haggard et al. (1997).
[158]His Imperial Japanese Majesty Resident General (1909).
[159]Government General of Chosen (1934).

is available in the fascinating work of Prof. Han Sangbok of Seoul National University.[160] Professor Han Sangbok is an anthropologist, in fact, a founding member of Seoul National University's Anthropology department. He engaged in an extensive series of fieldwork exercises in fishing communities of South Jeolla province during the mid to late 1970s. In particular his connection to the community of Gageodo (then romanised as Kagodo), the southernmost island of South Jeolla provides a rich vein of historical information. Gageodo's community is beset by extremely difficult geography at the very periphery of the Korean mainland (only Jeju Island or the infamous Dokdo being further detached), as well as difficult connections with Korean bureaucracy and institutions of government in common with the community at Takashima. These two communities separated by culture and nation exist in a complex web of subsistence practices, new technologies and the dissolution of past traditions and beliefs. Gageodo's community's efforts and energies were captured in part not only by the difficulty of their position, but by the extraordinary practices of Korean traditional *Kaekchu*, or commission traders who held much of the community in debt and who they were obliged to trade their resources and material through.[161] Although now retired Professor Han Sangbok continues to engage in fieldwork and analysis at Gageodo, and the author of this book joined him on the island in June 2017 to participate in fieldwork and to gain something of an understanding of the communities' challenging terrain, the web of life and lively matters with which they are concerned and the practices and strategies they utilise in order to navigate the challenges and difficulties these geographies present them.

Finally, it is important to consider communities to the north of North Korea in the People's Republic of China whose geographic position connects them to the same waters as the North Korean fishing communities of interest to this book. The infrastructures and topographies of much of China's coastlines interested as readers will have seen, colonising nations such as the United Kingdom, Germany and Imperial Russia during the period of opening and gunboat diplomacy. This was certainly in the case of the Liaodong Peninsula, and particularly Dalian which was occupied first by the British and then Imperial Russia (hence Lűshűn's older name of Port Arthur and Dalian's former Russian name of Dal'niy). The area then became a fulcrum of the military contest during the first Russo-Japanese war and was occupied and annexed by the Japanese Empire, becoming part of the Kwantung Leased Territory between 1905 and 1945 (Dal'niy being renamed Dairen 大連). Dalian and the Liaodong Peninsula was released from Japanese power in 1945 only to be then occupied by the Soviet Union for a further decade, only becoming an official part of the People's Republic of China in 1955.[162]

In spite of the intense geopolitics and complicated history of occupation and colonisation, developmental communities survived and fishing practices endured in

[160]Sangbok (1977).

[161]United States Army Forces Pacific (1946).

[162]Hess (2006).

the region. Much of the fishing effort in the early years of Japanese modern maritime enterprise was also focused on the seas of Liaodong, which quickly, as the record shows reduced the catch and reduced the volume of fish and other animals in the waters off the peninsula.[163] Dalian and its neighbouring communities of Lűshűn (Port Arthur) and Wafangdian have long harboured fishing communities and maritime communities. Dalian and its port following its return to the People's Republic of China in 1955, became famous for ship building as well, but fishing and aquaculture continued to be of great importance to the area until the 1980s.[164] Dalian in more recent times is renowned for the practices of debt-fuelled speculative urbanism and the energies of its former mayor Bo Xilai who sought to transform the city into a metropolis befitting a China of new economic possibilities.[165] Fishing communities such as those as Jinshitan to the west of the city and Haxian in the Changhai Islands to the southwest were subjected to new environmental challenges and the pressures of radical and rapid urban development.[166] Might such communities have their own strategies for engaging with these new geographic and economic realities, these new topographies and terrains, even in spite of the difficult political landscapes presented by this new China? Might lessons even have been learned by North Korea's fishing communities subjected to an even more difficult bureaucratic and ideological inheritance? Fieldwork undertaken for this book in the Dalian area including Jinshitan, Lűshűn and Tong Shui Gou, a small village in the Wafangdian area revealed extraordinary landscapes of subsistence fishing and aquaculture, in particular focusing on seaweed and shrimp fishing. Communities in these areas had been subjected to immense levels of environmental pollution and degradation as well as urban development pressures, yet all had continued to survive and to draw a living from the sea in spite of these factors and institutional disinterest.

2.6 Conclusion

Readers will certainly encounter this fieldwork and the communities and geographies of both Korean and Chinese fishing communities in Chaps. 5 and 6. To this point, readers will also have encountered the rich, if not entirely extensive history of fishing across the globe. While this chapter has really sought not to extend too far back in time or obsess in immense detail about the development of intricate elements of fishing technology many tens of thousands of years ago, it has touched on some of the deep history of human interactions with watery and oceanic spaces. The chapter has gone back to Greenland of the early Inuit, Australian first nations,

[163]Bianchi et al. (2000).

[164]Collins and Grubb (2008).

[165]Bo and Chen (2009).

[166]Wang et al. (2013).

Polynesian travellers and the Ainu. These early moments in fishing really mark several millennia's worth of development, fishing technology and human impacts on the sea really progressed slowly until the eighteenth century. Human impact on the sea was hemmed in by things like the complications of navigation, the difficulties and challenges of the weather, the lack of refrigeration and the unknowability of fish stocks for many centuries. While humans certainly circumnavigated the globe and travelled across the deep sea at moments like the Polynesian migration across and throughout the Pacific and the Norse adventures beyond Greenland, for the most part fishing was done close to or on the coast. Even complex fishing societies such as Japan which developed elaborate netting and trap technologies and were able to harvest and hunt passing cetaceans, did not venture far until the last couple of hundred years. The explosion of human interest and effort focused on the creatures of the sea across the globe is extraordinarily recent and readers will have encountered the processes which spurred on and energised this cataclysm which has impacted so heavily beneath the waves. So far this book has reviewed processes which revolve around technology, capitalism, commodification and geopolitics. These empires of the sea appear for the most part conventional empires, with military, extractive and technological capabilities and capacities. Fishing communities across the world and in Asia and the lively matters they seek have been impacted by these, but they have also been impacted deeply and in fact primarily by a different sort of energy, a different sort of empire, focused on the sea. It would not be holistic of this book if it did not delve into this other world, this other category of empire, one much less concrete, even though it may generate extremely concrete impacts. The next chapter, therefore, moves from one form of community and one set of imperial projects to another, from developmental communities to academic and statistical communities. It is these whose domination of both the global ocean more widely and the maritime landscapes focused on by this book, who have constructed the new realities for lively matters such as fish and for fishing communities.

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Chapter 3
Fish and Fishing Knowledge(s) as Vibrant Matter

Abstract Having outlined the theoretical background behind the notion of matter and matters as vibrant or lively in the introduction, this next chapter uses the theoretical framework provided by Jane Bennett, Sarah Whatmore and others to more deeply explore what its deployment within the realm of fishing would mean. Contrasting recent work on the intersection between human form and matter and the bacterial and viral realm, an intersection which is inescapable for humans and has begun to suggest a meshing and merging of humanity's apparently independent nature with other, unexpected forms of nature, the chapter considers the importance of knowledge and statistics about fish and their geographies in wider histories of fishing. The changing form and shape of available and known fishing resource, as well as the individual and collective behaviours focused on the extraction of fish and their importance to geopolitics is considered Fish and other creatures of the sea and of the seabed themselves, therefore, are held to be vibrant matters in the web of political and developmental life. Knowledge, therefore, as ephemeral matters with real impact on both fish and human communities and political groupings focused on fishing. Given the previous chapter on histories and geographies of fishing, those histories and terrains will be further considered in this chapter, the embedded vibrant and lively statistical and living materials active at different levels of temporality and materiality, providing a sense in which fishing interactions from the past and future impact on the geographies and communities of the present, especially those in forthcoming chapters of the book.

Keywords Fishing · Fishing statistics · Vibrant matter · Empires of fishing · Fisheries development

3.1 Introduction

Becoming an academic or becoming a writer deeply focused on a subject in a way means becoming an expert on that thing or the academic field in which that thing is situated. It might not surprise the reader to know that the author of this book has not

R. Winstanley-Chesters, *Fish, Fishing and Community in North Korea and Neighbours*, https://doi.org/10.1007/978-981-15-0042-8_3

always been academically knowledgeable or capable when it comes fish or fishing. My previous work on North Korea focused first on its forests and mountains and then on the developmental work to transform its coasts and coastlines. While working on North Korean issues is always a little psychologically draining, nothing has prepared me for what working on fish and fishing would be like. In the previous chapter, I described the available histories and geographies of fishing, both general work and writing and research specific to Asia more widely, East Asia and the Korean peninsula. While these works and research have been vital to framing the past academic focus on this topic, they were for the most part historical, geographic (in its cultural sense), or anthropological. While they complete or extend at least some of the story of fishing and fishing history on or near the shore, they seldom go onto the water and never go under it. But to really understand fish and fishing that is precisely what must be done. If this book is really to encounter fish and the creatures of the sea as vibrant matter, lively participants in the web of life that includes their capture, extraction and later utility for these fishing communities, then it will have to go with them under the waves.

This chapter, therefore, engages with fish themselves. But it does not do so by reporting on them in an ecological or natural sense. Keeping an eye on the spaces and places of the communities and practices involved in harvesting them, it is necessary for this chapter to connect with the development of ideas and sciences around fish and fishing. Extracting value from the sea has transformed over the centuries from an artisanal, subsistence-level exercise in survival to a global industry replete with extraordinary technology and a complex network and ecosystem of data focused on what is under the waves. This has allowed humans to go beyond historical efforts close to or on the shore, to voyage out into the deep oceans and work in the most challenging and remote of places. This is the fishing that now dominates the globe, that is literally changing the geographies of the seafloor, transforming the ecologies and ecosystems of the water. In short, this chapter connects with the development of knowledge about fish in the sea. How many there are, what species they are, how much they weigh and how many it is possible and acceptable to catch without impacting 'negatively' upon their ecosystems. The science of fish, fishing and fishing statistics is extraordinary, dry and perhaps a little dull sounding at first to readers, really has been one of the enablers of the global fishing industry. Hand in hand with technological developments in fishing has been developed in statistical knowledge and techniques, techniques which would underpin not only the industries sense of itself as a progressive force for good in the global economy but also conversely its utterly devastating overreach of exploitation.

Along with data and science about the numbers of fish in the sea, there have been scientific developments about the fish themselves. As this book has already recounted in a little detail, historical works on fishing often contain what sounds like fantastical visions of the number or size of fish encountered in the sea in the past. Sometimes, this literally ends up asserting that there were so many or they were so big that it was possible to almost walk upon the water. Today we dismiss these accounts as fanciful. We know how many fish there are in the sea and we

know how big they are, how much they weigh and what they look like—it is impossible for the sea to have been like that. The fishy vibrant matters that we know are of a size and a scale we are used to and familiar with, they fit in nets, can be caught, can be handled and picked up without a great deal of effort (except for Tuna, Sharks and a few other species). More recent and open-minded research with a forensic or archaeological sensibility, however, has begun to tell a different story about the fish in the sea. This story has a truly depressing denouement that in fact perhaps the fish we know from historical stories we once dismissed as fanciful, may well have been that size. They are not the same fish that we know today, because frankly we have eliminated them, debased them and denuded them. The science related to fish themselves tells us that the fish of our time are the fish we deserve in our age of environmental crisis, stunted and for the most part doomed.[1]

Finally, this chapter will explore another aspect of fishing which is primarily untouched by anthropological or historical considerations of either local or regional industries. Fishing technology, that is a technology which is not about theoretically knowing the statistical possibilities of fish or fishing, has developed enormously over the past two centuries. One might count these days global positioning satellites as part of the network of technology behind fishing, as such satellites make the sea knowable like never before. We marvel at stories of but a few centuries past when seamen and fishers would set sail armed only with a sextant and a paper map, navigating by the moon and stars across the sea. For the most part fishers of this time did not set out across the globe or enter the deep sea but stayed reasonably close to land or hugged the coast. It was dangerous to go far; the weather could get bad quickly and a boat could easily get lost. Not even fish were worth that, and they were unknowable anyway out in the deep. In the nineteenth century the technology of boat and shipbuilding developed to first include metal so that ships were more robust, and then to include steam and then petrol engines so that they could go further and be relied upon huge distances away from port. It was possible to go out further into the sea and as ships got larger to catch larger fish and larger amounts of fish. Finally, it was possible to have refrigeration on board so that fishers did not have to head back to port to return they catch as frequently and equipment such as nets, harpoons and other technologies could itself be powered and much more functional. Fishing expanded across the globe, and expanded across all species, including to the largest, whales. By this point fish had really become abstracted to vibrant matters seemingly disconnected from their bodies, to become lamp oil and baleen material. Such technologies have completely transformed fishing and the capabilities and capacities of fishers and work in tandem with technologies of vision and observation alongside statistical analysis and inference to build the industry we know today. All of these elements are themselves vibrant, energetic matters, all deeply embedded in the wider story of this book and key to this chapter.

[1]Stokstad (2007).

3.2 Numbers as a Lively Matter: Vibrant Statistics

The reader will have encountered the notion of things and materials being vibrant and lively in the introduction, and in the previous chapter we have explored an outline of both the general history of fishing across the globe and more locally to this book in parts of the Pacific and East Asia, settling finally on Japanese and Korean fishing histories. While these narratives and the stories, people and fish they contain are all in themselves lively and interesting, the book has not delved down into the depths of implication to really consider the material and non-material objects which are themselves important to the interaction between the human and watery realms. Humans after all, while they can be brief visitors to the sea are not of this domain and so require physical and conceptual protection in order to properly engage with its depths. This protection is both structural, in that humans require technologies and materials around them and to support them on or in the sea, and more perceptual, human sense and knowledge gathering potential is extremely limited below the surface. Technologies, knowledge production practices and the outcome of such practices are therefore absolutely vital to develop a real engagement with the seas. That essentially is why this section has both the words lively and vibrant in the sub-heading. Technological aspects and knowledge production revolve, primarily when it comes to fishing and the business and enterprise of the oceans, around numbers. How much will I get for this fish, how big is it, how much does it weigh, how many can catch, how many should I leave so that I can catch more tomorrow, which latitude and longitude can I catch them best at, and in recent years what are the GPS coordinates I have to navigate to in order to most efficiently extract my quarry from the water.

Fishing is, of course, not all about numbers, it is also about beauty, strength, energy and endurance. Historically fishing and engagement with the sea was a life or death battle for the underprepared human against the enormity of the water. Navigating by the stars or the moon, early fishers would make precarious journeys across the ocean in frankly very fragile boats using the energy of their own bodies. This is not to say that humans did not travel a long way in these early times, St. Patrick, St. Cuthbert and early Celtic missionaries made enormous journeys in small coracles across the North Sea and the North Atlantic. Polynesians somehow crossed huge spans of the Pacific in canoes and outriggers and the Norsemen island hopped from Europe to North America in their oar-powered Longships. For the most part however, early human engagements with the sea were focused on in shore waters and shallow seas and enclosed seas such as the Black Sea, the Caspian Sea, the Mediterranean and Japan's Inland Sea. It would be developments in technology accompanied by mathematics and navigation science that would enable humanity to span the world's oceans and to connect to the deep sea. While North Korea, of course, is not conventionally understood as part of the global academic scientific conversation, Pyongyang has absorbed many of the tropes of international fishing science over the years. While North Korean fishing policy may have a necessary

socialist or Juche spin on it, as the reader will see, much of its statistical and scientific presumptions are shared across the planet.

While the physical–technological aspect of this story surely begins earlier, when it comes to the statistical elements of fisheries development, this book, following the great work of Tim Smith begins in summer 1883 in London.[2] Between the May and October 1883, in South Kensington London in the grounds of the Royal Horticultural Society was held the International Fisheries Exhibition (IFE). The IFE is perhaps one of the lesser known of the Victorian scientific spectaculars designed to showcase Britain's Imperial efforts across the globe. While it is less well known that the Great Exhibition of 1862, it was no less spectacular. The exhibition hosted the largest aquarium seen in the world up to this point, containing some 65000 gallons of freshwater, three saltwater tanks and nine freshwater, four hundred fishermen in attendance an aviary of fish-eating birds, a pond for otters and seals and a resident community of Canadian beavers.[3] 2.6 million people visited the exhibition which was also opened by the Prince of Wales and had Queen Victoria as its patron.[4] As fishing capabilities and technologies had developed across the globe, aided, abetted and very much driven by the nexus of various colonial projects and the rise and development of investment capital and the marketisation and commodification of natural products and resources, records began to be better kept of the materials and living things pulled from the sea. At the same time as this record keeping developed, the growth in fleets and capabilities had begun to put the first waves of pressure on fish populations and ecosystems. Now that the market and empires were global, as well as communication technology such as the telegraph, institutions and governments for the first time had something of a global sense of both fishing resources and the vagaries of catch and capacity. While historically fishing capacity and numbers had been thought stable and infinite, because there always appeared (as the saying goes), to be 'plenty more fish in the sea', unexpected fluctuations began to be seen across the globe in a variety of species and in a variety of fishing contexts.

But how to explain them? There was much scientific interest in fishing and in the intersections between technology and organisational efficiency. 1883's International Fisheries Exhibition is itself one of a series of exhibitions on fisheries science, and therefore naturally included a series of scientific lectures from various luminaries in the field and more widely from other developing scientific disciplines. Smith records an extraordinary appearance by Thomas Henry Huxley, known as 'Darwin's Bulldog' for his enthusiasm for the theories of natural selection. Huxley believed that global fisheries were essentially without limits: 'the Cod fishery, the Herring fishery, the Pilchard fishery, the Mackerel fishery, and probably all the

[2]Smith (1994, p. 53).

[3]"The International Fisheries Exhibition. Second Paper." *Science* 1, no. 20 (1883): 564-65. http://www.jstor.org/stable/1759709.

[4]Ibid.

great sea-fisheries are inexhaustible…'.[5] Nothing that human science, technology or endeavour could possibly do to the fish of the sea would impact on them, reduce their number or cause disadvantage to those seeking to extract them from the waters. To Huxley, it appeared that humans could never dominate global fish populations or outweigh the impacts of natural predation on a planet-wide scale. Smith, describes Huxley's opinion as being that the global mass of fish and sea species was like a 'perpetual motion machine', always replenishing itself, never declining in speed, size or mass.[6] Huxley shared a sense of a world without limits, even in spite of the extraordinary power of scientifically and technologically minded, rational humanity, with much of Victorian science. It was against natural law and the natural order of things for there to be an end or an edge to nature's bounty, what liberated man was doing through the efforts and enterprises of his mind and body could simply not be negative or counter to his own interests.[7] Smith points out that even Huxley however was not without nuance and he did suggest that the inexhaustibility of global fish populations was not spread evenly across the planet and that it might be possible for particular fisheries in particular geographic places to be impacted, he also suggested that not enough was known at the time scientifically to expand his assumptions beyond the realm of pelagic fishing, trawling for instance was a new realm.[8]

In the same series of lectures however was one at its end by Sir Ray Lankester, third Director of the British Museum, scourge of anti-rationalists and spiritualists and theoriser of degeneration within the wider field of Evolutionary Biology. Lankester was concerned about simplistic understandings of the bounty of the oceans. He had no time for understandings of fish populations that equated them to natural products on land, such as wheat or barley. Fish were simply more complex species and therefore human and technological impacts on them would also be more complex: 'the thousands of apparently superfluous young produced by fishes are not really superfluous, but have a perfectly definite place in the complex interactions of the living beings within their area…' (Lankester quoted in Smith 1994, p. 54).[9] Instead, however, Lankester had developed a theory that fish populations struggled for equilibrium with predators and predation in a highly complex web of relation, and one that was not yet understood. Simply removing huge numbers of fish from the sea, especially young (apparently superfluous), fish would have a huge negative impact on this equilibrium and potentially cause collapse and reduction in populations. Measures would have to be taken, grounded on scientific understanding and rational experimentation and measurement in order to undertake the sorts of fishing and resource extraction that were underway.[10]

[5]Smith (1994, p. 53).
[6]Ibid, p. 54.
[7]Ibid, p. 53.
[8]Ibid, p. 54.
[9]Ibid.
[10]Ibid, p. 55.

These measures would involve a network of fisheries research and science stations that had begun to emerge in tandem with both the development of fishing capabilities and technologies and the development of nation state institutions dedicated to scientific inquiry. For the most part, these would revolve around American and European efforts including Russia. While Japan would become one of the three great Pacific fishing nations, its fishery science institutions would not emerge until later in the nineteenth century and after the defeat of the Russian Empire in 1905. Efforts in the United States had been hamstrung for many years by the failure of the constitution and founders of the nation to articulate a vision for science or research in their new nation which did not concern security or military capacity. The death of the eclectic British scientist James Smithson had in complicated circumstances left a legacy focused on the promotion of scientific knowledge which became the Smithsonian Institution. After much toing and froing about its budget, the Smithsonian found its first Curator as Spencer Baird in 1850.[11] Baird was tasked with the protection and development of the institution's collection in the face of much disinterest, and the complications of the American Civil War. Baird like Smithson himself was an eclectic scientist of multiple interests from herpetology, to ornithology, however he was also a committed ichthyologist. His love for the sea led Baird to holiday at Woods Hole, Massachusetts and he developed a real focus on maritime research, becoming more and more concerned about the impact of increasing levels of fishing on fish populations. In 1871, Baird was appointed the Director of the United States Fish Commission, tasked with maintaining stocks both in river systems and the seas surrounding America.[12]

Along with Woods Hole, the Fisheries Board for Scotland, the Scottish Association of Marine Science, a variety of French research institutes, the Norwegian fisheries researchers and the Prussian fisheries ministry began to build the institutional and scientific base from which much of the earliest systematic science was undertaken. These institutions were not only places of intellectual enquiry and theory but were very much practical organisations tasked with the development of methodologies through which fieldwork could be managed and expeditions organised. It was immediately obvious to all involved that very little was really known about the sea, that even less was known about the numbers of fish and virtually nothing known about the lifestyle of fish and the journeys taken by them and the geographic spread of particular populations. It was not even clear initially that there were even particular populations of fish and many, like Huxley sawfish as a gigantic, unquantifiable mass.[13] These new research institutions and organisations needed to be able to begin the process of determining how many fish there were not just in all seas but in particular parts of seas. They would need to develop ways of knowing what the size range of those fish were, their ages and any differences on a yearly or seasonal basis. But to do so, they would need to develop

[11]Rivinius and Youssef (1992).

[12]Smith (1994, p. 47).

[13]Ibid, p. 38.

processes for catching a useful proportion of those fish so as to meet the needs of the developing field of statistics. When it came to assessing the journeys or spread of fish even more practical concerns would have to be met. How, for example, does one mark a fish in such a way that it can be caught in one place, returned and then caught again in a different place, and that the fish is not hurt or disadvantaged in such a way that its behaviour or life cycle becomes artificially impacted and therefore the science is made void?

These methodologies became necessary across the globe as the nineteenth century progressed due to the developing fluctuations in fish species in a variety of different places. These included Cod around the Lofoten islands in Norway, whose numbers collapsed by some 50% towards the end of the century, Sardines off the coast of Brittany whose populations became highly erratic in the 1860s before disappearing entirely at the turn of the twentieth century, Herrings in the North Sea, the silver darlings completely vanishing from the fisheries of Cornwall and Sockeye Salmon in British Columbia.[14] Previous assumptions appeared challenged by such economically impactful variations, and scientists and research institutions seeking to catch up with the new realities of their present.

While ingenious technologies had developed to better extract fish and other living creatures from the sea, including by the turn of the twentieth century explosive harpoons to capture whales, similarly interesting technologies would develop to ascertain the realities behind these numbers.[15] These included extensive experimentation on the tagging of fish, and the place on the fish's body these tags would be placed, in order as previously suggested to track their movements.[16] It would be quite possible to spend an entire book talking about these technologies, which is not what this author intends of course. In tandem with these developing material, technologies was a set of numerical and statistical practices to make better sense of what was actually been recovered by these technologies. The research institutions and scientists I have already mentioned in this chapter become key proponents and developers of this particular aspect of research. Just as it was the development of technology which initially impacted on fish populations and distributions, so it would be statistical methodologies which both sought to correct or mitigate for these impacts, and in fact later drive these impacts to their contemporary terrible conclusions and realities—the sort of realities which now face North Korea, and which, along with all other nations involved in fishing across the globe, it is partly responsible for.

John Cleghorn's assertion from 1854 of 'overfishing' which had served as the precursor to Lankester's later worries and one of the first moments of concern from scientific or intellectual communities, focused on the reduction of quality and quantity of catches of Herring.[17] But given now the available technology and institutional capacity to ask questions of available fish in the sea, what numeric or

[14]Southward et al. (1988) and Smith (1994).

[15]Smith (1994, p. 77).

[16]Ibid.

[17]Ibid, p. 71.

statistical data might be sought? One of the key early concerns of fishermen had been numbers related to the size of fish they were catching. Smith terms this the 'small plaice problem.'[18] The fishermen of the east of England appeared concerned about the fact that they were, as technology developed catching quite a lot of small fish, and that being small such fish they must have been immature fish. Therefore, the fishermen were catching either fish that were too young to be of useful or saleable value, or the replacement for the generations of larger fish they had already been catching. But it was unclear how big fish should be, or how big they would have to be in order to not be classed as immature. To figure this out scientists would have to get a sense of the range of sizes of fish, a sense of the total population and some sense of the natural ages of fish and when they might stop being considered immature. Eventually through both analysis of both scales and gonads, scientists arrived at ways of assessing the age of fish and then by the 1890s Sidney Holt managed to collect extensive statistics from catches at Grimsby and Cleethorpes which allowed him theorise both 'trade limits' and 'biological limits' for a number of fish species in the North Sea.[19]

With a sense of size, maritime scientists began to move on to consider the numbers at large in areas of sea, and the movements of fish populations in those seas, in tandem with knowledge of the age of the fish. Danish work from Petersen in the 1880s and 1890s and Norwegian work from Hjört in the last decade of the nineteenth century on Icelandic Cod populations show great variations in population across years, and extensive movement across the North Sea and Scandinavia's Kattegat.[20] This developing numerical sense and data availability dovetailed with the developments in statistical theory that was moving on from simple averages into Gaussian distribution to calculations based on least squares. Frederick Heinke, later Director of the Royal Prussian Biological Station at Helgoland would use least square analysis to, intriguingly given his own ethnicity, develop a 'racial theory' of fishes.[21] This added further complexity to the statistical analysis and the geographic distribution with its idea that these races of fish, even though mixed in the sea, would separate at spawning time to reside with their own kin, in a geographic location important and very much locally specific to them. Walter Garstang at the turn of the twentieth century working in Scotland's Firth of Forth would complicate things statistically still further by developing theories following extensive experimental collections at sea by the Garland and other boats, of efficiency of catch based on an extrapolation of the size of a fish population and the capability of the boats in an area to catch those fish.[22] In particular, this caused extreme problems politically for one of the most rapidly developing technologies in the fishing industry, trawling. It appeared, given all of the developing knowledge around fish

[18]Ibid, p. 72.
[19]Ibid, p. 75.
[20]Ibid, p. 76.
[21]Ibid, p. 82.
[22]Ibid, p. 98.

population size, their ages and sizes, their movements over time and spawning habits, trawling was fatally efficient to communities of fish. It was absolutely possible for fishing communities focused on trawling to produce an instability not only of catch but of populations of fish themselves.[23]

Trawling in the North Sea and Northeast Atlantic was not new, but boat technology and capabilities had rapidly developed and increased still further with the invention of better and better engines. The historical research focused on this area gives a real sense of the vulnerability in both real and statistical terms of the populations of fish in these areas to these new technologies and practices. However, efficiency became very much a keyword for industrial fishing across the globe and any concerns from its earliest experimenters were forgotten in the rush to develop a planet-wide industry.[24] Extraordinarily just at the moment when populations and communities of fish became knowable through sampling and testing techniques rather an unknowable indistinct mass, statistical development would render the residents of the sea abstract and diffuse once more. Statistical research designed to solve the issues of efficiency of boats inexplicably conceptualised fish populations in such a way that what was caught became termed the surplus population, simply by virtue of having been caught. This statistical analysis held that any population that was not caught, even though it was categorised as the core population, would become itself surplus once caught.[25] In a bizarre and counterintuitive echo of the 'small plaice problem,' statistical scientists held that in fact by removing big fish, who were known to be old, from the sea and therefore from the population, fishers could only ever help the smaller fish. After all the removal of larger fish necessarily meant more resources and space for smaller fish.[26] A strange notion of sustainability began to be articulated in the literature which crystallised around a statistical methodology known as Maximum Sustainable Yield.[27] This was the point at which it was safe, given the knowledge of potential for overfishing, for fishers to remove fish from the sea. The calculation of these statistics, however, was highly problematic, and at the end disastrous to the global populations of the oceans…yet it is first and foremost what modern, scientific and rational fishing is based on.[28]

Maximum Sustainable Yield and more complex statistical analysis were developed throughout the first half of the twentieth century. Questions which such work sought to answer included the perennial concerns over potential overfishing, where, when and how appropriate levels of fish might be caught, if indeed there were such things as appropriate levels or inappropriate levels, what sought of fish to catch, which sorts of fish to avoid and since it was apparent that it was possible to tell the ages of fish, what age was it acceptable, for the remaining population to take

[23]Ibid.
[24]Ibid, p. 100.
[25]Ibid, p. 109.
[26]Ibid.
[27]Finley (2011).
[28]Smith (1994, p. 329).

fish at. All of these questions had been spurred by what appeared in the nineteenth century to be anomalies such as the 'small place problem' and unexplainable and unexplained fluctuations in catches and the occasional disappearance of once resilient and necessary populations. Given the development of technology and the agglomerations of capital and enterprise around that technology, the longer these issues remained unexplained the more expensive it was for those seeking an answer to them. Naturally, the technical solutions outlined a little in the previous section were complicated, though they were being overcome, the debates around them were long and passionate, though they to were being overcome. A sense of the impact of fishing and fishing development in various maritime geographies across the North Atlantic, the North Sea and the Baltic Sea was developing, as well as a greater handle on the nature of the fish populations of those waters. However, what was lacking was a way of viewing all of the impact and all of the data about the impact as a cohesive whole. As is common with much technological and scientific transformation, the opportunity unexpectedly was presented by the outcome of the most destructive and appalling war yet seen by Europe.

When what became known to Western Europeans as the First World War broke out on the 28 July 1914 the seas around Europe which had been an international hubbub of nations and their fishing enterprises quickly became the preserve of the various state's militaries. While a great deal of agricultural land was lost to the war and much more food required by states committed to the fight than normal, German policies towards the United Kingdom and the rapid development of submarine and other naval technologies meant that it was virtually impossible for European fishing fleets to put to sea from 1914.[29] Thus, one of the most heavily exploited fishing areas on the planet was virtually left alone for some 5 years, the fish and sea life bothered only by the occasional submarine, depth charge and sinking cruiser or destroyer. In hindsight, it is a truly extraordinary moment in recent fishing history, Smith and others even describing it as 'the Great Fishing Experiment.'[30] While no scientist could possibly have planned the exercise in this way (at least hopefully not), the virtually complete cessation of fishing in northern European waters competes with the outcome of the Pacific War and its resulting status quo for impact.[31]

Scientists and fishers were aghast in 1919 when fishing fleets again left port following the conflagration to find that fish populations which had been under severe pressure before 1914 had seemingly regenerated. It was not just the number of fish caught by the first boats at sea that astonished, but the size of the fish caught and the geographic spread of species. The fish were much larger than prior to the war, and populations which had retreated or found small niches to survive trawling, had spread out again across the seas.[32] There was a size and population boom, which meant these fish, born between 1914 and 1919 were larger afterwards and

[29]Ibid, p. 158.
[30]Ibid.
[31]Ibid.
[32]Ibid.

population diagrams included a bulge around them for many years to come.[33] Unlike any planned analysis, the unlikely experiment of the war drove home to many scientists and statisticians the power of fishing impact upon populations, and the propensity of fish themselves to recover given the chance. It would have of course been the time to set up a continent-sized network of fishing and sea reserves, but governments and fishing industries in 1919 were not in a listening mood and after many years of deprivation and poverty were keen to get out to sea and to haul in as much as possible.[34] Therefore, no matter how many scientists called for such measures and for further investigation into the impact of the European ocean's fallow period, they were not going to be given the chance. Statisticians though were intrigued by the potential for analysis of the data provided from the year or two after the war and bridging the gaps between the pre-war years.[35] How might it be possible to explain the seemingly rapid shifts in population and species spread in this great fishing experiment, what might they tell in statistical terms about those populations and their numerical relations with fishermen and their boats?

