Sea changes: environment and political economy on the North Aral Sea, Kazakhstan

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I, William Wheeler, confirm that the work presented in this thesis is my own. All photographs and maps are, unless otherwise indicated, my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

The Aral Sea regression is globally famous as a devastating ecological disaster, though recently a dam has led to the partial restoration of the North Aral. These ecological changes have overlapped with the collapse of the USSR and resultant political-economic transformations. From ethnographic fieldwork in Aral'sk and fishing villages, and archival research, I argue that the sea's regression and partial return cannot be analytically separated from political-economic processes of socialism and postsocialism. This study of the entanglements of environmental and political-economic change has, I suggest, implications for anthropological engagements with climate change.

Chapter 1 offers narratives of Soviet irrigation policies (which caused the regression) and of the construction of a socialist fishery, arguing that similar political-economic processes drove both. Chapter 2 explores official responses to the regression, especially importing ocean fish for processing in Aral'sk, and sending fishermen to fish elsewhere in Kazakhstan. Chapters 3 and 4 explore how these practices, and their cessation after the collapse of the USSR, shape local understandings of the regression. I thus decentre the environmental disaster narrative. Part 2 examines post-Soviet projects in the region, arguing that the disaster narrative, though partial, rallied actors and mobilised projects, including the dam, which have to some extent reshaped the region. Part 3 analyses the divergent outcomes of the sea's return today. No longer embedded in the command economy, the sea is enmeshed in new sets of relations connecting fishermen, private actors, state and markets extending as far as Germany. Catch is limited, but over-quota fishing is widespread. For some fishing villages, this has led to new-found prosperity, with extensive ritual expenditure. However, because over-quota fish cannot be sold openly, they do not reach newly-opened factories in Aral'sk, where the sea is felt to be marginal and the fishing industry figures as a symbol of corruption.

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Unless otherwise stated, all pictures, maps and graphs are my own. The black and white photographs in part 1 are taken from the Aral'sk Museum of Fishermen – thanks to the staff there for letting me reproduce them. Thanks to Martin Malik for permission to use the photograph of the mosaic in Aral'sk station.

Finally, I wish to thank friends and family for their unfailing support, especially my sister Hannah and my wife Millie for reading countless drafts, but most of all, for always being there.

Note on transliteration and pronunciation

For transliteration of Russian words, I use the modified Library of Congress transliteration. I transliterate Kazakh words from Kazakh Cyrillic. Given that the Kazakhstani authorities are currently planning to introduce a Latin script for Kazakh, modelled on the Turkish alphabet (as has already happened in Uzbekistan, Azerbaijan and Turkmenistan), there would be a good argument for using this, on the basis that the language would look more like its Turkic relatives. I transliterate from Kazakh Cyrillic because this is the alphabet that my informants are literate in. While the Latin script may represent the phonemes of Kazakh rather better than Cyrillic, any alphabet change is also political, and the Latin alphabet, if it is introduced, will distance Kazakh further from Russian, and, by implication, from the Soviet legacy. Many of my informants sometimes mix Kazakh and Russian, and everyone uses a lot of Russian-origin words in their everyday speech, and arguably do not perceive such a strong boundary between the languages. Thus for Kazakh words I also use the Library of Congress transliteration as for Russian, with the following additions:

ә	*ä*	ө	*ö*
ғ	*gh*	ұ	*ū*
қ	*q*	ү	*ü*
ң	*ng*	і	*ï*

Like other Turkic languages, Kazakh has strict vowel and consonant harmony, as below:

	Front	**Back**
Vowels	*ä*	*a*
	ö	*o*
	ü	*ū*
	ï	*y*
Consonants	*k*	*q*
	g	*gh*

The long vowels *u* and *i* can also be semi-vowels /w/, /y/.

I use Kazakh versions of all place-names in the region, except for the town of Aral'sk, where I use the Russian form, because the Kazakh form, which is simply 'Aral', would be confusing. Where proper nouns are relatively well-known in English, I use the conventional English spelling, thus Kazakhstan, not Qazaqstan; Baikonur not Baiqongyr; Nazarbayev not Nazarbaev, Syr Dariya not Syr Dariia. Finally, several organisations in the region publish materials in English, so I use their own transliterations: Aral Tenizi, Aral Aielderi, Kambala Balyk.

Glossary

akim, akimat (Kaz.: *äkïm*, *äkïmdïk*): mayor, mayor's office

aqsaqal: white-beard, elder

Aralgosrybtrest (1926-60), Aralrybokombinat (1960-77), Aralrybprom (1977-1998): state fishing industry on the Kazakh part of the Aral.

KazNIIRKh (Ru.: *Kazakhskii nauchno-issledovatelskii institut rybnogo khoziastva*): Kazakh scientific fisheries research institute

kolkhoz: collective farm

oblast (Ru.: *oblast'*, Kaz.: *oblys*): Soviet and post-Soviet territorial division below republic. Aral'sk is in Qyzylorda oblast.

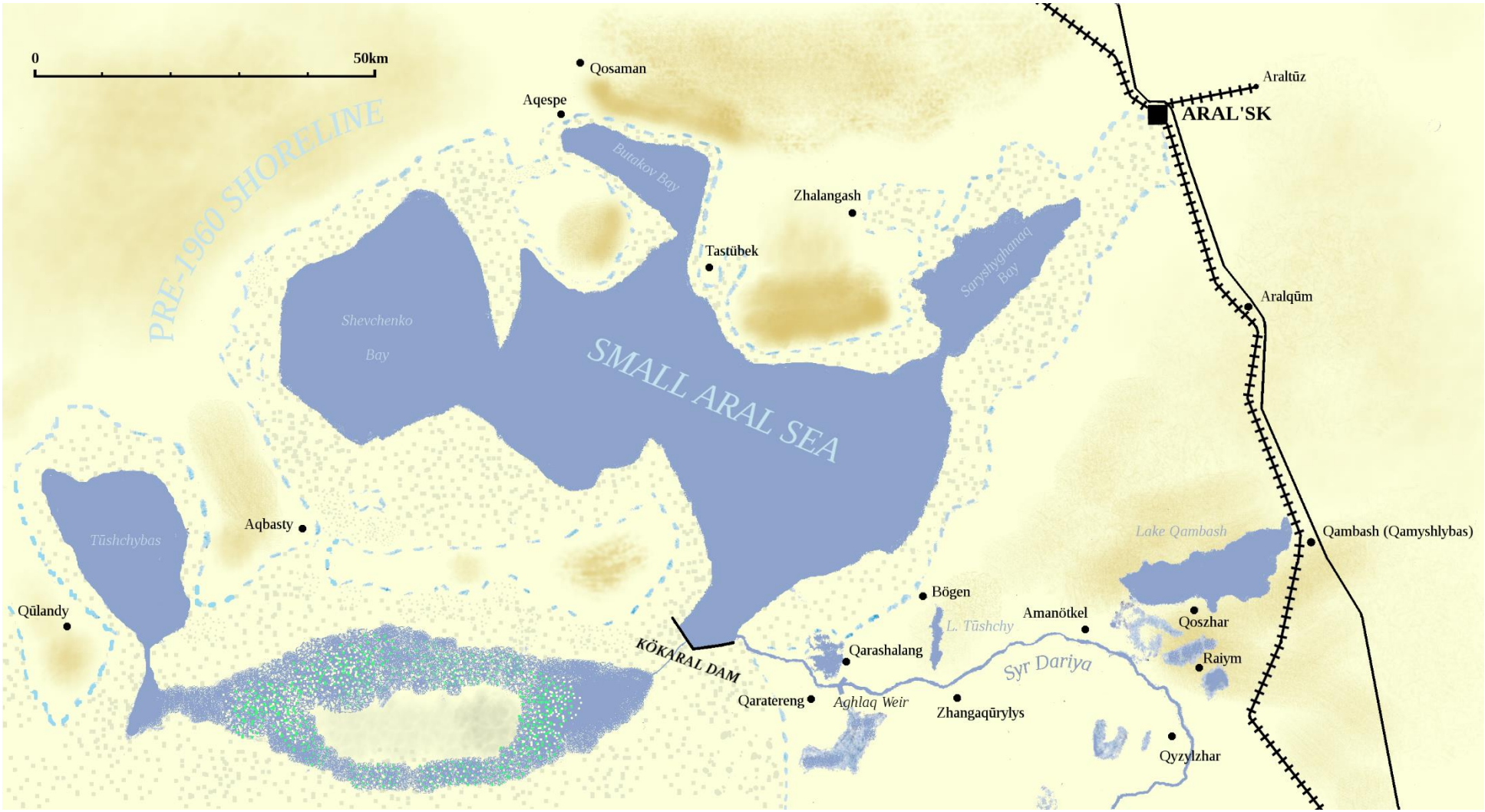
raion (Ru.: *raion*, Kaz.: *audan*) territorial division below oblast. Aral'sk is the centre of Aral'sk raion.

SYNAS: Syr Darya Control and North Aral Sea Project.

tenge (KZT): Kazakh currency. For most of my fieldwork, the exchange-rate was approximately 150KZT to the dollar, though the currency was devalued in early 2014.

Map 1: Central Asia

The pale blue marks irrigated land. Dashed black lines mark railways; solid black lines mark roads.



Map 2: North Aral Sea region.

The pale blue dashed line marks the pre-1960 extent of the sea.

Introduction

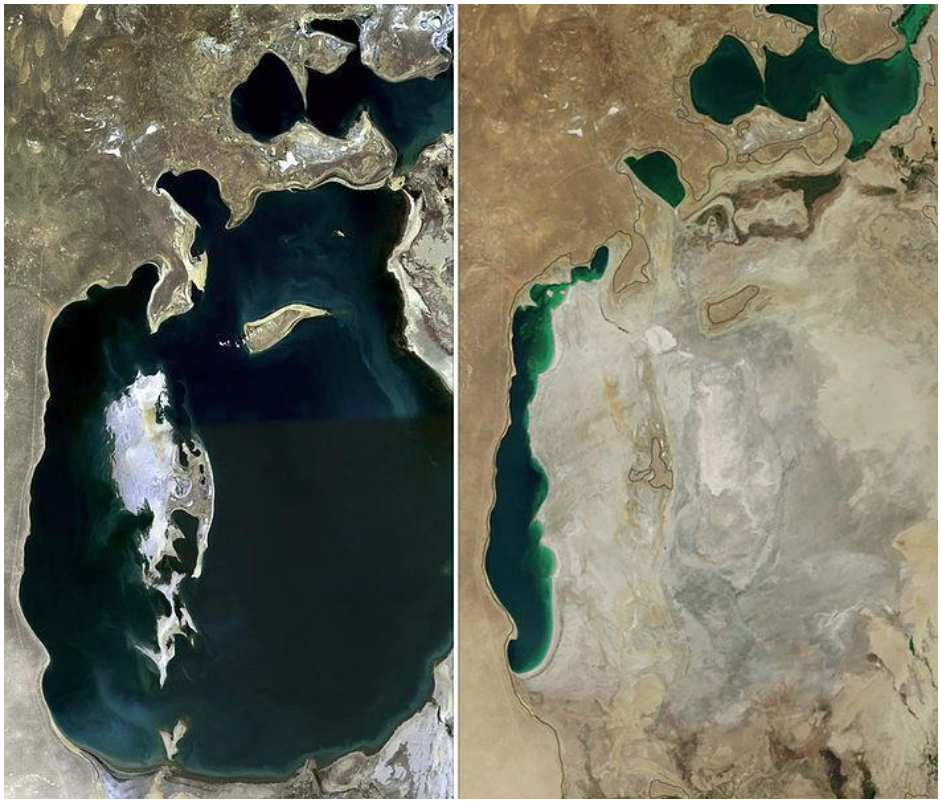


Fig. 1: The Aral Sea from space, 1989 and 2014. Source: https://en.wikipedia.org/wiki/Aral_Sea#/media/File:AralSea1989_2014.jpg, accessed 9/5/2016

Fig. 2: Rusting ships on the dried up seabed. Source: https://commons.wikimedia.org/wiki/File:The_Aral_sea_is_drying_up._Bay_of_Zhalanash,_Ship_Cemetery,_Aralsk,_Kazakhstan.jpg, accessed 8/5/16

The Aral Sea is known to the world through images like these. Ships stranded in the desert evoke a profound dissonance: the element of life has given way to a sterile, barren landscape as we cast a post-apocalyptic look back on a modernity which has passed. The disruption of the natural order of things is visible from space, a matter of global concern. Before and after: a natural object destroyed. These pictures are symptomatic of a global perspective on the Aral Sea disaster. The basic elements of the story are well-known. This was the world's fourth-largest inland waterbody. Evaporation was balanced by inflow from two great rivers, the Syr Dariya and the Amu Dariya, which rise in the glaciers of the Tien Shan and Pamirs, before flowing across thousands of kilometres of arid steppe and desert. Though the sea was always fairly salty, the freshening influence of the rivers supported freshwater fish, the basis of a thriving fishing industry. The sea also softened the extremes of the continental climate, and provided rainfall for pastures. But the Soviet authorities diverted water from the rivers to grow cotton and, to a lesser extent, rice. They were well aware that the sea would dry up, but cotton was deemed more economically valuable than the sea or the people who lived around it. From 1960 the sea began to retreat. Salinity rose. Over the next twenty years, the fish died out. As the sea retreated, navigation became impossible. The sea separated into a Small and Large Aral in 1987-9. Wind storms blew toxic dust and salt from the desiccated seabed, poisoning the land around and its people, and spreading far beyond the region. Polluted water exacerbated the region's health problems. Thousands of people left. But the authorities continued to expand irrigation and failed to recognise the environmental disaster. It reads as a parable of modernist hubris: humans seek to control nature; nature takes its revenge. The result is a sea-change for local people.

This story has been told again and again by journalists, while scientists and geographers have elaborated the details.[1] As the Aral became known in the west, it was often located in (post-)Cold War categories, figuring, like Chernobyl, as yet another Soviet crime against people and against nature. As a Canadian development worker wrote: "The Soviets targeted, condemned and sacrificed the Aral Sea" (Ferguson 2003:23). Indeed, I first encountered the Aral when I was growing up in 1990s Britain: an older relative made a casual remark about 'that sea the Soviets managed to dry up', commonsensically linking the disaster to the pathological, now safely defunct, Other that had shaped that generation's perceptions of geopolitics.

[1] See Micklin (1988, 2000, 2007), Micklin and Williams (1996), Glantz (1999a), Weinthal (2002), Nihoul et al. (2003), Kostianoy and Kosarev (2010), Micklin et al. (2014) for some of the vast academic output on the issue. For health issues caused by the disaster, see Elpiner (1998), O'Hara et al. (2000), Crighton et al. (2010). For a journalistic account, see, for example, Ellis (1990).

Fig. 3: The Kökaral dam

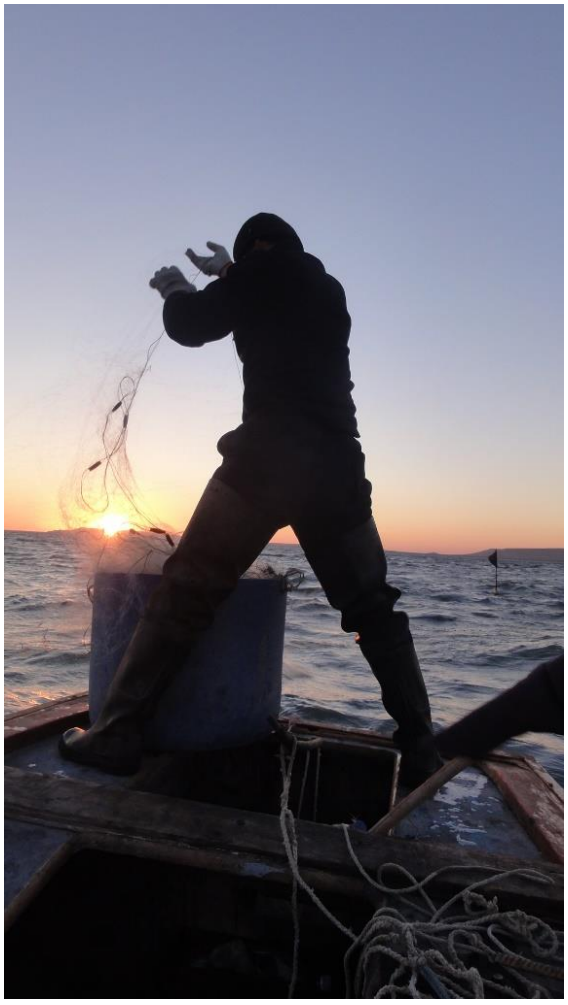


Fig. 4: Fisherman casts his nets, October 2013

This global vision has spawned scores of projects at different scales, most ineffective. A local joke developed: if everyone who had visited the Aral had brought a bucket of water, the sea would be full again. But not all projects have been useless. Some Danish fishermen who visited the Kazakh shore in the early 1990s learnt that the sea was not, as was widely assumed, devoid of fish: Soviet authorities had introduced flounder, a saltwater fish, into the increasingly salty sea, which, it turned out, was thriving. Over the late 1990s and 2000s, the Danes set up an NGO, Aral Tenizi, and re-established a fishery on the Small Aral. Most significantly, in 2005 the World Bank and Kazakhstan government built the Kökaral dam to save the Small Aral. The level has risen and stabilised, and salinity has fallen; native fish species have returned and the fishery is growing (Micklin 2007, Micklin and Aladin 2008). The sea is now 15-20km from the former Kazakh port of Aral'sk. The Large Aral continues to shrink, and on the southern shore around the former port of Moinaq, despite some efforts to restore Amu Dariya delta lakes and wetlands, the situation remains bleak. Water is still withdrawn across Central Asia to grow cotton and rice. The Aral disaster is far from solved. But the limited, technical solution for the Small Aral offers a hopeful, and photogenic, coda to the disaster narrative.[2] The image of the dam implies that the damage wrought by the disastrous hubris of Soviet planners has been fixed by the pragmatic know-how of the World Bank: nature's force is channelled and contained. The final image is also comforting: fishermen turn again to their age-old occupation, interacting with their restored environment in a seemingly sustainable way.

It was with these famous images in mind that I set off for fieldwork in late 2012. I was familiar with the extensive academic literature on the disaster, but it seemed that local perspectives were absent. The view from space shows the global significance of the disaster, but occludes the life-worlds of the people who lived through it: even global perspectives are partial and sited (Hastrup 2013, cf. Strathern 1991). In the global view, causation is linear: politics destroys the sea, environmental change causes economic collapse and social rupture, a sea-change in human society. I wanted to find out what a disaster of this scale, and its partial reversal, looked like to local people. I had visited Aral'sk twice, like many foreigners, as a tourist or disaster voyeur. In many ways it seemed not so different from other small towns in rural Kazakhstan. From time spent living in Almaty and travelling around parts of Central Asia, and from the ethnographic literature, I was also familiar with the ambiguities of Soviet legacies in the region. How did these intersect with experiences of the ecological damage wrought by the Soviet project? But though I expected ambiguity, I expected that the disaster would constitute a 'critical event', a totalising framework which would overshadow local imaginaries (Das

[2] See for example Walters (2010).

1995, cf. Carsten 2007:4).[3]

I planned to carry out a village ethnography in Qaratereng, near the dam; I planned to learn to fish and thereby acquire local environmental knowledge. As it turned out, plans went awry. I was sent to a different village where no one fished (they worked in a hatchery). I spent a week in Tastaq, during which I learnt a fair bit about kinship practices and gift-exchange, and rather more about my own shortcomings with regard to living in an isolated village far from viable bus routes, mobile connection and internet. I decided to carry out a different sort of project, based in Aral'sk, with shorter visits to various villages, mostly Bögen. I carried out fieldwork over four separate trips between November 2012 and June 2014.[4]

Local perspectives

Figure 5: Mosaic, Aral'sk station. The text reads: *Na pis'mo Lenina otgruzim 14 vagonov ryby*, 'In response to Lenin's letter, we will dispatch 14 wagons of fish.' Source: http://english.kompas.travel.pl/curiosity/TheAralSeaEcologicalDisaster#com, accessed 23/05/16

Alighting from the train in Aral'sk, I was greeted by a mosaic depicting a story from the Civil War: in 1921, Lenin wrote to Aral fishermen asking them to send fish to the Volga region which was beset by famine. One winter's night, fishermen from remote coastal villages – Bögen, Qarashalang, Qaratereng – went out in freezing temperatures and caught a heroic haul of fish. Camels, 'the ships of the steppe' (*dalanyng kemesi*), invigorated with a swig of vodka and a chunk of pike, towed the

[3] Anthropologists of disaster argue that disasters are 'revelatory crises', which lay bare societal structures (Oliver-Smith 1996, Oliver-Smith and Hoffman 1999, Hoffman and Oliver-Smith 2002).
[4] Three months into fieldwork, a serious illness in my close family took me back to UK. My initial reaction was that I never wanted to be so far from home again. After an interruption, I decided to proceed on the basis of shorter trips.

fish by sledge to the nearest station. Fourteen wagons were filled, and the fish saved, I heard, millions from famine. Young people often relate this story to the Second World War, but the point is clear: through Lenin's letter, the sea was integrated into broader spaces. It was not only a natural object, not only the ancestral property of local Kazakhs: it was also a Soviet sea.

Such stories express pride in local identity. By contrast, many people are bored of the disaster narrative, which can be felt to be stigmatising. Some critique the visual construction of disaster: film crews, they remark with some justification, search out the oldest, poorest inhabitants and the most decrepit houses so as to make everything look catastrophic. This construction, they imply, precludes the possibility that people might lead normal lives in the region. As a totalising discourse, global visions of disaster have little space for local perspectives (cf. Das 1995:ch.6). While tourists and journalists wonder at the spectacularly photogenic environmental disaster and no less photogenic recovery, the region is rather more mundane.[5] People are puzzled by the foreign visitors: what do they want to see in Aral'sk? Indeed, in the initial months of my fieldwork, I was struck by how little people talked about disaster. They looked blank when I talked about *Aral apaty*, the normal translation of 'Aral disaster' in Kazakh.[6] Perhaps this is unsurprising: our thinking about disasters is informed by events such as earthquakes; but the regression of the Aral took place over decades. Lacking the temporal boundedness of an event, it does not work on the imagination like one-off disasters: there is no clear before and after, no dividing line at which the world was turned upside down.[7] Crucially, the sea's gradual regression overlapped with processes by which the Soviet authorities sought to mitigate it: measures to improve living standards and provide employment, especially through importing ocean fish for processing in the Aral region, and sending fishermen to fish on other lakes. Though ambiguous and uneven, these processes inflect understandings of the sea's regression: it does not figure as the sea-change that it might appear. Indeed, older people sometimes blur the disappearance of the sea with the demise of the Soviet Union. After all, everyone agrees that the really bad time was the 1990s, when the Soviet Union disintegrated, leading to widespread economic crisis, inflation and unemployment; in former fishing villages, far from major transport routes, people came increasingly to depend on keeping livestock on depleted pastures.

[5] Brown (2015:ch.3) finds something similar with Chernobyl.
[6] *Apat* is semantically closer to 'accident' than 'disaster' or 'catastrophe'. 'Catastrophe' in particular, like the Russian *katastrofa*, has temporal connotations of a turning-point.
[7] Anthropologists argue that all disasters intersect with ongoing social processes (Simpson 2013, Oliver-Smith and Hoffman 1999, Hoffman and Oliver-Smith 2002). Iba*ñez-Tirado* (2015b) has shown how a disastrous flood in Tajikistan and a programme of forced taxation are both normalised by inhabitants, indistinguishable from ongoing economic decay. This case, where environmental change itself is processual, allows further exploration of intersections with other processes.

More prominent than disaster in local discourse is the term *ekologiia*, which locally signifies environmental problems, usually in the air, which affect health. This usage dates from the late 1980s, when the Aral Sea became famous across the USSR and was finally officially recognised as an environmental disaster. In 1989 a decree of the Upper Soviet of the USSR declared the region *zona ekologicheskogo bedstviia*, 'an ecological disaster zone' (Zonn et al. 2009:267). Aral'sk raion, like its neighbours, became known as an *ekologicheskii raion*, 'an ecological raion'. But *ekologiia* too is ambiguous. As an outsider, I would be asked if I noticed *ekologiia*. Once a fisherman, out on the ice under pale blue skies in a howling gale, declared that people always said that there was *ekologiia* in the region, but he didn't notice it – whereas the city, *that* was where the air was dirty. Having come from London via Almaty not long before, I had to concur. Indeed, most people also talk extensively about the positives of the region: Aral meat is the tastiest in the country because of the salt in the vegetation. Others insist that local Kazakhs, because of their nomadic past, have got used to *ekologiia* (and vodka can help mitigate it), unlike the non-Kazakhs who used to live in the region but left. Certainly, many acknowledge the presence of *ekologiia*, and invariably blame it, quite justifiably, for health problems. However, they do not unambiguously connect *ekologiia* with the sea; rather, it is tangled up with stories about corruption today, both within the region and beyond.

Such local perspectives, like the global perspective, speak of a view on the world (Hastrup 2014b). Like the global perspective, local perspectives have been consequential, dictating how people respond to environmental change, and further shaping contemporary relations with the environment. But there is no bounded, homogeneous local (Slater 2002, Cruikshank 2005). Sometimes people mention salt from the Aral found in, for example, Japan. Since this does not derive from local experience, it indicates how the local is 'perforated' (Hastrup 2009); or, in Bakhtin's (1981c[1935]) terms, how local discourses are 'shot through' with other discourses. Global discourses today mingle with Soviet discourses which have also inflected local worldviews.

The connections between *ekologiia* and contemporary political economy are unsurprising: histories of environmental and social change in the region are deeply entangled, and understandings of them no less so (cf. Slater 2002, Cruikshank 2005, Hastrup 2013). The environmental disaster narrative elides the story of Soviet socialism and its aftermath, a story which looms as large for my informants as that of environmental change, sometimes larger. Images of recovery cannot show that this is a post-Soviet sea which has returned. Water and fish have been restored; but in a complex regime of mixed state and private regulation, the sea is constituted differently, enmeshed in a different set of relations. The pictures do not show the market for illegal nets from China; they do not show the markets for

fish extending as far west as Germany. They do not show the ailing fish plants in Aral'sk which suffer from a paradoxical shortage of fish; nor do they show how Aral'sk is integrated into contemporary Kazakhstan as a newly peripheral zone. All these points shape different local perspectives on environmental change. What we make of environmental change, and what it makes of us, depends on how it insinuates into our lived experience. This in turn relates to the social processes it is tangled up with.[8]

Environmental change, political ecology and ethnography of Central Asia

I argue that the desiccation and partial restoration of the Aral Sea cannot be analytically separated from the processes, continuities and ruptures of socialism and postsocialism. This is not simply a matter of contextualising environmental change against a backdrop of political-economic change, or vice versa: the two are entangled. The first part of the thesis explores what happened when the sea went away: How did the Soviet state respond? What did this mean for inhabitants of Aral'sk and of fishing villages? How do memories of being Soviet shape perspectives on environmental change today? Part 2 looks at the consequences of global visions in the post-Cold War context: Under what conditions do projects happen? How are transnational actors rallied? What are the results of dissonance between global and local visions? Part 3 looks at the region today: What are the consequences of the new management system and new markets? How are social relations in villages transformed by the restored sea? Why is the sea felt to be marginal to Aral'sk?

All these questions have implications for the anthropology of environmental change. Indeed, the Aral regression offers a pertinent case study at a time when global climate change is increasingly evident around the world – including in Central Asia, where glaciers have been melting at accelerating rates since the 1970s (Sorg et al. 2012). Social scientists addressing climate change have often focused on adaptation, resilience and vulnerability of small-scale, often indigenous, societies (e.g. Adger 2000, Eakin and Luers 2006, Crate 2008, Crate and Nuttall 2009a, Crate 2011). These are certainly important issues for those facing the effects of climate change. However, such an approach tends to take small-scale communities as the basic unit of analysis. 'Political economy' and 'interscalar linkages' are reduced to contextual factors impinging on local resilience. But as Hastrup (2009) contends, when the local is 'perforated', the question of resilience needs to be reframed. At worst, the

[8] My project is geographically limited. I have not visited the Uzbek (Karakalpak) shore, which is particularly marginal to contemporary Uzbekistan. In Soviet times, there were similar processes of importing ocean fish and sending fishermen to other lakes there (Karimov et al. 2005, Karimov et al. 2009). Recent efforts to restore Amu Dariya delta lakes and wetlands have been reasonably effective, but less so than the Kökaral dam. Environmental problems are not restricted to the sea itself: throughout Central Asia, monoculture damages environments. My case study, therefore, is not meant to be representative.

resilience/vulnerability discourse renders political issues technical, and, as such, some suggest jettisoning the framework (Cameron 2012, Hornborg 2009). I revisit these issues in the postscript. My ethnography suggests that resilience and vulnerability do matter, but that analysis needs to start not from the local, but from the web of connections within which local worlds are constituted. In particular, I explore how local worlds are constituted by the fishing industry, which in different ways at different times links sites in the region, and links the region with wider spaces.

Hastrup and Rubow summarise the results of a major research project into the effects of climate change with the claim: "environmental changes cannot be kept apart from social life in general, or isolated as changes-in-themselves" (2014:4). Barnes and Dove (2015b:10) concur: isolating environmental change from other variables depoliticises it. My thesis confirms this point. However, despite a recognition that there is a connection between processes of uneven development and the causes of climate change (e.g. Barnes et al. 2013:542-543, Baer and Singer 2014, Barnes and Dove 2015b:8-9), such concerns have hitherto been largely absent from volumes about anthropology and climate change (Strauss and Orlove 2003, Crate and Nuttall 2009a, Barnes and Dove 2015a). The story of the Aral Sea illustrates the need for a political-ecological approach to the study of large-scale environmental change: both causes and effects of environmental change intersect with political-economic processes at different scales (e.g. Blaikie and Brookfield 1987, Biersack and Greenberg 2006, Robbins 2012). I explore these intersections in particular through the history of the fishing industry.

If studies of large-scale environmental change often focus on the adaptation of "indigenous peoples and other place-based peoples" (Crate and Nuttall 2009b:11) who are marginal to global capitalism, a major theme in political ecology is resistance to the encroachments of capitalism, particularly in Latin America (e.g. Peet and Watts 1996a, Escobar 2008). Central Asia offers empirical material to develop new theoretical perspectives within both these fields, not least because of the ambiguous enrolment of Central Asian peoples into a modernity which has wrought, and continues to wreak, considerable environmental damage, often far beyond the control of ordinary people.[9] Alexander (2009a) suggestively links environmental degradation in Kazakhstan with other Soviet legacies, notably the destruction of the nomadic economy. But her ethnography of urban Almaty also shows that people were enrolled in Soviet visions of modernity. Indeed, she found that people associated

[9] Indeed, Peet and Watts (1993b:10) call for a political ecology of state socialism, starting not from markets but from 'economics of shortage' (Kornai 1980).

pollution and waste with post-Soviet disintegration. Environmental change, therefore, must be explored in the same analytical framework as Soviet and post-Soviet societal transformations.[10]

Soviet planners and ideologues, 'seeing like a state', sought to transform Central Asian nature and society alike (cf. Scott 1998).[11] Until recently, it was assumed either that Central Asia was thoroughly sovietised, with total loss of cultural identity (e.g. Shahrani 1993), or that Sovietisation was superficial and traditional identities were unchanged (e.g. Poliakov 1992, Roy 2000). These readings would suggest that Soviet visions of nature were imposed, successfully or not, on 'traditional' peoples. But more recent historiography shows that because of Bolshevik efforts at indigenisation, the Soviet project was not just an alien imposition from Moscow (Martin 2001, Haugen 2003, Hirsch 2005). As Kandiyoti (1996, 2002) argues, 'modernisation without the market' resulted in a complex transformation: formal dysfunction of the command economy necessitated informal practices, which reproduced pre-existing identities, but transformed them in the process. There is no easy contrast between Soviet modernity and indigenous tradition.

It was also assumed that the relationship between Moscow and the Central Asian republics was simply extractive and exploitative, similar to western relationships with their (former) colonies (Rumer 1989, Gleason 1991). But while Central Asia's place in the Soviet economy involved export of agricultural goods and (especially in Kazakhstan) minerals, with little development of heavy industry, there was also some countervailing tendency to redistribute the fruits of modernity: the social contract of socialism, even in remote locations, promised a gradual rise in living standards (cf. Verdery 1996). The fulfilment of this promise was wildly uneven, but the promise itself is significant (cf. Reeves 2014:138). Furthermore, recent ethnography has highlighted the diverse modes of connection between Moscow and Central Asia: the periphery itself was not homogeneous, with some sites more incorporated than others (Reeves 2014:ch.3, Pelkmans 2013, Mostowlansky 2014).

[10] Cf. also Werner and Purvis-Roberts (2014), who link nuclear testing in eastern Kazakhstan to the region's marginality. More than twenty years after the Soviet break-up, I still consider 'post-Soviet' a useful category. Although trajectories across Central Asia have been diverse, and although the category makes less sense to a younger generation, social, political and natural landscapes are still heavily marked by Soviet legacies. While Iba*ñez-Tirado* (2015a) argues that such a label risks casting the region as temporally other, I hope that my attention to the Aral's contemporary integration into global markets and independent Kazakhstan's state-building processes evades this charge. Indeed, in light of historical amnesia of Kazakhstan's elites (see below), it is important to stress the continuities. Trevisani (2014) proposes a 'second phase' of postsocialism: after the disintegration of state socialism in the 1990s, something new is being built, albeit influenced by Soviet legacies.

[11] Cf. Payne (2011), Bichsel (2012) for nuanced applications of Scott's problematic work to Central Asia.

Buck-Morss (2002) contends that both socialist and capitalist systems were premised on similar dreams: popular sovereignty, mass culture and industrial abundance. All have had catastrophic outcomes, that of industrial abundance in particular driving "the construction of global systems that exploit both human labor and natural environments" (Buck-Morss 2002:xi). But as these utopian promises encountered local hopes and dreams, transforming them and being transformed by them, Central Asian peoples came to have a stake in Soviet conceptions of nature. Indeed, in Uzbekistan today there is deep ambivalence about cotton: while ecologically and socially damaging, it is nevertheless felt to represent modernity (Spoor 2007, Zanca 2010, Trevisani 2010). Part 1 explores the differential incorporation of the Aral region into Soviet space and transformations in understandings of nature; this affects what the sea's regression means locally.

As Communist ideology has been jettisoned, Central Asia has, like the rest of the post-socialist world, been exposed to new ideologies (cf. Brandtstädter 2007), notably that of the market (Mandel and Kandiyoti 1998). However, environmental discourses about sustainable development (Sievers 2003), and water scarcity and conflict (Bichsel 2009, Reeves 2009, 2014), also shape ongoing transformations. These new discourses encounter a tangle of Soviet ideologies and older understandings of nature, as we see in Part 2, where we examine the role of the World Bank and the Danish project. New ideologies in Central Asia have prompted land reforms which, located in broader political-economic changes, have transformed agrarian society (Shreeves 2002, Toleubayev et al. 2010, Trevisani 2010, Dörre 2015). Resultant changes in patterns of resource use are a classic concern of political ecology (e.g. Blaikie and Brookfield 1987). However, despite recognition that political-economic transformations have environmental impacts (e.g. Trevisani 2010:145-146), neither the causes nor the effects of environmental change are central to the ethnography of Central Asia.[12] Part 3 shows how the meanings of the sea's return are shaped by these post-Soviet transformations.

As Ferguson's (1999) ethnography from the Zambian copperbelt poignantly shows, modernity comes with expectations, and the demise of the promise of the USSR is still felt across much of the region as a profound sense of disconnection, inadequately replaced by new connections (Reeves 2014:ch.3, Pelkmans 2013, Mostowlansky 2014). But although Buck-Morss contends that dreams of mass utopia have passed, east and west, contemporary capitalism continues to promise private utopias premised on industrial abundance. Global systems exploit people and environments in new ways, to ever

[12] Environmental issues are more current in ethnography of Siberia and Mongolia than that of Central Asia (e.g. Anderson 1995, 2000, 2006, Sneath 2003, 2004, Crate 2008, Wilson 2003, Ziker 2002, Humphrey and Sneath 1999).

greater extents. Kazakhstan is an apt site to explore these processes since its most important global connections relate to oil, which continues to pollute environments (e.g. Zonn 2002). Accordingly, political-economic transformations are driven less by an optic of 'seeing like a state' than one of 'seeing like an oil company' (cf. Ferguson 2005). But the former optic is still relevant: sovereignty is projected in development strategies, first the Kazakhstan-2030 programme, more recently, Kazakhstan-2050.[13] These visions of the future do not offer mass utopias, but rather the economic stability within which to realise private consumerist utopias (cf. Adams and Rustemova 2009, Laszczkowski 2011:90). Unlike the Soviet social contract, compliance with Nazarbayev's authoritarian rule depends on modernisation which promises the conditions for private citizens to acquire wealth (Kudaibergenova 2015). This promise depends on oil, such that development is predicated on ongoing processes of extraction. Chapter 9 in particular shows how perceptions of new political-economic configurations in contemporary Kazakhstan are tangled up with ongoing environmental problems.

Over the rest of this introduction, I elaborate my central claim. The next section, in which I introduce the geographies of the region and my engagement with it, reveals a landscape shaped not only by the sea's regression but also by its integration into imperial, Soviet and post-Soviet spaces. Socialism and postsocialism therefore are not just the context for a natural object's regression and partial return: as this thesis shows, it was also a socialist sea that receded, and a postsocialist sea that returned.

Geographies

I flew to Kazakhstan's former capital, Almaty, the plane full of the new middle classes of Kazakhstan, direct or indirect beneficiaries of the country's oil wealth. I would spend some time in Almaty, where the old gridded Soviet city is still just about legible amidst the glass office blocks and luxury flats. I found 'the Aral Sea' to be an object of curiosity among older inhabitants of Almaty who remembered the fame it had found in the 1980s and 90s. But amid present concerns about economic crisis, concern for the environment has largely faded: for most in Almaty, the Aral Sea is marginal to the imagining of contemporary Kazakhstan.

While in Almaty, I would turn to the solid grey building which houses the state archives, seeking to find details and thickness to the Soviet past, about which official discourse is surprisingly muted. Indeed, though lip-service is paid to the country's sufferings (the Aral Sea, nuclear testing, the Virgin

[13] Kazakhstan-2050 is supposed to involve a transition to a 'green economy', based on market mechanisms like pricing and regulation of common-pool resources, and diversification away from oil (Brown 2014).

Lands programmes), this does not constitute a strong anti-Soviet postcolonial narrative. After all, in an ethnically diverse country, the authorities have avoided encouraging strong ethnonationalist sentiment (Davé 2007). Furthermore, president Nazarbayev himself and the country's elite all rose through the Soviet system. So while Kazakhstani statehood is legitimised by claims of cultural authenticity and continuity, based on symbols from the pre-Soviet past (Privratsky 2001, Alexander 2004b, Buchli 2007, Dubuisson and Genina 2012), there is no sense of narrative arc encompassing the recent past. Kazakhstan-2030 makes hardly any mention of Soviet legacies; Kazakhstan-2050 makes none. Indeed, the overwhelming orientation is to the future: sovereignty is imagined in the shiny new capital, Astana (Laszczkowski 2014), which promises a bright future for an imagined collectivity (Laszczkowski 2011).

From Almaty I would travel by train to Aral'sk, a journey of 30-40 hours across 1600km of relentlessly flat steppe and semi-desert. Fellow passengers included large families on their way to or from weddings; shift-workers on their way to or from work on oilfields or in uranium mines, often drunk; students; parents visiting children working in oil on the Caspian; Astana residents visiting families in Qyzylorda. Conversations captured all the ambiguities of Kazakhstan today: the beauty of Astana; the corruption that weighs the country down; the morality of the Soviet past; the bright future that lies ahead if Kazakhstan can diversify its economy, and if a younger generation can move away from Soviet-era practices; the ambiguous relationship with China. Sometimes as we passed through the heavily salinized land in Qyzylorda oblast, older people would talk about the damage of the Soviet legacy – the Aral Sea; the destruction of the nomadic way of life.

Aral'sk itself is the raion centre, a town of some 30,000, 450km (six to ten hours by train) from the oblast capital, Qyzylorda. In many ways, it is a typical small post-Soviet town. The old Soviet buildings are decaying; the closed factories are rusting. Sand swirls everywhere. Camels stroll up and down the main street, and cows graze off rubbish heaps. There are no cinemas and no supermarkets. There is however a bustling market and a range of bars and cafes; if the public space can seem depressed, new private houses abound. Clean drinking water from a vast aquifer in the desert was brought here in 1990. In the mid-2000s it was piped to individual households, and it now reaches all villages in the raion. There is no centralised sewage in Aral'sk, and no piped gas as yet, though the latter is promised soon. There is a perception that there are no jobs in Aral'sk, which relates to its peripherality within circuits of capital accumulation. But although Aral'sk is peripheral, the centre, Astana, is strikingly visible on billboards around the town and on television.

I stayed with various families during my different visits. My first host-family kept livestock, and my obligations as a guest included feeding the animals, mucking out, keeping some dung for fuel. My host worked informally as a taxi-driver, while his wife worked in school administration. Later I lived with a retired Russian couple, among the few non-Kazakhs left in Aral'sk; on my final trip I lived with Ornyq, an accountant, and her husband Samat, a vet. Much of my data from the town comes from conversations with my hosts, their relatives, friends and colleagues, and others I got to know: kitchen conversations over interminable bowls of tea while Kazakh or Russian news played in the background offered insight into people's life-worlds. Daily comings and goings of relatives, friends and colleagues spoke of the connections people maintain both within the town and beyond, and the various means of sustaining these relationships: one day we would be drinking beer with a colleague among the tulips on the steppe for 1st May; another day there would be a feast with kin and the Mullah to commemorate a dead relative, involving *bauyrsaq* (fried dough), fried carp, *qazy* (sausage) and the Kazakh speciality *beshbarmaq*. All my hosts liked fish, so sometimes I would be called upon to bring back fish from villages.

I would travel to Bögen in a rattling Soviet-era bus crammed with sacks of flour and potatoes. As it leaves Aral'sk, it climbs to the main road above the town, where there is a large cemetery. Everyone wipes their hands over their faces and says 'Amen'. As the bus joins the main road south, the under-construction Western China to Western Europe highway, modern container lorries thunder past. Freight trains laden with oil snake through the undulating dunes. Apart from the large herding village of Aralqūm, settlements are sparse and small.

100km from Aral'sk, the bus reaches the village Qamyshlybas ('reedy lake'), colloquially known as Qambash, situated by the lake of the same name. This is part of an extensive lake system. According to a 1930 report, old inhabitants claimed that some of these lakes were fields of cereals until the eighteenth century, when irrigation channels burst in spring floods and the lakes formed.[14] One road branches off to the south, towards Raiym, formerly a kolkhoz, which lies between a lake and a steep hill of mud and gravel. At the top of the hill, barely visible, are the traces of a fort built by Tsarist explorers in 1848. A view extends over expanses of interconnected lakes, deep blue amidst the yellows and greys of the surrounding steppe. A mud dyke runs across the marshes, placed there, I heard, by *Nikolai Patsha* (Tsar Nicholas II), to bring a water-pipe to Aral'sk from the Syr Dariya. To

[14]Aral'skii filial gosudarstvennogo arkhiva Kyzylordinskoi oblasti [hereafter AFGAKO], 5/1/1:71-74.

the south the view extends to Lake Aqshatau, where the *ülken ata* (ancestor) of the Zhaqaiym lineage (*ru*) is buried; descendants from all over the country visit the shrine.

Fig. 6: View from fort above Raiym. The dyke built by Nikolai Patsha is visible to the left.

This bus does not go to Raiym, but turns off onto a road along the southern shore of Qambash. This road has been tarmacked since Soviet times, some say because oil will be developed. A few hundred metres from the road there are some mud structures: this was Stalin kolkhoz, established in the 1930s, later abandoned; the structures are the remains of the *zemlianki*, mud huts which passed for housing when Kazakhs were forcibly sedentarised. The next stop is Qoszhar, on the shores of Qambash, where the state fish-hatchery, established in 1966, hatches valuable carp varieties. Next the bus arrives in Amanötkel, a large village of herding, fishing and melon growing. The soil is not salty in this region, and is suitable for cattle. Around the northern shores of the sea, towards Zhalangash, Tastübek and Aqespe, away from the freshening influence of the river, the land is heavily salinized and full of wormwood, suitable for camels.

The bus now heads away from the river and lakes, across rolling steppe. Twenty kilometres from Amanötkel, we pass the eastern end of Lake Tūshchy. Tūshchy was restored at the same time as the sea, when weirs along the Syr Dariya were renovated. Until the 1960s millet was grown here, but today around the lake all is arid. Beyond the lake the bus drives up a hill into Bögen, a village of 140 houses; from the hill, the traveller would once have seen the sea stretching out to the west. Down the hill there is a war memorial and a shrine to Zhamanköz, the *ülken ata* of a small lineage. The village cemetery is at a high point behind the village, overlooking Tūshchy. At the foot of the hill, the scrubby sand runs down to meet a strip of salinized mud – once the bottom of the harbour. Nearby stands a decrepit compound, once the headquarters of the Bögen state fishing base. Today the akimat (mayor's

office) stands in this compound. On a wall, the painted Kazakhstan-2030 logo is fading, but a poster depicts the new future which has replaced it, Kazakhstan-2050. The main economic activity in Bögen today, as in Soviet times, is fishing, though there is some herding too. The sea is 12km away by rough track, and fishing is impossible in the summer, as fish would spoil before they could be processed. But, while fishing, fishermen earn c.$1000 or more a month, so many people have built new houses. Bögen has had electricity since Soviet times; piped water is more recent. Recently phone lines were installed in all villages, though mobile signal remains patchy.

After Bögen, the crumbling tarmac terminates and the bus will turn to the south, to Qarashalang ('black seaweed'). Next to the village is a lake which was intermittently connected to the sea as the level rose and fell. Beyond Qarashalang the road crosses the river at Aghlaq, where a sluice regulates the river flow. In Soviet times, once the sea had been written off, a dam was placed here, so that the trickle of water in the river could be used to water lakes further upstream. Twenty kilometres further is Qaratereng ('the black deep'), a large village once lying in amidst sea, lake and marsh; today just a few small lakes remain. Soon after Qaratereng, the gravel track turns west onto the Kökaral dyke towards Aqbasty. To the south, along the former shoreline and on former islands lie remains of abandoned villages, far from water-sources: Ūzyn Qaiyr, Qasqaqūlan, Ūialy. It is three to four hours from Aral'sk to Bögen, depending on weather conditions, and another hour to Qarashalang. Previously of course they would all have been connected to Aral'sk by sea – and in Soviet times Bögen, Qaratereng and Ūialy were even connected to Aral'sk by air.

This landscape is defined in part by the complex interaction of changing hydrological processes, which link it to the glaciated peaks of the Tien Shan thousands of kilometres away, and layers of human infrastructural interventions under different modes of governance. The landscape has also been shaped by different sorts of use: fish extracted for Soviet plans, and now for global markets; livestock grown for local consumption, gift-exchange and sale on local markets. The space is not reducible to any of these elements, and nor is it simply the backdrop to social processes (Reeves 2012b). It is neither possible to disentangle 'natural' from 'human' environments, nor 'traditional' from 'modern' landscapes (cf. Féaux de la Croix 2014b). This has important implications for understandings of environmental change.

Fishing and daily life

In Bögen, I stayed with Zhaqsylyq, an important figure in the contemporary fishery in the village. His family lives in a large house near the former shoreline. Typically, the house looks onto a courtyard,

also enclosing the *sarai*, the shed which acts as summer quarters. Zhaqsylyq and his wife Gulzhamal live with their eldest son Zikön and his wife, Gulnar, who, as *kelïn* (daughter-in-law), is responsible for most household chores. Two younger unmarried sons also live at home, Maqsat and Mūkhtar. The daughters are all married, most outside Bögen, as is usual in a strictly exogamous society. My access while in the village was predominantly to male worlds. During fishing seasons, I spent most days accompanying Zhaqsylyq to the receiving-station, observing fish being handed in, chatting to fishermen as they sorted their nets, helping move sacks of fish. Periods of boredom would be spent squatting near the ground eating sunflower seeds (*semechki*), a habit which suspends time. During my first winter there, evenings were passed drinking in Zhaqsylyq's *sarai* while fishermen sorted their nets, divided up fish, and quizzed me about prices in UK. When fishing was impossible, I was told that fishermen would be relaxing. But apart from the occasional tasty *beshbarmaq* of newly fattened lambs, I have seldom spent a less relaxing time than those hot days in Bögen, as I was enlisted into building projects (sometimes described in Kazakh with the Russian word *proekt*): gathering dusty seaweed (*shalang*) from the dried up seabed for use as roofing insulation; collective assistance (*asar*) in laying it on the roof; or making hundreds of bricks from sand, clay and reeds in the baking sun while Enrique Iglesias sang from someone's mobile phone.

Early in my fieldwork I watched the process of laying nets (*au salu*) through the ice with Zhaqsylyq's sons and their fellow fishermen: two of their cousins, Bolat and Zhüman; Zhaqsylyq's *bazha* (wife's sister's husband) from Amanötkel, Müsïlïm; and a neighbour Aikeldï. The day begins as usual with Gulnar waking us with an angry repeated *Tūr!* ('Get up!') After some bread, butter, and tea, and after swathing ourselves in layers of clothes, we are off. As his family owns the UAZ jeep, Zikön drives; Müsïlïm, the oldest, sits in the front; the rest are crowded into the back, sitting uncomfortably on a plank which jumps around as we bounce over sand and snow. The air is thick with cigarette smoke, the smell of fish, Kazakh pop music blaring from an MP3, and Russian curses at the discomfort of an extra body. On the sea, we encounter a few other groups. With one group, there is boisterous discussion. They have just made a hole in the ice, and Maqsat, the youngest brother, offers a little help in shovelling ice out of the hole. They tell us that yesterday they were unlucky here. We drive on, and about 5km offshore, we stop. The older fishermen have a bowl of vodka. Everyone except the two youngest brothers discusses where to lay nets.

Fig. 7: Warming up for a day's fishing, January 2013

Fig. 8: Laying nets, January 2013

Most fishermen have a handheld metal bar (*lom*) for breaking the ice, but we have a Soviet-era petrol-powered drill (*motor*), towed behind the UAZ. We also have a 23m wooden pole (*aghash*), a metal hook (*ïlme*), and a two-pronged fork (*shanyshqy*). Ice is removed from the drill and pole with a petrol-burner. Aikeldï and Zikön drill holes through the 45cm thick ice at 20m intervals. Meanwhile, the pole has been lowered into the water, and Zhüman manoeuvres it along under the ice with the fork. A

string is attached to the pole, and once this is pulled through, Bolat extracts it with the hook, and Mūkhtar uses it to haul the net through from one hole to the next. The net is a fixed gillnet, with stones tied to one edge to anchor it. Meanwhile, back at the first hole, Maqsat and Müsïlïm feed the net into the water. Maqsat does most of the work; Müsïlïm checks for tangles: as the oldest person there he is not engaged in onerous work. At the fifth hole, the whole net has been hauled through. Maqsat and Mūkhtar plant some twigs in the snow, and tie them to the end of the net with a piece of string. Then the next net is started. The whole process is entirely seamless. No one directs operations. When a net is pulled through, this is communicated with a shout of *OOO*, or *Boldy!* ("That's it!"), or just a gesture. Occasionally something goes wrong: a hole has been drilled in the wrong place; in this case, one of the younger brothers is summoned over with a shout, and will make a new hole with the *lom*. Thirty nets (3km) are laid today.

Entangled relations

Such is one mode of engaging with the environment. It involves skill and local knowledge, which is acquired socially through embodied, daily engagement with the sea (cf. Pálsson 1994, Ingold 2000, Knudsen 2008, Vermonden 2013). Though fishing has changed immensely over the years, there is a certain continuity to fishing as a way of life. From a phenomenological perspective, fishermen's understandings of the environment, and of environmental change, are grounded in this daily interaction with it, and this description should inform the reading of chapters 4, 7, and 8. But by pausing for a moment on this net, I want to stress that this embodied engagement with the environment is just one link in a web of entanglements connecting Aral fish to German consumers and Chinese net manufacturers. Fishermen's role in these entanglements is not restricted to fishing itself, and most people who are caught up in the entanglements do not engage directly with the marine environment. I use 'entanglement' to capture the messiness of mutual dependencies between people and the material world (Hodder 2012). Different processes unfold according to their own logic and at their own tempo, but as they are entangled, they influence each other in contingent ways (Hastrup 2012, 2014a, Sneath 2013). Political-economic processes, then, are not just the backdrop to environmental change. To illustrate what I mean, let us consider the net on the seabed a little further.

The word 'tangle' entered the English language from the Norse word for seaweed, something that entangles technologies such as nets, oars and rudders.[15] There is a pervasive sort of seaweed in the

[15] http://etymonline.com/index.php?term=tangle&allowed_in_frame=0 accessed 9/9/15. 'Entanglement' is in vogue, displacing other metaphors such as actor-networks (e.g. Latour 2005) or meshworks (Ingold 2007). Evidently 'entanglement' affords different meanings in different contexts. For me, the image of a Chinese net tangled with Aral seaweed catching fish for German markets sustaining the Kazakh ritual economy nicely captures the messy coincidence

Aral Sea, *shalang.* If possible, fishermen avoid laying their nets where there is *shalang*, because their nets get tangled up in it. But they are already, metaphorically, entangled with the environment: the net is a piece of material technology through which two or three fishermen appropriate natural entities which they depend on for a living. The fishermen are also tangled in a web of human relations which I will only sketch out schematically here. They are dependent on their employers for the right to fish and remuneration (their employers are dependent, but rather less so, on them to go out and fish). Within Bögen, their wives and children also depend on fishing for their livelihood, while fishermen depend on female household members for other forms of labour, including preparing some fish for domestic consumption. Fishermen and their families further depend on money from fishing to sustain ritual expenditure.

Beyond Bögen, others depend on fish for a different sort of labour, in processing-plants in Aral'sk and Qazaly. Others are less dependent, but enjoy fish as part of their diet (though they usually prefer meat). They particularly enjoy fatty fish like carp and bream: a carp *besbarmaq* is a local twist on a Kazakh speciality; *qarma* from bream is another local delicacy. Or fish might be eaten smoked with beer, as across the former Soviet Union. But the market is mostly driven by demand elsewhere in the CIS and, for zander, in Germany and Poland. As my Russian host explained, zander is a 'capitalist fish' as it can be filleted and served in restaurants, while Soviet man (*sovetskii chelovek*) prefers gnawing at bream on the bone. Fish thus link different local worlds – their ecosystem, Bögen, Aral'sk, German supermarkets – which relate to each other, and depend on each other, to differing extents. This in turn dictates what environmental change means: without the German supermarkets, the return of the sea would mean something different.

Despite fishermen's best efforts, nets move in high winds, and may get caught in *shalang*. This is what Hodder (2012:158) calls 'the unruliness of things': they lie beyond the perfect control of humans. The net entangles human relations with natural forces beyond human intentionality.[16] If the net is a monofilament 'Chinese' net, as most are, it was cheap, so can be abandoned. But, tangled up with the *shalang*, it will not decompose. Because of the low price, the temporal span of fishermen's engagement with the net is of a different order from the perdurance of the physical substance of monofilament nylon. It will go on entangling fish, without any human intention, awareness or use – it is now completely separate from the social.

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of incommensurable processes.

[16] Thus, like Hodder (2012) and Hastrup (2014a), I do not subscribe to Latour's (2005) expanded definition of the social to incorporate nonhuman entities. Cf. also Ingold (1986:ch.1): the social sphere is one of intentional subjects.

As Chinese nets accumulate, scientists worry that fish stocks will be depleted. Because of the putative damage to fish stocks Chinese nets are illegal: unruly in the water, they are an object of regulation out of the water, mediating relations between fishermen and inspectors. NGO workers also try to encourage fishermen not to use them. But Chinese nets are no less unruly out of the water than in the water, and go on being used – and abandoned. If fish stocks are depleted, and catches fall, fishermen's income will fall. But the German consumers of Aral fish will simply buy their zander from elsewhere: there are varying degrees of tautness within an entanglement. Even the fishermen would not starve if resources were depleted, as most keep livestock too: their entanglements with the environment are dispersed across livestock and fish (cf. Hodder 2012). Despite widespread use of Chinese nets, fish catches continue to grow in the freshening sea. The net is also, then, entangled with the broader environment of the Small Aral, which is itself, in part, the messy outcome of complex histories of human interventions involving actors from far beyond the Aral basin.

All these entanglements are not only material but also discursive: we produce images of the material world through our social utterances, spoken and written. Indeed, following Bakhtin (1981c[1935]), there is no pre-discursive reality; there are no pure, unspoken objects.[17] The images we produce are consequential: the sea today has been materially shaped by Soviet understandings of nature and global visions of disaster. These discursive entanglements are open-ended, never finalised: objects are "conceptualized and evaluated variously" (Bakhtin 1981c:330) within different systems of ideas, seen within different 'horizons'. If Chinese nets are evaluated as an object of regulation in the authoritative discourse of the state, in Aral'sk they are located within a discourse about danger from China. But in fishermen's horizons, they are a matter-of-fact technology, cheap and effective, so they go on being used. But these horizons are not fixed: they are themselves the outcome of processes of environmental and political-economic change.

Political economy of fisheries

Entanglement, then, usefully captures the messiness of overlapping but distinct processes at different scales. Anthropologists are increasingly attending to the significance of 'resource materialities' in shaping entanglements (cf. Richardson and Weszkalnys 2014, Knudsen 2014, Richardson 2014). Indeed, Soviet and post-Soviet transformations are not simply imposed homogeneously on inert

[17] Latour (2004) would concur. Indeed, Bakhtin's (1981c:351) description of how scientific discourse approaches its object is strikingly similar to Latour's 'matters of fact'. Ch.4 further draws out the political-ecological implications of some of Bakhtin's thought.

matter (cf. Castree 2002, Gareau 2005). The multiple roles of fish in different political-economic configurations depends on their material features. As fish are invisible beneath the water, it is hard for humans to lay claims to ownership before they are extracted. Once out of the water, they are quick to spoil. So there is a certain immediatism about fish, as testified in the Kazakh proverb *egenshï zhylda armanda, balyqshy künde armanda*, 'the sower dreams for the year, the fisherman dreams for the day'. In the past, and to some extent today, I argue that there is therefore a sort of hunter-gatherer attitude towards fish, in contrast to livestock.

Sometimes when I went to Bögen, my hosts in Aral'sk would encourage me to demand fish from Zhaqsylyq. Sometimes this worked. Sometimes I would be met with a *Balyq zhoq*, 'no fish' – even when I was confident that this was not the case. But Zhaqsylyq had no connection with my hosts in Aral'sk, and no obligation to give them fish. They would never ask me to bring back meat for them from the village, although they knew that livestock was slaughtered while I was there. When I asked Zhaqsylyq if I could *buy* fish off him, he was adamant that I could not. This seems to bear some relation to the hunter-gatherer ethic of claiming shares in environments of natural abundance.[18] Myers (1988) relates how he became frustrated with this ethic among the Pintupi as they constantly demanded cigarettes off him; he only managed to keep his cigarettes when one helpful Pintupi told him to hide them. I suspect something similar was going on with Zhaqsylyq's *balyq zhoq*.

But the same material features also mean that, in Soviet times and today, fish are closely associated with money: like money, they are impersonal and fungible. Because fish are quick to spoil, they also require processing if they are to reach wider markets. This requires infrastructure and factory labour, mostly in this context female. In Aral'sk in particular, then, fish are associated with jobs. Finally, invisible in the water, fish are also hard to pin down once out of the water: in an extensive landscape of sea, lakes and steppe with few roads, fisheries are hard to regulate. Another proverb plays on this tension: *balyqshy aitpaidy rasyn, künde alady bïr asym*, 'the fisherman does not tell the truth, every day he takes a portion'. Indeed, lots of actors, not only fishermen, are creative in their accounting of fish. This shapes the movement of fish in particular ways so that today they largely bypass factories in Aral'sk.

Attention to materiality highlights the heterogeneity within entanglements. But political-economic

[18] Similar ethics of sharing with regard to fish are found in various cultural contexts: northern Russia (Nakhshina 2011), the Canadian Cree (Berkes 1987), Somalia (Dua forthcoming), southern India (Hoeppe 2007:ch.5).

forces also shape entanglements. To return to the image of the net: in Soviet times, generally seine nets were used, which were much more selective. They involved different social relations, as they required more people to lay them; and they materialised a connection with the state, in the form of the local fishery managers, who provided equipment. The entanglements of fish out of the water too were different as they were processed and distributed according to plans rather than market value. Even when the sea was not there, other elements of this entanglement (the connections between fishermen, technology, processing infrastructure, and the state fishery) stayed in place. Environmental change, then, is always bound up with political-economic processes.

Indeed, there are tendencies within both state socialism and capitalism to homogenise natural resources, and the space within which they circulate.[19] Under state socialism, nature, in all its heterogeneity, was abstracted according to the numbers of the plan and circulated via gridded matrices (cf. Brown 2015); today, market value homogenises nature and space. Fish do not only play an economic role: nature is also produced as an object of management in modernist regimes; while it may be managed to increase economic value, the two logics cannot be subsumed into one another, such that fish as objects of management only partially overlap with fish as objects of economic value (cf. Knudsen 2014). But while modernist management is not reducible to economic abstraction, there is an affinity between the two (Pálsson 1998, Holling, Berkes and Folke 1998). In both processes, nature is abstracted from society. As Hornborg (1996) argues, this abstraction of nature is closely linked to the disembedding of economic relations from other forms of social relations: overlapping processes separate economy, nature, and society and realign dependencies between people and things.[20] Critically, economic systems based either on plans or on market-exchange require the commodification of nature: diverse natural objects are abstracted from their ecosystemic contexts as numbers, so that they are commensurable and subject to rational calculation (cf. Carrier 2001, Castree 2002). In turn, this drives processes of physical extraction. But, as Richardson and Weszkalnys (2014) argue, abstraction does not only happen at the point of physical extraction: fish are abstracted at different stages in their 'social life' (cf. Appadurai 1986), as they are sold, processed, re-sold, acquiring value in new contexts.

Fish therefore mean different things to those who catch, process, transport and eat them. This is not a

[19] Castree (2002) and Fine (2005) comment that actor-network theorists' insistence on heterogeneity and methodological symmetry between things and people makes them blind to the asymmetry of a world where the capitalist quest for surplus value is pervasive and has a broadly homogenising effect.
[20] Cf. Bakhtin (1981b) on the growth of class society and the separation of nature and society. See also Latour (1993) on the modernist separation of nature and society.

unitary link of ‘resource dependence’ between a local society and its environment: it is a cross-scale web of mutual dependencies of varying degrees of tautness. Hence political-economic change is not just a backdrop for environmental change. Nor is environmental change simply a change in our (material) surroundings, which then causes change in our (human) economic relations. Given the entanglement of the two, environmental change is in itself already a change in economic relations. Thus what environmental change means to different people depends on the shape and spatial reach of an entanglement, on the nature of the forces which structure it, and on the different sorts of dependency within it. This has implications for climate change no less than for the Aral Sea, a point I will return to in the postscript.

Outline

Part 1 explores why the sea’s regression was not the sea-change one might expect. In chapter 1, I weave a narrative from secondary and archival sources about colonial and Soviet transformations of the Aral region itself, and of Central Asia more broadly. I locate the Aral regression in a history of dispossession, disaster and development: interdependencies of people and environments were re-shaped as cotton, water and fish were enrolled in different ways in colonial and Soviet visions and, ultimately, integrated into gridded Soviet space. I place my interpretation of why the sea dried up in the same framework as the transformations it had undergone before that. Chapter 2, based on archival documents, looks at the bureaucratic vision of the regression as a ‘problem of living standards and employment’, and the resultant efforts to mitigate it, especially by importing ocean fish and sending fishermen to other lakes. In chapter 3 we see how these efforts inflect perspectives in Aral’sk today, exploring in particular the nostalgia for gridded Soviet space, in which ocean fish are felt to have sustained relations between Aral’sk and the centre. Chapter 4 finds that fishermen’s perspectives on the regression and on efforts to provide work are more ambiguous. Locating these perspectives in the broader history of transformation of understandings of nature, I show how hunter-gatherer ethics about fish are overlaid with visions of fish as exchange-values, and a discourse of homeland (*tughan zher*) is overlaid with one based on labour and abstract space – with implications for understandings of the regression. Overall, part 1 suggests that both vulnerability and resilience were generated together within state socialist development.

Part 2 examines the consequences of the global vision of environmental disaster by comparing post-Soviet development projects, in the post-Cold War context. Chapter 5 charts the messy, contingent processes by which the dam was built, and its local meanings today. Chapter 6 maps out the history of Danish involvement and the rise and demise of the NGO Aral Tenizi as a local agent of change.

While I read the dam as an instance of post-Soviet hegemonic reconstruction, the Danish project is more ambiguous. In both cases, projects have effected change, though not always as expected. I also track the wavering trajectory of sustainability discourse and efforts to introduce co-management in the region.

Part 3 looks at the divergent outcomes of the sea's return today. Given the failure to introduce co-management, chapter 7 shows how entanglements of restored environment, new private/state management system, and lucrative but opaque markets shape the extraction and circulation of fish so that lots of fish are caught but few reach Aral'sk. Within this entanglement, fishermen's vision of fish as abundant is reproduced. In chapter 8, we look at the new-found prosperity and socioeconomic differentiation in Bögen, which depends on the restored sea. Fish, I argue, are both reproducing and transforming moral landscapes and local structures of value. Chapter 9 explores the marginality of the fisheries to Aral'sk, and Aral'sk's economic marginality within Kazakhstan today, which further explains the nostalgia seen in chapter 3. Economic marginality, I show, intersects with ongoing environmental problems to generate entangled discourses about *ekologiia*, money and corruption.

The postscript draws out theoretical perspectives for anthropological engagement with climate change, focusing on different aspects of the Aral regression and partial restoration to propose both pragmatic and utopian visions, drawing on the past to look to the future.

Methodological and ethical considerations

In addition to the research outlined above, I also conducted semi-structured and repeated interviews with professionals and experts: a hydrological engineer in Almaty, directors of fish factories in Aral'sk, fisheries scientists in the research institute KazNIIRKh, and NGO representatives; and, after fieldwork, Skype conversations with one of the Danes, Kurt, and a World Bank project leader. NGO representatives helped formulate research questions, and it was through the NGO that I was introduced to Zhaqsylyq in Bögen. I did archival research in Almaty and Aral'sk. As well as Bögen, I went on shorter trips to Qaratereng, Tastübek, Raiym, Aqespe. Throughout fieldwork I found it easier to communicate in Russian than in Kazakh, though my Kazakh improved. In Aral'sk, most informants speak good Russian, many (especially women) fluently, and in some contexts people mix Russian and Kazakh. Older male villagers speak Russian from their time in the Red Army, women and younger villagers speak very little Russian.

Defining sites

My field-sites were not bounded spaces, but rather were defined by their connections (Hastrup 2013). Aral'sk has always been much more connected with wider spaces than villages. From the perspective of Aral'sk, villages are remote and backward, if also sites of cultural authenticity (cf. Williams 1973), whereas Aral'sk is integrated into wider spaces, if more peripheral now than previously. But for villagers, the village can seem to be the centre of the world, clearly differentiated from the outside. Things and people come from the outside (boats, motors, Kalmyks, Danes, journalists, William...); and things happening elsewhere affect the local world (water usage, foreign markets for Aral fish). But this contrast between town and villages should not be exaggerated. After all, immigration to Aral'sk has been continuous for the last century, and many young people today still move between the two. My informants in Aral'sk tended to be second- or third-generation residents, but they invariably maintained relations with kin in villages. Most had connections also with Almaty or other big cities in Kazakhstan. The contrast I draw derives in part from the people I spent time with and the different sorts of questions that I asked in the two. Thus although chapter 9 discusses discourses about *ekologiia* in Aral'sk, such discourse is not restricted to Aral'sk; but in Bögen I spent most time with healthy young men who vigorously denied its existence (as do some in Aral'sk). Chapter 4 discusses the importance of *tughan zher*, 'homeland' and clan identity to villagers – but these also matter to townspeople.

Furthermore, neither Aral'sk nor villages were homogeneous (cf. Candea 2007), and my ethnography is partial. Bögen is not wholly representative: I suspect that the NGO director suggested that I go there because its fishery functions better than most. Visits to other villages drew out some differences, but these must remain schematic. Even in Bögen, because my access was negotiated via Zhaqsylyq, and my stay was sited in his household, it was hard at times to perceive ongoing processes of differentiation. My ethnography, then, is not holistic: it does not encompass the full range of perspectives. Even a single household is not a homogeneous space. On winter evenings, the *sarai* was a male space, where fishermen would drink and still be fishermen. Sometimes Gulzhamal would come in to clean fish, but would not linger. Fishermen would then disperse to their families, becoming husbands, sons, fathers, brothers. Young men who had spent the day aggressively performing their masculinity would now go all gooey over a baby, insisting on me taking photographs as they cradled them. It was taken for granted that my access was predominantly to male spaces, so most discussion in chapters 4, 7 and 8 relates to these male worlds. This is an important limitation: the perspectives in these chapters are predominantly male, stemming from active engagement with the environment via fishing.

Oral narratives and documents

Part 1 juxtaposes oral narratives about the past with bureaucratic documents from the past. In part 2 I also draw on grey materials of the World Bank and the Danish project; the former bear some similarity to Soviet bureaucratic documents. Both sorts of data offer partial, sited perspectives on the past. My aim is not to reconstruct the past 'as it was lived'. Indeed, the gaps and inconsistencies are interesting data in themselves. When oral narratives collapse the regression of the sea and the demise of the USSR, this tells us something about what both meant and mean to people. The Soviet past was less prominent in everyday discourse among my village informants than among informants in Aral'sk. This point is significant in itself, but it also means that I use rather different methods: while chapter 3 features more everyday talk, much of chapter 4 depends on recorded interviews. There is also a lacuna in my data regarding the 1990s. Unsurprisingly, no one was keen to talk about this dismal time. I felt able to breach some silences, on matters which did not seem important to people, like the structure of the Soviet fishery. But I sensed that it was best to leave the 90s be. Once I tried to elicit some texture to the phrase 'we lived on livestock' (*malmen tūrdyq*), and was rebuffed with a grumpy: "We may have lived on livestock, but there was no water, pastures were bad, it doesn't mean we lived well." It did not seem right to press further.

The archives were not much help here: as the fishery was unravelling in the 1990s, keeping of documents did too. Indeed, even before then the seemingly systematic filing of archival documents was often infuriatingly arbitrary. More fundamentally, the archives mostly hold formal traces of the Soviet state. Once a Tastübek fisherman showed me a huge channel, now dry, which had led to a pool for keeping sturgeon. When a gift needed to be made to a minister in Alma-Ata [Almaty], the sturgeon would be fished out and loaded onto a train. Similarly, whenever Zhaqsylyq caught a large carp on Qambash, he would tether it by its gill to a reed to give to visiting Party dignitaries or fishery bosses. Such informal practices are not recorded in the archives. Furthermore, off-stage communications, for example, angry telephone conversations between local bosses and the fisheries minister, are not recorded. Like the fisherman, the archival researcher dreams for the day – some days a meagre haul, other days more than can be handled. But there is another similarity to fishing: when a fish is brought to the surface, it gives a partial and limited view of the world below – we may dissect it and analyse it, but ultimately the fish only hints at the underwater reality; similarly, a document is metonymic of a past reality unknowable in its entirety.

Cruikshank (1998) draws on Bakhtin to celebrate the open-endedness of oral dialogue, contrasting it

with the discourse of the state, which closes down connections. Certainly, although my oral data, about past and present, are sited in the specific ethnographic encounter, and shaped within the concerns of the present, they carry traces of other voices, accreted conversations, authoritative utterances, and lived experiences: their meaning tells us not about a self-contained, self-referential present, but about the relationship between past, present and future (cf. Filippucci 2010). But from a Bakhtinian perspective, *all* discourse, even the most arid bureaucratic document, is dialogic: it is all socially produced and carries traces of other utterances. Bureaucratic discourse is thus one site to study how the state comes into being. Accordingly, bureaucratic documents do not tell us clearly about the past as it happened: they are relics of the state as process. Using oral and archival data together, therefore, is not a question of fact-checking for a truer picture of the past. Rather, it is to chart shifting perspectives over time.

Observation and rumours

I did not fulfil my plan to learn to fish. Helping lug sacks of fish caused some amusement, and rendered my presence more acceptable, but that was the limit of my engagement. Pálsson (1994) likens ethnography to the process of fishermen 'finding their sea legs': it is an embodied and social process of learning which is largely non-linguistic (cf. Bloch 1998:ch.1, Jenkins 1994). I learnt to know fish through a twinge in the lower back, and through flavour and texture, but that was the full extent of my embodied knowledge of fish. My research questions thus changed during fieldwork. My focus shifted away from fishermen's environmental knowledge (Hoeppe 2007, Knudsen 2008, Vermonden 2013) towards the political economy of the fishery. Observations at the receiving-station provided insight into local dynamics. But I also rely on conversations. Given the obfuscation which pervades the fishery, this raises epistemological difficulties: everyone's observations, including my own, are limited, and everyone's presentation of 'the facts' is interested. From my own observations and conversations, I am confident that more fish is being caught than is being recorded, and I am confident that much is being exported unprocessed. However, the scale of non-recorded fishing is unclear.

What I observed was openly visible to me: I had no sense that people were trying to hide things from me. But what is visible is not necessarily explicit, and there is a possible ethical concern with making it explicit. However, unrecorded fishing is widespread knowledge, so I am not revealing anything new. Since some people in Aral'sk associate intensive fishing with greed and corruption, I hope that my ethnography contests this association by locating my informants' agency in broader political-economic relations (chs.7, 8).

Boundaries

For the ethnographer, as for Bakhtin's novelist, "the object is always entangled in someone else's discourse (*oputan chuzhim slovom*) about it, it is already present with qualifications, an object of dispute that is conceptualized and evaluated variously, inseparable from the heteroglot social apperception of it" (Bakhtin 1981c[1935]:330). I encountered the Aral Sea tangled in other people's discourses. I initially construed the ethnographic endeavour naïvely, as a quest for the pure, uncontaminated discourse of 'the local' without the ensnaring discourses of outsiders. Early on, one old man in Bögen related with amusement how he had told a German journalist that the Germans were to blame for his lack of education: as a boy, he had been sent to fish during the war while the men were at the front. I found the presence of a journalist before me faintly troubling: it felt (wrongly, I now realise) like a threat to the authenticity of my ethnography. Indeed, I was just another person who had come from the outside, and who would go again. However long they stayed, people from the outside have always been transitory, and my presence was felt to be so too. But although I was initially greeted with shouts of *kamera qaida*?! (where's the video-recorder?!), I hope that I proved to be more interesting than most foreigners, not least because, despite my imperfect Kazakh language skills, I could enlighten people on many of the things they wanted to know about the UK (cost of cigarettes, average salary, cars, etc.).

Nevertheless, the issue about boundaries troubled me. As Clifford (1997) argues, ethnographers have always been keen to distance themselves from other sorts of travellers, such as missionaries and administrators. At times, I was perhaps too keen to differentiate myself from the journalists who peddle the same old story. Excited in the first months of my fieldwork to find how little people talked about disaster, it was easy to slip into thinking that the sea simply did not matter. I was too keen to hear different sorts of accounts, which, though real, just offered another perspective. On closer inspection, 'local' discourse fragments according to the fragmentation of local worldviews, in which the sea, nature and natural resources signify different things to different people according to their own entanglement with the natural world. The ethnographer's task is not to refute the global perspective, but rather, like Bakhtin's (1981c[1935]) novelist, to 'orchestrate' different voices.

The association with journalists became a practical problem when talking with people who wanted to display a particular sort of 'good news' story. For example, I found it very difficult to make the scientist at KazNIIRKh talk freely about the contemporary fishery, and I sensed that a major obstacle

was the need to display an unambiguously positive story about growing catches.[21] There were similar problems with inspectors and some NGO staff.

I was also conscious of a boundary with aid workers, specifically the Danes, who are still remembered affectionately in the region. From conversations with Kurt, I realised that they had acquired quasi-ethnographic knowledge, practical knowledge which guided their projects. Furthermore, as a former fisherman himself, Kurt had a connection with local fishermen which I lacked. I therefore wanted to bridge this boundary by contributing to the NGO's work with anthropological theory and ethnographic data. I was unsuccessful, not least because the NGO has changed radically recently. However, my desire to transcend this boundary shaped my evolving research questions.

[21] I also wanted to explore the epistemological practices at KazNIIRKh, and the boundaries between 'practical' and 'scientific' knowledge (cf. Knudsen 2008), but Zaualkhan never quite saw me as anything other than a journalist.

Part 1

Chapter 1. The Aral Sea and the modernisation of Central Asia: Cotton, water, fish

> And the Aral lived its natural life, practically undisturbed by man's interference, until 1960 (Kosarev and Kostianoy 2010b:46).

The above statement, which reflects predictably gendered assumptions about pre-modern natural equilibrium, is nonsense. The 2001 discovery of a medieval mausoleum on the dried up seabed provided clear evidence that the Aral had receded before (Boroffka et al. 2005). Geographers and scientists had suspected this since the nineteenth century, and local people have long been aware of it (see ch.4). While the famous photographs from space seem to signify the disastrous effects of 'man's' transformation of pre-modern pristine nature, from a wider temporal perspective it looks rather different. The Aral Sea first emerged a mere 10-20,000 years ago, the blink of an eye in geological time, when the Amu Dariya happened to change its course towards a shallow dip caused by wind erosion two million years ago (Zonn et al. 2009:21, 27). Over the course of its existence, the sea's level has varied, and there have been several major regressions comparable to today's, caused by diversion of the Amu Dariya into the Caspian via the Uzboi channel. The sea only returned from its last but one regression around the mid-seventeenth century. Archaeologists debate the causes, but three factors have been involved: climate, irrigation, and destruction of dykes during wars – notably by Ghengis Khan, then again by Timur. Evidently, since the advent of irrigation in the region 3000 years ago, the landscape has been shaped by human interventions. Indeed, the area of irrigated land in the past was comparable to that today (Micklin 2014a, Oberhänsli et al. 2007, Boroffka 2010, White 2013, Brite 2016). Even in the nineteenth century, the level of the sea fluctuated by several metres in response to climate cycles (Kropotkin 1904, Berg 1908), while travellers also noted that river channels changed as warring peoples blocked each other's canals (Wood 1876:175-179).

Over the millennia, then, the lives of those living by the Aral have been affected by distant events and processes. In part, this chapter offers a genealogy of the processes, far upstream from the sea itself, which culminated in its twentieth-century regression. These processes are rooted not only in histories of Tsarist colonialism and Soviet socialism, but also in the deeply ambivalent global history of cotton (Beckert 2014).[1] But if the sea itself has never been stable, nor have societies around it. I also therefore offer an overlapping narrative, centred on fish, of the re-shaping of relations between people and

[1] Beckert (2014) argues persuasively that the history of cotton is the history of capitalism. But because his 'global' perspective focuses on western Europe's relationship to the rest of the world, he has little space for the rather different story of Soviet cotton, and the post-colonial experiments in India and Egypt which it in part inspired: his account reduces these to state-led capitalism, another moment in the unilinear evolution of capitalism (ibid.:435-436). Apart from a glancing comment (ibid.:431), his global history also ignores the environmental impacts of cotton monoculture.

environments around the northern shores of the Aral, from the beginnings of Russian colonial rule to 1960, when the sea started to dry up. Before the sea dried up, I argue, it had already been transformed, both materially, and in terms of what it meant to local people. This point is crucial for understanding what the sea's regression would mean. Indeed, I offer an analytical perspective which puts these two stories in the same interpretive frame, two strands of the larger story of the modernisation of Central Asia.

With both cotton and fish, new visions of nature were the prerequisite of laying claim to nature (cf. Cruikshank 2005). However, modernisation processes played out differently across heterogeneous environments: imperial and Soviet administrators encountered different environments and different sorts of societies, from the pastoralists of the steppe, desert and mountains to the settled agriculturalists along the rivers and in the oases. Above all, water captured both colonial and Soviet imaginations, as with many modernist visions (Swyngedouw 1999, Mitchell 2002, Barnes 2014, Bromber et al. 2015, Suyarkulova 2015, Féaux de la Croix 2012). Beyond the massive Aral basin, there were plans, only dropped in the perestroika period, to bring the Siberian rivers Ob' and Enisei to Central Asia (see Petro 1987, Bressler 1995). Hence irrigation, canals and dams largely dominated colonial and Soviet visions in Central Asia, to the detriment of other sorts of resources.

But throughout the region, there are homologous histories of dispossession, as nature was 'disembedded' from society (Hornborg 1996). From the late nineteenth century, landscapes which people had been closely integrated with, and dependent on, were deemed empty and began to be transformed. Over the early Soviet period, particularly during collectivisation, gridded infrastructures were developed, facilitating the flow of resources to the centre. Human populations were re-organised to maximise resource-extraction. People came to live 'gridded lives' as their dependency on their environment was now mediated by a matrix which linked them to the centre via flows of goods to and from it (Brown 2015, cf. Payne 2011).[2] But while the grid offered a semblance of rationality and control, this was belied by the unruliness of things and people.

These two parallel stories about irrigation and fish began to diverge after the sea began to shrink in

[2] Such processes were hardly unique to the USSR: Brown (2015) compares Montana, USA and Qaraghandy, Kazakhstan, two similar environments emptied of indigenous inhabitants and transformed within the space of thirty years. The means were different – immigration and debt in Montana, deportations and coercion in Qaraghandy. Although the coercion was higher in the Soviet case, the working conditions differed little (cf. Buck-Morss 2002:104). Cf. also Cronon (1992) on the role of narratives about modernisation and conquering nature in the formation of the dust-bowl in the American west.

1960: while irrigation expansion continued, the fishery contracted. We pick up the latter story in chapter 2. The final part of this chapter explains why irrigation continued to grow even after its escalating consequences were evident. I therefore offer an interpretation of the twentieth-century Aral regression. The constant expansion of irrigation regardless of the consequences seems to be an instance of the high modernist myopia powerfully described by Scott (1998): seeing like a state.[3] But I root this myopia more specifically in the political economy of state socialism in Central Asia. This entails a broader interpretation of Central Asia's place in the USSR, which some scholars, picking up on interpretations by Central Asian intellectuals themselves, have characterised as colonialism or dependency: the Central Asian periphery produced primary commodities (especially cotton) cheaply for processing in the centre, where living standards were higher (Rumer 1989, Critchlow 1991, Gleason 1991). But this perspective misses the patronage relations not only between the republican elites and central leadership, but at every level (Spoor 1993, Kandiyoti 2002, Weinthal 2002). It also misses the redistribution by the centre, and the concomitant compliance of local populations with the centre's vision. I therefore suggest that 'dependency' needs to be re-cast as an entanglement of interdependencies of varying tautness, which resulted in spatially uneven rates of development, and uneven distribution of vulnerability to ecological damage.

From nomads to fishers

Kazakhs first came to the sea's northern shores, it seems, in the eighteenth century, deprived of access to their pastures by Russian and Dzungar incursions, and driving the Karakalpaks who were living there to the south (Jacquesson 2002). Though Kazakhs, like their predecessors, practised some small-scale irrigated agriculture and fishing on rivers and lakes, the economy was centred on livestock. Livestock was wealth (Tolybekov 1959:95-96, Khazanov 2012). Society was organised along patrilineal clan groupings, and livestock were exchanged according to kinship obligations. In a decentralised political ecology, constant movement allowed flexibility in negotiating the changing environment, though nomads were always vulnerable to severe winters (*zhūt*). Like agriculture, fishing was subsidiary, practised by the poor, those with few or no livestock. Fish were not a source of value or prestige. It seems that they were not caught for exchange, and most were eaten immediately (Beknazarov 2010). A proverb testifies to what fish meant in this economy: *balyqshynyng bailyghy etek zhengï kepkenshe*, 'the fisherman's wealth lasts until his sleeve dries'. While livestock brought wealth and power, fish were about sustenance and immediate return. Nor did fishing require the careful husbandry of scarce resources, as livestock demanded. *Aulau*, 'to fish', also means 'to hunt', deriving from the noun *au*, 'trap/net'. While the pastoral economy was premised

[3] Cf. Bichsel (2012) for cautious application of Scott's argument to Soviet irrigation in Central Asia.

on scarcity, when they fished, employing basic technologies, Kazakhs encountered natural abundance – lakes and rivers teeming with fish.[4]

Russian interest in the northern Aral region was, initially, military. A fort was built above Lake Raiym in 1847 when Butakov conducted a thorough exploration of the sea. Then a fort was built at Qazaly (Kazalinsk), the starting point for a gradual advance up the Syr Dariya. This culminated in the capture of Tashkent in 1865, a key moment in Russian expansion into Central Asia (Pierce 1960:18-21). Although Russian eyes were primarily focused on the rich settled lands to the south, the Russian presence on the lower Syr Dariya and around the northern Aral had immediate consequences for local inhabitants. Russian settlers, themselves fleeing upheavals in Russian agriculture, were encroaching on the best pastures. Tsarist policy cast them as a progressive force in the 'backward' economy of the steppe.[5] This process resulted in dispossession of local Kazakhs: as migration routes were curtailed, the fragile economy of nomadic life was disrupted and livestock numbers fell (Beknazarov 2010:39-40). Increasingly, winter quarters were established around Russian forts. After a *zhūt* in 1879-80 and again in 1892-3, Kazakhs began to settle along the Syr Dariya (Tolybekov 1959:299-300). Impoverished Kazakhs turned to fishing for survival (Beknazarov, personal communication).

When Ural Cossacks were deported to the region in the 1870s, they brought new technologies for catching, smoking and curing fish, and began to build ice-houses. Gradually, Kazakhs began to fish for the market, and fish were exported overland by caravan in winter to the railhead at Orenburg (Beknazarov 2010:31, Plotnikov et al. 2014:56). The sea came to be seen in terms of economic value as it was entangled in new relations. Dispossessed of livestock, Kazakhs had little choice but to subscribe to this vision. The sea also became an object of scientific study (Berg 1908) and of management: from 1886, access was regulated by permits; there was a banned zone around the Syr Dariya delta and bans on fishing during spawning season (Plotnikov et al. 2014:56).

A crucial moment in the fishery's development was the construction of the Orenburg-Tashkent railway in 1905-1906, which passes the sea's north-eastern corner, where the sheltered Saryshyghanaq bay was deemed a suitable site for a port. The station was (and still is) named *Aral'skoe more* (Ru.: 'Aral Sea'), and a village grew up between the station and the sea. The railway

[4] Dua (forthcoming) finds a similar contrast between livestock and the 'gifts of the sea' in the pastoral economy of Somalia.
[5] See Campbel (2012), though he also emphasises the ambivalent attitude of many of the agents of colonisation towards this vision.

opened up new markets for Aral fish, and catches grew rapidly. First the market, then the railway: both reconfigured entanglements with the environment; fish were increasingly valued as economic resources. Nearby salt deposits provided raw material for curing fish. Russian industrialists opened ice-houses and plants around the sea for smoking and curing Aral fish. As fish integrated local populations into imperial markets, new dependencies emerged. A 1968 book celebrating the glorious construction of the Soviet fishery waxes lyrical about pre-Soviet oppression: "And the family of the fisherman-Kazakh struggled in hopeless destitution, entangled in debts like a fish in a net" (Turmagambetov et al. 1968:1). Fishermen were advanced equipment and food, in return for handing over all their catch to pay off the debt. There was also widespread immigration to the region from other parts of the Russian empire, especially the Danube delta and the Sea of Azov, so that on the eve of the war, some 15,000 people were working in the industry, and 44-50,000 tonnes of fish were caught and exported from the region.[6]

Fig. 1: Russian fishermen, c.1900

Cotton famine, cotton fever

Meanwhile, a vision was taking shape centred on water and cotton, which decades later would be consequential for the sea. Though its roots lay in the 1820s, this vision received fresh impetus in the 1860s from distant events: the American Civil War, which starved global markets of raw cotton. This 'cotton famine' had a devastating effect on cotton manufacturing across the world (Beckert 2014:140). The event sparked swathes of accumulation by dispossession across the globe. The British, whose Lancashire mills were paralysed, began to turn over swathes of India (and other parts of the world) to cotton cultivation: driven away from subsistence farming, primary producers became

[6] AFGAKO 4/1/8:12-14. Cf. Pianciola (unpublished article), Plotnikov et al. (2014:57).

vulnerable both to the vicissitudes of the global market, and to extreme climate events, resulting in devastating famines later in the nineteenth century (Davis 2001:ch.10, cf. Beckert 2014:ch.9). Meanwhile Russian industrialists and administrators looked to the warm lands of Central Asia to secure Russian cotton independence. As cotton exports from Central Asia to Russia increased dramatically in the resultant 'cotton fever', Central Asian farmers also became entangled in debts; many lost their land (Beckert 2014:376-77, Joffe 1995).

As in other expanding empires, colonial eyes saw indigenous people as backward and the landscape as wasteful (Peterson 2011). They saw that this was no pristine environment: material and documentary evidence showed that for millennia humans had diverted rivers and transformed landscapes. Ruined irrigation systems spoke of a region which had gone backwards from its medieval glories (Wood 1876:98-101, Voeikov 1949b[1908]:157). The dream of turning the Amu Dariya again to the Caspian offered the opportunity both to connect Europe and Asia by water, and to restore the region's glory through irrigation (Romanov 1879). Scientific theory backed up this vision: the geographer Voeikov (1949a[1909]) argued that water was only useful to humans if it evaporated from plants; it was wasted if it flowed into the sea. The sea's area could therefore be drastically reduced, so long as the water was used 'usefully' instead (Voeikov 1949b[1908]).[7]

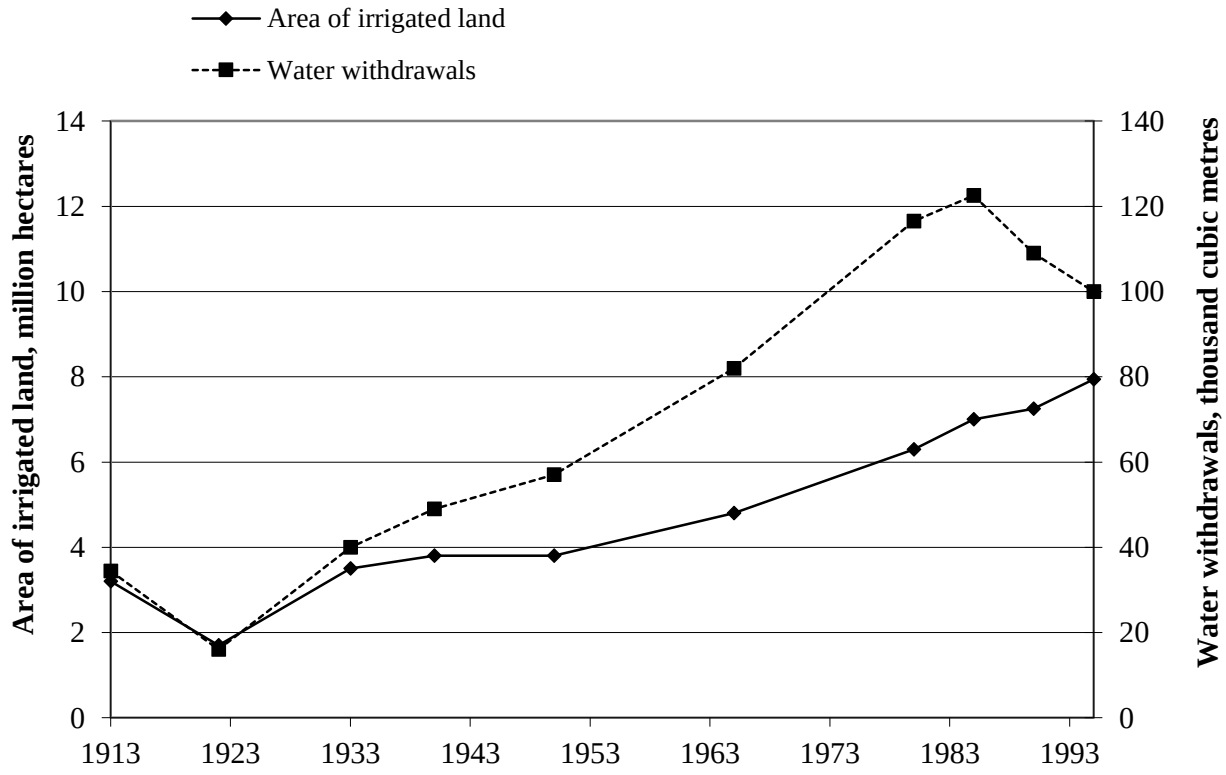
But Tsarist dreams of expanding irrigated area came to little: only two major irrigation works were completed, and the amount of water withdrawn from the Amu and Syr Dariya did not increase dramatically. Thus, though this vision would ultimately lead to the sea's regression, for now its only direct consequence for the sea was to heighten its significance as a shipping route, linking the cotton-growing regions of Karakalpakstan to European Russia via the railway at Aral'sk.

Soviet dreams in Central Asia

Rapid growth in both fish and cotton was brought to an abrupt end when distant events again reverberated across the globe. Integrated into Russian imperial space, dependent on imperial markets, the region was vulnerable when that space disintegrated during the years of World War One, revolution and civil war. The fishery rapidly unravelled as provisioning collapsed, fishermen were conscripted into the army, and hastily built infrastructure crumbled. Upstream, irrigation systems fell into disrepair and the area of irrigated land halved (see graph 1).

[7] Swyngedouw (1999) finds a strikingly similar discourse in early twentieth-century Spain.

The Bolsheviks in Central Asia blended old Tsarist visions with their own emancipatory and anti-colonial agenda. Colonialism, they supposed, had exacerbated 'backwardness'. The Aral Sea was still an object of economic value, but in exploiting its value to the full, men and women were to be freed from the bonds of debt and exploitation. Upstream, water was at the heart of the Bolshevik decolonising vision (Teichmann 2007:503). But another logic would crystallise during the years of collectivisation, whereby value created in agriculture would subsidise the industrialisation of the USSR as a whole, termed 'primitive socialist accumulation' (cf. Spoor 1993). In this vision, Central Asia was, as in Tsarist times, a producer of agricultural commodities. It was thus in sharp tension with the anti-colonial vision (Teichmann 2007).[8] Indeed, the promised utopia of industrial abundance came to override other utopian goals (Buck-Morss 2002). It also silenced voices for nature conservation which had been present in the 1920s (Weiner 1988). Thus, because of decisions favouring modernisation by industrialisation, Buck-Morss (2002:115) argues, "the Soviets missed the opportunity to transform the very idea of economic 'development' and of the ecological preconditions through which it might be realised." Development, on a massive scale, was to proceed by new forms of dispossession, with serious environmental consequences.



Graph 1: Area of irrigated land and water withdrawals in Central Asia, 1913-1995 (Source of data: Micklin 2000:28)

[8] Similarly, Anderson (1991) argues that the Soviet 'non-capitalist' model of development for 'backward' peoples implicitly accepted the capitalist notion of development which it purported to oppose.

The consequences of this shift in policy for irrigation in Central Asia, and thus, ultimately, for the Aral, are well-documented: as the region was integrated into the gridded space of the USSR, environment and society were re-shaped together. Previously, irrigation systems had been decentralised, access to water embedded in a range of social relations. This changed after collectivisation, as plans were dictated by the centre, and cotton monoculture displaced old patterns of crop rotation which both guaranteed food security and improved soil productivity (Teichmann 2007, Micklin 2000). Deportations of enemy peoples (Pohl 2007) and, later, resettlements from mountain regions (Loy 2006, Bichsel 2012) also brought people in to work on the reclaimed land. In this matrix, flows of water, cotton and labour were to be directed by the apparatus.

Ecological damage and dispossession under state socialism have a different dynamic to their capitalist variants. Indeed, Fehér, Heller and Márkus (1983:65) argued that the goal-function of state socialist economies was not, as under capitalism, profit, but "the maximization of the volume of the material means (as use-values) under the global disposition of the apparatus of power as a whole". Economic decisions thus tended to be made not according to financial profitability, but according to whether or not they increased the amount of resources under the control of the apparatus. Legitimacy was based on the countervailing tendency to redistribute, but as this would diminish the power of the apparatus, these two tendencies were in tension (Verdery 1996). Furthermore, different branches of the apparatus, whether sectoral or regional, were constrained to identify with their sector or region, and were always competing to expand their allocated share of scarce resources by expanding their economic activity (Kornai 1980). This led to huge-scale development, as in the giant steel complex at Magnitogorsk (Kotkin 1995). In agriculture, there was a tendency towards centralisation and monoculture, regardless of economic efficiency or ecological sustainability (cf. Weiner 1999:15-16): decisions were based on increasing the power of individual apparatchiks, and, if there was competition, of the apparatus as a whole.[9] Because water flows, and can be manipulated, the urge to accumulate material assets could be satisfied by constantly expanding irrigation infrastructure (cf. Wittfogel 1957).[10] Irrigation offered the opportunity to reshape landscapes so that fixed assets, agricultural output, and the labour of millions of people were under the control of the apparatus.[11]

[9] Monoculture is not unique to state socialism or high modernism as Scott (1998) supposed: Uekoetter (2011) describes the improvised and ad hoc growth of monoculture 'from below' in post-World War Two West Germany.
[10] Cf. Richardson (2014) on the materiality of water in a failed Soviet irrigation project in Ukraine.
[11] Thus Weinthal (2002:ch.4) argues that cotton was, and is, a form of 'social control'. Bichsel (2012:98) also discusses resettlements of mountain populations to irrigated lands: because of environmental constraints in the mountains, they were not always engaged in 'socially useful labour', but worked on their personal plots; i.e. their labour was not fully under the disposition of the apparatus.

Collectivisation initially represented the coercive dictates of the centre, but from the late 1930s, an accommodation was reached, as the state socialist social contract took shape, whereby compliance was secured by the promise of rising living standards and full employment (Verdery 1996). From 1937, the First Party Secretary of Uzbekistan promised 'people's construction projects' (Teichmann 2007). He mobilised Voeikov's theories for a patriotic socialism: "We cannot resign ourselves to the fact that the water-abundant Amudarya River carries its waters to the Aral Sea without any use, while our lands in the Samarkand and Bukhara regions are insufficiently irrigated" (cited in Zonn 1999:159). The task, he said, was: "to bridle the Syrdarya and Amudarya rivers, to control them and to make their water serve the cause of socialism, for the purpose of raising the living standards of the population and developing the country" (ibid.). Indeed, as living standards rose through redistribution from the centre via the grid, the promise of modernity came to be imagined through cotton (cf. Weinthal 2002:ch.4). If steel represented the urbanist values of the USSR as a whole (Kotkin 1995), cotton represented development for much of Central Asia. This was a web of dependencies more complex than the flow of raw resources from periphery to centre.

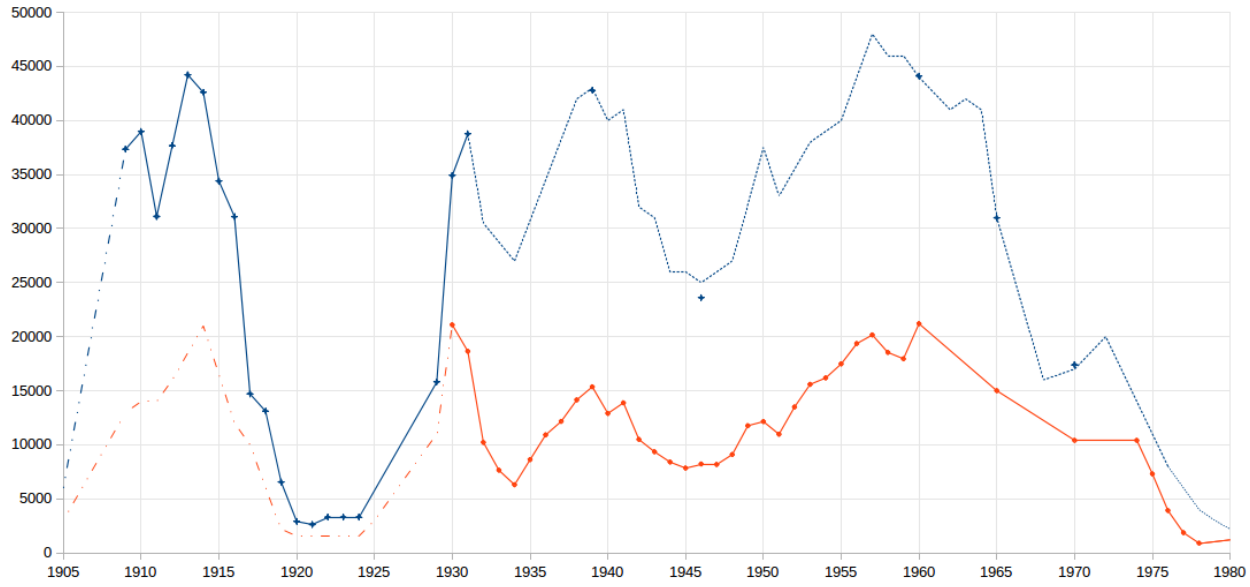
But the apparent rationality of the grid masked the messy underlying processes.[12] Control was, pace Wittfogel (1957), incomplete: as in modernisation processes the world over, it was belied by the unruliness of things and people involved (cf. Mitchell 2002). Indeed, Teichmann (2007) argues that cotton yields only recovered from the shock of collectivisation when the level of coercion dropped: the resultant system was premised on complicity, so that informally arranged 'accidents' and 'inefficiencies' would provide enough water for personal plots. Meanwhile irrigation canals, notably the Ferghana Canal, a symbol of late 1930s modernisation, were built with rudimentary technologies, allowing high losses to evaporation and seepage. Though the effects would not be felt for another twenty years, the consequences of this system would ultimately be significant: high wastage of water which might have reached the sea.

Constructing a socialist fishery

Meanwhile comparable, but distinct, processes were playing out in the fisheries. Over the 1920s, the fishing industry was gradually re-built. In 1925, the Aral State Fishery Trust, Aralgosrybtrest, was established, with the aim of harnessing the natural wealth of the sea, and emancipating local people. Aralgosrybtrest provided credit for cooperatives, with the aim of creating independent fishermen,

[12] Cf. Ingold argues that the 'vertically integrated assemblies' (2007:3) imposed by colonialism may realign reality but not as intended: imagined networks are always belied by the messiness of meshworks.

albeit bound to the state by debt.[13] These cooperatives also engaged in salting and cottage production of smoked fish, and, in one case, in melioration work on a lake, which, according to the umbrella organisation of cooperatives, Aralrybaksoiuz, fishermen did enthusiastically.[14] By 1930, catches were approaching their pre-war peak. But there was little centralised control: Aralgosrybtrest managers competed with Aralrybaksoiuz for fish; and semi-nomadic fishermen were liable to migrate away from the sea in spring.[15]



Graph 2: Fish catches, tonnes, in whole Aral Sea (blue), of which northern Aral catches (red). Dotted lines signify informed estimates. Notice the four catastrophic falls in catches: the First World War, collectivisation, the Second World War, and the sea's regression. See Appendix 1 for sources of data.

The cooperative model was enthusiastically defended in a document from early 1929: fishing should not be an industry where 'raw material' (*syr'ë*) is later processed industrially; the author argues that inland fisheries should be small-scale and decentralised, with processing carried out within households.[16] There are parallels with contemporary ideas about community co-management (see chs.6-7). But this was no time to defend the small-scale. Because Stalinist ideology was premised on the abundance of nature, it followed that labour was necessarily in deficit and all measures must be taken to exploit the natural resources fully. Thus sedentarisation in the Aral region, as around other major lakes in the republic, was necessitated by "the lack of fisher population and the natural riches of the water-bodies of Kazakhstan".[17] Kazakhs, denigrated again as 'backward', were settled in collective farms (kolkhozy), their livestock confiscated in another devastating moment of dispossession. Supposedly in the name of female emancipation, women were also to fish. Nomadic

[13] AFGAKO, 4/1/15:47-48.
[14] Tsentral'nyi gosudarstvennyi arkhiv respubliki Kazakhstana [hereafter TsGARK], 759/1/39:10.
[15] AFGAKO, 4/1/16:124.
[16] TsGARK 759/1/1:150-155.
[17] TsGARK, 759/1/31:56.

movement was replaced with a centrally-ordered movement of people: populations were relocated, especially from delta lakes to the sea, where their labour was needed. Deportations further served to fill the labour deficit: 'enemies of the people', and, from the late 1930s, 'enemy peoples' were also relocated to the region.[18]

The results were disastrous. As across Kazakhstan, confiscation of livestock and subsequent failure of grain provisioning resulted in widespread famine (Pianciola 2001, Payne 2011). There was woefully inadequate housing for the 'sedentarised' populations. While huge fishing plans far exceeded the likely capacity of the sea, actual catches collapsed. Indeed, in late 1932 fishermen were receiving 25kg of flour per quarter, against a regulation 73kg.[19] The provisioning of the whole republic was in crisis. A third of the Kazakh population died, others fled to other parts of Soviet Central Asia and beyond – to China, Afghanistan, Iran. In the Aral region, according to one document, from Bögen alone 86 out of 264 households fled, while from settlements on the north-western shores, 300 households fled; the document euphemistically blames inadequate housing and low pay.[20] As Pianciola (unpublished manuscript) shows, the region was also a transit route for returning famine refugees (*otkochevniki*) who had fled to Uzbekistan and Turkmenistan. Some of these attempted to settle in Aral kolkhozy, although they knew nothing about fishing, while at the same time people were still fleeing from the northern coastline.[21]

The period of collectivisation was thus a violent disentanglement of local social and ecological relations, which had already been in a state of flux for decades. The process was chaotic, its contingencies shaped by largely uncontrolled local agents who did not necessarily subscribe to the centre's vision (Payne 2011). But the outcome was a reorganisation of local society; human relations with the environment were reconfigured according to a gridded matrix whereby labour was directed and forcibly relocated and the circulation of fish was controlled by the apparatus. Nature was disembedded from society. In the new system, fishing was an industry (*promyshlennost'*), with extraction (*dobycha*) of raw materials (*syr'ë*) separated from processing (*obrabotka*). Output by type of production was centralised, and processing facilities in Aral'sk and around the sea came under the disposition of the apparatus. The labour of fishing was abstracted from its context, reduced to the mechanical extraction of resources. Goals of mechanisation and deep-sea fishing on ships were slow

[18] Brown (2015) also puts sedentarisation of Kazakhs and deportations in the same interpretive frame.
[19] AFGAKO, 7/1/32:37.
[20] AFGAKO, 7/1/12/3.
[21] AFGAKO, 7/1/51/4, 13.

to materialise; but in the sense that the time and space of fishing were micro-managed by the apparatus, *dobycha* was industrialised.

The shift from cooperatives to kolkhozy was therefore significant in terms of how fishermen and fisherwomen were constituted. Confiscation of livestock also amounted to confiscation of the time devoted to them, time which was now to be given to the state in fulfilling the plan. Though kolkhozy had subsidiary agriculture and herding to give them a semblance of autarky, their primary function was fishing. Nets and equipment were kolkhoz property. Kolkhoz management received the plan from Aralgosrybtrest; the plan would be split between brigades and units who would be assigned to specific spaces; brigadiers would pass the plan on to individuals. Pay was defined by amount of fish caught, and there were rewards for over-fulfilling the plan. Fishing labour was directed by the numbers imposed by the plan. Gridded lives here looked rather different to those of cotton farmers, for whom the labour-intensive nature of the crop fixed people in specific places; for the fishing population by contrast, gridded lives meant regulation of movement. If the colonial period had seen a shift in the meaning of fish to objects which could be translated into money under conditions of extremely unequal exchange, fish now, in addition, mediated the hierarchical relations between the fishing population and the state.[22]

But the fantasy of control was, again, undermined by the unruliness of people and things, which relates both to the materiality of the environment, and to the difficulties of operating in a shortage economy, where managers' authority was always constrained (Humphrey 1998[1983], Verdery 1996). The relevant means of production could be formally put under the control of the apparatus, but apparatchiks' capacity to actually control them was limited. Bad weather could disrupt the micro-management of the plan.[23] Regulations about keeping kolkhoz property like nets in centralised stores were routinely disregarded.[24] People ignored the military-style arrangement of brigades, and ignored exhortations to fish systematically covering all the areas of the sea; they chose to focus on easily accessible inshore waters.[25] Even in the 1950s, allowed 100-120kg of fish per year for their families, fishermen often took home that quantity every month without paying for it.[26] These last points relate to the invisibility which pervades fisheries, and the difficulty of regulating an activity happening over large spaces outside the purview of state authorities.

[22] This story is paralleled in other Soviet fisheries (King 2003, Knudsen and Toje 2008, Nakhshina 2011).
[23] e.g. AFGAKO 4/1/98:110.
[24] e.g. AFGAKO, 7/1/62:85-86.
[25] e.g. AFGAKO 7/1/42:60-62.
[26] AFGAKO, 4/2/8:125-127

Fig. 2: Fishing boats, 1940.

Fig. 3: Ship in the ice, 1940s.

Gradually over the 1930s plans were relaxed; livestock numbers recovered slightly; and catches rose. But in this new configuration, inhabitants of the region were dependent on provisioning with equipment and foodstuffs. Nevertheless, although local agency was thus constrained, in the archives there are glimpses of how these conditions enabled agency in other spheres. A newspaper report tells of how overfulfilment of the 1936 plan has brought a 'prosperous (*zazhitochnaia*) life'; 'European-style houses' have replaced the 'dark Asiatic *zemlianki*', some Stakhanovites own gramophones and

silk suits.[27] Though the claim of a 'prosperous life' is doubtless exaggerated, there was clearly an expectation that fishing would be connected to rising living standards. Indeed, because fishing brought social entitlements, local people had a stake in Soviet visions of nature.

Meanwhile, Aral'sk was growing, an important connecting node between the sea and railway. It was upgraded from a village to an 'urban-type settlement' (*posëlok gorodskogo tipa*), and then to a town (*gorod*) in 1938, when it became the raion centre. Cotton growing and manufacturing were spatially separate because of the pre-existing factories in European Russia. But since there were as yet no refrigerated railway wagons, fish had to be processed immediately, resulting in an integrated industry within the region. Those working in processing were predominantly women. There was a major plant in Aral'sk, where Aralgosrybtrest's headquarters were. Fish processed elsewhere on the sea would be brought to Aral'sk for distribution. Aral'sk was also the hub for provisioning remote fishing settlements. Other enterprises contributed to the industrial character of the town: in the port, Karakalpak cotton was unloaded and transferred onto the railway, while grain from Russia would be loaded onto ships for the return journey; there was also a shipyard, building vessels for the transport and fishing fleets. Until after the Second World War, the town was predominantly non-Kazakh. Many arrived in Aral'sk fleeing famine or repression in the European parts of the Soviet Union, while others – Koreans, Germans, Chechens, Kalmyks, and others – were deported to the region.

Besides this story about the construction of a socialist fishery there is another story about the management of nature. Indeed, in direct opposition to the economic vision of nature, a conservationist vision lived on in the circumscribed territory of a nature reserve (*zapovednik*), which was established on Barsakelmes Island in 1939.[28] Even fisheries management, in which science played a large role (especially after a research station was established in 1928), was not just about quantitative growth with no regard for the consequences. Managing catches by the numbers of the plan afforded the possibility to regulate the populations of different species, even if this was not always exploited by industry bosses. Management was also disembedded: a separate body regulated the fishery, introducing new rules to guarantee reproduction of stocks (Plotnikov et al. 2014:57). Spatial and temporal bans were expanded to protect spawning grounds. Inputs were regulated, as were sizes of fish caught (Mitrofanov et al. 1992:399). Further management measures including amelioration

[27] AFGAKO, 7/1/75/4.
[28] See Weiner (1999) on the conservationist visions of *zapovedniki*. Barsakelmes suffered from the sea's regression as the island joined the mainland, pastures became depleted and herds of saigaks and kulans migrated away. I do not have space to go into the *zapovednik* in depth, but today it is thriving, having been awarded more land to reflect the distribution of its animals; it is also well-funded, as part of recent moves towards 'greening' Kazakhstan's economy.

works like clearing spawning grounds, dredging channels to connect lakes, and clearing reeds which choked water of oxygen. Less successful were acclimatisations, which were supposed to enrich the apparently 'poor' fauna of the sea. Some acclimatisations were disastrous: most notably, stellate sturgeon acclimatised from the Caspian brought with it a parasite which proved fatal to the local *ship* sturgeon, which died off in large numbers (e.g. Plotnikov et al. 2014:59-68).

Figs. 4, 5: Factory labour, Aral'sk.

In the Second World War there was yet another catastrophic collapse in catches: men were sent to the front, leaving women and children to fulfil the plan. Only by the late 1950s were catches approaching the levels of the late 1920s and the early 1910s. Some mechanisation had taken place, notably the

introduction of motors and refrigerated ships. But the fisheries were never thriving. In the late 1950s, many remote fishing settlements still had to drink sea water. Leprosy had not been eradicated. Villages lacked electricity and housing and other amenities on which the USSR prided itself.[29] Finally, there was ongoing financial crisis. Kolkhozy bought new ships, so as to master deep sea fishing and finally develop the fishery to its full potential. But this expenditure had saddled them with debt, and they suffered chronic lack of circulating assets. The majority of the kolkhozy were liquidated and replaced with state fishery bases (*bazy goslova*), directly subordinate to Aralgosrybtrest, leaving only kolkhoz Zhambul (today Zhalangash village) and kolkhoz Raiym.[30] But Aralgosrybtrest too was saddled with debts, and fish production was consistently of a low quality. Indeed, the main processing plant in Aral'sk, built in the 1930s, was in a state of decay.[31] Supplies of equipment were hoarded throughout the system, contributing to financial difficulties. Most of the industry was not mechanised. In a shortage economy characterised by inter-departmental competition, investment tension precluded the growth that was always planned (Kornai 1980). This, then, is the pre-history of the twentieth-century regression of the Aral Sea, in which movements of fish, people and capital were reconfigured and integrated into Soviet space. The region was integrated another way too: after the war, military bases were established in Aral'sk. One provisioned a secret chemical weapons laboratory on the remote island of Vozrozhdenie; after the construction of the cosmodrome at Baikonur, the site of Gagarin's take-off into the cosmos, other bases ran search-and-rescue missions for cosmonauts who landed in the sea. Formally, these bases were not connected with the rest of the region.

Fig. 6: Unloading from refrigerated ship, undated.

[29] e.g. TsGARK 1874/1/23:13.
[30] TsGARK 1874/1/38.
[31] TsGARK 1874/1/37:149.

The needs of agriculture

Meanwhile, irrigation expansion took off after the war. In 1954, work began on the Karakum canal, leading across the deserts of Turkmenistan towards the Caspian, as Tsarist colonialists had dreamed. From 1960, the sea began to retreat as a cycle of low rainfall years accentuated the effects of irrigation withdrawals: in the 1960s, the sea level fell by nearly 2m, the following decade by 5.3m (Micklin 2014:121-124). Over the coming period, development around the sea itself began to take a different path, albeit one conditioned by what had gone before, as we see in chapter 2. Ironically, inland fisheries were one sector which was relatively well-managed across the Soviet Union, but they always bore the brunt of development priorities in agriculture.[32] From 1960, the emphasis in fisheries shifted from intensifying existing fisheries to establishing new fisheries on remote lakes and reservoirs (Mitrofanov et al. 1992:400). In 1965 the Presidium of the Council of Ministers of the USSR made a resolution, "About measures for the preservation of the fishery significance (*rybokhoziaistvennogo znacheniia*) of the Aral Sea."[33] An integrated plan (*kompleksnaia skhema*) was to be drawn up for the rational use of the water resources of the whole Aral basin, taking into account the interests of the fishing industry. But the integrated plan was slow to materialise, and water withdrawals continued to grow. In the Brezhnev era, cosy patronage relationships between Moscow and Central Asian elites facilitated the flow of investment into agriculture, the basis of the latter's power.