By this time, statisticians and fishing scientists had also moved on from simply the near or in shore waters of the North Sea, but instead were studying the populations of Icelandic Cod in the Northeast Atlantic and more particularly the impact of industrial fishing on whale populations.[36] When it came to whales, this research was first in the areas controlled by Norway. Later however as whaling expanded to become a virtually global industry with boats exploiting populations as far apart as the Barents Sea and the waters south of the Falkland Islands and South Georgia, these studies adopted a global outlook.[37] Whales it seemed had relatively small populations, complicated social patterns, very long lives and a tendency for their populations to be extremely heavily influenced by new fishing endeavours. They were almost model species in terms of responsiveness for scientific study. Johan Hjört, the Norwegian who had long been integral to the developing science of fisheries research, and who had published a landmark paper in 1914, just before the outbreak of hostilities, on the statistics behind the fluctuation in fish populations had found himself back at university (Cambridge), following his resignation from the role of Norwegian Director of Fisheries following a dispute over fishing cooperation with Germany during the war.[38] His previous work on population fluctuations in mind, Hjört became exposed to new work from Julian Huxley, Charles Elton and Raymond Pearl (an American statistician based at Johns Hopkins University in Washington DC), in the field of population dynamics.[39] Hjört considered this new work, with data focused on the population of bears and other

[33]Ibid.
[34]Ibid, p. 162.
[35]Ibid, p. 30.
[36]Ibid, p. 31.
[37]Ibid, p. 37.
[38]Smith (1994, p. 215).
[39]Ibid, p. 216.

animals hunted by the Hudson Bay Company and analysed by Bjørn Helland.[40] Ultimately whales were extremely vulnerable to new endeavours. Examining past data from Norway and Iceland, it was clear that once a population had started being hunted catches would only ever decline to the point at which either the local whale group was extinct or was spread so sporadically it was uneconomic for a conventional whaling enterprise to continue.[41] Research in the Pacific into the lifespan and population dynamics of Halibut, Herring in the North Sea and Cod in the Atlantic had gained a more detailed sense of the stratification of age groups and sizes within populations of fish.[42] This research had also suggested that quite often for fishermen to get a better catch it would be better to let all the fish in the area simply live for another year; this way the increased size of this group of fish persisted for many years to come and was more profitable for fishermen.[43] Whales it seems grew very slowly and reproduced according to completely different metrics than fish. With the conventionally increased pressure of a whaling enterprise, local populations simply could not reproduce themselves and mitigate for the loss of population year to year and so would inevitably collapse.[44] Hjört thought however, building on Helland and other's work, that it might be possible to know the rates of population replenishment, size against age and the dispersal of populations locally and arrive at what he termed an 'optimum catch'.[45] This was a statistically knowable number of whales that might be caught by whalers and which would not result in the depletion of the population but work in tandem with whale's natural death rates to come to an equilibrium of sorts. Hjört also did suggest that it would be difficult for empirical evidence to gained through testing for whaling and fishing grounds to prove his theory, but predictive work could be done that would help fishing grounds and local enterprises aim for a viable number.[46]

Michael Graham, Director of the United Kingdoms' Ministry for Agriculture, Fisheries and Food Fisheries Laboratory at Lowestoft between 1945 and 1958, was deeply involved in the work which Hjört had built on collecting the data on fishing and fishing capacity in the North Sea following the cessation in activity during the 1914–1918 war. He was deeply disappointed in the response of governments to the science which suggested the need for a reduction in catch and intensity in the European waters. He would later conclude that essentially the fish populations of the North Sea had been destroyed by efforts since 1918 and that as a body of water it was completely overfished.[47] He articulated this most famously in what has become known as his 'great law of fishing', published in its most succinct form as 'The Fish Gate' in 1943. 'The inherent weakness of all mechanized fishing is that

[40]Ibid.
[41]Ibid, p. 217.
[42]Ibid, p. 219.
[43]Ibid, p. 221.
[44]Ibid, p. 220.
[45]Ibid.
[46]Ibid.
[47]Ibid, p. 230.

one day's trawling…continually becomes less profitable. The trouble starts right at the beginning of the fishery: the stock becomes reduced at once by what the fisherman takes; and the catch per net…starts to fall' (Graham, quoted in Smith 1994, p. 230).[48] Applying an adaptation of Hjört's work on optimum catch which was expressed using statistics mainly focused on the amount of fish taken out of the sea against a particular local population, Graham considered other key aspects.[49] In particular, these focused on the number and size of boats, the amount of fishing technology deployed and the size of nets, as well as the length of time and the number of days boats were out at sea. These were constructed statistically into measures of fishing intensity. It appeared that when one applied catch, impact and intensity onto the statistics, the very fact of beginning fishing creating a drop in catch.[50] This drop in catch was then responded to by greater levels of intensity and effort by fishermen, which itself facilitated ultimately greater drops in fish populations.[51] While fishermen and fishing enterprises could mitigate for drops in catch and their profitability by increasing effort, intensity and time out at sea, they could not do so indefinitely. It appeared also that fishermen mitigated against declining catches by moving to a different area of the sea, then deploying exactly the same intensity of effort.[52] Thus, it might appear that overall catch and profitability was maintained, without increased or impossible levels of effort, but in reality fishing enterprises would run out of sea and run out of fish. This was particularly true of whales and whaling, as it had been with seals and the Stellers' Sea Cow in the northern Pacific. Ultimately, fishing without limits and recognition of a restricted optimum would result in the complete collapse of a fishery and ultimately unemployment and bankruptcy for the humans involved.

Hjört and Graham's statistically grounded warnings have always sounded extremely salient and powerful to this author. However, they were ignored as the late 1920s and 1930s wore on, and it was only with the obvious collapse of fish resources in the North Sea that their analysis was considered seriously by governments, and then only moments before the outbreak of the second European war.[53] Graham was tasked with leading the main scientific research organisation focused on the sea, the International Council for the Exploration of the Sea (ICES), through the 1939–1945 war, with hope presumably that his ground-breaking work would be picked up after the conflagration. The notion of 'optimum catch' however was, following the war put to use in ways that Graham could perhaps not have envisaged.[54] So far I have told a very European side of this story, focused mainly on the North Sea and the Northeast Atlantic. Given that this book is primarily

[48]Ibid.
[49]Ibid.
[50]Ibid.
[51]Ibid.
[52]Ibid.
[53]Ibid, p. 235.
[54]Finley (2011).

concerned with the vibrant fishing matters of a nation in East Asia, addressing elements of the narrative on the Pacific would surely make sense. The pressure of scientific and statistical developments and their uncomfortable nexus with politics, business and free enterprise would come to bear on Graham and his colleagues after 1945, and these would have their root in the Pacific and connect to Asia.

Aside from whaling fishing in the Pacific, or at least deep-sea fishing, had been focused with the primary nations involved at the advent of industrial fishing, namely, Canada, the United States and Japan, on salmonids and species of tuna. These large fish were radically different in lifestyle, tuna being primarily a fish of the deep and warm seas, salmon what is known as anadromous in nature, migrating from their birthplaces up continental rivers to the deep sea and then back again as adults to the same spawning grounds from which they were born. Both tuna and salmon have complicated lives, long journeys to make and relatively low levels of population growth. In the early twentieth century, it was found in an extraordinary moment in British Columbia how impactful human development could be on seemingly unconnected salmon populations. Just as the United States had sought to do in settling its western reaches, Canada aimed to build railway lines that would span its continent. Crossing the rocky mountains in British Columbia to reach Canada's foremost Pacific port, Vancouver was essential and both the Canadian National Railway and Canadian Pacific Railway sought to use the valley created by the Fraser River to cut through the deep mountains and by 1911 both railways had reached the narrowest part of the river's canyon, building a double track all the way through.[55] Blasting the rock out to allow a functional embankment and then ballasting the tracks meant that there was a huge amount of stone and spoil in a tight space and much of that went directly into the river. Neither the railway nor the engineers tasked with building the railway considered that the waterway below their enterprise was perhaps the most important routes to spawn for Pacific Sockeye Salmon, and between 1911 and 1914 the river became almost entirely blocked, a rock slide in particular in 1914 completely altering the form and flow of the water.[56] Local residents and even company workers noticed quickly that the salmon found it virtually impossible to make their way through the raging waters and tight spaces. A huge collapse in the spawning and breeding numbers of Sockeye Salmon that year and in the years around it, meant that across the Pacific Sockeye numbers were dramatically down for some 17 years after that.[57] The normal pattern of large and small years for spawning amongst the salmon was disrupted and in many ways the population never recovered; this is despite an effort by the railway companies in 1915 to clear the blockage and the invention of 'fishways' and 'fishgates' to allow safe passage for migrating salmon in future years.[58]

[55]Ibid, p. 30.
[56]Ibid, p. 31.
[57]Ibid, p. 32.
[58]Ibid, p. 31.

After the Hells Gate disaster (as it was known), it became very clear that the fish sought by fishermen in the Pacific and in the waters and rivers of the continental United States and Canada could be heavily impacted by human actions. This created a sense of possessive paternalism amongst the nations whose fishermen sought these fish, even while in the case of tuna they would develop new technologies which would allow them to harvest them much more thoroughly from the sea. The United States, Canada, Japan and Russia came to see the salmon in the Pacific as their fish, a feeling much amplified around Bristol Bay in Alaska, a bay which was a favourite ground of Sockeye Salmon and once under the control of Russia.[59] Since it had become clear from incidents like Hells Gate, that particular groups of migratory fish in the Pacific relied on physical terrains in specific countries to maintain their populations, those nations sought to essentially claim those populations of fish.[60] Just as in the North Sea is was difficult to solve the 'small plaice problem' and get a sense of the geographic spreads of fish populations and any human impacts upon them, it was a real problem essentially for Japan, Canada and the United States to get a sense of whose fish were both whose and where they were.[61] It was easy in a sense to know a Canadian salmon when it was fighting its way back up the Fraser River, much harder when perhaps fish who would one day aim for that same river, might be found out towards the Aleutian Islands or even further across the ocean. Might it possible to know where these different populations were when not heading home, did they mix with other national populations, would it even be possible to restrict other nations from accidentally or purposefully catching one's fish, even when they were a long way from 'home'. The United States and Canada in fact sought to set out to do just that with the foundation in 1937 of the International Pacific Salmon Fisheries Commission, later the Pacific Salmon Commission and after the war they would be joined by Japan and Russia in these efforts as part of the North Pacific Anadromous Fish Commission.[62] These nations set out on a huge research exercise to map the spread and travel of salmon from either side of the Pacific, and eventually through not just statistics, but developments in the knowledge of fish biology and their parasites it became possible to determine that particular groups of salmon were indeed Canadian, Japanese, Russian or American (particular rivers had specific types of parasites and mineral markers in the fishes digestive systems).[63] This embedded a certain form of national politics into perhaps ephemeral or diffuse matters, namely, the journeys of fish, matters which became a great deal less diffuse following Japan's entry into conflict with the United States in 1941.

[59]Finley (2011, p. 27).
[60]Ibid, p. 39.
[61]Ibid.
[62]North Pacific Anadromous Fisheries Commission (2018).
[63]Sindermann (1983).

These Pacific facing nations now had, following the extensive research, a real geographical sense about where the ocean's communities of large and migrating fish were. As I suggested earlier, this did not exempt those fish from many of the same imperatives of extraction that beset fish from European waters. Even though it was now quite possible to know where fish originated, resided and moved as well as a good sense of the numbers of their populations, politics and geopolitics impacted the fish and other marine life of the Pacific again hugely. Political trends which had emerged early in the twentieth century in which nations surrounding the ocean exerted their sovereignty over the less tangible and concrete spaces of the water, influenced by colonial imperatives and concepts of statehood post-Westphalian settlement, would carve out dominions in the more unlikely and previously inaccessible places. It could be possible to read these trends back to 1838–1842 and the United States Exploration Expedition encouraged by President Jackson or the pressuring, harassment and eventual overthrow of the Kingdom of Hawaii in 1898 by the United States.[64] Americans were, of course, not the only nation involved in the Pacific, the United Kingdom had long enabled the colonisation and settlement of Australia and New Zealand, France and Germany were also deeply engaged in the Pacific islands. Imperial Germany, of course, fell foul of world politics following the 1914–1918 war and its extensive territories known as German New Guinea were divided among the victors by the new League of Nations.[65] While some of these divisions are familiar, such as Australia's trusteeship over Papua New Guinea, Japan's place in these divisions is perhaps less well known or remembered. Japan, of course, had become a nation with imperial ambitions following its conflict with Imperial Russia in 1904–1905 and its annexation of Korea between 1907 and 1910.[66] Prior to this, Japan had extended its interests beyond the home islands of the archipelago co-opting the Ryukyu Kingdom and Okinawa and then aiming its acquisitive gaze to the south incorporating the Bonin and Volcano Islands, part of the same chain which includes the Marianas Islands. Fishing, of course, had always been important to Japan, and the reader will have a sense of that maritime history from elsewhere in this book, and the fantastic work of Jakobina Arch, however it had primarily been around the home islands and focused on fish and whales passing by Japan.[67] The Bonin islands had presented Japan with an opportunity to engage in deep-sea fishing and trawling for the first time, and its acquisition of what are now the Marshall Islands, Palau and Micronesia presented Tokyo with enormous further opportunities. Aside from the efforts of the South Seas Development Company (Nan'yō Kōhatsu K.K. (南洋興発株式会社), often referred to as the Mantetsu of the south (referencing the South Manchurian Railway (南滿洲鐵道) responsible for colonisation efforts far to the north), to extract phosphate from the islands, plant and manage sugar cane plantations, Japanese fishing enterprises built an extensive

[64]Devine (1977).

[65]Burkman (2008).

[66]Shin and Robinson (2001).

[67]Arch (2018).

fishing infrastructure on islands such as Saipan.[68] Harbours were reconfigured and extended and a number of fish processing plants built. Japan would keep its southern mandate until the end of the 1941–1945 Pacific war.

The sudden attack on Pearl Harbour on 7 December 1941 not only brought the United States directly into conflict with the Japanese Empire, but also brought the extent of Tokyo's territory across the Pacific very much to the forefront of the American institutional mind. While the Guano Islands Act of 1856, the 1899 Tripartite Convention (which gave half of Samoa to the United States) and later efforts to lay telegraph and telephone cables across the Pacific and the needs of international airlines to have places for their flying boats and other aircraft to stop on flights across the ocean had meant that the United States had extended its interests and sovereignty in the ocean, the war fixed in its government mind that it was not simply its northern Pacific boundary between Alaska and Russia which might be problematic.[69] It would be necessary to prevent the disaster of 1941 and any other threat across the Pacific to the United States ever happening again. Japanese territories such as those of the South Sea Mandate, but also others including Midway, Guam, Henderson and Wake would be brought firmly under the sovereignty of the United States. The South Pacific Mandate was removed from Japan, becoming a United Nations Trust Territory with the United States as the mandate holder, which existed until 1994 (when Palau finally gained its independence).[70] Many of the islands integral to Japanese sovereignty such as the Bonin Islands, Okinawa and Iwo Jima were not returned to Japan on the final settlement with the Treaty of San Francisco in 1952, but held by the United States as militarily useful for a number of decades afterwards (Okinawa was not returned to Japanese control until 1972 and still hosts, very uncomfortably, extensive American military infrastructures).[71]

President Harry Truman (President between 1945 and 1953), responsible for the unwinding of the American war effort, and setting the course for the future of United States interests in the Pacific, is renowned for the difficult decisions made across the former field of conflict. Korean's were astonished in 1945 when the United States Army Military Government in Korea, for example, decided to utilise much of the Japanese imperial government personnel and infrastructure on the peninsula, rather than build up local Korean capabilities, essentially because the United States was concerned about the influence of communist agitators, and felt the Japanese had been effective administrators.[72] Similarly while policy towards the Japanese government and its priorities after 1945 had initially been very harsh in tone, within 2 years American policy became more malleable and supportive of Tokyo, perhaps again influenced by the fear of communist success in Asia and

[68]Brookfield (1971).
[69]Iriye (1984).
[70]Firth (1989).
[71]McCormack and Norimatsu (2018).
[72]Seth (2016, p. 93).

requiring a functional and useful ally in the area to serve as a bulwark and a base for American force projection against both communist China and the Soviet Union in the future.[73] Truman it seems was profoundly concerned with extending the maritime sovereignty of the United States across the Pacific, not simply to support its military and diplomatic capacities, but also to create opportunities for American business and enterprise.[74] Quite contrary to this, Truman and the Supreme Commander of Allied Powers (SCAP) (which occupied and governed Japan until 1952), were also concerned that Japan should not be too expensive and costly to occupy and that it should be capable of servicing its own food supply and other material needs.[75] Thus, while American restrictions on Japanese fishing boats were quite severe in the initial months following surrender, by the end of 1945 SCAP gave Japanese boats opportunities to fish further offshore.[76] Within 18 months, SCAP was infuriating former war allies in Australia and New Zealand by allowing the Japanese whaling fleet to travel to access its former whaling grounds in Antarctic.[77] Carmel Finley describes the extraordinary policy shifts relating to tuna fishing and control in the Pacific, which had long been hugely important to the Californian fishing industry.[78] Former Japanese colonies such as those next to American Samoa and Guam became vitally important to the supply chain for maritime products in the Pacific, but rather than exclusively as sites of enterprise for American companies were declared duty free areas and this included Japanese companies.[79] Thus, Japanese-owned tuna fishers were allowed to land catches in American Samoa and ship their product to the American mainland free of tax or import charges. This put mainland American tuna canneries and other businesses at a distinct disadvantage and this aspect of the United States fishing industry followed its predecessor the sardine canning industry into decline and eventual extinction.[80] However, the policy served greater American aims by reducing the cost of fish products in the American food industry, securing notions of maritime sovereignty and control over the Pacific for the United States, underpinning the economic functionality and future of American colonial territories such as Samoa, and finally, integrating Japanese business and enterprise wider Japanese diplomatic interests into the post 1945 status quo.

These extraordinary themes of new colonial ambitions, America maritime dominance beyond America's western shores, and the integration of new modes and practices of capitalism and free enterprise following 1945 produced a malleable and flexible developmental landscape which as well as being underpinned and

[73]Cha (2000).
[74]Cowhey (1993).
[75]Johnson (2000).
[76]Supreme Commander for the Allied Powers (1946, p. 88).
[77]Supreme Commander for the Allied Powers (1946, p. 68).
[78]Finley (2017).
[79]Ibid, p. 69.
[80]Ibid, p. 74.

funded by this new geopolitical reality found itself energised and enabled by developing scientific and statistical models derived in part from the work of Hjört and Graham on the other side of the world.[81] Graham's 'optimum catch' had developed following what Hjört and others referred to as the 'second great fishing experiment,' namely the European war of 1939–1945. While Hjört would not live long after the end of the war, Graham, now a vital figure in the infrastructure of fishing and maritime research, and other scientists such as H.R. Hulme continued working on a statistically minded and empirical approach which might counter the practices of overfishing, damaging to both fishers and fish populations alike.[82] Graham's young protégé's Raymond Beverton and Sidney Holt ensconced at the United Kingdom Ministry of Agriculture, Fisheries and Food, Lowestoft Fisheries Laboratory, developed the theories of population dynamics as they pertained to fish.[83] These theories, first published in the journal Nature as 'Population Studies in Fisheries Biology' in 1947 (later reworked into 1957's book length *On the Dynamics of Exploited Fish Populations*), took into account both fluctuations in population, fishing effort projected onto or at them, and the carrying capacity of the environment itself to articulate what has been described as the 'steady-state yield'. This calculation was a twin of the analysis which produced notions of 'optimal yield.'[84]

President Truman's declarations of 28 September 1945 extending United States claims over the sea bed and rights to fisheries in waters contiguous to it, made a dramatic impact on the geopolitics of the Pacific, however they also provided the opportunity for this geopolitics to become further enmeshed in science and to begin reconfiguring statistical methodologies for political goals. Just as Hjört and Graham drove forward development of the scientific basis behind fisheries research and were heavily involved in the creation and foundation of new institutions and places of empiricism, the United States was home to an academic who would become central to the research and management framework befitting the new needs of the expansionist nation.[85] Wilbert M. Chapman a scientist from Washington State who had extensive experience of working within the state and federal fishing agencies, was tasked after 1945 with building the practical institutions on the ground in the United States new Pacific mandates and new semi-colonies. Briefly Director of Fisheries at his alma-mater (and that of William Thompson who had done much of the research on Sockeye Salmon populations in the Pacific, directing the Pacific Salmon Commission and essentially a foil to the European scientists), the University of Washington in 1948, he was appointed to the State Department in Washington DC as an undersecretary for fisheries policy.[86] Within the State

[81]Finley (2011).
[82]Smith (1994, p. 296).
[83]Ibid, p. 310.
[84]Ibid, p. 312.
[85]Finley (2011, p. 55).
[86]Ibid, p. 87.

Department, Chapman appears as a tireless organiser of the realities of US focus on the ocean, and very much at the behest of the close nexus between state power and business interest, as Carmel Finley recounts 'Chapman and the Pacific Fisheries Congress had tirelessly lobbied to create the undersecretary position at the State Department…The fishing industry's support had placed him within the State Department; now the industry had to get behind his policies' (Finley 2011, p. 88).[87] Chapman is known for his energy directed at two principle elements of United States ocean policy, first the creation for multinational agencies to manage fishery and maritime resources, but which essentially placed scientific principle second behind geopolitical needs.[88] Second, he was famous for the rationale that lay behind the activity which the United States would apply in, on and under the high seas.[89]

On the 16 January 1949, via a State Department Bulletin, Chapman articulated how fishing was to be undertaken in this new geopolitical and business world, including a graphic curve known as the Maximum Sustainable Yield curve in the document.[90] While the curve looked, and still looks classically scientific, there were absolutely no statistics given and no references listed in the bulletin.[91] In fact, the mathematical formulae which underpinned the curve were not made accessible for another 5 years, however the curve was essentially used as scientific fact by the United States from the moment it was released. Contrary to the science and approach that the Europeans had been seeking, Chapman was articulating an extremely utilitarian view of fisheries and the seas in which methodologies derived from industrial management were applied to the sea. Fish and the other living things in the sea are, as crops in a field, products to be harvested. Just as one would not leave wheat grown in a field to fail and rot, so to leave any more fish than were strictly necessary in the sea was to waste them.[92] Chapman even configured this message into one which fit a humanitarian frame: 'So long as the resource is underfished there is room for more fishermen to fish and it would be morally as well as legally unjustifiable for a resource of the high seas to be fenced of and not fished to the full extent that is needed to produce the maximum sustained harvest from the resource' (Chapman, in Finley 2011, p. 96).[93] Chapman's concept included an assumption that fish populations would as Graham, Holt, Beverton and others had ascertained, fluctuate and fall, but that they would at some point recover and return to a useful or functional level.[94] Maximum Sustainable Yield held to the strange tautology that young fish are helped by the capture of old and large fish and the reduction in a population's food requirements, because that leaves more food and

[87]Ibid, p. 88.
[88]Ibid.
[89]Ibid.
[90]Ibid, p. 94.
[91]Ibid.
[92]Ibid.
[93]Ibid, p. 96.
[94]Ibid, p. 95.

resources for the young fish.[95] This is strictly counter to an earlier analysis done of Sockeye populations, which suggested that removing the large and old fish from a population or impacting on their ability to create more generations of young fish, means that there will in future simply be less fish of any size around.[96] One of the fundamental problems of modern fishing has been that fish are simply not allowed or left to get old or large, so notions of what is a large fish or what is an old fish begin to change and fishermen themselves begin to misread and misremember species potential for growth and length.[97]

Maximum Sustainable Yield held that it was the impact of fishing and human effort according to Chapman's model that would stabilise populations; not going to sea or vigorously harvesting them would even result in less efficient, smaller, less useful stocks.[98] While the United States demarcated its own maritime territories, the policy of the State Department with Chapman at the helm was to internationalise everything else, to the extent that local governments could only exert control over coastal waters—international waters were free game for the practices and policies of Maximum Sustainable Yield, no matter where they were in the world.[99] The United States even pushed the idea in the face of considerable pressures from Latin American countries reacting against increased American tuna fishing and whaling in the oceanic commons. By 1955, the United Nations having been so concerned about these ructions across the globe called the International Technical Conference on the Conservation of the Living Resources of the Sea.[100] At this conference Chapman and his scientific colleague Schaefer, who had attempted to better theorise Maximum Sustainable Yield essentially defeated the arguments of the Europeans such as Graham and Holt, by appealing to the industrial and economic interests of their own countries.[101] Disregarding aspects of the theory which might make overfishing worse or reduce catches, the Americans succeeded (supported unexpectedly throughout the conference by the Soviet Union, which was looking out for its own deep-sea interests across the globe), in maintaining the deep sea as a commons, though allowing for offshore economic zones, and in placing the concept of Maximum Sustainable Yield at the heart of the conference's conclusions, which were to form the basses for international law of the sea.[102] Two of the conclusions of the conference are in this regard especially worth remembering:

'2. The immediate aim of conservation of living marine resources is to conduct fishing activities so as to increase, or at least maintain, the average sustainable yield of products in desirable form… 3. The principle objective of conservation of the

[95]Ibid, p. 96.
[96]Ibid.
[97]Stokstad (2007).
[98]Finley (2011, p. 95).
[99]Ibid, p. 96.
[100]Ibid, p. 134.
[101]Ibid, p. 146
[102]Ibid, p. 148

living resources of the sea is to obtain the optimum sustainable yield so as to secure a maximum supply of food and other marine products…'[103] (International Technical Conference on the Conservation of the Living Resources of the Sea, Conclusions, quoted in Finley 2011, p. 148.)

The conference outcomes have with the benefit of hindsight been utterly disastrous for the world's oceans, and for fishing communities themselves. In geopolitical terms, the Rome Conference's framework would after a decade or so, collapse into the current status quo of EEZ's. Iceland's engagements with the United Kingdom between 1958 and 1976, known forever colloquially by the author's home country as 'the cod wars' (Þorskastríðin in Icelandic), were but among the first fractures in Chapman and the United States vision of a global fishing system open to American, British and Soviet exploitation and power with no limits on catch or effort.[104] Iceland was willing sacrifice its relations with the United Kingdom and even its membership of NATO in order to reclaim control of the 200 miles of sea from its coast.[105] The future of Iceland's fishing community is perhaps not an ideal example as the neoliberal experiment of the Kvoti has meant that control of rights and fishing territories has accumulated to only a few powerful enterprises there, and traditional fishing communities have been decimated, but in a sense this has been no worse than what befell the fishing communities of the United Kingdom such as Hull and Grimsby.[106] At the moment of final editing of this book in 2019, what remains of fishing communities in Great Britain are profoundly dedicated to the process of Brexit and whatever neoliberal energies and animal spirits can be unleashed by the free market and sovereignty over the nation's waters after the watery tyranny of the European Union. There is as much energy now to banish the foreigners boats and to reclaim the territorial waters of the United Kingdom as there must have been in the 1960s, 1970s and 1980s as country after country made the effort to reject the domination of their local seas by the industrial motherships of global fishing. However, there is just as much misguided thinking about how this will protect local fish populations now as there was then. European Union quotas have been complicated, sometimes irrational and when it comes to bycatch and disgards as wasteful as many of the other institutional functions of neoliberal governmentality.[107] However unlike Chapman, Rome and the consensus surrounding Maximum Sustainable Yield, the Common Fisheries Policy of the EU cannot really be said to have demonstrably contributed institutionally to the collapse of world fishing resources. While it is true that the CFP certainly did not stop the decline or mitigate the impacts of industrial fishing, it has always held that fish

[103]Ibid.

[104]Ingimundarson (2003).

[105]Ibid.

[106]Eythórsson (1996).

[107]Daw and Gray (2005).

stocks are finite, vulnerable and that catches and quotas must be carefully planned, including by subsidising fishing industries not to go fishing, but instead to not go fishing, be laid up and reduce both their fleet and days at sea.[108]

3.3 Conclusion

In 2019, the most misguided of fishers look to a golden age essentially of limitless pillage. Maximum Sustainble Yield policies from the Rome conference asserted, as is common with much free-market or laissez faire thinking, that through the process of its own functioning, global fishing would produce an equilibrium in stocks, an equilibrium which was also to produce the maximum possible profit for global fishing enterprise. When fishing communities and corporations invested in their fleets and committed greated effort to the exercise of fishing, this would necessarily result in larger catches and increased profit. However, this increased effort would eventually impact on fish populations, which would mean less catch and less profit. Fishing effort would thus be reduced through a self-regulating principle and the fish population would naturally recover, at which point extra effort could be exerted again by fishers. This sounds fantastic and very simple on paper, as these things tend to do, however as Holt, Beverton and Graham made clear in the 1940s and 1950s, the scenario is hugely complicated by the fact that fishing people and the institutions of both fishing governance and private enterprise, are not entirely rational in scope. Fishing enterprises when encountering a reduced catch do not immediately reduce effort and allow stocks to recover, they have a tendency to push the envelope of both numbers and profitability in the hope that a bad season or a bad couple of seasons can be made up by better times in the future. Technology is also not taken wholly into account by the methodology. As fishing technologies and boats become more and more advanced, the effort used becomes more and more effective. The effort spent at sea by a group of fishers in their small beam trawler in the 1930s is nothing compared to the computer and GPS-controlled behemoths that cross the seas in our present.[109] Whatever effort modern fishing boats commit to the catch they will harvest a much greater percentage of the marine life present below it, than was possible in decades past. Geopolitical interests are also not taken into account, which is an interesting and bemusing fact given how geopolitically important fishing was to the United States and theoreticians such as Chapman who moulded the global fishing consensus of the 1950s. Given these interests, the line between profitability and unprofitability which is necessary for the proper function of the theory, because highly blurred. Governments and other interests are very concerned for more reasons than simple profit, for fishermen to keep working, for

[108]Jensen (2002).

[109]Robins et al. (1998).

the boats to still ply the seas, and thus extensive subsidies were deployed to make up the difference between profit and loss. This was, of course, a disaster to overfished stocks, which rather than having a relief from fishing effort at moments of collapse or struggle were further subjected to heavy fishing by fishing boats for whom making a direct profit was no longer strictly necessary. Finally, as anyone familiar with free-market economics will attest to, setting a limit to price in market virtually guarantees all players in the market reach the limit. So it was in the world of Maximum Sustainable Yield. Rather than enterprises and fishing bodies attempting to fish down to limits, there was a real tendency to fish up to the limit, so that the absolute maximum stress point of fishing populations was almost necessarily reached…because otherwise what was left was a bigger surplus than strictly necessary and profit left unrealised.

Fishing up to the Maximum Sustainable Yield, the notion of fish and fish populations as surplus if not caught and the absurd ideas that catching the larger and older fish in the ocean helps the smaller fish has led to the decimation of the global oceans. The seas and fish we have today are profoundly different from those of the past, by the hands of mankind and through the scientific, statistical and rational lens of the ideas encountered by this chapter, the vibrant and lively spaces of both the sea and knowledge about the sea are to some degree much less lively than they have been. In 2019, the most lively and energetic aspect of fishing, is not fishing up to the Maximum Sustainable Yield, but fishing down the Trophic Level.[110] Where once humans caught whales and tuna, now fishing enterprises are seeking to capture the profit in populations of Jellyfish, Urchin and even Krill.[111] Controversial efforts to extract krill from the Southern Ocean near South Georgia have already it seems led to issues of food supply and availability for seal and whale populations in this area, for example.[112] Maximum Sustainable Yield and the other theoretical frames discussed in this chapter are essentially vibrant matters by themselves, these bodies of knowledge and scientific development are certainly energetic, and as we have seen energetic for many of the wrong reasons. However, for the most part, these bodies of knowledge and both the practical infrastructures they inspire, and the global infrastructures of governance they enable have been rooted in capitalist principle. How might they be applied to different political structures and principles, North Korean principles for instance?

[110]Pauly et al. (1998).

[111]Nicol et al. (2012).

[112]Forcada et al. (2012).

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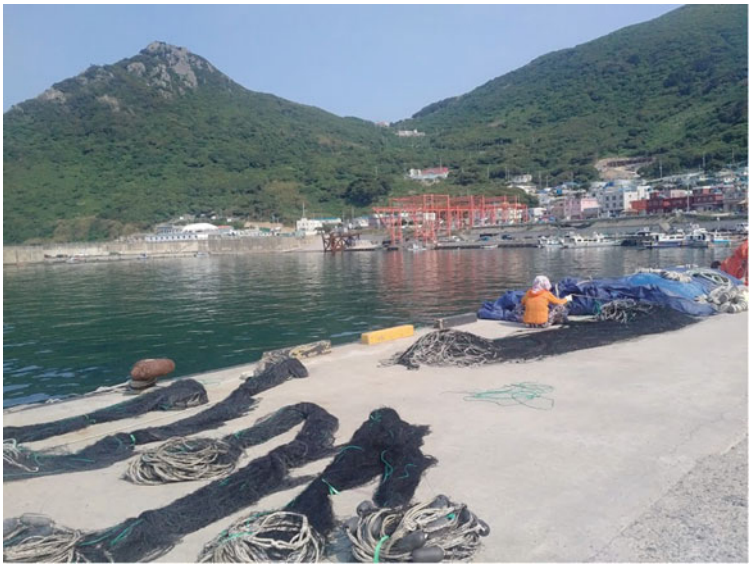
Photo Section

Sorting Shrimp in Tong Shui Gou (通水沟), People's Republic of China, 20 March 2017—Photo credit: Robert Winstanley-Chesters



Sorting nets in Gageodo (가거도), South Korea, 18 June 2017—Photo credit: Robert Winstanley-Chesters

Suzan Pizza, Jinshitan (金石滩), People's Republic of China, 20 March 2017—Photo credit: Robert Winstanley-Chesters

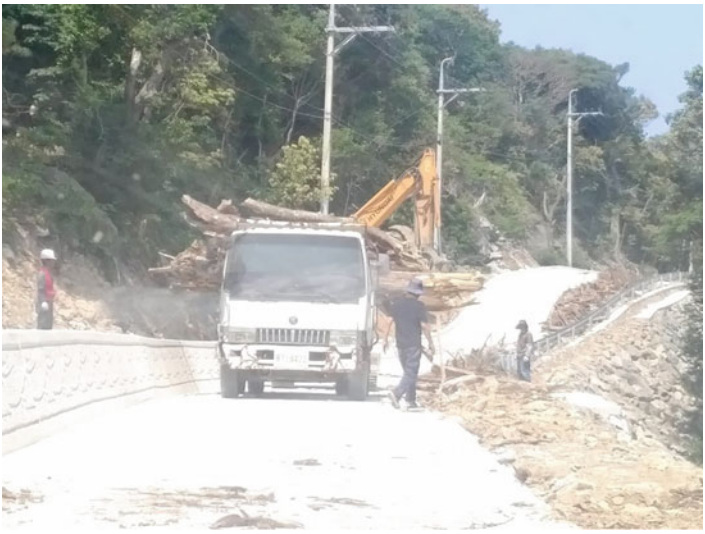
Watching If You Are the One 缘来非诚勿扰 (Fei Cheng Wu Rao) in the Fisherman's cabin, Tong Shui Gou (通水沟), People's Republic of China, 20 March 2017—Photo credit: Robert Winstanley-Chesters

Boiling Seaweed in Yanchangxincun (盐场新村), People's Republic of China, 19 March 2017—Photo credit: Robert Winstanley-Chesters

Lüshün (旅顺), Port Arthur, People's Republic of China, 19 March 2017—Photo credit: Robert Winstanley-Chesters

End of the line for Dalian's old fishing harbour, Dalian, People's Republic of China, 17 March 2019—Photo credit: Robert Winstanley-Chesters

Watching at the summit of Doksilsan, Gageodo (가거도), South Korea, 18 June 2017—Photo credit: Robert Winstanley-Chesters



Building the last road in South Korea (가거도), Gageodo, South Korea, 18 June 2017—Photo credit: Robert Winstanley-Chesters

From Gageodo 2 boatlift, Gageodo (가거도), South Korea, 19 June 2017—Photo credit: Robert Winstanley-Chesters

Gageodo 3, 21 June 2017, Gageodo (가거도), South Korea—Photo credit: Robert Winstanley-Chesters

Stocking up for climate change, Gageodo (가거도), South Korea, 22 June 2017—Photo credit: Robert Winstanley-Chesters

Chapter 4
Fishing in North Korea, A History and A Geography

Abstract Having considered deeply the theoretical framing of vibrant or lively matters in the previous pages, chapter four focuses directly on a territory widely considered to have a material and political relationship which is the opposite of vibrant, North Korea. With the political theorisation surrounding the politics and ideology of Pyongyang outlined in the introduction in mind, the chapter explores the intersections between fish and fishing and the developmental agendas of Kim Il Sung, Kim Jong Il and now Kim Jong Un. Tracing the focus on fishing and fishing resource and the connections and enmeshing with the different periods of North Korean political and industrial development, the chapter explores this periodisation and impacts on the lively matters of North Korean fish and fishing. This history and geography reaches back to the pre-history of North Korea, examining the transformation of fishing and fishing infrastructures during the period of Korea's opening up and the colonial period under Japanese occupation. Unlike Japanese fishing practices, traditional Korean fishing was focused on the shore and the near sea, Koreans did not historically venture out into the deep sea or the wider oceans. While Japanese colonialism developed Korean fishing practices in a more extensive and technological manner, North Korean fishing following the Liberation in 1945 was still technologically and infrastructurally challenged. This became worse following the Korean War of 1950–1953, and North Korea's fishing practices and rights have since then been challenged by the post-War status quo of maritime demarcation, in particular the Northern Limit Line and more contemporary practices of sanctioning and restriction which are also produced by geo-politics. Pyongyang has therefore continually fought to extend its fishing reach, with seemingly little success, but fish and maritime resources have become much more important to North Korea following the crisis period of the early 1990s. Fish in recent North Korean history have become vital to the provision of food given the collapse in soil health and agricultural capacity and also once an important element of economic exchange given their non-sanctioned status until 2017. Following UNSC resolution 2371 in August of 2017 of course fish and maritime products have now been problematized as other North Korean matters and materials and this will also be considered by the chapter. In a later chapter a specific location and community of fish and fisherpeople will be encountered, but this chapter more

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generally explores the geographies of North Korean fishing, especially those geographies which have been constructed or co-produced by the efforts, or otherwise of the state.