Not only the sea suffered: irrigation had increasingly problematic effects on the regions upstream too. In the perestroika period, as the crisis became a symbol of everything wrong with the USSR, Soviet intellectuals and scientists would highlight these devastating effects, and my interpretation draws on their arguments (Reznichenko 1989, Seliunin 1989, cf. Wheeler 2016).[34] Just as with fish and fishing populations, water and farmers were unruly, though their unruliness proved far more environmentally damaging. Though some of water's material qualities promise centralised control, other qualities undermined this control: the tendency of water to seep, taking with it pesticides and salts (cf. Richardson 2014). This unruliness was further exacerbated by the competition for resources at every level in the shortage economy (Kornai 1980). This competition included water, which was always felt to be in deficit. Conversely, water expenditure had no financial cost. In any case, the obligation to

[32] See Berka (1990). In contrast to the management measures outlined above, most western fisheries management regulates only by biomass, a much blunter management instrument, widely critiqued by e.g. Larkin (1977), Ludwig et al. (1993), Wilson et al. (1994), Pálsson (2006): see further ch.7. Today, such authors suggest parametric management, e.g. of conditions for reproduction, food base, species interactions etc. – all parameters which Soviet management did, in theory, take into account. Of course, things went wrong (as with overfishing of sturgeon on the Caspian, and with acclimatisations), but catches were higher across Kazakhstan than today. Indeed, problems arguably stemmed from not enough science, and from conflicts between industry and scientists (Mitrofanov et al. 1992).
[33] TsGARK 1130/1/843:99.
[34] These analyses tally with e.g. Micklin (2000).

fulfil the plan usually trumped economic efficiency and environmental sustainability. Thus water was wasted throughout the system, and water withdrawals were always higher than water budgets foresaw. With poor drainage and high mineralisation, this water contaminated the land, and productivity fell. Central Asian cotton was low quality. The Aral regression was therefore just part of a complex ecological crisis across the region, which stemmed, on the one hand, from the political value of irrigation systems to the apparatus, and, on the other, from the lack of economic value of water and the weak control of the centre. Irrigation specialists recognised these problems and saw the need to raise efficiency, to avoid wasting both water and money, but the direction of development remained the same.[35] Ultimately, from the perspective of apparatchiks, the aim was not to grow as much cotton with as little expenditure of money and water as possible, but to accumulate use-values, both fixed assets and commodities.

In addition to the environmental crisis, political and social crises developed across Central Asia. While cotton had seemed to promise development and modernisation, it had actually facilitated clientelism and entrenched corruption, most notably the infamous cotton scandal in Uzbekistan, which implicated the entire political class, right up to the First Party Secretary, Rashidov (e.g. Weinthal 2002:101-2, Kandiyoti 2002:241-2). Coercion was rife on cotton farms. Cotton also failed to deliver the promise of full employment: the authorities were troubled by the labour surplus in Central Asia (Lubin 1984). While in most state-socialist economies, there was an overall deficit of labour (Kornai 1980), in predominantly rural Central Asia, with little developed industry, the provision of work was outstripped by population growth. The authorities proposed more of the same: expanding irrigation and hastening the Siberian rivers diversion, dubbed *proekt veka*, 'the project of the century' (Lubin 1984:131-134). If cotton was the symbol and vehicle of Central Asian modernisation, perestroika activists found that the modernist vision of mastering nature had resulted in the negation of the urbanist values of the Soviet Union: as a labour-intensive crop which precluded cultivation of food crops, it effectively trapped the majority of the Central Asian populations, especially women, in a condition of rural dependency (cf. Kandiyoti 2007).

So why did irrigated areas go on expanding even when the sea was retreating? Environmental scientist Glantz (1999b) explains the Aral regression as a 'creeping environmental problem'. Because the onset is gradual, there is no objective threshold after which behaviour might change: postponement is always possible. While Glantz (1999b:16) sees this as a problem of 'human nature', it seems

[35] e.g. TsGARK 1137/25/554; 1626/3/1330:117-151.

reasonable to seek an explanation in the nature of modern bureaucracies in general, and that of Soviet socialism in particular. As expectations of modernity were invested in a tangled web of dependencies linking centre and periphery via cotton, any change of policy was increasingly difficult. This is what Hodder (2012) calls 'entrapment'. As the growth of the population outstripped the provision of work on collective farms, and as irrigation continued to be the easiest way to satisfy apparatchiks' urge to accumulate fixed assets, development went on as before.

Seeing like a state?

But there was also a wilful myopia: planners refused to take into account the escalating effects of the sea's regression. Indeed, they famously weighed the costs and benefits: the economic value of cotton exceeded that of fish. This seems to be an instance of Scott's (1998) famous account of 'seeing like a state': seen from a synoptic but myopic utilitarian viewpoint, things and people are seen out of context, with disastrous consequences. This vision misses the human cost not only for the fishing population, but for the entire population of Central Asia. But the thrust of my narrative so far has suggested that this viewpoint lies not in 'the state', but in departmental and regional interests (cf. Seliunin 1989).[36] Indeed, from an abstract cost/benefit perspective, it would have made more sense to raise the efficiency of existing irrigation infrastructure than to build new infrastructure with diminishing rates of return. The unfinished integrated plan for the water resources of the whole basin would also have made water use more efficient – and this required a more synoptic viewpoint than was actually taken. If the roots of the Aral regression lie in the competitive urge to accumulate use-values, and if irrigation was in the interests both of the Ministry of Land Reclamation and Water Management (Minvodkhoz) in Moscow, and of republican and local elites in Central Asia, it follows that the cost/benefit rationality which weighed the sea against cotton was less abstract than it seems.

Take this 1971 resolution of the bureau of a scientific council about a report on "the problem of the Aral Sea".[37] I do not suggest that this particular document played any major instrumental role, but it illustrates the sort of discourse used pervasively to justify bureaucrats' political decisions as rational necessity. The claim of abstract rationality – the claim to follow fixed rules – is the foundation of bureaucratic legitimacy (cf. Herzfeld 1992). But as this document shows, rules do not precede discourse but are produced by it, sited in social practice (cf. Bakhtin 1986[1953]). The resolution begins:

[36] This critique of Scott's argument is not new, see e.g. Li (2005), Alexander (2007a), Brandtstädter (2007). Cf. also Verdery's (2002) extension of the metaphor to include 'seeing like a mayor', against the interests of the central state.
[37] AFGAKO 4/2pr/272:1-7.

> The problem of the Aral Sea is acquiring ever greater importance in relation to the development of national economy in its basin. Water withdrawals from rivers feeding the sea for the needs of irrigated agriculture and other branches of economy are growing without break, which is leading to (*vedët*) a fall in level of sea. The problem is made sharper in connection with the presence of a significant fund of lands suitable for irrigation, the possible perspectival water demands of which exceed the available water resources of the basin.[38]

The sentence structure precludes debate. 'Irrigated agriculture needs a lot of water'; 'significant funds of lands are suitable for irrigation': compressed into noun phrases, these questionable claims cannot be questioned. The verb *vedët* mechanically connects the fall in sea-level with 'water withdrawals', eliding the causation which reaches back to a political decision about the definition of the needs of agriculture. Later in the document comes the cost/benefit analysis:

> The fall in the level of the Aral Sea will cause specific adverse economic consequences: there will be radical changes in shipping, reproduction of fish stocks of the sea, muskrat-breeding, livestock-herding and other branches of the economy in the neighbouring regions. Nevertheless, the national-economic (*narodno-khoziaistvennoe*) and economic (*ekonomicheskoe*) effectiveness of the development of irrigation and agriculture on the basis of irrigation in the basins of the Syr Dariya and Amu Dariya by far exceeds the damages which can be expected from the fall in the level of the Aral Sea.[39]

Notice how costs and benefits are weighed: adverse consequences are determinate and separate; they are also postponed to the future, which in 1971 was a basic misrepresentation. Rising salinity, which turned out to be even more destructive to fish stocks than the shrinking of the sea, is absent from the analysis. By contrast, the benefits are a tautologically interconnected whole. The author goes on to note: "It is also necessary to take into account factors not measurable by direct economic evaluation: the influence of the changes in the regime of the sea on the nature of the surrounding territories."[40] But these are only 'factors' – they are not even discursively acknowledged as 'consequences', though they would become famous visual symbols of disaster.

Such monologic discourse establishes a particular constellation of logical connections, silencing other voices, closing down other perspectives. Form ('the needs of irrigation') conceals the arbitrariness of the content ('we've decided irrigation is more important than the sea'). Like all discourse, and like other decontextualising visions the world over, it is sited.[41] This is not the abstract rationality of a monolithic state. Powerful interests were able to define the question in a particular way, drawing on a strand of science going back to Voeikov to discursively abstract people and resources from their

[38] Ibid.:1.
[39] Ibid.:4.
[40] Ibid.:4.
[41] Cf. Carrier (2012), who extends Scott's argument away from the modernist state: things are seen schematically, out of context when powerful interests, motivated under capitalism by profit, have the discursive resources to define the terms of the question.

contexts (cf. Tsytsenko and Sumarokova 1998:200). The centralising tendencies within Soviet socialism had, as Bakhtin (1981c[1935]:270-272) arguably saw, a centripetal corollary in discourse. This discursive abstraction of resources was the prerequisite of extraction and accumulation under the disposition of the apparatus.

This discourse was an important element of the entanglement of factors which constituted a 'creeping environmental problem'. The 'needs of irrigation' provided what Herzfeld (1992:81) calls an 'ethical alibi': they justified bureaucratic indifference by presenting the interests of particular bureaucratic departments as the common good. Bureaucratic discourse silenced other voices which sought to establish that a threshold had been reached; within such discourse there were no resources to talk about the Aral Sea itself, a point we pursue in chapter 2. While ichthyologists and others tried to stand up for the Aral, their voices were not heard. The Aral regression remained a 'matter of fact' (Latour 2004): determinate effects which could be known and accounted for. Only in the perestroika period would environmental activists turn it into a 'matter of concern' (Latour 2004): a proliferation of interconnected crises involving humans, water, salt and dust, far beyond scientific and bureaucratic control.

Conclusion: Uneven development in Soviet Central Asia

Some of these perestroika activists travelled the length and breadth of Central Asia to examine the catastrophe. They argued that socialism had never existed in peripheral areas (Reznichenko 1989:192). They thus drew attention to the uneven development of state socialism. The tangentially related stories I have told in this chapter, about fish and irrigation, entangled local populations in multiple dependencies, which resulted in spatially divergent outcomes. For Smith (1984), capitalism generates uneven development because, on the one hand, space is homogenised through the market, and, on the other, space is differentiated through the investment of capital where it is most profitable. Under state socialism the process worked rather differently. Space was homogenised not by the market but by the plan, which turned natural resources and labour power into numbers and rearranged them in a gridded matrix. As in capitalism, space was also differentiated by the uneven investment of capital, but this related not to profitability, but to apparatchiks' urge to accumulate fixed assets and to hoarding tendencies which created blockages.[42] Thus space and nature were differentiated according to their political value to the apparatus. The nature of the assets involved (fisheries, irrigation systems) shaped these processes of accumulation, and the sorts of infrastructures which were developed.

[42] These processes were exacerbated by the specialisation of production and interdependence between regions (Humphrey 1995:3-4).

Furthermore, discursive resources were unevenly distributed, as more powerful apparatchiks were able to define the terms of the question.

The political-economic processes described in this chapter were not only drivers of the sea's regression: they also radically reshaped the relations between people around the Aral and their environment before the sea dried up. For people in the Aral region, there was a double vulnerability. First, the vision of fish as wealth involved the region in an extractive relationship with Moscow. People were both dependent on fish as a resource, and on the centre for provisioning. While Aral people were dependent on the Soviet centre, the centre was much less dependent on them: Aral fish were a miniscule fraction of the total fish caught in the Soviet Union. Central Asian Fisheries Ministries were subordinate to the USSR Fisheries Ministry, to which, with the world's oceans at its disposal, the Aral was a drop in the ocean.[43] Within the region, this vulnerability was unevenly distributed: the port of Aral'sk, because of its strategic location, attracted some investment and provisioning was reliable; but fishing villages scattered along the remote shoreline were of little political value to anyone, hence the crisis in provisioning during the famine and their under-development into the 1950s.

Secondly, people in the Aral region were vulnerable to the myopia of the cotton vision. After all, the few hundred thousand around the Aral were a small fraction of the tens of millions living in Central Asia. The Aral fisheries were relatively marginal in republics whose economies were based on agriculture and (in Kazakhstan's case) heavy industry. After all, constant quantitative growth in cotton and rice meant more strategic resources for the apparatus to accumulate, and Central Asian cotton fed the textiles industry in Russia. Though the same urge towards centralisation drove development in the fisheries, this was never a particularly capital- or labour-intensive industry. Whatever improvements could be made by mechanisation, management and amelioration, expansion would always be limited by the total stocks in the sea. By contrast, expansion of agriculture could only be limited by water availability, and there was always the expectation of bringing the Siberian rivers to Central Asia. This promised to solve the region's water issues once and for all, and, in doing so, massively increase the fixed assets under the disposition of Central Asian elites and Minvodkhoz in Moscow (cf. Bressler 1995).

[43] The Aral fisheries were further disadvantaged by the republican boundary across the middle of the sea. In 1944 the fishery was separated into two, one based in Aral'sk, Kazakh SSR, the other in Moinaq, Uzbek SSR.

If the centralising tendency of state socialism drove uneven development, I have also suggested that compliance was secured, in part, by the countervailing tendency within state socialism towards redistribution which to some extent equalised Soviet space, as sympathetic observers argued at the time (Nove and Newth 1967, Khan and Ghai 1979). While these two tendencies were sharply asymmetrical, the equalising tendency would dictate the authorities' responses to the Aral regression, who shaped the terms of the question according to their own departmental interests within the discursive constraints they faced. This point is crucial for how people look back on the Soviet period today.

Chapter 2. Seeing like an apparatchik: A problem of living standards and employment

A 1962 document signed by the vice-chairman of the South Kazakhstan Sovnarkhoz, outlining measures for the development of the Aral fishing industry, begins:

> As a result of (*v rezul'tate*) the deterioration of the hydrological regime of the sea and the rivers Amu Dariya and Syr Dariya, [and] the sharp contraction in flow of fresh water into the sea, the raw-material stocks (*syr'evye zapasy*) of the Aral have been under great strain in recent years, and catches of such valuable species of fish as barbel, bream and shemaya are sharply contracting.[1]

Scientists, he went on, predicted that catches on the North Aral would fall from 21,300 tonnes to 15,800 tonnes by 1966. But the vice-chairman made no mention of the cause. Instead, he blamed fisheries managers themselves, relating the rapid fall in *catches* to their failure "to take effective and immediate measures to restore the raw-material stocks of the water-bodies".[2] He therefore instructed managers to carry out amelioration measures, construct artificial spawning grounds and organise acclimatisations of new species. He also urged mechanisation of the fleet, so that catches could be kept at 19,500 tonnes up to 1965.[3] This document is typical of official responses to the sea's regression over the coming years: yet more regulation and reorganisation of resources and people alike, continuing the policies of the previous decades. Indeed, another document criticised the disorganisation of the fishery itself in the same terms as earlier complaints: fishermen were not fishing in brigades, but were scattered at random along inshore waters.[4] As the sea contracted, deep-sea fishing, with newly acquired ships, assumed more importance especially in remote western waters. Certainly, the fishery contracted dramatically, but even after fishing was impossible on the sea after 1978, there was no paradigm shift in the management of the fisheries, and nor could those responsible for the fishery officially voice complaints against irrigation policies.

How did apparatchiks responsible for the northern Aral region view the sea's regression? In official registers, it did not become a 'catastrophe' or 'disaster' until perestroika, when ecological activists turned the issue into a critical event, laying bare interwoven environmental, social and political crises (Wheeler 2016). As environmental issues and the notion of catastrophe gradually entered the language of the state, hope emerged of a radical transformation. But before that, the word 'catastrophic' (*katastroficheskii*) was only used to discuss the collapse of the fish stocks, not the broader situation

[1] TsGARK 1874/1/23:7-20[7].
[2] Ibid.:7.
[3] Ibid.:16.
[4] TsGARK 1130/1/23:95-110.

of the region and its population. If it was not acknowledged as a catastrophe, part of the explanation is evident in the quotation above. Narrative arc is kept to a minimum, as causal connections ('the hydrological regime is deteriorating, so stocks are under stress, so catches are falling') are syntactically reduced to parenthetic background factors through the subordinating phrase 'as a result of'. There is no possibility of asking *why* the hydrological regime is deteriorating. Such language therefore precludes addressing the root-cause of the problem, irrigation, and it is unsurprising that no paradigm shift occurred.

Indeed, in the documents lying in the dust of the archives, at every level of the state, the means for talking about the sea's regression are limited: the 'sharp fall in the sea level' is related to 'the withdrawal of water for the needs of irrigation', which has raised 'difficulties' for the fishing industry to fulfil its plans. Clauses are articulated through mechanical connecting phrases, so that isolated causes and effects are abstracted from their contexts. This is typical of the "contorted redundancy of bureaucratic speech", as Brown (2015:31) aptly describes in a US context.[5] Narrative, which is the basis of moral evaluation (Cronon 1992), is reduced to bureaucratic formula.[6] Ostensibly, these documents suggest that bureaucratic indifference (Herzfeld 1992) to the plight of the Aral region and its population was produced at every level and in every branch of the Soviet state, the myopic vision of Central Asia in terms of irrigation providing an 'ethical alibi'. On the face of it, then the language of the state closes down meaning and restricts other ways of talking about the sea's regression (cf. Cruikshank 1998:ch.4). The forms of discourse open to bureaucrats precluded construction of the issue as a critical event.

But the evidence here suggests that apparatchiks were far from indifferent to the Aral's plight. In the 1970s, there was some official recognition of a crisis, which prompted a number of development interventions in response to the changing environment, which we examine in the next section of this chapter.[7] Furthermore, while the port closed, other enterprises in the region kept going, notably the

[5] Yurchak (2005) draws attention to the redundancy of late Soviet ideological discourse, an argument that can be applied to bureaucratic discourse too.
[6] Graeber suggests that bureaucratic operations preclude narrative (2015:106).
[7] Despite the Aral's specificity, its story in the late Soviet period mirrors stories of other peripheral parts of the USSR. Elsewhere in Central Asia after World War Two, populations were relocated (Loy 2006, Bichsel 2012), infrastructures developed and land use transformed (Reeves 2014:ch.2). Indeed, cosy clientelist relations between Brezhnev and Central Asian leaders meant that investments for development continued. Further afield too, development went on: in Siberia, Grant (1995) proposes a 'century of perestroikas'; Ssorin-Chaikov (2003) describes how the failures of state interventions were the loci for future state interventions. Expansion of paperwork, supposed to propel remote populations into modernity, was belied by the continued chaos on the ground (Ssorin-Chaikov 2003:132). There were similar patterns of relocation and consolidation among remote Russian fisheries where there were no environmental problems on the scale of the Aral (Nakhshina 2011:46, Wilson 2002).

fishery: as we see in the second half of this chapter, measures were taken to keep the industry going, mainly through importing frozen ocean fish, and sending fishermen to fish on other lakes. After a sharp contraction in the 1960s and early 70s, the fishery stabilised, and kept going, in permanent crisis, but in many ways a typical stagnation-era enterprise. In the Moinaq fishery on the Karakalpak shore too, ocean fish were imported (Karimov et al. 2005:90), while the fishing operation moved away from the sea to newly created reservoirs across Uzbekistan, where aquaculture yielded 20-25,000 tonnes per year (Karimov et al. 2009:3).

This chapter explores why the Soviet authorities responded in the way they did. Interventions did not simply respond to material changes, but to the way in which these changes were discussed, as the complex effects of the sea's regression were inscribed as problems, loci for state interventions (cf. Ssorin-Chaikov 2003). Apparatchiks' perspectives on environmental change are significant: if, as I argued, the irrigation vision was, *pace* Scott (1998) not so much that of the state as that of specific interests, it follows that other apparatchiks, with their own interests, had their own visions. No state is a monolith, and, while bureaucrats might write like cogs in a machine, the Soviet state was not a homogeneous cohesive machine. Apparatchiks were entangled in a web of dependencies, obligations and constraints. At any level, managers were obliged to fulfil plans set by superiors, but were dependent on superiors for inputs, and also dependent on those beneath them to fulfil the plan. The shortage economy also created constraints in fulfilling the plan; bureaucrats, responsible for their sector or region, were thus set in competition with each other over the allocation of scarce resources (Kornai 1980, Verdery 1996). In the Aral context, the deteriorating environment was a further constraint, increasing local managers' dependency on superiors. These structural constraints and dependencies have discursive implications: the 'speech will' (Bakhtin 1986[1953]) of bureaucrats depended, in part, on their position within these entanglements. The Aral Sea may have been doomed by the dominance of irrigation interests, but there were plenty of actors at different levels of the state who cared about it: whether or not they cared about 'nature', or the livelihoods and health of the people working and living there, they were structurally inclined to care about their domain, and thus to view the issue in a particular way. Of course, they may also have been interested in their personal enrichment, as became clear in the 1990s, but their departmental interests cannot be reduced to their personal interests.

Thus the 'needs of irrigation', while an ethical alibi for some, were a discursive constraint for others. Bakhtin (1986[1953]), elaborating his critique of the Saussurian view of language as an abstract set of rules, introduces the notion of 'speech genres': speech genres are marked by varying degrees of

constraints on what may be said; while some are very free, even the strictest contain some element of freedom. The speech genres open to bureaucrats writing to higher authorities about the Aral's regression were particularly constrained, as they had to follow the 'authoritative utterances' of superiors which 'set the tone' (Bakhtin 1986[1953]:88). There were constraints not only on what may be said but on *who* may be addressed: there was no official speech genre in which a fisheries manager could complain to water management organisations. But although discursive resources were unevenly distributed across different departments and regions, within many of these speech genres, there were certain affordances. As we shall see, bureaucrats appealed to other rationalities than the cost/benefit analysis. Furthermore, the sea's regression could be used as a rhetorical tool for seeking investment or negotiating a lower plan.[8]

Constrained, therefore, by the deteriorating environment and by the linguistic resources to address it, bureaucrats came to see the sea's regression as a particular sort of problem, an economic problem, thereby rendering it technical and depoliticising it (cf. Ferguson 1994, Li 2007). This was also a myopic vision: it scarcely saw other effects such as the dust storms, or the damage to human health. But it was materially consequential (cf. Pritchard 2013). I thus argue that the sea's desiccation, though not officially acknowledged as an environmental disaster, was discursively shaped as a particular sort of problem by authorities at different levels. This therefore forms an instructive comparison to post-Soviet projects which responded specifically to environmental disaster.[9]

This chapter is necessarily limited to public discourse: 'hidden transcripts' (Scott 1990) do not lie in the dust of the archives, though they doubtless played a role in negotiations between different branches of the state. Privately, officials may well have been appalled at what was happening to the sea. The documents I saw offered only tantalising glimpses of this offstage discourse, when bureaucrats endeavoured to drag it onstage, as we see at the end of the chapter. But even within official discourse, there is space for heterogeneity, competing claims, and hence some agency.[10] If

[8] Kaneff (2004) shows how local administrators in Bulgaria mobilised the past to connect with the centre and compete over allocation of resources. The discursive resources in this context are different, but the logic is similar.

[9] My approach differs from other important accounts of bureaucratic writing: Gupta (2012:ch.5) sees bureaucratic writing as a form of performance, where form is more important than content in shaping relations between bureaucrats and clients; Riles (2000) argues that, for activists and bureaucrats, conforming to pre-existing patterns in documents is more important than making coherent sense. But in some of the documents explored here, form is not only consequential per se, but in the way it shapes content. More broadly, if ethnographies of bureaucracies often focus on the mismatch between bureaucratic claims to abstract rationality, and the arbitrariness of bureaucratic action (Herzfeld 1992, Alexander 2002, Gupta 2012, Graeber 2015), I focus on the different sorts of rationality which particular interests appeal to.

[10] Similarly, Kotkin (1995) and Yurchak (2005) break down the opposition between compliance and resistance, agency and passivity, thus critiquing the view of the USSR as a totalitarian state. For Kotkin, getting by in Stalinist USSR

much focus in political ecology falls on resistance and affirmations of agency, I here illustrate what forms of agency are open within severe constraints.

Improving living standards by decrees

Despite the 1965 resolution by the Presidium of the Council of Ministers of USSR to preserve the sea's fishery significance (*rybokhoziaistvennoe znachenie*), no investments in the Aral fisheries followed, and the amount of water reaching the sea continued to decline. In 1969, the Kazakh Council of Ministers (Kazsovmin) referred to the resolution in an attempt to get investment in the Aral region from the USSR Fisheries Ministry (Minrybkhoz) and the USSR Water Management Ministry (Minvodkhoz).[11] But although the resolution was a discursive tool to bolster the case for investment, no investment followed.[12] Furthermore, the decision to preserve the sea's economic significance did not trump the needs of irrigation. So in their 1969 letter, Kazsovmin asked Minrybkhoz USSR and Minvodkhoz USSR to petition Sovmin USSR "about hastening the resolution of the question of preserving the Aral Sea by means of diversion of the flow of Siberian rivers".[13] It was thus possible to talk about preserving the sea itself only on the basis of diverting Siberian rivers, a project approved at the highest level; otherwise, within the limits set by the necessity of irrigation, it was only possible to talk about saving the Aral's 'fishery significance', which in practice related only to delta lakes – and talk did not easily translate into action. One arm of the state continued as normal, causing the environment to deteriorate at an accelerating rate; for other state organs, preserving even the economic significance of the Aral was a race against time. By the early 1970s, the situation was worse than foreseen: a 1973 Union-level commission forecast, accurately, that the 'industrial significance' of the sea would be almost entirely lost by 1980.[14]

The Kazakh authorities now began to shape the regression as a technical problem, one of employment (*trudoustroistvo*) and living conditions (*sotsiial'no-bytovye usloviia*). During the 1970s, given that a holistic resolution of the sea's problems was out of the question, their approach was more limited. One solution to the problem of living standards was *pereselenie*, deportation/relocation. Over the course of the 1970s populations of former islands were relocated to Qaratereng, while inhabitants of

depended on 'speaking Bolshevik', while Yurchak argues that ideological pronouncements in the late Soviet period had become devoid of semantic meaning; participating in this discourse was neither a matter of belief nor cynical public conformity, but a performance which enabled a wide array of meanings to emerge in everyday life. My angle is rather different: for Kotkin and Yurchak, conforming with official discourse is the precondition for agency; my point is that even within the constraints of official discourse, some agency is possible.

[11] TsGARK 1130/1/843:97.

[12] TsGARK 1130/1/910:93.

[13] TsGARK 1130/1/843:99.

[14] Referenced at TsGARK 1130/1/1692:26.

the villages Ūialy and Ūzyn Qaiyr, far to the south of the delta, with no fresh water, were relocated to Aral'sk itself, continuing earlier policies of settling and concentrating populations. But while the USSR Fisheries Ministry raised the possibility of relocating *all* the coastal villages to another region altogether, this met stiff resistance from the Kazakh authorities, and indeed from the local population.[15] Thus, as outlined in a 1973 directive of Kazsovmin, living conditions in villages were to be improved through construction of water pipes, field hospitals, schools, nurseries and shops; and villagers were to be provided with feed for their livestock and Ural motorcycles.[16] Work was also carried out on amelioration of lakes and the creation of lake fish farms (*ozërno-tovarnye rybokhoziaistva*), while investment was sought for other sorts of employment, most importantly a canning factory in Aral'sk.

Why was the problem shaped as one of employment and living standards, rather than, for example, one of falling economic output? First, both fisheries bosses and regional officials wanted investment from higher bodies. 'Investment hunger' was characteristic of every branch of socialist economies (Kornai 1980). Industry bosses identified with their sector and regional leaders with their region, the sources of their political power, and they were preoccupied with the daily difficulties of managing their sector or region amidst shortages. As ecological conditions deteriorated, the resultant new constraints shaped what sort of investment was demanded. Secondly, the tacit social contract of state socialism rested on full employment and steadily rising living standards (Verdery 1996). As we saw, living standards in the Aral region had always lagged far behind the metropolitan regions of the USSR. Furthermore, in Central Asia there were not enough positions in the formal economy for the rapidly growing population (Lubin 1984). As the sea dried up, the worsening living standards, falling pay, and layoffs further jeopardised the social contract. This point dictated the sorts of investment which regional and sectoral bosses sought. After all, the violation of the social contract was a direct threat to their own legitimacy. Furthermore, their superiors were more likely to look kindly on demands for investment couched in such terms. Within the discursive constraints outlined above, these considerations shaped the sort of demands that were voiced, and hence the particular construction of the Aral Sea problem.

However, as Kornai (1980) argues, allocative bodies tended towards postponement, because savings from postponement were immediate, certain and quantifiable, even if in the long run this meant higher

[15] TsGARK 1130/1/1484:66-67, 91-93.
[16] TsGARK 1130/1/1484:2.

social costs and more investment needed to sort the problem out. Furthermore, amidst investment tension, most spare funds were being used for investment in cases which had reached tipping point. So investment only happened after 'tolerance limits' had been reached, after the problem had become a crisis. But, Kornai argues, there was nothing automatic in the recognition of tolerance limits. This point was particularly salient in a 'creeping environmental problem' where change was incremental, and thresholds were not objectively given (Glantz 1999b). Many of these documents show bureaucrats struggling, within discursive constraints, to establish that tolerance limits had been breached, while higher level authorities sought to downplay the problem so as to avoid assigning funds. In this process, the loss of the sea was shaped as a particular sort of fact.

Accordingly, a series of resolutions was passed by Kazsovmin about living conditions and employment. Each was preceded by correspondence between Kazsovmin, the planning body (Gosplan KazSSR), the fisheries ministry (Minrybkhoz KazSSR), and the Qyzylorda oblast authorities (obkom/oblispolkom). Minrybkhoz and oblast authorities sought investments, to varying degrees of success. For example, in 1974 Minrybkhoz KazSSR tried to insert a clause to ask Minrybkhoz USSR for investment for hatcheries in the Syr Dariya delta and a fish farm on Aqshatau lake system, and for assistance in relocation of villages, which "cannot stand further delay since the social conditions of the existing villages are difficult".[17] But the attempt to establish tolerance limits was unsuccessful: when the resolution was drafted by Kazsovmin, there was no reference to investment from Minrybkhoz USSR (although the *Kazakh* Minrybkhoz was told to allocate funds for construction of water pipes).[18]

The following year, a letter from Qyzylorda obkom/oblispolkom prompted another Kazsovmin resolution. This letter, in which the regional authorities strive to make their voice heard, begins with some flourish, and an unusual sense of narrative arc:

> The Aral water-body is one of the oldest fishery basins in the country. In the past on the Aral Sea up to 500 thousand tsentners [50,000 tonnes] of high-quality table fish were extracted (zander, asp, carp, barbel, bream, roach). However since 1965 the Aral Sea and the fishery lakes of the oblast, because of the sharp increase in the abstraction of water from the rivers Syr Dariya and Amu Dariya for agricultural needs, have been shallowing, which has led to a serious deterioration in the natural reproduction of fish stocks in the basin and reduction in the volume of fish catches.[19]

The description of the sea's shrinking is determined by the discursive constraints already discussed:

[17] TsGARK 1130/1/1484:82.
[18] TsGARK 1130/1/1484:78-80.
[19] TsGARK 1137/1pr/4721:163.

the needs of agriculture are a parenthesis – after all, the oblast authorities benefited from the development of irrigation in Qyzylorda oblast for rice. But the emplotment in the glorious past, though exaggerating both quality and quantity, rhetorically boosts the claim for investment. The authors note efforts to maintain water levels and fish stocks in lakes, but stress that these measures cannot solve the problem of employment. They therefore make a series of requests, "in the interests of preserving a contingent of fishermen and workers in the fishing industry and making full use of the labour resources existing in the region".[20] The most significant request is to include in the tenth Five-Year Plan the construction of a canning factory in Aral'sk, processing 20,000,000 cans per year, employing 500 people – a clear case of investment hunger. Other requests are for hydrological installations on lakes, and also for the hastening of the construction of the Qambash fish farm; for funding for flats in Aral'sk for relocated families; and money for loans for fishermen to build new houses. There are also smaller requests for the fishing industry in light of the difficulty of reaching the sea, including refrigerated lorries for receiving fish, mobile banyas, Ural motorbikes for fishermen, trucks to transport drinking water.

If the oblast authorities were rather florid in their introduction of the problem, this was more muted in the final resolution of Kazsovmin, 'About measures for labour organisation (*trudovoe ustroistvo*) of fishermen of the Aral region and improvement of their living and cultural conditions'. It began:

> In the interests of improvement of everyday cultural conditions of fishermen of the Aral region and employment of workers in the fishing industry who have been released (*vysvobodivshiesia*) in connection with the contracting fishery on the Aral Sea, the Council of Ministers of Kazakh SSR resolves: […][21]

The constraints of the speech genre are evident: the participle phrase 'the contracting fishery' conceals both the glorious past described by the oblast authorities and the reasons for its contraction, while the euphemistic *vysvobodivshiesia* disguises the problem of employment as the natural consequence of a normal process. Not all the demands of the oblast authorities were met. The resolution approved the construction of the Qambash fish farm and other interventions in delta lakes, and instructed Gosplan KazSSR to assign necessary equipment. It also included a range of measures to improve living conditions, including water pipes and field hospitals. It approved the decision to relocate 520 families from remote villages to the town of Aral'sk, and instructed Minrybkhoz KazSSR to build housing for them, and Gosplan "to provide measures for improving the use of labour resources of the Aral region [...]".[22] But despite this vague gesture towards providing employment for the relocated families, the

[20] TsGARK 1137/1pr/4721:164.
[21] TsGARK 1137/1pr/4721:139-140(139).
[22] TsGARK 1137/1pr/4721:139.

obkom/oblispolkom's central demand for a canning factory did not feature anywhere in the resolution.

In 1976, the pattern was repeated. A letter from the obkom/oblispolkom stressed the effects of the sea's desiccation on water provisioning, transport of foodstuffs, the fisheries, the shipyard and the port. The effects are stark: "This has led to the reduction of workers in the last ten years by 2000 people. At the present time in the whole the Aral region it is not possible to provide with work 10,500 people capable of work (including 6,000 women), of whom in the town of Aral'sk 6,600 people (including 2,300 women)."[23] Statistics thus simplify the complex ecological crisis into an issue of employment, which was in fact broadly typical of Central Asia.[24] They are also blind to the informal means by which people supported themselves, whether by keeping private livestock, or by trading (cf. Lubin 1984). But statistics baldly indicate that tolerance limits have been reached, and shape a severe problem of employment, which requires investment.

The resulting decree from Kazsovmin, "On urgent measures for the further development of the economy and improvement of everyday-cultural conditions of the population of the Aral region of Qyzylorda oblast",[25] included only some of the obkom/oblispolkom requests. The canning factory *was* now included in the decree, as well as new fish farms. But funds were not allocated: Minrybkhoz KazSSR was to 'discuss' it with Minrybkhoz USSR. New enterprises in Aral'sk were planned, including a sewing factory and a meat processing plant; but the oblast authorities' other requests, such as a glass factory and a brick factory, did not make it into the decree. According to the decree, fishermen's pay also rose to compensate for falling catches. The oblast authorities had also requested that, in accordance with a previous directive, Minvodkhoz KazSSR be obliged to deliver 50m^3/s (1.57km^3/yr) of water below Qazaly, for the watering of lakes and fish farms;[26] but in the final decree, this figure was to be defined each year by Minvodkhoz, in dialogue with Minrybkhoz. Finally, because rising salinity was killing off native species, in the pattern of earlier acclimatisations, flounder, a saltwater fish, was to be introduced, "in the interests of making fuller use of the biological resources of the Aral Sea".[27] This intervention was to be significant only after the Soviet Union

[23] TsGARK 1137/1pr/5145:162.
[24] These figures represent approximately 30% of the working-age population. See Lubin (1984:58) for comparisons.
[25] TsGARK 1137/1pr/5145:118-119.
[26] Before 1960, annual inflow to the sea from the Syr Dariya was 13-16km^3 (Asarin et al. 2010:119).
[27] TsGARK 1137/1pr/5145/119. Acclimatisations in the 1950s had sought to cater for less freshwater inflow, but, according to Plotnikov et al. (2014:64-65), the way these were carried out went against scientific recommendations: instead of starting from the plankton base and working up the food chain so as to reconstruct the whole ecosystem, only fish were introduced, which then competed with the native species. See e.g. Mitrofanov et al. (1992:379-382) for the destructive effects of those earlier acclimatisations on the indigenous ichthyofauna.

collapsed.

In sum, Kazsovmin did recognise that tolerance limits were reached and postponement was not possible. But not all the demands were fulfilled, and many measures were tacitly postponed simply by not allocating resources. Nevertheless, according to later reports on the progress of implementing these resolutions, some concrete action ensued.[28] Relocated populations from islands were provided with housing in Aral'sk, and hospitals, shops and schools were built in villages. A stud farm was established at Qūlandy to provide employment. Water pipes were (eventually) built to most villages, while others were provided with wells. A water-purifying station was built at Amanötkel in 1977, although this could not mitigate the heavy mineralisation of drinking water caused by agriculture (Elpiner 1998). Electricity was provided to many villages for the first time. In other words, some basic aspects of state-socialist development, new forms of connection, which had long been absent from the region, finally arrived. But not all measures were fulfilled. Two fish farms were created, but they did not receive funding from Minrybkhoz USSR, who refused to assign funds before water provisioning for the lakes was guaranteed in the integrated plan – which never materialised. Indeed, since the decree stipulated that Minvodkhoz KazSSR should define the quantities of water to be delivered to the lower reaches of the Syr Dariya, this varied from year to year. In 1981-1982, total flow below Qazaly was more than the oblast authorities had requested, 1.63km^3 and 2.04km^3 respectively, in 1983 much less – just 0.39km^3.[29] Some of the major enterprises to provide work were cancelled: the sewing factory was never built; the canning factory, for which funds had been unsuccessfully sought from Minrybkhoz USSR, was cancelled by decree of Kazsovmin in 1982; and the meat-processing factory was cancelled. The 'problem of employment' was not fully resolved.

In 1984 another letter from the obkom/oblispolkom to Kazsovmin sought help for the Aral region. Gosplan carried out some investigations, focused on the village of Qaratereng, which noted the positive results of the measures taken. But they also found that there was still a labour surplus in the village, comparable to that identified in the region nearly ten years earlier – and, the investigation found, most of the population categorically refused to leave, for reasons we explore in chapter 4. Gosplan's solutions were more of the same: Minvodkhoz was to guarantee 30m^3/s (0.95km^3/year) below Qazaly; the Ministry of Agriculture was, in compensation for the damage done to the fisheries, to allot funds for building a dam on a delta lake; electricity lines were to be built to power pumps for

[28] Progress on implementation of the resolutions is summarised at TsGARK 1130/1/1830: 17-20; 1130/1/2484:44-54.
[29] TsGARK 1130/1/2484:48. Over the 1980s, water reaching the Syr Dariya delta averaged 1.1km^3/yr (Micklin 2014b:125).

the lakes.[30]

Thus even when investment was allocated, it could never resolve the root causes of the region's problems, namely lack of water. Critically, because of the discursive constraints of these speech genres, the problem could only be constructed in a limited way, disaggregating cause and effect. In a mechanical chain of consequences, regulation of rivers is a parenthetic background factor. The end consequence is a technical problem of 10,500 surplus workers – 10,500 individual stories packaged as a statistic which is mobilised as bureaucrats jockey for resources. Seeing the problem as one of living standards meant some investment in basic infrastructure, but this vision excluded the problems of dust-storms and polluted water supplies. Constructed as a problem of living standards and employment, the desiccation did not constitute a critical event mobilising large-scale transformation.

But, as we see in the following chapters, the Soviet period is remembered as a period of full employment. Employment *was* provided in Soviet times, if not the full employment which was promised. Certainly, the fishery contracted dramatically. In the post-war period, about 8000 people were working in the industry, including two to three thousand men and women fishing on the sea, lakes and lower reaches of the Syr Dariya.[31] Over the coming years, the fishery on upstream lakes in Qazaly raion sharply contracted as irrigation for rice was developed. Fisheries in uninhabitable villages like Ūialy and Ūzyn Qaiyr were liquidated. By 1970, the number of people fishing had fallen to about 650.[32] Because fishing is talked about as an exclusively male activity today, it seems likely that women were the first to stop fishing as the fishery contracted over the 1960s, though they continued to work in processing-plants. In 1976, Avan' fish plant was liquidated, and some of the fishermen from Aqespe and Aqbasty villages were laid off, and transferred to the nearby Qūlandy stud-farm.[33] But this was the last case of an entire enterprise being liquidated and workers laid off until perestroika. If challenging the needs of irrigation was politically unconscionable, so was suggesting layoffs.[34] The goal of the enterprise shifted from exploiting the wealth of the sea to supporting the workers in region, and Aralrybprom went on employing some 2000 people: fishermen mostly in coastal villages, and workers, mostly women, in processing plants in Aral'sk, Bögen, Qaratereng, Qazaly, and Aqtöbe to the north. Although the port closed, analogous processes kept

[30] AFGAKO 4/1/719:8-12.
[31] TsGARK 1874/1/18:1, AFGAKO 4/2/10:43.
[32] TsGARK 1130/1/1484:189.
[33] AFGAKO 4/1/516:33
[34] This point was forcibly voiced by an Aralrybprom accountant at a Minrybkhoz meeting in 1986 (AFGAKO 4/1/802:41).

people working in the shipyard and other enterprises in Aral'sk.

Fish farms

As the industrial character of the Aral Sea disappeared, attention turned to developing fish farms (*ozërno-tovarniia rybokhoziaistva*) on delta lakes. They were, in part, a continuation of previous policies of amelioration: they seemed to promise a new way of managing nature, ensuring a sustainable supply of fish, and employment, over the years.[35] Lakes were to be provided with fresh water, cleared of weeds, and stocked with valuable carp; fishing effort was to be regulated; and it was claimed that they would provide up to 4500 tonnes of fish.[36] Even as the environment deteriorated, the *ozërno-tovarnoe rybokhoziaistvo* offered a form to be regulated. Yet the promise of control was, as ever, frustrated. After farms were established, further decrees were necessary to ensure the 'rational use' of the farms, involving stocking, cleaning canals, pumping in fresh water.[37] Weeds and low-value fish like pike were not in fact removed.[38] All lakes were supposed to be assigned to a single enterprise or kolkhoz, which was to be responsible for the lake, but poaching was rife; and inspectors and managers did little to stop it. An order from 1981 found enterprises fishing on forbidden lakes; in one instance, a local manager was complicit.[39] Given the difficulties of fulfilling the plan in the deteriorating environment, such behaviour is unsurprising.

The biggest constraint on the development of fish farms was, of course, lack of water, which lay far beyond the control of fisheries managers. But within official speech genres, blame could only be passed downwards, not upwards and/or sideways to Minvodkhoz for example. Thus a 1984 Minrybkhoz USSR commission sternly instructed Minrybkhoz KazSSR to ensure that lakes were supplied with water – although the commission explicitly recognised that water-management institutions were failing to assign water for fishing. The commission also criticised an absurd situation whereby Qambash, an important fish farm, was being used by subsidiary enterprises in Aral'sk, who were growing water-melons along its shores, withdrawing water and polluting with pesticides.[40] The fisheries authorities were well-aware of this – and had complained about it to the town authorities, who, it turned out, had been organising it! People from the town had even been keeping boats and nets there – a hint of the informal practices which lay behind the official statistics of dire

[35] On the southern shore, from the 1980s similar efforts were made to rehabilitate the Amu Dariya delta (Micklin 2014c:376).
[36] e.g. AFGAKO 4/1/666:5.
[37] e.g. AFGAKO 4/1/479:107-109.
[38] AFGAKO 4/1/549:17. See also Mitrofanov et al. (1992:401), who blame both the shortcomings of fish farms themselves, and the 'objective' factor of lack of water.
[39] AFGAKO 4/1/660:27-28.
[40] AFGAKO 4/1/718:16-17.

unemployment.[41]

Meanwhile, Aralrybprom managers blamed those below them for failing to stock lakes and for failing to supply them with water. In 1984, they complained that Lake Aqshatau, managed by kolkhoz Zhambul, had not been watered since 1970.[42] Furthermore, they found that kolkhoz Raiym had taken things into their own hands: their lake was separated from Lake Qambash by a dam, which the kolkhoz managers had destroyed, presumably to raise the level of their own lake. This behaviour prompted the ministry to remove the lake from the kolkhoz's control. But a delegation of kolkhozniks to the ministry successfully requested that it be returned to the kolkhoz; the ministry even agreed to put in a sluice to improve water-supply to the lake.[43]

In the early 1980s, the Syr Dariya was dammed at Aghlaq, so that what little water there was would not flow into the sea itself but could be used on the lakes and provide drinking water. Sluices were installed on various lakes. But there was never enough water. In 1985, a famous brigadier fisherman and Party member, Narghaly Demeuov, wrote a letter in the oblast newspaper criticising Aralrybprom. The managers defended themselves by blaming water-management organisations, in particular for failing to build a dam at Qarashalang which would provide for the 'rational use of limited water resources'. Kazsovmin had decreed that water management organisations build this dam, but five years later, they had failed to do so.[44] But although fisheries managers could make these points to defend themselves in the press, there was no official channel for them to address the water management organisations directly.

Expeditionary fishing and ocean fish

Nevertheless, these lakes were far from useless. In 1979 the total caught in the lakes of Qyzylorda oblast was 1153 tonnes; in 1988, 1540 tonnes.[45] But they could not provide enough work for fishermen or processors. Thus fishermen were sent to fish on lakes hundreds or thousands of kilometres away in other parts of Kazakhstan: if earlier in the century fishing labour had been deployed in places where resources were abundant and labour in deficit, surplus labour was now dispatched to regions where there were resources left to exploit. But *all* the major lakes in Kazakhstan were damaged by the insatiable demands of agriculture, and fish stocks all over the country were

[41] AFGAKO 4/1/718:15, 23.
[42] AFGAKO 4/1/707:1-3.
[43] AFGAKO 4/1/718:40-41.
[44] AFGAKO 4/1/760:45-49.
[45] AFGAKO 4/1/622:49, AFGAKO 4/3pr/935:13.

under pressure.[46] The most obvious place for Aral fishermen to fish, the Caspian, was out of bounds, as it was not managed by Minrybkhoz KazSSR but by a trans-republican authority. Most promising were the lakes on the Yrghyz river in Aqtöbe oblast, some 300km north of Aral'sk. The Yrghyz lakes, though initially poor in ichthyofauna, were successfully stocked with carp, which grew rapidly and proved the basis of a successful fishery. The two biggest lakes in the country, Balqash and Zaisan, had their own fisheries. Kolkhoz Zhambul fished on Balqash from 1976, and in 1978 a Minrybkhoz decree allocated Aralrybprom a sector of north-eastern Balkhash, "in the interests of full development *(osvoenie)* of the lake".[47] In this remote region Aralrybprom set up a receiving station with a salting workshop. This sort of fishing, described in the documents as *ekspeditsionnyy lov*, 'expeditionary fishing', was contingent on permission from Glavrybvod, a regulatory body directly subordinate to Minrybkhoz USSR, not Minrybkhoz KazSSR. As a practice of providing employment, it was constrained institutionally, and by the limits of a damaged environment. This was not full-time work, though fishermen were paid extra for the time away (*komandirochnye raskhody*). When not fishing, they would be employed in 'subsidiary enterprises', gathering hay, tending to Aralrybprom livestock. Whether on delta lakes or other lakes in Kazakhstan, fishermen were found to violate rules about catching juveniles, and managers were reprimanded for showing little oversight.[48]

In 1979, 1887 tonnes were caught from other oblasts, in 1988, 3420 tonnes.[49] But while fish from these lakes and from the fish farms near Aral'sk would be processed in Aralrybprom factories, the majority of fish processed was from the oceans – vast enterprises deploying factory-ships in the far east (Dal'ryba), the north (Sevryba), and the west (Zapryba). Pollock, capelin, herring, sardine, sardinella, mackerel, horse-mackerel: all were brought in refrigerated railway wagons to Aral'sk and small plants in Bögen, Qaratereng and Qazaly for smoking or curing. This was common practice in all fish plants in Kazakhstan, because of falling catches, and because fish were deemed important to the diet. From the late 1970s, up to 5000 tonnes a year were imported to Aral'sk. But ocean fish had their own problems, connected with the dysfunction of the Soviet economy: despite their abundance in the ocean, deliveries were highly irregular, and rarely conformed to what was promised, still less to Aralrybprom's annual plans. There was a tendency to dispatch fish such as pollock, which was, unpopular in the USSR as it is in Britain, unprofitable to process.

[46] e.g. TsGARK 1130/1/913:43-45.
[47] TsGARK 1130/1/1710:296-8. The policy is usually described in terms of employment, but in the late 1970s in particular other rationalities explained this practice, such as sorting out the finances of the industry, more profit, etc.
[48] e.g. AFGAKO 4/1/852:148-9.
[49] AFGAKO 4/1/622:49, AFGAKO 4/3pr/935:13.

Because of the cost of importing fish and sending fishermen thousands of kilometres to fish, the enterprise went from being profitable to loss-making, dependent on subsidies from Minrybkhoz KazSSR, which itself was subsidised from the republican budget. Even so, there were almost constant financial difficulties. While output plans tended to be met (after some tweaking) cost of production was generally higher than planned. So, while planned losses were automatically covered by the ministry, there were also over-plan losses; and there was a chronic shortage of circulating assets (*oborotnye sredstva*). From the late 1970s onwards, losses generally oscillated between 500,000 and 1mn roubles per year, sometimes higher than planned, sometimes lower.[50]

Trouble with the bank

But despite the chronic difficulties, the industry kept functioning – in which sense, this is also a typical story of a struggling stagnation-era enterprise. Indeed, while 'financial difficulty' is a result of all the constraints which we have explored so far, it is not, in itself, an insuperable constraint. Kornai (1980) proposes that because socialist enterprises are always bailed out, budget constraints are 'soft', and state socialist enterprises treat money as 'passive': their behaviour is not affected by how much money they have. While this material supports that point, bailouts still required negotiation. After all, only in the 1950s Aral kolkhozy had been liquidated precisely because of financial difficulties. Thus fisheries managers were entangled in a series of constraints and dependencies: the ministry set the plan, and they were dependent both on the ministry, and on their workers to fulfil the plan. They also depended on the local branch of the state bank (Gosbank) for financing everyday operations, particularly purchasing ocean fish.[51] They were constrained both by the dysfunction of the shortage economy and by the deteriorating environment. But there were still some forms of agency open to them as they negotiated their awkward situation. After all, their superiors were also dependent on them to keep the industry going and prevent the crisis worsening.

When negotiating bailouts, all the discursive constraints we have looked at applied: fisheries managers could not protest about the loss of the sea, or claim compensation from Minvodkhoz or from the cotton sector. There was no language for expressing the severity of the crisis, or for addressing anything other than the economic symptoms. Take this 1975 letter to Minrybkhoz KazSSR, seeking to raise the limits for production costs and personnel. Several reasons are cited,

[50] Aralrybprom's total production output was around 10mn roubles per year; that of Minrybkhoz KazSSR as a whole around 40mn roubles per year.

[51] Enterprises were maintained on a minimum of working capital and short-term loans from Gosbank were crucial to everyday operations, which allowed Gosbank to monitor everyday management (Garvy 1977). The local branch of Gosbank in Aral'sk was subordinate to the oblast bank, ultimately subordinate to Gosbank in Moscow, not to Kazsovmin.

including costs of fish from the oceans. Only the fifth reason touches directly on the drying up of the sea:

> As a result of the deterioration of the industrial significance of the Aral Sea and lakes belonging to it, as in fact the first quarter showed, to fulfil the state plan we have been forced (*vynuzhdeny*) to carry out expeditionary fishing in the 2 and 3rd quarters of 20,000 tsentners [2000 tonnes] of fish on the lakes of Aqtöbe oblast, which are delivered to Aral'sk and Aqtöbe fish-plant by auto-transport, which just for the additional transport costs requires more than 450,000 roubles.[52]

The complex ecological crisis is reduced to a single-stranded economic problem (deteriorating industrial significance), a technical problem which obstructs fulfilment of the state plan. The limits of discourse mean that *what* can be claimed from the higher organ is also limited. Nevertheless, claims can be made. Highlighting constraints allows the authors to disavow agency ('we have been forced to'), thus forestalling any charge of mismanagement, and bolsters their claims for leeway. As well as constraints, the speech genre thus has its affordances: reductions in plans and economic assistance could be negotiated on the basis of environmental constraints.[53] Indeed, Minrybkhoz KazSSR and Gosplan KazSSR gave the enterprise considerable leeway, often on that very basis.[54] In turn, Kazakh fisheries ministers would try to negotiate with USSR ministers and with their colleagues in Kazsovmin. Of course, while local managers would highlight only the constraints within which they operated, letters from the ministry would, as well as acknowledging the 'objective reasons' for their difficulties, also blame mismanagement, especially hoarding, and would instruct them to take a number of measures to improve management.[55] But this was a generic feature, part of the performative aspect of the document. It never translated into sanctions from the ministry. Doubtless informal pressure, other ways of talking about the problem offstage, which are not recorded in these documents, also played its part, particularly when Sarzhanov, formerly director of Aralrybkombinat, was Minister of Fisheries in the 1980s.

Relations between Aralrybprom and Gosbank were more fractious, and a file of correspondence between them from 1978-1979 offers insight into the (dys)functioning of the fishing industry. Gosbank was less interested in Aralrybprom meeting its plan than in it sorting out its chronically dire financial situation and improving its 'economic efficiency'. Thus further bargaining was necessary to secure loans to cover shortages in working capital and purchase of ocean fish. On Aralrybprom's side, correspondence draws attention to a permanent state of 'temporary financial difficulty', which

[52] AFGAKO 4/1/504:7.
[53] e.g. AFGAKO 4/1/718:20.
[54] AFGAKO 4/1/504:110.
[55] AFGAKO 4/1/549:32-37.

managers blame on: irregular delivery of ocean fish; the high expense of fishing on Balqash; the failure of the ministry to top up their working capital as promised; shortage of railway wagons delaying dispatch of finished production – all factors beyond the control of the fisheries managers. Managers also voiced the measures being taken to rectify the financial situation: sending their fishermen to the southern Aral (before 1978) and Balqash, and making full use of the delta lakes. They would stress that the factory was working as hard as possible to process all the fish which had arrived so as not to accumulate excess stocks, and that they were trying to get hold of profitable fish.

In reply, Gosbank would never mention the desiccation of the sea – although Aral'sk Gosbank managers would have been all too aware of the disappearance of the sea from the town. They focused on the overdue loans owed by Aralrybprom to the bank and to deliverers; their over-expenditure on pay and travel expenses; their hoarding of materials, especially fish; and their failure to call in debts owed to them. Threats would involve 'special regimes of financing', which aimed to reduce indebtedness. In general, these threats would be discussed at Gosbank meetings, where it would be decided to postpone the application of the regime on the basis of promises from Aralrybprom directors. Gosbank may also write to the republican office of Gosbank, and ask them to help Aralrybprom via Minrybkhoz.

Faced with a threat of a special regime of financing, Aralrybprom managers would write to the ministry for help. There would be less explanation of the root causes of the problem than in letters to the bank – a sign, perhaps, of a more sympathetic addressee. The standard format was simply to state the shortfall in working capital, the various overdue loans, and the threats from Gosbank, before requesting a loan or subsidy. A particularly desperate telegram from 1978 adds that deliverers of ocean fish are refusing to deliver because of problems paying them, and that the enterprise will be 'paralysed' without the ministry's help.[56] In this instance, they request that the minister petition the republic office of Gosbank for a 1mn rouble loan. And, generally, special regimes of financing would be avoided. But when one such regime was applied, in 1979, the director and accountant of Aralrybprom were able to write to the local manager of Gosbank:

> The experience of recent years has shown that when the association Aralrybprom has experienced tough financial difficulty, Minrybkhoz has always come forward and through the Ministry of Finances has paid off all the debt on Gosbank loans.[57]

The letter continues to note that the fishery on local lakes and on Balqash is going well; that an

[56] AFGAKO 4/1/592:90.
[57] AFGAKO 4/1/631:8.

agreement has been reached with Zaprybsbyt about more marketable ocean fish like mackerel and horse-mackerel; 'experienced comrades' are being sent all over the USSR to choose suitable fish for processing. A week later the regime was cancelled.

Gosbank was also under constraints. Their goal was to make the enterprise run more efficiently, but the only pressure which they could apply threatened the working of the enterprise altogether, and in the stagnation era the rationality of meeting plans – not to mention keeping people in work – trumped that of economic efficiency. An internal Aralrybprom document from 1979 mentions that the local bank has applied to the oblast office of the bank to apply the most serious sanction of all: forced sale.[58] But there is no mention of it anywhere else. While, from a strictly economistic perspective, it was the only viable solution to a chronically failing enterprise, it was politically and socially unconscionable: the rationality of economic efficiency was subordinate.

The limits of bureaucratic discourse

Thus the industry limped on. In the local archives, after a flurry of correspondence in 1978-9, there is no more about financial difficulties until 1985, but there is no reason to suppose that they went away. Indeed, files from 1985-6 containing the correspondence from that year and the following years between Aralrybprom, Minrybkhoz and Gosbank, follow the same pattern as earlier documents. But in some letters from Aralrybprom managers there was a shift in the language used: a new level of exasperation, and bureaucratic discourse almost breaks down. In late 1985, Gosbank applied a credit sanction without warning and cut off all forms of credit. In outrage, the director and accountant wrote to the oblast office of Gosbank, sending copies to the ministry, the republic office of Gosbank, and the local office.[59]

After explaining how the regression of the sea has led to the necessary reorganisation of the fishery so that it is based on ocean fish and expeditionary fishing, the authors state bluntly:

> The sharp retreat of the sea has caused anxiety (*vyzval bespokoistvo*) for the local inhabitants, and they have started moving to other life favourable regions of south Kazakhstan (*drugie zhiznennye blagopriiatnye raiony iuga Kazakhstana*).[60]

This is the most evident expression of concern for the local population that I found in the archives – and the closest to their voices. But the Russian is strange. As Bakhtin (1986[1953]:80) notes, even

[58] AFGAKO 4/1/630:62-63.
[59] AFGAKO 4/1/761/24-28.
[60] AFGAKO 4/1/761:25.

people competent in a language may lack the generic repertoire to partake in certain forms of discourse. Here the writers, native Kazakh-speakers, are well-schooled in official bureaucratic genres of Russian, but as their speech incorporates other forms of discourse about the sea, arguably it exceeds the limits of those genres, and the Russian becomes ungrammatical. They continue:

> In the interests of supporting the indigenous fishermen and processing workers of the Aral, the TsK KP Kazakhstan and Kazsovmin have adopted a special decree, where it is categorically forbidden to dissolve any sections, brigades, units, both of fishermen and processors. Accordingly technical-economic assistance has been given, both of an individual and societal character of production (we adduce these facts for the information of the employees of the bank who are not acquainted with the exhausted [?] situation of the Aral and with its labourers [*s istomnym* [?] *polozheniem Arala i s ego truzhenikakh*]).[61]

There is thus a further constraint, imposed by higher authorities: no workers are to be laid off. The parenthesis at the end of the paragraph is sarcastic: the employees of Aral'sk Gosbank would have been well-acquainted with the Aral's situation, which far exceeded the limits of official discourse. With this phrase, the authors, usually restricted by generic rules to talking just about the 'loss of industrial character' or 'deterioration of hydrological regime', gesture towards the whole complex of ecological, economic and social effects, and the sorts of discourse with which people were talking about them. Official discourse holds a trace of hidden, off-stage transcripts.

The authors go on to complain that, although the plans have been fulfilled and Minrybkhoz is helping, the financial situation has deteriorated, and all the frustration bubbles over:

> Consequently, just for the normal work of the Association, a constant overdraft limit of no less than 1.5mn roubles is necessary; factually the matter far from corresponds to what was expected, since ocean raw-material from the main basins of the USSR arrives with interruptions (*s pereboem*); everyone knows that fish is not ore, or coal; suppliers dispatch whatever they have in stock. Here we are forced to accept without analysis of species of fish, whether they are included in the plan, whether they are profitable or not; the fact is that if we refuse, because the goods are not foreseen in the delivery plan or for some other reason, then we will be left without raw materials, and the 2000-strong workforce collective will be left with nothing. We have been through that bitter experience (*gor'kii opyt*) several times. Actually in recent years by seasons there is a practice of stocking up with raw materials 3-4 times more than the required norm. And the sequence of shipping to customers, in contrast to a combination of regional fish, dictates its own: they demand ordinary species of fish from local water-bodies, which we often don't have.[62]

The language breaks down here. The sense is clear: consumers want local fish, not fish from the oceans. But there is some odd phraseology, and the syntax is unclear, with verbs lacking clear subjects

[61] Ibid.
[62] AFGAKO 4/1/761:25-26.

and a lack of punctuation. The sheer frustration of trying to function in the shortage economy boils over in a discourse lacking the resources to express such frustration. They continue to point out that supply is seasonal, and processing is also seasonal since it is impossible to process fish in the summer heat, before highlighting another constraint, the 'law of socialism':

> At that time, we present the workers with leave without pay, however we do not reduce the whole collective, since that is not stipulated in the law of socialism.[63]

Thus, they explain, materials and debts accumulated together, and when production was ready to be dispatched in September, all the railway wagons were busy transporting water-melons. This explains the current financial difficulties. The bank has ignored their letters and imposed a regime of special crediting. The authors further remark that the bank has omitted to take into account Aralrybprom's early overfulfilment of the Eleventh Five-Year Plan, and the overfulfilment of the plan for the first nine months of this year. On this basis, they urge, the bank is obliged to help. The managers have also appealed to the minister, Sarzhanov, both orally and in writing, but still the special regime of financing has been imposed. The sense of outrage accumulates as more arguments are adduced.

Finally, the authors state that, because Gosbank has cut off all credit:

> Production is on the verge of final paralysis (*na grani okonchatel'noi paralizatsii*), since in days suppliers can refuse to deliver raw materials and other materials necessary for production, which will sharply influence the fulfilment of the state plan and without doubt will disrupt the pre-Congress obligations of the association.[64]

While bureaucratic discourse may be at its limit, the authors are still writing according to the rules of the genre, drawing attention to their legal obligations before the state. They use the genre's affordances to strengthen their hand in fulfilling what remains a rather limited 'speech will'. They indicate clearly that tolerance limits have been reached, but the tolerance limits are simply defined as 'the verge of paralysis' of the fishing industry. After this letter, and a phone conversation with the oblast bank manager, the credit sanctions were lifted.[65]

Conclusion

Over the coming years, in the climate of perestroika, central subsidies were cut, and the ban on layoffs was breached, with the remaining fishermen in Aqbasty being transferred to the Qūlandy stud farm.[66] But 1988 saw some success: a new refrigeration unit was purchased from Denmark, a storage facility from Japan, and new lines of production, including spiced kippers, were mastered; that year saw an

[63]AFGAKO 4/1/761:26.
[64]AFGAKO 4/1/761:28.
[65]AFGAKO 4/1/761:33.
[66]AFGAKO 4/1/857:22-23.

extraordinary above-plan profit.[67] Nevertheless, the basic pattern of financial difficulties, resolved at the last minute by intervention from the ministry, persisted. At the same time, the freer political atmosphere of glasnost brought a new way of talking about the sea, as activists' work established that tolerance limits or thresholds – economic, social, ecological, and medical – had been passed years ago. As a result of environmentalists' efforts, environmental concerns entered official discourse, and official recognition of the sea's regression as a disaster began to have material consequences, a story we pick up in chapter 5.

The story lying in the dust of the archives is rather different: far from the utopian promises of socialism, certainly, but not the total catastrophe which activists saw. The sea's disappearance was not in itself a sea-change, in the sense of a total transformation, as, arguably, the destruction of the pastoral economy over the previous hundred years had been. Because apparatchiks saw the problem in a specific, if limited, way, the overall shape of the entanglement between people, fish and infrastructure was maintained, even once the sea which had been at the centre of the entanglement had gone.

This story casts further light on the nature of the relationship between the Soviet periphery and the centre. Chapter 1 demonstrated how interdependencies characterised by unequal exchange, and the centralising tendency of state socialism, resulted in spatially uneven development across Soviet space. As the sea dried up, the Aral region's dependence on outside space was accentuated, but the unequal exchange was now the other way round. As the increasingly uncontrollable environmental consequences of uneven development threatened the social contract, and as apparatchiks viewed the sea's regression as 'a problem of living standards and employment', the equalising, redistributive tendency of Soviet socialism became prominent. Hence the financial subsidies, the redistribution of fish from the ocean, and the redistribution of the right to fish on other lakes to Aral fishermen. But tendencies towards centralisation and redistribution, though contradictory, were connected: the capacity of Minrybkhoz to redistribute depended on centralisation of resources; had Balqash been managed by local communities, or the ocean fish managed by their own fishermen, this would not have happened.

But apparatchiks always struggled to deal with even the limited problem of employment and living

[67]AFGAKO 4/3/935:11, 14.

standards: redistribution was never automatic. Indeed, the uneven distribution of discursive resources and the constraints of official speech genres limited the manner in which apparatchiks could talk about the sea's regression, and hence limited the possible official responses. Surplus labour or a paralysed fishery could constitute a tolerance limit, more complex integrated problems could not. Indeed, the evidence cited here suggests that these contradictory tendencies, towards centralisation and towards redistribution, were sharply asymmetrical: the latter could not recompense for the escalating damage wrought by the former, even in the very limited terms in which this damage was understood. The following two chapters explore what these processes look like to people in the region today.

Chapter 3. Ocean fish, state socialism and nostalgia in Aral'sk

Mūrat Sydyqov is an Aral poet and musician known across Kazakhstan. My friend Edïge, who is in his early 30s, suggested I visit Mūrat. Edïge had been telling me how little he had heard about the sea from his parents, saying that everyone in Aral'sk today is mostly concerned about money and everyday pressures. He recommended I talk to Mūrat, as a fund of cultural knowledge, someone who truly cares about the sea and the region. Mūrat was born in 1941 to a fishing family in Qarashalang. His descriptions of his childhood emphasise the heroism of Aral fishermen, the wealth and holiness of the sea, the natural wonders of the landscape. Indeed, he says, his talent comes from being washed in the sea as a baby. Injured in an accident on the ice as a child which left half his face paralysed, he moved to Aral'sk, and later studied in Alma-Ata. When the sea was still there, he and his wife Bazar worked on the *kul'tsudno*, the 'culture ship', performing national music for fishermen at sea. Since the sea dried up, he has composed songs about it, lamenting its loss and expressing hope for its return. In the early 1990s, he raised money through his concerts in the region, and donated them to a fund for saving the Aral Sea.

Our conversations reflected the topics of his songs, and most accorded with what I had been expecting before I went to the field – integrated narratives of the sea's desiccation, encompassing issues about politics, ecology, morality and personal health. In our recorded interviews, Mūrat presented his public self, an artist who stands up for and defends the people (*khalyq*). He talked extensively about the bright future of Kazakhstan as a sovereign state, its success in restoring the sea, and his hope for further restoration of the sea in the future. His account of the sea's regression suggests a 'moral ecology' (Akyeampong 2001:ch.4), the proper, divinely ordained, relations between humans and their environment:

> We have an enemy, *ekologiia*... the sea is disappearing, wealth is disappearing, but nature – if you defend it, such a disaster (Ru.: *bedstvie*) won't happen. Wealth wasn't valued...

He cited the Koran, saying that God had given all the wonders of nature on condition that humans should only take what was needed. He stressed the need for *qanaghat*, meaning sufficiency or moderation: "Between heaven and earth there will be wealth, but if someone destroys *qanaghat*, there will be suffering, you spoil nature, you spoil wealth, *ekologiia* starts up..." Mūrat's accounts thus weave together ecology, economy and health in his integrated understanding of a regression as a disaster, brought about by a breach in the moral ecology through failure to observe *qanaghat*. But I did not hear anyone else use *qanaghat* in this context, and whereas Mūrat, in his public voice, talks in abstract terms about 'wealth' (*bailyq*), other people, including the unofficial Mūrat, talk more

concretely about money and work, and connect them to the contemporary political economy of Kazakhstan.

More typical was a conversation with the grandmother in the house where I initially stayed in Aral'sk. She told me how her husband had sold dried fish illicitly from their household in the 1960s, as well as deer, ducks and geese which he hunted. She concluded: "There was a lot of wealth in the sea. We lived very well in those days, under Communism, but now we've gone past that..." There was no contradiction between the informal practices endemic to lived socialism and the abstract idea of Communism. Most striking was her equation of natural abundance, a good life, and Communism. She did not mention that in the 1960s the sea was already shrinking and fish catches were falling dramatically. I tried to clarify the date. She said something vaguely about the sixties and seventies, before declaring firmly that it was in 1990 that the crisis started. I tried to press her about what life was like in the town in the 1980s, when the sea was already long gone, but she contradicted me: "It didn't go suddenly – it went gradually, gradually..." This is certainly true, but even so most people agree that the sea had disappeared from the town by 1978. Her memory collapsed the loss of the sea and the fall of the USSR: both are periods of abundance defined against the indisputable scarcity of the 1990s.

Indeed, in Aral'sk today, the loss of the sea does not dominate local discourse, nor, for the most part, are there integrated narratives expressing total disaster, a critical event touching on all aspects of people's lives. People are certainly aware of the global disaster narrative. But this construction of what has happened as a disaster has, for the most part, come from the outside – and, as explained in the introduction, is felt to be stigmatising. People are also aware of environmental problems today, but in everyday talk, these are usually connected with contemporary issues, not with the regression of the sea itself (see ch.9). Indeed, people who grew up in the Soviet Union, even those who were in their twenties when it collapsed, remember the late Soviet period as a time of stable employment and relative abundance, a time of cinemas and workers' clubs in the town, powerful industrial enterprises (*krupnye predpriiatiia*), even a naval college (*morskoe uchilishche*), a time when people's lives were integrated into the encompassing, gridded space of the USSR, which sustained a sense of belonging (cf. Ferguson and Gupta 2002, Jansen 2014). They tend to remember the collapse of the USSR, not the loss of the sea, as the real sea-change: a contraction of space, a loss of connections and belonging – of the 'expectations of modernity' (Ferguson 1999). These memories of the late Soviet period are in stark contrast to outsiders' impressions at the time: when environmental activists from across the USSR visited in 1988, they saw the town as "the epicentre of an ecological disaster" (Reznichenko

1989:191), a chaotic and disordered sprawl which negated the urbanist values of Soviet socialism.

This is not to say that the sea itself is not mourned. But while nostalgia for the USSR prompts litanies about jobs, cost of groceries and pensions, nostalgia for the sea is nearly always compressed into: "We swam, where the restaurant 'Aral' is today, we swam there." Memories of the sea are memories of leisure. After all, while the town's growth had depended on the economic significance of the sea as a transport route and a fishery, the livelihoods of many in the town did not depend directly on the sea: they interacted with it as a space of leisure. My landlady Ornyq happily told me how her mother forbade her to go to the sea; when she came back covered in salt (salinity levels were rising then), her mother scolded her. These memories of leisure tend to be private, happy reminiscences of childhood. Although most people have a clear idea of why the sea dried up, there is little sense of contradiction between the two sorts of nostalgia. Indeed, often the demise of the sea and the demise of state socialism are blurred: the two sorts of nostalgia leak into each other, both expressing longing for a time of abundance, or sometimes just for a time away from the stresses and concerns of the present.

Postsocialist nostalgia

The previous chapter's discussion of official efforts to mitigate the sea's regression partly explains why it was less of sea-change than it might appear, and why narratives like Sydyqov's are rare. As we see in this chapter, ocean fish in particular are felt to have played a significant role in this process. But I also stressed the limitedness both of official definitions of the problem and of actual interventions. Furthermore, chapter 1 suggests that we cannot easily disentangle the centralising (environmentally devastating) and redistributive (mitigating) tendencies of state socialism. How, then, to explain the nostalgia for late socialism which is sustained by those old enough to remember it? Why does nostalgia for the political-economic space of the Soviet Union often overshadow nostalgia for the natural environment? How is the moral content of the nostalgia for Soviet space sustained when the sea was destroyed by Soviet development projects? This chapter argues, uncontroversially, that the nostalgia for the Soviet project, focused on labour and livelihood, speaks to the present, and offers an implicit critique of the present (cf. Boym 2002). Nostalgia for the sea does not easily lend itself to articulation, and, when it does, it does not speak to the present. Nor are political explanations of the desiccation, or outsiders' narratives of an environmental disaster, salient to present concerns.

However, the past is not simply reconstructed from scratch to suit the needs of the present. Certainly, the content of nostalgic narratives is often the loss of the promise of socialism rather than its actuality

(cf. Boyer 2006:372). Certainly, memories are selective (cf. Pine 1998), and there is a degree of (conscious or unconscious) 'memory management' (Sorabji 2006). But I also take seriously the reality of the past to the people who lived through it (cf. Heady and Miller 2006, Richardson 2008, Filipucci 2010). Perspectives on the past today derive, in the first instance, from real experiences. What the sea's demise meant to local people depended, in part, on the transformations the sea had undergone as a socialist fishery had been constructed before 1960, and, in part, on the further interventions after the sea began to dry up. Perspectives on the past have also been reshaped by layers of change in the intervening period, particularly the rapid unravelling of the 1990s. These past experiences are further interpreted through tangled discourses past and present, which constitute shared (but not all-encompassing) frameworks within which people use the past to make sense of the present and future (cf. Halbwachs 1992[1925]). These frameworks might have their source in local cultural understandings, or in the authoritative utterances of the Soviet state, or in the critical perspectives of perestroika intellectuals, or even in the global disaster vision. I do not propose that there is a singular 'official' framework which people either resist or conform to (cf. Richardson 2004, 2008). Certainly, under the Soviet system, the state's monopoly on many forms of discourse engendered oppositional private narratives or counter-memories (Watson 1994, Boym 2002:61, Pine et al. 2004); and certainly, in many postsocialist contexts, nostalgia is a way of resisting new hegemonic narratives (e.g. Berdahl 1999). But the relative absence of strong official narratives about the Soviet period today means that remembering is taking place in something of a historiographical vacuum. While there is certainly heteroglossia, there is an absence of authoritative or hegemonic discourse about the late Soviet period.[1]

Postsocialist nostalgia is far from unique to Aral'sk: across the former Soviet bloc, the disintegration of Soviet space produced a defensive nostalgia, as people sought to stabilise the past amid rapid change (Boym 2002:ch.6). Reeves (2014:ch.3) emphasises the sense of loss and disorientation which accompanies the disintegration of the diverse modes of connection by which Central Asia was incorporated into the USSR (cf. Mostowlansky 2014). Across Central Asia, ethnographers find similar litanies about employment and pensions – from urban Almaty (Alexander 2004a, 2007b, 2009a), to de-collectivised rural Kazakhstan and Kyrgyzstan (Toleubayev et al. 2010:363-365, Féaux de la Croix 2014a, McMann 2007), to post-industrial Kyrgyzstan (Pelkmans 2013), to urban

[1] Hence Boym's (2002) distinction between 'restorative' and 'reflective' nostalgias has little purchase here: while reflective nostalgia involves critical reflection on the present, restorative nostalgia is enrolled in political (usually nationalist) projects to reconstruct the imagined home in the present. Some of the narratives I look at here seem to express longing for a USSR which never quite existed – but they are not enrolled in broader political projects, and their meaning is personal, so do not fit Boym's typology.

Uzbekistan (Dadabaev 2010). There is a sense that a moral connection between state and citizens has been breached; in urban contexts, there is also the loss of an urbanist identity based on order and legibility, which allowed people to imagine their futures and pasts within the future and past of the Soviet Union (Alexander and Buchli 2007, cf. Buck-Morss 2002, Kotkin 1995:18).[2] This is relevant even to a small town like Aral'sk.

But more than twenty years on, differences across the region have widened. In much of Central Asia, "memories of having been modern" (Reeves 2016:4) centre on the material markers of modernity, such as constant electricity supply and decent roads which connected far-flung locales with the grid of Soviet space; but in Aral'sk, much of the infrastructure has improved in the last twenty years, most notably the clean drinking-water which arrived on the eve of the USSR's demise and since then has been piped to all households. Nor is the pace of change the same as in the 1990s. There is rather a chronic instability within which it is possible to get by and imagine a future for oneself and one's family, even if hedged around with uncertainty and financial tension. Accordingly, my informants are not stuck in the past: certain aspects of Soviet rule, notably the lack of variety in the shops, are noted in negative contrast to the present; and there is also a general recognition that things have got better since the disastrous 1990s. Sovereign Kazakhstan provides a new sort of belonging, which is certainly meaningful for many, though it does not preclude regret at the loss of the older, more encompassing sense of belonging, or critique of the new political-economic configuration. A further question, then, is why postsocialist nostalgia persists in these circumstances – particularly when we might expect that the ecological devastation wrought by the Soviet project would destabilise the longing for a return to the Soviet 'home'. These memories of being urban and being Soviet are not the only meaningful framework of belonging, and may be less salient for recent migrants to the town; like the villagers of the following chapter, most Aral'sk inhabitants are deeply attached to the region, the home of their ancestors, and of most of their kin today. But the memories of being Soviet are the key focus in this chapter.

The next section explores the Soviet geographies of the town and introduces memories of the old Soviet industries. I then turn to the role of ocean fish in keeping the fish processing plant functioning, and I explore understandings of the social contract of state socialism. Finally, I look at perspectives on the sea's regression, locating them within all these other memories.

[2] Further afield, Pine (2002a, 2007b) makes similar arguments about industrial workers in Łódź, Poland, being integrated into socialist space and time, with a sense of socialism as modernity, which went backwards after 1989.

Ruins

Figs. 1, 2: Aral'sk harbour, past and present.

When I look back on my time in Aral'sk, I see the cranes which loom, rusting, over the dried up harbour. From almost anywhere in the town they are visible, their heads poking like dinosaurs' heads above the skyline – fossils, metonyms of a lost world. Ships bearing raw cotton would arrive from Karakalpakstan, and the cotton would be unloaded and loaded onto trains to be sent to Ivanovo, in the Russian SFSR. In the town museum a grainy black-and-white photograph shows cotton being unloaded (fig. 1); a caption states what is happening, but makes no comment. Ships would then be laden with grain from the northern parts of the Soviet Union, for the return journey to Moinaq and Nukus to feed the cotton-growing regions of Central Asia. The port was kept open until 1978 by dredging a channel along Saryshyghanaq bay. When this too dried up, the port closed. As work was declining throughout the 1970s, and as it became increasingly clear that the Aral was disappearing,

most of the non-Kazakh population left. Many moved to Togliatti, where AvtoVAZ (the car plant which was to make the famous Zhiguli, or Lada) was being constructed – and today former Aral'sk residents meet up in Togliatti. For many older Kazakh inhabitants of Aral'sk, the loss of the sea is associated, with regret, with the departure of the non-Kazakh population, and a loss of the cosmopolitan, urban nature of Aral'sk.[3]

Fig. 3: Old fish plant, Aral'sk.

The area around the former harbour, once a hive of activity and a focal point of the town, is today peripheral. Cement is sold out of the back of the port. The enterprises connected with the sea are largely ruined. Sometimes when I was at a loose end, I would be drawn to these seemingly abandoned spaces. I would walk along the road out of the centre, past the hotel Aral, past the fisherman's museum and the crumbling fisheries research institute, past a large new school which overlooks the harbour, round the corner and towards the remains of the fish processing plant. Though a new plant has opened in the old building (see ch.9), there is an overwhelming sense of abandonment. The former shore is today littered with rubbish. Once, there were pontoons where fish would be unloaded for processing. Old residents reminisce together about children stealing fish from these pontoons, and no one cared because there were *so many* fish; about fish being used as fuel because the fish were abundant and worthless; about catfish so large that they could feed an entire village.

Across the harbour from the fish processing plant stand the long sheds of the shipyard (*sudoremontnyi zavod*), where vessels for the fishing industry and the transport fleet were built and repaired. Today it stands largely empty. An attempt to install a plant for repairing railway wagons was unsuccessful. Inside the shipyard stands *stanok Lenina*, 'Lenin's lathe', donated to the people of the region in thanks

[3] Nostalgia for Soviet cosmopolitanism is widespread: cf. Grant (2010) on Baku, Flynn et al. (2014:1506) on Ferghana, Dadabaev (2015:101-104) on Uzbekistan generally.

for the fourteen wagons of fish. As well as the mosaic in the station, this event is also commemorated in the central square, and is perhaps the most salient collective memory in the town: even for young people who have little first- or even second-hand knowledge of the period when the sea was full, this story functions as a metonym for the golden age of the Aral fisheries.

Fig. 4: Shipyard, seen from harbour.

Fig. 5: *Stanok Lenina* (Lenin's lathe), Aral'sk shipyard.

To return to the shipyard: like the fish processing plant, it was kept open even when the sea had dried up. My host Sasha worked there as an electrician until it went bankrupt in 1995, leaving him unemployed. He talks enthusiastically about how the principal activity of the shipyard was now making barge sections. These would be loaded onto trains and assembled in Siberia into 200 tonne barges, a crucial means of transport for delivering oil and other key goods in a remote region. In the winter, Sasha explained, the demand for barges in Siberia was low, so shipyard workers would go on 'business-trips' (*komandirovki*) to Termez, where the Amu Dariya forms the border between

Uzbekistan and Afghanistan. They would repair barges used for ferrying goods up and down the river and across the border. Locals, Sasha added, lacked the expert knowledge of the Aral shipyard workers. This is a typically Soviet solution to the problem of employment: space is abstract, gridded, and production is divorced from place. But this in itself becomes part of local identity: production incorporated Aral'sk into Soviet space, and Sasha's pride derives from the fact that his labour contributed to maintaining infrastructural connections elsewhere.

Fig. 6: Orderly modernity? Fish plant, Aral'sk, 1983.

Near the end of my fieldwork, I was talking with Ornyq, who is in her forties, about measures taken by the Soviet authorities when the sea went away. She said that all the same it would have been better to have the sea. She proceeded in the subjunctive, imagining what it would be like if the sea was still there – there would be a beach, and tourists would come here rather than go to the Black Sea; the port would be open and ships would sail on the sea; the *rybokombinat* would be working (she ignored the several fish plants that are open in the town today); all the young people would become sailors... This longing for the sea was strikingly distinct from a longing for socialism. While her words drew on her childhood memories of the remnants of the sea in the harbour, she was imagining what the present-day town would look like if the sea was there. Capitalism and socialism were irrelevant to that vision. But then the subjunctive slipped into past historic:

> Before, the fish plant operated, and the shipyard... And every morning there would be a siren from the shipyard: WOOOOOAAAAAAA! We would all check our watches and say, 'Time for work!' And off we'd go, in buses, big buses, not these taxis that we have today... Not like today, now... what? People just sit in the market and trade.

Her longing for the sea slipped into a straightforward reminiscence about the late Soviet years, with no reference to the sea. The content of the reminiscence is instructive: she recalls order, rationality, the labour discipline of industrial time, in contrast to a present of small-scale market trading. Ornyq

came of age in the mid-1980s, her working life began when the sea was already long gone and the siren sounded from a shipyard which was making barges for Siberia; yet it was the sea that prompted this reminiscence. Brown (2015:52) suggests that one reason why the Chernobyl catastrophe was so unexpected was that the 'orderly modernity' in towns like Pripiat lulled any sense of danger. Given the chronic difficulties of the Aral fishing industry explored in the previous chapter, it is questionable whether there was a sense of 'orderly modernity', although the fact that such plants kept functioning may have muted any reading of ecological degradation as catastrophe, or overturning. Either way, *looking back*, Ornyq produces a narrative of 'orderly modernity', of gridded lives, which precludes reading the past as catastrophe.

Fig. 7: Military town, Aral'sk.

There is another, much more ambivalent, ruined space in Aral'sk – the old military town, where just a few crumbling apartment blocks remain. This was part of the military-industrial complex of the Soviet Union, built for provisioning the top-secret chemical weapons laboratory on the island of Vozrozhdenie. This is an eerie space, nearly always deserted – though it has been plundered for building materials. In general people are silent about these spaces. My first host, Mūrat, took me there with his young son, for it was important for him to see it, Mūrat said. As we drove, Mūrat told us stories about accidental deaths when people took bricks and the buildings collapsed on them; he talked about the thieves and prostitutes loitering there after dark. He told us that they had not known what happened in here in Soviet times; and he also talked of other military towns hidden in hillsides.

But for the most part, this space is marked off with silences, metonymic remarks to the effect that it was all secret. Nowadays, people generally know about the chemical weapons laboratory – there are even stories about lepers being sent there, which were publicised on television during perestroika. I once heard the chemical weapons laboratory cited as a minor factor in the sea's desiccation. This is the bad Soviet past, the unspoken and unspeakable. But twenty-five years on, this bad past is, in general, partitioned off in memory, just as the space is, in general, avoided today. Contradictions between good and bad pasts are, in general, smoothed over: potentially disturbing memories do not disturb cherished memories of good Soviet times (cf. Vogelsang 2004). Indeed, in some stories even this eerie space is reintegrated into fond memories of the informal side of socialism: sailors would signal when they needed alcohol, and children would row it over to trade for lemonade; the military was provisioned with high-quality foodstuffs, which the soldiers' wives would bring into the town to exchange. In such stories, the unspeakable is domesticated. But it is a significant space, significant for its abandonment, and for the way in which it is avoided in stories about the good Soviet past.

Indeed, despite the nostalgia, there is ambivalence about the Soviet period, as the following conversation with Sasha demonstrates. He started out his normal jolly self, reminiscing about the other nationalities that had lived in the town, the cosmopolitan past which defined Aral'sk as a Soviet space. But as he fleshed out his narrative, he talked about their status as enemies of the people, how they had been forbidden to talk about what had happened to them. I mentioned something I had heard from other inhabitants, that Aral'sk was a site of exile for some and a 'heaven on earth' for others. But I was being naïve, and had missed the seriousness of his tone. He immediately cut in that it only seemed like heaven on earth because there was famine all over the country at that time. He explained how his mother had fled here in the 1930s, before asking if I knew about the famine all over the Volga region, all over Ukraine... He was now visibly distressed, and said slowly: "What a story! The Communist Party! Lenin... Stalin... Fucking hell..." He paused – the air thick with the horrors he had left unsaid – before adding half-heartedly, as if from force of habit: "Of course, there were benefits... free education, free healthcare...," but he trailed off. The collective framework of nostalgia which so often affords meaning in the present could not be sustained here. In other contexts, as we have seen, Sasha would reminisce happily about life under socialism, but this flood of memory recalled the terrifying arbitrariness of Soviet space. Different elements of the Soviet state could not be compartmentalised: they occupied a single space in his memory, and the contradiction was untenable.

Both Alexander (2009a) and Pelkmans (2013) find that nostalgia can, as here, be destabilised by memories of dark pasts. Alexander describes the sense of spiralling disintegration in the rapidly changing city of Almaty in the late 1990s, while Pelkmans evokes a context of despair and stagnation in a post-industrial mining town in Kyrgyzstan in the 2010s. If nostalgia in Aral'sk does not tend to be destabilised by darker memories, I would suggest, perhaps paradoxically, that this relates to the fact that, while there is dissatisfaction with the present, there is a sense of future, and there is a sense that things have stabilised since the collapse of the 1990s. As a result, the object of nostalgia itself is more stable, so that the good past can, for the most part, be separated from the bad pasts.

'To provide work': remembering the social contract of state socialism

If the sea's desiccation was officially constructed as a problem of employment and living standards, it is employment which is today remembered as the locus of state paternalism. Former employees of the *rybokombinat* stress that importing ocean fish was loss-making (*ubytochno*). But they equally stress that 'the state' did this so as 'to save *rybprom*', and 'to provide work' (*chtoby obespechivat' rabotu*). Former managers describe their role as providing work for people. This narrative, then, provides a collective framework of memory. Generally, there is little reflection on where the ocean fish came from: providing Aralrybprom with fish is not thought of as an issue of natural resources, but rather of allocation, not a question of what nature gives but of what the state provides. No one suggests that sending frozen fish from, for example, Riga for processing in Aral'sk was economically irrational. On the contrary, people imply a certain rationality to the practice, as people talk of the USSR as *odin kotël*, 'a single pot/cauldron', highlighting its capacity to absorb the losses of any industry through redistribution via the grid. In these narratives, as ocean fish circulate around the unitary, homogeneous space of the USSR, they materialise the moral connection between state and citizens via Minrybkhoz and factory managers. Paradoxically, it is the sea's regression which gives shape to the social contract in these memories.[4]

But, as we saw in chapter 2, provisioning of fish, the prerequisite of employment, was fraught. Daniiar, a friend of Sasha's, worked in Aralrybprom in the 1980s. When Sasha first took me to meet him, Daniiar declared: "I personally loaded fish in Kaliningrad, in Riga, Sakhalin, Murmansk... I personally was there..." At this point Sasha interjected, relating Daniiar's personal narrative to the collective framework of the town: "So there would be work." Daniiar's list of places takes us to the furthest corners of the USSR, as the state's abstract promise to provide work is here personalised in

[4] By contrast, Trevisani (2010:217) argues that among decollectivised Uzbek farmers, it is not the social contract that is missed, but simply the decent standard of living and the possibility of moving forward. Perhaps the fact that there is a future in Aral'sk, and a reasonable standard of living, makes people focus here more on the *promise* of socialism.

the figure of Daniiar. When I met Daniiar on other occasions, he expanded on his role in procuring fish. Before working in the fishing industry, he had already established networks of acquaintances across the country working as a lorry-driver in the 1970s, apparently unaware that the cargoes of nuts and tomatoes he was driving from Uzbekistan and Tajikistan were concealing narcotics. Networks of acquaintances were to prove crucial in his work in the fisheries too:

> Daniiar: You put in an application, and if they aren't your acquaintances (*znakomye*), they send your orders to Sakhalin! Understand?! How can you get fish from Sakhalin? You need to get across to Vladivostok, then from the ship to the railway, and from Vladivostok to here – it's 13, 14 days by freight train... I travelled! Then I started to understand, I started... Russians, those who work in deliveries, I started to get to know them, in Moscow I had good acquaintances, I went through them and so... they started to stand by me.
>
> William: So to get fish, you needed acquaintances?
>
> Daniiar: But of course...
>
> William: You needed connections (*sviazy*)...
>
> Daniiar: Of course. Without that you won't get anywhere.... In Kaliningrad, the director of the *rybzavod*... I couldn't go in for *three days*... Busy, busy, busy...
>
> William: Nightmare...
>
> Daniiar: Nightmare! Then I had to treat (*ugoshchat'*) the secretary... there was French eau de cologne, er, Chanel, French eau de cologne, yes... and flowers, for the secretary... and she let me in! There, you see?!
>
> William: What else did you treat people to?
>
> Daniiar: Well it wasn't about money then, nothing like that...
>
> William: In the 80s?
>
> Daniiar: Yes. Flowers, eau de cologne, or *shampanskoe* [Soviet Champagne] – a bottle... or cognac. It was enough. Understand? And now – only dollars.

In this narrative, the gridded space of the USSR is criss-crossed with networks of acquaintances fostered by Daniiar on his travels. As he recalls the informal connections necessary to procure fish, he portrays himself as the cosmopolitan man of the world, with the charm and cultural knowledge to navigate the informal channels of the Soviet economy with the appropriate gifts.[5] In this account, then, informal practices were morally embedded in ideas about gift-exchange, in moral relations between persons. Today, he implies, everything is mediated only by the abstractions of dollars: moral informal practices give way to damaging corruption, carried out through the impersonal medium of money.[6]

[5] Ledeneva (1998:152-155) explains that gifts like cognac and Chanel were appropriate symbolic tokens to acknowledge favours, since they were of low monetary value, but hard to obtain.

[6] Under state socialism, grey, informal areas were differentiated so that certain practices were deemed moral (Pawlik 1992, Firlit and Chłopecki 1992, Ledeneva 1998, Pine 2015); indeed, the ubiquity of these practices contributed to a sense of shared Soviet identity (Wanner 1998). Although the boundaries of these grey areas have shifted since the end of socialism, some practices *were* classed in Soviet times as bribery or corruption, so it is striking that Daniiar locates damaging corruption only in the present: his selective recollection of the morality of socialist gift-exchange becomes critique of the present (cf. Dunn 2004).

I again mentioned the lack of the sea in the 1980s, at which Daniiar responded:

> Daniiar: Well, the sea had gone away... there were few fish... somehow it was necessary to maintain the people (*narod*)... that's why we went off to other republics, from there –
> William: Looking for fish?
> Daniiar: So as to maintain workers here, there was work...
> William: So it was loss-making?
> Daniiar: It was loss-making, but they were maintained, the workers...
> William: Quite right...
> Daniiar: The state was socialist. Not capitalist.
> William: It was necessary to help people?
> Daniiar: Socialist. And when the socialist state was ruined, we proceeded (*pereshli*) to a capitalist one, but the capitalist one isn't working out for us.

He explained that the local capitalists have not read their Marx, and do not understand that they should reinvest capital rather than pocketing their profits: "They don't know what capital is." Daniiar's critique of local capitalists today has some substance, as we see in part 3; again, the past acts as a commentary on a present where providing jobs is not prioritised. Notice the seamless transition from the personal narrative about the procurement of fish to the abstract state-citizen relation – there is no sense of contradiction between the two. Socialism, in this account, was both the abstract, ordered, rational promise of the state to provide work for its citizens, and the chaotic, disordered, contingent processes by which the promise was delivered, which necessitated the fostering of personal relations. In Daniiar's account, as in the archival documents, the sea's disappearance is just a fact, devoid of human agency, which sharpens the need for the state to fulfil its moral obligations. It is the 'transition' (expressed in the verb *pereshli*) to capitalism which is the major rupture.

As we saw, despite Daniiar's best efforts, deliveries of fish from the oceans were sporadic, with lengthy periods of no fish at all, followed by the arrival of more than could be handled. Aqshabaq was born in the kolkhoz Zhambul and is now in her early 50s. In 1980 she started working for Aralrybprom in Aral'sk; after it collapsed in the late 1990s she was instrumental in setting up the NGO Aral Tenizi; today she works in the management of a shiny new, but chronically failing, fish factory in Aral'sk (see chs.6, 8). When I visited her in the factory, our conversations would veer unpredictably between these three periods of her life. Whether reminiscing about her time working for an apparently successful state enterprise, or about her quite different work setting up an NGO with Danish assistance, the past featured in a positive light compared to the present of working in a failing capitalist enterprise. The contrast in her tone was marked: world-weary, disjointed remarks about the present; animated, engaging narratives about the past. Picking up on my finds in the archives about

irregular deliveries of ocean fish, I asked whether deliveries were reliable:

> Yes! Distribution, deliveries: it was all according to contract (*dogovor*). If they didn't deliver, then there would be a fine. Everything was according to plan: annual and five-yearly plans. They were obliged to deliver, and if they didn't deliver, the director in Vladivostok or wherever would be sacked... and we were *obliged* to process it! Everyone chased the plan – by quantity and quality. Everywhere it was written [chuckling]: THE PLAN IS THE LAW – TO FULFIL IS A DUTY, TO OVERFULFIL IS AN HONOUR.

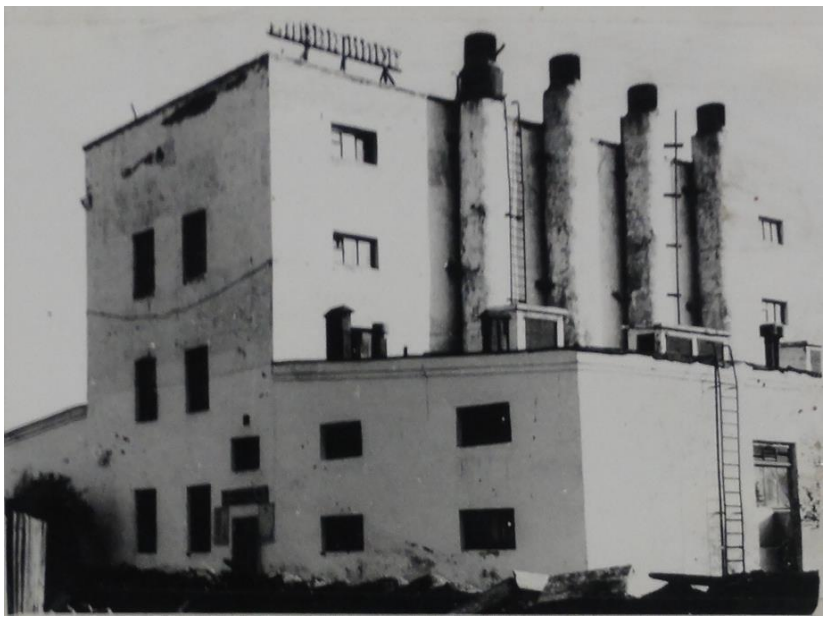
Given her position today, it is unsurprising that Aqshabaq should exhibit some nostalgia for a time when everything was planned, and unsurprising that she claims that things went according to plan rather more than they may have done in fact. Unlike Daniiar's account of the informal practices and relations through which the enterprise functioned, she remembers a congruence of moral and legal obligations. In other contexts, or differently framed, obligations to fulfil the plan might imply an absence of agency. But in this context, they are precisely the inverse of state paternalism: the state supported citizens, and in return citizens played their active part. Again, ocean fish materialised this relationship. In its original context, the slogan she refers to is the authoritative discourse of the Party state (Bakhtin 1981c[1935]). But picked up in dialogue more than twenty years later, treated with affectionate humour, it is re-accentuated; as it evokes an over-arching rationality connecting the obligations of a director in Vladivostok with the obligations of the Aralrybprom workforce, it is recontextualised as an implicit comment on a present of chaotic, unplanned capitalism.[7]

One paradoxical consequence of irregular deliveries of ocean fish was that, despite the overall problem of surplus labour, when several big deliveries arrived at once, Aralrybprom lacked the labour resources to unload and process them all. Here the functioning of the economy through informal relationships became noticeable in the interstices of Aqshabaq's narrative: there was never any labour shortage, she said, because soldiers from the military bases could be enlisted to help with unloading, the boss of the factory being an acquaintance of their commander. Soldiers enjoyed it, she emphasised, especially because they could take some fish for their wives and children. She also told me with much hilarity, that schoolchildren were forced to work: "Anyone in the town will tell you about it!"

Indeed, Ornyq enthusiastically reminisced with her sister about their *praktika* ('work experience') in the fish factory while at school, recalling how they would steal fish and take them home; they remembered capelin and mackerel (nowadays unavailable in Aral'sk) as particularly tasty. Ocean fish,

[7] Just as commodities are recontextualised to become objects of nostalgia (e.g. Berdahl 1999), discourses too, I suggest, can be recontextualised.

then, not only incorporated Aral'sk into Soviet space both formally and informally; they also became part of the identity of the town. Reminiscing together, Ornyq and her sister reproduced their relatedness in the present by affirming a shared past, characterised by material abundance. As much as the formal channels of redistribution, the lived experience of socialism rested on informal practices such as pilfering.[8]



Figs. 8, 9: Smoking workshop, undated.

But experience has a certain resilience (cf. Richardson 2008). After Aqshabaq had told me about all that, I made an inconsequential remark about how interesting it was that there was employment even when the sea went away. This prompted a lengthy dreamy reminiscence, unconnected to my remark, about the town when the sea *was* there: about ships in the port unloading cotton from Karakalpakstan

[8] There was no sense that this pilfering was an act of resistance against the state: ethnographic evidence from socialist Poland suggests that pilfering from one's own plant was considered strictly moral (Pawlik 1992:84, Firlit and Chłopecki 1992).

(as usual, no comment on the role of cotton in destroying the sea); about the floating restaurant in the harbour; how people relaxed by the harbour; how when she was a little girl they would swim all day every day, and when they came home the parents would shout at them... Nostalgia for the sea, and for the innocence of childhood, here seeps into the nostalgia for the gridded space and time of late socialism.

But in general, nostalgia for the sea is submerged in nostalgia for the Soviet Union, whose collapse figures as a more significant rupture than the loss of the sea. This is because, I suggest, the contrast between the supposed full employment of Soviet times and the low employment of the present acts as a commentary on the present in a way in which nostalgia for the sea does not. This is a yearning for encompassment within a wider grid (cf. Jansen 2014). But, as I argued, the sea's regression related to the region's unequal integration into Soviet gridded space. It is from this perspective that we should explore perspectives on why the sea dried up.

Understanding the sea's regression

I first went to the old processing plant one eerily still and warm winter's day, the sun veiled behind hazy cirrus; the light was watery and the air heavy with silence, punctuated only with the distant barking of dogs. When I later went back to the place, I never saw anyone except people passing in cars. But on this occasion, a man was standing gazing up at a red metal skeleton which was part of the plant. He asked me for matches, and we got talking. Aslan was born in the mid-1960s, and remembers the sea, though he never saw it full. He studied in Orenburg, Russia, but is long-term unemployed. I explained about my project and asked him if he had understood at the time why the sea was drying up. He said: "There were different versions. They said that there is another channel from the bottom of the sea, connecting it to the Caspian... That was the scientific version." But, he said, the 'fundamental reason' was the Uzbek authorities' withdrawals of water for cotton and the Kazakh withdrawals for rice. We chatted a bit more and then I asked who was guilty for the sea going away. His reply was surprising: Gorbachev. Why? He let the Soviet Union be divided into fifteen republics. Had the Soviet Union continued, the Siberian rivers project would have been carried out; the Ob' and Irtysh would have been brought to Central Asia and the sea would have been saved... I have often heard Gorbachev blamed for initiating perestroika and for letting the Soviet Union fall apart, but I was taken aback: what about irrigation? He reiterated that irrigation was the 'fundamental reason' why the sea had dried up, but there was no broader political critique.

Indeed, official accounts in the late Soviet period, which are still taught in schools today, primarily

blamed the Uzbeks for taking all the water. In Aral'sk today, most people relate the irrigation explanation, without mentioning Moscow's role. It is told blandly, usually as a matter of objective fact, without resentment or a sense of victimhood. Younger people say that this is what their parents told them. The scientific theory about the Caspian which Aslan alluded to responded to the unexplained rise in the level of the Caspian in this period: the theory posited that as one fell, the other rose.[9] Accordingly, people in Aral'sk often supplement the irrigation thesis with the Caspian theory, and sometimes reject the irrigation explanation altogether. Once I heard that boats from the Caspian resurfaced on the Aral, *proving* the existence of extensive underground waterways. There is also a near-universal belief that the desiccation was hastened or even caused by rockets being released from the nearby cosmodrome, Baikonur, which apparently bring about evaporation and cause extensive *ekologiia*.

These accounts parallel explanations of climate change in post-Soviet Siberia: according to Crate (2008), change is either ascribed to local projects, such as a nearby reservoir, or to people going into the cosmos disturbing a natural balance, or to the agency of nature itself. The Baikonur explanation alludes both to ongoing local concerns (see ch.9) and to anxiety about destabilising cosmic relations, while the Caspian explanation alludes to an agency greater than human agency, without which it is hard to make sense of such massive changes in the environment. Because none of these accounts blame the Soviet system itself, they do not destabilise the object of nostalgia.[10]

But there are also political explanations, blaming Communist Party leadership and their ideology of nature; such explanations tend to emerge among well-educated people of the older generation, who would have been immersed in the critical perestroika discourse about the disaster. Iura, a laboratory technician in a school, is one of the few Koreans remaining in Aral'sk. Talking about those who left, he told me in hushed tones how everyone who remembers the sea sees it in their dreams, and the sea 'draws them to itself'. Iura's parents were deported from the Vladivostok region in the 1930s, and his father worked as a fisherman in Ūialy and Bögen before moving to Aral'sk in the 1950s. This deportation was part of *stalinskaia politika*, 'Stalinist policy', he said. But his account was hedged with silences; *stalinskaia politika* acted as a metonym for the unspeakable horrors of that period. Although for his parents the Aral region was a place of exile, Iura sees the region as his homeland

[9] Geographer Philip Micklin, who has worked on the Aral problem since the 1980s, says (personal communication) that it is 'probably nonsense'. I find the 'probably' fascinating.
[10] Cf. Pelkmans' (2006:ch.1) account of how Ajarian villagers on the USSR/Turkey border, many of whom were deported in Stalin's time, reconcile the horrors of the system with positive memories: he finds that older inhabitants blame local leaders, rather than question the system itself.

(*rodina*), his childhood one of long summer days spent on the sea, perpetual good health and abundant fish. While serving in the army in 1976, the sea came to him in his sleep. But on his return from the army, he immediately noticed that the sea had gone away.

His account for the sea drying up was overtly political, and he presented it as common knowledge in the town:

> William: Did you know why the sea was going away?
> Iura: Yes of course. Everyone knew.
> William: Knew what?
> Iura: That they were taking water. There are records... They were taking water in the 1930s, *in the time of Stalin...*

Most inhabitants cite 1960 as the year when the sea started to go away, but Iura dates it in the Stalinist era: as with his parents' deportation, the name of Stalin functions gestures at a catalogue of horrors, commonly known but not voiced beyond allusion. Similarly, later in the interview he told me of the utter powerlessness of local people: "It was the Communist Party then. That was *something* (*eto bylo* chto-to)." He did not elaborate, or need to: like the name of Stalin, 'the Communist Party' stands for something vast and unspeakable, defying verbalisation.

Later he discussed more explicitly Soviet ideology and nature, talking about his reading on the subject – and his account was shot through with other people's discourses: he quoted the language of planners and scientists, polemicising with them and holding them up to critical scrutiny in the manner of perestroika intellectuals. He cited contemptuously a famous line of the Soviet scientist Michurin: 'We cannot expect favours from nature: our task is to seize them'. He juxtaposed it with the line of another scientist, Vavilov: 'For every such victory, nature will take a cruel revenge.' At this he reeled off the health problems that the sea's desiccation had caused, as instances of the revenge that 'nature' had taken. Finally, he leant forward and said slowly and quietly, emphasising every word:

> Everyone needed cotton and rice. That's all. And the fact that they destroyed the sea: they didn't care.... [raising his voice, gesturing] There were lots of grandiose projects: the Enisei – they wanted to bring the Enisei to fill the Aral! If they'd done that we'd all have been underwater! It was stupidity, idiotic!

The Siberian rivers scheme, the ever-deferred future, is the final proof of megalomania and heroic disregard for nature.

But such accounts are not common. Indeed, Iura's own family background of repression is clearly relevant to his perspective. Madi is the director of the town museum and a friend of Iura. Both his

parents were Party officials, and his father established the museum in 1988. He was brought up in a street on the seafront, inhabited by Russians and other nationalities – and he relates his good education to the Russian and Ukrainian intellectuals who were exiled to Aral'sk. He maintains active links with the remaining non-Kazakh families in the town, and his everyday talk over beer and dried fish with other old inhabitants is full of nostalgia for the cosmopolitan Soviet past.

One day he took me on a tour of the dried up seabed outside the town. Although he talked a little about the final abandoning of the ships when the port closed, on this occasion his focus was on when the sea *was* there. His manner was celebratory, without regret. It was only later on in our acquaintance that I asked him directly about the causes behind the sea's regression. On that occasion his account was strikingly similar to Iura's: the command was in Moscow; the Communist Party always knew best; 'man' should not have interfered with 'nature'. But this narrative did not surface before or after because, I suspect, it has less relevance to Madi's daily concerns than post-Soviet decline, and it sits uneasily with his rosy memories of the Soviet period. Different memories are compartmentalised.

Indeed, nowadays, more than twenty years after the collapse of the Soviet Union, this political narrative has little salience for everyday concerns. People growing up in the 1980s and 1990s at first simply say that they were *informed* that the water was used for irrigation elsewhere; then after a pause, or when pressed by me, they declare that in their opinion it was the fault of the authorities, or of the Communist Party; that 'up top' (*sverkhu*) they knew what was going to happen to the sea. But they present this as personal, private knowledge, inferred from their awareness of the Soviet system and the gaps in official stories. It is not part of public discourse, nor is it used to make connections in the present. The dark side of socialism is relegated to the unknowable upper reaches of the Soviet state, distinct from (and not in contradiction to) the lived actuality of socialism (cf. Dadabaev 2010:44). In late Soviet times, when the monologic utterances of the state were everywhere, such stories may have been a locus of opposition to the state (Watson 1994). But in the historiographical vacuum of contemporary Kazakhstan, they are less pertinent. There are hints however that the political narrative had more salience before, and with it a sense of victimhood. The director of the local archives, Bolatbek, told me about the glorious history of the region, and the fish they gave to the state when the rest of the Soviet Union was starving in the 1920s, before remarking bitterly, "But no one helps us now." It is not a phrase I heard in any other context – and indeed, it was contradicted by the rest of our conversation, in which Bolatbek told me about the positive effects of the Kökaral dam, and the beneficial role the Kazakh government plays today. His 'no one helps us now' is arguably an echo of a now submerged discourse of political victimhood.

This being the case, political accounts of the sea's desiccation can take unexpected forms, blurring with nostalgia for the grandeur of the Soviet project itself, as we saw with Aslan. Daniiar talked in detail about Stalin's plans to connect all the rivers and lakes of the Soviet Union with canals so that it would be possible to transport cargo from the Far East to the Black Sea by water, enthusiastically drawing a map in the sand as he explained it. Had they done that, he said, not only would vast swathes of desert have been irrigated, but the sea would have been saved. "But," he said regretfully, "the war got in the way." When I asked about the promise of the Siberian rivers scheme in the 1970s and 80s, he declared that the Soviet Union was no longer at full strength: since the death of Stalin it had been taken over by rogues (*zhuliki*) and weakened by rock music from America. If for Iura the name of Stalin gestures towards the unspeakable, for Daniiar, it signifies a time of greatness, looked back to wistfully after years of decline and collapse. The problem was not the ideology, but the failure to implement it, and the loss of the long promised utopia. The loss of the sea is blurred with the loss of the Soviet dreamworld (Buck-Morss 2002), the lost promise of a utopian hydraulic civilisation (cf. Wittfogel 1957). If the sea's demise related to the uneven integration of the Central Asian periphery into the gridded space of the USSR, for Daniiar, as for Aslan, the problem was rather a *lack* of integration, a failure to develop the grid to the full through hydraulic connections.

But in another register, Daniiar would distinguish between 'those up there' who knew that the sea was being destroyed, and the ordinary citizen, suggesting a disconnect within Soviet space which did not quite tally with his nostalgia for Stalinist hydraulic despotism. Indeed, his family history made him keenly aware of the repressive side of Soviet power: his mother was from a wealthy family in southern Kazakhstan and had fled to Aral'sk in the 1920s, and lived there with a disguised identity. Daniiar keeps this private past separate from his nostalgias both for the lived space of socialism, and for the utopian promise of Stalinism.

Conclusion

As should be evident from my ready agreement with Daniiar's assessment of socialist employment policies, I suggest that we take seriously not only the function but also the content of postsocialist nostalgia in Aral'sk. After all, environmental change did not come alone, as the global vision implies: it came entangled with the processes we explored in chapter 2, which, while inadequate, are recalled today as meaningful. The critique of the present which nostalgic voices articulate will become clearer in chapter 9, when we look at the town today. For now, we should note that, rather than negating the social contract, environmental change is felt to have strengthened it, so that ocean fish became the

means by which the promise was delivered, connecting state and citizens within a moral space of belonging. It is the promise of these connections which has been lost. The inefficiency of the Soviet state in making investments, and the chaotic and, ultimately, incomplete manner in which work was provided are not remembered: it is the promise of socialism, the promise of providing employment in response to ecological crisis, the promise that local resilience can lie in integration into broader gridded spaces, which is remembered – and it is this which forms a critique of the current political-economic configuration. Insofar as the informal relations which criss-crossed gridded space are remembered, they are not remembered in resistance to the grid; rather, they are felt to have sustained moral relations between persons within the grid.

However, this nostalgia, and the critique it contains, are maintained at the expense of social forgetting, compartmentalising the good past and the various bad pasts which threaten to subsume it – and as these are not transmitted, memory of them fades, just as the military town, embodying another dark Soviet past, gradually crumbles. Political accounts of why the sea dried up, or other Soviet horror-stories, would destabilise the nostalgic reconstruction of the USSR, and are suppressed. As a result, what is also suppressed is Aral'sk's vulnerability within gridded space, which was arbitrarily shaped by the myopic visions of departmental interests.

This social forgetting, I have argued, depends on the relative stability of the present, and the sense of a future. The disconnection of the 1990s has been replaced with new forms of connection within contemporary Kazakhstan: under circumstances of greater uncertainty, this compartmentalisation may be less effective, and the disaster vision have more salience. Ultimately, the social forgetting will be more encompassing. This is not a 'restorative' nostalgia (Boym 2002): no one foresees (or even wants) a return to the Soviet system in the future. It is not a project. Perhaps as a result, the content has little traction for the post-Soviet generation. Though young people are aware of the Soviet period as a period of abundance, and proud of the town's role in providing fourteen wagons of fish (even if they tend to associate it not with the Civil War but with the Great Patriotic War), the specifics of how employment was provided are of less interest in a context where no one foresees the Soviet Union returning, or an alternative to the present of deregulated capitalism.

At various times in the chapter, memories of the sea overflow nostalgic commentary on the present. But while experience may be resilient, some experiences resist narration. Even if they are narrated, there are certain embodied experiences that cannot be verbalised – except in the elliptical "we swam",

which says so little and hints at so much. This came out poignantly when my friend Edïge told me that his parents had not told him about the sea, except that they had swum. This speaks of the difficulty of transmitting those embodied experiences to a generation that never partook in them. Without transmission of meaningful memories, Edïge and his friends would, he told me, play on the rusting ships, left only to imagine what the sea had been like.

Chapter 4. Change and continuity in Aral villages

One summer's evening, I was sitting out in the sand on the edge of Bögen with Aikeldï and two other men enjoying some well-earned drinks after a hard day's work on Aikeldï's new house. All are in their 40s. As usual, Aikeldï was doing most of the talking. At one point he wanted to know about meat in England, and asked if we ate pork; the affirmative answer, as always, attracted much hilarity.[1] Aikeldï then started talking about how important pigs were to Russians, before asking rhetorically: "And what is our *bailyq*?" *Bailyq*, literally 'wealth', here suggests cultural property. The answer was obvious: fish. He went on to declare that 80% of the fish eaten in the Soviet Union were from the Aral Sea. The others then told me about Bögen's glorious past, about the factory which had stood very near where we were sitting. Today not a trace remains. Slipping from Aikeldï's talk of the natural wealth of the sea, they told me about how fish were sent here from the Far East to be processed here. In this display of local patriotism, reinforced through the collective telling of stories, there was no narrative of loss, or sense of rupture between Aral fish and the ocean fish which replaced them. Aikeldï did not mention that he first fished thousands of kilometres away on Balqash and had never seen the sea when it was full. As in Aral'sk, there was no mention of the disaster by which outsiders know the region.