Keywords North Korea · North Korean fishing histories · Japanese colonialism · Environmental challenges · United Nations sanctions

So far in this book, the author has opened a wide theoretical and historical frame and comprehensive contextual setup for readers to encounter North Korea, its neighbours and their fishing and watery lives and stories. The reader will have journeyed from the first interactions with fish in the hunting practices of early humans, through subsistence fishing, the development of fishing technologies and communities, the rise of mercantilism, first wave globalisation, colonialism and the era of modernist forcing open in Asia and the Pacific. This was followed by real concrete colonisation on the Korean peninsula, then a series of painful and destructive conflagrations, followed in the 1950s and 1960s by the second wave of maritime globalisation. This second wave generated what has been referred to as an 'empire of fishing'. For Korea this was, in fact, the second empire of fishing, the first, being the Japanese Imperial efforts across the Pacific and Southwest Pacific following the assumption of the previous German territories there. This second imperial enterprise while less deliberately colonising on the surface has been much more impactful on the fish and other lively matters under the waves of the Pacific. Those vibrant watery matters around which communities and developmental practices grew along and beyond the shoreline were themselves dominated and degraded by new energetic materials and technologies derived by human hands and by the various powers and logics of capitalism.

These energies produced the post-1945 status quo, and on the Korea Peninsula the post-1953 status quo, which although fractured and challenged at times exists to the present day. These energies produced much of the military-security processes, which drove the imperial Japanese project and which drive the post-1945 imperial project of the United States. It is easy to characterise these products as being entirely focused around military capability and capacity, around security networks and the practical domination of vassal states and satellite societies, however, this was only part of the project. The most public and perhaps obvious element was to drive free-market capitalism, consumerism, commodification and liberal (and later neoliberal) logics across the globe, creating a new form of imperial subjectivity, an internalised commodified subject which would limit choice and co-opt social organisation in a new American century. However, readers will also have encountered a further element, one which utilised the preexisting focus on developing science and technological knowledge. Of course, given this book's focus, the previous chapter has considered developments in fishing science and technology. This element is itself a lively and energetic material in global processes of extraction and interaction between human and fish. However rather than focusing on material and tangible lives and things, the previous chapter has considered rather

more immaterial and intangible elements. Since 1945, statistical methodologies and practices became vital weapons in the United States efforts to dominate global fisheries.[1] Previous long-standing efforts to make the amount, behaviour and journeys of fish more knowable from both European and American scholars, which intriguingly had gained great analytic value from the two world wars, simply by dint of the fact that pressure on fish populations came to a brief halt amidst the human conflict allowing them to recover and for human impact to become obvious once fishing resumed, were displaced by new scientific practices and ambitions.[2]

In the lee of 1945, it was no longer important to know the details of the life of fish, of their young offspring, of their weight and travels as they grew older. It was no longer important to know their habits or their interactions, instead they became an abstracted product, a commodity of a developing global capitalist superstructure. Statistical methodologies which had sought to present a way in which the number of fish in the sea could be known, were co-opted to produce what is known as the Maximum Sustainable Yield (MSY), a figure which reduced fish populations to simply non-surplus and surplus.[3] MSY was then deployed across the world's oceans to serve a developing fishing industry predicated on total access, the military and diplomatic power of dominant states and powerful new technologies which would strip the world's oceans of a great percentage of its vibrant and energetic aquatic life in but a few decades.[4] Ultimately, the dominating power of this statistical methodology was so great that it forced the destruction of the era of United States and other nations domination of all waters, and nations were required to extend their territorial waters out to 200 nautical miles, a great enclosure of the near seas.[5] While the statistics and science which generated this situation and their extractive and accumulative energies have been mitigated by the growing horror of global populations at what was happening to the creatures of the sea, they have not gone away. Many of the presumptions of fish and other watery matters as existing only for the purposes of extraction by humans, only justified by the utility and usefulness, still exist and in fact underlay a lot of what popular culture thinks about fish, seeing them akin to a crop, to be harvested, cut down with the scythe.[6]

However, this does not sound like North Korea's story as the nation's politics and national mythology is rooted in a predication that it is different, it is something other than the conventional sovereign space. Like a mirror image of American exceptionalism, North Korea has long seen itself as a radically different state, a lodestar of revolution as Kim Il Sung once asserted.[7] Freed from the structures of American imperialism and global capitalism by the ingenious idea of its Great

[1]Finley (2011).
[2]Smith (1994).
[3]Finley (2011).
[4]Frank et al. (2005).
[5]Finley (2011, p. 100).
[6]Ibid, p. 94.
[7]Winstanley-Chesters (2014, p. 4).

Leader, Juche, North Korea is supposed to serve as an example to other developing nations of what can be achieved if one only does not kowtow to the Yankee. Its developmental mythos and narrative hold to much of this as well. North Korea sees its development as a product of its own politics, its own ideology and own ideas, from local ingenuity and experiment.[8] From mining to agriculture to architecture and urban planning, the developmental imperatives and logics which have underpinned progress north of the 38th parallel are regarded as something unique across the globe, unique enough for other nations to follow.[9] In this, North Korea has sought to spread its agricultural methodologies globally through DPRK-Friendship Farms (which can still be found with some frequency in African countries), architectural schools and other institutions of intellectual and urban planning.[10] Of course, only a little of this is true. It would take another book, or series of books to tell the history of just how integrated North Korean development and its developmental histories are with wider global narratives. While North Korea may see its approach as separate and distinct from those of capitalism and imperialism, along with the Soviet Union and other states inspired at least initially by Marxist theory, while it attempts to dispense with class systems and class dynamics, the accumulative and extractive logics at the heart of what is called State capitalism remain. In this regard, North Korea is as Capitalist as any other state.[11]

North Korea's developmental logics, therefore, are not based on some unique, obscure and distinct web of science, but on many of the same scientific themes and presumptions as elsewhere. This is, of course, as true in the sea as it is on the land. North Korean fishing policy and practice today is predicated on many of the same extractive presumptions as those followed by other nations. Fish and aquatic creatures are simply a resource, a commodity, like grain or rice to be harvested and accumulated. Conservation of fish and of habitats in the sea is not done or conceived of simply for the sake of those lively matters and ecosystems, but to conserve a useful and functional amount of commodity to be harvested or extracted in the future. While the debates within North Korean academia are not in a conventional sense available or obvious, the policies which are driven by both national politics from Pyongyang and academic and research development hint at their content. This chapter, therefore, focuses as much on the hidden presumptions beyond those debates and intellectual directions, and their potential sources outside North Korea in the wider intellectual milieu of the era of Maximum Sustainable Yield and surplus populations, as it does on the history of North Korean fishing.

Unlike the approach of historical polities on the Korean peninsula, which it seems were either disinterested in fishing and maritime resources, incapable of developing capabilities in the field, or unwilling due to the complications of regional geopolitics, North Korea as it now exists is extremely concerned to

[8]Krishnan (1981).
[9]Kim (2013).
[10]Kirkwood (2013).
[11]Lee (2016).

demonstrate a capacity for fishing in both the deep seas and around its coast.[12] This is also the case with South Korea, its estranged sibling after 1948. In a story untold by this book, though hinted at in previous chapters however, South Korea would go on after the 1960s to be one of the globally important fishing nations.[13] Boats under the control of South Korean businesses and government would be key players in the era of Maximum Sustainable Yield, found everywhere across the planet, with the latest and most powerful technologies capable of extracting the maximum possible resources from the water.[14] As the reader will suspect, this is not the case when it comes to North Korean boats.

Readers will remember the complete reconfiguration of Korean fishing infrastructures and practice during the Japanese colonial period, through both institutions on the Japanese mainland and those of the Chosen Government General. A once peripheral developmental interest, excluded and stigmatised by cultural and spiritual traditions was in this period modernised and reorganised to suit the new priorities of imperialism and capitalist commodification. At the end of this period, fishing interests and fishing capacity collapsed on the Korean peninsula as Japanese interests extracted their personnel and technology (and boats), from the peninsula and both sides of the Korean nation lapsed into a complicated and long struggle for sovereignty under occupation and geopolitical pressure, and then the disastrous violence of the Korean War. In 1953, much that had been left behind by the colonial authorities had been destroyed and Korean boats, such as there were had not been able to set to sea for some time. Both Koreas would have to completely rebuild much of their developmental infrastructure and this included that which was focused on the sea. This chapter will recount the fact that for North Korea, following 1953, fishing and maritime capacity has always been deeply important, and this importance has never diminished over the decades.

Territory both on land and at sea has been vital to North Korea's national sense of itself, especially since it was forced to define which territory it held at its inception in 1948 and then defend it against enormous odds between 1950 and 1953. The end of the Korean War was not favourable to North Korea when it came to the maritime territory. During the war, United States Naval command and dominance of the sea surrounding the peninsula was crystallised at the Korean War's armistice into the Northern Limit Line (북방한계선).[15] Such an unfavourable historical gift has induced painful issues for North Korea on its western maritime boundary many times in the past. It has hugely complicated North Korea's access to deep waters and restricted its access to a very rich area of coastal waters. Recent altercations between North and South Korea, particularly Yeonpyeong/Yŏnp'yŏng Island (연평도) in 2010 and the extensive framework of United Nations Security Council sanctions in recent years have further impacted on North

[12]Sinmun (2015a).
[13]Sala et al. (2018).
[14]Block et al. (1998).
[15]Ford (2012).

Korean fishing capability.[16] At the moment of writing this chapter in 2018, it is in fact according to UNSC2397 illegal for any foreign entity to purchase or trade-in any maritime or sea product from North Korea whatsoever.[17] UNSC2371 even mentions specific classes of sea creature, and is surely the first instance in which aquatic invertebrates have become a sanctioned item in world politics and trade.[18]

It would not be surprising, if prior to the recent semi-rapprochement between the two Koreas (in 2018/2019), North Korea's fishing and maritime capabilities, capacities and rights would become a hot issue for Pyongyang and feature heavily in its media and political narratives. North Korean government and media publications, for instance, throughout the middle of the second decade of the twenty-first century produced a seemingly continuous stream of reports of Leader Kim Jong Un's interest in fishing and maritime developments. 2015's New Year Address demanded that North Korea's developmental institutions generate 'mountains and seas of gold' as part of the yearly commemoration of both the 70th anniversary of Korean Liberation and the 70th anniversary of the foundation of the Korean Workers Party.[19] While it was the mountains and their forests that seemed to dominate Pyongyang's interest in the first half of the year, the second found North Korea's media outlets committing a huge variety of images of Kim Jong Un in the company of fishermen, their institutional or political leaders and sundry and varied fish species to print.[20]

Fish were not simply of interest to Kim Jong Un and the Korean Workers Party in 2015, but appear to have been building in importance for some years previously. Fishing and fishery matters, for example, moved several notches up Pyongyang's list of priorities in 2014. *Rodong Sinmun*'s announcement, 'The Party Requested, They Did It!'[21] just before Christmas 2013, elicited a burst of piscine reportage. It has been speculated that fishing resources and the logistics of their transport to foreign markets could have been one of the reasons for the execution of Kim Jong Un's uncle, Jang Sung Taek in that year. Jang Sung Taek it is suggested, had gained some sort of control over fishery rights and resources in the West Sea or their trans-shipment across the border to Chinese interests and institutions, control that had previously been within the remit of the Korean People's Army (KPA).[22] His death in this narrative represents the interests of the KPA simply re-established control over these rights. A less dramatic and blood-soaked analysis is that this emphasis on fishing might have been expected, as it had been featured as a key

[16]Haggard (2017).
[17]United Nations (2017a).
[18]United Nations (2017b).
[19]Rodong Sinmun (2015b).
[20]Rodong Sinmun (2015c).
[21]Rodong Sinumn (2013).
[22]Sang-Hun and Sanger (2013).

element of 2014's New Year Address,[23] and was deeply connected to the memorial processes revolving around the 50th anniversary of the publication of a text key to North Korean developmental history, the "*Rural Theses for the Solution of the Socialist Rural Question*'.[24]

Fish and fishing, therefore, are currently lively and active matters in the North Korean institutional mind. In this they are similar to other resources, materials and matters found in 1964's *Rural Theses*. While that important text focused mainly on developmental sectors of the economy on the land, the inclination within it to focus on a reconfiguration and reorganisation of materials and landscapes to better serve a utopian political project appears shared with contemporary North Korean fishing narratives. Moving backwards through time, this chapter is concerned with whether that has been the case throughout North Korea's fishing history, and whether given the issues with unpicking the political narratives of this nation, it is possible to discern such a history and any vibrant matters within it.

This chapter is focused on an attempt at historicising North Korean fishing endeavour. An attempt to extract North Korean conceptions not only of the importance of fishing within its national and political project, but also to consider the ideas held by Pyongyang and its institutions about the materials and matters involved in that project. In a nation where the most vibrant matters of all are the words and ideas of its leaders, is it possible to discern a concern or interest or even an acknowledgement of other energetic materials, that might even stand apart from such politics? Is it possible to discern ideas and research practices derived from elsewhere such as Maximum Sustainable Yield that would ultimately be deployed on any such acknowledged lively matter?

To construct or extract such a historicisation, the chapter will consider the narrative roots to North Korea's fishing strategy, examining the key texts and documents accredited to Kim Il Sung and their connections to the wider political structures and conceptions of Pyongyang's institutional mind. It will seek to trace along with that historical narrative inheritance the passage of those conceptions and ideas into practical policy and physical manifestations in the guise of particular sites and communities of fisherpeople. To do so, it will touch briefly on North Korean notions of central planning and economic theory and how these theories translated or otherwise into the wider frameworks of policy during the 1970s and 1980s. The chapter will consider the connections between the charismatic authority of Kim Il Sung and Kim Jong Il and the topographies of development, both generally and more specifically in the case of fishing and maritime development. It will compare and contrast North Korean ideas and concepts related to fishing with developments from research communities the book has explored elsewhere, tracing perhaps any journeys made by important research ideas and statistical sensibilities in North

[23]"New Years Address", *Rodong Sinmun*, 1st January, 2013, http://www.rodong.rep.kp/en/index.php?strPageID=SF01_02_01&newsID=2014-01-01-0001&chAction=S.

[24]Kim Il Sung (1964). "Theses on the Socialist Rural Question in Our County," Works vol 18. Pyongyang: Foreign Languages Publishing House.

Korean fishing practice. In particular, it will attempt to discern the influence of statistical concepts related to fishing such as MSY and surplus population, from the wider world on that practice. Finally, the chapter will bring the reader up to the present, considering the outworking and impact of North Korea's maritime past in what we might term its piscicultural present through a deeper consideration of its contemporary fishing and maritime goals. In the following and penultimate chapter, the book will utilise this knowledge of North Korea's fishing history and those political narratives which address it, as well as any sense gained of North Korea's usage of foreign or global statistical or developmental theories. This will allow a much more nuanced and considered understanding of the place of particular fishing places and communities and their interactions with watery lively matters of all kinds.

4.1 A New Basis for Fishing

From the earliest years of Pyongyang's institutional and infrastructural development following the end of the Japanese colonial period, fishing, maritime development and access to the sea have been a key thematic element of that development. Just as in other sectors, this development can be periodized to form a more coherent historiography. Readers might suggest that in part this is not related to North Korea's revolutionary political ideology or sense of itself as a beacon for other politically unconventional states, but something far more conventional. The Japanese Empire, United States, the United Kingdom and other completely unrevolutionary polities, in North Korea's opinion, had simply by 1948 established some of the prerequisites for functional governmentality in modernity. One element of this was to have the capability to take to the deep seas and to become a global fishing nation. North Korea's ideological and national nemesis, Imperial Japan, had even between 1910 and 1945 done this across the Pacific and from the shores of the Korean Peninsula. If North Korea, therefore, was to ever assert a claim to political authority and legitimacy from the northern half of the Korean Peninsula, to one of the things it would have to be capable of as a nation was fishing and fishing not just around the coasts, but in the deeper waters of global oceans. As readers will have gathered, this was made all the more difficult by the removal of much of the fishing fleet by retreating Japanese institutions in 1945 and by the degradation of whatever was left between 1950 and 1953.[25] However, just because recent history and circumstance put Pyongyang at a disadvantage in this field of development, did not mean that North Korea wasn't determined to aim to secure its place as a global fishing powerhouse.

A peculiarity, familiar to those who watch, study and analyse North Korean matters, of North Korean historical narrative on developmental matters is for

[25]United States Army Forces Pacific (1946, p. 30).

contemporary interests and focus on a particular theme or issue to be read or rewritten back into historical narratives from much earlier temporal frames.[26] Thus, the very first text which addresses the interest of political leaders of North Korea in fishing and maritime matters, actually references projects, intention and desire from long before the moment it was written.

Kim Il Sung apparently authored '*On Developing the Fishing Industry on a New Basis*' and presented it to the Central Committee of the Korean Workers Party on 8 July 1948. Some 3 years from Liberation and the formative process for the nation, in the text the reader can still discern the tensions of postcolonial issues during North Korea's early years.

'Seabound on three sides, our country is very rich in marine resources. The fishing industry is a major component of our national economy and plays an important role in improving the people's living standards.'[27]

While Kim Il Sung's assertions of fishing's importance to national development, will become familiar to the reader, the texts' distinct temporal context is clear. One of Kim Il Sung's key desires within it is to reiterate success in those tasks undertaken because of the necessity of a post-Liberation de-Japanising of the nations' economy and developmental institutions: '[W]e set up a new fishing system by reorganizing the fishing associations formed in the years of Japanese imperialism… through nationalization of fishing grounds, fishing boats, processing factories, netting plants and other fishing equipment and facilities formerly owned by Japanese imperialists, their collaborators and traitors to the nation.'[28]

Kim Il Sung does not mention the removal of much of Korea's fishing infrastructure by retreating Japanese interests in 1945 and the complications of getting that infrastructure and capabilities back. In spite of the overtly nationalist strategy embedded in the text, it is possible to catch a brief glimpse of North Korea's post-Liberation mixed economic strategy. This developmental strategy was most overtly evident in the case of land reforms. Just as was the case in agricultural production, Pyongyang in its denuded and difficult post-Liberation state could not rely on any infrastructure or bureaucracy left behind from Chosen. Instead, and against ideological inclinations and revolutionary imperatives, North Korea was forced to utilise whatever private enterprise was left behind or had been in Korean hands at the moment of Liberation. As the reader might imagine, for Kim Il Sung and other comrades and revolutionaries, it was not the easiest and comfortable of relationships: 'Of course, we have encouraged private fishing and will do so in the future, too. But, if we rely on private fisheries alone, we shall not be able to shake off the backwardness in our fishing industry and satisfy the people's demands for marine products.'[29]

[26]Petrov (2004).

[27]Kim Il Sung (1948, p. 304).

[28]Ibid, p. 304.

[29]Ibid, p. 306.

Whatever the discomfort involved in maintaining this relationship, it was vital for the young North Korea, in spite of whatever ideological issues it would generate. Kim Il Sung found the time to articulate some institutional themes very familiar in national narratives, such as a focus on planning from what we might consider to be more conventional North Korean development strategies: 'a plan must always be concrete, scientific and dynamic…;'[30] institutional structure and connection: 'each bureau of the People's Committee of North Korea related to the fishing industry must shake off the tendency to narrow departmentalism…;'[31] and the place of politics and the Korean Worker's Party within any developmental framework: 'the party organizations in this field must radically improve their functions…'[32]

However important, institutionally embedded or politically structured the fishing industry and its productive capacity had become to North Korea's development, it was decimated by the destructive Korean War. It would be some years until fishing could again be the direct focus of Kim Il Sung. However, these tumultuous war years resolved through the death of some of interested parties and the further degradation of the landlord class, some of the post-Liberation and postcolonial issues mentioned by Kim in 1948. 1957's '*On the Development of the Fishing Industry'*, the next key articulation of the importance of fishing to North Korean politics is remarkably different from the early statements from 1948. It is steeped in assertions of Pyongyang's intentions such as productivity and technological development are concerned during North Korea's post-war period of rehabilitation. This is a period, before Stalin's death when Moscow and the Soviet Union's technical support was most vital to North Korean policy and politics, a point of necessity and fact confirmed by the text: 'we invited Soviet scientists who were engaged on maritime research in the Far East. They came to our country under an agreement reached when our Government delegation visited Moscow last year'. According to Kim Il Sung, these Soviet technicians and experts supported the first goal-setting focused approach from Pyongyang in the fishing sector as 'they drew a conclusion… that we have enough fish resources to land some 500,000–600,000 tons a year in the next five years.'[33]

A production goal for the extraction of some 600,000 tons of fish annually was instantly adopted by Kim and itself embedded a number of other developmental elements within the sector; from a focus on nutrition: 'If we land 600,000 tons of fish, it will mean an average of 60 kilograms per person per year… [and] the people's living standard will be improved considerably[34]; to practical strategies and methods of fishing and extensions of technical capacity: '[A]ll possible fishing methods including medium and small-scale, seasonal and deep sea fishing should

[30]Ibid, p. 307.
[31]Ibid.
[32]Ibid, p. 308.
[33]Kim Il Sung (1957, p. 96).
[34]Ibid, p. 97.

be readily applied both in the East and the West Sea.'[35] It is worth considering whether the equation between tonnage landed and nutritional value and this new statistical focus on special goal targets was garnered from the knowledge of those experts from the Soviet Union. It would not be many years until the infamous Rome conference in 1960. At the conference in which the United States had expected difficulty and obstruction from Moscow, much to Washington DC's surprise the Soviet Union emerged as an enthusiastic supporter of this new global fishing status quo and a useful ally in the era of MSY.[36] Soviet scientists were much in thrall to the developments in fishing statistical method, St. Petersburg's Fisheries Research Station having been one of the earliest places of modern maritime science.[37] Imperial Russia itself had been one of the primary global powerhouses of early extraction, of course, decimating the populations of Stellers' Sea Cow, Seals and Whales around Kamchatka, the Commander Islands and the Bering Strait.[38] It would not be surprising if some of that extractive, modernist imperative had not transferred to the ambitions of the Soviet Union.

While North Korea's developmental strategy at this moment itself seems inclusive, structured and potentially functional within a reasonable timeframe, just as its agricultural twin focused on grain production, it was not to be long lived. Stalin's death in 1956, Khrushchev's policy of De-Stalinsation and its implications for North Korea's politics and position had already laid the ground work for its abandonment.

North Korea's geopolitical triangulation towards the more ideologically favourable winds of Maoism and the People's Republic of China following Stalin's death has been well documented by a number of commentators.[39] The implications of this for North Korea's development have been also noted by analysts from the period.[40] However, the internal connections within the sector between developing Maoist principles and the rise and articulation of North Korea's new ideologically sound Chollima (천리마, the name literally 'thousand li horse' refers to a legendary flying horse from Chinese mythology that could fly one thousand 'li' or four thousand kilometres in a day), development concept, for example, and fishing and fisheries policy have not been subject to extensive focus.

Perhaps North Korea's commitment to the tropes and strategies of Maoist revolutionary urgency and ideological influence can be best seen, so far as fishing is concerned in the abrupt change of focus when it comes to research and technical development. North Korean commentators and readers of this chapter, even those not strongly concerned with developmental matters, will surely be aware of the acute importance to North Korea of doing things and achieving goals in a technical

[35]Ibid.
[36]Finley (2011, p. 147).
[37]Smith (1994, p. 39).
[38]Tucker Jones (2014).
[39]Prybyla (1964).
[40]Kuark (1963).

or scientific manner. In the twenty-first images of scientists undertaking important work are a highly frequent trope of North Korean government imagery and narrative production.[41] This has already been echoed by Pyongyang's early adaptation of fisheries science and statistics. In the blast of ideological change brought on following Mao's Great Leap Forward, Pyongyang's articulation of Chollima and its urgent harnessing of the power of mass movements and mass population, developmental texts echo this focus on the popular and the urgent rather than the organised or the scientific.

4.2 Fish Culture in North Korea

"*On the Tasks of the Party Organizations in South Pyongan Province*," delivered to the Provincial Party Committee of that Province on January 7, 1960, includes the typical for the period, if extraordinary statement that: 'We must intensify ideological education among the fishery officials and eradicate mysticism, empiricism and all other outdated ideas so that they will improve the fishing method zealously with the attitude of masters….'[42] When reading this for the first time, the author wondered whether this really did constitute a repudiation of the high position of science, statistics and academic work related to fishing, but assertions that 'Fish culture is a not a difficult job. A little effort and everyone will be able to…' suggest it was so in these acute, urgent times.[43]

As with many of the developmental strategies however, there is a sense of 'popular schizophrenia' about them. In an effort, again familiar to North Korean analysts everywhere from most of its historical periods, Pyongyang aimed its developmental focus so that it could be applied universally, and that a sense of urgency could be applied in all cases, all of the time. Thus, while it is clear that some element of empiricism is rejected during this period, it is not clear how categoric this rejection is, as reference is made to learning from scientists, although this learning itself is framed within a project to embed their knowledge and research within an institutional framework tasked with harnessing the energy and commitment of the masses. '[C]hairmen of agricultural management boards and Party committees should read a lot and learn… [about] the know-how of fish breeding and sea culture.'[44]

As the impending collapse of the Great Leap Forward became clear to Pyongyang, North Korea's geopolitical adherence again shifted, and the dramatic, insistent and urgent elements within developmental praxis began to wane. Although the mid-1960s again saw fishing goals reimagined upwards along with the rest of

[41]Rodong Sinmun (2018).
[42]Il Sung (1960, p. 38).
[43]Ibid, p. 39.
[44]Ibid, p. 40.

the 'Six Goals' ('we should raise the production of seafood to 800,000 tons…'[45] the sector would be quickly connected to what might be termed a more 'rational', 'functional' set of developmental strategies.

Similar to undertakings in the other developmental fields such as grain production, forestry and many others, fishing and fisheries policy would be reconfigured and embedded in the late 1960s and 1970s in a thick set of connecting institutional repertoires of practice. Developmental projects and strategies would have to connect with bureaucratic and institutional structures (at all levels of governance) and ideological and theoretical progress as well as paying homage to both the Korean Workers Party and the Korean People's Army. '*For Bringing About Rapid Progress in the Fishing Industry'*, apparently articulated by Kim Il Sung in early June 1968, is certainly a useful example: 'Developing the fishing industry is of great importance in improving the diet of the working people, particularly in providing them with protein….'[46] The text also reiterated progress made and the application of institutional focus using a historical frame: 'Our party has been paying close attention to the development of the fishing industry since immediately after liberation… within a few years after liberation the material and technical foundations of the fishing industry were laid.[47]

But '*For Bringing About Rapid Progress in the Fishing Industry'* and its articulation of developmental aspiration in the age of the Six Goals appears mere subtext when compared to the far more expansive and detailed '*On Taking Good Care of State Property and Using It Sparingly',* a text more concerned with rigorously critiquing past progress and outlining future infrastructure and practice rather than an expression of aspiration. As Kim Il Sung noted in the text: '[W]e cannot rest content with this. So far we have laid only the basic foundations of the fishing industry'.[48]

Kim Il Sung's critique and commentary surrounding institutional development in the fishing and fish-processing sector intriguingly addresses environmental issues and developments that appear to echo later ecological concerns of North Korea's contemporary government.[49] These concerns in the developmental present surround land-based ecologies, but Kim Il Sung here focuses on the maritime environment 'because of change in the current' which had resulted in 'only small numbers of Mackerel and Yellow Corbina in these waters'.[50] The text also decries the 'frequent floods' which fishery workers had told him they had to contend with.[51]

This text suggests, of course, some institutional knowledge of the connectivities between fish and animals of the sea and other vibrant matters in their ecosystem,

[45]Il Sung (1961, p. 332).
[46]Il Sung (1967, p. 261).
[47]Il Sung (1969, p. 52).
[48]Ibid, p. 53.
[49]UNFCCC (2016).
[50]Il Sung (1969, p. 53).
[51]Ibid, p. 60.

namely deep ocean and coastal currents. Harking back to research we have examined from the early twentieth century, this text also acknowledges that fish resources cannot simply be a static mass to be harvested, like rice in the field, but fluctuate and change due to forces greater than the power of the nation state. Primarily, however, Kim Il Sung's principle initial concern in the text is to critique institutional structures and participants in them, even in their responses and solutions to these environmental changes. Kim states: '[B]ecause we are inexperienced we have only prepared many nets needed for catching mackerel… since we had expected big shoals of this fish to come… we could not catch them because they did not come…. After that fishery workers are discouraged and at a loss for what to do'.[52]

The text also critiques the sector and wider technical and strategic development in the fishing and fish processing sector. Even the fleet material sourced from foreign supporters, lauded in previous documents, is now seemingly regarded as problematic: 'The 450-ton trawler we are now producing has many shortcomings. [For example,] it can be used for fishing only in the Black Sea or the Baltic Sea… [and] it cannot be used in the Pacific Ocean where the waves are moderate'.[53]

Kim Il Sung's plan for the sector and its infrastructure within this text, like its counterparts focused on land-based developmental repertoires, demanded a large expansion in the sector's capacity, replacing these smaller, seemingly unsatisfactory boats. But while it was an urgent matter in temporal and commitment terms, this expansion was to be carefully managed and located in a few centers of industrial excellence—for example, the Ryukdae Shipyard in the Komdok Island area. This shipyard was to serve as such a centre for the industry in the West Sea.[54]

The primary geographic site for this renewal of North Korea's fishing fleet and accompanying infrastructure was located at Chongjin's historically important port, where apart from Ryukdae's efforts to build mid-range ships of some 600–1,000 tons, North Korea sought to construct much larger vessels of between 3,000 and 10,000 tons.[55] While this production was to be supported in institutional terms through the Ministry of Fisheries, the Ministry of Machine Industry Number 1, and Provincial Party Committees, other sub-sectorial elements close which Kim Il Sung was concerned with would need to involve themselves functionally in this developing. He writes: '[A]t the moment people at the ship repair yards busy themselves getting engines, spare parts and paint, only after the ships return from the deep seas. They say therefore that it takes a few months to repair a ship, and sometime it even requires 150 days. Consequently they miss the fishing season'.[56]

The structural failure of supply and organisation outlined by Kim Il Sung here would, of course, not be welcome in the industrial sector of any nation for whom

[52]Ibid, p. 54.
[53]Ibid, p. 55.
[54]Ibid, p. 57.
[55]Ibid.
[56]Ibid, p. 58.

development and progress was a concern, even less so in one for whom capacity and output is absolutely vital. Just as a reorganisation was pending and necessary within those institutions tasked with the reconstruction and reconfiguration of the fishing fleet and port and processing infrastructure, it was necessary for new bureaucratic connections and governance technologies to be made and developed at the institutional nexus between those departments and the practical projects responsible for that fleet's maintenance and support. As Kim Il Sung asserted: '[I]f we are to succeed in this work, we must have a large quantity of engines and other spare parts in stock… a ship spare parts factory should be built in Kimchaek City… then it will be easy to obtain supplies of steel from Songjin Steel Plant'.[57]

This text reiterates a fact that the chapter will return to later, that for all its ambitions and planning, North Korea has to this point failed to join the technological race so far as ship size and capacity that would allow it join countries like Japan, the United States and by this point in time South Korea, in the race for MSY and the harvesting of the deep sea and the ocean floor. To this point, the largest boat it appears that North Korea has built is only some 450 tonnes and there has been no mention of the highly effective, if destructive mothership system utilised by the Soviet Union, Japan and the United States for some decades now. North Korea it seems at this point must return its catch to land for processing, rather than being processed at sea which would allow whatever fleet it had to sail further and fish for longer in international waters. At this stage, North Korea cannot have made much of an impact on the vibrant and lively matters beneath the waves as Kim Il Sung wished it to have.