On another occasion, I was talking with Zhūbatqan, who was born in 1936. In 1950 Zhūbatqan started fishing, working first for the kolkhoz, then for the state fishing base until his retirement in the 1990s. He worked on ships travelling all over the sea; when the sea was not there he fished mainly on Balqash. Today he lives with his son, daughter-in-law and small grandchildren. He has another son in the village; his other children have all left for Aral'sk, Qazaly, Aqtöbe, Almaty. One son fishes, and has just bought a UAZ jeep. Although Zhūbatqan is well-liked and respected, he does not command the authority that many men of his age command; and while he enjoys telling stories about the Soviet fishery in the village, he is not always listened to – except by me, and I draw on his stories in this chapter. On this occasion, Zhūbatqan began by telling me about the different sorts of vessel which 'came' (*keldï*) to the region, how 'we fished' (*auladyq*) first with wooden boats then with fibreglass boats, how sails and oars were gradually replaced with motors. He told me about the ships that came to the kolkhoz in the 1950s; how small fishing boats would be loaded onto them by crane and how they fished for months at a time in distant waters. Then he said:

[1] Kazakhs do not generally eat pork on religious grounds, though many fishermen are partial to *salo*, salted pork fat, a Russian delicacy.

Then in 65 the water receded (*qaitty*).[2]

William: In 65?

Zhūbatqan: It receded, the water... disappearing, disappearing, disappearing (*qūryp, qūryp, qūryp*)... 75, it stopped. Then we left for Balqash, we fished on Balqash (*Balqashta auladyq*).

In this narrative of gradual change, in which the constant is fishing, the retreat of the sea forms a rupture. But unlike events like earthquakes which burst into the everyday, the retreat of the sea insinuates itself into the everyday. Indeed, the rupture in Zhūbatqan's narrative is immediately covered over by the repetition of 'we fished'. Everything changed, but nothing changed. This chapter explores how narratives today smooth over such ruptures.

Fig. 1: Stump of post for pontoon in former harbour, Bögen.

Chapters 1 and 2 pointed to various sets of relations within which Aral villages were constituted. Within Soviet Central Asia, where cotton was prioritised, they were extremely marginal – there was an absence of connection; but within the socialist fishery, they were connected to the state via Minrybkhoz, which plugged them into gridded Soviet space via a relationship which was both extractive and redistributive. Villagers were also constituted through their connections with each other, and through a connection to the land going back generations, embodied in graveyards and ancestral shrines.

The sea was at the centre of these relations, connecting people and state via the fishery, and defining the landscape materially and culturally. But, as in Aral'sk, the stories above represent the sea's loss as less of a sea-change than one might expect. In chapter 2 I explored this paradox through looking at the functioning of Soviet socialism, and in chapter 3 through nostalgic memories of being incorporated into gridded Soviet space. Here I contextualise the sea's regression

[2] The verb *qaitu* means, primarily, 'to return', but also means 'to be lost' and is used as a euphemism for 'to die'; with water it means 'to fall, recede'.

in notions of space, place and nature, which were being transformed long before the sea dried up. Bakhtin (1981b[1937]) uses the chronotope to express the interdependence of time and space in narrative.[3] For example, representations of limitless, homogeneous spatial expanses are matched by empty time, where the order of events does not matter – a chronotope which bears a striking resemblance to Soviet plans. When narratives locate labouring bodies in these various constellations of space and time, both people and the nature they work on are constituted in particular ways: when space and time are particularised, there is an organic connection between people and nature; when space and time are abstracted, which Bakhtin links to the growth of a class society, people and nature are separated (1981b[1937]:211-214).[4]

Thinking about continuity and rupture within different sorts of chronotopes offers a way into thinking about resilience and vulnerability. In the next part of this chapter, I contrast two chronotopes, the gridded time and space of the Soviet Union which produced vulnerability, ultimately rupturing the local landscape; and a local rootedness in place affirming continuity over time, which seems to illustrate local resilience. But I will then query that dichotomy, suggesting both that local identity was sovietised, and that fishermen to some extent internalised the gridded divisions of space and time imposed by the state, and the concomitant understanding of nature. This point explains how ruptures are smoothed over. Overall, I find an oscillation between a discourse based on place and belonging, and one based on labour and livelihood, where space is abstract. These are not mutually contradictory, but they are distinct. I thus examine how far the Soviet project reconfigured indigenous relationships with the environment and transformed what fish mean.

As well as resilience and vulnerability, this also addresses more overtly political issues. One might ask why no one protested, and why anyone stayed in the region.[5] From this perspective, the Aral case seems to present a lack, which might be explained through appeal to the total nature of Soviet power. Indeed, many narratives stress the constraints on agency. But, although villagers do not tend to

[3] Although Bakhtin uses the chronotope as a tool of literary analysis, he initially theorises it in the phenomenological experience of time and space: he rejects the Kantian approach to time and space as transcendental categories of perception, emphasising instead that they are given *through* experience (Bakhtin 1981b[1937]:85). Not only is the chronotope therefore compatible with phenomenological approaches to space and environment (e.g. Casey 1996, Ingold 2000, Vermonden 2013); it also provides a link between embodied experience and discourse. Indeed, following Bakhtin's theory of discourse as socially grounded, I assume the chronotopes explored here originate in bodily experiences over the years, entangled with social practice and various discourses.

[4] Cf. Thompson's (1967) account of the shift from 'task-oriented time' to 'industrial time'.

[5] Cf. Hirschman's (1970) schema of voice/exit which posits that people failed by institutions must either protest or leave. But the assumption of atomised individuals pitted against external institutions is problematic: here we look at individuals' imbrications with each other and with institutions, and with the land.

represent Soviet socialism in the moral terms explored in chapter 3, they were enrolled in the Soviet project, and in its ways of dealing with the problem.[6] In a context where protest and contestation were minimal, the point is not to posit an absence, but to explore how shifting understandings of nature informed experiences of ecological change. In keeping with other accounts of Soviet Central Asia, I stress the compliance with the Soviet modernising project, which did not so much destroy traditional identities as transform them in their articulations with Soviet modernity (Tett 1994, Kandiyoti 1996, 2002, Kandiyoti and Azimova 2004, Saroyan 1997).

A sub-theme running through this chapter is the question of how past difficulties and suffering are socially forgotten in a present filled with optimism. As an old man (aqsaqal) in Qaratereng announced after listing the benefits of Communism: "We've passed the former time of Communism, but *now*... now we don't slander ourselves, we are a sovereign country, Kazakhstan... now we are ok... we're ok now." Communism is not the ever-deferred endpoint of history, but another stage which has been passed on the way to sovereignty (see also ch.5). Traumatic memories are fading as they are not transmitted. Older people would tell me how fathers and brothers were all sent to the front, many not returning; but they did not, perhaps could not, tell me the stories their relatives brought back from the front. Similarly, when I asked people born in the 1940s and 50s if they heard about the period of collectivisation from their parents, they would say 'we didn't ask', or 'they didn't say'. The same is true, I think, of more recent traumas. As a result, many of the narratives which emerged in formal interviews, often in response to my questions, did not emerge in other contexts, and some of these stories are alien to young people. This does not mean that individuals do not hold memories. Nor is it to suggest that there was not a register for mourning the sea: but, as in chapter 3, I suggest that register has little salience today amid high fish catches. This is therefore, in part, a story about how the immense traumas of the twentieth century are smoothed over. Carsten's (1995) account of a Malay village suggests that social forgetting affirms relatedness in the present. Here I suggest that the forgetting of past traumas helps to affirm local identity rooted in the land.

Vulnerability

For some time, I thought that villagers were unaware of the political context of the sea's desiccation. Everyone knows that the sea dried up because water was used elsewhere for agriculture, and the most common account blames Uzbekistan for 'not giving water', so that 'the Amu Dariya and Syr Dariya didn't flow properly (*dūrys qūmaidy*)'. I once heard the rockets going off from Baikonur cited as a

[6] See e.g. Kotkin (1995), Grant (1995), Pelkmans (2006:ch.1) who in different contexts show how subjectivities were re-shaped such that people were enrolled in, and complicit in, Soviet modernity in all its ambiguities.

secondary factor, but otherwise (unlike in Aral'sk) there are no outlandish accounts of a subterranean connection with the Caspian. Such matter-of-fact accounts lured me into thinking that there was no awareness of the role of Moscow, of political decisions taken by authorities at the highest level.

But many older people are aware of the role of Moscow in the desiccation of the sea, although this would only emerge when I asked directly who was responsible. Most strikingly, some accounts allude to the cost-benefit analysis we saw in chapter 1, like this interview with an aqsaqal, Rai, in Raiym:

> Someone was looking at the sea and said, 'In place of the Aral Sea it's necessary to sow rice'... One minister from there (*ana zhaqtaghy*) said it. Then they divided the water. Rice doesn't grow at all, and now they can't fill it again. Now they can't fill it with water again. They transferred it all to Karakalpakstan, and our river is left dried up.

The phrasing captures nicely the arbitrariness of the synoptic viewpoint from which a sea can be exchanged for rice: local particularities are, from this viewpoint, abstracted in a political ecology whereby natural resources can be despatched across homogeneous gridded space. This account is theodical, in that it locates agency far away from the individual (Herzfeld 1992) – and far from the local. What is far off and complex is construed as a homogeneous, knowable entity: bureaucratic structures are reduced to the figure of a capricious minister who has the power to divide the water (cf. Alexander 2002:79). This narrative suggests that local people are vulnerable to a state optic which is blind to the Aral region. Looked at in this light, the silence of other informants on the political context of irrigation may be read as misinformation by the authorities, who cast all the blame on Uzbekistan; furthermore, the political context of the Soviet Union would have made overtly critical narratives about Moscow risky, hence their mutedness even today. This suggests a further dimension to vulnerability: an inability to voice what had happened. Like others in remote parts of the Soviet Union, Soviet modernity is felt, in this register, to be something which has happened *to* people, changes on the local wrought by distant, powerful forces (Humphrey 1998:viii, Grant 1995, Alexander 2004b:54).

Furthermore, there is no sense of communication between the two levels. The minister was 'from there', from a different space. As we saw in chapter 2, at different levels of the state it was possible to raise, in a limited way, the issue of the sea's regression with higher authorities. Discursive resources were even more sparsely distributed at the village level: it was impossible, my informants insist, to complain to anyone. In fact, there is evidence of a letter in 1977 from inhabitants of Bögen to Qonaev, the First Secretary of the Communist Party of Kazakhstan, demanding better use of the delta lakes and improvement of living conditions, as well as a demand not to transfer a melioration station, along

with all its machinery, to another village. This caused a flurry of communication between Minrybkhoz and the Central Committee, in which the fisheries minister blamed Minvodkhoz for failing to deliver 50m^3/s below Qazaly. The villagers received a reply only from the vice-minister of fisheries, who noted the measures being taken to improve their living standards, including a water-pipe and a banya; he also noted that measures were being taken to use the delta lakes but owing to the 'low water level of 1974-77' these could not be implemented in full. But some glimmer of hope was promised, as the vice-minister noted that the integrated scheme for use of the Aral water resources should be finished in 1978 (it was not, of course). The letter stated that the melioration station had to be moved to a region where there was more water. The only positive response to the villagers' attempt to protest their plight was that they would be compensated with a single bulldozer.[7] It is hardly surprising that the letter should today be forgotten.

The locality and 'higher up' are thus felt to have been unconnected. When I asked Zhūbatqan directly whether the government helped, he replied: "They didn't. They said 'move (*kösh*)'. If we moved, where would we go?" If narratives about the state aim to establish a reciprocal connection between state and citizens (Alexander 2002:83), this is strikingly absent here. In this way of talking, then, villagers were vulnerable to the optic of the distant and uncaring state, which sees only abstract space and reorders environments accordingly, and is blind to local lives, and local meanings.

The resilience of local identity?

But though many left, my informants did not leave: as we saw in chapter 2, their refusal to leave was another constraint for the authorities dealing with the Aral. Very early in my fieldwork, a conversation with my host Zhaqsylyq seemed to suggest a reason why they did not leave. We were driving over the dried up seabed towards the sea, when he stopped beside a rusting heap of metal, the remains of a ship, which Zhaqsylyq pointed out with a laugh. But we had stopped to look at his camel, which was grazing with the village herd. Zhaqsylyq stood for some time gazing at it. As we walked back to the UAZ, I asked him how he had felt when the sea disappeared expecting (for it was still early in my fieldwork) to hear a narrative of victimhood. He replied: "We always thought it would come back." When I asked why, he explained: "Because we knew that long ago, the sea wasn't there, then it came back." I knew about the mausoleum and the previous regressions, but I had not suspected that local people would have been aware of this. In this temporal framework, the sea is a transient object which comes and goes. Hence this knowledge, about the deep past, was oriented towards the future: it was

[7] TsGARK, 1130/1/1722:39-44.

hopeful knowledge (Miyazaki 2004). It is striking that Zhaqsylyq spoke in the first person plural. At an earlier time, when many people were leaving the village, I suspect that such a story served to hold together a sense of community by keeping hope alive.

Fig. 2:
Zhaqsylyq with his *nor* camel (on the left).

This local knowledge is no closed tradition: it has also been reproduced through encounters between local people and their environment, as fishermen dredged up bits of saxaul,[8] remains of jugs, cradles, parts of yurts with their nets (cf. Cruikshank 2005, Hastrup 2014b). People also cite the recent discovery of the mausoleum as further evidence of what had long been known. Although this provided the definitive proof for archaeologists that the sea had gone away and come back before, locals make no distinction between legend (*angyz*) and 'scientific' proof. During my fieldwork, people often told me versions of this story, presented as something which had been passed down through the generations, local knowledge transmitted by the elders (*aqsaqaldar*/*shaldar*). When I would ask if they had thought the sea would return one day, people might reply in the past tense, saying that the sea had disappeared and reappeared before. This is the third time that it has gone away, they would say. This story alludes to a time-span far beyond that of the human life, a time-span in which (in the narratives of older people), the sea itself assumes agency: I was told that the sea 'slept'; that it 'came to itself'; that when it returned, it came 'in a single day'. Sometimes people mention the populations living on the dried up seabed who were wiped out when the sea returned. In this chronotope, the sea's agency transcends that of humans.

If these stories provide one hint why my informants stayed, a further answer lies in the strong local

[8] Saxaul is a desert shrub (Haloxylon).

identity connected with place. When I asked people why they did not leave, the dominant response was that this is *tughan zher*, 'homeland', 'land of birth'. This phrase captures the relationship between people, place and ancestors. Important sites indexing the land as *tughan zher* include the shrines of *ülken atalar*, founders of lineages, where rituals bring together descendants now scattered across the country. There are also the cemeteries on the high ground above villages, a visible reminder of the dead. Whenever anyone passes them, they pass their hands over their faces, a gesture which embodies a connection to the past; longer prayers evoke the more recent dead. This moral connection to the land came out most clearly in a conversation in Aqespe, a village which is far from the delta, far from Aral'sk and paved roads, where ecological conditions continue to deteriorate owing to an advancing sand dune. Only forty houses remain today. One fisherman, Zhengïs, told me how all his brothers and sisters had left and gone to Aralsk, Qazaly, Qyzylorda; but, he said as he pointed at the hillside opposite, their ancestors are buried here and someone needs to stay to watch over them. In addition to this sense of moral obligation, many, as in Aral'sk, also insist on their emotional, even bodily attachment to the land where they were born, despite the ecological devastation: some from Qaratereng who left for rice-farms elsewhere in Qyzylorda oblast could not cope with the climate, it is said, and died there. Ancestors are not restricted to sacred sites. In the home, before a *beshbarmaq* for example, a verse from the Koran recited in Arabic is followed by a Kazakh blessing (*bata*) invoking the spirits of the ancestors. Indeed, the ancestors link people in the present – clan identity is a way of relating to people.[9]

The importance of *tughan zher* to Kazakhs as ancestral homeland is attested by Privratsky (2001), Post (2007) and Dubuisson and Genina (2012),[10] and has parallels both within Central Asia and beyond.[11] In contrast to the abstract space within which villagers were vulnerable, *tughan zher* is a chronotope in which the permanence of sites connects people to the ancestral past; in this chronotope, persons are constituted through their connections to place and to each other. Taken together, stories of previous regressions and the ideology of the *tughan zher* seem to point to the resilience of the local, making connections between people and place which transcend the visible changes in the

[9] Cf. Privratsky (2001:52) on the links between domestic space and sacred spaces. He stresses the link to the past; I suggest that it also has implications for the present. Cf. Pine 2007a.

[10] Privratsky argues that landscape embodies Kazakh collective memory and defines Kazakh Islam in the relative absence of mosques. While his argument about a teleological development towards universal, global Islam, and his suggestion that this form of Islam is linked specifically to ethnic (as opposed to local) identity, are both problematic, this particular point is well-taken. Both Post (discussing Kazakhs in Mongolia), and Dubuisson and Genina (discussing Kazakhstani Kazakhs), argue that *tughan zher* is more real to people than the macronarratives of the state. Here I suggest that it signifies a permanence which transcends the changes in the environment.

[11] See Pedersen (2009) on Mongolia, Mostowlansky (2012) on Tajikistani Kyrgyz, Féaux de la Croix (2012) and Beyer (2012) on Kyrgyzstan.

environment wrought by the gridding abstractions of the Soviet project. By drawing attention to temporal connections far beyond the reach of individual lifetimes, and indeed that of the projects of the Soviet state, they suggest compelling reasons why people stayed, papering over the rupture of the disappearing sea.

But things are not, of course, that simple. The story about previous regressions is not unambiguous. Many draw the same conclusion as Zhaqsylyq, that the sea will come back again. But not everyone grants this knowledge the same significance. Some say quite straightforwardly that if the Syr Dariya and the Amu Dariya flow into the sea again, then the sea will return; if not, it will not. Although Zhaqsylyq seemed to affirm a collective sense of hope in his use of 'we', he was by no means talking for everyone. Indeed, I was surprised that some younger people did not know about the previous regressions. In light of the sea's partial return, and its renewal of community relations, this story has lost its social function. Furthermore, although there is certainly an ideology of *tughan zher*, and although stories of previous regressions provided some sort of hope, many people did leave, economic exigency trumping attachment to place. Hence narratives of the sea going away often slip into narratives of people leaving. Sometimes villagers talk about the places like Ūialy and Qasqaqūlan which became completely deserted, but more often they refer to the people leaving from their own villages.

Even those who stayed do not always account for their decision in terms of *tughan zher*. As Zhūbatqan said, 'Where would we go?' In the 1970s and 80s, the authorities were encouraging Qaratereng villagers in particular to go to rice plantations elsewhere in Qyzylorda oblast where they could find work, but those who stayed stress that they knew nothing about rice: they only knew fishing. They stress the limits of their knowledge, the limits of their horizons. Others wanted to leave, particularly in the 1990s when the situation was increasingly dire, but they stress the constraints they faced – they lacked money to leave, or perhaps an elderly family member needed to be looked after. More than the moral connection to the land and ancestors, obligations to actual family relations in the present needed to be sustained.

Batyrkhan was born into a fishing family on the island of Qasqaqūlan. His family was relocated in 1974 to Qaratereng. Today, he is an important figure in the Qaratereng fishery; he has grown rich and has built a huge house in the village. But he had never wanted to stay in Qaratereng: in 1980 he left

school and entered a Railway College; in 1982 he went to serve in the army in Hungary (he showed me his tank unit tattoo with pride) and decided he wanted to become a professional soldier. We were talking in Russian, which he spoke fluently from his experience in the army:

> William: Many say that this is *tughan zher*, their homeland (Ru.: *rodina*) –
>
> Batyrkhan: Well, homeland, homeland (*rodina, rodina*)... If there's no water here, no food, then it's not a homeland! This is people's emotion, that this is *tughan zher*... Well, I stayed here with my father, my youngest brother was little, our mother had died, I had little brothers and sisters at school.

In contrast to others who stress the limitedness of their horizons, Batyrkhan presents himself as someone who had seen the world, and could see through the ideology of *tughan zher*, distancing himself from it by citing the Kazakh phrase in a Russian sentence. He too knew the legend of the previous desiccation, telling me how settlements had been wiped out when the sea returned; after the flood, just one kulan (a wild horse), with a white spot on its head, had been left alone on Qasqaqūlan, giving the island its name.[12] But he insisted that there had been no hope of the sea returning, and that he had stayed only to fulfil family duties.

Batyrkhan rejected the power of *tughan zher* when the environment has been ruined. But there is little consensus over whether the environment *has* been ruined: after all, people have gone on living there. Certainly, the damaging effects of *ekologiia*, visible in the salt which lies on land, are acknowledged. When the sea receded, villagers explain, salt went up into the air, and when that happens there will be *ekologiia*. Understood as salt and dust in the air from the dried up seabed, *ekologiia* is a transitory phenomenon, and indeed, around Bögen and the lakes, some people assert that *ekologiia* has gone away. Crucially, fluctuations in numbers of livestock are related to political-economic factors rather than ecological factors. Thus immediately after collectivisation, people had few or no private livestock, and only after the war did they start acquiring more livestock, though seldom more than a few heads. The bankruptcy of the fishing industry in the 1990s is related to the *increase* in private livestock, as fishermen were paid in kind. Meanwhile, large herds, especially those belonging to the fishing kolkhozy Zhambul and Raiym and the large livestock sovkhozy elsewhere in Aral'sk raion, were massively depleted as collective and state farms went bust. At the same time, while salt is acknowledged to have damaged the pastures, the region has always been salty (especially around the northern coast) – and this is why locals deem Aral meat the tastiest in the country. Indeed, today the dried up seabed around Bögen is seen as good pasture for camels.

[12] *Qasqa*, 'white spot'; *qūlan*, 'kulan, wild horse'.

Local attachment to place, therefore, needs to be contextualised in the political-economic significance of the landscape. *Tughan zher* may represent a local connection to the land, but it is also thoroughly sovietised. The rest of this chapter contextualises the sea's regression local perspectives on chapter 1's story about the construction of a Soviet fishery, which transformed local structures of value, and the meaning of the sea itself. This transformation, coupled with Soviet practices to maintain the fishery, help understand how the rupture of the sea's regression is smoothed over. This is not to deny the importance of *tughan zher*: it is rather to suggest that it only makes sense in its political-economic entanglements. The next section looks at traces of pre-Soviet understandings of the sea, before moving on to look at collectivisation and life in a Soviet fishery.

The sea, famine and mutual aid

When I was talking with Zhūbatqan, I asked him whether there would be fish in the future, the concern of chapter 7. To my surprise, his reply was couched in the past: "There will.... The Aral Sea in 32, in 41 in the war, fed all people. You eat fish, and it's enough." Another chronotope thus emerged, one of timeless natural abundance, in which the sea was a source of sustenance. Zhūbatqan collapsed temporal differences: throughout the years of collectivisation and war, the constant is that the sea fed people – and this is a guide to the future of the sea, the years of the sea's absence notwithstanding. He continued:

> Then how many people flocked (*auyp*)[13] here from other places: this place fed them. They ate fish, they drank *sorpa* [stock], they ate it fried, they ate it boiled, they put it in a pan, made *qarma* and ate it... you don't die. Far away, they were people from far from the sea, they don't have fish. They came to the Aral Sea, lots of people. It fed them, this is what feeds them (*osy asyrady ghoi*, *būl asyraidy*).

Mass migrations of famine refugees from other parts of Kazakhstan in the early 1930s, deportations of enemy peoples from all over the USSR during the war: all these are blurred in a narrative where the sea is the centre, the source of sustenance for all, assuming agency in feeding the people who flocked around it. This image of natural abundance, I suggest, originates in pre-colonial practices of fishing, when, in a pastoral economy predicated on scarcity and differentiated ownership, fish were abundant, a common resource owned by no one. Hence the representation of the sea as centre, sustaining all people, regardless of their attachment to the locality.

In this narrative there is no trace of the famine in the Aral region itself, and Zhūbatqan, like many

[13] The verb signifies 'to move en masse, migrate'.

others in Bögen and other villages in the delta, explicitly denied that there had been famine, drawing a contrast with other regions in Kazakhstan: as Rai put it: 'At that time, if a man came to this lake and laid two nets, his stomach would be full.' Stories of people coming from other regions are also common: 'food was necessary' (*tamaq kerek qoi*). In Aqespe on the north-eastern shore, I heard a slightly different story from Tasbolat, who was born in 1949. When I asked explicitly, he at first said that he did not know anything about famine because his parents had not told him about it; he did say that probably there had been some famine, though the sea would have moderated it. But later in our conversation, he mentioned how all his parents' livestock had been confiscated 'when there was famine'. He told me that his parents had moved away, to Bögen, where his mother had relatives. Although people were fleeing Bögen too, this is consistent with the documentary evidence which suggests that the famine was more severe on the north-west shores, where, with little fresh water, nothing grew.[14]

Interwoven with these links between the sea and famine are stories about other nationalities coming in the 1930s and 40s – Koreans, Chechens, Kalmyks, Germans. Explanations for why they came are vague. Sometimes it is because of famine, sometimes because 'Stalin brought them'. Stories about other nationalities emphasise reciprocity: the help that the local Kazakhs gave them, inviting them into their houses; how they learnt Kazakh while Kazakh children learnt Russian and Kalmyk; how they fished together. Most left in the 1950s, after Stalin's death, when enemy peoples were allowed to return, the rest left when the sea began to retreat. The arrival of deportees is not presented as an intrusion or rupture. The narrative format is: 'they came... and then they left, to their own countries (*öz elderïne*)'.

In the chronotope of abundance, the sea transcends economic valuation. This became clear when I asked Zhūbatqan about Lenin's letter. He told me that 'our fathers' had fished, loaded the fish onto sledges and camels dragged them to Qambash, where they were cleaned, processed and stored, before being loaded onto trains:

> There had been a call for help. The old men [here] had seen poverty (*zhoqty*, lit. 'nothingness') before, and those guys there [in the Volga region] were on the brink of

[14] The official silence on the famine throughout the Soviet period (and the danger of speaking out), together with the mutedness of official discourse about it today, is evidently key to social forgetting of the famine both here and elsewhere in Kazakhstan. In Ukraine, by contrast, famine in the 1930s is central to nationalist narratives (Wanner 1998). Richardson (2004) finds that memories of the famine in Ukraine were kept alive in unofficial discourse throughout the Soviet period and are disputed today as the macro-narratives of which they are a part are disputed. In Kazakhstan, despite historians' and nationalists' attempts to create macro-narratives about the famine, these remain muted.

> death... so they said come on, send something, food is needed. So they fished and fished, saying 'we won't take money, this is our help, we're giving those guys help'... By camel, lots of camels... they brought it and loaded into wagons.

There is a sense of generalised reciprocity between the region and the outside. The refusal of money suggests that the sea's wealth is more than an economic resource: the sea as a source of sustenance connects the locality with the outside through help (*kömek*). There is a parallel with hunter-gatherer ideologies of sharing natural abundance, rejecting calculated exchange (e.g. Woodburn 1982, Ingold 1986:ch.5). But this account also establishes a moral connection between the sea and the idealised space of the Soviet Union outside, in terms not inimical to the utopian ideology of Communism.[15]

Indeed, this relationship would entail a different conception of nature, and of fishermen. This process of the commodification of nature started well before the Soviet period: stories about Russians, stories about encounters between different sorts of knowledge, already establish an association between fish and money. Such stories describe a period when the local – and local understandings of nature – was becoming increasingly 'perforated' (Hastrup 2009, cf. Cruikshank 2005, Hastrup 2014b). But these early encounters are strikingly couched in terms of reciprocity. The gradual process of colonisation, which from the outside looks like a rupture of local knowledge, is domesticated, and rendered in local idioms: Zhūbatqan told me that before the kolkhoz was constructed, Russians and Ukrainians 'came to help', because Kazakhs had not known about fishing and did not have nets. They had brought nets and hooks and had installed ice-houses. Zhūbatqan described them as *bai* (rich men, kulaks), emphasising that they were private (*zheke*), paying the Kazakhs money. But he framed this in terms of 'help' (*kömek*) rather than exploitation: they helped by giving money, clothes and boats. The tangle of debts and exploitation which the Bolsheviks saw was, in Zhūbatqan's perspective, a relationship embedded in moral notions of reciprocity. The new vision of the sea as an economic resource is assimilated to local understandings of mutual aid. Fish were not pure commodities, hence the refusal to take money in response to Lenin's letter.

Kolkhoz construction

Collectivisation, as we saw in chapter 1, brought fishers into the industrial, seemingly homogeneous time and space of the Five-Year Plan. The clan structures of Kazakh society were supposed to be broken down, and people and nature were to be separated, mediated by the numbers of the plan. Policies of sedentarisation, collectivisation and deportations – and, later, importing fish from oceans

[15] The nuances about not exchanging fish are absent from most accounts of this story. For younger people, as in Aral'sk, the story simply expresses local pride in the connection between the region and the outside.

or sending fishermen to other lakes – instigated a political form of movement which treated space as abstract, over-riding the ecological movements of people in tune with geographical particularities, clan affiliations and the rhythm of the seasons.[16] Chapter 1 showed this moment to be a significant rupture, the official Soviet narrative of a glorious socialist construction contradicted by archival evidence of chaos and collapse.

But Zhūbatqan's take was different again. He said that the kolkhoz was founded 'when the government was constructed', explaining euphemistically that before the 1930s 'the kolkhoz couldn't be organised'. But he did not mention the reasons, or the chaos of relocations and sedentarisation. He explained that the private employers had to leave when the kolkhoz was constructed, because it would not allow them to work privately, but he did not pass moral judgement on either. Rather, he explained the practical advantages of the kolkhoz:

> The government gives you money, it gives you a boat for free; your boat, nets, it gives them for free. The kolkhoz, the committee maintains it. They don't ask money from you. *Koptit'* (Ru.: smoking), sale, the Trust does that. Then... for free they give nets to the kolkhoz.

The separation between fishing and processing, between the kolkhoz and Aralgosrybtrest, is, in this account, convenient: so long as the kolkhoz is well-provisioned by the Trust, the system works well.

Indeed, in some accounts of the famine, it is not only natural abundance which saves people. Möngkebai, another Bögen villager slightly older than Zhūbatqan, told me about the confiscations, emphasising that they were morally 'not right' (*dūrys emes*): in his narrative, this encounter with the outside ('the government') *did* produce a sense of rupture; and he, unusually, did say that there was famine in the region. But he continued to tell me that when people started fishing for the kolkhoz, "the Soviet government took the fish and brought groceries, Lenin-Stalin gave money". After this, he said, things got better. In this phrasing, it is not just natural abundance that is important, but the encounter with the outside, embodied in 'the Soviet government'/'Lenin-Stalin', which provisioned the region (eventually) with foodstuffs. The state is personalised in the figure of Lenin-Stalin (unsurprisingly given the personality cults), and the relationship is one of reciprocal exchange. The sea is a source of money as well as a sustaining centre. Möngkebai added with a laugh that this was

[16] When Bakhtin (1981b[1937]) celebrates the Rabelaisian chronotope of healthy organic growth based on direct proportionality of time, space and value, he seems implicitly to critique Soviet notions of growth based on abstraction, separation and hierarchy. Given that Bakhtin had spent the preceding years working as an accountant on a pig-farm in remote Kazakhstan, such an interpretation seems reasonable.

before his time, but ‘the aqsaqals told us’. Though I was often told about the people that came to the region, I was never told about the 84 households that left Bögen in 1931: either this was not something the aqsaqals told Möngkebai, or it was something which he, himself an aqsaqal now, omits from his narratives. He smoothed over other traumas laughter, joking about how he had first fished during the war, when women and children were fishing to fulfil the plan in a time of ‘shock work’ (Ru.: *udar*).[17]

Figs. 3, 4: Fishing on the Aral, undated.

Because rupture is smoothed over, collectivisation does not figure as an alien imposition on the native *tughan zher*. Family histories express pride in generations who fished first for the Russians, then for the kolkhoz, then for the state fishery base. This sovietisation of the local landscape comes out particularly clearly in a famous *terme*, a sort of song, which I first heard blaring from an MP3 player in the UAZ while fishermen drew their nets through the ice. It begins:

[17] Today, fishing is widely understood as a male activity. I did not hear much about fisherwomen, except as an oddity, sometimes connected with the time when lots of other nationalities were there. I regret not pursuing this further.

> My Aral's endless surface, mine (*Aralym aidyn shalqarym*) – land blessed with abundance (*qūt-bereke qonghan zher*).
> Land which left its mark in history, land where Nūrtughan[18] wrote my precious *zhyr* [poem].
> My Aral (*Aralym*), land thus blessed with happiness and wealth (*däuletpen bailyq*).

The *terme* stresses the connections between the singer and the land (*zher*, *Aralym*), emphasised with the possessive suffix *-ym*/*-im*, and stresses the natural wealth and abundance in terms compatible both with the famine narratives we looked at above and with Soviet notions of wealth as exchange-values. But the rest of the *terme* lists labour heroes and war veterans and writers from the region famed across the Soviet Union. It is a patriotism for a sovietised *tughan zher*.[19]

Indeed, while the clan structure of Kazakh society was transformed by collectivisation, the kin-based ordering of space and time was not destroyed, but was articulated with socialist logics. After all, given the difficulties of the shortage economy, state socialist time was in practice arhythmic (Verdery 1996:57); and, while space was formally homogenised, as we have seen development was uneven, with widely heterogeneous distribution of resources over space. As Humphrey's (1998[1983]) ethnography of a Buriat kolkhoz demonstrates, the concomitant formal difficulties of fulfilling the plan necessitated informal practices, which were organised according to kinship logics. Industrial space and time thus provided the conditions for the perpetuation, and transformation, of family space and time.[20] Hence the chronotope of local, place-based identity, is neither autonomous of, nor opposed to, the gridded time and space of state socialism: the two are articulated.[21]

Rybatskii zhizn': The fisherman's life in the late Soviet fishery

> 'We had food to eat, vodka to drink [flicking throat][22]... it was Communism.' – Tolpash, fisherman

After camping in the back of a draughty GAZ-66 truck for several days by Kökaral in spring 2014 (see chapter 8), Zhaqsylyq and I were travelling back to Bögen in driving sleet. Zhaqsylyq asked me, not for the first time, what I thought of the 'fisherman's life', using a Russian phrase, *rybatskii*

[18] An *aqyn*, musician/poet, of the Aral region in the early twentieth century.
[19] Cf. Beyer (2012) on the connections between descent, place and relatedness in the present in rural Kyrgyzstan. Beyer argues that the process of 'settling descent' is inflected with Soviet (and post-Soviet) modes of governance which have transformed clan identity, reducing its importance in economic life. Conversely, villagers 'customised' collectivisation, relating to it through genealogy and landscape. There is thus no clear division between a Soviet landscape and a resistant 'traditional' landscape. By contrast, Privratsky (2001) ignores the sovietisation of Kazakh landscapes (and indeed of Kazakh identity and religion in general): he only sees Soviet modernity as a threat to a resilient local identity.
[20] See Kandiyoti (2002) for the relevance of Humphrey's argument to Central Asia.
[21] Cf. Pine's (2007b) argument (regarding socialist and postsocialist Poland) that there is no straightforward progression from small-scale domestic economy to modern, large-scale production, but different articulations of the two.
[22] A symbol for drinking ubiquitous in the former USSR.

zhizn'.[23] I had not been fishing, but I had lugged sacks of fish around and dragged boats over the mud and loaded them onto the roof of the truck, and was cold, wet and exhausted, so I replied, as I was expected to reply, that it was 'difficult' (*qiyn ghoi*), with which concurred with a hearty laugh. But when I asked if it had been the same in the past, he said that it was much easier today: until recently, there had been no jeeps and trucks, only camels. Older people remember still more difficult times, when there were no motors and they had to row for hours against strong winds. Recall Zhūbatqan's narrative at the opening of this chapter: the regression of the sea formed a rupture in the progressive arrival of newer sorts of technology. *Rybatskii zhizn'* has changed immeasurably since Zhūbatqan's youth, both because of environmental change and because of technological improvements. It still, however provides narrative continuity even in the late Soviet years after the sea had gone away.

Memories of fishing in the late Soviet period should be contextualised in memories of the period as one of abundance. Indeed, my incessant questions as to how things were different before and after the sea went away would elicit comparisons between an often undifferentiated 'Soviet time' (*kenges kezi*) and today. As in Aral'sk, the presence of the sea becomes blurred with the late Soviet period in general. Fuel was free, groceries were abundant, everything was affordable because 'money had value': all this is characterised as 'Communism'.[24] Small factories in Bögen and Qaratereng continued to function, where women worked processing ocean fish delivered by lorry from Aral'sk; through such factory labour many local women participated in the public sphere. The landscape also holds traces of infrastructure developed in that period: water pipes, electricity cables, field hospitals, which came during the 1970s and 80s. Although these changes are not narrated by villagers, it is significant that the period when the sea finally retreated was also the period when some albeit limited amenities of modernity reached many of the villages in the region. This also helps us to understand why there is no clear narrative of decline. Much of the infrastructure remains, or has been improved. Some of it, like the public banya, the canteen, the factory, the wireless station has gone, along with the stable currency and efficient provisioning. As the public sphere has sharply contracted, women's roles are increasingly restricted to the household (cf. Pine 2002b, Shreeves 2002).

But it is the continuity afforded by fishing that I explore in depth here. Today, narratives about fishing

[23] Like many who learnt their Russian in the army, Zhaqsylyq has a cavalier attitude towards gender: in formal Russian the phrase would be *rybatskaia zhizn'*.

[24] The promised communist future, the ever-deferred utopia, constitutes another chronotope. But while many narratives explored in this chapter are structured in a linear progressive manner, there is no trace of the utopian future. Insofar as Communism is remembered, it is not as a promised future, but a historical stage, located in the Brezhnev era, which has now passed.

are generally comprised of a litany of places fished. Indeed, these are often woven into official presentation of biography, as this Qaratereng fisherman, who announced, as soon as the dictaphone was on:

> My name is Küntughan, Tūrghanbaev Küntughan. I started fishing on the sea in 73, I worked in this fish system (*balyq sistemasynda*). It was good. When the sea went away, after it disappeared: in the Aqtöbe region there is a place called Yrghyz, the fish on the sea was becoming scarce (*azaidy*), when it became scarce they sent us (*zhïberdi*) on *komandirovka* (Ru.: business trip) to Aqtöbe... We fished from this place. There is a place called Yrghyz. Baitaq. So we fished. There are lots of names of the lakes. There's Baitaq, there's Lake Qarmaq...

He went on to talk of fishing on Zaisan (east Kazakhstan) and Qapshaghai (south Kazakhstan), expressing pride in a life spent fishing all over Kazakhstan. Such stories reflect the hierarchical structure of the fishery: 'they sent us' is a recurring theme. Sometimes it is the local director who is said to have sent them, sometimes the *kombinat*. Sometimes it was the minister himself, an emphasis which personalises the distant state and creates a connection (cf. Alexander 2002). But there is less emphasis on the state providing work; there is no sense of the moral space affording an encompassing sense of belonging that we saw in the last chapter.

When I tried to elicit some texture to these narratives, fishermen would emphasise the importance of labour discipline, and of fulfilling the plan. But documents from the late Soviet period are full of complaints about poaching and about poor labour discipline. Sometimes in the 1970s fishermen refused to go out and fish. On one occasion, Bögen fishermen wrote to the chairman of Kazsovmin complaining about not receiving the minimum pay grade in the winter of 1977-78, when fishing on the sea was nearly impossible;[25] a Minrybkhoz investigation found that they had been breaking work discipline by not going fishing at all, so were not entitled to the minimum salary – indeed, they should have been punished.[26] This may be interpreted as a minor act of resistance against their plight in a situation where agency was severely constrained.

But it is not remembered today. Indeed, fishermen today remember a well-managed fishery, which contradicts the archival evidence.[27] Poaching was minimal, people claim; banned seasons were respected. Both people and nature were, they say, better managed than today: lakes were stocked with

[25] Fishermen received pay per amount of fish caught, but in case of poor catches, they were entitled to a minimum salary.
[26] AFGAKO 4/1/584/98-100.
[27] Von Hellermann (2013) finds a similar gap in Nigerian forests between memories of successful 'scientific management' under colonialism and archival evidence of failure.

fish, provided with water, and monitoring deterred poachers. By contrast, the Yrghyz lakes are said to have deteriorated dramatically since Soviet times because now they are private (*zheke*), so there is no water; Lake Aqshatau also does not have enough water and is not stocked with fish; Lake Raiym is not properly monitored and villagers have no means of fishing legally, so stocks are declining.

Crucially, labour discipline in fulfilling the plan is associated with job security, as in this exchange with Zhūbatqan:

> William: So discipline was good?
>
> Zhūbatqan: We were ok. The Soviet government looked after us. They didn't let anyone eat up [i.e. embezzle] our salary, they didn't allow it. If you tell the Raikom, they'll get it, if you say they've eaten up your salary. They can't eat it up, back then they can't eat it up. If you say I'm going to work, *pozhaluista* (Ru: 'by all means' [lit. 'please']). You must fulfil the *plan* (Ru: 'plan'). *Plan*, if you fulfil the *plan*, that's enough.
>
> William: And did you fulfil the *plan* on Balqash?
>
> Zhūbatqan: We fulfilled it, we overfulfilled it! We overfulfilled it, twice over.

In such accounts, fishing for the plan materialises a connection with the state. It is not the same sort of encompassing incorporation into a wider gridded space that we explored in the previous chapter, but the connection is still there.

In another register, Zhūbatqan declared that work was bad: people could not sit and relax, and, when fish were abundant, even small children were called out of school and made to work. The most critical voice that I heard was that of Tasbolat in Aqespe. He had fished all his life under Narghaly Demeuov, a brigadier and Labour Hero (and Party member) famous across the region. There was a clear contradiction between Demeuov's discipline and Tasbolat's views of the system. Edïge, my friend from Aral'sk, was helping me with the interview. Tasbolat mixed Russian and Kazakh, but seemed to prefer speaking to me in ungrammatical army Russian, partly sensing that it was easier for me to follow, but partly also because it offered him the opportunity to show off his swearing:

> William: And when you fished then, did you always fulfil plan?
>
> Tasbolat: Yes, we fulfilled the plan.
>
> Edïge: (in Kazakh) There was no *perevypolnenie* (Ru.: overfulfilment)?
>
> Tasbolat: (in Kazakh) There is... (in Russian) there was *perevypolnenie*... 9th, 10th 5-year plans, there was... a little medal would be given – fucking cheating us! No gold for fuck's sake, just metal crap... Bullshit. Crap. All politics cheats. It's state politics, of course they cheat people, all of them... bullshit, they gave money...

> Edïge: (in clean, grammatical Russian) They rewarded them with medals, they claimed that this is gold but it was ordinary metal he says, not gold.
>
> Tasbolat: They gave a certificate... utter crap... paper... it's all fucking shit, they clap and say 'go on, work'. Fuck it... There, William... And now it's the same too!

In other narratives, lack of agency is mitigated by what the state provided, but Tasbolat rejected all that with humorous cynicism, critiquing the mechanisms by compliance was generated. He dissected the authoritative discourse of the plan, bringing its hierarchical distance into comic proximity through the everyday language of the army (cf. Bakhtin 1981a[1941]:23).

But Tasbolat also talked of the benefits of Soviet modernity, and did not question Soviet conceptions of the environment. Indeed, subjection to the plan, which situated fishermen as resource extractors, transformed local understandings of fish, advancing the process of commodification begun in the colonial period.[28] The political ecology of numbers was internalised, with implications for conceptions of space and time. When I asked how they would decide where to lay their nets, Zhūbatqan told me simply: "You fish where you're taken." Others point to some agency, albeit constrained and within a limited space. This is how Rai put it:

> From dawn till dusk you go on laying the seine. In the end you have to go over the whole surface of this lake [Raiym] and find fish. If you sit in the middle, the fish won't come. Now if I've fished from this place, tomorrow I must fish from Qoszhar. I have to fish from Qambash. I have to go right round and fish. *Then* the fish will enter [the net].

Fishermen are, in this narrative, constrained to extract the requisite amount of fish from the lakes, and the lakes are reduced to resources. Insofar as local knowledge is relevant, it is subordinated to the logic of fulfilling the plan. Lakes are, in this register, homogenised. This is not, of course, to say that fishermen did not have local knowledge or agency in their fishing activities. But in narratives like these, they present themselves as extracting resources to fulfil the plan; their bodily engagement with the environment is constrained by higher agency.

This same logic applies on the much larger scale of the Kazakh republic. After Zhūbatqan had told me about overfulfilling the plan on Balqash, I asked if they were sent there specifically so as to fulfil the plan:

[28] Lampland (1995) shows how socialism in Hungary completed the process of commodifying labour, both objectifying it, and producing a particular ethical worldview. In slightly different vein, I suggest a transformation of understandings of the environment. This is not to posit an equivalence between socialist commodification and capitalist commodification (cf. Dunn 2004:179[fn21]): but in both cases nature is abstracted as numbers. See further chapters 7 and 8 for the differences.

> If there's no fish here, you have to fish in that place (*ana zhaqta*). They're all Kazakhstani lakes. Then... There was a single minister, in this place (*myna zhaqta*) there's no fish, *davai*... in this place the fish are disappearing, and it's necessary to fish.

When people say, for example, 'Stalin sent Kalmyks here', there is a clear sense of bounded locality, an inside and an outside. But here Kazakhstan is an undifferentiated space, united by a single minister. When the plan has to be fulfilled, there is no difference between lakes: fish are equivalent wherever they are. But when I press fishermen further, they do talk about the differences between places fished: Balqash fish are thin, because the bottom is rocky and lacking in *shalang* for fish to eat; zander on Balqash had scabs; some of the fish on Zaisan had worms; the Yrghyz system on the other hand was rich in fish, especially carp. But when the phrase 'we fished' provides narrative continuity, these differences are subsumed: the logic of the plan just demands fish. Indeed, when I suggested that life must have become much harder after the sea went away, Zhūbatqan responded: "There was work. We fished from Balqash, then we'd take our salary." From this perspective, the association of fish with money means that it is not significant where one fishes, so long as one has work and money. The chronotope of fishing affords continuity because of the connection with money.

Fig. 5: Fishing, late Soviet period.

Conclusion

This chapter, like the last, suggests that it does not make sense to locate resilience solely in the local, beneath or in resistance to the externally-imposed grids of the state. Insofar as it makes sense to talk about resilience here, certainly, part of this is about long-term local relationships between people and land; but it also lies in local people's incorporation into gridded time and space, via fish, money,

infrastructure and entitlements. Both these understandings of time and space are evident in local discourse. In one register, individuals are constituted through moral relation to place, ancestors and kin; in another, they are constituted as resource-extractors in the homogeneous time and space of the plan.

The colonial and Soviet periods witnessed a new meaning of *bailyq*, an abstract conception according to which fish are exchange-values, convertible with money. More broadly, translated into money and linking the region to gridded infrastructure, fish came to be associated with rising living standards. This conception overlaid but did not quite displace a local conception whereby the sea is valued as an agent sustaining life itself. The new conceptualisation has spatial implications: fish and water are both fungible, so it does not matter where you fish, so long as you fulfil the plan, hence the level of continuity which fishing provides. Space becomes homogeneous, place loses meaning and local agency is limited. The locality is connected to broader spaces by ministers and authorities giving money, making orders, sending fishermen here and there. When Aikeldï spoke of the *bailyq* of the region, both understandings of wealth could be signified. Crucially, there is no clear disjuncture between a 'traditional', cultural landscape and a 'modern' space of economic gain: *tughan zher* was thoroughly sovietised. Furthermore, as we saw in chapter 1, from the late 1930s, money from fishing was reinvested in livestock, which circulated in the ritual economy. Rai, who married in the 1950s, remarked laconically that the wedding was good because there was lots of fish and lots of money. The association of connections is instructive: social reproduction, which is rooted in place, and which also reproduces place, is dependent on the abstraction of nature and its transformation into monetary value – a point we explore further in chapter 8.

Despite the particular historical trajectory of the Aral region, some instructive comparisons can be made from radically different contexts. Pine (1999) describes the Polish Gorale's oscillation between the world centred on the village, expressed in terms of rootedness, ancestral belonging and relatedness in the present, and the outside world of economic gain, where space is abstract. Myers (1986) shows how the Aborigine Pintupi's everyday organisation and spatial disposition are flexible, while the transcendent social order is established through specific sites (cf. Hirsch 1995). If Bloch and Parry (1989) distinguished between two interconnected orders, a short-term transactional order of economic gain, and a long-term order of social reproduction, perhaps these have their spatial corollaries: space as an abstract aggregate of economic values, and place as transcendent permanence.

Many of the nuances of past narratives are fading. One day I was sitting with Zhūbatqan near Zhaqsylyq's house. Elzhas, a recent arrival in the village, was repairing a truck. Zhūbatqan was telling him in detail where the kolkhoz had been, how the management had given nets and clothing, where fish had been received. I was (of course) listening to all this avidly, but Elzhas devoted most of his attention to repairing the truck. Today young people in Bögen know that the sea came up to the village, that there had been a quay and a factory in the village; they tell me how 'the old men (*shaldar*) said' that once upon a time the sea dried up; Uzbeks did not give water; when it dried up, salt spread up into the air and into foreign countries, then there was *ekologiia*. Narratives about the past thus are being transmitted, and when prefaced by 'the old men say', there is a sense of a homogenised narrative, crystallised local knowledge. But the texture of the past, with all its trauma, does not need to be transmitted, just as, at an earlier stage, other traumas were not transmitted.

Part 2

Chapter 5. The Kökaral dam: post-Soviet development, statehood and governmentality

As we saw in chapter 2, official recognition of the Aral problem was limited for decades. But in the late 1980s, there were signs of change at the highest level: a 1988 decree from the Central Committee of CPSU aimed to get 21km^3/year to the Aral by 2005 (Micklin 1998:404). Official discourse at last had space to recognise ecological problems. Over the next few years, a series of decrees responded to what was now acknowledged to be an ecological catastrophe. But there was, as yet, no reduction in the area sown with cotton, and, to the outrage of activists, Minvodkhoz – which had done so much to cause the problem – was responsible for sorting it out. As environmental concerns were displaced amidst the escalating crisis of late perestroika, a major paradigm shift in Soviet development policies looked less likely.

But after the USSR disintegrated, the Aral basin became the object of rather different sorts of development interventions. The Aral had become known in the west through a dreadfully written but exquisitely photographed National Geographic article: "A Soviet sea lies dying" (Ellis 1990). As the Aral became the problem of the newly independent Central Asian states, it also became known as a global disaster. Although environmental scientists are wary of deeming it global in either cause or effect (Glantz 2010), placed in global perspective, it rallied a vast network of actors, including national governments both in the region and beyond, international institutions, NGOs and scientists. In the 1990s, more than a thousand books and articles were published on the Aral Sea by post-Soviet and western scientists, many very moralistic; and more than thirty international projects were set up (Kosarev and Kostianoy 2010a).

The emerging global vision was comprised of scientific data (including images from space), tangled up with a growing awareness of, and concern for, the planetary environment, tangled up to varying degrees with Cold War mythologies of the Soviet Union as 'evil empire'. After all, Cold War patterns of thought lived on: as the victors surveyed the ruins of the vanquished, they continued to think and act through Cold War categories. Throughout the 1990s western eyes focused on environmental crisis in post-Soviet countries (Oldfield 2005). Academic books bore melodramatic titles like *Ecocide in the USSR* (Feshbach and Friendly 1992), or *Troubled Lands: The Legacy of Soviet Environmental Destruction* (Peterson 1993). Unsurprisingly, in such books the Aral Sea features, along with Chernobyl, in prime position. As Oldfield (2005) argues, such visions lack nuance: certainly, there

were and are plenty of ecological crises in the former USSR. But (post-)Cold War mythologies situate the USSR as the unsustainable, destructive other, incapable of mitigating destructive effects, let alone of conservation.[1]

In Central Asia, visions of environmental crisis were linked to the spectre of ethnic conflict driven by water scarcity. Social scientists have critiqued this discourse of danger, arguing that neither ethnicity nor scarcity are in themselves drivers of conflict (Thompson and Heathershaw 2005, Bichsel 2009, Reeves 2009, 2014, Heathershaw and Megoran 2011). But, these authors suggest, these myopic visions have nevertheless shaped the sorts of interventions western aid has taken in the region. The same is true with the Aral. Through images and narratives, the sea's regression was consolidated as a particular sort of fact, as an environmental disaster, caused by megalomaniac Soviet planners' destruction of 'nature', with knock-on effects on society, economy, and health. This vision had little space for the political-economic entanglements of environmental change: environmental problems were seen out of context (cf. Carrier 2012). As we saw in chapter 2, the discursive construction of environmental problems dictates how they are dealt with, and this new vision of environmental disaster would prove consequential.

This chapter and the next offer narratives of the 'social life of projects' (Sampson 1996), showing how problems are constructed, projects formulated, and social relations and social/environment relations reconfigured. In this chapter we look at the different ways in which the Kökaral dam embodies new hegemonic formations (cf. Brandtstädter 2007). The next section outlines failed development initiatives in the Aral basin over the 1990s, contextualising them in the ethnography of aid to Central Asia and postsocialist countries more generally. Then I chart how the vision of a dying sea translated, eventually, into the construction of the dam, before examining what the dam looks like to different people in the region today. The final part of the chapter introduces an attempt at social engineering which accompanied the supposedly technical intervention.

Disaster development

In 1992, the International Fund for Saving the Aral Sea was established, comprising all post-Soviet Central Asian republics. In 1994, with extensive support from UNEP and the World Bank and other western institutions and governments, the Aral Sea Basin Programme (ASBP) was launched, with the objectives of stabilising the environment; rehabilitating the disaster zone around the sea; improving

[1] Brain (2012) gives a provocative, if problematic, reassessment of the USSR's environmental record.

international water management, particularly with a view to averting conflict; and building institutional capacity. An initial goal of stabilising the sea-level was rapidly dropped as being too difficult in near- to mid-term (Micklin 1998:406). Although deltas were identified as sites for intervention, there was no mention of fisheries. The vision of the sea as dying was pervasive.

Explaining this assemblage of actors from east and west, political scientist Weinthal (2002) proposes an elective affinity between Central Asian leaders and 'third party actors' such as western governments and international institutions. National leaders could enhance their legitimacy by attempting to solve the Aral problem. At a time when nationalist discourse was increasingly critical of the Soviet legacy, national leaders who had risen to power in the Soviet system needed to show that they were doing something to tackle that legacy. Furthermore, Weinthal explains, they were offered generous 'side payments' in return for their cooperation. For the third parties, helping to solve a 'global' disaster would raise their prestige in the region. Indeed, as an environmental problem seemingly amenable to technical interventions, the Aral disaster could be used as an apparently politically neutral issue with which to leverage western influence in the region.

Weinthal's argument can be pushed further. Brandtstädter (2007) argues that 'transition' was a utopian project which paralleled international development to the third world: both are hegemonic discursive formations which fix an idealised construct of 'the West' (freedom, prosperity, democracy) as the centre, and the only viable future to which peripheral others are to aspire (cf. Wedel 1998:16). The environment was early on identified as a priority for western intervention in postsocialist space (Wedel 1998:33-34). So beyond Weinthal's point about leveraging western influence in the region, there were broader opportunities to re-shape the region through seemingly technical aid. Because the Aral disaster so clearly shows the failures of Soviet water management practices, now characterised as 'backward', it was a suitable area for international institutions to intervene to promote 'global best practice'. Indeed, the environmental crisis wrought by irrigation prompted World Bank officials to propose that Uzbekistan required clearer land rights and water charges to use land and water more efficiently (World Bank 1993:132-133).

Such interventions may have promoted the interests of western governments and transnational institutions, but they were also characteristic of 'the will to improve' (Li 2007), offering the opportunity to re-shape subjectivities for local well-being. Like other developments in development

in the 1990s, such interventions are arguably instances of 'transnational governmentality', whereby government is no longer the sole domain of the state: international institutions are imagined as 'above' the state, while grassroots civil society activities challenge the state's authority from below (Ferguson and Gupta 2002, Watts 2003, Gould 2005, Anders 2005). For Foucault (2006[1978]:136), what is governed is "men in their relations, their links, their imbrication with those things that are wealth, resources, means of subsistence, the territory with its specific qualities, climate, irrigation, fertility, and so on; men in relation to that other kind of things, customs, habits, ways of acting and thinking, etc.; lastly, men in their relation to that other kind of things again which are accidents and misfortunes, such as famine, epidemics, death, etc.." The global concern for the Aral is arguably an instance of this urge to re-shape the imbrications of people, environments and infrastructures. Interventions to mitigate 'accidents and misfortunes' offer the chance to transform 'customs, habits, ways of acting and thinking'. We explore this further in the final section.

Following Escobar (1995) and Ferguson's (1994) critiques of development, Brandtstädter argues that 'transition' involves new ways of knowing populations – and, we might add, their environments – and a new language of modernity, whereby hitherto 'progressive' socialist policies were discarded and characterised as backward; the region was construed not as 'underdeveloped', but 'misdeveloped' (Wedel 1998:21). Brandtstädter's citations of Escobar and Ferguson are helpful for deconstructing the global vision of the Aral disaster: just as Escobar links development with Orientalism, we can also think about transition in terms of (post-)Cold War practices of othering; and just as Ferguson shows how Lesotho is constructed as a 'less developed country', its problematic depoliticised and reduced to technical issues, so too are the political-ecological entanglements of the Aral reduced into a problem of ecology, suitable for technical intervention through institution-building.

Despite the massive global interest in the Aral, results were slow (Weinthal 2002, Micklin 1998). Central Asian leaders still talked about restoring the whole sea through diverting the Siberian rivers, while international lenders advised that the whole sea could not be saved, stressing instead the need for institutional reform and capacity-building, as well as unilateral poverty alleviation projects. The Aral Sea was a problem so intractable that it could either be solved through drastic measures (stopping cotton cultivation or diverting Siberian rivers), or not at all. Even donors disagreed amongst themselves: in the Amu Dariya delta, the World Bank, keen for an environmental success story at any cost, urged the restoration of delta lakes, while the UNDP argued that this would destroy reservoirs upstream which now supported fisheries (Sievers 2003:405-410). In the meantime, irrigation

continued more or less as normal, though there was some move away from cotton, as newly independent countries grew more cereals for food. Negotiations took place about water, or about water and energy, but agriculture was never discussed (Weinthal 2002:ch.7). Thus the issue was effectively depoliticised: given the ongoing dependence on cotton, the technical focus on institution-building could not solve the issue (Weinthal 2004). Meanwhile, Central Asian states were somewhat bolstered by international institutions: as Sievers (2003:405-410) argues, national leaders were quicker to blame USSR and thereby seek western aid than to reform.

Although international consultants' dire warnings about conflict did not materialise, there was little improvement either. Indeed, some consultants admitted that the World Bank's focus on institutions was a mistake: local specialists were most in need of financial and technical assistance (Weinthal 2004:260). Well-paid international development consultants accustomed to working in the third world ignored the existing expertise of Central Asian engineers, creating new hierarchies (Micklin 1998:408, Sievers 2003). In 2003, two Médecins Sans Frontières researchers identified a second disaster, a 'disaster of international assistance', describing a landscape now littered with the ruins of unfinished projects, as donors retreated from their earlier goals of environmental rehabilitation, abandoning the sea to its fate (Small and Bunce 2003).

This is broadly typical of western aid and development programmes in Central Asia, where mistaken optics of danger have led to failed projects, which have often heightened inequalities, and both misrepresented and re-shaped local categories (Heathershaw and Megoran 2011:607-609, Bichsel 2009:ch.7, Reeves 2014:94-100). More generally, it is typical of aid in the postsocialist world, characterised by "misperception, collusion, corruption and blindness to realities and needs" (Wedel 1998:183). Because of a failure to see local needs clearly, and a tendency to ignore local cultural and social practices, especially informal relations and networks, such programmes have often exacerbated problems and entrenched elites in their positions (Bruno 1998, Werner 2000, Pétric 2005, Babajanian et al. 2005, Wedel 1998:86-87). Meanwhile, as neoliberal prescriptions have rolled back the state, 'transition' has been widely experienced as disintegration and moving backwards.

Given this track record, Brandtstädter (2007:138) urges that we study the fate of grand plans: "if [they] drive the transition by creating a dissonance between administrative spaces and local worlds,

they thereby also continuously produce the condition for their own failure".[2] Brandtstädter, following Ferguson (1994), goes on to claim that, while failure is inevitable, in the longterm projects establish new hegemonic categories of 'progressive' and 'backward', 'central and peripheral'. In sum, therefore, "the postsocialist transition is best explored as a period of hegemonic fragmentation and reconstruction" (Brandtstädter 2007:138). This chapter and the next challenge this notion that a dissonance between local worlds and administrative spaces makes failure inevitable: while the picture remains bleak for the broader Aral basin, these chapters chart more successful projects.[3] They also demonstrate the heterogeneity of the hegemonic reconstruction.

Recent ethnographies, highlighting the heterogeneity of development, go beyond Escobar and Ferguson's critiques (Mosse and Lewis 2005a, Lewis and Mosse 2006, Bichsel 2009, Venkatesan and Yarrow 2012). As Mosse and Lewis (2005b) argue, what appears to be coherent policy is in fact the post hoc rationalisation of messy, contingent processes, so the focus on institutionalised discourse, while salutary, is too narrow. Certainly, the discursive construction of the Aral Sea disaster is a necessary condition for the projects discussed here to happen, but it is not sufficient for explaining why precisely these projects happened. Furthermore, the focus on discourse misses the material things which projects act on, and the entanglements of people and objects which elude the formal control of project planners (cf. Mitchell 2002). Because projects take place under conditions of uncertainty, regarding both humans and environments, projects often proceed by experimentation, which is only rationalised as control after the event. If a project is, as the etymology suggests, something 'thrown forward', it is an attempt to appropriate a chunk of the future, without knowing exactly what that future will hold.[4] The Russian for project, *proekt*, also means 'draft'. Thinking about projects as drafts suggests that they will always fail in some way; but it also draws our attention to the possibility of success. Finally, attention to the afterlives of projects brings some nuance to Brandtstädter's account of 'hegemonic reconstruction': as we will see, the Kökaral dam materialises *both* the hegemony of the World Bank and Kazakhstani sovereignty.

[2] Cf. Scott (1998), whom Brandtstädter (2007), like Li (2005), critiques for his vision of a monolithic state and sharp separation between state and society; but Brandtstädter concurs that dissonance breeds failure.
[3] Though the situation around Moinaq is worse than that around Aral'sk, some interventions there have been positive. Certainly, a discharge facility to provide the eastern part of the Large Sea with water from the Amu Dariya was destroyed in floods (Aladin et al. 2009:181). But internationally-funded efforts to restore Amu Dariya delta lakes and create artificial wetlands have been fairly successful, especially with the Sudochie Lake, though new water-bodies suffer from highly variable inflow (Micklin 2014c:376-378). Pollution from agriculture remains a serious problem for the fisheries (Karimov et al. 2005). Meanwhile a German-funded project has successfully stabilised 2000km^2 of dried up seabed through phytomelioration (Micklin 2014c.:378).
4 Reeves (2016:21) similarly suggests we see infrastructure as anticipation, as experiment.

The unravelling of Aralrybprom

As the disaster vision rallied ineffectual development projects, throughout the 1990s neither environment nor society was static. In Soviet times, a channel had been dredged for military ships through the Berg Strait, which connected the northern Small Aral Sea to the Large Aral. In 1989, when the sea-level had already fallen 13m to 40m above Baltic sea level (a.s.l.), the two seas separated. The Syr Dariya continued to flow into the Small Aral, near the Berg Strait, and the level actually rose, as evaporation from the much smaller surface area was less than inflow. But as the Large Aral continued to fall, water from the Small Sea flowed down through the Berg Strait, eroding the channel and thereby accelerating flow through it. There was a risk that, as the channel deepened, the Small Sea would completely empty. Experts advised the akim (mayor) of Aral'sk to dam the channel. In 1992 local authorities built a dam, with a dyke, 13km long and 4m high, with an extremely limited budget – although the project was formally approved by the Kazakhstan government. Given the shortage of materials, the dyke was built out of sand and reeds. As the prevailing wind blows from the north, the dyke was eroded by waves, and was also undermined by filtration. The following spring the sea rose by just a metre, and the dam, which lacked a spillway, was breached (Aladin et al. 1995). It was rebuilt in 1996, and the sea-level was relatively stable at 40m a.s.l., and salinity fell to 20g/l. In some places, freshwater fish began to appear again. But in spring 1999, the sea level rose to 43.5m a.s.l., and the dam was breached in a northerly gale (Kouraev and Crétaux 2010).

Meanwhile hydrological installations along the Syr Dariya were in drastic need of repair, and were further undermined by the erosion of the river-bed as the sea-level fell. Another complication was the shifting geopolitics following independence: in the 1970s, huge reservoirs had been built in the upstream Kyrgyz SSR, releasing water in summer for irrigation. In the 1990s, independent, energy-poor Kyrgyzstan switched the use of the reservoirs to hydroelectric, and released water in winter. Aside from the conflicts this created with Kyrgyzstan's downstream cotton-growing neighbour Uzbekistan, the river turned from a summer-flow river to a winter-flood river: Soviet engineers had not designed hydrological installations to cope with this volume of water and ice. Hence bottlenecks formed at dams and weirs, and water ran off into desert sinks (World Bank 2001). To put it simply, even more water was being wasted, which could have reached the Aral.

At the same time, there was another source of hope. In 1978, as we saw in chapter 2, flounder (Ru.: *kambala glossa*) had been introduced, from the Sea of Azov. By the late 1980s the flounder was thriving – there was no fishing on the sea, and, given that the indigenous fish had all died, it had no

natural competitors. KazNIIRKh scientists in Aral'sk estimated that 5-10,000 tonnes per year could be exploited sustainably. In February 1991, on the orders of Kazrybkhoz, the descendant of Minrybkhoz, there was an experimental catch of flounder.[5] That year, approximately 50 tonnes of flounder were caught, the following year more than 100 tonnes (Landsforeningen Levende Hav 1998b). Freshwater fish were still being caught in the delta lakes, and Aral fishermen continued to fish on Balqash, Zaisan, and even the Kazakh part of the Caspian, which was now under the control of Kazrybkhoz.

But the fishery was unravelling amidst severe economic crisis. There was no more ocean fish now that the oceans were in a separate country, and subsidies had evaporated, so trips to other lakes became increasingly infrequent. Aralrybprom limped on, bartering fish for fuel, foodstuffs, goods and services; only zander, which was exported to Germany, brought in cash.[6] Official catches fell: by 1995, no flounder was caught, and very little freshwater fish. The main reason was that the fishermen were not being paid. When they did receive salary, they received it in the form of livestock, equipment, or cheap foodstuffs like margarine (Landsforeningen Levende Hav 1998b).[7] My informants, particularly in the fishing villages, were unwilling to talk to me about the 1990s. It was a bad time: no water, no fish, no work, no money. Having learnt of local involvement in the earlier dams in the 1990s, I expected local narratives of a heroic endeavour against the odds, but villagers downplayed those efforts: there are few positive memories of the period. This is the context in which the Danish project intervened over the late 1990s and early 2000s, as we see in chapter 6. But it was also an important context for the World Bank interventions, even if World Bank officials were largely blind to these local developments.

SYNAS-1

The World Bank was looking into restoring the Small Aral from the mid-1990s, but a 1995 report on the ASBP concluded that with the current water availability, the sea-level would be well below the 1960 level, "and the benefits of such a project would be limited" (World Bank 1995:7). Given the collapse of the fishery over the previous few years, this conclusion is understandable, though it ignored the economic factors behind the fishery's collapse. A later report was more positive about the project, but identified lack of water and low economic impact as substantial risks, and thus called for careful analysis of impacts and benefits (World Bank 1997:7). As well as economic evaluations,

[5] AFGAKO 4/1/1866/143-144.
[6] AFGAKO 4/2pr/986/11.
[7] Cf. Toleubayev et al. (2010:358) for similar practices elsewhere in rural Kazakhstan.

environmental assessments largely focused on the likely effect on the Large Aral if the Small Sea alone was saved. They also looked at the deleterious effects of flooding on arable land along the Syr Dariya. The breach of the dam in 1999 led to extensive lobbying of the Kazakh government by local and regional authorities for a more stable structure. After a draft final report for the 'Syr Darya Control and North Aral Sea project phase 1' (SYNAS-1) was submitted in 1999, the project underwent rigorous reviews and revisions within the World Bank, and was finally approved in 2001.

$62mn were provided in a World Bank loan; the remaining $21.3mn were provided by the government of Kazakhstan. The substantive components of the project were: rehabilitation of the Small Aral Sea ($23.19mn); improving hydraulic control of Syr Dariya and carrying out urgent repair work on the Shardara dam (upstream near the Uzbek border) ($55.05mn); and restoration of aquatic resources ($2mn). The 'project objectives' were:

> i) sustaining and increasing agriculture (including livestock) and fish production in the Syr Darya basin in Kazakhstan; and ii) securing the existence of the Northern Aral Sea (NAS) and improving the ecological/environmental conditions in the delta and around NAS leading to improved human and animal health and conservation of biodiversity. (World Bank 2001:2).

The project was designed by international consultants in conjunction with the local institute Kazgiprovodkhoz, once a prestigious arm of Minvodkhoz, now a non-state, under-funded cooperative. Construction contracts for the whole project were won by a Russian company and a Chinese company; the Russian company, Zarubezhstroy, built the Kökaral dyke.

The global vision of environmental disaster was crucial in mobilising this project. While the project supported World Bank goals in Kazakhstan of raising living standards and reducing poverty through improving the environment, the project appraisal document also stresses that this is "an internationally recognized area affected by the Aral Sea environmental catastrophe" (World Bank 2001:10). Indeed, the documentation alludes to the powerful images of stranded boats which "drew the world's attention to the environmental crisis the Aral Sea has been facing" (ibid.:3), and blames the disaster on "mismanagement of land and water resources" (ibid.:3). As in chapter 2, I approach this document as a social artefact, with an interplay of constraints and freedoms within a fairly rigid speech genre. Numbers play a prominent role, giving an aura of objectivity. Like the Soviet documents, the World Bank document proceeds in linear fashion from abstracted cause to effects. But if the Soviet documents we looked at saw a primarily economic problem to be addressed through economic measures, in the World Bank document, economic issues are only admissible as effects of

ecological problems: crises of fisheries, agriculture, climate, health, unemployment are all directly caused, in this vision, by environmental problems. This vision misses the wider context of economic crisis across Kazakhstan. Hence the solutions proposed primarily address the environment.

The delays between the initial studies in 1994 and the final implementation of the project suggest that there was nothing inevitable about the project being financed: the global vision of environmental disaster was not the only condition for the project to materialise. Few development workers were aware of the flounder, and assumed that the saline, polluted sea was dying. The project appraisal document suggests some of the other necessary conditions. The temporary success of the dams built in the 1990s seem to have been crucial, which are described as 'tests' for the current project, proving that salinity would fall, with beneficial impacts on fisheries and local society. In addition, the earlier dykes are cited as evidence of borrower commitment and local ownership, as the document describes a rather rosy picture of the construction of earlier dykes "with local resources and participation of local communities" (World Bank 2001:18) – none of my informants had rosy memories about participating in earlier dam constructions. The document also stresses their frustration with the many consultations and lack of action throughout the 1990s.

The authors also argue that the 'no project' alternative is not viable: the situation would worsen both around the North Aral and along the Syr Dariya; and the cost of resettlement would be prohibitively high. Furthermore, a social assessment survey conducted in 1998 showed that residents wanted to stay in the area despite the high unemployment (World Bank 2001:15). Chapter 4 suggests some of the reasons for this. Furthermore, an EU-funded pre-investment study in 2000 found that fishing was still an important part of the local economy, and was seen as an area with potential for growth, citing the widespread local approval of the Danish project (ibid.:44). Indeed, the most substantial risk to the project identified in the appraisal document was that the sea would be restored but the fishery would not, given constraints to marketing; but in mitigation, the document notes: "Indications are that other donors active in the project area [i.e. the Danes] would provide assistance in improving marketing of fish products" (ibid.:45). The existence of a flounder fishery in the late 1990s, which we explore in the next chapter, was evidence that there would be a viable freshwater fishery once the sea was filled.

The project is also subject to a cost/benefit analysis (ibid.:52-57). But the rationality of this cost/benefit analysis was no more abstract than that of the Soviet planners who opted for cotton over

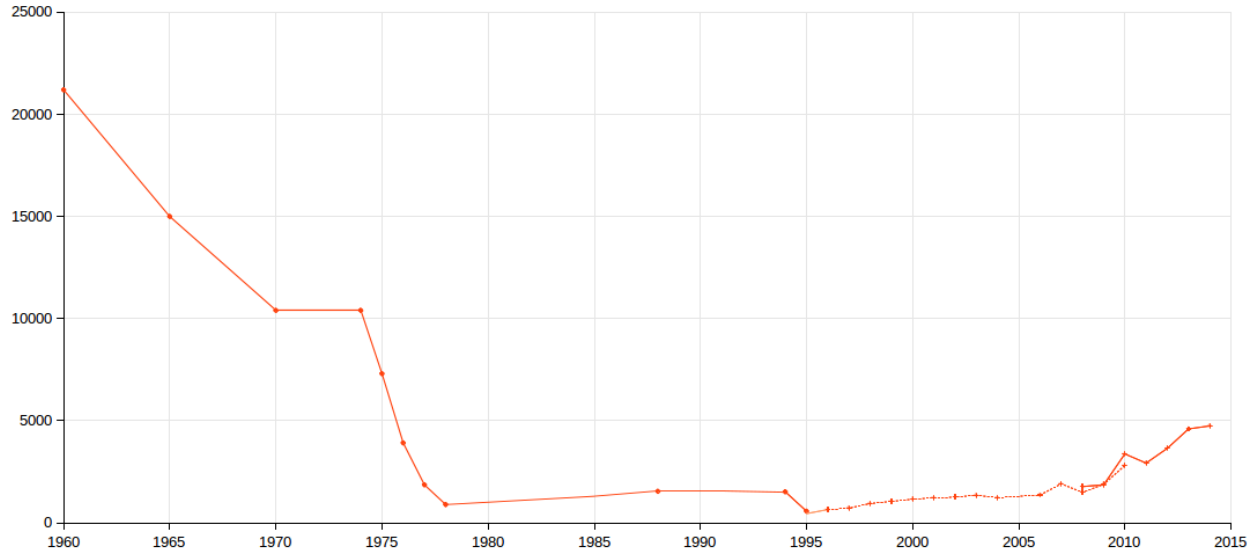
the sea. The World Bank analysis assumes that without the project, agricultural production will decline further, whereas the project will bring about an increase in irrigated area and livestock. This point is bolstered by figures showing a massive decline in agricultural production from 1990 to 1999 (ibid.:52). Although this decline is obviously related to economic collapse, these figures are taken out of that context, and used rhetorically as evidence of deteriorating ecological conditions to show the need for the project. They further assume that catches of freshwater fish will increase to 2000 tonnes/year, and that sturgeon will increase from 0 to 500 tonnes per year, and caviar production from 0 to 30 tonnes (ibid.:54). This depended on restoration of hatcheries at Qoszhar and Tastaq, which was to be carried out separately by USAID. Benefits from fisheries by year 10 was estimated to be 10.32mn USD (ibid.:96). Other key indicators, to be monitored but not directly quantified, were improvements in soil and air salinity, and in human health. As such, the project documentation states, ambitiously, that one million people will benefit directly or indirectly from the project, mostly in Qyzylorda oblast, especially 150-200,000 suffering from poverty in Aral'sk and Qazaly raions (ibid.:10). Clearly, the fame of the disaster and its well-known effect on human health across a vast region bolsters this grandiose claim.

For all the aura of objectivity surrounding this document, it is evidently a social artefact, born of a vision which decontextualises environmental effects from their entanglements. Predictions about improvements to agriculture ignore the economic constraints to prove that the project would bring substantial financial benefits. An ichthyologist in Almaty claimed that two World Bank employees had got him drunk and then asked him to confirm that the project would bring $10mn in profit from fisheries. He told them that the claim, based on sturgeon, was ridiculous; but they already had the signed conclusion of the Fisheries Committee, and this figure was key to the project going ahead. In sum, the planners' vision, disaggregating ecological cause and economic effect, was evidently partial, and there was a high degree of contingency in its implementation. But within the given constraints of post-Cold War development and post-Soviet decline, it is questionable whether a more holistic vision would have resulted in action.

Results

Preparatory works began in 2003, construction began in 2004, and the dyke was completed in autumn 2005. It is lined with a 30cm layer of concrete, and slopes gently towards the sea to prevent wave erosion. There is also a spillway with nine sluice-gates to release overflow water in spring floods. There were, of course, delays implementing the project (it took nine years rather than the planned five), which the Bank euphemistically blamed on old Soviet practices in the Committee for Water

Resources and increasing costs of materials as Kazakhstan underwent a construction boom (World Bank 2011). But another key factor was that there was far more water in the river than had been expected: the climate had entered another high-water cycle. Though this slowed construction down, when the dam *was* constructed, the sea filled quickly. Although it was expected that the sea would take ten years to reach the 42m mark, in fact it reached it far ahead of schedule, in spring 2006, and over the following years, salinity fell to about 10g/l. Freshwater fish recovered much faster than expected, migrating downstream along the Syr Dariya (Micklin 2007). Hence the project rapidly met one of the key indicators, securing the existence of the North Aral Sea and improving ecological conditions.



Graph 1: Fish catches, tonnes, North Aral Sea and lakes, 1960-2014. See appendix 1 for explanations and sources of data.

The project met some of its other indicators too, though not quite as expected. Fish production went up to 2650 tonnes in 2009, mostly freshwater fish, not including a significant informal catch (World Bank 2010:2). But while the freshwater fish estimate proved conservative, the prognosis about sturgeon was wildly optimistic: much more work is needed to provide the hatcheries with sufficient water, and they lack the capacity to grow sturgeon. Five years after the dam was finished, the World Bank estimated the benefits from fisheries to be $3mn/year, still a long way from the $10.32mn expected by year 10 (World Bank 2011:32). However, although there was no sturgeon, zander made a strong come-back, and has valuable export markets, as we shall see – which the planners had not envisaged.

The carrying capacity of the river increased, with losses to desert sinks reduced to nearly zero. There were some unforeseen effects: unexpected turbulence below several weirs was causing erosion of the

river bank, necessitating further intervention in future projects. The effect on agriculture was more ambiguous. There was a significant increase in livestock production, and some increase in area sown with rice, but the World Bank reports generally downplay the positive effect on agriculture: it is far from clear whether yields have increased, and the report authors recognise that agricultural yields depend on other factors in any case.

Arguably, most significant for the World Bank is the photogenic success story which international journalists have propagated. The Bank's implementation report notes with satisfaction the "many good media reports" (World Bank 2010:3). After all, while abstract numbers are necessary to get things done in development circles, images play on the imagination much more effectively. In contrast to the disaster images of death and sterility, pictures of the restored sea evoke re-birth and renewal. Media reports juxtapose the unsustainable mismanagement of the Soviet Union with the modest, competent approach of the World Bank to rectify the problem (e.g. Walters 2010). In this sense, the dam materialises new post-Cold War hegemonic formations, in which the World Bank is a technocratic institution of government, sitting above the state (cf. Ferguson and Gupta 2002), capable of fixing damaged environments and improving people's livelihoods. The story reads as a rare success story of transition to globalised transnational governance. Like the state, the World Bank is not an entity but comes into being through its effects – and through the photogenic success story, the Bank is imagined as a benevolent, apolitical institution, devoted to competent, technical solutions. The complexity and contingency which make up the daily workings of the bank and its relationship with borrowers disappear from view altogether.

Imagining sovereignty

But locally the dam materialises a rather different hegemonic reconstruction: Kazakhstani sovereignty, embodied in the person of Nazarbayev. Indeed, big dams around the world are a powerful form of nation-building, securing benefits over future years (Bromber et al. 2015).[8] Children across the region are today taught about Nazarbayev's concern for the region. Posters abound of Nazarbayev hailing the dam – around Aral'sk, in clubs in small villages. The first poster bears the caption: "I said I would help the Aral, and I am happy to have fulfilled my dream." It is a personalised, emotional way of imagining Kazakhstani statehood: a peripheral region is integrated into the state by the benevolent desires of the president.

[8] Cf. Suyarkulova (2015): in recent debates about Tajikistan's Roghun dam, both dam and water comprise the body politic. However, while the Roghun dam represents a particular form of nation-building directed against the supposedly oppressive neighbour, Uzbekistan, the Kökaral dam does not stand against any imagined other.

Fig. 1: Poster, Aral'sk. Nazarbayev and Kökaral: *Men Aralgha kömektesemïn degen, armanyma zhetkenïme quanyshtymyn* ('I said I would help the Aral, and I am glad to have fulfilled my dream')

Fig. 2: Poster, Aral'sk. Nazarbayev and Kökaral: *Kökaral – ghasyr zhobasy* ('Kökaral – the project of the century')

But it is also a connection of technopolitical mastery, embodying the state's capacity to reverse a globally famous disaster, undoing the damage of the past. In this sense, there is continuity in the affective dimensions of Soviet and post-Soviet statehood: indeed, the second poster characterises Kökaral as *ghasyr zhobasy*, a translation of the Russian *proekt veka*, 'the project of the century', the phrase used for the Siberian rivers scheme.[9] If a project is about appropriating a chunk of the future, this promises, in Soviet fashion, a very large chunk of the future. Because of water's mutability, controlling water is a particularly spectacular materialisation of technopolitical power (Féaux de la Croix 2012). In fact, the Kökaral project is on a far smaller scale than the Siberian rivers scheme, and it is a rather less spectacular feat of engineering than most dams. Indeed, its beauty arguably lies in its modest simplicity. But images like these emphasise the natural power of water, safely channelled by the solidity of concrete. Ironically, what the pictures are depicting is the water which is released

[9] Mostowlansky (2014:160) also finds a Soviet phrase describing a new infrastructure project in post-Soviet Tajikistan.

from the Small Aral into the saline waters to the south: this water will in fact be lost. As we see below, there is some criticism among local people about this loss of water. However, images work through associations: concrete and the president together channel the power of the water and secure the future. Not only are the messy, contingent processes which went into assembling the dam occluded from this vision: so too is the role of the World Bank. In Latour's (2004) terms, the dam becomes a 'matter of fact'.

Thanks in part to such images, local people relate the dam to *egemendik*, 'sovereignty', such that it becomes, as a 'state effect' (Mitchell 1991), a vehicle for imagining the state. When I asked why the central state did not assign money in the 1990s, I was told that Kazakhstan was still a young country then. Kökaral thus embodies mature statehood, where the encompassing reach of the centre is fully realised. Indeed, as we saw in the previous chapter, Kazakhstani sovereignty is sometimes the telos of narrative progressions, the next stage after Communism. But infrastructures, as Reeves argues, are unruly: not only do material processes exceed the control of planners, but infrastructures further "become entangled with a variety of local hopes, desires, fears, and contestations in ways that are themselves consequential" (Reeves 2016:6). The following chapters show the divergent results of the dam across the region. As fish and water exceed the control promised by the dam, and as some of the hopes invested in the dam are frustrated, the dam itself becomes a vehicle for critique of the Kazakh state.

Unresolved problems

The high-water years which allowed the sea to fill so quickly brought a further unforeseen complication. Once the sea-level reached 42m a.s.l., the water brought down in spring floods was surplus. Although the possibility of building the dam higher had been considered, given the low-water years of the 1990s, it was felt that there would not be enough water to fill it if it was built higher. So every year water is released through the sluices (see the pictures above), and with it flow fish and fry together. Washed down towards the extremely salty remnants of the Large Sea, they would, it is assumed, perish. In 2007 the NGO Aral Tenizi (see ch.6) wrote a letter to the Committee for Water Resources and the World Bank on behalf of fishermen, suggesting a fish ladder be put in place to allow fish to swim back up, but the response was that there was no scientific proof that it was happening. World Bank and government representatives came, but nothing happened. In 2014, a defensive net was at last placed to prevent fish swimming through, but fishermen were sceptical that it would be effective as it would get blocked with detritus.

The problem attracts considerable bitterness from the local director of the fisheries research institute (KazNIIRKh), who blames Kazgiprovodkhoz for not designing the dam to be higher; he suggests either a fish ladder or an electric shock device to keep fish away. Meanwhile my informant at Kazgiprovodkhoz wearily explains that an electric shock device would be ineffective in such strong currents, and a fish ladder, aside from being expensive, would not guarantee the return of all the fish, let alone the fry. Both of them told me about a huge new water-body which has formed some 30km below the dam, in the former bay Tūshchybas. Having been fed by the excess water from the Small Sea for the last ten years, it is unclear whether it is salty or not. It is conceivable that many of the fish washed down have in fact survived: no research has been done in this water-body, and, though it is visible from space, it is in a remote area and most people are unaware it exists.

Before I started my fieldwork, I was expecting that the loss of fish would be a matter of severe concern and dissatisfaction to local villagers. But I was surprised to find that they were sanguine about the issue. Indeed, it was very hard to make my informants discuss it. Though fishermen preferred the idea of a fish-ladder to a net, they insisted that it was a problem to be resolved *zhoghary*, 'higher up'. This is partly because, however many fish are lost, fish in the sea today are abundant. In everyday life, as fishermen extract fish from the restored environment and translate them into money, and households are sustained by the role of fish in diet, and by their afterlives as money, the dam provides the solid background conditions which enable life to go on: it is not an object of contestation. In locating the solution 'higher up', fishermen highlight the limits of local agency – which, after all, their experience of environmental change has demonstrated. The state, then, is not only imagined through infrastructure already delivered: it is also imagined in terms of a future intervention.

But the problem of the fish being lost assumes more significance in Aral'sk, even among people unconnected with the fisheries. For example, when I was talking with a pair of teachers (who are responsible for children learning about Nazarbayev's role), they were privately critical of the president wanting his stamp on everything, pointing to local involvement in the construction of the dams in the 1990s to suggest, rather romantically, that the idea had come from 'the people'. But after they had distanced the figure of the president from the dam, they then immediately pointed out that the fish are swept through the dam to their death. The dam's promise of solidity, containment, and re-birth is contradicted by the emotive image of fish being swept down to the poisoned waters to the south. If the first comment sought to dissociate the dam from state-building, with the second the dam

became a vehicle for critique of the state.

The most common explanation for the problem about the fish is that the dam was not built high enough, which is therefore connected with a common complaint in Aral'sk that the sea come all the way back to the town: the connection is incomplete. But the sea has not returned to villages like Bögen either, and I did not find the same complaints there, despite the general agreement that the dam should have been built higher. Later chapters explain this divergence by charting the movements of fish which, once out of the water, largely bypass Aral'sk. Indeed, some townspeople claim that the project has achieved *nothing*, because there are no jobs in fisheries in the town. This further leads to accusations of corruption on the part of the bureaucrats and engineers responsible. These accusations are embedded in a broader discourse of moral decay, which in chapter 9 I relate to Aral'sk's place into post-Soviet Kazakhstan. After all, despite some continuities with Soviet modes of governance, as a way of dealing with the sea's regression Kökaral embodies a very different sort of connection from the incorporating grid of the Soviet state we saw in chapter 3.

Futures: SYNAS-2

Project engineers in Almaty are sanguine about the problem of the fish being lost. They describe the results of SYNAS-1 as 'intermediate/transitional' (*promezhutochnye*), suggesting that a project is only a draft. Today, SYNAS-2 is underway. Phase 1 was so successful that the World Bank is, unusually, willing to fund it again. Phase 2 involves further rehabilitation of hydrological infrastructure with a view to lowering salinity in delta lakes, and major work on the two hatcheries. It also involves a feasibility study for variants for further rehabilitation of the Small Aral Sea. This is a point of considerable contention. One variant is for the sea level to be raised to 48m a.s.l. by raising the existing dyke. The other variant involves creating a new water-body in Saryshyghanaq bay, near Aral'sk, at elevation 50m a.s.l., which would almost bring the water back to the port. This would be fed by a canal from the river near Qambash. Regional authorities are in favour of the first variant: they do not want to divide up the sea still further. But international consultants, and, now, Kazgiprovodkhoz, favour the two-level variant. My informant in Kazgiprovodkhoz explained that, if there was enough water to fill it, of course the one-level variant was preferable. But the dam might take ten years to build, and another twenty or thirty to fill. While there is enough water today, there is no guarantee that there will be in thirty to forty years' time. Populations across the region are growing and water demands increasing. Uncertainty is compounded by climate change: shrinking glaciers in the Tien Shan may mean that less water is available, particularly if summer droughts increase and upstream countries hoard water (Sorg et al. 2012). In addition, maintaining the level of

the whole sea at 48m a.s.l. would involve some oscillations in dry years; and if the level were to fall by just 2-3m, this would mean the shore would retreat by several kilometres, making it difficult to maintain fishery infrastructure.

Near the end of my fieldwork, Zhaqsylyq's son Maqsat solemnly told me a teleological narrative: the sea was big once, then dried up (he did not mention previous regressions); then Kökaral was built and it returned; after Expo-2017, hosted in Kazakhstan, the dam will be raised and the sea would return to Aral'sk and Bögen. Maqsat linked the future of his village to an event which marked Kazakhstan's new global connectedness. Local people are generally unaware of most of the details of SYNAS-2, especially the restoration of delta lakes. It is the further rehabilitation of the sea which catches the imagination. Few realise that it is only at the stage of developing a feasibility study. Most are unclear about the two variants: there is an emotional desire for a single sea, as two water-bodies would be pointless, *tolkasyz*; but residents of Aral'sk in particular also have a strong desire for the water to reach the town – and few realise the incompatibility of these desires. If the present dam is felt to be incomplete, its very incompleteness becomes the site where future interventions are desired: a fuller, more encompassing state will restore the connection between Aral'sk and the sea, and make the marine landscape whole again.

Such imaginings obscure the complex processes that lie behind projects. Like the view of the state from afar which we saw in chapter 4, this view of the state is reductionist (cf. Alexander 2002). Although people have opinions about *what* decision should be made, no one in the region disputes that it is the president that makes the decision. Even NGO workers and fisheries managers, who recognise that 'foreign experts' are involved in making calculations, insist that the final decision is the president's. In autumn 2013 the president was supposed to be visiting Aral'sk. Everyone expected that he would make the decision about which variant to go for, and the thought of the sea returning to Aral'sk assumed substance. For half the year selected parts of the town were spruced up: some roads were re-paved; streetlamps were installed; even a few road safety signs were put up; photographs of generic watery locations were plastered over the shabbier parts of the town. But the president did not come. There were rumours that he made a decision about the next phase of the project from Qyzylorda, but these were, of course, unfounded.

But as people speculated about the president's non-arrival, personalised imaginings of sovereignty

got entangled in other concerns. One taxi-driver I talked to started from the president's ill-health (a controversial topic), before veering into regional politics (Nazarbayev was offended at Medvedev and Putin), terminating in a critique of Kazakhstan's economic dependency on Russia. If sovereignty is imagined in the figure of Nazarbayev, it is imagined as all too human, and international political-economic relations are reduced to interpersonal relations between leaders. Many joked about the president's non-arrival: would that he would promise to come every year, and the town would get an annual makeover! Such light-hearted cynicism draws attention to the performative dimension of Kazakhstani statehood (cf. Heathershaw 2014). If the dam materialises the new hegemonic formation of Kazakhstani statehood, it is always contingent, and can always be held up to critical scrutiny.

Social engineering and governmentality?

No project is purely technical: technical interventions offer the opportunity for social engineering, driven by the 'will to improve' (Li 2007). This is another sort of hegemonic reconstruction. The 'new architecture of aid' involves institutional reform, usually along neoliberal lines, rolling back the state and bringing in the market wherever possible (Mosse and Lewis 2005b). It is thus perhaps a surprise that the World Bank proposed keeping hydraulic infrastructure on the Syr Dariya under state control, owing to its scale and to the weakness of the private sector. Of course, there was a reform agenda, but this mainly focused on capacity-building, in particular strengthening the Committee for Water Resources, the weakened successor to the once mighty Minvodkhoz.[10]

I talked extensively with the country manager of SYNAS, Serikbai Smailov, in his cramped office in Kazgiprovodkhoz. He had previously worked on Soviet development projects in Yemen, where he met Italian engineers; today he works with international firms like Mott Macdonald who have also been working on project design. He described this in terms of collaboration, downplaying any sense of hierarchy between foreign and local consultants. However, he did stress that they learnt from foreign consultants, explaining with a wry smile how 'our people' (*nashi*) always go for the maximum – which was, he acknowledges, partly why the sea dried up in the first place. Governmentality is a useful lens here: technical interventions in people's imbrications with material things are accompanied by interventions in 'customs, habits, ways of thinking'. Local subjectivities are reshaped according to global best practice. In this instance, I would stress that power can be productive: powerful institutions are not inherently bad, and in some cases reshaping local behaviours is

[10] It is beyond the scope of my research to assess how far CWR was re-shaped as World Bank consultants hoped. Anecdotal evidence suggests that CWR was strengthened by World Bank support, but without significant institutional transformation.

beneficial (cf. Gould 2005).

SYNAS-1 was also accompanied by an attempt to transform local subjectivities in the Aral region. Although the vision driving the SYNAS project was primarily environmental, project designers were aware of the economic constraints involved in reconstructing the fishery. Indeed, they envisaged the Danes covering some of this ground. But they also envisaged that while the dam was being built, the government would draw up a fisheries development plan, based on community co-management. A World Bank (2004) report on Kazakhstani fisheries in general made a number of recommendations, including suggestions for a new law about fisheries management; in particular, it recommended piloting co-management on the newly restored Aral, and limiting inputs as well as outputs. But in keeping with the disaster vision, most emphasis in SYNAS-1 was placed on the technical project, and the broad assumption was that if the environment was fixed, the rest would follow.[11]

However, after SYNAS-1 was underway World Bank staff mobilised a parallel grant of $1.9mn from the Japanese Social Development Fund (JSDF) to accompany SYNAS-1 and address the economic issues facing the fishery, and, in doing so, reshape the way local people interacted with the environment. A foreign consultant drafted a project called 'Community-based Aral Sea fisheries management and sustainable livelihoods'. It was managed by the SYNAS team, headed by Smailov. It involved several components about improving fisheries infrastructure, diversifying incomes, and improving access to social infrastructure. Hence there were to be investments in roads and quays; radio communication for fishermen; an ambulance for one village; a water lorry for another village; medical supplies; wagons near the sea for fishermen to sleep in. It also involved sub-grants for local businessmen to apply for projects to diversify income sources. But the main goal of the project was to pilot co-management, whereby fishing communities would participate in resource management. Like the capacity-building of institutions, this is another form of social engineering, an attempt to instigate new, more sustainable relations between people and nature, so that individual fishermen would become responsible resource-users, with the state stepping back from management.

In many ways, the project operations manual reads like a textbook case of 'environmentality' (Agrawal 2005), a form of governmentality whereby people in their imbrications with the environment are re-arranged so as to foster new 'customs, habits, ways of thinking' about nature. In

[11] The team leader of SYNAS-1 confirmed this when I talked briefly with him.

this case, it seems to fit into a broader picture of hegemonic reconstruction, whereby local subjectivities are to be re-shaped by a 'transnational apparatus of governmentality' (Ferguson and Gupta 2002). As we see in the following chapter, the JSDF project was not particularly successful. In Brandtstädter's terms, this would seem to relate to the dissonance between the World Bank's notions of sustainability and local understandings. But this project was not only entangled with the dam – it was also the outcome of the work of the NGO Aral Tenizi, which we turn to in the following chapter. This complicates the notion of a transnational apparatus of governmentality, as the social life of projects exceeds the logic of that apparatus.

Chapter 6. Flounder, the Danes and Aral Tenizi

Qydyrbai, a Tastübek fishermen with a booming voice, told his cousin Samalbek and me about the first time a flounder was caught:

> ’87, October ’87. Ah, no, flounder was released in September ’84, in ’87 it began to be seen. Elubai was a fisherman, this was the first fisherman to catch a flounder. Then he came and showed it to my father: “*Agha*, what is this fish? It looks like a tortoise.” Then my father said: “This fish was released by KazNIIRKh.”

Qydyrbai explained that a man had come to their house from Alma-Ata in 1984, telling them that flounder had been released into the Aral, from the Pacific Ocean.

> So, he brought in one flounder. The next day my brother laid a net and seven fish were caught. Then my brother – the whole family was scared – my brother said “If I die I die...” and fried it and ate it. Tasty. So.

Samalbek was confused: he thought the Danes had introduced flounder. Qydyrbai explained:

> In ’96 the Danes came. Autumn ’96, at the end of September they came. So. Kurt, Knud, Henrik, Ruud. Four of them came. Then they began. They gave the people nets, Danish nets. They brought a refrigeration unit. Clothes. They brought everything except for boats. Clothing, life-rings, anchors, life-jackets, rubber boats, nets, needle and thread, crates, basins, seins, they brought all the equipment to give us. Only boats they didn’t bring, they brought everything else.

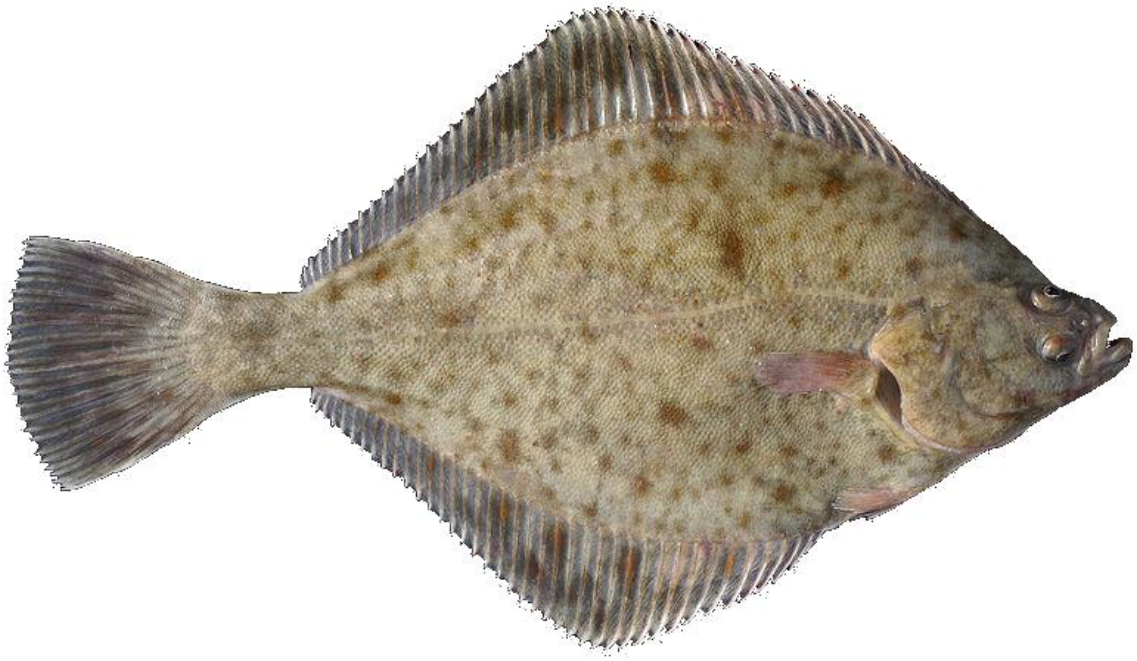


Fig. 1: Flounder (Platichthys Flesus), Source: https://en.wikipedia.org/wiki/European_flounder#/media/File:Platichthys_flesus_1.jpg, accessed 24/06/2016.

On the eve of the USSR's demise, Kurt Christensen was invited to Alma-Ata by a local university as part of a delegation of European grassroots activists, to foster NGO environmental activism in Kazakhstan. Kurt was a former fisherman, and, having heard about the Aral, he travelled to Aral'sk. The issue resonated with him as a small-scale fisherman, whose own fishing grounds in Kattegat had been polluted by run-offs from agriculture and damaged by trawling. Indeed, in the 1980s, he and other fishermen formed an NGO, Landsforeningen Levende Hav (Society for a Living Sea [LLH]), to stand up for small-scale fishermen. While their successes were mixed, he remains committed to the principle that only those suffering from environmental mismanagement can sort these problems out, and protect the environment on which their profession is based. He was also concerned, like many others at the time, east and west, about what we were doing to the planet: he was following the Nevada-Semipalatinsk movement, an anti-nuclear movement linking the USA and Kazakhstan in the final years of the Cold War, and the Aral disaster resonated with those issues. While in Aral'sk he heard the well-known refrain: if everyone who had visited the Aral had brought a bucket of water, the sea would be full again.

After this trip, Kurt was critical of the disaster narrative: so many publications, he argued in a later article, set out the disaster but ignored the people still living in the region; and he was critical of delegations which seemed to offer people hope, but simply reproduced the view of their position as hopeless (Christensen 1995). Determined to do something, in 1994 he returned with others from LLH to conduct preliminary investigations for a project which could be funded by the Danish Foreign Ministry Development Fund, Danida. They stayed in the kolkhoz Zhambul, where the chairman told them about the flounder. He explained that they had difficulty catching it: not only were their nets in need of replacement, but they were the wrong sort of nets for flatfish. He showed them a 1936 Soviet book which mentioned the Danish seine net, devised specifically for catching flatfish, and asked if the same technique could be used here.

Such were the now legendary beginnings of the project 'From Kattegat to the Aral Sea'. Over the coming years, flounder would be caught in large numbers, providing livelihoods for families in the region; they also facilitated the rise of a new agent of change, the NGO Aral Tenizi. This chapter thus continues the analysis of the previous, exploring the social life of a very different sort of project.[1] We explore the entanglements of actors, including flounder themselves, stressing the resultant

[1] The following narrative is based on conversations with Kurt and NGO workers in Aral'sk, and also on reports published on the LLH website, http://gl.levendehav.dk/uk/aral-fishery-project.htm, accessed 12/6/15.

contingency involved in the progress of the project, so as to nuance Brandtstädter's notion of transition as hegemonic reconstruction, and to ask whether dissonance inevitably results in failure.

As a small-scale grassroots project, the Danish project resembles other civil society initiatives in Central Asia, which have formed a major plank of development projects in the region, often with negative results (Mandel 2002, Weinthal and Luong 2002, Babajanian et al. 2005, Pétric 2005, Bichsel 2009, Féaux de la Croix 2013). As Bichsel (2009) shows in the Ferghana Valley, the region's problems have been wrongly located in scarcity and ethnicity, while development workers' normative visions of what society *should* look like have ignored actual social relations. Environmental NGOs in Kazakhstan fit the same pattern: initially seen as a means of fostering democracy, after the political climate became more authoritarian in the mid-1990s, western donors encouraged local NGOs to develop risk-free programmes, focusing on global issues rather than actual environmental damage; as a result, NGOs became disconnected from local society (Weinthal and Luong 2002). Despite widespread interest in the Aral disaster, as it became clear how ineffective aid was, much of the donor community, including NGOs, shifted to the Caspian (Weinthal 2004:265). The general pattern, then, supports Brandtstädter's contention that 'transition' should be thought about in terms of hegemonic reconstruction: development, with all its failures, casts Central Asia as backward, in the sense of having inadequate civil society institutions; western-funded NGOs function as part of a modernising 'transnational apparatus of governmentality' (Ferguson and Gupta 2002), taking on state functions and endeavouring to shape Central Asian citizens in the image of the 'developed' west.

The Danish project marks an exception. The global disaster vision played its part in mobilising the project, but it was not embedded in post-Cold War triumphalism: this was an instance not of the victors striving to re-shape the vanquished in their own image, but of new sorts of connections and commonalities discovered in the aftermath of the Cold War. Indeed, the Danes' vision of the sea was closer to some local perspectives than to those of other development workers at the time: while the dominant global disaster vision saw the sea as dying, Kurt's interest was sparked by the abundant flounder, a fish he knew from Kattegat. The project's first stage enrolled flounder to establish that this was a living body of water, not the poisoned puddle seen by most development workers (cf. Richardson 2014).

As the project progressed, this was an unequal encounter of rather different sorts of local knowledge

(cf. Slater 2002, Cruikshank 2005), but there were productive connections between the knowledge-spaces: both the Danes and the Kazakhs knew fishing, and they knew what it was to fish in waters damaged by their economic peripherality. But differences mattered. Kurt and his colleagues also had a vision of what human/nature relations *should* look like which differed from most local understandings: their vision was one where individuals taking responsibility for themselves and making decisions democratically would husband resources carefully. They insisted on the agency of marginalised people, whereas, as previous chapters have suggested, Aral fishermen, emphasise the limits of their agency. The Danes exploited the power differential and sought to instigate a sea-change in local society via aid. Indeed, this project shared some of the language of 'the new architecture of aid': local agency and sustainability resonated with hegemonic visions, which explains the NGO's later partnership with the World Bank in the JSDF project. But the Danish project, and later NGO activity, I argue, cannot be reduced to part of a 'transnational apparatus of governmentality'.

This chapter thus builds on recent ethnography of aid which questions the Foucauldian notion of an invisible apparatus of power, since this notion precludes ethnographic exploration of aid workers' intentions and moral choices (Yarrow 2008). Such ethnography focuses on those implementing projects, as brokers translating between different knowledge-systems (Lewis and Mosse 2006, Yarrow and Venkatesan 2012, Rossi 2006, Obeid 2012).[2] Rather than assume a gulf between administrative spaces and local worlds, I explore the connections between them, and locate outcomes in the way in which those connections are negotiated.

The next section charts the course of 'From Kattegat to the Aral Sea', the changes in local social relations, and the rise of Aral Tenizi. As projects progress via encounters between different actors with different world-views, Bakhtin's (1981c[1935]) notion of heteroglossia may be useful: words like 'sustainability' and 'democracy' are located in globally authoritative discourses, but they resonate, and are meaningful, within other discourses. The final section describes NGO attempts, after the Danes' departure, to implement co-management: the JSDF project and a more recent Global Environment Facility (GEF) project. Together these later projects mark the demise of the NGO as an agent of change.

[2] Similarly, rare successes in aid to postsocialist countries are put down to brokers (Wedel 1998:77-81, 188; Sampson 1996:141; Mandel 2002:286).

Proving the sea was alive

Kurt found international organisations based in Aral'sk like UNDP obstructive: caught up in the disaster narrative, they denied that there was any future in the sea, or any life in it. They suggested moving people away, or providing some other (unspecified) livelihood. To persuade the Danish development agency, Danida, that there was hope in the sea, LLH organised a delegation of Kazakhs, including fishermen, to come to Denmark, where they were introduced to Danish small-scale fishery cooperatives. The Kazakhs talked not only about the Aral's problems, but also about the flounder that *was* there; they explained that the situation was not as catastrophic as portrayed, and stressed that their problems were primarily logistical.[3] The clear articulation of this point of view helped mobilise funds from Danida for the first phase of the project. In 1995 a 'Protocol of our common aims' was signed with Kazakhstani partners, including Aralrybprom, and in 1996, the project 'From Kattegat to the Aral Sea' was initiated. It would run until 2008, mainly funded by Danida.

The initial aim was to establish a sustainable flounder fishery, which could be marketed to the population in the region. At this stage, the future of the Small Aral was still in doubt. The Danes recognised that the primary obstacle to catching flounder was lack of equipment and money. They also recognised the difficulties of infrastructure: the lack of roads to the sea, distance of processing facilities, and lack of transport – most fishermen travelled to the sea by camel. Finally, they foresaw difficulties in marketing flounder to a population accustomed to freshwater fish. Many were scared of flounder's appearance, with both eyes on top, and different colours on each side. There is a local joke that people would ask in the market for one kilo of black flounder and one kilo of white flounder.

Given these obstacles, and given the uncertainty regarding the future of the sea, Kurt and his colleagues adopted a step-by-step approach.[4] If much development work suffers from a dissonance between expert/specialist/outsider knowledge and local knowledge, they proceeded by acquiring local knowledge. The first step was to prove that it was possible to catch flounder, to prove that the sea was still alive. Flounder's cooperation was key to the nascent project's viability, and they were accordingly enrolled in human relations in three ways (cf. Knudsen 2014). First, as a one-month trial fishery was carried out near Tastübek in 1996, four Danish fishermen instructed Kazakh fishermen in catching and primary treatment of flounder. In line with their flexible approach, the Danes quickly

[3] See the report about their visit in *Danish Environment* (Sørensen 1996).
[4] Kurt told me that this is not how NGO projects are supposed to be run, especially today; he chuckled that if they had carried out a feasibility study, as would be demanded today, they would never have got funding.

realised that Danish seines were inappropriate, as the seabed was too muddy; but flounder could be caught with gillnets, which Aral fishermen were familiar with. So flounder were enrolled as a viable object of a fishery. Secondly, the fish were processed in Aral'sk; they were sold in the market, where a stall demonstrated how flounder is cooked in Denmark; and a competition was organised among the cafes in the town to cook the tastiest flounder. Flounder was thus successfully enrolled as a viable foodstuff, and the monstrous fish became a viable commodity within local markets. Finally, a biological test established that the flounder were exceptionally clean, far cleaner than Danish flounder. Flounder thereby exploded the vision of the sea as dying, or even polluted.

Establishing a fishery

The managers of Aralrybprom were less cooperative than the flounder. They failed to provide transport to and from the sea (fuel being used as a means of payment at that time), and did not establish a camp by the sea. Worse still, a year into the project the Danes found that fishermen were still not being paid in cash, despite the money the Danes had forwarded to Aralrybprom. When I talked to Kurt, I said that I sensed they had been somewhat obstructive. He roared with laughter: "SOMEWHAT?!" He described how they called the rapacious manager of Aralrybprom, Aimbetov, 'the animal', for his unflinching focus on his own personal gain. After all, across post-Soviet space, the interests of managers and apparatchiks were increasingly trumping those of their enterprise or department, and local stories about Aimbetov enriching himself in the 1990s abound. So the Danes began to bypass Aralrybprom, encouraging local fishermen to set up their own small cooperatives and limited liability partnerships (LLPs). Anyway, in 1998 Aralrybprom finally went bankrupt and was sold off. The new juridical bodies now became the main channel for Danish aid: registering as a cooperative or partnership was the condition for receiving equipment. In one sense, this was a pragmatic response to the failure of Aralrybprom, and it was after all characteristic of aid agencies' focus on downsizing in the postsocialist world (cf. Perrotta 1995:62-63). But it also aligned closely with the philosophy of LLH: that fishermen should take responsibility for their own environment. The Danes envisaged a break from the hierarchical Soviet system where lower-level agency was constrained: fishermen would decide when and where to fish; they would engage in primary processing; and they would take responsibility for marketing; when the Danes set up workshops to repair engines, they insisted that fishermen pay for them. When I talked with Kurt, he stressed repeatedly that personal responsibility was key: the aim was to inculcate a sea-change in people's consciousness.

So in Brandtstädter's terms, Soviet institutions were indeed relegated to the waste-bin of history; the

demise of Aralrybprom can indeed be read as 'hegemonic fragmentation'. New juridical forms and the language of personal responsibility conform to the neoliberal discourse prescribing reorganisation of labour relations so as to reshape postsocialist societies (Dunn 2004). However, despite the echoes, the Danes were not part of a homogeneous process of 'hegemonic reconstruction'. While many projects ignored the fact that 'transition' was experienced by most postsocialist citizens as the collapse of all the infrastructure and support which might enable one to take responsibility for one's own life, the Danes recognised, and to some extent provided, the material conditions which were necessary for re-shaping consciousness. They perceived and acted on the obvious point, that the region's woes were as much economic as they were ecological; just a little material provisioning could provide livelihoods, despite the ecological devastation. After all, although the Danes came from the 'centre' of the post-Cold War world, the waters of Kattegat were peripheral in EU space. This economic marginalisation made them vulnerable to the pollution of intensive agriculture, and to over-capitalised large-scale fishing. This personal history is key to Kurt's understanding that the problems of the Aral were more than ecological. His language of personal responsibility arguably stemmed more from the rugged individualism of a Nordic fisherman than from neoliberal ideas of people looking after themselves.

Organising cooperatives, the Danes worked through villagers who could act as local leaders. In principle, they preferred to work through brigadiers and ordinary fishermen, people with strong social capital within their communities but lacking connections further afield, who would take a lead in setting up cooperatives and mobilising kin and neighbours to go out and fish on the sea again. In practice, they worked with whoever was willing. For example, in Aqespe they worked with the famous labour hero and Party member, Narghaly (described affectionately by Kurt as 'an old dictator'); in Bögen they worked with the former director of the rybzavod, Äskerbek, and with Zhaqsylyq, a fisherman turned herder; in Tastübek with Düzbai, another fisherman turned herder; in Qaratereng with Batyrkhan, who had previously worked in provisioning.[5] Overall then, the Aral region differs from usual patterns of agrarian change in Central Asia and beyond, where former managers were best-placed to use their social capital to take advantage of privatisation (Trevisani 2010:112-118, Lampland 2002, Perrotta 2002:120). In rural Kazakhstan, this process has been characterised as 'accumulation by dispossession' (Toleubayev et al. 2010, cf. Harvey 2009).

[5] It is striking that the Danes sponsored two people who had worked as herders (*malshy*) in state enterprises. This position may have been a strategically useful one, as it afforded access to fodder supplies. Given the importance of private livestock to livelihoods at the time, fodder would have been a 'manipulable resource' (Humphrey 1998), which would have enhanced the social capital of those controlling it. Similarly, Batyrkhan would have controlled a range of manipulable resources, and, further, had organisational experience.

Certainly, it is widely assumed that former managers, especially Aimbetov, enriched themselves from the collapse of Aralrybprom, and today, Aimbetov's stature in the fishery is growing again. But some key productive capital, notably livestock and boats, had been distributed to fishermen as pay. If Aimbetov and others did accumulate capital by dispossession, they did not, at that stage, reinvest it in the fishery.

Apart from Narghaly and Äskerbek, who have died, all these people still occupy roles of authority in their villages, as we see in later chapters. In effect, one long-term outcome of the project has been to reproduce their social capital, which has put them in strategic positions to benefit financially from the return of the sea and the new management system. The process of 'hegemonic reconstruction' is thus specific to local contingencies. Kurt is open about the drawbacks of his approach, describing the issue of 'nepotism': whenever equipment was distributed, leaders would first and foremost look after their kin. But Kurt stressed that this was simply something which they had to work with, a problem to be mitigated. He was also candid about the effect of working with local leaders. Having told me how the project was initially obstructed by Aimbetov, he proceeded with amusement: "And we created new Aimbetovs!" This was of course not what was intended, but in Kurt's account, it does not distract from the primary goal of the project, which was to provide livelihoods.

Aral Tenizi

After the project's viability was proved, the second phase began, running from 1999-2000. Flounder promised the possibility of a small-scale, sustainable fishery which would supply local markets and provide local livelihoods. Quotas were set by the state, and were purchased by the private enterprises and cooperatives, who would sell licenses to brigades for a certain amount of fish. The Danes planned to set up receiving stations around the sea, with small-scale processing carried out near fishing grounds – not unlike the 1920s vision which was steamrollered by collectivisation (see ch.1). So there was another shipment of equipment, and a fish receiving centre was established in Tastübek.

Most importantly, the NGO Aral Tenizi, based in Aral'sk, was established. In a period where state control was lax, many fishermen were unregistered, and much of the catch went undeclared, so NGO workers would tour villages, gathering data about how much was being caught, and what nets and vessels were being used, thus taking on quasi-state functions. The NGO also acted as an umbrella organisation, coordinating the activities of different cooperatives and assisting with marketing. There was a general assembly, comprising 500 members within a year; a board was elected. A council would

agree prices, seasons, amounts to be caught. Thus small units were to cooperate through Aral Tenizi; they were not simply to be in competition with each other. Democracy was key, as a 1999 report indicates:

> The focus of Aral Tenizi as well as of LLH is the sea, and in order to protect the common interests of all parties living from and by the sea, conflicting interests must be accorded. NGO Aral Tenizi is aiming to be an independent and democratic organisation with numerous national and international contacts and projects. (Landsforeningen Levende Hav 1999)

According to this western liberal conception of democracy, conflict is inevitable, but a democratic forum can rationally align interests and find compromises. Simultaneously, another NGO 'Aral Aielderi' ('Aral women') was established, which worked on environmental projects like saving juvenile fish; planting trees; reopening canals to small lakes; training schoolteachers to teach children about the environment. Schools would have an *ekologicheskii ugolok* (ecological corner), echoing the Bolshevik practice of installing a *krasnyi ugolok* (red corner) for propagating Communist ideology. Aral Tenizi also looked outwards, its staff attending seminars and conferences about the Aral Sea. In 2000-2002, the NGO undertook an additional small project funded by GEF for preserving bio-diversity of the lakes by encouraging fishermen to fish on the sea.