Apart from these larger, national developmental scales of construction and infrastructure focused on the productivity of the deep sea and perhaps even the expanse of the Pacific Ocean, which North Korea has not yet really engaged with, '*On Developing the Fishing Industry Further'* and Kim Il Sung also perceives the possibility for connectivities and development on a smaller, more personal, local scale: 'At the moment there are many good comrades in big cities… who live on pensions because of illness… it will not be bad to engage them in fishing… they will be very pleased if they are told to catch fish with nets and rods in boats while they continue to receive the benefits from pensions.[58] Here it seems that Kim Il Sung envisages the revival of a model of semi-informal fishing cooperatives using, marginalised, peripheral or underemployed workers. The word 'semi' is of course in this context something of an oxymoron as these workers are still conceived by the text and no doubt North Korea's bureaucracy, to be well integrated into institutional and political planning, as well as ideological expression and presentation, serving as much as part of the sectors future and interests as those facilities and sets of workers undertaking activity in the deep sea.

Beyond the developmental capacity and institutional structure of the fishing and fish-processing industries, the final key point of this text is another that would become

[57]Ibid.

[58]Ibid, p. 61.

familiar to analysts of North Korea and scholars whose focus was agricultural development and capacity increase elsewhere in the Communist/Socialist world in the coming decade.[59] Pyongyang's developmental and infrastructural focus began to assert the categorical importance of scientific research and the place of the scientist within bureaucracies and institutional structures. On this matter, Kim Il Sung is no less assertive within '*On Developing the Fishing Industry Further'*: 'It is not an exaggeration to say that the modern world is one of science and that science and technology decide everything'.[60] This scientific and empirical focus is important when it comes to the functional protection of fish stocks, the development of fishing areas and fish farm installations in freshwater environments. Science and attendant epistemic communities, it seems was to become vitally important in North Korea, not only in the fields of fishing and fisheries, but to its wider frameworks, processes and practices of politics and ideology. For example, one of Kim Il Sung's final concerns in the text is the embedding of commitment to science and scientific process within this political imperative: '[T]he fishery sector must carry out a forceful ideological struggle against the conservatives who are trying to check our advance and thus develop the science of fisheries as soon as possible….'[61] Of course, the text and Kim Il Sung never fully articulate which scientific developments and concepts North Korea will be led by in the fisheries sector. It is clear that North Korea has absorbed notions of fish populations as capable of fluctuation and change due to natural conditions, but there is also a sense that the products of the sea are something of an unlimited harvest and easily translatable into less tangible nutritional values, as opposed to being living beings and communities. Even though North Korea appears interested at moments in conservation, it is quite possible the scientific imperatives behind this conservation are simply to conserve that which can be later extracted.

4.3 Blue Crabs, Gizzard Shad and Anchovy

Institutional framing of science within North Korea's focus on fishing and fisheries development becomes more politically acute as the 1970s continued, becoming located in the troublesome and contested West Sea area, still familiar to those interested in North Korea.[62] Countering what is perceived as a world food crisis in 1977, Kim Il Sung writes: 'the world is currently experiencing an acute food shortage… according to information from abroad, as much as a quarter of the world's population is now suffering from malnutrition'.[63] In the text '*On the*

[59]Wong, Lungfai. 1986. *Agricultural Productivity in the Socialist Countries*. Boulder, CO: Westview.

[60]Il Sung (1969, p. 66).

[61]Ibid.

[62]Kotch and Abbey (2003).

[63]Il Sung (1977, p. 65).

Further Development of the Fishing Industry in the West Sea', from that year, Kim Il Sung sites much of future development within that most disputed of North Korea's maritime areas. However, Kim Il Sung also carries over much of the focus on small-scale fishing from earlier texts, creating a potentially enormously crowded and confusing in conceptual or functional terms, developmental space within an already complicated locale: '[I]t would be reasonable to establish fishing bases around Ongjin, Monggumpo, Sukchon and Mundok in South Pyongan and in Cholsan, Chongu, at the mouth of Chongchon River and on Sinmi Island in North Pyongan Province….'[64]

While Kim Il Sung's concern to harvest the 'well known fish in this sea'[65] is clear and the focus on the West Sea areas developmental possibilities and capacity is acute, its generative capacity means that Pyongyang will see the expansive deeper spaces of the East Sea as perhaps a more long term and economically rich institutional priority. '*Let Us Develop the Fishing Industry and Increase the Catch'*, for example, draws out the importance of the East Sea as a zone of deeper pelagic exploitation as much as it reconfirms the themes of science, development, political connection and capacity increase which have marked the 1970s as a decade in policy terms, and occur in the smaller infrastructural development on the Peninsula's opposite coast: 'The fastest and most rational way of solving this problem is to catch large quantities of fish. Our country is bounded by the sea on three sides, so it is much faster and more economical to solve the protein problem by developing the fishing industry….'[66]

While Kim Il Sung begins his analysis with an extremely positive note,[67] it is clear from even a brief reading of the larger body of the text that in spite of the importance of the East Sea fishery and the extent of North Korea's institutional agenda and concern shown to it, there are factors at play to thwart some of the scientific and developmental ambition, ambition which appears alas quite close to home in institutional terms. Some of the hesitancy and 'conservatism' Kim Il Sung and North Korean revolutionary politics wished to banish through the incorporation of scientific modernity and technical development appears still extant at the close of the decade: 'I have emphasised on more than one occasion that the officials in charge of fishing should study deep-sea fishing. But they have claimed there are no fish in the deep sea and have not looked into methods of detecting shoals and catching the fish. They even altered the contents of the textbooks to concur with their opinion'.[68]

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[64]Ibid, p. 70.

[65]These are listed as "planktonic shrimps, prawns, Acetes chimensis, Blue Crabs, Gizzard Shad, Yellow Corbina, Setipinna Gilberti, Anchovy, Sand Ell and Grey Mullet." Ibid, p. 67.

[66]Il Sung (1978, p. 86).

[67]It reads: "A large amount of Pollack was caught by our fishermen last winter. The catch is large every year, but last winter was an all-time high…." Ibid.

[68]Ibid, p. 88.

Despite some two decades of development, political impetus, and imperative it is in a sense a little astonishing that Kim Il Sung in 1978 could determine that 'since summer fishing has never been organised on the East Sea, we have no clear idea of what kinds of fish are living in the East Sea and what kinds of migratory fish visit it'.[69] It appears that it is not only the research and knowledge basis that is weak, but even the developed infrastructure, and the institutional ambition behind it has been neglected, half-heartedly undertaken or confused by bureaucratic failures and disruptions. Far in fact from the early aspirations to the building of 10,000 tonne ships, Kim Il Sung almost balefully recalls that 'some years ago a 1,000 ton fishing vessel was built, but some officials of the fishing industry said that it was unserviceable even before it was used'.[70]

Ultimately, while political drive and ideological embedding and reconfiguration served to push along North Korea's developmental narratives, within the fishing sector the 1970s, according even to Kim Il Sung's own assertions, ended on a downbeat and disappointing tone. Whatever has happened and whatever was demanded in the previous decade, scientific development and research as envisaged had not occurred, institutional connections remained counterproductive and diffuse, and both capacity and actual productivity and catch appeared substantially disappointing. It is fairly extraordinary by this point that North Korea appeared to have no sense of what was present or not present in the East Sea (known to non-Koreans as the Sea of Japan). While by the 1970s, these waters would have been quite heavily exploited and denuded of fish given the power of the Japanese fishing effort, there was much publicly available data by this point in time.[71] Japanese, American and Soviet fishing research through the North Pacific Anadromous Fisheries Commission had engaged in a systematic field analysis of stocks and fish migration in the Pacific, and Japan had included the waters of the East Sea (Sea of Japan) in that analysis.[72] It seems unlikely that North Korean scientists, even simply through their connections with Soviet research institutions did not have access to this research. Perhaps they did not, though the next section of this chapter suggests that cannot have been possible, but for whatever reason, Kim Il Sung has opted not to mention this wider body of knowledge. This lack of knowledge or access to it or capability with it is reflective of many of the issues North Korean fisheries science and development faced at this point. It is apparent that many of the same drag factors, research and knowledge gaps and inefficiencies that beset the agricultural sector on land and crippled North Korea's industrial and economic productivity had been present in the fishing sector as well.[73]

'Pollack is a very good fish. Because it contains less fat and more protein than other fish, it is not only palatable but also good for the health.… From olden times,

[69]Ibid.

[70]Ibid, p. 93.

[71]International North Pacific Fisheries Commission (1971).

[72]International North Pacific Fisheries Commission and Fisheries Agency of Japan (1955).

[73]Rhee (1987).

therefore Koreans have offered it at the altar. It seems that our ancestors also like Pollack.…'[74] While Pollack may well have been Kim Il Sung's fish of choice and deep and frequent catches an aspiration of Pyongyang's fishing fleet in the 1970s, the era of the 'Six Goals' and 'Great Tasks' (though primarily on land), would soon fall given these diminishing and seemingly unrealizable tasks. The Party Congress of 1980 would abandon the comprehensive, dramatic wider strategies and goal setting for the next decade, determining that perhaps it was better to focus on simply achieving what was possible given the resources available, despite inefficiency and incapability. Maritime production and the fishery sector were as subject to this abandonment as were the national framework of forestry goals and tidal reclamation.

4.4 Politics and Pollack

Following the abandonment of most developmental goals in the 1980s and North Korea's period of stagnation and near collapse in the 1990s, there would be a time when policy directed at fisheries and maritime infrastructure would again in the post Kim Il Sung and Kim Jong Il eras connect with North Korea's institutional priorities and newly articulated developmental agenda. Fishing and extracting value from the sea has been brought back into focus during the era of Kim Jong Un. Particularly in 2014, these appeared to be because of revitalisation and reconnection of North Korea developmental policy with the agricultural narratives and political impetus generated by the Rural Theses and their 50th anniversary. The appearance of fishing in 2014's New Year Address, along with a call for both memorialization and actualization of the goals previously articulated in the Rural Theses, frames the development of the fisheries sector within the mould of contemporary North Korean politics. Kim Jong Un's words from the New Year Address, that the state 'should take measures to bolster up the fishing sector and that it should follow the example of those institutions within the Korean People's Army tasked with the exploitation of the sea and other maritime resources. The KPA's Fishery Stations has apparently had enormous success and landed a 'huge haul of fishes by carrying out the order of the Supreme Commander unto death'.[75] This had the effect, in common with many other elements of North Korean economics and development following the famine period, of asserting and demonstrating the important, functionality and relevance of military participation in the fishing industry, as well as their absolute commitment to carrying out the requirements of the 'Supreme Commander' and this maintaining a close connection to the Kim dynasty itself. Kim Il Sung and Kim Jong Il's conceptions of fishing issues were while they were alive, vital to its continued institutional importance, and their revolutionary charisma served to drive forward and further

[74]Ibid, p. 98.

[75]Rodong Sinmun (2014a).

increase the impetus for the development of the sector. 2014 and 2015 would certainly see that political charisma and its power within the developmental field and specifically the fisheries sector, being harnessed by Kim Jong Un in the present.

Kim Jong Un's order following the New Year Address in 2014 to modernise fishing vessels and infrastructure and to 'launch a dynamic fishing campaign by scientific methods…' while potentially capable of deriving from any era of North Korean development, places the sector firmly in a framework of technical and institutional approach that is intrinsically modern, and very much of the political moment in the North Korean sense. Similar strategies have been deployed in institutions responsible for fungal development, turf and grass production, and those tasked with weather forecasting and more long-range meteorology[76]. While the fishing industry within this campaign was to have the KPA and its institutions with their 'unusual resolve and stubborn practice'[77] as a model, it seems more important top North Korean politics, its agenda and development for it not to fall into the traps of institutional stasis which Kim Il Sung critiqued in the 1960s.[78]

4.5 2014: The January 8 Fisheries Station

Kim Jong Un's first official moment of 'on the spot guidance' in 2014 was focused on this paradigm of modernised, scientific approach to piscine resource management. However, Kim also sought to make connections and useful examples of previous development to the articulation of this new paradigm. These examples could then serve as historiographic vectors through which past authority and success in developmental terms could be deployed on the maritime projects of the present. *Rodong Sinmun* for instance recounted Kim Jong Un's visit to KPA Unit 534's 'Aquatic Products Refrigeration Facility' on 8 January[79] This visit served for North Korea's institutions and the writers of the report to underscore and reiterate the 'need to make the flames of the innovation drive in the fisheries field of the People's Army rage furiously in the fisheries across the country'. Perhaps in light of past notions of revolutionary urgency, which North Korea ultimately sought to avoid in the era of the Great Leap Forward, it is interesting to consider the level of functionality within the developmental project given that its projects must be undertaken in the midst of such a furious, urgent rage; 'Kim Jong Un demanded that the KPA unit undertake the building of a fishing port facility to supply the refrigeration facility, and ostensibly complete its construction 'before the Day of the Sun and start the fish supply from coming autumn'.[80]

[76]Rodong Sinmun (2014b).
[77]Rodong Sinmun (2014c).
[78]Il Sung (1964).
[79]Rodong Sinmun (2014).
[80]Ibid.

The 'January 8 Fisheries Station' and its workers are required to connect not only the charismatic threads of the Kim dynasty's political authority, military urgency and technological development; it is also bound to absorb those elements of previous rhetoric derived from the Kim Jong Il's intent to create a 'strong and prosperous state'. *Rodong Sinmun's* 30 January 2014 editorial[81] reviewing those developments and progress linked to the project asserts, for example, 'Fishery plays an important role in improving the standards of people's living', and, 'To shore up the fishing industry is not simply an economic task, it is a political task to carry out the behests of the great generalissimos and our Party's intention to make our people live better off'. Doing so at such a dramatic and urgent pace does not (in theory, at least) militate a reduction in technical or research focus; however, for a project built at a revolutionary pace must not neglect research or technical competence,[82] since 'Fishing operation today is in a certain sense a brain's warfare and technical warfare. Therefore, it requires of us to keep the fishing industry scientifically and technically update'.

A little over a month later in 2014, Kim Jong Un was again present on the grounds of the 'January 8 Fishing Station', visiting on or around 24 February 2014.[83] This second visit both reiterated the urgency of the project and the importance of the Korean People's Army as a trusted and privileged institution within the developmental remit; a point that it is interesting to note in light of previous speculation as to the place of developmental issues and their co-option by Jang Sung Taek and his supporters: 'I thought of the service personnel of the KPA who had carried out any task assigned to them, when I was making up my mind to build a modern fishery station here, and so, I declared I would entrust to them the project to which the party attached importance…'[84]

Kim Jong Un's statement about the Korean People's Army's importance serves to reassert the structures of institutional hierarchy in North Korea's developmental strategy. In this, the KPA serves as the key tool in the state's bureaucracy to support the will and direction of the Korean Workers' Party as it is applied within the remit of the nation's wider institutional ecosystem. This was reinforced in the reporting of the event, by the presence of several important individuals from the KWP: one Central Committee department director and at least two vice-directors. *Rodong Sinmun's* recounting of Kim Jong Un's visit concludes with a reminder of both the specific urgency involved in the planning for the project and the future planning required for its successful utilisation. Only 2 months since Kim Jong Un first articulated and asserted the need for this particular project, Central Government and developmental institutions focused on the sea were looking towards the long term, officials being given instructions 'to select captains and fishermen and prepare them

[81]Rodong Sinmun (2014).
[82]Ibid.
[83]Rodong Sinmun (2014f).
[84]Ibid.

as all-round fishermen in advance so that they may go out for a fishing operation right after the completion of the project'.[85]

It would, in fact, be only 5 months between the narrative initiation and infrastructural completion of the January 8 Fisheries Station. The Station's construction and development was apparently successfully achieved on 30 April 2014.[86] As was the case throughout the period of its construction, multiple narrative and developmental streams converge upon the project, reinforcing and supporting each other, as is the case in many such projects in the fishing sector. Connecting the charismatic authority of Kim Jong Un, the political–ideological framework provided by Kimism and the Korean Workers' Party and the efficiency and brute strength of the Korean People's Army, it is apparent that the impetus for the project is conceptualised within a wider framework of revolutionary and narrative urgency. Such projects are thus undertaken beyond the bounds of normal/non-revolutionary time: 'This is another miracle and a model of creation of speed of Korea which can be created only by the Korean People's Army possessed of indomitable fighting spirit and heroic fighting traits'.[87] They operate in, as if it were possible, charismatic time. Yet in spite of their charismatic tone and content, they are also conceptualised within a more mundane, frame, one in which 'it is aimed to supply fishes to baby homes, orphanages, orphans' primary and secondary schools and old folks' homes across the country.'

North Korean maritime exploration and exploitation have even more recently continued to develop in both institutional and narrative importance. 2015's New Year Address[88] suggested that developmental sectors should create 'seas of gold' following the suggested institutional model of that year and Kim Jong Un's New Year Address for 2016 demanded that; 'fishing sectors … should ramp up production as soon as possible and see to it that the fish farms … built across the country pay off …'[89] Kim Jong Un, in fact, made a series of visits to fish-processing and equipment-production facilities in late 2015, just before the generation of new developmental themes for the next year.[90] Having done much of an aquacultural nature in a year that was both the 70th anniversary of Liberation from Japanese rule and the 70th anniversary of the foundation of the Korean Workers Party Kim's concern later in the year served to reiterate both the role of the Workers Party and the Korean Peoples' Army within the framework of North Korean bureaucracy.[91] The KPA Fishery Station no. 15[92]and August 25 Fishery Station.[93] were the sites of

[85]Ibid.
[86]Rodong Sinmun (2014g).
[87]Ibid.
[88]Rodong Sinmun (2015a).
[89]Rodong Sinmun (2016)
[90]Rodong Sinmun (2015d).
[91]Ibid.
[92]Rodong Sinmun (2015).
[93]Rodong Sinmun (2015).

Pyongyang's much-vaunted success in bringing home 'great fish hauls.' Kim Jong Un certainly made sure to mention fishing in the New Year Addresses of 2017, 2018 and most recently 2019 and these will be considered further in the concluding chapter of this book.

4.6 External Sources (Soviet and WCPFC)

Aside from the repeated failures and complications of development, when it comes these historical narratives of fishing from North Korea, another familiarity to those versed in North Korean developmental history will be its opacity. How can we as external readers and analysts possibly trust a North Korean historiography, when we know that such narratives are so often written, rewritten and written again.[94] Can we get any corroborating evidence or account of North Korea's fishing history from elsewhere or outside the nation itself?

The reality is that to this point it has been nigh on impossible to get a coherent sense of the reality of North Korea's fishing history from other sources. In nearly every other nation's case researchers would turn to the statistical yearbooks produced by the Food and Agriculture Organization of the United Nations (FAO). It is worth remembering that FAO fisheries statistics are notoriously complicated and troublesome from this period, their methodologies being reconfigured every few years.[95] However, when it comes to North Korea, the FAO received one set of statistics in 1957 which were so outlandish and ridiculous that from that point til now the organisation simply estimates and extrapolates the nation's statistics based on the level of economic development of the country, its population and geographic position.[96] Looking elsewhere to the statistics of the various commissions which manage the pelagic and anadromous fishing stocks of the Pacific, such as the North Pacific Anadromous Fisheries Commission (NPFC), North Korean boats make no appearance, not even as illegal fishers (Taiwanese boats being the prime concern of the authorities of Japan, the United States and Canada). Thus while boats from the Soviet Union, the German Democratic Republic and the People's Republic of Poland are all accounted within the documents by the NPFC, Pyongyang's boats are nowhere to be found.[97] Fish for North Korea's institutions and government have always been an important, lively matter, but perhaps Pyongyang has never been successful at all in extracting them and connecting with their vibrancy. But it is unclear whether these statistics cover all the fishing effort in these waters, or whether they can ever do so, so we cannot discount entirely North Korean presence somewhere in the Pacific.

[94]Petrov (2004).

[95]Pauly and Froese (2012).

[96]FAO (1972).

[97]North Pacific Fisheries Commission (1972).

To get a sense of North Korean capabilities and interests in the Pacific and perhaps elsewhere the author of this book turned to the archives of the former Soviet Union. The author's interest on these archives was first piqued a couple of years ago when North Korea's national newspaper *Rodong Sinmun* reported on a meeting of the Joint Fisheries Commission of the Russian Federation and North Korea. A reading of past North Korean media reports suggested this commission had met for many years, but its publications and minutes were never publicly available and certainly not made available by North Korea. North Korea and the Soviet Union had in fact set up the commission's predecessor in the late 1960s following some 20 years of attempts at engagement on Moscow's part. This author had in fact never seen any of the reports issued by these committees, however visits to the Russian Federation's State Archive of the Economy in Moscow gave the author access to the committees' previous reports and the documents that surround them. These certainly give an external, Soviet perspective on North Korea's fishing interests history and particularly its success or otherwise in the eyes of Moscow's institutions.

The Soviet Union appeared concerned to develop conservation and management of fisheries stocks, counter to the extractive imperatives of Maximum Sustainable Yield, capitalist, socialist or communist rationalism focused on appropriating resource from the sea at this time. The Soviet Union was very concerned to support North Korea's own efforts to develop its fishing capabilities and capacities, perhaps to mitigate the cost of the various loans, credits and exchanges offered to Pyongyang by Moscow following the Korean War and to support relations between the two during the difficult politics following the death of Stalin and North Korea's engagement with China. Reports from the Ministry of Fisheries and VNIRO (Russian Research Institute of Fisheries and Oceanography) (ВНИРО or Всероссийский научно-исследовательский институт рыбного хозяйства и океанографии) suggest that the Soviet Union had sought to connect with North Korean fisheries throughout most of the 1960s, especially to engage in researcher swaps and exchanges on each other's boats and ships.[98] But contrary to Kim Il Sung's assertions in previous decades of how much North Korea wanted this to happen, and that readers will have encountered previously in this chapter, they had never happened. Vladivostok's branch of VNIRO and the Russian Academy of Sciences Fisheries Section were especially concerned to develop joint projects in the Sea of Okhotsk, as North Korea sought valuable Snow and other crabs for local markets and that stocks had declined within its territorial waters.[99] There were it seems also a number of instances of illegal and dangerous fishing practices by North Korean boats in or near Soviet declared or territorial waters. After much negotiation and many false starts, North Korea and the Soviet Union signed a

[98]'The Soviet Union delegation's account of work on session of Joint Soviet—North Korean Fisheries Commission' 1970, p. 3. Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-20-2323.

[99]Ibid, p. 2.

protocol on the 5 September 1969, which established the joint Soviet-North Korea Fisheries Commission.[100] The first meeting of the commission was delayed by Pyongyang's preparations for a Workers Party of Korea Congress (the 5th, eventually held in November 1970), but was finally held between 26 February and 10 March 1970.[101]

Soviet reports on the commission's meetings give a fairly thorough and frustrated view of a complicated and difficult series of exchanges. North Korea's representatives are described as intransigent, taking an entire day to set the agenda and being extremely reluctant to discuss the practical procedure.[102] The Soviet Union, on the other hand, had wanted to discuss the granular details of fish stocks and North Korea's perception of their own stocks and the framework of management and administrative principles governing joint exercises. North Korea, however, was determined to discuss potential joint collaboration and interactions as soon as possible.[103] The Soviet Union it appears, already had a considered and complicated network of restrictions and management around Kamchatka, the Sea of Okhotsk and Sakhalin and even joint agreements on stock capacity with Japan (with whom, even in spite of very difficult relations given the post-war status quo of Sakhalin and the Kuriles, the Soviet Union had a joint fisheries commission), which North Korea was keen to avoid being constrained by.[104] After much discussion, the North Korean side agreed to abide by the wider restrictions on salmon fishing across the Western Pacific which the Soviet Union subscribed to in collaboration with the Japanese (also quite possibly to avoid complicating relations with the United States and Canada on the subject of fishing for anadromous species in the Pacific), as well as restrictions on crab fishing around Kamchatka, trawling the mid-sea on the west coast of Kamchatka and herring fishing in the Gulf of Shelikov between mid-April and mid-July (herring fry season).[105] In exchange, the Soviet Union allowed Pyongyang to access the inshore waters of the Commander Islands, fish for flatfish around Kamchatka and Sakhalin and access the herring fisheries of the Soviet area of the Bering Sea.[106]

In exchange for these supplementary rights, North Korea supplied the Soviet side with the details of its fleet and catch. According to the Korean side, its fishing fleet in 1969 had been some 35 boats, half medium-sized trawlers and some purse seine boats.[107] North Korea also claimed to have four mother ships and four transport ships (having even bought two mother ships from the Netherlands) and

[100]Ibid, p. 1.
[101]Ibid, p. 4.
[102]Ibid, p. 5.
[103]Ibid, p. 6.
[104]Ibid, p. 8.
[105]Ibid.
[106]Ibid.
[107]Ibid, p. 7.

had plans to two large trawlers with refrigeration capacity.[108] These boats had caught in 1969 according to the North Korean fishing experts, some 11000 tons of flatfish and 25000 tons of herring in the Sea of Okhotsk. In the Sea of Japan, North Korea claimed to have caught 1000 tons of Pink Salmon, 400000 tons of Pollack, up to 60000 tons of squid and 15000 tons of crab (both Hairy Crab and Snow Crab).[109] The Soviet side thought these figures an understatement and that North Korea, in spite of its consent to restrictions, sought to exploit Pacific salmon resources as much as possible and to exploit the highly endangered Fur Seal populations on Tyuleny Island off Sakhalin.[110]

Despite their own concerns and lack of trust in the North Koreans, the Soviet Union in the joint commissions sought to negotiate joint research collaborations between fishing experts of both countries in 1970. While this seemed very difficult to set up in 1970 owing to the demands of the forthcoming Workers Party Congress on North Korea's scientific bureaucracy, the commission managed to come to an arrangement.[111] Many complex challenges were overcome when it came to matters of responsibility and lines of control and even the issue raised by the North Koreans, that Soviet ships in the Pacific were subject to mandatory boarding rights in certain areas by foreign powers and Pyongyang was absolutely keen to avoid any circumstance where hostile or unfriendly agencies might have access to North Korean workers and operatives on board Soviet ships far from its control. These joint exercises were to begin in late September 1970, the culmination of many years of effort on the part of the bureaucrats, diplomats and scientists from the various Soviet institutions.[112]

These potentials for collaboration between the two nations was severely challenged on 28 September 1970 when a highly urgent telegram found its way onto many bureaucratic desks across the Soviet Union. In the week that research cooperation efforts were supposed to begin on ships of both the USSR and North Korea, the telegram reported that a North Korean purse seine boat with its identifying marks illegally disguised, had attempted to set its own nets across and above the nets of the Soviet Union's chief research ship, damaging the them and the Soviet boat's floats beyond repair.[113] Responses to the initial telegram revealed that this was not an isolated incident and that in fact North Korean boats had been repeatedly disguising their identification marks and using incorrect or impossible to

[108]Ibid.

[109]Ibid.

[110]Ibid.

[111]Ibid, p. 4.

[112]Urgent Telegram from USSR Ministry of Communications 'Urgent Moscow Harbour to Ishkov Dal'ryba (FarEastFish) to Starzinskiy,' 28th September, 1970, Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-20-2323.

[113]'Letter to D. Gafin from Volkov A.A,' 28th September, 1970, Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-20-2323.

decipher marks on their nets and floats in the Sea of Okhotsk.[114] Further telegrams from 'Far East Fish' the 'Fishing Cooperative of Kamchatka' reported near collisions and other dangerous interactions between North Korean boats and tugboats, an ocean-going barge, the Dagystanka and a fishing trawler, the Kammeniy. Unsurprisingly, interactions between the research institutions of the Soviet Union and North Korea which had been very carefully organised and negotiated earlier in the year were curtailed for the moment while authorities in Moscow reconsidered how to approach and engage a partner like Pyongyang.[115]

In spite of this bizarre and destructive behaviour on North Korea's part, while activities at sea were restricted in 1970 the Soviet Union decided to allow North Korean researchers to engage on land with the Ministry of Fisheries institutions near Vladivostok in Nakhodka. North Korean researchers were in the Soviet Union between the 15 December 1970 and the 16 January 1971 for what was a fact-finding mission for the Koreans and an exercise in epistemological training from the Soviets—according to the accounts it was an extremely difficult month.[116] The events of the previous year, which the Soviet institutions had essentially put down to some form of industrial sabotage, coupled with the complication of the discussions surrounding the joint research efforts had soured the mood between the two nations. The Soviet side considered the reasons for some of the more difficult moments in the discussions, such as North Korea's lack of willingness to allow any reciprocity in contract arrangement and complex negotiation over the legal framework and responsibilities for any of that nation's citizens on Soviet boats as exposing its institutions to moral hazard.[117] It appeared that there was a high-security risk in engagements with North Korean institutions and that under the guise of interest in fishing, Pyongyang could send intelligence operatives and engage primarily in industrial espionage on Soviet infrastructure and factories in the far east, but also to extract knowledge not available to it on fishing stocks and fishing areas in the Sea of Okhotsk and in the wider Pacific.

The exchange in 1970/1971 certainly did not begin in the most comfortable manner. In order to avoid issues of subterfuge, espionage and security threat, the Soviet Union stipulated that none of the researchers or technicians sent by North Korea should have visited the area before or been involved in the institutions on the Soviet side in the past. Certainly none should have security or intelligence

[114]'A list of violations committed by DPRK boats fishing in the Sea of Okhotsk regarding the Regulations for Preventing Collisions at Sea and the fisheries regulations,' October, 1970, Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-20-2323.

[115]Ibid.

[116]'A report on the work with Korean delegation during a period of 15 December 1970 until 16 January 1971,' 29th January, 1971, Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-22-468.

[117]'The Soviet Union delegation's account of work on session of Joint Soviet—North Korean Fisheries Commission' 1970, p. 4. Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-20-2323.

background and essentially all should have fishing and fishing research experience. North Korea, of course, claimed that none of its researchers had ever been in the Soviet Union before and all were trained and experienced fishing experts, but Soviet intelligence soon reported that one had been to college in the USSR and two had worked in their consulate in Vladivostok—a fourth member of the Korean team it was decided actually had nothing to do with the fishing industry and knew nothing about fishing at all.[118] The Ministry of Fisheries efforts to entertain the North Koreans continued to be combined with a concern for security and the obvious dangers of their potential efforts at subterfuge and espionage, concern which only grew when the Koreans appeared to be fairly consumed by the technological aspects of their visit to the extent that when they demanded the blueprints and layouts for the machinery in the various canning and preparation facilities they visited, the Soviet side actually restricted access.[119] Eventually, a reasonable negotiation of the problems was done by the Soviet side, with extensive reports in the documents of the North Korean's being refused visits to irrelevant infrastructure and careful management of their visits to technical or research institutions, so that they could not extract data or spend too long with technology that was delicate when it came to security matters. The documents also report a number of moments of push back from the North Koreans and frequent returns to their hotel rooms following difficult moments with their hosts, to review material at length or to communicate with North Korea.[120] Finally in scenes familiar to watchers of North Korea in the present, the researchers aside from their focus on machinery and technology, were fascinated by shopping opportunities in the fishing towns they visited—The Soviet Union's Ministry of Fishing even sent the North Koreans back to their own country with an extensive supply of Soviet Crab, Caviar, Shrimp and Herring.[121]

The records of the Joint Soviet Union North Korean Fisheries Commission which met on average every 4 years following the initial 1970 meeting record more or less similar interactions between the two countries and their fishing industries for the next two decades. Undoubtedly on the surface, Soviet efforts to develop North Korea's behaviour and technical capacity worked to mitigate the security and espionage risks it generate, Pyongyang's desires to fish illegally and exploit what was not within its property or remit for the 1970s (though it could never seem to diminish Pyongyang's ambition to extract whatever it could from Japanese stocks), though it cannot be said that efforts from Moscow's researchers and academics supported much in the way of practical development when it came to North Korean fishing capacity. Nor can it be said that North Korea ever managed to extract by

[118]Ibid, p. 6.

[119]Ibid, p. 2.

[120]'A report on the work with Korean delegation during a period of 15 December 1970 until 16 January 1971,' 29th January, 1971, Soviet Union Ministry of Fisheries Archive, Russian State Archive of the Economy, Fondy, 8202-22-468.

[121]Hong (1995, pp. 97–113).

means of subterfuge or espionage any information or technology that would later drive success or development in its fishing industry or its fishing catches.

Aside from North Korea's efforts recorded in the archives of the Soviet Union, another small glimpse of its capabilities and efforts at sea can be garnered from the single fisheries commission that Pyongyang successfully became involved with (and there were a number of fisheries commissions in the Pacific. Readers will remember both Japan's great efforts and success at harvesting tuna and other larger species in the deeper seas of the Pacific. They will also remember the intense desire of Pyongyang to not just engage in its coastal waters, and to extract from the waters of neighbour countries as suggested by the documents from the Soviet Union, but to engage in the deep sea and aim for tuna. North Korea in the past decade has made a concerted effort to join the West and Central Pacific Fisheries Commission (WCPFC), which is tasked with managing the deep-sea resources of that area of the Pacific and the waters of small island nations such as the Federated Republic of Micronesia, Vanuatu and Nauru. The Commission's own records document the complicated and lengthy process surrounding North Korea's membership. Pyongyang had its application rejected several years in a row, before external pressure forced a compromise in which North Korea could join as an associate on condition of paying a fee and submitting data on its current fishing interests in the area. Unsurprisingly to North Korean watchers perhaps, Pyongyang failed to pay the fee or submit its documents on time and in English in 2013 but was allowed to join anyway as an associate member. Finally in 2014 after many years of diplomatic push and pull, North Korea joined the WCPFC and submitted useful and legitimate data on its fishing efforts in the area.[122] Extraordinarily this North Korea did, providing what to this date are the only reasonable and functional statistics on its fishing efforts and catch size in the Pacific Ocean since its submission to the Soviet Joint Commission in the 1970s. These statistics reveal the miniscule scale of North Korea's contemporary fishing capabilities and effort in the area, comprising only two small purse seine boats and one long line boat, collecting in total a sum of some 368 tonnes of tuna in 2014.[123]

The inclusion of North Korean fishing rights as an intangible sanctioned item or category in UNSC2397 suggests some value in these to Pyongyang, beyond which as an alternative to that which its institutions and organisations could catch themselves. Bo Gao has in fact recently suggested several reasons for the value of such rights.[124] As readers may have already gathered and if not they will certainly have by the end of the following chapter, China's territorial and home waters are under considerable environmental pressure from both overfishing and pollution. The Chinese waters of the Bohai Sea are in particular famous for algal and pollution blooms famously known as red tides. This has led to much pressure on Chinese fishing enterprises to fish in South Korean and North Pacific waters. However the

[122]Western and Central Fisheries Commission (2014).

[123]Western and Central Fisheries Commission (2014).

[124]Gao (2019).

signing of the China-South Korea fisheries agreement in 2001 mean that South Korean waters were now primarily closed to Chinese boats. Likewise, the Fukushima Nuclear Incident after the 3/11 earthquake in 2011 meant that a great deal of radioactive pollution was discharged from Japan into the currents of the northern Pacific.[125] Specifically, this radioactivity would pool in the bodies of molluscs and squid species highly sought after by Chinese fishermen. While North Korea's waters even in the eastern edges of the Bohai Sea and at the mouth of Amnok/Yalu estuary are far from pristine, they are preferable for Chinese companies and state enterprises to breaching the terms of the China-South Korea fisheries agreement and to fishing in waters felt to be radioactively polluted by Fukushima.[126] Bo Gao thus records a burst in interest from Chinese fishing organisations after both 2001 and 2011 in purchasing fishing licences from North Korean institutions such as the North Korea Fishery Association.[127] This interest has been pressured by both the impositions of United Nations sanctions and by the various difficulties generated institutionally by a series of kidnappings of Chinese boats by North Korean interests around the mouth of the Amnok/Yalu, the first of which was known as the 5.8 Fishery Incident.[128] This again perhaps suggests that engaging with North Korea's small fishing resource is as fraught to with difficulty in recent years as it was for the Soviet Union in 1971.

4.7 Fishing Matters and Multiple Scales

By the conclusion of this chapter, the reader will now have something of a sense of North Korea's sense of its own fishing history as well as the briefest of glimpses into the reality of its endeavours allowed by corroborative evidence from elsewhere. As much as it is clear that fishing and watery matters were hugely important to North Korea and its political, governmental and national sense of self, it is also clear that its ambitions have not been realised. But given this fact, how might they be conceptualised within Pyongyang's politics Fishery projects and the developmental, environmental or agricultural sectors in which they are placed essentially function on multiple scales, as indeed do the politics and ideology of North Korea. All ultimately connect with the narratological strands serving to underpin, define and legitimate the charismatic political form; all strands lead to the Kims or conceptions or ideas of there are own conception, and thus all are transformed by that charisma and those narratives into something a little close to transcendent or miraculous. This narrative element of mythos and the miraculous creates a

[125]Ibid. p. 61.
[126]Ibid. p. 58.
[127]Ibid. p. 62.
[128]Ibid. p. 55.

developmental mythography.[129] In this North Korea's fishery projects and processes and those participating in them as exist in a revolutionary charismatic time, in which projects such as the January 8 Fisheries Station and other fishing projects can be achieved at infeasible yet 'realistic' speeds. At the same moment, there exists a more mundane chronological plane, a timescale of everyday commitment, toil and dedication. This is the domain of the (soldier) builders and the shock brigaders, of the provincial party members, the institutional apparatchiks and bureaucrats, all those that are charged with bringing narrative, assertion and aspiration to practical reality.

In a sense neither of these chronologies and categories of spatial relationship or engagement are disconnected from the carrier signal of North Korea's charismatic politics, both being vectors by which its historical and ideological narratives must be embedded or developed. This is where the interplay lies between Kim Il Sung's postcolonial assertions from 1948, his call for ship development at Ryukdae and Chongjin shipyards in 1969, the reality of North Korea's fishing capabilities at the time as shown by the Soviet documents and Kim Jong Un's desire for a 'miracle' of institutional construction and development in this decade; a liminality, slipperiness and transferability across institutional scales, developmental epochs and politico-narratological forms.

Perhaps as external readers and observers, we will never fully know whether North Korea's claims to have entered an era of 'big' or 'unprecedented' fish hauls are to be trusted, whether the 'fish flavour of socialism' can ever be tasted,[130] not until its archives and databases, are opened up. In spite of the appearance of vast piles of fish and fish products in the photographic records provided by North Korea in recent years, some of it held and personally encountered by Kim Jong Un during his on the spot guidance sessions,[131] an assessment of the real volumes of its fishing sectors catch is extraordinarily difficult. Perhaps what is most extraordinary and important about North Korean accounts of fishing and maritime efforts not just in 2015 and 2016 but throughout its history is their continued portrayal of a particular form of landscape and spatiality. While much of North Korean development leads a lot to be desired in terms of output and development, projects seeming neglected or half-finished, output lacklustre or product amateur or mediocre in production,[132] fishing and the focus on the sea allows Pyongyang's institutions an open and accessible space to articulate continued utopic, ambitious claims which connect to the most charismatic and dramatic of its political and ideological ambitions. In our contemporary world of contested politics, the liminal maritime landscape allows a North Korea in danger of severe sanction on account of its nuclear and space exploration ambitions, and even more severe censure as a result of the activities of

[129]Winstanley-Chesters (2015).

[130]Rodong Sinmun (2016).

[131]Rodong Sinmun (2015).

[132]Winstanley-Chesters (2014).

the United Nations Commission of Inquiry (COI),[133] a little space in which its institutions and imagination can extend despite a myriad of troubles on land. While North Korea's revolutionary claims may reside in many cases in the charismatic, narrative past, the contemporary era of the 'big fish hauls' allows just a little bit of that revolutionary possibility to leach out into the present. Just as the KPA's dam builders in 1997 battled against the West Sea's waves to rebuild the breakwaters at Taegyedo reclamation site,[134] protecting hard-won new land for the revolution, so the fishing boats of North Koreas' Fishing Stations are tasked still with forging socialist promise from the water.

North Korea as the reader of this book may realise by now, may never reach the heights of extraction from the commons of the sea managed by the Soviet Union during its existence. The Soviet Union and perhaps unlikely partners such as the Polish Democratic Republic and the German Democratic Republic would join the United States, Japan, South Korea and Canada in the 1970s and 1980s as a global fishing power, the ships of these nations found across the seas of the earth and at their farthest reaches. North Korea, in spite of efforts made in the 1970s as recounted by this chapter would never be a great success. However, that has never stopped it aspiring to such success as seen in 2015's New Year Address from Kim Jong Un, and in following years, which features seas (and mountains) of gold as developmental imperative.[135] As much as Kim Il Sung wanted, desired and demanded it, North Korean fishing success on a global scale has never happened. The institutional redesign, scientific focus and technological jump required by North Korea's fishing strategy in the late 1960s and 1970s produced very little. North Korea fishing boats seldom top 1000 tonnes (Whereas South Korea's are in the tens of thousands).

The notion that fishing landscapes are still under construction in North Korea, still in engagement with the lively matters of the sea, at least in the institutional mind is fascinating. This chapter as well as the at times mythic history of North Korean fishing has touched on the reality of that history through the use of archival materials from the Soviet Union. Readers would have read a lot about not just watery matters and the vibrancy of fish and fish products in North Korea's view, but also about the spaces and geographies in which that matters would be captured, harnessed and produced. The shipyards of Chongjin and other fishing places are hugely important to these narratives, deeply embedded in the narratives and in the ideology of North Korean developmentalism. However, these narrative and historical landscapes cannot really tell anything like the entire story of the nation's engagement with its fishing matters and so it is vital for this book to go into the field and to explore the reality of fishing spaces as they are in reality. Just as it is impossible to consider North Korea's fishing history without considering the deeper and wider fishing histories of its neighbours, so North Korean fishing landscapes

[133]United Nations (Office of the High Commissioner on Human Rights) (2014).

[134]KCNA (1997).

[135]Rodong Sinmun (2015).

and places, particularly at the community level will give the reader a more holistic sense of the engagement between space, community and the lively matters of fish and fishing. Just as this book as used the wider history of fishing and its application in the East Asian region to frame the watery histories of North Korea, so it will encounter the reality of communities focused on fish and products from the sea and coast by shifting the frame again back to North Korea's neighbours. The next chapter does that through recounting fieldwork done in fishing communities in the People's Republic of China and South Korea, places and populations who are challenged by many of the same environmental problems that fishing communities in North Korea will be, but whose political and economic frameworks will be considerably different.

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Chapter 5
Gageodo, Dalian and Slavankya…Lively Matters in the Neighbourhood

Abstract While North Korea may certainly be unusual in contemporary politics, an outlier when it comes to the organisation of state, economy and society the author of this book believes it is a mistake to consider it unique or sui generis. North Korea its politics, development and no doubt lively matters cannot be separated from the wider streams of history, nor from the influence and connections with neighbouring nations. This is, of course, both true historically as much as it is true in the current era. While fishing practice and development as we will see in the next chapter is certainly difficult in contemporary North Korea and specific communities under Pyongyang's rule, communities and fishing geographies nearby to North Korea are themselves also beset by difficulties and challenges, of both environmental and political natures. It is important, therefore, for this book to engage with lively fishing matters and materials in these neighbouring or connected nations. This chapter engages in particular with three case studies, which the author of this book has completed fieldwork exercises in during the period of this book's production. First, this chapter journeys to the island of Gageodo, the most south-western island in South Korea and the closest South Korean community to China. Gageodo's fishing community has always been challenged by its geographic isolation and distance from the political institutions of Korea, whether contemporary South Korea, historical Chosŏn or colonial Chosen. Its community, however, has continued to fish, in spite of this isolation, the co-option of their efforts historically by tradition *Kaekchu* middlemen, and the pressure of tourist development (Gageodo is now very famous for sport fishing) in current times. Similarly pressured are the fishing communities nearby Dalian on the Liaodong Peninsula in China, just to the northwest of North Korea. Dalian city is subject to spectacular levels of speculative urbanism and attendant levels of pollution and environmental degradation. Whole areas of the city and its surrounding rural hinterland have been captured by the forces of new capital and speculation and reconstructed in such a way as to exclude less profitable and more old-fashioned enterprises as fishing. However, fishing communities continue to exist, as well as fish, reconfiguring their fishing geographies and infrastructures to take into account the new economic and social realities of twenty-first-century China. Finally, the chapter considers the case of Slavyanka, in Primorsky Krai, Russian Federation to the northeast of North Korea. Situated in

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political geography in some ways as challenging as that of China and North Korea, Slavyanka a fishing community since the 1860s was threatened by the developmental interests of regional politics in Russia, yet through an extensive repertoire of resistive and energetic actions managed to maintain its geography and fishing infrastructure. Through these three case studies, a complex meshing of lively political, environmental and economic matters generate and co-produce fishing geographies and landscapes which will certainly be useful in the next chapters' consideration of a particular North Korean fishing community.

Keywords Fieldwork · Gageodo · Dalian · Chinese fishing communities · Korean fishing communities · Russian fishing communities · Kaekchu

5.1 Gageodo, Dalian and Tong Shui Gou…Lively Matters in the Neighbourhood

This books' consideration of fish and fishing communities in North Korea cannot entirely focus on the spaces and places of that nation's territory. Fishing communities in our age are focused on watery spaces beyond the bounds of the national territory, and as much as the United States and Japan have attempted in the past to transform fish populations into national subjects, fish are beyond nation and national territory. However, it is best that any study of North Korean matters does not make the same mistakes as past analysis and imagine that the nation and territories are themselves separate from the wider world or region in which they sit. As this author has sought to make clear throughout his work and certainly in this book, North Korea is not a unique nation with a *sui generis* social and political system, in fact to think of it like that is not helpful for a real and coherent understanding of it as a real place. North Korea is not simply an aberration, outlier or freak of the political weather, it is a product of history of local, regional and international relationships, of changes in economic and social forms and of developing environmental challenges, which in a sense we all face, but that are certainly faced by fishing communities and fish themselves globally. This book does not really have the time or intention to delve deeply into the fishing histories of every nation that sits close to North Korea. In the English language, if background and history on the interactions between state and society in the realm of fishing in historical China is needed I suggest the work of Micah Muscolino[1]; if the same is true of Imperial Russia and its interests in fishing and marine mammals then I suggest the work of Ryan Tucker Jones.[2] However, it is extremely important for this book to connect to some of the places and communities near and connected to North Korea. This fifth chapter, therefore, will as the title suggests, examine the

[1]Muscolino (2009).

[2]Jones (2014).

lively fishing matters in North Korea's neighbourhood. It will primarily do this not through extensive historical analysis, or statistical review, but through that most Geographic of methodologies, the fieldwork exercise. The chapter will certainly get to Chinese places and spaces, for they are and were utterly fascinating to the author, especially given the nexus of cross-border exchange, support and interaction between North Korea and the People's Republic of China. However, first this chapter will explore a fishing community mentioned earlier in this book, Gageodo (가거도) in South Korea. There is an industry in making comparisons between North Korea and South Korea of course, comparing economic and political development since the division in 1945/48, often pointing out the failure of northern efforts in comparison to apparently miraculous achievements of the south. This isn't the ambition of this author or this section of the chapter which seeks to place this South Korean fishing community in the context of a similar sea to those of North Korean fishing communities, and certainly very similar environmental and climatic problems.

Gageodo is the most southwestern island in the whole territory of South Korea. This book considered a little of its fairly unknown and unwritten history in the second chapter, but it is fair to say that Gageodo has always been peripheral to the institutions and governance of Korea. When Prof. Han Sangbok of Seoul National University first visited the island in the 1960s while he was completing his doctoral training it was almost as remote as it had been centuries earlier. The Professor reported to me the extraordinary journey from the mainland which was the only option at the time, a journey of some five days by steam ferry, staying overnight on the chain of islands that extends offshore from Mokpo port, itself the most south-western port in South Korea.[3] Most of the trade and interest in this area it seems has settled for some time on the island of Heuksando, famous in Korea for its Hongeo-heo 홍어회, incredibly strongly smelling fermented Skate (similar to the legendary Icelandic dish of Kæster hákarl, the putrefied and fermented flesh of the Greenland Shark). Gageodo at the time was still some 2 days sailing southwest of Heuksando (흑산도). This remote location meant that Gageodo was fairly unde-veloped for many centuries. Even under the Japanese colonial administration, it seems there was no police force or military garrison on Gageodo, and the colonial era only left a lighthouse at the island's far southern tip…not even accessible by path or road from the villages on the island. In 1968, the fishing community in the main village of Gageodo had to rely entirely on the natural harbour created by the areas topography (a headland and a large island, presumably once joined to the island by a rock bridge which had long since collapsed), and as this could be problematic in a storm or change of current or wind direction, traditionally the fishers of the village had to haul their boats up and over the pebble beach for safety so that they rested on the seaward side of the main village street, opposite the narrow rows of houses. The steam ferry did not even actually berth on the island, and the Professor and anyone else who wished to visit had to be decanted into a

[3]Han (1977).

smaller tender boat to get to shore. Gageodo in 1968 was even still under the thumb of the *Kaekchu* (객주), commission traders who had kept the community and many other fishing villages under a curious private enterprise form of debt and credit bondage, which meant that its technological and economic development was highly compromised and restricted.

In 2017, when the author of this book travelled to Gageodo with Prof. Han Sangbok the steam ferry and overnight stops on Heuksando and other islands had been discontinued. Gageodo was now reached by a hydrofoil from Mokpo which while still making quite a large number of stops at various islands (even the express service), including Heuksando, in some 5 h of sailing. South Koreans who the author has mentioned this island to, still often exclaim at this point how can it take 5 h? South Korea today is an extremely well-connected nation courtesy of its highly developed high-speed railway network, the KTX which means that one can travel from Seoul in the far northwest of the nation to Busan in the far southeast in around 2 h. A five-hour journey in South Korea is highly unusual in the twenty-first-century. Gageodo's hydrofoil service is provided by a boat actually named '*Utopia*', but fishing communities have never been utopian in East Asia and certainly not in Korea. Fishers and fishing communities, including Whalers were among the lowest and unclean classes of the population, problematic and stigmatised people. In Korea, historically the sea and the ocean itself was considered dangerous and in some way morally dysfunctional. The Sea Dragon King held sway over the waves and fishing communities were forced to seek cosmic mitigation of this danger through a complex landscape of ritual and spiritual performance in which fishers engaged in complex rituals at particular rocks and small islands. Gageodo in 2017 is still not any form of utopia but is considerably more developed than when visited in the early 1960s.

Utopia arrives next to a large concrete harbour wall, which was in the middle of having an even larger concrete berth built connected to it in 2017 by Samsung Heavy Industries so that cruise ships and larger pleasure boats could dock at Gageodo rather than just sailing by. When Prof. Han Sangbok visited in 1968 the notion that this tiny remote island might become in any way connected to tourism would have seen fantastical and outlandish. At the time there was only one guest house on the island, owned by the head of the village in the largest village on the island. Gageodo's position far out to sea and in the middle of some of the strongest currents of the West Sea meant of course that the fishing was good, the reason for the communities on the island in the first place. When sportfishing developed as a leisure activity in the 1970s and 1980s in South Korea, newly adventurous leisure fishers sought out all sorts of interesting landscapes on South Korea's jagged western coastline in order to find the best and most interesting places to access the more energetic of ocean fishes. Gageodo became actually quite famous for fishers' potential access to Tuna and larger sea and ocean fish. It appears there was a boom in accommodation providers for these sport fishers, although nothing so far very luxurious as such sportspeople seem to minimise their costs for overnight stays, and even small shops for sustenance and fishing equipment. Thus by 2017, a number of the houses on the front street of Gageodo's primary village were guest houses and

there were further guest houses and accommodation providers further up the mountain. Quite what will be the impact of larger cruise ships and tourist boats in the future is unclear but it surely won't be long before a more conventional hotel is opened somewhere on the island. Along with the extensive harbour development which allows the hydrofoil to stop in the harbour, South Korean government money had supported the fishing community to install a large mechanised boat lift and to build new birthing spots for larger boats. The community has built a freezing and prep facility on the right side of the harbour next to the fishing community hall. Gageodo's main village is connected by small roads to two further small hamlets on either side of the island. Both of these communities were in 2017 declining in population and have many derelict and unused houses, but both have had new harbour infrastructure built to support initially whatever fishing enterprise remains there, but in more recent years to support the sport fishers.

When the author of this book arrived, staying with Prof. Han Sangbok as he had done in 1968 in the guest house of the village head one of the first things I noticed at the head of the harbour was a large series of shipping containers filled to the roof with bottled water. Interesting environmental times it seems were afoot on Gageodo, drought had arrived for what was said to be the first time in living memory and had come for several seasons. Gageodo's many water storage tanks and bores were dry and no serious rain had fallen for many weeks, even though dense fog would regularly roll in. The village head had engaged in extensive negotiation with the regional administration on the mainland in Mokpo and they had agreed to support Gageodo and neighbouring islands with drinking water until the end of the drought. No one knew when this strange weather situation would end as it really had never been seen before. So at this moment of real institutional and governmental interest in Gageodo, unlike many centuries of neglect prior to the 1960s, the island was beset with new problems, surrounded by water, but with no water to actually drink. The village head and other fishers I met on the main street and who talked to my colleague the helpful and sprightly Han Sangbok (even though he is an Emeritus Professor and in his late 70s), insisted that while there were still plenty of fish, the types and sizes of fish caught on the island had begun to change and the time of the year they were caught had also begun to shift.

I set out a number of times to walk across the island, as of course there is no public transport on Gageodo, so if one wanted to get from the main fishing village to the two further small hamlets one would have to walk out of the village, up the mountain past the ROK Navy Marines base. At the shoulder of the mountain 400 m above the largest village, the road splits in two. One road follows the contour lines into a deep wood and heads to the west side of the island. Another road heads straight up the mountain and eventually weaves, turns and then descends fast down to the eastern side. Extraordinarily, and in a way which Han Sangbok could not have imagined in the 1960s, Gageodo is as digitally well connected as nearly every other place in South Korea. Korea Telecom and SK Telecom, the two largest South Korean telephony and mobile telephony services decided that rather than install a brand new copper wire network across the island in the internet age, they would

install broadband Wi-Fi routers on old telephone poles all across the island. The visiting tourist or academic can, therefore, now be as connected as anywhere else, I found myself walking through the paths up Gageodo's highest peak streaming BBC Radio 4 on my phone while using an Olleh mobile broadband 'egg'. Although in one of the most distant and foreign places, I had ever visited I felt as enmeshed in the global digital nexus as I have ever felt in Korea.

While listening to streaming services or networking on social media, the visitor on the western side of the mountain would continue down to the second Gageodo fishing village. Gageodo 2, as the villages of the island are marked on maps, was located in a topographic bowl underneath the mountain and with a promontory to its west. Essentially the village had no coastal strip or beach and has never had one, steep cliffs abut the sea, but the shape of the coast means that the water below is very calm and presumably very safe for boats to be moored. Historically fishers of Gageodo 2 used to tie their boats close to the cliffs and the scale them using a steep ladder and walkway. This was apparently the case until the early 1970s when funding from regional authorities in Mokpo and from central government under the control of the Park Chung-hee regime enabled new infrastructures to be built across the island. Gageodo 2 received a new powered boat lift to raise fishing boats from sea level up the cliff to a new prep and freezing building. This boat lift was built on quite a substantial concrete base, large enough to take the catch and equipment of several boats and to allow those boats to berthed alongside. This boat lift and base also enabled a brand new and dramatically shaped concrete set of steps to be constructed alongside the boat lift. Sat on the concrete base the water at this point is extraordinarily clear and pristine, as idyllic a scene as can be found in Asia. It is abundantly clear however that very little organised conventional fishing still occurs from this place, even though on the occasions that the author of this book was there, a number of sportfishing boats surrounded the boat lift and base racing off with their eager cargo of holidaying South Korean businessmen out to catch a big fish and not let it getaway. The head of the village, and unofficial governor of the whole island informed me that in fact there were only three actual fishing boats fishing properly out of Gageodo 2's harbour. This small village had begun to decline in the late 1980s and now only a few of the small houses on the hillside above the cliffs were inhabited and apparently not by families but by single older men, three of whom were the remaining fishers. These small dwellings hunkered down into the landscape, connected by small cobbled pathways, not unlike mountain villages I had visited around Nagarkot in Nepal, timeless but more than a little lost.

Thinking back up the mountain to the road junction, the visitor interested in fishing should turn to the east and climb further up the small mountain following the tiny road. Before the peak, a further trail climbs away from the road to the highest point of the island. Instead, however of being able to sit at the top of the summit and look out across the seas below for whatever fishers might be plying their trade, visitors are not really alone at this place. There is a very substantial listening post and radar station on top of the mountain from which the Republic of Korea Navy and Intelligence Agencies survey the shipping lines and watch for

Chinese breaches of the 2001 China-South Korea Fisheries Agreement,[4] infiltration or other threats in the water.[5] Heading back to the road and up through the forest the mountain drops away dramatically on the northeastern coast of Gageodo, the road itself twisting and turning to Gageodo 3, the smallest of the villages. This remote place was only reached by road within the past decade and instead of being formed of a ribbon of houses along the road, the community clumps along a slope down to the sea. Gageodo 2 may feel quite traditional, but Gageodo 3 resembles those peripheral villages first encountered by British adventurers on Jeju in the nineteenth century, low bound small buildings which appear to all surround a courtyard, with rooms facing directly onto that courtyard. Often there would be a collection of organised or less organised work focused material and tools and this was certainly the case at Gageodo 3. While there was a lot of fishing and maritime detritus scattered throughout the area of the village, the Head of Gageodo's main village insisted that there were no longer any boats at all registered to this small village, no families or even single fishers still based there, and only a few older ladies still lived in some of the houses. Despite the fact that Gageodo 3 was not only inaccessible by road from the main village and very small, even historically, money from central government also reached its small harbour facilities in the late 1970s. This village landed boats on a small natural rock shelf at the bottom of a fairly steep cliff. Funding from the Park Chung-hee government had allowed new steps and access routes down to the boat landing area to be constructed in concrete. The village had also been enabled to build an elaborate if a little rickety wire lifting system to ferry crates of fish and crustaceans up to a small preparation shed. The boat landing area itself had also been extended, connecting some small rock formations offshore to the concrete shelf and making further space for boat births. One of the older female residents of the village even came out of her house upon seeing my arrival to show me that their little lift mechanism still worked. She told me it had been some years since the last fisherman left the village, prompted by the arrival of the road which in her opinion should never have been built. Finally, it had never been possible historically to continue along the coast to the far southwestern tip of the island. The only piece of construction built during the colonial period was a lighthouse, cottages and resupply store built on the remote tip of the island. It had only been accessible via a dangerous path from the summit of the mountain. When I arrived in 2017, builders were hard at work completing what surely must have been one of the last roads to be built in South Korea. Although the road was still not entirely finished, I could pick my way past the piles of bitumen and the collections of prepared tree trunks with which the builders were underpinning it and walk along to the lighthouse, perhaps one of the last places in the country to be touched by the nation's developmental aspirations. This lighthouse with accompanying cottages and storehouse built in a familiar colonial style has beamed out its light of safety for nearly one hundred years (it was built in 1921), but the waters this light shines upon

[4]Gao (2019).

[5]Kim (2017).

are in a substantially different geopolitical and environmental world from that of its birth.

All of the Gageodo villages and the islands other infrastructures may have had quite a degree of financial and other support dispersed upon them over the decades since South Korea's birth in 1948, enough to maintain and develop fishing communities and practices which would have dissipated and disappeared elsewhere. However, the waters surrounding the island have transformed similarly since the colonial era. While whaling boats and motherships may no longer ply the nearby seas, as this book has already asserted, the maritime landscapes and the fish themselves that travel the currents and school amongst unseen underwater topographies have been extraordinarily denuded by the technologies, economics and practices of industrial fishing in the nineteenth and twentieth centuries. As fishing technologies and capabilities have developed what is done to the sea and to its inhabitants as only spiralled downwards in impact. Global societal notions of what is a large fish or what is a large number of fish have transformed, so that earlier literary descriptions of the size of particular species or the density of a shoal are regarded as fantastical. A cod could never surely be the size of a man, the waters could never really be so full of fish that a human could also walk upon them to reach land, it is though, the writers who said so were being hyperbolic or absurdist. Yet recent more careful maritime archaeology and consideration of the genome of fish species suggests that in fact it is very likely that these seemingly rather far-fetched stories were true.[6] It is not the reality of the past that has changed or become cleared or smaller in the present, it is the fish and their numbers, and that is the fault of humans and their technologies. The impact of this is felt as heavily at Gageodo as elsewhere across the globe in changing fish size, population density, ease of catch and time of migrations and schooling. Even in spite of the investment from central and regional government fishing has not been good and the number of fishers and fishing boats has declined over time.

Many miles to the north of Gageodo is the Liaodong Peninsula. A long thread of land which follows the estuarial course of the Amnok/Yalu (압록강/鸭绿江) River, just across the water from North Korea and the community of fishers at Sindo. Liaodong has like many places on the coast of China colonised by many other nations. At one point, the peninsula had a settlement named Port Arthur at the end, a British colony. Port Arthur soon became a Russian colony and was connected to the China Eastern Railway, another ice-free port for the Empire. Just to the north of the port the Russian's built a dramatic new city, Dal'niy, planned in a similarly Haussmannian style familiar in other cities nearby. Dal'niy would become Dairen in 1905 following Russia's defeat to Japan in 1905 and the area would become the Kwantung Leased Territory, combined in the later years of the Japanese empire with Manchukuo.[7] The Russians would arrive back in Dairen in 1945, this time as the Soviet Union, defeating the remaining Kwantung and Japanese forces following

[6]Barras (2018).

[7]Hess (2006).

the Manchurian Strategic Offensive.[8] The Soviet Union would hold the territory in collaboration with the forces of Communist China until 1950, handing it back to the People's Republic of China without compensation and with goodwill.[9] The People's Republic of China and the developmental power behind the Chinese communist model have continued to develop Dalian over the decades. Dalian is now one of the largest ports in northeast China, building aircraft carriers for the PLA Navy and Port Arthur now known as Lüshün (旅顺), has one of the largest PLA Navy bases in the area, just down the street from the preserved railway station from the China Eastern Railway. Under the mayorship of the infamous Bo Xilai, Dalian found itself with the worlds' largest planned square and some fantastical architectures on hills around the city.[10]

While certainly not uncommon in the contemporary People's Republic of China, Dalian has one of the most extraordinary proliferations of examples of the physical and architectural outputs of what has been called speculative urbanism. Within the highly active economy of contemporary China, there is a great deal of capital flowing around, generated by the normally extremely high levels of economic growth, high profit margins and the unusual liquidity of money.[11] People with capital are always looking to invest and make a profit in China, and one way of doing so is urban development. While China's politics has a peculiar set of restrictions, known as the Hukuo system (户口) designed to protect agricultural land holding, maintain public order and control the mobility of the public, modern Chinese people are still essentially quite mobile.[12] There are a number of ways in which restrictions, which prevent citizens from moving to new districts and buying and selling land are circumvented, often leading to greater speculation.[13] Large population transfers have occurred in China in recent decades as the western coastal region developed economically into the industrial powerhouse it is known as today. Wages in these industrial areas, while extremely competitive on a global scale, completely outpaced the value of pay and trade-in non-urban areas to the east.[14] This created a huge drive towards population transfer from the rural areas to the urban areas like Dalian. Under post-Deng Xiaoping housing policy, the supply of public housing was restricted and privatised to a degree, so that property developing companies, often in tandem with arms of or connections to state institutions like the PLA, became the key provider of new housing.[15] Coupled with an autocratic and radically ambitious approach to urban and developmental planning that privileged economic growth over personal property or rights, such companies, backed by the

[8]Ibid.
[9]Ibid.
[10]Bo and Chen 2009.
[11]He et al. (2009).
[12]Chan and Zhang (1999).
[13]Huang et al. (2014).
[14]Knight and Song (2003).
[15]Huque (2005).

state in both its' organisational and legal capacities, and powered by the huge capital flows would completely reconfigure areas of urban and rural landscape.[16] While this has been for the most part successful and contemporary China has managed to navigate these huge population transfers without extensive political or public revolt, there have been glitches and fractures in the system. Famously these involve situations where incomplete or unsatisfactory planning has failed to map the potential population flows and public demand in the right way and been further enabled by an overheated market for capital and investment.[17] Academia knows the results as China's 'ghost cities', huge and unlikely new urban conurbations built often in very remote or peripheral places because of a sense that development would reach even the furthest outreach, or that there was a resource to be extracted nearby and workers would be needed to obtain it.[18] These have been the subject of intense debate in the literature and often ridiculed as examples of the weakness of China's model of development.[19] There are also examples of where developmental capital has gone through a process of diffusion, so that primary builders, sell on to secondary buyers, tertiary buyers and then even fourth-level buyers all of whom are highly focused on extracting a profit. Because there are so many rings of profit, the primary builders and secondary buyers are essentially protected from risk. It does not matter whether people will actually live in these developments or not, as their equity stake in them will have been sold on well before anybody even thinks about buying them. It is only tertiary and fourth level buyers who might be exposed to the reality that perhaps the location is unlikely or will not be popular enough to turn a profit as has been the case with many of these secondary developments.[20] Large sets of urban high-density tower blocks attempting to take advantage of the new power of the city, trying to second guess its growth and the growth of its transport infrastructure. There is also a great deal of speculative urbanism in the area which connects to leisure pursuits or the aspirational desire of newly middle-class Chinese to move either further out of the city or to be in an attractive landscape, particularly by the coast.[21] These developments cannot always be successful or appropriate, but they are powerful stores of capital and almost impossible for people who are not part of this new development/capital matrix to compete with. Traditional ways of life and ways of making a profit such as fishing and other maritime enterprises, which the area is, of course, famous for, are subject to intense pressure for space.

The author of this book engaged in fieldwork around the Dalian/Lüshün region, which included a number of visits to various examples of such speculative urbanism, including the hotels north of the record-breaking square in the middle of the city which resemble fantastical Disney creations. The old fishing harbour of

[16]He and Wu (2009).
[17]Yu et al. (2011).
[18]Yu (2014).
[19]Sorace and Hurst (2016).
[20]Wu (1999).
[21]Jiang et al. (2017).

Dalian, familiar to the Russians and Japanese is buried beneath the dramatic construction site of a new Langham Place development. Further along the fishing area, Dalian now sports an enormous series of faux-European townhouses, meaning that one can walk along the shore past imagined versions of Bruges, Venice, Florence and Paris, architectural styles changing every few hundred metres. Away from the shore and the new thrusting city centre, the Russian old town built around a turn of the century town hall sits derelict with its paint peeling. There was little to be seen of Dalian's fishing traditions within the centre of the city or in the main area of Lüshün, which is complicated to visit and restricted somewhat by the security presence around the PLA Navy station. To the southwest of the city is the Bangchui Island area. Historically famous for being one of Mao and Deng Xiaoping's favourite CCP guest houses (it was recently visited by Xi Xinping and Kim Jong Un),[22] before it was cordoned off to become a VIP area this shore was important for fishers. Little remains of their facilities and architectures, nothing of course in the guest house area, but the power of speculative capital has displaced whatever was left of fishing communities along this coast. Middle-class residents of Dalian can now even be found sipping coffee in a giant coffee shop and restaurant named 'fishing harbour' at Xiaoping Island. Accompanied by a guide, fellow academic, translator and a driver we set off in search of the remains of Dalian's fishing communities.

Travelling along the coast road towards Lüshün, we first visited the fishing market at Yanchangxincun (盐坨新村). Here the market on the coastal side of a dual carriageway highway is overshadowed by an army of 30–40 storey apartment blocks. The market was one of those dream places of China, if a little dishevelled with all manner of sea product, some completely indescribable, scattered in a mix of tiny stalls and other sales outlets right at the end head of a beach, on which a few small powered boats had been hauled out of the water. Perhaps this would have been proof enough that amidst all the speculative urbanism it was possible for the vestiges of a past fishing community to carry on, if it were not for what we saw next in the distance. Behind the market, connected to a small promontory that stuck out into the sea were an extraordinary network of wires, pulleys and metalwork that were fixed into the ocean. These various haphazard pieces of technology connected to a disorganised flotilla of boats as well as to facilities on the shore which appeared to billow with steam and smoke. A short walk up a path to the edge of the promontory revealed that all this steam was, in fact, the sign of an unexpected industry, seaweed boiling. Kelp is made ready for storage and cleaned by vigorous boiling and the networks of wires allowed the various small businesses along the coast to pull bundles of kelp directly from their boats to the boilers. Here, a group of at least four men per site would make sure the kelp was kept on feeding into the boiler, poked and prodded it while inside the machine and then made sure it emerged properly at the end of the process. These were extraordinary workplaces, hot, wet and uncomfortable, jets and bursts of boiling steam spraying out on

[22]Benjamin (2009).

occasion, the workers protected in white overalls and protective suits. We walked all the way down the promontory counting at least 14 such businesses working in the same field of work. Surely this is complicated and dangerous work with little profit margin in contemporary China, but proof at this point that along with the various tower blocks and apartment complexes, value could still be extracted from the sea and life could be had at its edge.