Both NGOs were staffed largely by women who had worked in middle management in Aralrybprom in the 1980s and 90s. Although the language involved in both organisations referred to western buzzwords, these words resonated with local actors, making connections with ideas they were familiar with. Aral Tenizi's first president was Aqshabaq, whom we met in chapter 3 reminiscing about Aralrybprom. Today she works for another chronically failing fish-plant. She first got involved with the Danes in her capacity as a middle manager in Aralrybprom, and went on collaborating with them after its bankruptcy. She reminisces happily about her time working for Aral Tenizi. Her narratives are well-rehearsed, the story having been told many times to journalists: the fishermen had absolutely no hope before the Danes came, but through the NGO's work, she recounts proudly, they regained a sense of dignity.

Baqytzhamal studied water management, and has strong opinions about the role of Soviet officialdom in the sea's regression. Despite her training, she worked in Aralrybprom from 1988. In the late 1990s, when there was no infrastructure for fish marketing, her husband gained villagers' trust by setting up a small fish receiving centre, distributing flounder and lake fish in Russia, and settling up with fishermen in cigarettes and groceries. Baqytzhamal worked initially in Aral Aielderi, and took over

Aral Tenizi in 2004. She describes her time helping fishermen register, creating databases about fishermen, boats and nets – though she did not, she stresses, share this database with state inspectors. She also stresses fishermen's trust for her, and their honesty with her, which she contrasts to their attitude to the inspectors. She looks back on that time favourably compared to the present: although fish today are more abundant, there was less state control in the past. For Baqytzhamal, NGO activism provided an alternative to the hierarchical structures of the state.

The most energetic and influential member of Aral Tenizi was Zhannat. A former Komsomol member and energetic organiser, in the late 1980s she worked as a physics teacher and trade union secretary. She first got involved in Aral Tenizi to improve her English, but over time got more involved; in the 2000s she took a master's degree in applied ecology in Almaty. She has worked extensively with foreign specialists, and has contributed to FAO and World Bank reports on the fisheries in Kazakhstan (World Bank 2004, Timirkhanov et al. 2010). She sees a continuity between her Komsomol activism and her NGO activism, linked by the feeling that 'we can build a fair society'. After her marriage to a Finn in 2009 she moved to Finland; she still writes project proposals for Aral Tenizi but her influence is waning.

The vision of Baqytzhamal and Zhannat differs from that of Aqshabaq. Whereas Aqshabaq talks mainly about 'raising the economic level' of the fishermen, Baqytzhamal and Zhannat both talk, like Kurt, about the importance of responsibility, democracy and sustainability. However, there are subtle differences: for Kurt the Nordic individualist, the emphasis is on personal responsibility, hence the Hobbesian sense of conflicting interests underlying the Danes' conception of democracy; he seems fairly unconcerned about the structure of the juridical body. For Zhannat and Baqytzhamal on the other hand, cooperatives were preferable to LLPs, because collective decision-making and a sense of shared property was key; they had been impressed by these features, Zhannat told me, in the fisheries in Denmark. Arguably, what they saw in the Danish cooperatives (which Kurt did not) was an idealised vision of the kolkhoz, where local people lived in harmony with each other and with their environment.

Grassroots activity thus challenges the verticality of the state from below, as the NGO takes on state functions like recording catches and vessels (Ferguson and Gupta 2002). But Aral Tenizi cannot be shoehorned into a 'transnational apparatus of governmentality'. This globalising theory would miss

the historical trajectory of the region and the role played by flounder themselves. It would also ignore the personal trajectories of the participants, which meant that concepts from outside were meaningful within Zhannat and Baqytzhamal's worldviews (cf. Yarrow 2008, Obeid 2012). The transition from *krasnyi ugolok* to *ekologicheskii ugolok* nicely illustrates the resonances and translations between global environmentalist discourse, Soviet horizontal activism, and top-down Soviet propaganda.

Kambala Balyk

The third phase, 2000-2004, established further fish receiving centres in Bögen, Aqbasty and Qaratereng, equipped with refrigerators and generators. Most importantly, a processing plant was established in Aral'sk, supported also by an Israeli fund Mashav. Kambala Balyk[6] was set up in the former bakery. The primary goal was to improve marketing: fishermen were successfully catching plenty of fish, but faced difficulty processing and finding buyers. A secondary goal of the factory was to provide a sustainable source of financing for Aral Tenizi. This also marked a shift in the sort of fishery envisaged, towards a more commodified vision of nature. Kurt explained to me that they had perhaps been romantic in their initial preference for the small-scale, and had also failed to foresee the dramatic improvements in transport from the sea to Aral'sk once people started acquiring motorised transport. Crucially, the Kökaral project was approved: the sea was going to become fresher, and it was clear that local fish, including zander, would recover. If flounder supported a vision of a small-scale industry supplying local markets, zander promised something bigger, integrated into much wider markets.

Characteristically, Aqshabaq eloquently stressed the practical help and money which fishermen put into the factory, and their sense of ownership. I never heard fishermen talk about it in that way. But Zhannat claims that this was when the project started to go wrong. As Aqshabaq took over management of the factory, she employed her brother as deputy, and together they filled the factory with their kin; the factory also got into debt. In 2007 Aqshabaq was fired, and a Qazaly businessman, Amanbai, who also manages the Bögen fishery, was put in charge. He lasted for a year until he too was fired for diverting funds to his processing plant in Qazaly. After him came a Russian citizen, who finally bankrupted the factory. While Zhannat blames the corruption of this succession of managers, it is also important to stress their severe financial constraints – which we will explore further in the next chapter.

[6] *Kambala* is Russian for 'flounder', also used in Kazakh, *balyq* is Kazakh for 'fish'; in Aral Tenizi documentation in English it is transcribed as 'balyk'.

The final phase of the Danish project ran from 2004-8. Fishermen were now becoming materially better off, and were less in need of logistical support. The project's focus therefore shifted towards 'capacity building', involving seminars focusing on legal rights and obligations and on ecological sustainability. Both of these proved increasingly important: from 2004 onwards, cheap Chinese nets became available. Legal questions were also important when a new management regime was introduced in 2006, as we see below. By 2005, when the dam was built, Aral Tenizi had 800 members, of whom 575 were fishermen. There were about 100 brigades of three to six people, and forty private enterprises and cooperatives.

The JSDF project

The previous chapter closed with the supplementary project which accompanied SYNAS-1: the JSDF project, which was to address the fishery's economic constraints. As Aral Tenizi was involved in running this project, the Danes felt able to leave. Within chapter 5's narrative, the JSDF project looked like World Bank social engineering tagged onto a seemingly technical project. Its central vision was a community-managed, small-scale sustainable fishery. Existing cooperatives were to be turned into co-management organisations. Co-management organisations were to register legally and work with the research institute and the inspectors, declaring their catches in full. They would also decide how much could and should be caught. Fish would be bred in growing ponds in separate villages, and local processing would be developed, so that local people would be involved in every stage of fish's social lives. Top-down Soviet-style management was to be a thing of the past: fishermen were to be reconstituted as environmentally-minded subjects. In a hegemonic reconstruction where communities and sustainability are the watchwords, fishermen were to care about, and take responsibility for, the resource. Furthermore, state verticality was challenged: the inspectors were co-workers with the fishermen, not their directors; and state policy was to be dictated by the World Bank consultants' suggestions. The project was, of course, utopian.

Nevertheless, although sustainability and community certainly are watchwords of neoliberal governance, again, the local trajectory precludes analysis of this as transnational governmentality. The history of Danish involvement pointed strongly towards some form of co-management, hence the resonance of the terms 'sustainability' and 'community' with Zhannat and Baqytzhamal. Furthermore, these buzzwords made sense in the context of serious problems identified in Kazakhstani fisheries in the 2004 World Bank report, whose authors included Zhannat herself: she

thus translated between local realities and global visions. The report highlighted that there was a risk of collapse: catches across the country had fallen dramatically since Soviet times. Most fishermen were unregistered, and the report estimated that actual catches were four times higher than declared catches. The report blamed the verticality of the system: quotas were allocated to small companies, and sold on to individual brigades. As quotas were expensive, fishermen would buy a quota for one tonne and then fish as much as they could. Efforts at enforcement only alienated fishermen further. A further problem was the arbitrary size of quotas: research into stocks was only carried out on two lakes. The project was specifically geared to these problems: if fishermen had a stake in management, catches would be fully reported; developing infrastructure and facilitating access to the market would raise prices, reducing the incentive to fish illegally. There were certainly some blind spots in this vision, which ignored issues about markets and value-formation, which we explore further in later chapters; but we should not assume that failure was on that account inevitable.

The results of JSDF were mixed. Some infrastructure was delivered: most fishermen are connected with their base by radio today; wagons were placed near the sea – some are used, others lie empty; some stretches of road were upgraded. Sub-grants were distributed, to little effect: in Bögen today, an unfinished petrol station stands idle; in Qaratereng, equipment for breeding sturgeon, bought by Batyrkhan, lies unopened in the hatchery. But most importantly, co-management was never tried out. Part of the problem was staffing: the charismatic Zhannat left Aral Tenizi in 2008 to live in Finland. In 2011, when Kambala Balyk finally went bankrupt, leaving Aral Tenizi without any source of funding, Baqytzhamal went to resurrect it; the new director of Aral Tenizi, Aina, had no experience of working in fisheries.

But the main problems, Baqytzhamal explained to me, were in the implementation of the project. Whereas previously NGO staff had worked directly with the Danes, they were now expected to work with bureaucrats in the Committees for Water Resources and for Fisheries. The first problem was that the project was only approved in 2008, although it had been prepared in 2005. Baqytzhamal blamed obstructive bureaucrats, who wanted a bribe before signing the document. Then when the project started, bureaucrats were slow in disbursing the funds, so that by 2011, by which time the project should have been finished, only 22% of the funds had been disbursed. Furthermore, there was no central coordinator: Aral Tenizi had to work with different teams in Qyzylorda and Astana, who did not understand the needs of fishermen; in practice, all the money was spent on supporting the management teams. None of the training about co-management ever took place, and the system was

never piloted.

Another crucial factor in the failure of the project was the nationwide change in fisheries laws. Shortly after the 2004 World Bank report recommended a new law, a law was indeed passed about the fisheries in Kazakhstan. But the World Bank recommendations were ignored, and the hierarchical top-down system remained, although access rights to water-bodies were clarified and allocated to private bodies. In 2006 therefore, the Aral, like other large water-bodies, was divided into plots (Kaz.: *uchaske*/Ru.: *uchastok*), and each plot was put out to tender for ten years to a 'nature user' (Kaz.: *tabighat paidalanushy*/Ru.: *prirodopol'zovatel'*).[7] Nature users have the right to exploit their plot up to an annually-defined limit of catch per species. They employ fishermen, and provide them with boats. They are also required to draw up a development plan for the fisheries, including infrastructural development; and they are responsible for various aspects of management. As nature users employ fishermen and set prices, the new system contradicted the vision of co-management. The JSDF project was designed in 2005, under the old system. Since the project was only confirmed in 2008, two years after the tender system was instituted, it is unclear how co-management could have been implemented.

Fractured visions: Tūshchy

The new system did not dispel the problems raised in the 2004 report. Indeed, the tender process lacked transparency and was deemed unlawful by the General Prosecutor's Office (Naumova 2012, cf. Timirkhanov et al. 2010:45-46). In most villages, nature users were former fishermen who had worked with the Danes. In Qaratereng for example, Batyrkhan won. In Bögen however, although Äskerbek bid, he was unsuccessful, and the nature user to this day is Amanbai, from Qazaly. With little capital, nature users had difficulty keeping up with the extensive financial obligations in the fisheries development plan. Hence prices for fish were low, and nature users tried to avoid registering fishermen officially. Poaching was rife. A 2010 FAO report, also co-authored by Zhannat, estimated that less than a third of catches were reported (Timirkhanov et al. 2010:1), and also drew attention to the high level of illegal export (ibid.:53). Today the system is more established and some level of compliance has been secured, as we see in chapter 8, but the overall structure remains the same. Accordingly, in collaboration with western consultants, Zhannat continued to draft project proposals for funding from DfID (UK) and from the EU. The ultimate aim was to change the law to make

[7] Though nature users are also obliged to act as environmental managers, the term, dating from Soviet times, implies a vision of nature as a source of economic benefit.

provision for co-management before new tenders in 2016.

But with Zhannat in Finland, and Baqytzhamal running Kambala Balyk, their influence in the NGO was waning. Aina, the current director, used to work in the judiciary, and was invited to give fishermen legal advice about their rights and responsibilities. The contrast between Baqytzhamal and Aina is evident in their respective offices: Baqytzhamal takes pride in sitting with a mess of papers around her, the accountant in the office with her, while Aina sits authoritatively in the centre of a desk below a picture of the president; everything is tidy and ordered. Early in my fieldwork Aina characterised the role of the NGO as follows: "We do projects to improve the condition of the fishermen. They receive benefits from our projects." She cited as examples buying an ambulance for Amanötkel, and a water truck for Qyzylzhar. There was no sense of changing consciousness. The vision of the NGO is thus far from its original vision, and its role as an agent of change is declining. Her interpretation of co-management significantly deviated from the project documentation: as she explained it to me, it involved more competition from villagers to participate in tenders, and fixed rate of pay for fishermen.

The EU funders demanded that a pilot project be in progress to demonstrate the viability of the project. Accordingly, while I was in the field, a GEF-funded project was getting started on Lake Tūshchy, near Bögen, to pilot co-management. Although I did not see the outcome, the following vignette should give some impression of the fracturing of the NGO's vision. Tūshchy was restored as part of SYNAS-1, when a sluice was installed at Aghlaq. From an environmentalist point of view, it is also an important habitat for birds. But SYNAS-1 only provided water: it did not restore the fish population. Today, Tūshchy is populated mainly with pike, which is of little commercial value. The absence of phytophagous fish and lack of amelioration work means that Tūshchy is becoming clogged with plants, with the risk that it will eventually become a marsh. According to project documentation, therefore, the aim is 'to reduce anthropogenic impact on the biodiversity of delta lakes' through constructing a fish farm: low-value fish will be removed and replaced with carp varieties, which are both more valuable and will help clear the lake of plants. The fishery is to be sustainable, eco-system based; and the project will facilitate, according to documentation, 'the formation among the local inhabitants of a responsible attitude towards the ecological condition of the lake'. Better fishing techniques will reduce the damage of fishing on bird populations. Though the emphasis in the GEF documentation is on preserving biodiversity, in the spirit of co-management, fishermen are to be trained and ultimately will be involved in managing the resource, and also in processing fish. Both

nature and society will benefit. While I was in the field, this project was only in its early stages, as the research institute, KazNIIRKh, was still carrying out a biological feasibility study for the creation of a fish farm. There were parallel projects in other villages: in Qambash, a project to sew nets, so as to diversify the local economy and reduce the use of Chinese nets; and in Amanötkel, a pond farm project.

The local coordinator of the Tūshchy project was Zhaqsylyq, my host in Bögen. Today, as we see in chapter 8, he is a key figure in the Bögen fishery. Most of this derives from NGO sponsorship: NGO leaders saw him as an honest and hard worker, who did not drink heavily; being well-connected with relatives in the village, he was able to rally fishermen. Indeed, we saw in chapter 4 how Zhaqsylyq expressed a community spirit and hope that the sea would return. After the death in 2006 of the former fishery boss, Äskerbek, the NGO worked mostly through Zhaqsylyq in Bögen. As such, during the JSDF project he was to distribute radios, GPS navigators – he even received a fish-finder, which was only tried out when I was there, on the basis that I would be able to understand the incomprehensible instructions, which were in a form of English.

In autumn 2013, a commission came from Almaty, partly to monitor progress on the GEF project, and partly to make a film to display on the GEF website. It became clear now that there were rather different visions of what the project was about, informed by different visions of what nature is and what it is for. The commission consisted of Katia, the GEF employee in charge of the project and a friend of Zhannat, the imposing Igor, and Timur, the cameraman. Katia explained to me that, while it was positive that the locals should get some income from the fish, the project was mostly about birds. No one else I talked to mentioned the birds: what mattered was the fish farm. Indeed, when Zhaqsylyq explained the project to me, he simply described it as a project to create a *tovarnoe ozero* (Ru.: 'commercial lake'). None of them mentioned the co-management component – I only found out about that from the project documentation.

Before arriving in Bögen in the evening, the commission visited Lake Qambash, and the pond farm in Amanötkel. They were also accompanied by Aina, and Tabyn, another senior fisherman from Zhalangash who is seeking GEF money for a project of his own. As local coordinator, Zhaqsylyq was to host them – which involved his wife, daughter and daughter-in-law spending most of the day preparing substantial amounts of food. Female domestic labour was crucial to Zhaqsylyq's

performance of hospitality by which he reproduced his position in the NGO. An initial course was eaten at a high table consisting of sweets, cold meats, bread, *bauyrsaq*, fishcakes, fried bream, juice and cola. Katia and Timur picked fussily at what they deemed the more palatable bits of food, while Igor ate heartily. Then there was a second course – to the horror of the Russians – of *beshbarmaq* in Kazakh manner at a low table with everyone seated on the floor, eating with fingers. Although Zhaqsylyq speaks good Russian, the Almaty delegation communicated via Aina. After supper, Zhaqsylyq, visibly stressed, invited me to join him and Aina and Tabyn for an unusual glass of cognac.

The next morning, breakfast was another extended affair with much food and talking. Zhūbatqan, whom we met in chapter 2, was introduced as an 'old fisherman' (*staryi rybak*). He told a story in Kazakh about travelling to Balqash by train, but this was not translated. Further actors in the project, and in the current management regime, now appeared: the slight, dapper director of the Aral branch of the fisheries research institute KazNIIRKh, Zaualkhan, dressed in his usual smart blazer; a stocky, moustachioed inspector dressed in camouflage gear; a senior fisherman from Amanötkel; and several drivers. After breakfast, the Almaty delegation was taken off by Aina to see the sea, while frenzied activity took place in the village. Hastily assembled floating nests were loaded onto trailers and driven over to Tūshchy where they were taken out into the reeds by boat. Meanwhile a sign was erected on the shore, giving information about the project – though there was concern that the earth was freshly dug at the foot of the posts. When the group returned from the sea, Aina discreetly checked with one of the lads that eggs had been placed on the floating nests. Two young fishermen went off to haul in nets laid the previous day, filmed by Timur – everyone, of course, wearing shiny hitherto unused life-jackets (this was the only time I ever saw life-jackets).

Meanwhile on the shore, off-stage arguments erupted. Katya had been furious to find that the pond farm was completely dry, and laid into Aina about it. Meanwhile the large and imposing Igor was tackling the inspector about the Chinese nets which the delegation had seen around Qambash. The inspector argued defensively that it was only poachers who used Chinese nets. Meanwhile, Zaualkhan stood with them, but said nothing. The boat returned with a meagre haul of weedy pike – which was at least evidence of the need to stock the lake. Interviews were now filmed: Aina talked about creating a fish farm; Zaualkhan talked, in fluent Russian, about the different varieties of carp with which the lake would be stocked; the inspector, lounging for the camera on the bow of a boat, spoke in Kazakh, offering some generalisations about the need to reduce poaching. No one talked about the birds, nor about co-management, nor processing. Ordinary fishermen were present in setting the stage for the

filming, and in hauling in the nets, but they were not involved in the filming, so the whole event arguably reproduced the current hierarchical system.

There was an evident gap between the ambitions of Zhannat and Baqytzhamal and the possibility of realising them. The gulf between the social worlds of the development workers and local people was visible in the almost comical disjuncture between the Almaty delegation's business-like approach to their working trip and the locals' equally serious approach to the business of having guests. Development activity in this context is performance, as we saw in the disjuncture between the offstage arguments and the soundbites for the film. This is not to trivialise it – after all, Zhaqsylyq, not to mention his household, found the experience stressful. There was a dissonance between Katia's bird-first environmentalism, visions of co-management, and local expectations of a commercial fish farm. Even if we acknowledge that co-management in this context is not simply a technology of transnational governmentality but has its own specific trajectory, that is not to say that it would have worked in this context. The following chapter explores further the dissonance between the vision behind co-management and local realities. But dissonance does not make failure inevitable. Rather, it means that brokers and translators are necessary, to carry meaning between visions.

Near the end of my fieldwork, Baqytzhamal was fired from her role at Kambala Balyk, for reasons that become clear in the next chapter. She continues to carry out some Aral Aielderi projects, including a drip irrigation project for water-melon cultures, in villages further from the sea less based on fishing. Aral Tenizi is no longer an agent of change; instead, community leaders, who now are either nature users themselves or have close connections to nature users, today reproduce their social capital through their position on the board of Aral Tenizi. I did not stay long enough to witness the outcomes of the Tūshchy project. But from what Aina told me, the principles of co-management are unlikely to be propagated. More significantly, the application to the EU for a bigger co-management project, which claimed that the current system is "clearly not sustainable", was unsuccessful. The EU project had sought to change the law to make provision for co-management; without this project, there is no longer any chance of changing the law before the next tenders in 2016; and without legal provision, there is little chance for co-management institutions to succeed.

Changing society?

After successfully re-establishing a fishery, the Danes today are remembered affectionately in the region. Soon after arriving, I learnt to say *Skål!* to wash down a bowl of vodka. Narratives about the

Danes coming, and giving help, echo narratives about earlier times, when people came from outside to the sea and gave or received help. But there is little sense that the Danish project aimed to fundamentally change society. A fisherman in Qaratereng described their establishment of cooperatives simply as a way of distributing equipment:

> Then they brought nets all the way from Denmark. They brought them in a lorry, then at Aral'sk there was an office. Then they told these Batyrkhans to organise people, about ten people. They told others to organise more people. Then they held a meeting in Aral'sk. If for example Batyrkhan had organised people and brought them, they would say to Batyrkhan: 'You will be the brigadier of these people, here are some nets for your people.' They'd give them to Batyrkhan. Then as before, little boats... we caught flounder from the sea. With Danish nets.

Rather than 'personal responsibility' or 'democracy', there is a hierarchy whereby the Danes organise leaders, who organise ordinary fishermen.[8] The JSDF project is seen in the same light: first the Danes helped, then the Japanese. Today Aral Tenizi too is perceived as a channel of aid, whereby outsiders 'help' the region: it is not perceived as a democratic forum for debate. In bolstering leaders like Batyrkhan and Zhaqsylyq, the Danes re-shaped society in unintended ways, but there was no sea-change in consciousness, as we see in later chapters. Later projects, which have been channelled through the same local leaders, have further entrenched their positions, while utopian goals of building a democratic fishery have been unfulfilled. Today, Zhannat and Baqytzhamal, while proud of their work, sometimes complain about the fishermen's behaviour in the early 2000s: they did not want to take responsibility for themselves; they wanted something for nothing; they refused to declare how much they were catching. Looking back on the past through the lens of lost hopes, they express their frustration at the failure to align fishermen's visions with their own. They do not mention that most fishermen back then were more interested in making a living than in building a utopian fishery.

It would be possible to locate this failure, as Brandtstädter would put it, in the dissonance between the local world of the fishermen and the Aral's problems as they are seen from Kattegat, or from the offices of the World Bank. However, dissonance alone does not explain failure. Rather, I locate it in the different tempos of change (Wiber 2014). If a project is an attempt to appropriate some chunk of future time, there are always other changes happening at different tempos which complicate that attempt. The change in regulation in 2006 and subsequent entrenchment of the current system made co-management increasingly difficult to implement. Furthermore, the rapid pace of environmental change after the sea's restoration arguably made the co-management vision increasingly irrelevant:

[8] This continuity of practices, and in assumptions about how enterprises should be run, is common in rural postsocialist settings (e.g. Hivon 1998, Perrotta 1995:68-69).

rapidly growing catches displaced concerns about sustainability, and as zander tied fishermen into lucrative markets, the vision of a small-scale artisanal fishery sustaining local markets made little sense.

But if Aral Tenizi has failed in its more utopian goals, this does not matter hugely to Kurt: the real struggle, he insists, was to ensure that people could get a livelihood from the sea. He has not visited the region for many years, and is therefore uncertain about the project's long-term effects; however, he insisted: "But this isn't our problem: the choice is to do anything or to do nothing." Kurt thus forestalls a critique of development which points to the unintended effects: if we worry too much about unintended effects, about the uncertainty inherent in entangled processes, we will never accomplish anything. Kurt also suggested another sense in which the project was successful: by showing that the sea was alive, and that there could and should be a fishery on the sea, it persuaded other actors that it was worth saving the sea. Indeed, the evidence presented in the previous chapter suggests that the presence of a viable fishery was at least one factor in the Kökaral project going ahead. In this sense, flounder, enrolled in the project of building that fishery, played their part in enlisting other actors in the restoration of the sea. Ironically, this in turn has led to flounder's demise: they cannot cope with the freshening waters and are dying out.

Part 3

Chapter 7. The social lives of fish and the drama of resource management

After the filming at Tūshchy, there was a lunch of *quyrdaq* (fried meat) back in Bögen. The Almaty delegation sat at the head of the table in the place of honour (*tör*) with Aina near them. They talked amongst themselves. I was down at the other end of the table. To my right was Zaualkhan the scientist, who reclined languidly as he picked at the *quyrdaq*; to my left, around the bottom of the table, was the inspector, along with senior fishermen from the board of Aral Tenizi, who are either nature users or, like Zhaqsylyq, work as fish receivers (Ru.: *priëmshchiki*). They engaged in noisy banter with the inspector, leaning forward and eating heartily; Zaualkhan contributed to the conversation only intermittently, from the sidelines as it were. The spatial arrangements around the table, and the behaviour of the different actors, seemed to embody the management system today: the inspector and senior fishermen of the same social world, with overlapping interests; the dapper, urbane scientist who writes collaborative papers with Russian ichthyologists for western journals, distanced from, but still part of 'the local'; the agents of change from a different planet, with a broker who is not translating anything; and outside, not part of the meal, the ordinary fishermen.

Like other aspects of post-Soviet life, post-Soviet fisheries do not work according to the formal rules (cf. Nakhshina 2011, 2012, E.Wilson 2002, King 2003, Knudsen and Toje 2008). On the Small Aral, practices such as over-quota fishing, catching young fish and using illegal nets are widespread. It is neither clear how much fish should be caught, nor how much is being caught: according to some estimates, real catches exceed official catches by two or three times, and a disproportionate amount of the catch is zander.[1] The long-term effects of this are uncertain. This chapter asks why the system does not work as it is supposed to.

If co-management, as introduced in the previous chapter, is touted as a solution to the dysfunction of the current system, none of those present at Bögen that day had an unambiguous interest in, or clear understanding of, co-management. They also had different perspectives on the current system. Senior fishermen like Zhaqsylyq benefit from the current system and are not interested in changing it. The inspectors and the scientists see shortcomings in the status quo. Zaualkhan argues that the 'culture' (Ru.: *kul'tura*) of the fishermen is too low at the moment for them to be involved in management. Zaualkhan blames weak enforcement of the current system on inspectors, contending that Kazakhstan

[1] Quotas for zander are about 10% of the total. From what I saw, zander made up 30-50% of the catch.

is in ‘a transitional period’ (Ru.: *perekhodnoi period*); in the future, he says, the laws of the country will function and the system will be properly regulated. But inspectors argue that better funding is needed to increase their capacity. They are wary of any system which might impinge on their interests. The NGO director, Aina, as we saw, has a limited understanding of co-management, and those with the greatest commitment to co-management, Zhannat and Baqytzhamal, were absent. Zhannat and Baqytzhamal would agree that fishermen do not understand principles of sustainability *at the moment*, but are confident that it is possible to change this mentality through training – particularly if young people are motivated, and the authority of the senior fishermen is dislodged. Indeed, they argue that fishermen do not understand sustainability precisely because they are, as in Soviet times, excluded from resource management.

The central contention of this thesis is that environmental change cannot be separated from processes of political-economic change. The sea which has returned is a postsocialist sea, enmeshed in a different set of relations from the socialist sea which went away. This chapter explores how sea, fish and fishermen are constituted within the new management system and new markets. The next section contextualises the perspectives above in academic debates about resource management. I then introduce the formal and informal dimensions of the current management regime, before describing the social lives of fish (cf. Appadurai 1986). Over the course of these lives, fish play different roles in different visions, right up to the moment of their consumption in a German restaurant or a Russian bar. Later chapters will zoom in on particular moments in these social lives, where fish transform village life (chapter 8), but largely bypass Aral’sk (chapter 9). Here I show how these trajectories are shaped by formal rules, informal norms, and markets. Taken together, I argue, these explain the high rates of fishing today. It is therefore unclear whether co-management could achieve its goals. Finally, I show how these formal rules, informal norms and markets today reproduce fishermen’s perspectives on the resource.

Managing nature

Resource management systems are shaped by theoretical debates about why resource depletion happens, and are informed by visions of nature, visions which are temporally oriented to secure the future of the resource. The current system, formally mixing state and private regulation, rests on arguments akin to Hardin’s (1968) influential thesis of the ‘tragedy of the commons’: because individuals acting rationally in their own best interests collectively produce a result which is worst for everyone, faith has to be placed in state management or in private property, or both, as in the Aral case. The fishery will be efficient and sustainable, and future growth will be secured. There are

tensions in this vision, as we will see, which partly explain why the system does not work as it is supposed to.

Zaualkhan and the inspectors blame over-quota fishing on the dysfunction of the current system. If the current system is properly enforced, they assume, the resource will be managed sustainably. However, as we see, respecting quotas would destroy the fragile financial viability of the fishery. It would also mean lower prices for fishermen and/or limited access. Furthermore, this approach assumes that the current situation is simply a negation of formal rules, de facto open access. But as von Hellermann's (2013) study of Nigerian forest management suggests, arguments which just blame corruption assume that the formal rules, if obeyed, result in effective management. There are reasons for doubting the effectiveness of the current system's regulation by numbers. In particular, the system is based on the assumption that perfect monitoring by the state is possible, which is highly questionable given the scale of an expansive and unpredictable environment of sea, lakes, marshes and river with few roads. Von Hellermann also argues that blaming corruption obscures the real effects of governance as it is implemented. Indeed, it is, partly, an unintended consequence of the formal rules that things are as they are on the Small Aral. We should therefore attend to the practical outcomes and subjective effects of formal and informal dimensions of management. As management is enacted, different actors, from different epistemic communities, play different roles, all with different visions of what fish are and how they should be extracted for human economic use (Wiber 2005, Hoeppe 2007, Knudsen 2008). Such visions are consequential. Thus, while Zaualkhan thinks about the current reality as a deviation from an ideal form which will be reached in the future, it is more productive to think about how categories like 'state', 'private', 'fisherman' come into being through social processes of resource management.

This point is broadly recognised by Zhannat and Baqytzhamal, who blame the private and hierarchical structure of the property regime, and pin their hopes on co-management. Fishermen have no incentive to conserve the resource precisely because of their exclusion from management. Underlying their plans for co-management is a vision in which nature should be managed carefully, and is best done so equitably by local communities. If the current regime rests on the theory of the 'tragedy of the commons', co-management rests on theoretical perspectives developed in new institutionalist economics (especially Ostrom 1990) and bolstered by empirical findings of anthropologists and others (e.g. McCay and Acheson 1987), which suggest that both state and private control can create incentives for unsustainable resource use, while common pool resources can be successfully regulated

by individuals cooperating to devise rules both in their own and the collective best interest. Co-management of fisheries is also advocated by ecologists and socio-ecological systems theorists, who argue that integrating fishers' knowledge into management is the best way of coping with unpredictable fish populations (cf. Wilson et al. 1994, Johannes et al. 2000).

However, these critics of Hardin's argument share his key assumption: that the distribution of rights and obligations shapes resource use. Faith is therefore placed in asocial institutions, ignoring the range of social and economic relations in which resource users are entangled (Steins 2001).[2] Furthermore, as Agrawal and Gibson (1999) note, co-management rests on several assumptions: that resource-dependence automatically makes people good stewards; that communities are small, homogeneous units with shared norms, including norms compatible with 'sustainable' exploitation. Co-management institutions also rely on open, democratic decision-making and widespread trust (Ostrom 1990).

Though co-management has never been tried on the Small Aral, the ethnography presented here suggests reasons to query all these assumptions.[3] The local social norms through which the fishery functions in practice are not conducive to openness, as the next section shows. The final section shows that fishermen understand fish as naturally abundant, so see no need to limit their effort. Furthermore, the social lives of fish, during which they are enrolled in different visions, complicate the notion of resource-dependence. Indeed, resource management systems in general abstract fish from the multiple entanglements they get caught up in over the course of their social lives. Academic discussions of management ignore in particular the shape of the market. From this perspective, the management system is just part of the 'resource environment', in which resources come into being at different points as "the result of an entanglement of processes and practices of abstraction, homogenization, and standardization" (Richardson and Weszkalnys 2014:22). Intensive fishing today, particularly of zander, depends on value-formation at different moments in fish's social lives, moments of abstraction which, together, shape processes of extraction from their aquatic environment. As I shall show, value-formation is driven by the formal and informal aspects of the

[2] Acheson (2006) shows that while resource management failure can occur in all types of management, proponents of particular theories place disproportionate faith in them as policy solutions.
[3] Anthropologists' responses to community management range from cautiously positive (Li 1996, Tsing 2005, Caulfield 1997) to sympathetically critical (Li 2002, Agrawal and Gibson 1999, Acheson 2006, Dörre 2015): all agree that there is a mismatch between the idealised image of community adopted by policy-makers and the multiple, often conflicting interests on the ground; this mismatch may or may not be productive. Zhannat and Baqytzhamal are well aware of the mismatch. Whether it would have been productive in this case would have depended on the brokers involved in implementing co-management.

management system – but also by processes far beyond it. Ultimately this vision of fish as economic value subsumes other visions (Hornborg 1996, Greenberg 2006). In sum, I argue that human agency in resource exploitation is distributed throughout the social lives of fish. Only from this perspective can we look at fishermen's own views of the resource.

Formal and informal regimes

The state devolves use rights for ten years over different plots of the sea and lakes to a series of private juridical bodies (nature users), who have the right to employ fishermen by issuing licenses. Nature users have the right to buy all fish caught on their plot at their prices, and should ensure that there are no poachers. They should provide boats but not nets or fuel. Fishermen therefore characterise the system as 'private' (*zheke*), expressing the absence of connection with the state which once provided boats, fuel, equipment. They associate the sea being private with the division into plots, which, except for Qaratereng fishermen who fish fertile waters near the delta, is regarded as an inconvenience.[4] But the state, in the form of the inspectorate (Ru.: *rybinspektsiia*), is by no means absent. Nature users have the right to fish up to an annually defined quota per species, which they purchase from the inspectorate. This limit is defined by inspectors, based on scientific recommendations. Nature users should also mediate between fishermen and the state, by paying pension contributions and social tax. They also have a series of obligations towards the state, codified in fisheries development plans, which involve some environmental measures (stocking lakes and sea with valuable carp varieties grown in the state hatcheries, and clearing weeds) and some infrastructural measures (installing refrigeration units near the sea, building proper receiving stations and accommodation for fishermen by the sea, building roads to the sea, and investing in new boats). The inspectorate therefore monitors the nature users to check that they are fulfilling their responsibilities, and it monitors fishermen themselves directly. The vertical authority of the state is still there, although it does not involve the same incorporation as in Soviet times.

These abstract categories of 'nature user', 'state' and 'fishermen' are instantiated in concrete social relations and practices, such that the system is informally regulated by local social norms (von Benda-Beckmann et al. 2006). For either the current system or co-management to work, local norms about openness and accountability are essential. Such norms are arguably absent from the region, as the saga of Baqytzhamal's dismissal from Kambala Balyk demonstrates. As director of Kambala Balyk, she was a nature user with a plot on the sea and a factory, answerable to the fisheries inspectorate;

[4] In practice, boundaries are not respected, though considerations of fuel and distance limit the encroachments.

but as Kambala Balyk funds the NGO, she was also answerable to the board of Aral Tenizi. Having mortgaged the factory to buy a compressor fridge, she fell behind with loan repayments in summer 2013 when she was banned from fishing while a criminal investigation was opened against her for over-fishing flounder. The case dated back to April that year: although she had a quota for 15 tonnes of flounder up to 10th April, she had not received any; the inspectors pressurised her to record that she had caught some, saying that she would receive a lower quota next time otherwise. In doing so, she made a mistake, recording 13 tonnes before, and 2 tonnes after 10th April, when she did not have a quota. The inspectors picked up on the mistake and took the case to the prosecutor's office.

Baqytzhamal's indignation was multi-stranded. First, she had broken a rule, not the law – so it was a matter for the inspectors, not the prosecutor's office. Secondly, she insisted that she had not actually broken anything. Of course, strictly speaking the *promzhurnal* (logbook) should be filled in on the shore, but, she said, the 'fishermen' (i.e. the receivers) are not literate, so of course they bring it back for her to deal with. This was, for her, acceptable bending of the rules. Finally, she had not damaged the state, since, because flounder is dying out in the freshening sea, the quota has been free since 2007. Eventually, Baqytzhamal wrote to the Fisheries Committee, and the upshot was a stern reprimand to two senior inspectors in Aral'sk. She is convinced that the inspectors and prosecutors wanted to make an example of her, knowing that she would not use informal channels to defend herself, and underestimating her capacity to take the case to the highest level. Given that she is a woman in a predominantly male world, and given her general antipathy to bureaucracy and authority, her explanation seems highly plausible.

After the case was dropped in November 2013, the factory began to operate again and the outstanding loan repayment was paid off. But in January 2014 there was a quarterly meeting of the Aral Tenizi board in Bögen. Members of the board accused Baqytzhamal of embezzlement. While she suggested that an audit commission be carried out to look into the issue, they demanded to see all the relevant documents there and then – which, of course, she was unable to do, as they were all in Aral'sk. For various reasons, Baqytzhamal suspected that there was a hidden agenda behind this denouncement; and she felt that she had been tricked into going to Bögen without the relevant paperwork.[5] She remarked bitterly that this was the upshot of teaching the fishermen democracy – that they elected to

[5] In endorsing Baqytzhamal's story, I am myself taking sides. I cannot go into details without compromising people who helped me during my fieldwork, but suffice it to say that other versions I heard of the story were either gappy or thoroughly inconsistent.

sack her. Arguably, what was at stake was the very conception of politics. Richardson (2015) describes the failure of a World Bank community-based conservation project in the Ukrainian Danube delta: project managers' liberal understanding of openness was trumped by local conceptions of politics as intrigue and denunciation. Similarly here, Baqytzhamal's insistence on procedure was trumped by a reality of politics as backstage intrigue and denunciation, which extends across state and non-state institutions. This picture is crucial to understanding how the fishery works in practice today. We will unpick different aspects of Baqytzhamal's story in the exploration of the social life of fish which follows.

Fish, numbers and virtual fish

Although carp, silver carp and grass carp are hatched in the state-run hatchery, most fish in the Small Aral are born by 'natural reproduction' (Ru.: *estestvennoe vosproizvodstvo*). But even natural reproduction is regulated by humans. As in Soviet times, there is a banned fishing season in May and June, when carp spawn. In the scientific vision which the management system rests on, fish are a resource to be husbanded over the years; from this perspective, both nature and humans are objects to be regulated in what Pálsson (2006) calls the 'aquarium of modernist management'. There is also a permanent ban on fishing in the delta, an important spawning ground. There are regulations about mesh-size, and certain types of gear (monofilament nets and explosive devices) are also banned. In principle, then, unlike many modernist regimes, the fishery not only regulates how much fish is extracted, but it also regulates some parameters of fish populations, as western ecologists advocate today (Wilson et al. 1994, Acheson et al. 1998): the spaces and times of regulation are not wholly divorced from the spaces and times of nature. But although zander is the most valuable fish, the banned season does not cover its spawning period, which is April: regulation here has not caught up with present market realities. Inspectors are also inflexible towards natural variability: spring 2014 was colder than normal, with ice still lying on the sea at the beginning of April, making fishing impossible. KazNIIRKh scientists, as well as nature users, requested that the ban be postponed, since carp had not started spawning – but to no avail. In practice, of course, transgressions occur. Poaching is common in the delta, and limited fishing still happens during the banned season, with some fish sold to *kommersanty*, and others taken to the nature users themselves, who ask no questions. But the institution of the bans seems, in practice, to be as significant for establishing the (always contingent) authority and function of state inspectors as for actually regulating the fishery.

Zaualkhan's account of the controversy over postponing the ban offers an instructive glimpse of his world-view. He first complained that the state authorities did not understand biology, suggesting that

the laws of the state were subject to the higher laws of science. As it is, Zaualkhan implied, they are the arbitrary outcome of personal decisions by ignorant inspectors. But he also argued that it was unfair that the fishermen had been unable to make any money during those lost fifteen days, expressing a paternalistic concern. In this rather different vision, the laws of the state should be flexible on a moral basis, subject to a higher rationality whereby fish are a source of employment. Indeed, when Zaualkhan said that co-management would not work, he argued that basic conditions needed to improved first such as living quarters by the sea. Seeping into his scientific vision are old Soviet ideas connecting fishing with work and entitlements.

The central plank of regulation is numbers, which perform both representative and constitutive functions (cf. Verran 2010). In the next phase of their social lives, therefore, fish are known as numbers by scientists. Stock assessments represent the underwater reality in terms of biomass per species and fertility of spawning stock. I did not, unfortunately, have access to KazNIIRKh's methodology, but there are reasons to doubt the accuracy of these numbers. Anywhere in the world, accuracy of fish stock assessments is seldom better than a range of 30% (Acheson et al. 1998:396). In the Aral context, there are further complications. Zaualkhan, trained in the Soviet system, stresses the role of pure science, but he also stresses the financial constraints KazNIIRKh operates under today, and the difficulties of carrying out research with so little money. Indeed, even the building of the institute, once in a prime seaside location overlooking the harbour, is crumbling. Independent ichthyologists are sceptical about the quality of KazNIIRKh's work.

Scientists then make recommendations about quotas to the inspectorate. More fertile areas nearer the delta receive proportionally higher quotas than saltier plots. Representation of underwater realities is thus geared towards the future: quotas represent a forecast of how many fish can be removed without damaging future stocks. But quotas also *constitute* a form of property, fictitious quasi-commodities, which we can call 'virtual fish' (Minnegal and Dwyer 2011).[6] Virtual fish regulate the fishery by limiting the amount of real fish which may be caught. Nature users are obliged to purchase their entire quota over the course of the year, but they can choose when to take it. So, for example, they will not take any quota over the summer, when it is too hot to fish. The quotas are the Fisheries Committee's main source of income. Virtual fish thus establish a relationship between nature users, the state, and actual fish in the sea. This relationship, endorsed by the seeming objectivity of scientific knowledge,

[6] Quotas are quasi-commodities because they can only be exchanged between state and nature users, unlike individual transferrable quotas (ITQs) in the west.

is both financial and regulatory. Regulation thus rests on the modernist vision that fish can be known numerically, and that annually limiting the catch by numbers will lead to reliable catches over time.

Regulation by quotas in the west has been widely critiqued, as, even if stock assessments are correct, it is hard to predict what the effects of removing certain numbers of fish will be. Western fisheries scientists are increasingly coming to realise that deterministic models of nature do not match a reality where fish populations may well be chaotic or stochastic. Single-species quotas ignore other factors which affect the reproduction of fish populations: age of spawning stock; ecological interactions between fish; effects of fishing gear (Larkin 1977, Ludwig et al. 1993, Wilson et al. 1994, Pitchford et al. 2007).[7] As a guide to the future, quotas are therefore at the best of times questionable. There are further complications in the Aral context. Zaualkhan told me that he sets the quotas a little lower than they should be: because he knows over-quota fishing is happening, it is better, he says, to set the quotas low. Understanding the present as 'transitional', he partakes in, and thus reproduces, a system where formal rules do not work, where informality is the norm. Meanwhile cynics in Aral'sk point out that KazNIIRKh's work is partly funded by nature users, and since nature users will overfish in any case, lower quotas suit them as they cost less. I did not ascertain how much the inspectors would alter KazNIIRKh recommendations, but the allocation of quotas is at least partly flexible. The root of Baqytzhamal's problems lay in this point: she was told that if she did not record 15 tonnes of flounder, she would receive a lower quota next time. Size of quotas is thus related to perceived ability to exploit them. This makes little scientific sense, but it is linked to a rather different view of property: in this vision, there is a moral sense that property must be exploited.[8] In this vision, the quota is more like a Soviet plan – a target rather than a limit.

There is therefore a mismatch between virtual fish and real fish. Lampland (2010), discussing early socialist Hungary, argues that false numbers are not necessarily deviations from a formal system, but are part of the process of formalisation – better, in effect, to deploy wrong numbers in the right manner than to have no numbers at all. From this perspective, Zaualkhan's numbers matter less as a representation of reality, than as an enactment of a management system founded on scientific knowledge and abstraction of nature as numbers. Current practices thus reproduce hierarchies of

[7] Much of this, as noted in ch.1, *was* regulated in Soviet times. Critiques of 'modernist management' focus on quotas in relation to markets, but the planned fishery had the capacity to regulate input and output much more closely. In this light, quotas are a particularly blunt instrument. However, KazNIIRKh does also take into account fertility of spawning stock, so their assumptions are not as simplistic as those critiqued by the authors cited.
[8] In other postsocialist contexts, this is enshrined in law, cf. Verdery (1998).

scientific knowledge over fishermen's knowledge. No one, least of all fishermen, believes that fishermen's knowledge has any value for management – despite academic arguments to the contrary, a key justification for co-management (Pálsson 1994, 1998, Johannes et al. 2000).[9]

But the inadequacy of numbers as representation also matters. Institutions are built on the premise of certainty, which depends on the objectivity and transparency of science (J.Wilson 2002). Because everyone knows that the numbers are socially produced, the management system is constituted on an arbitrary foundation, and trust is eroded. If there is little sense that the numbers which constitute virtual fish adequately represent fish in the sea, virtual fish are not respected. Fish play their part here in the corrosion of trust in the quota-system: although everyone knows that quotas are not respected, catches (and quotas themselves) have grown year on year. As long as fish populations continue to grow, the formal institution of scarcity makes little sense.

Fish in the (Chinese) net

Fig. 1: Aikeldï, Mūkhtar and Maqsat extracting net, January 2013

The subjective effects of this system on fishermen become evident in the next moment of abstraction in fish's social lives. Now fishermen themselves enter the drama, physically abstracting fish from the sea. Recall the vignette in the introduction: this is a moment of skill and local knowledge, when

[9] I did not, unfortunately, have access to KazNIIRKh's methodology. In line with Knudsen (2008), I suspect that there is less of a gulf than is assumed between the two ways of knowing fish.

fishermen interact directly with the environment via the technology of the net, which is probably monofilament, a 'Chinese net' (*qytai au*). Some fish are consumed within the village, but most become commodities. The following chapter explores in depth fish's parts in the social worlds of Bögen villagers. For now, I focus on the technology of abstraction itself, the monofilament ('Chinese') net. Like explosive and electrocution devices, which are not used on the Aral, monofilament nets are illegal. Because they are cheap, they are readily discarded, left in the sea or on the shore. If fishermen cannot find them, it is not a major loss, and the nets get tangled on the seabed. Once stuck, they do not decompose. So abandoned nets go on catching fish. As an ichthyologist in Almaty drily pointed out to me, there is no loss to the ecosystem when this happens, as the biomass stays in the sea, re-entering the food chain: the loss is to humans. But Chinese nets are ubiquitous. Because they are illegal, if unknown vehicles ever approach the shore, fishermen hastily throw all their nets into the boat and cast off; but in general there is no attempt to conceal their use.

There is an instructive contrast to Knudsen's (2008) ethnography of the conflicts between the practical knowledge of fishers and the expert knowledge of scientists in Turkey. In particular, he finds contrasting views on the sonar: fishers insist that it damages fish, while the scientists insist that it has no negative impact. While the scientists simply see it as a piece of technology, fishers' knowledge about the sonar represents a moral commentary on technology and social inequality. By contrast, with Chinese nets, there is no clash of knowledge systems, but rather a disavowal of knowledge. The following conversation is typical:

> William: Why don't they give permission [to use them]?
>
> Küntughan: I don't know. If they are left in the water they don't decompose, they say, there's a storm or whatever and they can't be pulled out... fish come and get stuck, they say, and they rot. When that fish rots, it pollutes the water, they say. Then diseases spread from it, they say. Therefore it's forbidden to lay those nets.

After disavowing knowledge, Küntughan proceeded to give a full explanation, but at one remove, as someone else's knowledge; in fact, I never heard such an explanation from scientists, but presumably this was what he had heard from the inspectors – in any case, to Küntughan it is unimportant what the real reason is. On another occasion, I pressed a young Bögen fisherman about the issue: did *he* think they were harmful? He replied: "Harmful, it's said... but [broad grin] they catch fish well (*ziangdy deidï ghoi, bïraq balyq tüseidï*, lit. 'the fish enter them')". He thereby delimited two domains of knowledge: he claimed knowledge about the technology in the practice of fishing, but not about the long-term effects of the technology. Affirmation of ignorance justifies ignoring – and it is empowering (cf. Uekoetter 2013). Only once did I hear someone contest the knowledge about the

Chinese nets: he complained that inspectors come and fine them for Chinese nets on the basis that they wipe out the fish. But he protested that it was not Chinese nets that wiped out the fish, but the water being released through the sluices of the dam. So even when this issue is contested, it is to deny that fishermen's actions affect the resource. There is a sense of the arbitrariness of power, and a sense that the diktats of the authorities do not relate to everyday life except as a form of control. In contrast to the meanings of the sonar to Turkish fishers, for Aral fishermen Chinese nets *are* just pieces of technology. As in chapter 4, agency with respect to the environment is felt to be elsewhere. Here this point is empowering: the hierarchical form of the current system constrains fishermen not to think about resource-management; at the same time, awareness of the wide gulf between form and reality means that rules can be readily ignored.[10]

But the issue of Chinese nets goes beyond the local worlds of fishermen: although their import is banned, they can be imported as nets for catching birds. Enforcement of the ban on sale is also lax: in Aral'sk they are sold covertly, but in Qazaly they are sold openly in the market. The net which the fish are entangled in embodies a web of relations which extends beyond the local context of the sea, across international borders and markets. Furthermore, the Chinese net is favoured because other nets are so expensive. Agency is thus dispersed beyond the fishermen who actually use the nets.

Fish in the factory

Extracted in a Chinese net, bringing value to fishermen and their families, the social life of the fish is far from over. They will be known in different ways, and most become different sorts of commodities, with value extracted at every stage. Only certain types of fish become commodities, usually bream, roach, asp and zander. Although it is valuable, there is not enough caught for it to be worth nature users receiving it. The commodity fish caught by Bögen fishermen now travel in a Soviet-era ZiL truck across the dried up seabed and up to the small plant outside the village, where fifty people work. Sacks are hauled out of the lorry and slit open to reveal their contents. Exhausted men, working through the night, lug sacks of fish a few metres onto the scales. Zander are then transferred into crates and loaded into a modern container lorry for transport to Qazaly where they will be filleted, while bream, roach and asp fish are taken into the factory, where they are washed in long baths before being fished out by strong-armed women and young men. Then the sorting (Ru.: *sortirovka*): a different group of women knows them fleetingly as sizes. Then they are frozen. Later on, a group of

[10] In other post-Soviet fisheries too there is a preference for hierarchical management (E.Wilson 2002, Nakhshina 2011); elsewhere in Central Asia Oberkircher and Hornidge (2011) describe how water users in Uzbekistan see water-management as the preserve of the state, not of their agency.

young men and women joking and laughing together will package them.

Fig. 2: *Sortirovka*, fish plant, Bögen

While the *sortirovka* is proceeding, factory bosses are adding up all the figures, and checking the weights against those recorded by the fish receivers. They also draw up official documentation, again translating fish into numbers. One winter's evening I was up at the factory. As usual, the fish was all bream, roach, asp and zander. But as the documentation was drawn up, the bream and zander were recorded as sabrefish and flounder. Of course, Amanbai holds a quota for these as he is obliged to purchase quotas for all species. But he does not receive them because their numbers are too small. Bream and especially zander on the other hand are being caught in abundance – over the official quota.

The mismatch between virtual fish and actual catch is facilitated by the difficulties of regulating. Keeping two sets of records, one by the shore and one at the factory for the inspectors, is routine. Even Baqytzhamal did it, for all her insistence on openness and procedure – and this was what the inspectors picked up on. Out of the water, fish lead double lives: as commodified frozen meat, and as official numbers. These numbers misrepresent the real fish, but they also constitute the relationship between nature users and the state. Inspectors are aware of the under-reporting, but stress their limited

capacity: just ten inspectors patrol the whole raion; they have three UAZ jeeps, one Niva and two boats. Every plot has several receiving stations, so it is impossible to monitor nature users. The attempt to prosecute Baqytzhamal for a minor offence suggests that inspectors need to make an example, to prove that they are doing something to address the problem of above-quota fishing.[11]

Fig. 3: Fish in the back of the ZiL

From one perspective, then, the lack of state oversight is exploited by private actors. Certainly, most nature users want to transform fish into profit and thereby reproduce their social capital, as we see in the following chapter. But above-quota fishing also speaks of formal tensions in the property regime, whereby rights are accompanied by obligations (cf. Verdery 2004). Indeed, the fisheries development plan shows some continuities with Soviet planning. But although the authorities have a stake in collecting taxes from a growing sector, the formal logic of this plan is to make nature users behave like good capitalists: profits from the fishery are to be re-invested to further growth.[12] Ideally, refrigeration facilities near the shore will facilitate year-round fishing. If quotas rest on a vision of nature as a scarce resource to be husbanded, the development plan rests on a vision of fish as a resource which feed steady economic development and capital accumulation in the future, with the state benefiting financially. Exchanged as commodities, fish are a means of building regulated capitalism. Although there is a congruence between management by numbers and the

[11] Cf. Trevisani (2010) for similar behaviour on the part of the authorities towards small businesses in Uzbekistan.
[12] Similarly, in decollectivised farming in Uzbekistan, farmers are obliged both to deliver cotton to the Uzbek state and to behave like good capitalists (Trevisani 2010:ch.4): the role of the state is less extreme in this instance, but it produces similar tensions.

commodification of nature, there is a formal tension: if virtual fish are scarce, profits are too low to make investments; and if investments are made but virtual fish do not increase, there is a risk of over-capitalisation.

This tension is heightened by the constraints nature users face, which create an incentive to ignore virtual fish. If in Soviet times plans were constrained by material shortages, nature users today are constrained, as in other postsocialist settings, by lack of money and credit.[13] Failure to fulfil the plan can lead to confiscation of plots, a fate which befell a number of nature users in the early years of the system. LLP Asta in Zhalangash for a long time failed to install a freezer, or fulfil any of its other obligations, and only held onto its plot through use of connections with the inspectors. Eventually in 2014 the company was to have its plot confiscated and handed over to Aimbetov. It is rumoured that a bribe enabled the director to maintain management of the plot in a complex arrangement whereby the LLP was handed over to Aimbetov but the director stayed in place.

Other nature users do fulfil their obligations. Ideally, they should translate fish into money, and invest in infrastructure. However, fisheries are not sufficiently profitable to do this without credit – which is why Baqytzhamal had to mortgage the factory to buy a compressor fridge.[14] Credit can be obtained from a state-owned rural consumer cooperative which offers easy terms, but which will only assign money to a new business partly owned by itself. Amanbai, manager of LLP Baqyt which fishes in Bögen, had to open a new LLP, Servis Tsentr, and is successfully making repayments. Batyrkhan in Qaratereng, whose LLP Quanysh manages two plots on the sea, opened a new LLP, 51% owned by Quanysh, 49% owned by the cooperative. After Batyrkhan fell behind with repayments, the future of the plant is uncertain – perhaps Aimbetov or Amanbai will take it over. Factories and infrastructure, therefore, are not built on the proceeds of fish which have been caught, but on the proceeds of future fish. Consequently, if nature users are to fulfil their obligations, pay off their loans, *and* make a profit, fishing above quota is necessary. Fish, translated into money, pay off the debt incurred in building the factories where they themselves are processed. Thus fish do not facilitate linear growth. It is not a case of translating fish into money, re-investing capital, catching more fish – rather, investments are made on the basis of debt. This in turn drives the high demand for fish, especially zander, on the part

[13] There are similar processes and outcomes across postsocialist space, from the Sakhalin fisheries (E.Wilson 2002:34) to Romanian forests (Dorondel 2009).
[14] Kambala Balyk's annual obligations were about 7mn KZT. In 2013, their quota for zander, by far the most profitable fish, was 29 tonnes. They received it at 300KZT/kg and sold at 450KZT/kg. They should pay 60KZT/kg pension contributions and social tax, and the quota costs 30KZT/kg, so, even before sales tax, the profit is only 1.74mn KZT – and that does not include running costs for the factory itself.

of nature users, demand which exceeds the limits of virtual fish.