On the other side of the Dalian urban region, Jinshitan (金石滩) was a fishing village known for its deep-sea fishing prior to the colonial periods. The Jinshitan now visible from our car appeared to be an interesting mixture of apartment architecture from the 1970s and 1980s, shopping centres and leisure facilities connected to the area's new identity as a seaside resort and golf resort, including Discoveryland Theme Park and the Golden Pebble Beach Golf Club. The Canadian owner of the famous Suzan Pizza restaurant in the middle of the more down at heel apartment complexes, who has lived in Dalian for more than 20 years told me that when he first moved to the city the apartments were primarily owned by fishers and that the coast had been radically reclaimed to make space for the golf resorts which had impacted not only on the physical space available for fishing infrastructure, but also on the sea currents which travelled around the headland. Behind the golf resort and down an unmetalled road, dodging the trucks and wagons you could make your way to the new fishing area. Having taken his advice, we did find the new area for the huge number of wooden and metal boats of the Jinshitan fishermen's cooperative. Here in the waters of Changjiang bay, the fishing community and its infrastructures appeared to have found a functional new home. In the manner familiar to developmental communities across the globe who are busy with work and not necessarily hugely focused on beautification, Jinshitan's fishing area is a little chaotic and messy, but the extensive buildings around the fishing administration office and cooperative hub suggest that investment from the Dalian area authorities had not been wasted. The cooperative also had extensive preparation and freezing infrastructure and that looked as if they had been built for wet fish, though I never did see any fish being landed or transported at the time. Around the corner from these places explicitly focused on fish, I found a street-facing directly onto the sea with a series of undramatic low-roofed factories with extensive courtyards. This area belonged again to seaweed preparers and boilers. Out on the quayside in front of these facilities trucks disgorged wet cargoes of kelp and other vegetation from the sea, cargoes lifted up by cranes and placed into wire mesh cages. These cages disappeared into the courtyards and later the steam began to rise as the boiling and processing got underway. The prevalence of such industry focused on seaweed suggests that besides wet fish, crustaceans and other shellfish, this might be the real focus of Dalian's still extant maritime enterprises. Future fieldwork undertaken by others should surely seek out the location from whence all this seaweed came from, whether it be directly from wild sea forests or enormous kelp farms offshore. It would also be fascinating to read an anthropology of the seaweed boilers and their lives amidst this steamy, hot, messy way of life.

Jinshitan and Yanchangxincun while in some ways thriving and managing to continue in the midst of so much urban and leisure development, with all of the

pressures of both space and capital around them are examples of more urban fishing communities in the area. These were not entirely traditional, and East Asian examples more generally of fishing places are more peripheral and rural, so it was important for the author to find whether in the hinterland of Liaodong, such places still existed. For this, we apparently needed to head north out of Dalian City area to Wafangdian district (瓦房店市). In 2017, this journey involved driving along a series of large dual and triple carriageway highways (with remarkably few cars after having left Dalian City limits), and then turning off into the countryside along increasingly smaller and remote roads. Having passed an extraordinary example of a ghost tourist resort, complete with a series of hotels, bus station for coach and touring companies, potential restaurants, a bowling alley and a series of unfinished golf courses, the roads traversed a series of salt farms. There is perhaps a book to be written on salt farming in this area, as these facilities took up miles and miles of ground and presumably displace other agricultural efforts, but as a low input, reasonable output industry they are perfect for the landscape of the area. Finally, beyond the salt farms and over a series of low hills we glimpsed the coast and the road essentially gave out to pebbles and compacted mud, here, at last, was Tong Shui Gou (通水沟). The gateway to the village, complete with faded party slogan from the local office of the CCP was followed by what can only be described as a tower of broken and disused lobster and crab pots. Further down the main village street was a huge pile of what looked like anchors and the metal posts used to fix buoys to the ocean floor. Tong Shui Gou is certainly not a pretty fishing village, it is not picturesque in any sense, it is impossible to imagine speculative urbanism weighing the investment potential of this land. While the days we visited were perhaps not the most auspicious for its appearance, the sky a slate grey, light mist rolling in, a stiff breeze in the air, amplifying the essential dullness of the water, tourists or citizens of modern China will be unlikely to come here, my fixer and academic colleague from Shanghai was amazed that somewhere like this still existed in the greater Dalian region. If the village is a mess, it is at least functional and practically every building and patch of ground nearer the coast was dedicated to fishing or the storage of fishing equipment. The harbour itself was host to a huge number of boats, perhaps more than 50, both wooden and metal hulled, both small two or three man-day boats and a series of larger trawlers and purse seiners with which a crew could go to sea and spend a few nights at work. Whether any of these larger boats had seen service recently was not clear. The ice house, the prep building and what looked like a packaging facility looked as if they had not been used for some time. But as we approached the quayside with its weigh station and fisherman's rest house, it was clear that there was a small crowd in attendance, not for us visitors but to receive a boat due to arrive with a catch in the next 20–30 min.

We decided to wait, with an invitation of course, in the rest house for the fishermen and to see if any of those at work with their stout and lengthy wellington boots would talk to us. It was apparent that they had all been at work throughout the early morning and were of few words at the best of times. But the conversation such as it did tell us that Tong Shui Gou was still in business, yet did not as a community focus on wet fish or larger shellfish anymore because they simply could not be

found in quantities worth seeking. There was some talk of who they had to sell to as well, that it was hard to find a market for the products, so jokingly the market came to them…an aside which was not elaborated on in any great detail, but later the meaning of which became abundantly clear outside in the drizzle and wind. Mainly, our small group and the fishermen watched an episode of the globally famous TV show 'If You Are the One' 缘来非诚勿扰 (Fei Cheng Wu Rao) in which single men attempt to win the favour of a phalanx of women by detailing their capabilities and attributes, as well as a giving a little performance of sorts. While the British version ('Take Me Out') of this programme is much more focused on comedy than the rigorous, serious Chinese version, it would be no less bizarre to watch in a fishermen's rest up surrounded by the detritus of lives at sea. The bright lights and cacophony of the studio in Nanjing seemed very far away from this dank, blustery coast.

After several men and numerous women had failed to impress or be selected movement outside the hut alerted everyone that the incoming boat, now later than anticipated due to the stiff wind, was not far off the harbour. Outside I noticed the arrival of a small group of men dressed in leather jackets, better shoes than everyone else in the village and with rather purposeful expressions. At the same time, four women dressed very colourfully in padded jackets and hats also arrived with a set of large boards and coloured plastic buckets. The women set up their boards into a set of large tables and the men loomed about above them smoking furiously and trying to keep warm in spite of the noticeably cold wind. These men with commission tradesmen, responsible for buying whatever the catch was, setting the price and finding a market elsewhere for it. Similar to *Kaekchu* in historical Korea such tradesmen would also extend credit and supply necessary resources or arrange repairs to boats, nets or other equipment. Naturally, the relationship between such people in a peripheral community like Tong Shiu Gou is problematic and not entirely comfortable, but, given the distance of Tong Shui Gou to the nearest fishing markets, the need for the fishermen to spend as much time at sea as possible and the presumed connections between the salesmen and the regional markets themselves, they are fairly essential. I have described the historical impact of *Kaekchu* on fishing communities in Korea and the restrictions their place in the web of relationships around fishing places on the practical level of development of these communities in a previous chapter. I do not claim that such restrictions are necessary in play at Tong Shiu Gou and any other fishing villages of the Dalian region. These communities in previous times in the People's Republic of China sold their fish through a more centralised and bureaucratic system of fish marketing. The appearance of these men in leather at the quayside essentially is a product of China's economic liberalisation and peculiar approach to free markets, as well as the withdrawal of institutions of the state from smaller scale developmental interests such as these. It is more likely that while they cannot be generous with their pricing and certainly will extract a profit which would otherwise go to the fishing community, their continued interest in this place makes it possible to continue fishing here in these difficult contemporary times.

So with the men in leather jackets, the women and their boards and our small group of academics and helpers all looking on, the black wooden boat for about potentially four or five crew flying the red flag of the People's Republic rounded the breakwater and entered the inner harbour. When it arrived at the quayside the four crew on board attempted to scramble off at the same time as two of the buyers tried to get on to make sure of what was on board. Essentially, it was a meagre catch, three crates of mixed specimens of the sea, not really full, but somewhere between two-thirds and three-quarters full. I have learnt a lot about the state of our seas and oceans in recent years for the research behind this book, the impact of fishing technology, climate change, warming sea temperatures and pollution and I was on the quayside shocked and more than a little horrified by what was in those crates. A polite and academic way of saying it would be 'shrimps and assorted other crustaceans,' there are of course innumerable less polite ways of referring to it. Essentially much of what had been caught looked undersized, sick or broken, as well as interspersed by an enormous percentage of waste, both plastic and paper. At this village, we were some distance from urban centres or landfill, but it was patently clear that wherever this boat had been to dredge or net this catch, the sea was not healthy or clean there.

As the catch was hauled out of the boat the women sat next to their boards waiting, before the boats crew unceremoniously dumped the contents of each of the crates onto them. Faced with a seemingly vast pile of mixed waste and slowly wriggling small fish and shrimps the women got to work. Moving very fast the women began to make several piles, one for waste, one for things that were shrimp or looked like shrimp and things that were fish or looked like fish. The waste pile grew and grew, at least a third of the catch, while the fish pile remained fairly small and bizarrely the least attractive of the piles as at least some of the waste had colour, whereas these fish were also entirely grey and appeared fragmented and damaged in almost every case, often with skin lesions and other malformations. The shrimp pile became towering, and while grey, had some of the pinkish colour so famous around the world, almost a single mass still moving occasionally. When the piles were initially complete the women scraped the waste pile and the fish pile to two other boards, each with a single person tasked with its further investigation, while two women focused on the mass of shrimp.

It is probably too much to compare the efforts of two women sorting shrimp in the wind in a down at heel Chinese fishing village to the synchronised movement of robotic arms in a complicated factory or a fully automated Amazon web fulfilment warehouse, but the extraordinarily fast fingers and arms of the two women at their board had a sort of balletic quality. The one enormous pile of shrimp very quickly transformed into three and the women through an obviously engrained and pre-existing set of mental guidelines were set fast in the task of sorting the greying mass into these three piles. Based on both size and width the women selected individual shrimp for each pile, the differences being not immediately apparent, but before long it was clear that there was a previously unseen homogeneity in their selected piles. Each set of shrimp really were discernibly different sizes and presumably weights and judging by the interest of the men in leather jackets also different

prices. As the women finalised the first sort, they then went through each pile, reallocating on the rare occasion that a particular shrimp did not meet the unwritten specification and had been placed in an incorrect pile. One of the tradesmen buyers was very much more hands-on in this process than the other and considered each case of misallocation very specifically and carefully, shrimp by shrimp, obviously not wanting to pay a single Yuan more than was strictly necessary.

On a neighbouring board, another woman had the job of sorting out the pile of fish and assorted other living sea creatures in a series of piles that seemed to equate to 'saleable,' 'unsaleable' and broken. These were, for the most part, sad collections of sickly, small looking creatures, the value of which could not really be clear to all but the most expert of fish pricers. Still it became apparent that there must be value in these little agglomerations of fishy life as the most interested of the tradesmen sought to set prices both for the pile of apparently saleable fish and the pile of broken and damaged creatures. There was even heated discussion about the value of certain species, which mainly focused on what looked like very juvenile dogfish and a species of very colourful guppy. For the pile of broken fish, there was less discussion, only a resigned expression from the sorting woman that this collection of once living detritus had some value, even if it was very small. Moving back to the shrimp piles, the discussion between the two women, a representative from the fishing cooperative and the two tradesmen took up some ten minutes of discussion over the three separate piles. Even at the last moment before final prices were set, there was some disagreement over the place of some of the shrimp in the middle pile between them, but eventually consensus was grudgingly reached and the tradesmen unceremoniously decanted off their boards their piles of shrimp and fish into separate black bags. If money changed hands I certainly did not see it, and neither did any of my colleagues and if a monetary price was come to, we certainly did not hear it, as the prices were discussed in fractions of an unknown whole. Large shrimps were sold for 8/10s, middle sized for 5/10s and small for 2/10s. When it came to the fish, reasonable specimens were sold for 6/10s and the pile of broken pieces for 1/10th. To this day, it is unclear what these tenths represented or how they were translated into a financial value.

Just as quickly as the men in leather jackets had appeared, they and their black bags from the catch disappeared back into their cars (which had been left running and with presumably the heating on during the entire process), and faster than we would have dared, drove up the rutted main street past the various piles of unused and unusable fishing equipment. The women who had spent such an effort sorting through the various piles seemed a little disappointed with the pricing and the exchange, though they were fairly taciturn and reluctant to engage my Chinese colleagues in detailed conversation surrounding what the prices had become and what they had hoped, save for a few utterances like 'what do you expect' and 'they are good and hard businessmen'. They seemed much more concerned to get out of the wind and like the cooperative representative were soon disappeared back into the fishermen's hut. My Chinese colleagues were also reluctant to hang around watching the boat head back out to sea and round the breakwater to carry on the task of wrenching their meagre catch from the sea.

As we left the harbor I was left to look back at the pile of plastic and other pieces of rubbish left behind on the ground having been dumped off one of the sorting boards. This pile had been greater in height than either the pile of shrimps or the pile of small and broken fish and really for me represented the primary catch of this boat. It brought home to me the degradation of the ocean and seas of the world that we are seeing in our century. This was Tong Shui Gou's own little Pacific garbage patch, not as dramatic perhaps as the enormous conflagration of material stuck out in the gyres of the mid-Pacific, but very much their own. This, in another sense was not a garbage patch at all, it was their home waters and the territory from which this small village was forced to ply and derive a living. In retrospect, I find it extraordinary that a community would carry on in the face of such environmental disaster and despoliation, but then what other choices did our sorters have? While it may have been meagre, the value of their small and denuded catch cannot have been so low as to make it either pointless for them or for their leather-jacketed tradesmen and buyers. Even in the midst of the obvious decline in the productivity of their particular little patch of sea it was still apparently worth it to carry on the effort.

The fieldwork for this book was also anticipated to have extended to the northeast of North Korea, past its complicated boundary with the People's Republic of China and the mouth of the Tuman/Tumen (두만강/图们江) River over the railway bridge between Tumangan and Ussurisyk. This border formulated following the treaties of Nerchinsk (1689), Aigun (1858) and Peking (1860) solidified the Russian Empire's control of its claims to the western coast of the Pacific, Chukotki, Kamchatka and the far east of Siberia.[23] Originally governed from the port of Okhotsk, the centre of institutional and bureaucratic power moved south to Khabarovsk and finally to Vladivostok at the far end of the Trans-Siberian railway.[24] Vladivostok is the administrative centre of Primorsky Krai and for most the end of the road or rails across the entire Russian Federation. However, to the south of Vladivostok is Khasansky district which runs right to the tri-point above the Tuman river where North Korea, the People's Republic of China, and the Russian Federation meet. Little known but famous in some circles for the Russia-North Korean Friendship Bridge, the only connection between the two countries, a single-track railway bridge across which traffic was banned for most of the 1990s due to a huge debt built up by North Korean railways to Russian Federal Railways after Pyongyang started to refuse to return Russian railway wagons shipped across the border, Khansansky has a series of ports and fishing villages along the shore of Peter the Great Gulf. Unexpectedly perhaps there are a series of ferry routes to North and South Korea and from ports such as Posyet and Zarubino as well as bulk goods facilities and transhipment to China taking advantage of the railway connection to the Trans-Siberian and to the North Korean and Chinese networks. Slavyanka is the district capital and was perhaps named by settlers of Ukrainian

[23]Frank (1947) and Finkelstein (1978).

[24]Mackinder (1904).

ethnicity in the nineteenth century (there is another Slavyanka in the Donetsk region of eastern Ukraine). For much of its existence Slavyanka has been focused on fishing and aquaculture, however efforts during the 1970s to develop Primorsky Krai by the Soviet Union sought to diversify the area's infrastructure and capabilities. While this impacted the communities at Posyet and Zarubino in a familiar way having already extensive port facilities, Slavyanka was to have an extensive new shipyard constructed.

Slavyanka's shipyard was a large piece of developmental infrastructure, which in its comparatively small harbour could only displace a fairly substantial proportion of local fishers. The extent of this practical displacement could not be evidenced by this book, as the records for this period in the Russian State Archive of the Economy's material on the Soviet Union and that from Vladivostok's branch of VNIRO or Gosplan could not be located. Anecdotal evidence garnered during discussions with academics focused on fishing in the Russian far east suggests that even during the mid-1970s in the Soviet Union there were community protests and upset about the plans reducing the amount of space for both fishing and the storage and stowage of fishing equipment, as well as potential ecological impacts on the fishing grounds nearby.[25] While the shipbuilding yard was constructed, space was left in the harbour for the traditional fishing communities until the turn of the twenty-first century. In the 2000s however, there was further pressure on Primorsky Krai from the government of Vladimir Putin's United Russia to extend development in the area, in part to counter the rise of China, but also to underpin Moscow's claim to institutional functionality this far away from the centres of power.[26] Yet another extension to the shipyard and shipbuilding facilities at Slavyanka, this time focusing on a new dry dock and bulk materials trans-shipment yard was envisaged.[27] Again the impact of this development on the local community and more traditional enterprise sparked local protests and petitions to both district and regional authorities. However, as readers can imagine complaining about such developments has always been problematic in the framework of Russian politics and this is no less the case in contemporary Russian politics under either Putin or Medvedev. Primorsky Krai in particular has proved a place of real interest to Putin, with huge infrastructure dedicated at Vladivostok for what is known as the annual Far Eastern Forum at which political leaders from across the region attend to talk economic development and security policy.[28] However, again the community obtained reconfiguration of the plans and developmental policies which meant there would still be space for fishing and fishing people at Slavyanka.[29]

This author due to the pressures of both time and bureaucracy unfortunately never made it to Slavyanka (or hasn't by this first version of the book). Regardless

[25]Personal communication (2016).

[26]Korneyko and Latkin (2015).

[27]Ogai et al. (2017).

[28]Nemtsova and Anna (2012).

[29]Ogai et al. (2017).

of the community's success in fending off the categoric and existential challenge of the newly extended shipbuilding yard, Slavyanka and other communities on the shore of Peter the Great bay are also impacted by ecological degradation and damage. While the detritus, filth and plastic cannot be seen with one's eyes such as in the unfortunate catch of Tong Shui Gou, these Russian communities face extensive wastewater runoff from the Vladivostok metropolitan area. Numerous reports and papers also describe and detail frequent pollution incidents and outbreaks of bacterial infections in the water and in fish and other sea life in the area.[30] Even though the fishers of Slavyanka, Posyet and Zarubino may be able to continue fishing, in spite of all of the recent developments and infrastructural impositions, their catch may not be of anywhere near its historical quality nor saleable in foreign or distant markets.

Having explored in this chapter the history and some of the reality in the field of these fishing communities in South Korea and China, as well as the communities in the Russian Federation which are subject to many of the same environmental issues and some of the same pressures from political and economic forms, the penultimate chapter of this book moves away again from neighbours to North Korea itself. China, South Korea and the Russian Federation have all been part of the global developmental process, which has radically exploited and extracted life from the waters and oceans through extraordinary technological progress and statistical reconfiguration. Russia and before it the Soviet Union and before that Imperial Russia has long been a key player in the stripping of the ocean commons, both underwater and at its surface through the exploitation of sea mammals such as seals and the Stellers' Sea Cow. South Korea, of course, as this book has suggested has only recently become one of the global powers of the sea, its boats and ships present on many of the world's oceans, far from its coasts as had been the case for much of Korea's national history. Whether unsuccessful or successful on the waters, however these nations have also been deeply integrated into the global industrial and economic structures of production and consumption that have caused so much damage to the planet's ecosystems. In these, they are all responsible in some way for the impacts of climate change, sea temperature rise and pollution which has also heavily impacted on the lively matters that are the fish of the world's waters. This does not mean that they are any less impacted by these impending and developing changes than anywhere else, in fact as we have seen at Tong Shui Gou, often their communities are even more heavily impacted than elsewhere. The essential differences for communities around the globe focus on matters of resilience, adaptation and adjustment, practical matters which fishing communities are well versed in given what they do. In China, South Korea and the Russian Federation, we have seen resilient communities facing incredible levels of change and difficulty manage the processes unleashed by such changes in such a way that they can still survive as communities and still engage in the fishing activity which is at the centre of both their lives and work. Given the complexities and difficulties

[30]Vashchenko (2000).

faced by North Korea more generally in its history and contemporary experience, how might fishing communities and practices there cope with such changes. While North Korea certainly has not been at the developmental vanguard which has stripped the world's oceans of life, filled the atmosphere with pollutants and CO_2 and fallen into the logics of consumption and production (though not of course for want of or desire for trying), it will certainly have been subject to these powerful impacts. As we have also seen in a previous chapter, in spite of its rather distinct political form and sense of itself in geopolitical history, North Korean fishing effort has been predicated on many of the same statistical and developmental presumptions as fishing nations elsewhere in the globe. The desire, energy and effort to follow these presumptions, regardless of its local ideological structures has had some truly extraordinary impacts on fishing and other communities in North Korea, the outcomes of which this book will only briefly mention, but which have haunted and will continue to haunt this author for some time to come. With all of this in mind, the next chapter attempts to root itself in the fishing communities of North Korea, both now and in the future, no matter how hard they are to conceive of or access.

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Chapter 6
Sindo, Environment and the Politics of Fishing in North Korea

Abstract Sindo island is in the mouth of the Amnok (Yalu in Chinese) River at the border between North Korea and the People's Republic of China. Reclaimed from the estuary of the river in 1971, a cooperative of fisher people from older fishing communities and enterprises along the western coast of North Korea was created to serve as a model community and model example of development at this time. Kim Il Sung himself made repeated visits between 1971 and 1976, during a period when North Korean politics sought to reconfigure landscape and developmental possibility through a series of what are called 'Great Nature Remaking Projects'. North Korea's fishing industry was to be reconfigured so as to focus on resources further out to sea, fishing practice and knowledge was to be further developed and a series of cooperatives were to be the institutional basis for the sector. By the 1990s, fishing cooperatives such as Sindo had been forgotten in the collapse of North Korean capability and bureaucracy and in the 2000s, the fishing industry has been co-opted by the Korean Peoples' Army and a network of fishery stations dedicated to industrial fishing and resource production built. This meant that Sindo became even more peripheral to the political and institutional mind. This chapter explores this history, context and strategies the fisherpeople of Sindo might use to maintain their livelihoods and connections to the vibrant and lively fishing matters that once sustained and gave impetus to them. In Sindo and in other places within North Korea are fishing matters as vibrant and energetic as local political sensibility and aspiration are lively?

Keywords North Korea · North Korean fishing communities · Sindo · Amnok River · Environmental change

With this penultimate chapter, this book returns to the Korean Peninsula, but does so with a shorter historical frame and some of the perspectives gained from fieldwork in North Korea's neighbours both to the south and north. Readers will have encountered in the preceding chapter the extraordinary survivals of communities in China and South Korea who are focused on fishing and the products of the sea, extraordinary for the challenges faced by them generated by both environmental

R. Winstanley-Chesters, *Fish, Fishing and Community in North Korea and Neighbours*, https://doi.org/10.1007/978-981-15-0042-8_6

and politico-economic issues. This book has attempted to detail as best it can, the impact of human development over the centuries, but especially the last two centuries on fish and their watery landscapes. The nineteenth and twentieth centuries saw the rise of technological and industrial fishing, connected to the power of mercantilist and colonialist Capital. The logics both of Capitalism and Empire began a stripping of the oceans in the nineteenth century, but this developed into a truly extraordinary industrial process by which fish can now in the twenty-first century be located by GPS satellite from space, extracted from the sea at all levels and even stripped from the ocean floor or beneath it. These fish can be produced into abstracted and reformed products, their flesh and material reconfigured into different shapes and textures, while still at sea so these new matters are ready for computerised logistics and shipping to disperse them across the planet. In the previous chapter, new technologies such as refrigeration meant that fishing communities could venture further from the coast, beginning work in the deep seas, pressuring for the first time fish populations in deeper waters. Refrigeration in conjunction with steam power hugely altered the effort and energy placed into extraction by industrialising fishing enterprises. These technologies were later embedded in new fishing practices such as the use of motherships and deep-sea trawling. Geopolitics following the 1914–1918 war meant that Japan was gifted the League of Nations mandate over Germany's former South Pacific colonies, giving it an opportunity to practice using these technologies and logistics. It would later deploy such infrastructure and technology across the empire it built in East Asia and the wider Pacific before 1945. After the conclusion of the war in the Pacific in 1945 and Japan's defeat, global American geopolitical interests meant that the United States was very concerned to assert what it called 'freedom of the seas' across the planet. This inadvertently meant that it had to guarantee the freedom of the deep seas for all other nations, including its deadly enemy between 1941 and 1945. More than that the United States was very concerned that Japan be both as cheap as possible to occupy and rebuild following 1945 and a useful bulwark and ally against world communism in Asia and the Pacific. Inexplicably, this would result in the United States essentially selling out some of its own Californian tuna canning and fishing interests in order to allow Japan to build a canning factory on one its former colonies (now known as American Samoa) and to import cans of tuna caught by Japanese boats into the 50 states of the continental United States of America.

These new geopolitically connected, technologically advanced fishing landscapes put not just extreme pressure on fish populations, often causing them to collapse under the power and agency of Maximum Sustainable Yield, but also fishing communities. Most recently, this power has been seen in fishing communities in Africa who are out competed and displaced by the factory boats of the European Union and others. Fishing communities in this book have been enormously challenged by the changes to the landscape and the fishing ecosystems created and reconfigured by this new industrial empire of fishing. In tandem with this pressure on fish stocks and populations have been wider pressures focused on watery and maritime environments by huge growth in human population and the

wider global economy. This second decade of the twenty-first century has brought enormous dead zones in the global oceans, with no or little oxygen, a product of industrial farming and sewage discharges. It has also brought coral bleaching, sea temperature rise, sea level rise and ocean acidification, products of climate change and wider environmental crisis. Finally, and perhaps most resonant in the public mind the oceans have simply been filled with disposable and non-biodegradable waste, particularly plastics. While the world is familiar with the fact that human waste and chemical products, historically DDT and Chlorofluorocarbons (CFCs), can reach the furthest parts of our globe and wreak havoc there, plastic is a great deal more visual and present. It is a lively and active material which persists in global ecosystems, stuck in the throats of turtles, twisting up in the intestines of fish and cetaceans, spread over the beaches of remote islands and caught in the North Pacific Gyre, an ocean current in the middle of the ocean so polluted it is now publicly familiar as the Great Pacific Garbage Patch. The fishing communities encountered in the previous chapter certainly have been impacted by plastic, this was obvious in the case of Tong Shui Gou (通水沟) on the Liaodong peninsula, whose catch witnessed by this author was predominantly plastic waste. Gageodo island in South Korea was impacted by unusual weather and drought during the field visit by the author. All of these communities surely have been affected severely by these environmental changes in the present, and they certainly will be in the years to come, perhaps as climate crisis and sea level rise increases in severity.

North Korea, of course, will not be absent from these challenges, there is no way it will not be subjected to the environmental challenges faced by the rest of the globe in the coming years. In fact, North Korea has already been subject to intense environmental impacts, it is even suggested that one of the driving factors in the nation's economic and environmental collapse in the early 1990s was a series of climactic events and flooding which damaged the nation's vulnerable pump-fed irrigation system and therefore hugely impacted upon its agricultural output, contributing to its terrible famine period. Only 3 years ago, the northern provinces of North Korea were subjected to further intense flooding following unexpectedly heavy rain and 2018 was a drought year which has again impacted agricultural production.[1] Just at the moment that a nation's ability to feed its population has become a key prerequisite of its governmental offer, North Korea has been delegitimised in the public and media mind due to these impairments.[2]

The developmental history of North Korea does not record that it has been happy to accept failure and the collapse of its own agricultural and developmental systems. Pyongyang following the disasters of the 1990s, was forced to call for the first time for aid from the non-communist world.[3] Along with the grain and other aid resources came an influx of agencies of the United Nations and other NGOs whose

[1]"North Korea Floods, Tens of Thousands Displaced," *BBC News*, September 13th, 2016. Retrieved April 27, 2019 from https://www.bbc.co.uk/news/world-asia-37335857.

[2]Boffey (2019).

[3]Kim (2011).

focus was the improvement of developmental outcomes for impoverished or challenged nations, recovery from famine and disaster and environmental mitigation. While there is no doubt that North Korea found this period extremely difficult and humiliating as a sovereign power, with hindsight it might be said that in fact, the period was extremely useful when it came to governmentality and developmental repertoire. NGOs such as Triangle Humanitaire, Nautilus and the United Nations Environment Programme (UNEP) as well as the United Nations Development Programme (UNDP), brought an entirely new way of looking at the environment and nature–human relations.[4] North Korea previously had framed natural matters and environmental issues through the lens of its own highly anthropocentric ideology of Juche and self-reliance which itself was originally predicated on Marxist materialist dialectics. Essentially, this mean that the environment was seen only as a resource and living things in nature not as vibrant materials or energetic matters, but as passive objects to be extracted and deployed entirely to the service of man, The environmental movement which followed the developments of the 1960s in the capitalist West, and notions of sustainability, limits to growth and a finite planet had passed Pyongyang by, disregarding, of course, North Korea's inefficiency and failure to develop an extensive and powerful industrial base.[5] For the first time North Korea, amidst the chaos of the early 1990s encountered these ideas, essentially as a route to survival through the intensely difficult period, referred to by North Korea as the 'arduous march' (the second such march as the first was during the period of guerrilla struggle in the 1930s).[6]

Such environmentally friendly or sustainable techniques have in part allowed North Korea to keep functioning into our present. Visitors to North Korea will see an abundance of solar panels for instance in Pyongyang and in other cities. On the face of it, this was taken as a good sign, that North Korea was developing a real sense that renewable technologies would be vital in the future.[7] In fact, it has been suggested that the growth in the number of solar panels at home is actually one of the many signs, along with a network of guerrilla markets and small private food kiosks, that Pyongyang has essentially given up on its responsibilities as a state and rather than constantly demonstrating its developmental incapacities has essentially left its population to fend for itself.[8] There is an abundance of solar panels because the local electricity grid, even in Pyongyang (though it has by accounts become a little better in recent years), is unreliable and often fails, hence citizens must use their initiative to make sure they have electricity.[9] Other forms of sustainable energy production such as wind power were one of the earliest environmentally friendly technologies brought into North Korea, and although there are a few wind

[4]Noland (1997).
[5]Winstanley-Chesters (2014).
[6]Ibid.
[7]Makinen (2016).
[8]Ibid.
[9]Ibid.

turbines, North Korea has never managed to harness a substantial amount of power from them.[10] In reality when it comes to the countries environmentally friendliness, North Korea has one of the lowest CO_2 emissions rates on the planet, not because it is concerned not to impact climate change yet further, but because its industrial base collapsed to such an extent that there is very little functioning that can actually produce excessive CO_2 or other emissions.[11] Organic agriculture in North Korea has become quite an important issue for government. This author has tracked the development of new stock-breeding bases at Sepho, using organic feed and other materials and there is even an organic dairy processing enterprise in North Korea which is seeking to fill the supply gap for organic dairy products in Europe.[12] However, this use of organic agriculture has not come about because of a Damascene conversion to the cause, but because North Korea's agricultural system used to be one of the most chemical and fertiliser intensive systems on earth, and since the early 1990s and now since the UNSC sanctions have been strengthened, it simply does not have the capital to buy such large amount of fertiliser, nor has it been able to make it locally.[13] North Korean agriculture was even experiencing a decline in the 1980s due to the impending nutritional death of its soil. Organic and low impact agriculture, therefore, is simply the only form of farming that the nation is now capable of and its environmental benefits for Pyongyang come second.

This period also saw the importation of ideas of conservation and sustainability into North Korea, which focused on the sea and on fishing resources. There is an anecdote about one of the first UNEP meetings in North Korea which touched on the sea, in which having had the idea of maritime conservation explained to him by the official from the United Nations, the Minister of Fisheries exclaimed that this was fantastic as there would now simply be many more useful fish for their boats to catch.[14] Fish, for North Korea following the difficulties of the 1990s were not something to conserve or leave alone, they were a useful, if not vital, free resource, a commons to exploit with little complicated effort involved in their capture. While North Korea has continued to talk about notions of conservation and environmental protection at sea, and the mitigation or reduction of harms in the water, little sense has been gained of any movement on the institutions of the nation's idea of what such notions actually are, other than intrinsically connected to the needs and hopes of man, rather than the interests of fish.

In the previous chapters of this book, readers will have encountered multiple layers of history and geography which extend backwards to the moments in which early humans first sought fish in ponds and streams for food. These layers have then traced the development of human technology and cultural practices, which have sought fish and watery matters first on the shore, then close to it and then out into

[10]Habib (2015).

[11]Ibid.

[12]Ireson (2006).

[13]Jung (2018).

[14]Winstanley-Chesters (2016).

the deeper waters of the globe. These practices might have once been described as haphazard, discoveries of the places and journeys of fish and other creatures by chance, often twinned with spiritual and religious rituals to give thanks for the unexpected gift of having located such watery bounty. As technology and industrial capacity developed, however, such practices became ever less haphazard, to the point we have reached now, when fish populations and their routes of travel, migration and breeding can be literally seen from space, through a panoptic technology which allows fishing people to know exactly when and where their quarry is, and how much effort to deploy in order to capture it. Previous chapters have specifically focused on these developments as they have occurred in East Asia, in pre-revolutionary China and in Imperial Japan, and connected them to the geopolitical developments which generated what has been referred throughout this book as an Empire of fishing in the Pacific. The Korean peninsula was of course part of both the Japanese Empire and this Empire of the Sea, and the book has explored the transformation of Korean fishing and coastal spaces from traditional, subsistence to places rooted in the research and developmental prerogatives of the Japanese Imperial project. Later of course, unseen by this book, South Korea developed its industry and technology so that its boats and fishing enterprises would rival Japan and it would become a true master of the global oceans, one of very few nations on earth whose ships can be found in any waters on the planet.[15] Chapter 4 then considered fishing and the development of maritime resources in North Korea. This chapter traced the history of fishing under the rule of Pyongyang from its emergence as a separate nation in 1948 to the period of stagnation prior to the collapse its communist supporters elsewhere in the globe in the 1980s. In this historical tracing, the connections between industrial practice and ideological development were made clear. North Korea's fishing efforts, like the rest of its developmental practice has been heavily influenced by the ideological needs of those nations which is connected to for support. Thus early in North Korea's history, its fishing policy and practices were heavily influenced by the classical central planning policy of the Soviet Union, and then later following the death of Stalin, when Pyongyang tacked geopolitically towards China, ideas and concepts derived from the Great Leap Forward and the most dramatic forms of Maoist urgency began to influence the nation's developmental strategies. Of course following the obvious disasters of the Maoism's more intense form, North Korea moved to maintain an equidistance between China and the Soviet Union, and thus sought to absorb many of the ideas, practices and technologies developed in the Soviet Union and which had made such a huge difference to its capabilities in the global oceans. This author has tried to give a flavour of this connection in this book using documents which recount the processes and organisation involved from the Soviet perspective of having North Korea integrated into its Pacific/eastern fishing bureaucracies. Chapter 4 sought to give a periodisation of North Korea's fishing efforts and policies, in part led by the frequent writings and assertions of Kim Il Sung on the subject. This periodisation

[15]Anticamara et al. (2011).

includes an early period which focused on reducing the influence of the Japanese colonial model, followed by a period which sought to increase the scientific and technical capacity of fishing institutions as well as North Korea's boat and ship-building capacities. North Korea then entered into a period, influenced at first by China, which set great goals for production and extraction, goals which on land would seek to transform landscapes and the natural environment, but which at sea sought to transform North Korea itself into a player in the global oceans. The chapter considered the bureaucratic and institutional processes around which all this was framed and gave a sense of some of the key spaces and terrains of North Korea's fishing interest. The reader will have encountered the fishing community, the fishery station and the fishing cooperative in North Korea, as well as the yards of Ryukdae and Chongjin.

In the present, readers of North Korean government reportage and publication will still see on occasion the harbour side and the dry docks of Chongjin, often with an accompanying photo of Kim Jong Un, but will do so with the knowledge that the shipyard has never been able to reach the level of production aspired to by North Korea and that the nation's ships have for the most part remained small, regardless of whatever fishing initiatives had been conceived or developed. North Korea, has the following 2013/2014 returned to fishing and aquaculture as major elements of its developmental strategy given the use of such as a low input, comparatively cheap resource. In spite of the strictures placed upon North Korea's fishing industry by UNSC2397 and other sanctions and restrictions, Pyongyang sees fishing as a viable source of both food and revenue, and it appears has not yet been dissuaded from this by external pressure. Much of the impetus and interest of North Korea in recent years has focused not on familiar fishing communities and villages, but on fishing stations. These are essentially enterprises run by units of North Korea's military, the KPA. Army units are tasked with developing and running fishing stations run on military rules and practices which are vertically integrated, so the KPA supply, build and run the fishing boats.[16] The KPA repair and maintain the boats and crews and also then prepare and market the product, even researching elements of diversification into other markets. These fisheries stations can focus on classical fishing practice, focused on the deep sea, or they can be on land and focused on aquaculture and fish farming.[17] An interesting subset of this element has been those stations, which are constructed on the urban rivers of Pyongyang and integrated firmly with state research organisations tasked with further developing an integrated environmental industrial policy and experimenting with whether it is possible to deploy reed beds and fish farms together in order to improve urban water quality.[18]

As readers will have also been aware of, North Korea's approach to fishing strategy and organisation changes quite radically with changes in politics and

[16]Bermudez and DuMond (2018).

[17]Ibid.

[18]O'Carroll (2017).

ideology. This is true of other areas of development, for example in agriculture which when North Korea was first organising its approach after 1945 was something of a mixed system, including small private farmers as well as state farms and other collective enterprises. In reality, this was because, even though Pyongyang aspired to be entirely Marxist–Leninist in ideological form, issues with population size and technical capacity meant that it was impossible to hand over all agricultural production to the working class and still maintain levels of production. Thus some private land holding and private enterprise was necessary to keep up supplies of rice and other food. After the Korean War between 1953 and 1956, North Korea was able to reconfigure and redevelop agricultural approach so that it could be undertaken in a more ideologically pure way, primarily through collectivisation and state enterprises. Following the brief dalliance with Maoist urgencies involving enormous numbers of workers from the cities redeployed to work in agricultural settings, North Korea continued for much of the 1970s and 1980s with a collectivist model of agriculture. Finally following the collapse of agricultural capacity in the 1990s, Pyongyang allowed citizens to grow their own food in their home plots, and then to sell produce and materials at what have been called 'guerrilla markets'. This to an extent mitigated the collapse in supply systems and took some of the pressure off the North Korean government and its institutions focused on serving the agricultural needs of its population.[19] More recently, as I have already suggested in this book, the Korean People's Army has been utilised to reintegrate some of the larger collective farms and new research institutions, such as the Sepho area's enterprises. The KPA, thus, can supply focused and organisation developmental energy, trained and well-fed participants and can market and sell agricultural products both abroad and on the home market, supplying demand, providing hard currency for their products, fees for the rights to do so and reducing some of the burden on the central government budget from the nation's defence needs.[20]

Such a process has been happening for some time at North Korea's coasts and offshore in its waters. Just as in South Korea, historically fishing villages and communities in North Korea have been subsistence based, with a fairly low volume of catch, low wages and constrained economic development. Prior to the 1945 and prior to the Japanese colonial period, North Korea fishing communities would have not ventured far from the shore and certainly not out into the deep sea. They were primarily coastal and inshore enterprises. This was challenged to a degree during the colonial period, though not greatly, as we have seen the Japanese colonial administration was much more concerned to import Japanese fishing people into the Korean peninsula than it was to completely re-engineer Korean's local perceptions of what the industry might be. It was certainly challenged during the chaos of 1945–1948 and then the Korean War period of 1950–1953, when surely a great many fishing people and their families were displaced by the coast. However they cannot all have been displaced, and just as in South Korean territory, some fishing

[19]Lankov and Seok-Hyang (2008).

[20]Ibid.

villages and communities survived the war or returned soon afterwards. North Korea sought to initially harness the energies of these communities, interspersed and guided by the various articulations of Kim Il Sung, but also to generate new collective fishing enterprises and to utilise the now centrally organised ship and boat building institutions and yards to supply them with better equipment. North Korea's fishing ministry under the guidance of Kim Il Sung and wider policy framework sought to organise much of the fishing in the 1960s through these large collective enterprises, but often the best fishing on the peninsula is done on peripheral spaces, far from areas which might be useful for extensive production and infrastructure building. In the 1970s, this sense that the most effective places for fishing in the country might be at its most peripheral places, was twinned with projects which focused on the rehabilitation of unusable land or the reclaiming of coastal land from the sea. These projects focused on a cooperative model, sourcing families and fishing people from a variety of other communities along North Korea's coast and forging them into smaller cooperative units. These cooperative units for a moment in North Korea's fishing history were vital to its developmental approach, focusing not just on fishing and the extraction of product from the sea, but also the reorganisation of family and social groups at the state's behest, and on the reclamation and creation of new useful land from the sea, a hugely important task given North Korea's political ambitions a real way of creating new socialist territory over which Pyongyang could rule. One such cooperative site was at Sindo, a small island in the mouth of Amnok/Yalu (압록강/鸭绿江) River and the newest county in North Korea.

Sindo has long been of interest to the author of this book. For some time before I became interested in the watery and fishy matters of North Korea, I had been focusing on developmental communities in the nation, specifically those that worked in the forestry and timber sector and those that sought to reclaim land from the sea. For the most part, such communities were present in the spaces they worked in for only short periods, completing one project, or being tasked with something before moving on to the next engagement or the next task. Often the places and spaces they lived in during their periods of engagement were deliberately built for the purpose of undertaking that engagement. They had tenuous, short-term links to the geographies and terrains they sought to transform and were for the most part either epistemic or technical communities, rooted in research, academic work or developmental effort. Previous fieldwork I had undertaken in North Korea had been focused on just these sorts of communities and had felt primarily like engaging with groups of researchers similar in a way to me.[21] While these communities and similar engagements are considered rare by popular or public narratives, in reality they are not. North Korean researchers, technicians and developmental specialists have been making connections with similarly minded academics communities across the globe for many, many decades now. This book has even recounted some of the moments in which North Korean fishery specialists

[21]Winstanley-Chesters (2014).

sought to make connections with the Soviet Union in the 1970s and we know that developmental specialists from all fields from North Korea were embedded in a variety of projects across the globe during the period of communist and socialist solidarity. Following the famine period of the early 1990s, North Korean technical and research communities met and engaged with a number of external partners to support Pyongyang's recovery from that difficult period. In more contemporary times all manner of foreign researchers and projects have engaged North Korean academics, specialists and other technical workers, from Volcanologists, health researchers, and Computer Scientists to bureaucrats and specialists in renewable energy.[22] Yet, North Korea is famous for restricting the connections between foreign visitors of most types and its regular, non-specialist citizenry. It has historically been almost impossible for foreigners of any type or situation to engage with normal people in North Korea, though this has begun to change in recent years with a slightly more relaxed attitude on occasions and even cases of comfortable friendly interaction on university campuses and elsewhere between locals and visitors (though this unfortunate case resulted in the eventual detention and deportation of the foreigner involved, shortly before the manuscript of this book was finalised).[23] Historically, this extreme difficulty in connecting with local North Koreans even meant that developmental spaces and their communities could seem amorphous, abstract and unreal. Whatever lively and energetic matters there might be, certainly appeared out of reach to the visitor. Such places appeared to be almost entirely unknowable.

Sindo, however, appearing in the Works of Kim Il Sung in the early 1970s, perhaps could have been different. A single developmental community on a patch of land that was fairly small and absolutely trackable via Google Maps and other GIS techniques (and more conventional and old fashioned tools of surveillance such as those found in NARA's collection of aerial photography held at College Park, Maryland), as well as easily defined temporally could be different. Perhaps this community, engaged as it has been, in a developmental project which is not, by North Korean standards hugely controversial or politically embarrassing, could be reached, perhaps its energies and vibrancy could be known. It might be possible in our contemporary times of increased openness from North Korea to really know one of its developmental communities. Hence, the author of this book started this project, which for a time became enmeshed in the work of Tessa Morris-Suzuki at Australian National University focused on what she had called 'informal life politics'.[24] In North Korea, one would require both an extensive repertoire of very formal life politics as well as anything informal, but the practicalities of engaging with little resource and very challenged capacity with the denuded seas of the world in a time of acute environmental crisis would surely require a great deal of flexibility and skill. While such a theoretical frame has become less important as time as

[22]MacDonald (2016).

[23]Sigley (2019).

[24]Morris-Suzuki and Jeong Soh (2017).

gone on in the writing of this book, the reflexivity of those involved and of North Korea, in general, is powerful in the author's thinking. It might not surprise the reader to learn that while a great deal of watching, considering, knowing has gone on so far as this community is concerned, so far as actual engagement and meeting is concerned that has been a different matter.

As I have iterated elsewhere in this book and in this chapter, North Korea's new fishing initiatives in the 1970s and the fishing bases mentioned by Kim Il Sung on the West Sea coast were not isolated and disconnected from other national developmental imperatives and agendas. Projects which focused on coastal reclamation and land rehabilitation had followed a similar institutional journey to those, which focused on fishing since the 1950s and had been re-conceptualised in the 1970s within a new developmental framework of organised goal setting and increased capacity. This increased capacity would come in part from technological change and imagined efficiencies, but also from literally creating new land. Sindo Island itself was one such piece of terrain reconfigured and generated by North Korea's utopian urges to generate new Socialist land which could support increased capacity.

Sindo island was forged from the estuarial bed of the Amnok/Yalu River, downstream from Sinuiju/Dandong initially in 1958. As part of a wider drive for land reclamation and capacity increase during the 1970s and what was known in North Korean government narratives as the 'era of 300,000 ha', the small island and sand banks on opposite side of the Yalu boundary with China were reclaimed to form Sindo Island and reconfigured later in 1991 into a new county.[25] A fishing cooperative was formed on Sindo's reclaimed land from communities elsewhere on the coast, during the era of fishing cooperative development outlined elsewhere in this book. Sindo's cooperative was even visited by Kim Il Sung in 1976. In the years following the deaths of Kim Il Sung, Kim Jong Il and the difficulties of the crisis period in the mid-1990s Sindo completely slipped off Pyongyang's developmental radar becoming an even more marginal, half-remembered site.[26] While fishing and maritime activity is certainly still a feature of North Korean government policy, as evidenced by the many appearances of Kim Jong Un in 2015 at various coastal installations, Pyongyang, like as is the case in other developmental utilises the KPA as the primary agent of its functionality and driver of institutional change. Yet in spite of the KPA's dominance, the resident community at Sindo Island would have to continue their lives and work focused on fishing and would occasionally be referenced by North Korea in its historical narratology.

The story of Sindo, therefore, is in a sense a similar narrative to those of other developmental projects in North Korea as the nation entered the difficult period following the collapse of the Soviet Union and Warsaw Pact. The story of Sindo and other North Korean fishing communities and enterprises, for example, mirrors that of the tideland reclamation sector. The reclaiming of coastal land by local and

[25]Winstanley-Chesters (2016).

[26]Ibid.

regional bureaucratic institutions and by local communities had long been part of North Korea's developmental strategy. Coastal land engineering and reclamation had been a key part of the dramatic projects aiming for a complete transformation of nature and of the various planning periods of North Korea's commitment to central planning. North Korea's 'Third Seven—Year Plan', which included extensive elements of coastal reclamation and reconfiguration proved very short lived and developmental policy was rapidly overtaken by the consequences for North Korea of the collapse of the Warsaw Pact and the USSR between 1989 and 1991. North Korea, its development and those communities undertaking it were forced to take a new direction, disregarding any previous ideological agendas or progression.

Given the collapse of much of North Korea's bureaucracy, the difficulties with finance and the disappearance of eternal partners, progress by both the state and developmental communities focused on hydrological projects during this period of disruption, might have been expected to have been limited. However, documentation from the KCNA and American sources suggests that work on key tideland reclamation projects, including Taegyedo, was sustained to a surprising extent.[27] This continued work provides evidence of pragmatic shifts in developmental strategy, shifts in strategy which would go on to diminish the role of local bureaucracies and communities in favour of the remaining, functional military institutions and bureaucracies. During August 1992, for example, it was reported from the Kumsong tideland reclamation area in Hamgyong province that 'soldier builders have laid a dam extending more than 1,400 m in the last two months to complete the first damming project by introducing advanced construction methods'.[28] This project was soon finished with the KCNA reporting a year later that '3,300 ha [had been] reclaimed, as part of the wider project for the reclamation of 300,000 ha, including 110,000 in North Pyongan, 110,000 in South Pyongan and 80,000 ha in South Hwangae'.[29] Further work by the military was also undertaken in 1995 within North Pyongan province, in areas surrounding the Taegyedo project, and there were reports of a new barrage at Cholsan being constructed. *Rodong Simnun*[30] reported that this barrage 'makes it possible to water 6,000 ha of reclaimed tideland'. Responsibility at this point as this chapter has already pointed out, for major reclamation projects shifted from local and provincial institutions. The KPA is described in contemporary reports as the initiator and planner of such projects, reflecting a radical change of policy and approach. Whilst the KPA had undoubtedly provided support for local projects, North Korea's military forces had not previously assumed direct responsibility for projects which developed industrial, technological, agricultural or hydrological capacity. This shift formed part of Pyongyang's new 'military first' or 'Songun Politics', which subsequently

[27]Ibid.

[28]KCNA (1992).

[29]KCNA (1993).

[30]Rodong Sinmun (1995).

incorporated into most elements of practical policy in North Korea.[31] Taegyedo Tideland Reclamation Area. A project which was originally undertaken by its local communities to serve their local agricultural and developmental needs was thus completed by the military who gained much of the prestige and funding connected to it and whose completion was used during the Kim Jong Il era to reflect the political charisma of the leadership on the newly created landscape. These developmental communities and local bureaucracies in common with many other sectors of North Korea's economy were swept aside in the era of the second arduous march, their importance diminished and their stake in development and economics challenged.

The disappearance of coherent local bureaucracies and state power within this developmental sector and the peripheral spaces of governmentality while, on one hand, demanded the interjection of military capacity, it can also be seen as connecting to some of the more extraordinary and unexpected results from the difficult and 'arduous' period under Kim Jong Il, which can in a sense really be conceptualised within the frame of 'informal life politics'. The failure of Pyongyang's bureaucracies to provide for its peripheral populations and communities after 1992 through past infrastructures such as the Public Distribution System meant that people had to adopt other strategies to guarantee their survival.[32] While many citizens of North Korea did not of course do this, and still others adopted a strategy of mobility which saw them escape the bounds of Pyongyang's sovereignty becoming refugees or economic migrants elsewhere in East Asia and the world, the majority engaged with processes of informal marketization in order to secure goods and sustenance. The Guerrilla Markets sprung up throughout North Korea as physical manifestation of grassroots practices and processes of capitalism and private enterprise which could be conceptualised as spaces in which digression from ideological purity or hegemony could be accomplished, generating new landscapes of the market.[33] Sindo and its fishing community in common with the community around Taegyedo, also on the West Sea coast of North Korea were also subjected to the processes of diminution which produced new spaces of marketisation and exchange elsewhere in North Korea.

For Sindo and its community at the North Korea's northern border, however, the path of development and possibility provided by the collapse of institutional authorities could not run smooth. What happened between 1976 and the present at Sindo is extremely hard to say, and certainly in the processes of research through which this book was formed, little concrete has been found. The physical geography of Sindo, including its major island Pidansom (비단섬), changed little between the 1970s and the 1990s, viewing the island through the aerial reconnaissance archive held by NARA showed the island being knitted together in its present form through reclamation from the late 1950s to the early 1970s. By 1971/

[31]Park (2007).

[32]Noland (1997).

[33]Smith (2009).

1972, the island appears to have reached its greatest extent, merging together a number of smaller islands and small settlements, dock infrastructure and tracks across it become visible. Much really stays the same for the next couple of decades, Pidansom is drained a little further than it had been initially, and perhaps a little more development takes place along its north coast, however, it is for many years until to the north of Pidansom, an area of the estuary to the north of the main river flow is drained extensively, rather incongruously creating a piece of North Korea on the northern side of the Amnok/Yalu River. This has become known as Hwangkumpyong (Hwanggeumpyeong) (황금평) and in our present is extremely close to one of the main roads leading out of Dandong as well as Chinese railway lines to the north of the river. Both North Korea and China sought to develop the area as a Special Economic Zone following the 2000s though it appears from satellite photography that very little happened.[34] By 2011, it was revealed as the Hwangkumpyong SEZ and a variety of publicity material and billboards put up on site, as well as public announcements made focusing on how important it would be and how much trade and business was going to pass between North Korea and China as a result of it.[35] Andray Abrahamian of Chosen Exchange and Theo Clement were two of many visitors to the area in the years following its unveiling, however, by 2013 and 2014, it was clear that virtually nothing had been built on the site since 2011.[36] In fact, the execution of Jang Sung-taek in 2013 broke many of the institutional connections, which had been leveraged to make the project happen in the first place and without them Hwangkumpyong appeared destined for non-completion for many years in the future.

The rest of the Sindo County area and the island of Pidansom remained without any further development until the turn of the 2000s. At this point, at least two further installations were construction on the islands west coast, facing the sea with what looked like the beginnings of aquacultural development. Over the preceding decades, Pidansom had also been further drained and agricultural developments are clearly outlined on the maps and on satellite imagery from the area. The original fishing cooperative occupied a coastal area at the most southerly tip of the island, below a small village named Chogumsa, which while small clearly has its Party foundation monument and parade ground. It is unclear whether this village, or in fact this part of the island received anything in the way of support or materials for many decades following its moment of interest in the 1970s. The author of this book was very concerned for many years to physically visit the island, and came closest to organising a trip around the year 2016. In this year, I was supported by the research project, which I was part of at Australian National University to visit a number of the fishing communities discussed in this book and to arrange a visit to North Korea, specifically to engage with fishing projects and initiatives there. If any reader has experience of arranging fieldwork to North Korea, they will surely know

[34]38 North (2012).

[35]Ibid.

[36]Choson Exchange (2014) and Theo Clement (2016).

the process making such arrangements and the intriguing complications that can be found along the way. Suffice to say, it is fairly easy, unless you are an American citizen (who cannot as of 2019 visit North Korea without a reason satisfactory to the current administration, surrendering their passport to the State Department and having a special one use only travel documents issued), to visit North Korea to spend several weeks being shown the monumental architecture of Pyongyang and a large number of pictures of Kim Il Sung and Kim Jong Il. It is less easy to visit North Korea and do actual empirical work, to collect functional and viable data and to engage with a real research community or object. Even if you do manage to arrange a visit to do such things, your intricately, politely and carefully developed plans can be subject to change at the last moment and in a way which cannot be appealed against (there are few appeals in North Korea of course). On previous occasions in which I have done fieldwork in North Korea focusing on developmental projects, changes occurred which actually benefited my interests and were extremely generous on the part of local institutions. I was able to visit places I had never imagined visiting and to see things I had not heard any researchers engage with before. I have seen similar moments happen to colleagues in the field of geography, but also volcanologists, architects and health practitioners. On this occasion it did not happen to me, primarily because of the vagaries of ethics committees within Australian institutions, but also because Sindo was too hard a place for local institutions to consider me visiting. It was quite possible to visit the shipyards of Chongjin, quite possible for me to visit port facilities at Nampo and elsewhere (though not necessarily from the shore), but it was problematic for me to physically visit Sindo itself, or the fishing cooperative just south of Chogumsa.

Unlike the busy community at Gageodo or the small fishing villages of Liaodong, including Tong Shui Gou and Jinshitan, beset by both economic and environmental pressure, this book would have to consider Sindo and its fishing cooperative mainly from afar, but with an academic gaze rooted in fieldwork done in neighbouring fishing spaces, history and an awareness born out of knowledge of environmental and other data. It is worth remembering that Sindo itself, as an island would dramatically impact upon the flows and hydrology of not just the Amnok/Yalu estuary, but also the waters around it. The river has also been a source of great amounts of silt, and deforestation that has occurred from many centuries ago would have certainly impacted on the amount of material entering the river. While this area of North Korea has not been extensively farmed, the collapse in local irrigation and agricultural systems following 1992 cannot but have increased the amount of material eroded from the hillsides and mountains still further. Across the world as climate change has developed and increased temperatures have dried out the landscapes at higher altitude and altered ecosystems there, much soil, sediment and peat material has been lost, flowing downhill into streams and rivers as sand and other fine materials (this is certainly true in the areas near to where the author of this book lives).[37] This will have impacted greatly on the flow of the Amnok/Yalu and

[37]Harrison et al. (2008).

on those species of fish which inhabit the river, as well those species which inhabit the areas of the sea just offshore. Sea level rise will also be impacting on the tidal range of the river, as again will the physical geography of the island itself, and the extension on which Hwangkumpyong SEZ perhaps one day will be built.

Sindo fishing communities will also be challenged by a huge drop off in the volume of fish and other marine life in the waters in the East Sea/Yellow Sea. This area is one of the many across the globe which has begun to produce either permanent or seasonal dead zones, anoxic, as in oxygen-free or depleted areas of water in which little can live.[38] Often such the zones are product of extensive agricultural run-off into river systems, containing as it often does in industrialised agriculture, very high levels of nitrogen and other organophosphates due to heavy levels of fertiliser use on the land.[39] Urban areas, especially those built in a hurry and without functional or responsible urban planning, can also discharge enormous volumes of human and other wastes directly into the sea through either sewage systems designed to do just that, or sewage systems which have become overwhelmed by the size of contemporary populations or increased rainfall events which have become much more frequent in an age of climate change.[40] Many of the shallow waters along China's coast have been shown to develop extreme levels of Hypoxia and Eutrophic events such as vast blooms of green algae have become more and more frequent along its shores.[41] While South Korea has partnered China, Japan and the Russian Federation recently in detailing some of the instances of such impactful and wide-scale events in their seas and coasts, North Korea has as of yet not done so. This does not mean that North Korea's coastal and shallow water areas would not be impacted by such processes and events. The collapse in the use of chemical fertiliser in North Korean agriculture and the decline in the nation's industrial base removed some of the primary causes of such environmental issues. However, the importance of North Korean urban centres and a lack of availability of finance to support the maintenance of sewage and waste disposal facilities, coupled with the increasing number of heavy rainfall events brought by a changing climate mean that the nation's fishing communities are very likely to face similar spaces along its coast. If North Korean fishing communities such as Sindo are not faced with Anoxic or Eutrophic spaces directly on their own coast line, then surely when fishing in the West Sea/Yellow Sea or in Korea Bay, which the Amnok/Yalu River feeds into they will encounter them.

Fishers from Sindo would be faced with many of the same fishing resource problems as those the author of the book found were faced by communities on the Liaodong Peninsula. These anoxic, Eutrophic and pollution events have really impacted heavily on the volume of fish available in the areas that they would fish. It is quite evident that for the most part North Korea's fishing communities do not venture far, there are simply not enough large boats in the country for extensive

[38]Diaz and Rosenberg (2008).

[39]Townsend and Howarth (2010).

[40]Chen et al. (2007).

[41]Zhou et al. (2001).

fishing efforts in the deep sea. The virtual absence of North Korean boats from the deep Pacific as recorded by the North Pacific Fisheries Commission and West and Central Pacific Fisheries Commission reports in the present day and the fact that those boats from North Korea that are known about catch only a very small tonnage of fish in comparison to other nations in the area, further suggest that communities such as Sindo will struggle in any effort to extract great volumes from the sea. While elsewhere on the globe, seafaring communities challenged by similar issues have been beset by extensive numbers of invasive species (European Green Crabs, for instance, which have become prevalent in Canadian waters and which have begun to severely impact local ecosystems), in the water, the ecological restrictions placed on the waters of Northeast Asia have meant that, in fact, the primary invasive marine species is a species of Cord Grass *Spartina alterniflora* which impacts coastal tidal flats, severely reducing their biodiversity.[42] Korea Bay and the West Sea/Yellow Sea are so degraded ecologically that the marine ecosystem is not inviting to invasive or new species and its more regular inhabitants are in serious decline. Recent scientific analysis, for instance, shows that mollusc species which are vital for shore economies have declined precipitously in biodiversity from hundreds of species present to seven, and that even the Chinese Shrimp which is a hugely important species for fishing communities has declined in population so far as to now be classed as endangered.[43] The degradation of shrimp populations was all too obvious during fieldwork by the author of this book at Tong Shui Gou.

Beyond the core issues of climate change, sea level rise and environmental degradation and reduced biodiversity which would challenge any coastal community, the fishers of Sindo and other nearby North Korean communities have long been further challenged by the fact that the mouth of the Yalu has long been problematic in the relationship between China and North Korea. Pidansom one of the islands that now forms part of Sindo was actually once Chinese territory (known as Chouduandao 綢緞島), inhabited by a number of Chinese fishing families, but had fallen under Korean control around the period of Japanese colonisation. North Korea had offered after the 1950–1953 war to return the island to China as a gift for the support given by the Chinese volunteers, but had in fact never done so.[44] The developmental dreams of North Korea which resulted in the entire area becoming one single island, Sindo in the late 1960s and early 1970s meant that the People's Republic of China had to evacuate those Chinese families from Chouduandao in 1969. This is in spite of the fact that in 1949, at the conclusion of the Chinese Civil War, both China and North Korea had agreed to manage the area of the Amnok/Yalu River mouth jointly together, not demarcating the international boundary down the midstream of the river as is conventional in most other territorial examples.[45] North Korean actions over many years, including the co-opting of the

[42]Wang et al. (2006).

[43]UNEP Regional Seas (2011).

[44]Pinilla (2004).

[45]Ibid.

entire territory of Sindo have gone against the spirit of this conclusion. North Korea in 1977 even followed the practice of seafaring nations across the world seen in an earlier chapter of this book and extended its economic exclusion zone to some 200 miles, an extension which proves highly problematic in such a space as the mouth of the Amnok/Yalu.[46]

In more recent years, however, it has not been North Korea's complicated engagement with the territorial boundary arrangements between itself and China that has been the primary problem for the fishers of Sindo and other North Korean fishing communities along its coast. The environmental issues outlined earlier in this chapter have meant that the West Sea/Yellow Sea and the areas of the Bohai Sea just to the west of North Korea have become extremely depleted of fish, as well as ecologically degraded and polluted. China has, in fact, closed most of the area above the 35th parallel to all fishing boats in the summer months since the year 2004. North Korea itself in recent years has also sold what little there remains in its West Sea EEZ to Chinese fishing enterprises for hard currency, so that North Korea's larger boats have to sail further afield.[47] These larger North Korean boats themselves have issues of range and capability and cannot themselves travel or fish very far away from the home ports. There have been a number of instances of North Korean boats illegally fishing for squid at night in the Japanese EEZ because of this.[48] All of these environmental issues and border issues pale into comparison with the more recent fact of UNSC2371, the sanctions regime which, in fact, makes it illegal for North Korea to sell any seafood or maritime product to anyone and also makes it illegal for any other country to buy such products.[49] UNSC2397 explicitly outlaws North Korea from selling any of its own rights to other countries and seeking value and funding that way from the sea.[50] This has further problematised much of the interest detailed by Bo Gao, from Chinese fishing enterprises following both the restriction of other waters to Chinese boats and the unfortunate radioactive pollution of their preferred grounds in the North Pacific following the Fukushima Incident in Japan in 2011.[51] All this has further complicated the fishing market for North Korea, even at those moments with, for example, Chinese enterprises who are most malleable when it comes to international law and the restrictions it places on North Korean fishers.

Small fishers from communities like Sindo are therefore caught in many binds, not simply environmental, but also governmental, institutional and legal, which restrict their capacity and the sea space from which they can extract fish and make a living. It is also worth reminding the reader that when it comes to institutional support within North Korea, such communities are now at the absolute bottom of

[46]Ibid.
[47]Shim (2016).
[48]Princic (2018).
[49]United Nations (2017a).
[50]United Nations (2017b).
[51]Gao (2019).

the pile when it comes to governmental interest. As North Korea's KPA now controls the vast majority of the nation's boats, fishing rights and production/preparation facilities, the small boats of fishing cooperatives and other subsistence communities are very low in the list of priorities for local institutions. If there is fishing to be done, primarily it will be done by fishers of the KPA rather than places like Sindo.

North Koreans, however are resilient and always capable of finding their way around a seemingly intractable problem, so it would not surprise the author of this book if fishing communities like Sindo, or perhaps even Sindo themselves found a way of extracting value from their denuded sea and in some way continued to make a living, regardless of the multiple challenges facing them. The current institutional interest shown in not only more generally the fishing sector, but very specifically the island of Sindo the reclaimed land surrounding it, speaks to this fact. Sindo is famous not only for its fishing and fishing station, but also for its reed beds, and perhaps some of the focus recently bestowed on these spaces by the visit of Kim Jong Un would flow to the community nearby.

So in this chapter and in this book, readers will have come close to the fishing people in Sindo, close to the small fleet of boats moored off the tip of the island and the collection of buildings which service them next to the coast. They are, as is often the case in North Korea, tantalisingly out of reach from both myself as the researcher, and us as the readers of this book. While North Korea's interest in the lively matters of this island continues to grow, the benefit for these fishers declines, just as the population of fish in the nearby waters of the Amnok/Yalu River and the Yellow and Bohai seas decline. However, as is often the case again in North Korea in contradiction with these declines has been the rise in interest within Pyongyang's narrative in fishing and watery matters.

Chapter 4, this books' concerted effort to extract a historiographic narrative and sense of geography from the strands of North Korean political messaging and elements of the often hidden documentary evidence of Pyongyang's intentions and efforts at sea, has detailed the outburst in 2014 of institutional interest which detailed the reconfiguration of its strategies for fishing away from places and communities like the Sindo cooperative and towards the various infrastructures of the KPA. That chapter, for the most part, focused on the events and focus of 2014 and 2015, the era of 'mountains and seas of gold'. From the intense peak in the middle of the decade, institutional interest seemed to have waned a little in 2016 when Kim Jong Un in his New Years Address could only muster the direction: 'fishing sectors…should ramp up production as soon as possible and see to it that the fish farms…built across the country pay off…'[52] But North Korea certainly paid attention to fish farming and aquaculture in 2016, with a number of media and government announcements of new projects in Pyongyang and elsewhere. This was, of course, the peak period for the Byungjin Line (병진로선), North Korea's developmental and ideological strategy which paired technical development in the

[52]Rodong Sinmun (2016).

economy with nuclear capability and capacity. Fishing and watery matters it seems could certainly play their part in the drive to increase the technical capabilities and level of North Korea's various developmental sectors. As readers will know this increasing focus on nuclear capability drove international focus on North Korea to something of a fever pitch, and Pyongyang and Washington DC after a few too many early morning missile launches with Kim Jong Un in attendance seemed at points destined for a real military confrontation.[53] Amidst the heat of it all, North Korea still included fishing policy in its developmental agenda. 2017's New Years Address, for instance, reminded readers of the difficulties North Korea has had historically with increasing the size of its fishing boats and developing their capabilities: 'The fishing sector should conduct a dynamic drive for catching fishes and push perseveringly ahead with aquatic farming… It should build modern fishing vessels in a greater number…'.[54]

2018 was a unique year in North Korean political history. In the middle of the disturbing geopolitical volleys between North Korea and the United States, Moon Jae-in had been elected as President in South Korea on a platform which included some form of return to his political mentor Kim Dae-jung's 'Sunshine Policy'. At a speech in Berlin on 6 July 2017, the new President Moon made it very clear he was minded to overturn some twenty years of conservative party policy on North Korea if given the chance. Rüdiger Frank of the University of Vienna recorded the core intentions in the speech as '… Moon repeatedly expressed his willingness to respect and accept North Korea as it is. To make sure the message isn't missed, he explicitly said that he neither wishes for North Korea to collapse nor that he will work towards any kind of unification through absorption…'.[55] Given the bluster coming from Washington DC it never looked as if Moon would get the chance, but the Pyeongchang Winter Olympics in the early months of 2018 provided an opening that perhaps no one saw coming. It appears that mindful of Moon Jae-in's inclinations, Kim Jong Un's New Years Address of 2018 included the hope that North Korea and South Korea might cooperate in some way during the period of the Winter Olympics, as they had done at previous international sporting events. Seoul and the Moon administration acted within 48 h of the address being posted and by the 9 January, both sides were discussing the possibility and within a month North and South Korean athletes were participating with a joint team at the Winter Olympics.[56] While the attendance of Kim Yo Jong, Kim Jong Un's sister and Kim Yong Nam (North Korea's then official head of state, Chair of the Praesidium of the Supreme People's Assembly) at the opening ceremony and their handshakes with the South Korean President would have been absolutely extraordinary in normal times. However

[53]"North Korea Confirms Successful New Ballistic Missile Test," *BBC News*, May 21st, 2017. Retrieved April 27, 2019 https://www.bbc.co.uk/news/world-asia-39990836.

[54]Rodong Sinmun (2017).

[55]Frank (2017).

[56]"North Korea Accepts Olympics Talks Offer says South," *BBC News*, January 5th, 2018. Retrieved April 77, 2019 from https://www.bbc.co.uk/news/world-asia-42574870.

within months, Moon Jae-in and Kim Jong Un met at Panmunjom and signed the April 27th, Panmunjom Declaration, the first of three search meetings and by June, Kim Jong Un and a North Korean delegation were meeting US President Donald Trump at an extraordinary event in Singapore (so far the first of three meetings between the two men, and certainly the most substantive and successful).[57]

Not only in 2018 had North Korea avoided the seemingly inevitable (in 2017 at least) attack from the United States and its allies, but as a nation, it had rather punched above and beyond its weight and reputation on the global stage, in spite of the various sanctions regimes and processes. While 2016 and 2017 had brought severe restrictions on its developmental output through the UNSC 2397 and unilateral sanctions put in place by the United States through Edward Royce's HR757 Bill, perhaps a way forward could now be found for the future.[58] Fish and fishing would it seems certainly play a role in whatever future that would turn out to be. While the Winter Olympics in Pyeongchang were happening, North Korea's long-standing joint commission on fisheries with the Russian Federation (this book has explored moments of interaction produced as a result of this commissions' previous iteration with the Soviet Union as a partner), took place for the thirtieth time. Interest remained high in fishing matters throughout the year and Pak Pong Ju, then Premier of North Korea would be seen in government publications visiting fish farms, a railway bridge and a new railway line built to connect new fishing facilities on the Songjon peninsula near Wonsan and the opening of a new 'National Fish Breeding Laboratory'. Kim Jong Un himself made time in 2018 to visit salmon farms, the Samchon Catfish Farm and a number of the KPA's Fishery Stations.[59] For this book and its author however the most important moment in North Korea's developmental year in 2018, was Kim Jong Un's visit to Sindo itself. *Rodong Sinmun* records that on 30 June 2018, Kim Jong Un paid a visit along with a number of other officials as part of a more extensive visit to Sinuiju and the northwest corner of North Korea to the islands.[60] Such a visit does inevitably put greater institutional focus on this once forgotten place, even with the dreams and ambitions of Hwanggumpyong SEZ to its north. But it was not focused on the island and the various communities of fishing people who live there that was important on this occasion to North Korea. Granted fish and fishing in 2018 were lively matters among many others for North Korean institutions, but it appeared that another form of vibrant material was the key concern. Kim Jong Un was in fact visiting 'Reed Branch Farm 1' of the Sindo County Combined Reed Farm (the text from *Rodong Sinmun* asserts that this farm was also visited by Kim Il Sung and Kim Jong Il), in order to see developments in the production of reeds for the fibre and chemicals industry.[61] This natural product has become important to North

[57]Lyons et al. (2018).

[58]United States Congress (2016).

[59]Rodong Sinmun (2018a, b, c, d, e).

[60]Rodong Sinmun (2018f).

[61]Ibid.

Korea since it can no longer afford or source fibres produced through chemical process or based on petroleum by-products. Sindo thus in North Korea's institutional mind, in 2018 is not a place for the fishing cooperative and fishing interests (though fishing does have a brief mention in the text recounting the visit), but for other forms of material, other lively energies in the matrix of the nation's development.

6.1 Conclusion

Sindo is one of those terrains in North Korea that certainly can be seen and studied from space. GPS-enabled satellite photography can show the reader and the watcher the outline of its fishing facilities, the monument at the heart of its main village square, the developments on its west coast and increasingly the turpidity and sediment build up in the Amnok/Yalu estuary. The post-imperial technological gaze can show the interested and the curious all of these things, but it cannot get anyone close to the reality of the small fishing community on its southern tip and their politics and political strategies, informal or otherwise. Sindo has long been caught in web of environmental crisis, developmental stasis, geopolitical complication and institutional disinterest, and all of these do not make the community there itself anymore visible or any more reachable. It is a fundamental disappointment to the author of this book, that the space and place they had set out to engage with have on this occasion been essentially and practically unreachable. I hope that this does not make this book without merit. It has been a long journey intellectually and conceptually to this point, and on that journey, I hope that vibrant and lively fishing matters, or the place of such matters in North Korean political and developmental practice has become a little less opaque.

The final concluding chapter of this book seeks, not just to summarise and reiterate the various temporal, geographic and conceptual scales and frames the reader will have gone through to get to this point, but to open out the frame once again. At this point, the reader and the narrative of this book have arrived in 2019 at a small community, a little beyond physical reach, at the mouth of the Amnok/Yalu River. While for many analysts, readers and writers, such a place is out of time, out of political space, out of the social, economic and ecological frame that much of the rest of the globe sits in, it has throughout this book and throughout the research and fieldwork that is behind the words of this book, always been the ambition of the author to put Sindo and watery geographies like it back into the framework of political, economic, social and environmental time. North Korea is part of a peninsula, it is not an island or a satellite of the wider world, circling it forever like an unusual aberration. As a nation is as much a part of our global neighbourhood as any other place, its own environmental crises are simply offshoots of the wider planetary crisis that is befalling us all as a result of unfettered growth politics and an industrial and economic system predicated on and defined on their being no limits. Non-human materials and energies have been harvested and extracted from our

world to the extent that the lively and powerful matters on which humans as a species have depended on for so long are now depleted beyond repair, or present in such a great volume that we are on the brink of a radical transformation in our ecosystem. This book has so far very much attempted to tell this narrative, and Sindo, however, accessible is certainly part of that story.

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Chapter 7
Lively Conclusions

Abstract Having encountered the vibrant matters of fishing communities close to North Korea, and fishing in North Korea at and around Sindo, framed by the histories and geographies of fishing landscapes throughout East Asia and beyond this final chapter draws this book to a lively conclusion. Fish and fishing for North Korea have become vitally important again in current years, important in both abundance and absence. North Korea has this in common with much of the world's fishing terrain, precarious resources familiar in global histories of fishing such as those of the collapse of Newfoundland and the Grand Banks cod fishery, the disappearance of the Herring from Southwest England and the depletion of much of Africa's fishing stock in recent years. As climate change, ocean temperature and acidification and a number of other elements of global environmental crisis develop, fish and fishing will become still precarious. Fish themselves may be energetic and vibrant materials but that will not stop them becoming another element of the impending and ongoing global extinction event of the Anthropocene/Capitalocene. That does not, however, mean that fish and fishing terrains will lose their agency or the impact upon human life and developmental practice. On the contrary fish and maritime resources in their absence could become even more vibrant, their diminution in the web of life of the sea and land making them more powerful and valuable as they become more scarce. Scarcity and absence, of course, are common in the life and practice of North Korea, and this chapter and book concludes with a discussion of North Korean Ghost Ships and the most macabre of impacts of such scarcity. Fishing communities North Korea must be concerned, along with their development institutions, with the navigation of landscapes and terrains of lack, scarcity and difficulty, and the Ghost Ships and their unfortunate crews suggest not only the real limits of those difficulties, but allow historical connections with other uncomfortable and difficult materials and bodies in East Asian fishing history.

Keywords Fishing history · Fishing communities · Capitolocene · Ghost ships · North Korea · Japan

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So far, this book has primarily been a work focused on developmental communities and processes, which have long roots in human history but have only in the last few centuries become intense industrial processes, which have stripped the world's waters of their lively matters. For the most part, this narrative has been one of plenty and presence, the developing capabilities of human societies and institutions to harvest fish and other creatures of the sea, this development in tandem with changes and growth in those societies and their structures. Readers will have encountered the transformation of societies and their practices of extraction from semi-feudal to mercantile to late capitalist and neo-liberal. Classical empires have been built across Asia and the Pacific, only to disintegrate and collapse and have new empires of fishing and extraction replace and build on their ruins. Technological development and the unending quest for profit and accumulation have transformed the seas, oceans and coasts of the world to just that, ruins, ruins which both humans and sea life must live among. While this narrative certainly sounds unrelentingly bleak and destructive, this book and its author are not so naïve as to assert that this is the end of the story.

If Geography's ruin-turn has imparted anything to the field it is that ruins and destruction are not the end of the story. Our planet's web of life, as Moore understands it, whether impacted by the energies of capitalism or non-capitalism cannot simply be negated, but constantly transforms and reconfigures itself under the pressure of accumulation and other human processes.[1] Just as weeds, grasses and other life colonise redundant, broken, derelict sites of industry or alien viruses, bacteria and other pests colonise new territories as climate change and global temperature rise transform our global ecosystems, so denuded and degraded waters will harbour new forms of sea life. Humans will learn to interact with, use and accumulate these new species and forms just as they have always done and through practices, the reader will already have encountered, of fishing down the trophic level, are in reality already doing so. I do not suggest a biological equivalence between historic, contemporary and future forms of life, just as I do not suggest a moral equivalence on the part of humans and societies for having at least in part created these situations. It would be better for the planet if such degradation had not and did not happen, ecosystems and ecology, after all, develop best at slower temporal frames, more geologic than anthropocentric. But this is, as many assert perhaps a new era, the Anthropocene, or more correctly, the Capitalocene.[2] In this new epoch, species and ecological development will exist outside of the frames of ungoverned or directed nature, influenced by the energies of capital of all times, a product of consumption, accumulation, extraction and waste as much as by evolution or natural selection.

[1]Moore (2015).

[2]Moore (2014).

Matters in this era are no less energetic or lively than they have been in previous eras. If anything they are more energetic, as they are not simply the drivers of natural processes, but elements vital to the functioning of the processes and practices of capitalist logic. Vibrant and energetic matters have become important parts of the construction and functioning of our new world, their energy driving both the physical materialities of that world, and values and prices within it. Of course, fish and sea life are one such category of those matters, vital as food for humans and for animals, for chemistry, industry and medicine. While not quite the energetic material that corn and its by-products have found themselves to be in our world, seafood and other products of the sea are deeply important to many of the processes of our modern age. I began this section by talking about destruction and degradation, key processes at play in the economy and development of our age, and processes that pivot on the transformation of living materials from a state of abundance to states of scarcity. Scarcity economics are of course familiar in our times. Scarcity sets prices, creates value and drives innovation in our economies, or at least that is the theory. Scarcity is itself an important and vibrant political matter in our global geopolitics. As readers will already have encountered when reading this book and thinking about North Korea's place in world politics and economics, scarcity in a society is now taken as a sign of governmental failure and incapability. Only failing, illegitimate governments and economic systems have overt scarcity which is not mitigated by the abundance of something else. North Korea is conceived of, in global popular, political and media discourse as a place of scarcity and therefore not legitimate in some way as a nation. Commentators have even in the past accused North Korea of even deliberately starving its own people, denying them sustenance as a means of control and of power. Intriguingly whether or not this is true, or wilfully true, the assertion that North Korea might not be capable of feeding or sustaining its own people has been weaponised by those who seek to change, overthrow or negate North Korea, in a way which itself a means of control and of power. The reality is that of course things are scarce in North Korea. It is a nation whose entire political and economic support structure collapsed in the early 1990s, it was subjected to a period of acute environmental and institutional failure because of this and because of a series of climactic misfortunes and its political system and ideology has required much of the energy and capital generated by the nation and its people over the last few decades to be spent developing military capabilities. Further to these things, North Korea is subject to some of the most fierce and disabling sanctions regimes yet constructed in the global legal system; so things are certainly scarce.

Fish in this nexus of scarcity and lack are vital for their energy and vibrancy. As readers will have seen at moments in which North Korea has found it very difficult to access the finances and material support to engage in developmental activity of the conventional sort, fish have seemed to it like a bountiful commons to be exploited, without cost or material input. Of course, this isn't true in a way, as the seas open to North Korea do not have a great many fish, and there is certainly a level of material, financial and technical input required to go fishing. However, it seemed that way to North Korea, and fish and the energies of their matter have

entranced the institutions of Pyongyang as a means to mitigate scarcity and lack. Putting aside for a moment the fact that there is a general and verifiable scarcity of fish in this hypothetical global commons, created for the most part by the stripping of life from the sea by industrial fishing, North Korea has seen fish as a way out of its protein and other food resource problems. And here is the connection with one of the most extraordinary intersections between scarce resources, the vibrancy of potential and community in North Korea, and the power of its political ideology, a connection which really demonstrates the power of these watery energies.

Readers will be familiar from the preceding chapter and chapter four with the historical importance of fishing in North Korea's developmental history. They will also be familiar with the rising importance of fishing and extracting other resources from the sea and coast to North Korean political and developmental narratives since around 2013. North Korea's fishing enterprises and communities have been repeatedly called by Kim Jong Un and government institutions to project greater effort, time and resources to fishing matters. The KPA has also been primarily tasked with the responsibility for this, to the detriment of course of conventional communities and cooperatives such as those considered in the previous chapter. Readers will remember the huge role played by the KPA in North Korean development since the early 1990s and will perhaps be aware of the huge cost placed on the government finances of possessing such a large military capacity, as well as the development of nuclear capabilities.[3] Essentially it is possible for North Korea to fund its military and the various responsibilities it holds out of core government finance or income generated or extracted from overseas. So to an extent, the North Korean military, like its foreign embassies and diplomatic services must not only pay their own way and not be a financial burden, but must make a profit to increase the funding available for core state, party and leadership activities and the ambitions of the country to be a nuclear power. KPA Fisheries Stations are thus part of this financial and governmental order, required to generate not funds through the sale of fish for central government, but also profit for the specific Army and Navy units to pay wages, provide food and suitable accommodation for soldiers and staff, to channel funds to regional and national institutions who might support institutionally and bureaucratically their efforts. This is of course hugely difficult given the number of restrictions North Korea is under through UNSC sanctions and other legal frameworks, as well as the ecological and environmental crisis in the seas surrounding it and more widely across the globe. While the North Korean KPA and other institutions have certainly made efforts to develop their fishing capabilities and skills over recent years, it is important to remember that primarily they are military and governmental institutions of a country hugely lacking in governmental capacity and resource. The KPA and its Fishery Stations are therefore under considerable and increasing pressure to go to sea more often, for longer, with more resource and more effort than before and to catch more fish from waters which have less and less resource. This is a fundamental case of lacks meeting lacks, absence

[3]Gause (2006).

encountering absence and it has produced one of the most truly macabre developmental outcomes in recent years.

Japan has long been concerned about infiltration and espionage from North Korea. Ever since the dramatic and unprecedented spate of kidnappings and abductions from its shores by North Korean military operatives in the 1970s (to both fulfil a practical need for Japanese language translators in North Korea and occasionally the esoteric needs of its leadership which further poisoned relationships between the two countries), Tokyo has been protective of its coastline.[4] After 2010 Japanese media, public and government institutions were extremely concerned then when a series of wooden, derelict boats with Korean identification marks began to wash up on the shores of western Japan and Hokkaido. Later finds of North Korean materials such as flags, a Kim Jong Il pin badge and military insignia suggested that these were from North Korea. It was doubted that such boats were attempts at defection or escape from North Korea, though a few North Koreans had tried in the 1980s to sail to Japan, due to the enmity between the two countries and because it would have simply been easier for these boats to aim for South Korea, which is considerably nearer and less troublesome to navigate to. In 2011, Japanese Coast Guard statistics recorded that 57 boats had washed ashore, and this was the start of an increasing number of boats over the years, peaking in 2013 with some 80 boats and in 2017 with 99 boats.[5] These boats were often of extremely rudimentary and primitive wooden design, with, where still present, very old and badly maintained outboard engines. While there were a few instances of crew surviving the journey to Japan, for the most part, and the most macabre element of this developing story, the crews were either missing or dead.[6] A large number of the dead bodies of North Koreans thus have come to Japanese shores by these means, sometimes badly decomposed, sometimes reported essentially as skulls or skeletons by the time they washed ashore, indicating that whatever had happened to them, it had been a very prolonged period of time since they had set to sea and come to grief.[7]

To date, there are very few answers surrounding the nature of the boat crews' ambitions, identities and the background behind what has created this terrible outcome. North Korean authorities to date it seems have not divulged details for any of the instances, and as North Korea and Japan have no bilateral relations formally, no repatriations of bodies or other materials have occurred. It is suggested that all of the increasing pressure from the central government and institutions in North Korea on the KPA, other institutions and perhaps even local communities (being pressured by their local or regional Party bodies), are forcing either soldiers, sailors or civilians to go to sea to catch fish when they do not have the capabilities, training, knowledge or resources to do so.[8] Fishing as an occupation is one of the

[4]Williams and Mobrand (2010).

[5]Japan Coast Guard (2019).

[6]Park and Kaneko (2015).

[7]Ibid.

[8]McCurry (2017).

more dangerous livelihoods on the planet, and historically, even with experience, training and resources behind them fishing communities have had many losses globally. The crews of these 'Ghost Ships' as they are termed, have set off in search of the bounty of the sea, with inappropriate boats for the currents and weather they will encounter, little navigational knowledge, no equipment for communicating in case of difficulty, very little food or sustenance and little resources to support them. They have set off it seems in search of the vibrant matters of the sea, only to be overcome by the powerful energies of the water. Japanese coastal communities and institutions to make something of an understatement have found these instances traumatic and frightening, yet to date have had little reassurance that the problem is reducing. Ghost Ships and their spectral crews continue to haunt the harbours and coasts of western and northern Japan, victims of intense developmental urges from what is essentially an enemy across the waters.

How do we as academics, as publics, as humans even begin to frame such a horrible, miserable outcome? These North Korean Ghost Ships are lively matters in the geopolitical and regional political networks of northeast Asia, the bodies, skeletons and other human materials of their crews are political and energetic objects in the own right. The derelict boats and craft washed up on remote beaches, moored precariously at the edge of Japanese harbours are essentially waste material by-products in North Korea's contribution to global efforts to extract the resources and lively matters of the sea. They are perhaps by-products, which represent the level of human wastage and collateral damage that its institutions are prepared to tolerate in the rush to extract value from the sea, while that value still exists. They are complicated, troublesome, upsetting and traumatising materials of course, deeply problematic for the nations which surround North Korea to deal with. So far, the vast bulk of the instances of their arrival has been on the shores of Japan, while they could of course also be washing up on the beaches and coasts of China and the Russian Federation, if they have the media and government agencies of those countries have not reported on them. Our response surely must also be human, as well as political or focused on security. These unlucky fishers and sailors are of course citizens, fathers, sons and friends who will never see their families again, never see their homeland again, no matter how politically complicated a place that is. Their bodies, due to the disconnection between Japan and North Korea will never be repatriated to their home country, and so their mortal remains intersect with the cultural, social and political traditions of Japan. Japan is of course well versed in encountering and managing the bodies and materials of living things that are complicated and difficult to cope with given spiritual and cultural norms. This author, in particular, suggests revisiting the work of Jakobina Arch encountered earlier in this book, and her recounting of Japanese communities management of the bodies and burials of whales and foetal whales in the eighteenth and nineteenth centuries.[9] Little has been said so far of what actually happens to the bodies and human material washed up with these Ghost Ships on the shores of Japan, save for

[9]Arch (2018).

one story focused on the town of Monzen (門前町), in Wajima municipality (輪島市). Monzen had three Ghost Ships wash up with a number of bodies in December 2015, and after various bureaucratic issues, the municipality authorities found they could not afford the $13,500 cost of disposing of the human remains.[10] The Los Angeles Times reports that Wajima authorities arranged for the bodies of the North Koreans to be cremated and their ashes interred at Soujij, a Buddhist Temple on the outskirts of Monzen.[11] It is unlikely that the North Koreans whose bodies they were would have been in any conventional terms, Buddhist, yet their physical materials have become part of the sacred geography and commemorative architectures of Japanese Buddhism. Kayoi village in Yamaguchi Prefecture (山口県) as Arch records has a Buddhist shrine, grave and commemorative geography which presumably has much in common with that of Monzen. Kayoi's sacred geography, in common with Monzen in our present, also possesses the bodies of visitors involved in fishing who are as alien as the bodies of those North Koreans. They are the bodies of foetal whales caught by its whaling crews by accident, in contradiction of the Buddhist practice of their time and necessarily entombed and named on memorial headstones to atone for the whalers mistakes and give the souls of the unborn whales a chance to become little Buddhas, like all those creatures in existence who have had a chance to live. It is entirely impossible that the dead North Koreans of Monzen and elsewhere could ever be thought of, like the whales of Kayoi, as 'mizuko' 水子, but the heart of their and many other crews of these Ghost Ships, unfortunate stories is that they become as lost as the 'water-child', trapped not only at sea, but in the place as lively matters, caught seeking other vibrant materials in an even more energetic and impossible watery geography. Perhaps, this abstraction of the bodies of unlucky North Korean fishermen into a frame in which they can be encountered in commemoration and remembrance in a similar manner to other complicated or uncomfortable materials in the complicated watery interactions that make up global and historical fishing practise is a difficult connection for readers to make. However, these fishers, even more unknowable and diffuse than Sindo and other North Korean fishing communities surely are owed a modicum of compassion and a place at least somewhere on land. The ghosts of the Ghost Ships are for this author the most extraordinary contemporary element of this books story, and that which requires the most extensive research in the future and to which he will certainly return.

The reader will certainly have travelled some distance through this book and its engagement with the lively matters of fishing. The irony is not lost on the author, that one of the final energetic materials with which connections are made in this book are the dead bodies of unfortunate North Koreans, which are lively in the politics of the region and the difficult relations between the two neighbouring countries, in spite of their lack of life. Fishing is about life and death and always has been so. Humans sustain their own lives and the lives of their families and

[10]Kaiman (2016).

[11]Ibid.

communities through the harvesting of the lives of creatures of the sea, whose own dead bodies become vital and powerful materials in the global web of life. While their living bodies certainly have energy and are vital to the geographies and ecosystems below the waves, their vibrancy once caught, processed and prepared has been extraordinary.

This book has explored the role of fish, fishing and products of the sea in the political, economic and cultural lives of coastal communities in a huge temporal and geographic scale. Readers will have encountered the development of human interest in fish and the creatures of the ocean from the very earliest time until the present. The book has ranged widely across the planet, yet has primarily focused on fishing in Asia, specifically on the Korean peninsula and neighbouring nations. This book has thus explored the development of Japan from one of the first ocean-going nations, whose economic and cultural landscapes found creatures from the sea hugely important for food and other materials and who sometimes incorporated the bodies of those creatures that had been caught into the structures of towns and villages, as well as commemorative and sacred architectures. Equally the book has recounted the development of China, as one of the pioneers of river fishing and aquaculture, a nation focused on taming a complicated and troublesome hydrology, and when it did so would become one of the world's great civilisations. Both nations were of course hugely powerful in their own ways, yet both had complicated histories and experiences of colonisation and modernisation at the hands of mercantilism and capital. Japan, in the long run, was initially more successful and used the experience of colonial and imperial power to develop its own unique form of colonisation. Since it was an ally of Britain and the victorious powers in the War of 1914–1918, Japan was granted trusteeship of the former German South Pacific territories, now Palau, Micronesia, the Northern Mariana Islands and the Marshall Islands. Possession of these territories allowed Japan to experiment with and develop its capacity for deep sea fishing and industrial processing, particularly at Saipan and gave it an extensive area of territorial waters over which it could exercise control. As history records, Japan would go on to build an empire across the Pacific, which was both a classical imperial project on land and an 'Empire of Fishing' at sea. The Korean peninsula would become a hugely important part of that empire of course.

Later, following Japan's defeat by the United States and its allies in 1945, Japan's reach over the Pacific would be briefly restricted before it was allowed to grow again, in tandem this time with America's own imperial ambitions and desires to hold back, restrict and if possible roll back communism. The United States had global ambitions after 1945, not just for imperial domination in the classical sense, but for economic imperialism, reframing what was possible in social and political terms in many nations so that it would best fit American political and business interests. Extraordinarily as readers will have encountered this meant sacrificing the interests of its own fishing industries and canneries so that freedom of the sea and freedoms of navigation could be maintained across the globe. This framing of the deep sea and the wider oceans, especially in the Pacific as open territory, a global commons, suited the interests of a fishing industry who with a new statistical

methodology rooted in the claims that not only were the fish in the sea knowable, but they were quantifiable using scientific and mathematical methods. Such methods gave rise to the notions of surplus populations and Maximum Sustainable Yield which building on much scientific research over more than a century, corrupted fisheries science for political and economic ends. While they did so, they created the availability of investment capital which transformed the technology involved in the fishing processes. Ships became larger and larger, refrigeration was put to use so that the problems of spoilage and decay were no longer a concern so those larger and larger ships could put to sea for longer and longer and travel further and further. Motherships were developed as floating factories so that fish caught by a fleet of smaller ships could be processed and packed without ever having to touch land and could then be landed at the nearest and most convenient market. These preparation technologies even revolutionised the form that fish were actually eaten in, from fillets and cuts of whole fish, to processed fish sticks and fish fingers, a key part of a developing convenience economy and society. Where once fishing was a matter of chance and luck, technologies such as sonar and radar developed which allowed fishing boats to see fishing populations from above and to best target their technology. In more recent times, these technologies have been superseded by GPS and Remote Sensing from satellites, so that fish movements and stocks can be tracked from space, a panoptical developmental technology rooted in the observation-security complex of our modern world.

Korea was a nation a little out of line with the fishing histories and narratives of China and Japan. Never a country of the deep sea, fishing practices and communities had been restricted by political and economic developments, by spiritual, religious and social ordering, so that fishing was very much coastal in nature and fishing communities disparate and peripheral. Korean fishing communities themselves were not hugely impacted by the Japanese colonial period, as the Government General of Chosen was primarily concerned to import Japanese fishing people and technology onto the Korean peninsula rather than transforming local practices. Korea's waters long contested and impacted by external and foreign fishers and agency were regarded as under pressure by Japanese colonial authorities and even restricted fishing boats from mainland Japan. It is unclear whether the Pacific War of 1941–1945 or the Korean War of 1950–1953 were positive periods for fish populations, as was the case during the First and Second Great Fishing Experiments (as European researchers referred to them), in the North Sea and North Atlantic between 1914–1918 and 1939–1945, no one ever thought to engage in the research necessary to discover whether fishing stocks increased in the West and East Seas in these times of conflict. This was even after the fact that Japan's colonial authorities sought to include Korea and its waters within the wider framework of Tokyo's research network. After 1945, both Koreas were hobbled somewhat initially by the fact that Japanese fishery institutions and fishing people retreated to mainland Japan with their fishing boats, and then whatever infrastructure was left was further degraded during the destruction of the Korean War. Both Koreas since their independence have seen fishing as one of the developmental imperatives which would bestow legitimacy and authority upon them during

the Cold War. South Korea after the 1950s with American support and with Japanese capital became one of the world's global fishing powers, its boats and ships seen in seas across the globe. North Korea, of course, has always sought to extend its fishing power across the globe, in tandem with other socialist and communist nations such as the Soviet Union, the People's Republic of Poland and the German Democratic Republic. This author has often said what could be more socialist or utopian than literally creating new land from the sea, but dominating the seas of the world would surely be another key goal for any bonafidé utopian national project.

North Korea's ambitions at sea have never really come to fruition. Despite technical, bureaucratic and financial support from the Soviet Union, the People's Republic of China and a number of other ideological allies, Kim Il Sung's repeated calls to increase production, develop new infrastructure and built larger and more capable boats somehow never seemed to be heeded by reality. The vagaries and contradictions of central planning and both ideological changes and development meant that the most concrete and well-laid plans somehow always went awry. The Japanese colonial administration had through the importation of a large amount of Japanese labour, financial focus and Imperial drive increased the volume of fish and marine products landed on the peninsula an extraordinary amount; it is unclear in the history of North Korea whether the final pre-war figures for colonial Korea (even accounting for reduction in territory), for 1939 and 1940 have ever been matched. North Korea certainly has talked and written its way into considering itself a great and aspirational fishing nation of the world, but the reality, as unclear at times as it has been, is that this is not the case.

In the present, however, this book has repeatedly asked the question, what is left in the waters of this world for there to be a great fishing nation of. Industrial fishing rooted in the statistical framework and presumptions of the American century and the Cold War Empires of Fishing has essentially asset stripped the past, present and future of our oceans. In reality there is little left to catch that has already been extracted from the waters, coasts and seafloor. The fishing methods and practices of the twentieth century guided by the panoptical gaze provided by satellite and remote observational techniques have not simply reduced the populations of fish and other species to a fraction of what they have historically been, they have transformed the geographies of the sea and the seabed. Deep sea trawling has flattened and reduced the ecosystem of the ocean floor, from a complex and complicated topography of coral and other deposits, built not only by geologic and sedimentary time, but by the combined efforts of polyps, worms and molluscs, to often flat deserts devoid of life, but perfect for the interminable scraping of trawling gear. Industrial fishing has even transformed fish and human perception of fish. Fish which are attractive and valuable to the global fishing industry are not in reality allowed to live anywhere near the normal life spans, so do not in general reach anywhere near their historic potential size. So the fish of our present, really are not the same fish as those of our pasts and human perception of them has radically altered. In the twenty-first century, we read historic accounts of fish and fishing in which authors recount the huge size of some species and the incredible abundance

and presence as fantasy, fish are simply not that big and it is ludicrous to us for them to suggest that there might be so many that the water itself might no longer seem liquid, that it might be possible to walk over the backs and fins of so many creatures. While humans loom larger than life in our anthropocentric times, fish are very much smaller, their geographies and topographies taking up a great deal less space.

This is the reality of the science and the watery geographies of this book, that the vibrant and lively matters and the spaces of fish and other creatures of the sea are reduced, smaller, degraded, and perhaps a little less energetic. Another key element of this book has focused however, on the fact that while this may be true when it comes to their own bodies, the routes and spaces of their own lives under the sea, fish and fishing practices are still every bit as energetic, vibrant and vital to those communities and people who seek and make a livelihood off them. Jane Bennett's theorisation of the vibrancy and energy of matters is certainly reflected in the 'thing power' of fish and aquatic creatures, even at their most degraded, in the web of life encountered by the author during the fieldwork and research for this book. The Chinese communities of the Liaodong peninsula who are beset by a number of vibrant and energetic matters in the present, such as speculative Capital, the physical materials of urban development and the powerful politics of contemporary China certainly still seek to harness the power and value of fish, sea life and aquatic vegetation. While communities like Tong Shui Gou (通水沟) and Yanchangxincun (盐场新村) are pressured even in their peripheral locations by powerful external energies, the vibrancy of materials and matters from the sea mean that it is worth for their communities navigating a complex and precarious path to continue to attempt the harvest of whatever bounty remains below the waves. Gageodo (가거도) in South Korea and its fishing communities, long extremely peripheral to national institutions and infrastructures, have continued to seek the lively matters of the sea. The residents of Gageodo do so even as subsistence or conventional fishing from the island is challenged by the pressures of tourism and the islands precarious place in South Korea's security framework, close to Chinese waters and shipping lanes. Complicated as their connections to the mainland have been, Gageodo's fishers have been freed from the yoke of the *Kaekchu*, commission tradesmen, but find themselves now facing new restrictions from climate change. The least visible and accessible community of this book, Sindo (신도군) and its fishing cooperative are also challenged by multiple practical environmental challenges, but with them face many of the developmental problems which concern other North Korean developmental communities. Institutional disinterest, bureaucratic and financial failure, ideological change and political reconfigurations, have seen smaller fishing communities in that nation replaced in the developmental hierarchy by the fishery stations of North Korea's military. Yet the vibrant matters of the sea for North Korea following the 1990s seem even more lively than before. The value of the watery commons is huge for a country so restricted by economic, political and environmental factors, it has been vital for Pyongyang to seek more fish from the sea to replace the protein and calorific values lost by agricultural collapse elsewhere. It has been vital for North Korea's sense of its own legitimacy and authority

as a nation to take to the waves and to find 'seas of gold', even if those seas are not necessarily in their own economic zone or national waters. Yet North Korea, of course, has found itself further restricted and cut out of global maritime markets by the complex and thick framework of sanctions placed upon it in recent years, having to find new and novel ways to continue connecting with the vibrant energies of the sea.

Ultimately North Korea's fishing communities continue to live, even precariously, but they also die, as the reader will have encountered in this final chapter in the shape of the macabre and spectral geographies of the Ghost Ships. While the human remains and bodies of North Koreans washed upon on distant Japanese shores are some of the most lively and energetic materials of all connected to the sea in regional politics, these are not the materials this book wishes to end with (though in classic academic style, more research is certainly needed on them). The fishers of Sindo and other communities in North Korea though unknowable and inaccessible in many ways continue to seek the vibrant and lively materials of the sea, even as those materials become sparser, thinner and more disparate. In framing their places, spaces and experiences throughout this book as but part of a longer historical frame, a wider conceptual network and a geographic neighbourhood which connects them rather than regarding North Korean people and places as detached, the author hopes to have inserted a new sense in the readers mind. Instead of disconnection and isolation, North Korea's fishers and fishing communities are very much part of their regional neighbourhood, and in fact, a neighbourhood which encompasses the whole planet. The entirety of this neighbourhood faces dramatic, perhaps insurmountable challenges in the future, as all of us humans, animals, plants and other residents of the planet do, but the vibrant energies, the 'thing powers' of the materials and beings that make up our global web of life will keep enticing us to continue engaging, continuing to harness their liveliness.

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Index

R. Winstanley-Chesters, *Fish, Fishing and Community in North Korea and Neighbours*, https://doi.org/10.1007/978-981-15-0042-8