Fish in the wild market

Let us return to Amanbai's factory for the next stage in the social lives of the fish. Because most factories in the region do not do large-scale smoking and curing, the bream, roach and asp are then loaded again into modern container lorries, bypassing Aral'sk, for export to Russia, where they will be processed, before finally being sold to consumers. Eventually, our Aral bream may be known as flavour and texture by a pair of beer drinkers in a bar somewhere in Russia. Meanwhile zander caught in Amanbai's waters are on their way to Qazaly, where they will be filleted and coated in an ice glaze in a factory with an EU export code. In this form, they travel across Kazakhstan into Russia and eventually to Poland, Germany and Turkey. But not all the zander caught in the Aral is processed in this way. For most of my fieldwork, Amanbai was the only nature user who both had plots on the sea, and had a processing factory fitting European standards. Above-quota fish cannot be bought and sold legally, and factories without plots on the sea are obliged to buy fish with documentation. So the above-quota zander is mysteriously exported in frozen form and processed elsewhere in Kazakhstan or in Russia. Critically, as we see in chapter 9, it therefore bypasses Aral'sk.

As fish cross international borders, customs officials know them in new ways, by code and documentation. Arriving in Russia crates of fish are apparently now stamped with different codes. Fish lying packed in lorries thus lead double lives, as real frozen meat, a commodity with exchange-value, and as official numbers mediating a relationship with customs officials. In the course of their migrations, the zander meet other Kazakhstani zander and are repackaged, eventually arriving in German and Polish supermarkets labelled as 'zander from Kazakhstan' – and will become entangled in central European taste, cuisine and sociality. Demand for Kazakhstani zander in the EU is high, because the fresh-water bodies in Kazakhstan are relatively deep and clean, so the fish is high quality. This final stage is crucial: so long as demand is high, the price is high.

Above-quota fishing, therefore, depends in part on fish's valuation on distant markets. McGoodwin (1991) argues that when markets are local, aggregate demand is finite; when fish feed regional and global markets, demand is infinite, creating incentives to fish without end. But, like Latour's (1993) railways, markets are local at every point: agency does not lie with some higher entity like 'global capitalism'. Rather, extraction is driven by the sum of locally-contingent processes of value-formation. In Soviet times, fish caught on the Aral were processed in local factories, before entering

the gridded space of the USSR. Today, different fish have different spatial reach according to the specific shape of the market. This depends not only on prices in Germany and Russia, and not only on the sorts of processing infrastructure in the Aral region, but also on the "atmosphere of intrigue" (Anderson 2002:161) surrounding sale of above-quota fish. This 'atmosphere of intrigue' is created in part by the formal tensions in the management system, and in part by the obfuscation by which it is enacted. At each stage in fishes' social lives, there is a new form of abstraction or (mis)translation. Because state oversight is incomplete, at every stage, all other stages are mystified: virtual fish mystify the ecosystem and spatial distribution and migrations of the fish; the nature users' official statistics mystify the actual number of fish in the lorry; the supermarket price mystifies everything that has gone before it; and, at each stage of abstraction in fish's migrations from sea to European supermarkets, value is extracted. The sum of these processes drives the high extraction of fish from the sea.

This picture of the social lives of Aral fish complicates the notion of resource-dependence: fishermen are dependent on the resource, but only its multiple entanglements connecting them via invisible channels with lucrative markets. This means that fishermen's agency is constrained: agency is distributed across the different social worlds which fish travel through. Fish connect these different social worlds, and causality is multi-directional. Fish appear in German supermarkets because of over-quota fishing in Kazakhstan, but the high demand in Germany provides the incentive to fish above quota.[15]

In different visions, fish are a scarce resource to be husbanded; they drive economic development; to nature users, they are a source of private profit and a means of paying off debts. But although human agency is distributed throughout the social lives of fish, fishermen's own perspectives on the resource also help explain current fishing practices. Since co-management rests on the assumption that resource-dependent communities will be good stewards, any plans for co-management would need to take these perspectives into account. But while fishermen, managers and NGO workers are evidently of different 'epistemic communities', I do not assume an unchanging bounded, local knowledge: rather, perspectives are re-made in the light of new encounters (Cruikshank 2005, Hastrup 2014b). Fishermen's subject positions need to be historicised in shifting power relations in the region and in the history of environmental change, and also in the political economy of resource use today

[15] Cf. Knudsen (2008:ch.2), who emphasises consumption in his explanation of intensive fishing in Turkey.

(Agrawal 2005, Vermonden 2006, Knudsen 2008).

‘The fisherman dreams for the day’

Fishermen do not share the vision of scarcity on which regulation is premised. As we saw in the introduction, ‘the sower dreams for the year, the fisherman dreams for the day’. This is partly because, from day to day, fish are unreliable. But in the longer term, according to the dominant view, fish are naturally abundant. Resources sustain, but they themselves do not need sustaining. Narratives of past abundance are a guide to future abundance: as we saw in chapter 4, Zhūbatqan’s narrative about the sea sustaining the starving in the 1930s was prompted by my question as to whether there would be fish in the future. Fishermen also draw on their own experience: every fish lays millions of eggs, so of course there will be fish in the future. Hence the dominant view is that if there is water, there will be fish, and everyone is confident that there will be water, especially if the dam is raised. Images of natural abundance thus sustain a ‘politics of the present’. Though it is characteristic of hunter-gatherer societies, Day et al. (1999) identify such a politics among marginalised people in a wide range of societies.

Indeed, there is a different sort of moral ecology with respect to exploiting marine resources and livestock, which most Aral fishermen also keep. Central concepts in traditional Kazakh religious thought, *nesïbe* and *qanaghat*, have a specific application with fishing. *Nesïbe* is your lot, what has been apportioned by Allah; to have *qanaghat* is to be grateful for one’s *nesïbe*, to use it carefully, and not to seek more beyond what he has given. One should not seek to become rich from Allah’s bounty. Such ideas are a prescription for careful resource use in a fragile and uncertain environment. But according to fishermen, your *nesïbe* is what lands in your net, and *qanaghat* is simply being grateful for what is there. On this basis, some fishermen have *qanaghat*, some do not – some always want more zander, however much they have caught. But on this interpretation, *qanaghat* is not relevant to changing fishermen’s behaviour; there is no suggestion that fishermen should lay fewer nets because of *qanaghat*, because it is not a question of their agency but that of Allah.

I would suggest that this relates to the notion of fish as abundant. After all, in the nomadic economy, animal herding and crop cultivation required active management over a long time-scale. Catching fish had, as we have seen, a certain immediatism to it, producing a sense of nature’s bounty, as Astuti (1999) describes for the Vezo of Madagascar. But fishing today is worlds apart from pre-colonial fishing. The images of abundance in the sea, therefore, are reproduced by experiences and practices

of fishing, past and present, situated in their broader political-economic and environmental contexts. First, whether fishing for immediate consumption, for the plan or for the market, relations with fish are generally impersonal and transitory, quite unlike those with livestock. Secondly, both the organisation of fisheries past and present, and the history of environmental change feed a sense that fishermen's agency does not affect the resource. In the Soviet system, the sea was a space to be managed and regulated by higher authorities: although labour was valorised, fishermen were constrained simply to extract resources. Under the current system too, fishermen continue to be constrained only to extract resources, hence the presentist orientation and insistence that their agency does not affect the future of the resource continues. Indeed, they express their lack of interest in quotas with a dismissive expletive. The history of environmental change further explains this point. Of course, villagers have known the resource become scarce, but they know that the fish died out because the sea dried up, which was nothing to do with them or their managers. Over the last few years, fish populations have been growing rapidly despite intensive fishing. The rapidly multiplying fish thus reproduce an image of nature as inherently abundant, silencing dissenting voices.[16] Indeed, in one old man's account, hierarchical management even guaranteed natural abundance: he insisted that there would be plenty of zander in the future, because now the government (*ükïmet*) is taking care of the matter by growing zander in hatcheries. On that basis, he insisted, fishermen could fish without end.

The presentist ideology of resource use today is thus, as Baqytzhamal and Zhannat would argue, sustained by the marginalisation of fishermen from management. This is not to deny the real sense of agency in fishing as a way of life, or the agency it enables elsewhere, which we explore in the following chapter: but these are separate from resource management. There are, however, dissenting voices. There are some who are uncertain. Some younger people are particularly concerned about the development of oil – again, a threat to the resource from non-fishermen. But others express concern about the current intensive levels of fishing. Those who are doubtful about the future say that only Allah knows if there will be fish. They thus locate knowledge about the future on a different plane from their own actions. Düzbai, a senior fisherman in Tastübek, who now works as a fish receiver for Amanbai, is the only figure in a position of authority that I talked to who showed real anxiety about the future of the resource. He contrasted the modern fishing without limit to the past, when fishermen would return from Balqash with little money but content with what they had received. Unsurprisingly he blamed the youth for not understanding: before, there was *qanaghat*, but no longer – everyone

[16] Comparative evidence supports this point: Finlayson and McCay (1998) show that a paradigm-shift in understanding the Atlantic cod fisheries only happened when fish stocks became scarce; Acheson et al. (1998) show how memory of overfishing produces social pressure for restraint even decades later.

now thinks only about money. When I asked him whether there would be zander in the future given the high levels of fishing, he replied quietly: “I don’t know... I’m not God!” (*Bïlmeimïn... Qūdai emespïn*). He went on to express concern that any fish could be depleted, especially given the use of Chinese nets. For there to be fish in the future, he said, the sea must be properly monitored and controlled; Chinese nets must not be used; limits must be respected; the banned season must be enforced. He blamed the division into plots, saying that the authorities were playing games with them; he argued for a single factory with domain over the whole sea.

This anxiety is suppressed in the narratives of every fish laying a million eggs and of past abundance. Such narratives derive from experience (seeing the roe in fish which are caught; having lived through times of abundance and heard about them from parents), but they also serve the social function of justifying fishing today without concern for the future. They constitute an ideology of the present. Intensive fishing is legitimised by the image of abundance in the sea, an image sustained, for now, by growing populations of fish. But there are important differences between Aral fishermen and hunter gatherers. Aral fishermen certainly do not characterise themselves as foragers: rather, they emphasise how hard their work is. Indeed, hunter gatherers are famous for not working hard (e.g. Sahlins 1972), whereas Aral fishermen generally work very hard.

The Soviet valorisation of labour partly explains why. But Düzbai also contrasts a Soviet past of moderation with a present dominated by money. The lucrative market, tensions in the formal system, and informal norms explored in this chapter only partly explain intensive fishing today: we also need to examine the role of fish in local structures of value. Here there is another important difference from the hunter-gatherer ethics which Day et al. (1999) find among marginalised groups: while the Vezo, for example, living for the moment, transcend durational time (Astuti 1999), most Aral fishermen are committed to the long-term order of social reproduction. If the fisherman dreams for the day, the fisherman and his family dream for the next wedding. The following chapter therefore explores the multiple meanings of fish within Aral villages.

Uncertain future

William: Will you fish in the future?
Nūrlan: Time will show (*uaqyt körsetedi*).
William: Will there be fish in the future?
Nūrlan: Only God knows (*tek Qūdai bïledi*).
William: Today you’re fishing lots and lots of zander... tomorrow will there be zander?

Nūrlan: [smile, shrug, pause] That is unknown (*belgïsïz*).
William: And if there are no fish....?
Nūrlan: The people will leave.

I mentioned the possibility of oil. He was pessimistic for the fish if oil were found – they will be wiped out.

William: Is that possible?
Nūrlan: Everything is possible.
William: The fisherman dreams for the day, yes?
Nūrlan: [pause, nod] What you say is true.

I am no ichthyologist, and ichthyologists I talked to in Kazakhstan had an interest either in painting the picture as rosy as possible or as dark as possible. Given the unreliability of both quotas and official catch data, and the inherent uncertainty of the resource, we do not know if over-fishing is a problem.[17] My sympathies are thus with the young fisherman, Nūrlan, quoted above. I have stressed that the distributedness of the resource means distributedness of agency and causation. But the future of the fish may also be affected by other factors completely unrelated to the current fishery. It is unclear how the plans to develop fish farming in SYNAS-2 will turn out: if plans to breed zander and sturgeon are successful, they will bring significant financial benefits to the industry, mitigating intensive fishing of zander. Evidence from the Caspian (Zonn 2002) suggests that oil exploitation would pose a threat to the fish, as some fear, though even if oil were exploited in the Aral region, it is unlikely that it would be exploited in the sea itself. In coming decades, climate change introduces another tranche of uncertainty: according to some projections, the melting of glaciers will drastically affect the amount of water resources in the Aral basin, though the possible effects on the Small Aral depend on an extremely complex entanglement of human and climatic factors (Sorg et al. 2012).

The pattern at the moment is of consolidation of plots, so that the region is conforming to patterns of agrarian change in postsocialist Eurasia (e.g. Perrotta 2002). Amanbai now has three plots, one in Saryshyghanaq, one near Tastübek, and one at Shaghalaly. Aimbetov was recently awarded six plots, one near the village of Qarashalang, one also in Saryshyghanaq, the rest in the remote west of the sea. As he has a EU-code factory of his own (see chapter 9), he has the potential to consolidate his business. But his obligations will be expensive, and the possibility of exploiting remote plots is questionable.

[17] Global comparisons are not encouraging, and indeed, as Holling (1973:6-9) explains, endorheic lakes tend to be particularly lacking in resilience, vulnerable to human interference.

Fig. 4: The fisherman dreams for the day? Darkhan, spring 2014

With the failure of the EU project, co-management seems set to fade as a never-realised dream. The vision of fish as a scarce resource needing local management is belied by abundant fish which have so far delivered some prosperity. So long as the status quo does not result in tragedy, does the failure of co-management matter? For Zhannat and Baqytzhamal, it does: they have consistently dreamed of a fair, open and democratic fishery, a small-scale, artisanal fishery where every village has growing ponds, and villagers are involved in processing. In one telling moment, Zhannat told me that co-management might not make the fishermen richer, but at least they would not be slaves. Whereas fishermen have a practical preference for the sea being held by a single factory, Zhannat and Baqytzhamal have a strong moral sense that it should be held in common. During one conversation with Baqytzhamal, after she had lost her role in Aral Tenizi, she reminisced nostalgically about her and Zhannat's dreams for the fishing industry: there would be roads and quays; fishermen would wear special clothing; they would neatly pack fish into boxes and unload them onto quays. But as it is, she said, they just haul the fish in through the mud in sacks. Here her environmentalist vision gave way to a yearning for order, rationality, formality, visibility. I would suggest that the discourse of sustainability is a useful vehicle for this yearning: if fish laying a thousand eggs is a useful fiction to justify high catches, dire prognoses also serve their social function, for mobilising change and facilitating project funding.

Principles of order and visibility are, arguably, anathema to fishermen. As another proverb goes: 'the fisherman does not tell the truth, every day he takes a portion'. Taylor (1987) describes a state/private fishery in Ireland where the management regime is perceived as unjust, but natural; when a priest proposed introducing community management, fishermen resisted the proposal, because there was a healthy tradition of poaching which allowed fishermen to define themselves through resisting

outsiders. Similarly, informal practices on the Aral define fishing as a way of life. After all, fishermen fully understand that elsewhere informal practices on a much larger scale permeate the system. Once when I was talking with a group of fishermen on the shore, I asked if it was better as it is now, or whether it would be better if the industry was state-run. They agreed it would be better state-run, because they would be able to go wherever they wanted and be answerable just to one director. Someone raised the possibility that there would be a lot of theft, at which one older fisherman muttered to much mirth: "I could do with some theft (*maghan keregï ūrlamai ghoi*)!" Invisibility and complicity are key to understanding the high levels of fishing – but, after years of alienating management, they are also central to fishermen's self-definition, as we see in the following chapter.

Chapter 8. Zander and change in Bögen

In spring 2014, Aral fishermen from several villages, and one group from Shardara reservoir (south Kazakhstan), had permission to fish at Kökaral, near the mouth of the river and the dam. This is normally a forbidden zone; but as fish will be lost through the dam at this time of year, permission is granted to fish for a limited period. I stayed with Bögen fishermen, who were camping in UAZ jeeps and GAZ-66 trucks. They had permission to catch 12 tonnes between 1st and 9th April. We would rise at 7.30am to wash hands and faces in the cold morning air and drink tea. Fishermen would then put their Soviet-era boats out through the dense reeds to go and haul in their nets in the fresh northerly breeze. I stayed behind with a few older fishermen, including my host Zhaqsylyq. Zhaqsylyq would fiddle with the wireless, tuning in to invisible global connections (English-language news items about further unrest in Ukraine; the search for the missing Malaysia Airlines flight in the South China Sea...), while fishermen were extracting fish which would plug them into global markets. From midday, they would trickle back in. Usually someone would catch a large carp, which was boiled and shared among anyone present at the time. After a few hours' rest in the vehicles, at around 4 fishermen went out again; the ZiL lorry would be brought down to the shore, and fishermen would bring in their catch. They lugged the sacks of fish through the shallows and the slithery mud on the foreshore over to the ZiL, where the driver and I would heave them into place. Fishermen then headed out again to lay their nets, returning as darkness was falling. Supper would be tinned meat, or fried fish with roe. On several occasions, the Bögen fish receivers were approached surreptitiously by fishermen from another village. Muttered negotiations were held a few metres away from the main camp. The next morning, a few sacks of fish would mysteriously await the Bögen ZiL truck. For official purposes, these were recorded as the ZiL driver's catch. After supper, exhausted bodies would relax, huddling together for warmth, wind-burnt faces animated as fishermen discussed the movement of the ice, and where they had laid their nets.

On 5th the weather deteriorated: the northerly wind picked up, bringing snow, sleet and rain with it. The fish were not moving around, owing to the cold weather. Moods became fractious. Fishermen were finding that their nets had disappeared. While the wind and ice were evidently wreaking some havoc, there were suspicions of theft, *ūrlyq*, by people from other villages.[1] Despite this, Bögen fishermen were catching a reasonable amount of fish, and were on course to catch about 12 tonnes. But it was decided to go back to Bögen early. *Balyq zhoq*, Zhaqsylyq said to me: 'no fish'. Then he

[1] Unsurprisingly, I never got to the bottom of what exactly happened out there. Bögen fishermen were adamant that they were all honest (*bäri chestnyi*).

added: *Tïstï zhoq*. *Aqsha zhoq*. ‘No zander, no money’. In driving rain, we hauled boats over the mud and lifted them onto the roofs of the trucks, pouring cold muddy water over us in the process. The Shymkent lorry got stuck in the mud. Another lorry got stuck trying to haul it out. It was *bardak*, ‘chaos’.

Figs. 1, 2: at Kökaral.

This incident was atypical, in that there were different groups of fishermen working for different nature users. I never heard complaints of *ūrlyq* elsewhere, and fishermen insist that this would not happen within the village. But the incident illustrates three important points about the contemporary fishery. First, fishing is a way of life, an identity, involving embodied skill and environmental knowledge, and a close sociality and masculine camaraderie both between and across generations. It is not a way of life for everyone: one young man at Kökaral, Ghalymbek, is studying to become a *fizkul’tura* (PE) teacher, and is fishing temporarily to earn some ready money. He would not want to fish forever, he said, because it is bad for the health being out in the cold and wet. For others though,

the fact that fishing is 'heavy work' (*auyr zhūmys*) is a source of pride.[2] Most fishermen in Bögen plan to fish in the future, and plan for their sons to do so as well.

The second point is the pervasive invisibility. As a way of life, fishing involves detailed environmental knowledge: because fish in the water are invisible, ethnographers are interested in how fishermen know where fish are (Hoeppe 2007, Knudsen 2008, Vermonden 2013). As this incident shows, the human elements of a fishery are equally hard to see, and hard to regulate. According to fishermen, the Kökaral expedition descended into *bardak* because there were outsiders present. But invisibility is an ever-present problem, negotiated in different ways in different contexts, hence, as we have seen, the above-quota fishing. Invisibility also shapes the relations between fishermen and fish receivers, as this chapter shows.

Finally, the incident illustrates the significance of zander. If before fishing as a way of life met the gridded time and space of the plan, today it meets the time and space of global markets. As fish reach transnational markets, they are ascribed wildly divergent values as commodities according to their spatial reach, and according to fluctuations in the prices of other commodities, especially oil.[3] Because zander reaches Europe, it is far more valuable than other fish. This is not stable: crisis in Europe halved the price of zander; since the beginning of 2014 crisis in Kazakhstan and Russia is doing the reverse. Furthermore, unlike the Soviet fishery, fishing is not accompanied by social entitlements, so money assumes greater importance, though money itself is apt to lose its value amidst inflation.

In chapter 3, we saw how an ethic of sharing was overlaid in the colonial and Soviet periods with an understanding of fish as commodities which could be translated into money. This ethic of sharing was still alive and well at Kökaral: we all partook of the tasty carp. This relates to the immediatism of fishing, and the ideology of the present which we identified in the previous chapter. But immediatism also supports ready commodification of fish, and today, the exchange-value of fish predominates, particularly with regard to zander, which is not rated as a foodstuff. Zander is described as *zhūmysymyz*, 'our work/job'; a characteristic greeting at the receiving-station is *Balyq qalai? Tïstï*

[2] Interestingly, they do not stress the danger – although drownings are not infrequent.
[3] Although the time and space of neoliberal capitalism are usually analysed with respect to urban centres (e.g. Harvey 1989), Anderson (2006) uses the same approach for peripheral regions integrated into global capitalism on the basis of raw commodities.

bar ma?! (‘How is the fish? Is there zander?!’). This is hardly surprising: because of zander, and because in practice there is no limit to the amount of fish which may be caught, during my fieldwork, fishermen could earn 150,000KZT or higher per month. Fishermen do not fish all the time: in May there is the ban, in summer fish would spoil before reaching the factory, and in spring and autumn ice is melting or forming. Nevertheless, this is considered good money in a region where the average salary is about 45,000-60,000KZT per month – thereby bucking the trend of rural impoverishment characteristic of postsocialist Eurasia (Leonard and Kaneff 2002a, Trevisani 2010, Zanca 2010, Toleubayev et al. 2010). As the previous chapter showed, the fish which have returned are postsocialist fish, and, in their new entanglements, they are transforming the ‘moral landscape’ (Helgason and Pálsson 1997) of the region – including the processes of social reproduction itself.

Fig. 3: Meirambek, fish receiver, shows off a huge zander.

Stereotypes about fishermen

In Aral’sk, there are two contrasting stereotypes of fishermen, often voiced by the same people. Either they are impoverished, exploited, and paid a pittance for their labour; or they are getting rich (richer than ordinary people in Aral’sk!), motivated only by short-term greed, caring nothing for the future, and spending their money on cars or houses. Cheap Chinese nets, it is claimed, have made it too easy to fish now. Both stereotypes are simplifications, reductionist views of the village from the town, which tell us more about the concerns of townspeople than about the lives of villagers (cf. Williams

1973, Leonard and Kaneff 2002b). Nevertheless, I find them useful for thinking through the transformations in social relations which have followed the sea's return.

The first stereotype, implying class differentiation between fishermen and nature users, was certainly what I had expected before fieldwork. I had heard that the tender process had lacked transparency, benefiting those with connections or the financial means to pay a bribe. I thus expected a form of accumulation by dispossession, as Toleubayev et al. (2010) attest all over rural Kazakhstan, and Nazpary (2002) finds in Almaty. As Shreeves (2002) found in new private farms in Kazakhstan, I expected that labour would be increasingly commodified, disembedded from social relations as well as social entitlements. I expected a palpable sense of exploitation in the extraction of surplus value, and appeals to moral economy (Thompson 1971), which ethnographers of postsocialist agrarian change have found in a range of contexts (Hivon 1998, Hann 2003). I also expected, as ethnographers of fishing elsewhere have documented, resistance to quotas, which make fish in the water a property-object (Pálsson and Helgason 1995, Helgason and Pálsson 1997, Minnegal and Dwyer 2011).

In fact, the picture is much more varied across the region. Trevisani (2010) finds in Uzbekistan's decollectivisation widely heterogeneous outcomes: while there is differentiation between peasants and private farmers, there is further differentiation within the peasant class between those who with access to land via kinship networks, and those without such networks. Despite the radically different context, I will suggest something similar here, though for those who lack such networks, the position is arguably less bleak than in the Uzbekistani case. This is because resources are abundant. Indeed, while quotas should create scarcity, because quotas are ignored, in practice there is no sense that fish are owned while still in the water, and relations are shaped by the abundance of real fish, not by the artificial scarcity of quotas. Overall, the ongoing transformation is more complex than can be captured in the term 'disembedding'.[4]

The second stereotype speaks of the moral ambivalence about money among my informants in Aral'sk which we explore in chapter 9: zander are seen as easy money which corrupts local society, dissolving social ties and increasing individualist self-interest.[5] As we shall see, while long-term

[4] Hence I look beyond the property relations and approach the fishery as a 'socioeconomic system', encompassing markets, technologies and so on (Durrenberger and Pálsson 1987, Campling et al. 2012, McCall Howard 2012). Cf. Stirrat's (1989) exposition of how specific fishing technologies and markets shape not only relations of production, but also patterns of consumption.

[5] Such concerns are a widespread response to processes of commodification the world over, both among people who

social ties between fishermen *are* being weakened, I put this down more to the technologies money has facilitated than to money itself. Overall, in villages there is much less moral ambivalence about money than in Aral'sk. Just once, an old man, who had been happily explaining about how much better life is today, declared that abundance (*toqshylyq*) was not good, because too much money made people drink and argue and fight. But his exposition was very tongue-in-cheek: an old moral discourse was re-accentuated with humour in the new context where anxiety about money is largely absent. I suggest that the stereotype, which posits that fishermen are greedy individualists concerned only with the present, ignores the local uses of money in sustaining ritual expenditure. If zander connect fishermen to the time and space of global capitalism, once translated into money, they are a means of reproducing local society over time.

But this money is also transforming patterns of ritual expenditure, as elsewhere in Central Asia. Zander's migrations to Poland and Germany produce comparable effects to labour migration from Kyrgyzstan and Uzbekistan to urban centres in Kazakhstan and Russia (Reeves 2012a, Trevisani 2016): as local economies become increasingly monetised, 'local structures of value' (Reeves 2012a:122) are transformed. Ritual expenditure in Central Asia sustains social networks, which in the 1990s were key to survival (Werner 1998, 1999, Kandiyoti 1998). But according to classic assumptions about the effect of money, it should reduce the need for these affective ties. Why then the extensive ritual expenditure? I will revisit this question towards the end of the chapter, arguing that zander in particular, through its entanglements with global capitalism, is reconfiguring social relations in the region.

I focus on Bögen, though comparisons to other fishing sites illustrate the processes of differentiation happening across the region. In Bögen, the nature user is Amanbai, a businessman from Qazaly. As we shall see, there are a range of affective ties linking fishermen and nature user; and the fishery generally functions fairly well, with fishermen paid in cash every day. By contrast, in Zhalangash, LLP Asta was until recently run by a former fisherman with relatives in the village, but the fishery was badly organised. In other parts of the sea, where nature users have been unable to consolidate the fishery, plots have been confiscated, and local fishermen in villages such as Aqespe and Qarashalang can only fish legally when someone from Aral'sk gets a license and organises a brigade. During my fieldwork, these empty plots were assigned to Amanbai and Aimbetov: overall, then, the trend is, as

live through such changes and among theorists (Bloch and Parry 1989, Helgason and Pálsson 1997).

in many other postsocialist agrarian situations, for small-scale operators give way to larger players (Perrotta 2002, Shreeves 2002, Toleubayev et al. 2010). Finally, there are villages by lakes, such as Amanötkel and Qambash, which are further from the sea, and whose fishermen lack permanent access to the sea through a particular nature user.

Zhaqsylyq and Meirambek

Most of Bögen depends on fishing for a living. A minority of families make their livelihood from livestock, though they may sometimes fish. Most fishing households also keep some livestock (sheep, horses, camels) which remains a marker of social status, and may be given as gifts to fulfil kinship obligations. Livestock may also be translated into money if necessary for ritual expenditure. There are jobs for women only in the school and the nursery, and most women do not have formal jobs (most women working in the plant in Bögen are from Qazaly). There are four or five informal 'shops' in the village, selling groceries from Aral'sk or Qazaly at a healthy profit.

Bögen fishermen fish in plot number 8, with about 30km of shoreline and a quota of around 800 tonnes a year. There are three receiving stations on this plot, the main one being at Shaghalaly, 12km from Bögen over the dried-up seabed. The other receiving stations are smaller, and fishermen from nearby inland villages fish there. Amanbai, lives in Qazaly, about 100km away; before 2006 he had no connection either to Bögen or to fishing in general, having made his money in rice in the 1990s. Whereas in Soviet times the state fishery provided everything, today, Amanbai only provides boats. He should also pay pension contributions for fishermen, and a social tax. Initially, poaching was common, and Amanbai faced competition from illegal traders (Ru.: *kommersant*) in the village. Today there is little poaching on the sea. This is partly because of better security along the shore, but it also relates to Bögen fishermen's compliance: the fishing operation is well-organised, with fishermen paid in cash every day, and weather forecasts provided for them; fuel and nets are also sold to the fishermen at the receiving station. Crucially, the affective ties between Amanbai's representatives in the village and other villagers shape both the formal and informal relations between them.

The figures mediating Amanbai's relationship with Bögen fishermen are the two fish receivers (*priëmshchiki*) at Shaghalaly. Meirambek, in his 30s, is Amanbai's nephew and is also from Qazaly; he moved to the village in 2006 and has worked there since. Zhaqsylyq, in his late 50s, is a former fisherman who rose to prominence, as we saw, through Aral Tenizi; he started working as a *priëmshchik* in 2012. Zhaqsylyq is the eldest brother of a large family; while other families have

dispersed as family members have moved away to Aral'sk or further afield, all Zhaqsylyq's younger brothers also live in the village: Ädïlbek is a fisherman, Tölebek keeps camels and cattle, and Törekhan works in the akimat. Zhaqsylyq's three sons still live at home and also fish. One daughter is married to another camel-herder, and when camels are brought into the village for slaughter, they are slaughtered in Zhaqsylyq's pen. His wife Gulzhamal and daughter-in-law (*kelïn*) Gulnar informally sell groceries out of the house. The family has thirty angora goats and a prestigious *nor* camel.

In 2009 Zhaqsylyq's youngest daughter Danagul married Meirambek. This puts Zhaqsylyq into a relation of *qūda* with Amanbai, creating a close connection between the families. Although Zhaqsylyq's formal legal role is restricted to his being Amanbai's employee, his authority within the fishery depends both on his social connections with other villagers, and this connection with Amanbai; meanwhile, Meirambek and Amanbai too gain acceptance by association with Zhaqsylyq's family. Meirambek has eleven horses roaming the steppe with the village livestock, and keeps some sheep in Zhaqsylyq's sheepfold. Beyond his immediate kin in the village, there are many others of the same *ru* (patrilineage) as Zhaqsylyq, Zhamanköz. Other *ru* in the village such as Zhangbai, Teke, are also related, being subdivisions of the larger Külïk *ru*. However, while a *rulas* can claim relatedness, there is no sense in which a *ru* is a corporate entity forming the basis of the organisation of production.[6] Members of other *ru* which are not historically based in Bögen, such as Altynbai, are not excluded from the fishery. Other sorts of affective relations also matter: a shared history of fishing together; being a neighbour; being *qūrdas* (of the same age-set).

Both Zhaqsylyq and Meirambek have some authority within the village, which is reproduced on a daily basis. Zhaqsylyq projects his authority through his imposing posture, and through his unwaveringly stern gaze. Although not averse to physical work around the house when alone or with close family, when more people are around, he barks orders, rarely demeaning his dignity by engaging in manual work himself. He has a strong sense of propriety: most people, even his contemporaries, are afraid to drink in front of him. He often remains aloof from conversations, exuding authority through not engaging. But he is also capable, when he feels like it, of boisterous banter, relaxing his dignity to generate a different sort of respect through mischievous humour. By contrast, Meirambek is energetic and garrulous, always putting himself at the centre of everything. In a context where

[6] Evidence from other parts of Central Asia tallies with this point, cf. Isakov and Schoeberlein (2014) on Kyrgyzstan, Trevisani (2007) on Uzbekistan.

people are often laughing about something, Meirambek's sense of humour asserts his central position within the group at the expense of weaker members or outsiders – drunks, fishermen from other villages, me. His acceptance and authority within Bögen thus goes beyond both the formal legal right and his kinship relation to Zhaqsylyq.

When we were at Kökaral, one night after supper eight or nine people were assembled in the back of Zhaqsylyq's GAZ-66 truck. Zhaqsylyq as usual sat in the position of authority (*tör*) at the head of the *dastarqan* (table-cloth) furthest from the door; as guest, I was next to him, while the others sat or sprawled down the sides. Early on in the evening Zhaqsylyq, sitting upright, told a brief noisy story involving lots of swearing in Russian, which attracted uproarious laughter. After this he relapsed into silence and reclined on his cushions, not fully engaging with the conversation. Most of the evening was taken up with lengthy anecdotes from Meirambek about people getting stuck on ice in various sorts of vehicle. As he told his anecdotes he sat cross-legged and leant forward slightly, raising and lowering his voice for effect, throwing in some Russian swearwords at moments for emphasis. Everyone listened in awed silence, only laughing at the carefully timed punchlines. A young fisherman tried to tell a story afterwards, but could not hold the floor. It was now that Zhaqsylyq asked me if we should sleep or stay up telling stories all night; at this signal, everyone departed to their vehicle to sleep.

So the relation between fishermen and receivers goes beyond just selling the fish to them. But fishermen are also well aware that the system is hierarchical – and there is no expectation that it should be otherwise. Whereas the official catch translates not only into pay for fishermen, but also into pension contributions, the unofficial, over-quota catch does not. Fishermen tell me that their pension contributions are 3000KZT a month, when if they claim to have earned 150,000KZT, the contributions should be 15,000KZT! Their attitude is characterised by not asking questions. Indeed, there is a sense of complicity between fishermen and receivers. One winter's day when I arrived in Bögen from Aral'sk, I was surprised to find Zhaqsylyq's house full of men tucking into a camel *quyrdaq*: no one had gone fishing. Two camels had been slaughtered that morning, and a further two would be slaughtered in the afternoon. During the butchering, Zhaqsylyq stood around smoking and chatting to some other senior figures. I and a visiting relative of Meirambek's were relegated to the unglamorous task of skinning the neck, while Meirambek himself, along with ten or so others, was involved in the more complex process of butchering the body. There was no fishing that day because a commission had come from Astana, the capital, to check up on the fishermen. Because of the

Chinese nets, they had all stayed at home: *qūlaghymyz bar*, 'we have ears.' Threatened by an external authority, fishermen and receivers act together. Regulations, perceived to come from outside, are flouted by locals. This picture conforms to other accounts of post-Soviet fisheries, where regulations are flouted, but the necessity of a hierarchical structure is not contested (E.Wilson 2002, King 2003, Nakhshina 2012).

The right to fish

In general, fishermen must obtain formal permission from Meirambek to go to the sea. So long as the weather conditions are good and it is not the banned season, Meirambek will grant permission, as, while fish are abundant, he is keen for as many fish to be caught as possible. But, unsurprisingly, it is sometimes possible to fish without permission and not receive censure. Aikeldï, in his late 40s, has a reputation of being a heavy drinker, joker, and hard-working fisherman. He lives near Zhaqsylyq and Meirambek, and sometimes fishes with Zhaqsylyq's sons. In spring 2014, there were still ice floes and strong winds, so Meirambek was not giving permission. Aikeldï informed him that he was going to lay his nets anyway. Meirambek did not try to dissuade him – he knew that any fish would end up at the factory in the village. When Aikeldï returned, he told Zhaqsylyq's eldest son over a bottle of vodka about where the fish were, and the state of the ice – information which was later relayed on to Zhaqsylyq and Meirambek. Fishing in the banned season is also tolerated, so long as fish are sold to the factory.

On another occasion, in the winter, Meirambek was patrolling the ice, checking for poachers. He came across a group of fishermen from Amanötkel. Although they were well-known to Meirambek, and on good terms with him, they did not on this occasion have permission. While they should have been fined, instead they gave Meirambek a sack of fish.

But such negotiations are not always successful. Lake Tūshchy, as we have seen, is full mainly of pike, which is of very little commercial value. When I met some Bögen fishermen fishing there, they were planning to sell their catch to local *kommersanty*, and were dismissive of any punishment from Meirambek – as a relative (Ru.: *bratishka*, 'little brother'), he would not punish them for fishing here, although, they implied with a lewd gesture, fishing on the sea would be another matter. However, when another time I accompanied Meirambek on a trip to the lake, we found two men laying their nets through the ice beside an ancient Ural motorcycle. Meirambek did not know them. Meirambek, dressed in his state-issued camouflage suit, puffed himself up and demanded to see their documents.

As they did not have any, he announced that they should have requested permission and took a photo of them, to their discomfort. One of the men was elderly, and had an air of quiet dignity. He negotiated rather than argued, addressing Meirambek as *sen* ('you' addressed to equal or junior). He talked quietly, patiently and at length, as if telling a story. Various phrases asserted their right to fish: *bïz qazaqpyz*, 'we are Kazakhs'; *men aqsaqalmyn*, 'I am an *aqsaqal* (white-beard/elder)'; *bïz tengïzde auladyq, bïz dariiada auladyq*, 'we have fished on the sea, we have fished on the river'; *kölïmïz*, 'our lake'. But most of the conversation was taken up with the old man telling Meirambek about his various kin across the region. Meirambek's demeanour altered: he listened patiently, standing still, not too close to the old man, his head bent slightly down, nodding, occasionally raising his head slightly and asking for clarification, addressing him with the respectful *sïz*. At one point he asked the man's *ru*, before relapsing again into deferential silence. But the old man was unsuccessful: he could not find a kinship connection. After about fifteen minutes of this, Meirambek read out an official statement, though rather more patiently and respectfully. He also said he would give them his phone number so they could get permission off him next time. The old man was made to write out a confession, which would be passed to the inspectors, who would impose a fine.

What we see here are competing claims to the right to fish. Meirambek's claim, bolstered by the authority of the camouflage uniform, appealed to the law. But the old man, drawing attention to his white beard, challenged this authority. He appealed to different normative frameworks: ethnicity, seniority and kinship. In narrating past fishing experience, establishing a relation between persons and places through story (cf. Koul 2011), he laid a claim to the right to fish based on quite different categories from the formal rules. As it was, the authority of the camouflage costume and badge won. Had the old man found a connection, the outcome would have been less clear.

Some weeks later I saw these two men again, fishing with Meirambek's permission on the sea. In the absence of an affective relationship with Meirambek, their labour was more fully commodified than that of Bögen fishermen. At Shaghalaly, and at Amanbai's other sites, there are a number of fishermen from other villages working informally as hired workers. They do not receive boats or pension contributions. Such informal labour is strictly speaking not allowed, but Amanbai needs to fish as much as possible for the reasons we have explored. There is thus a differentiation between the fishermen who are formally employed and those who are informally hired. In winter, so long as they have UAZ jeeps, they can fish as much as anyone else. When the ice is melted, however, they must use their own boats, which are often small 'lake boats' made of metal sheets, sometimes without

motors. Besides being dangerous in the open sea, these boats cannot travel far, and cannot hold so much fish.

These informally hired fishermen, lacking affective connections to Zhaqsylyq or Meirambek, arguably constitute a new fishing proletariat. I visited one of Amanbai's new plots in spring 2014. It is in Saryshyghanaq bay, close to Aral'sk itself, and fishermen had come from Aral'sk, Qambash, Qazaly – even, apparently, from Shymkent. The group of fishermen I spoke to from Qambash stressed that they received no pension contributions and no boats: they would fish here as long as there was work, then they would move elsewhere. They described themselves, with much hilarity, as 'nomadic' (*köshpengdï*): a mobile fishing proletariat, their labour thoroughly commodified – in this context of informal labour, labour is abstracted even from the fairly meagre social benefits which should formally accompany it. Strikingly, it was only in this context that I heard complaints about the prices of fish, on the basis that they 'are not worth the labour' (*engbegï tūrmaidy*): exploitation becomes visible when labour is fully commodified.

But for most Bögen fishermen, the process of commodification of labour is incomplete. To the extent that it is abstracted, exchanged for money, it is a commodity. But the relationship is more than purely economic – and they could not be easily fired. Different fishermen can relate to Zhaqsylyq and Meirambek in different ways, as various sorts of kin, as neighbour or longstanding colleague; and they construe the relationship, at least in part, in those terms. As we shall see, this drives some of the negotiation that goes on at the receiving station between fishermen and fish receivers. This is not to say that embeddedness automatically translates into easier labour relations: in Zhalangash, where the nature user is a former fisherman, he fails to fulfil obligations to provide boats and invest in infrastructure; he is also accused of making deductions to subsidise paying for the quotas.

Fishing units

Fishing units are extremely flexible. But there is a general trend for fishing units to become smaller, such that households are becoming more self-sufficient and less dependent on networks of friends and relations. This relates to two sorts of technology: Chinese nets and UAZ jeeps. Rising incomes allow increasing numbers to invest in UAZ jeeps, which facilitate daily access to the sea. In the time of flounder (*kambala kezïnde*), most access to the sea was by camel, and people would camp in groups by the shore. The more households have UAZ jeeps, the less important are connections between households. Chinese nets have also led to a downsizing in fishing units: generally, Chinese nets can

be laid by two or three people, so wider cooperation is not essential. Thus many units today are just fathers and sons, possibly with some uncles. In spring, family members from Aral'sk or even further afield, as well as non-fishermen in the village, are hired informally.

The unit we saw in the introduction was an unusually large unit, involving Zhaqsylyq's sons, a brother-in-law (*bazha*), two cousins and a neighbour. While the journey to the sea in the UAZ was a squash, the UAZ effectively levelled differences between its owners and the other fishermen. But by the following spring, Bolat had bought his own UAZ, and he, Aikeldï and Zhüman had formed a new unit. Mūkhtar was on military service, and Zikön and Maqsat were joined by their cousin Aibek, Müsïlïm's son; and a brother-in-law (*zhezde*) from Qoszhar. Another fairly large unit was Nauryzybai's. Nauryzybai is in his early 20s. In early 2013 Nauryzybai drove his family UAZ to the sea with various maternal relatives collectively referred to as *naghashy*: two cousins and two uncles who had only recently started fishing. The following year he was fishing with just one cousin, and with another cousin on his father's side who is fishing temporarily. Darkhan, also in his early 20s, fishes with his father. Early in my fieldwork, they were accompanied by Darkhan's *qūrdas*, whose family did not fish. In spring, Darkhan was fishing with a relative who works shift-work in the oil industry, and was taking advantage of the fine weather to earn some extra money.

Fig. 4: Nauryzybai and colleagues

So while the gradual increase in UAZ ownership represents increased differentiation between villagers, the flexible formation of fishing units spreads the benefits more widely. There is no sense that the owner of the UAZ is in command, or that he should receive a greater share of the proceeds. But overall, the increasing level of UAZ ownership is reducing the importance of these horizontal ties between fishermen.

The receiving-station

In the introduction we saw the interplay of skill, local environmental knowledge, cooperation and hierarchy in the intricate process of laying nets through the ice. 45-50mm mesh nets are preferred for catching zander, but the Chinese net is not particularly discriminating, unlike the seine nets used in Soviet times. Laying nets is described as a *zhoba* (project): knowledge is imprecise; fishermen emphasise that only God knows if there are fish here. From day to day, numbers of fish caught vary significantly: *bïrde bolady, bïrde bolmaidy* ('sometimes there are, sometimes there aren't'). Let us now pick up the fishing process at the moment when the fish are extracted from the water. While fish are now visible to fishermen, they will be more imperfectly known by the fish receivers and inspectors.

The process of hauling nets in (*au qarau*, 'to look at the nets') is much more straightforward than laying them. Two holes are made in the ice with a *lom*, heavy work performed by junior fishermen. The net is retrieved with a hook and attached to a piece of string, which pays out down the first hole as the net is hauled through from the second. Two or three fishermen extract the fish from the net, trying not to tear the net, which is not easy with low-quality Chinese nets. This process tends to be accompanied by conversation, joking and improvised singing. Once all fish have been removed, the net is pulled back through from the first hole with the string; the process is now repeated with the next net. Fish are thrown unceremoniously onto different heaps as they are extracted – bream, roach, zander, asp. This is the commercial catch, which will be handed in to the fish receivers and whose trajectory we followed in the previous chapter. The least onerous work of putting fish in sacks falls to the oldest person present. But there will also be a few small flounder, sabrefish, and possibly also carp, silver carp or catfish, more rarely pike and perch. But as we saw, because their numbers are small, fish receivers do not receive them. The smaller ones (flounder and young carp) are thus added to the heap of bream where they will hopefully go unnoticed by fish receivers, while larger ones are put on one side. In winter the catch is driven straight to the receiving station at the end of the day – often as late as 9 or 10pm. In spring and autumn fishermen haul in their nets in the morning, and then they go ashore and extract the fish, sort them, put them in sacks and sort their nets. In the afternoon they take the catch round to the receiving station either by UAZ or by boat, before going out to lay their nets again in the evening.

As we follow the fish to the receiving station, other sorts of negotiation become evident, which are neatly encapsulated in the proverb: *Balyqshy aitpaidy rasyn, künde alady bïr asym*, 'the fisherman

doesn't tell the truth, every day he takes one portion'. This proverb is told with a smirk. But the exact wording is telling: '*asym*' is a pot's worth of food, the amount of meat you need to make a *beshbarmaq*. That is, the fisherman does not tell the truth about his catch because he is taking some home for a meal with his household. It is not the same as taking some home to sell to a *kommersant*. In this cryptic proverb, fish are not simply commodities: they also sustain the household as food. Not telling the truth is legitimated – within reason. The proverb thus defines the rights and obligations linking fishermen and nature users as subject to negotiation.

Figs. 5, 6: Receiving station, Shaghalaly. Zhaqsylyq is on far left, Meirambek operates the scales

The receiving station is simply a set of Soviet-era scales and a Soviet-era ZiL truck. During the first

part of my fieldwork, in winter, Zhaqsylyq would be dressed in smart clothes and sometimes a fur hat, while Meirambek wore the camouflage uniform with camouflage cap; later Zhaqsylyq too donned the uniform, but never looked comfortable in it, and tended to wear a rather incongruous leather flat cap. As fishermen come in, Zhaqsylyq chats affably with the older ones; Meirambek jokes with all and sundry. Formally, the relation between the receivers and fishermen is a monopsony, but the formal relation is fraught by uncertainty about what is and is not seen. Fishermen may haul in their nets and take their boat to a reedy bit of shoreline two or three kilometres from the receiving station, where they put the fish into sacks. One or two sacks may go into the UAZ which is parked nearby. In line with the proverb, they will take home the non-commercial fish, and probably also a sack of bream, and maybe some asp for domestic consumption. They then take the commercial catch by boat to the receiving station. Zhaqsylyq and Meirambek are busy all day receiving fish and cannot patrol the entire shore. Furthermore, they cannot check that every sack contains what it is supposed to contain. A sack of zander is generally quite obvious because the zander's pointy heads tear the sack and stick out of the sides. But a sack of bream will almost certainly also contain some flounder, young carp not worth eating, and other non-commercial varieties.

Fig. 7: Meirambek weighs the catch

The fishermen unload the sacks of fish and pile them onto the scales. Fish now acquire value as commodities as they are known in a new way, quantified by weight. This quantification not only

depends on the technology involved: it is socially produced knowledge, such that the very process by which fish are abstracted as commodities is embedded in social relations. The receivers ask what is in the sack, but do not check. They also do not ask what is in the UAZ. When the scales are fully loaded, Meirambek or Zhaqsylyq adjusts the balance and reads off the weight. Although the fishermen are keen to hear the result, in general, they do not watch to check that it is being read correctly. Meirambek operates the scales deftly and efficiently, whereas Zhaqsylyq is clumsier. But I only saw the result challenged once. Zhaqsylyq was operating the scales, and sliding the measure slightly too far, he aroused an angry shout of *Eeee, boldy, eeee!* (Hey! That's enough!) – but there was no one else about, and Zhaqsylyq ignored it. On another occasion, a zander was rejected from the lorry as it was found to be mangled; it was re-weighed and deducted from the fisherman's pay. Another fisherman was watching, and, although it was not his catch, he shouted "It's just one!", to which the response was "Yes, but that's 500KZT!"

If knowledge is socially produced, everyone knows that what is visible is partial, which means that the production of knowledge must be to some extent negotiated. The minor incidents above show the forms of social pressure involved in these negotiations (cf. Hivon 1998): the receivers' capacity to exploit their position is limited by the need to maintain the trust of the fishermen. Though in these very minor cases the social pressure did not work, I did not see more serious challenges to the receivers' authority in Bögen – indeed, it was striking how rarely fishermen monitored the operation of the scales.

If there are social pressures on the receivers, there are also limits to what fishermen themselves can get away with. Not telling the truth may receive censure. Informal rules shape relations between receivers and fishermen. One day Zhaqsylyq was outraged to learn that a sack of zander had been rejected by the directors of the factory, because it was full of young zander, some 20cm long. This is formally forbidden, as juveniles should be put back, but Zhaqsylyq's outrage was financial. The fish were too small to be filleted, so had been rejected by the factory: they have no value as commodities. Zhaqsylyq pays fishermen with his own money, so he was out of pocket. That day, this sack was left near the scales, a few fish spilling out, and as fishermen came in, Zhaqsylyq drew their attention to it. Eventually the man assumed guilty arrived, and was sternly reprimanded by Meirambek and Zhaqsylyq – on the basis that the factory would not receive fish under 400g. They did not mention the formal legal category whereby juvenile zander under 38cm should be put back. While the fisherman defended himself on the basis that he had laid 45mm nets like everyone else, he did not

deny having handed in undersized fish, nor did he dispute the cost of the sack being deducted from his day's earnings. When he left, he made a point of saying a friendly good-bye to Zhaqsylyq, who ignored him.

Fig. 8: Loading the ZiL

With a last act of shared labour, two fishermen heave the sacks into the lorry, perhaps with a helping shove from a third. At this, their brief relationship with the fish is severed. The cost is calculated, and deductions are made for fuel or nets purchased from Meirambek. The money is handed over to a senior member of the fishing unit, not necessarily the owner of the UAZ. During my fieldwork, bream and roach, which formed a large proportion of the catch, cost consistently less than 100KZT/kg. Asp ranged from 100-170KZT/kg. But the bulk of fishermen's earnings came from zander: zander was 250KZT/kg when I first arrived in winter 2013, and 500KZT/kg by spring 2014.[7]

[7] In February 2014, as the rouble was plummeting, the tenge was devalued, which rendered exports more competitive.

Fish in Bögen

As we saw in the previous chapter, the commodity fish then travel up to the plant outside Bögen, where fifty people work, mostly from Qazaly. The later social lives of the commodity fish explain the divergent value that fishermen extract from them. But for the moment, commodity and non-commodity fish are entangled in the social worlds of fishermen. Different sorts of fish sustain the reproduction of society in different ways, over different time scales. In my first winter in Bögen, Zikön and his colleagues would gather in Zhaqsylyq's *sarai* to divide up fish, sort nets, and relax. The non-commodity fish were divided not by individual fisherman, but by household. A large carp would go to Müsïlïm, as he was the oldest. Catfish would be sliced evenly, each household taking a share. Most of this fish is for household consumption; but some may also be given to relatives elsewhere who do not fish, entering long-term reciprocal relations. Furthermore, claims may be made on fish – mostly by relatives or friends but even by someone completely unconnected, where there is no long-term reciprocity. They may thus enter short-term immediate relations with no expectation of return: the hunter-gatherer ideology of shares, whereby economic value is not assigned to nature's bounty, thus persists where fish have low monetary value. Although there is a sense that a gift of fish need not be reciprocated, most often, if fish is being given to someone unconnected, vodka may be offered in return, but certainly not money. On one occasion (not in Bögen), after giving vodka for fish, I was invited to consume the vodka with the fishermen, and to share their lunch of a carp *beshparmaq*, and then to consume a lot more vodka (such that I'm fairly sure I drank about as much as I gave). There is thus an aversion to the idea that these fish should become commodities, even if they not always the pure shares assigned by hunter gatherers, with no expectation of reciprocity.

Fig. 9: Aikeldï divides up a catfish

But while this ideology of sharing persists, there is no anxiety about the commodification of fish, particularly the translation of zander into lots of money. This is in striking contrast to E.Wilson (2002) and Nakhshina's (2011, 2012) examples of post-Soviet fisheries in the Russian Far East and Far North respectively: both describe communities where commodification is perceived to come from outside, and is resisted as immoral, contradicting local ethics of sharing. In both those examples, the fish in question is salmon, which has high market-value *and* is prized locally. By contrast, zander is not rated by Kazakhs. Popular in Europe for its leanness, it is unpopular among Kazakhs for the same reason: fat and oil are rated highly in Kazakh diet (McGuire 2014, cf. Zanca 2007). The same material feature thus entangles zander in different ways in different regimes of value, which helps explain why it is so readily commodified.

Money from commodity fish would be divided equally among individual fishermen. Regardless of the cooperation and hierarchy in the fishing process itself, at this moment they are all equal individual economic actors: they are momentarily disembedded. Some of this money was consumed immediately, as the individual economic actors now take it in turns to buy drinks, so as to reproduce a particular sort of sociality between fishermen. Zikön, Aikeldï and Müsïlïm would drink vodka, while Bolat and Zhüman would drink beer (Mūkhtar and Maqsat did not drink in front of their seniors). But most money is handed over to wives or mothers, and fishermen are no longer individual economic agents, but are embedded in their household. Indeed, when I was in Bögen outside fishing seasons, I would be called on to buy drinks and cigarettes; the litany was always the same: no fish, no money. When they were fishing again, I was promised, they would reciprocate. What they meant was that they had no money which was not earmarked for household expenditure. Fish are associated with money, specifically with ready money. Again, there is an immediatism about fishermen's relationship with fish.

Fish and money

It is November 2013. There is an air of excitement as fishermen return from the sea: Ghalymbek's wedding (*toi*) is approaching. Over the next day, which is grey and windy, the air thick with dust, men are slaughtering livestock in preparation for the feast, and the vodka flows freely. Meanwhile women are busy preparing inside the newly built family house. The day of the *toi* is sunny, cool and breezy. Beneath pale blue skies, the face of the bride, who is from Shymkent, is revealed, while a poet improvises with a dombra, singing about all the wedding guests (myself included), who give a small gift of some money. Not only are villagers present, but also Külïkter from further afield, from Aral'sk and Qyzylorda, as well as the bride's family from Shymkent. The day includes various formal meals

and a lot of informal drinking on the sidelines, culminating in the *svad'ba* (Ru.: wedding) in the evening: Soviet hits from the 1980s, Boney M, modern Kazakh pop music blares from a sound system as everyone dances together, vodka continuing to flow on the sidelines for men and women alike. Then a master of ceremonies invites a series of *tïlekter*, brief speeches wishing them well, from Zhaqsylyq, Aikeldï, Gulnar, and others, including our new *qūda* from Shymkent. As the master of ceremonies celebrates the presence of so many Külïkter and Zhamanközder, the wedding promises the continuation of the *ru* into the future. The wedding therefore is a key moment in the reproduction of the chronotope of *tughan zher* – which today hinges on the intersection of chronotopes of fishing, of abundance in the sea, and of contemporary capitalism.

Fig. 10: Wedding, Bögen, Novermber 2013

Fishing today thus sustains this ritual economy which reproduces society over time. This is not of course its only significance: money from fishing first and foremost supports everyday expenses, which are high, given the distance of the village from towns. Money is also saved for longer term expenses, notably investment in productive capital such as UAZes and GPS finders, which render the often fraught task of finding one's nets easier. In Simmel's terms, money, by facilitating access to these technologies, has brought some freedom in reducing the importance of affective ties and obligations. The importance of networking as a survival strategy is declining as households become more self-sufficient. But the role of money in ritual expenditure is crucial to understanding the changes that are taking place. I have stressed parallels with hunter-gatherer ethics. But, as we noted, while hunter gatherers are famous for working only to satisfy their limited wants (Sahlins 1972), Aral

fishermen work extremely hard. This is partly because of the limited fishing seasons and unpredictability of the weather. It is partly also the result of the Soviet legacy emphasising labour. But most important is the sense that there is never enough money.

Money is required for building new houses, which costs 2-3mn KZT. When I was in Bögen in the summer, everyone emphasised the cooperation and reciprocity involved in this work: through the institution of *asar*, people rally support in advancing their project. But house-building is also competitive: houses are judged on size and style, with *evro-tip* (European-style) preferred, i.e. fronted with factory bricks, with plastic windows and new furniture. A new house is crucial when a wedding is coming up. Indeed, weddings, which cost 1-2mn KZT, and other forms of *toi* (celebration), are cited as one of the principal reasons why money is needed, especially as the ritual economy becomes increasingly monetized. Bridewealth (*qalyng*), for example, which used to involve transfers of livestock from the groom's to the bride's family, is usually now cash – with figures of 100-150,000KZT cited as normal, sometimes higher.

Overlapping explanations have been put forward for conspicuous ritual consumption in post-Soviet Central Asia. As financial capital is turned into symbolic capital, it reproduces and cements social differentiation (Koroteyeva and Makarova 1998, Kandiyoti and Azimova 2004, Trevisani 2010:215, 2016). To this extent, this long-term order in which society itself is reproduced is not only about solidarity, but is also the site of competition between households, and as society is reproduced, it is differentiated. For Trevisani (2016), an 'instrumental mode' of ritual rationality is thus replacing a 'communitarian mode' in Uzbekistan. Conversely, Reeves (2012a), discussing migrant remittances in Kyrgyzstan, argues that ritual expenditure is a means of affirming presence in a village. Indeed, it is important to emphasise the affective meaning of this expenditure (cf. Brandtstädter 2003). Reeves also argues that it is necessary to continue fostering networks, which are still necessary for migrants in the neoliberal labour markets. Given the ongoing embeddedness of the fishery, networking is evidently still important in Bögen too. But, as I have shown, horizontal ties between households are becoming less salient; on the other hand, the vertical ties between ordinary fishermen and Zhaqsylyq and Meirambek are crucial. Networking still matters, but there is an asymmetry in the connections: Zhaqsylyq and Meirambek are considerably less dependent on other fishermen than vice versa. As Botoeva, discussing the effects of money (earned from hash) on a rural Kyrgyz village, concludes: "monetization of gift giving transforms social networks into more layered and stratified dependencies" (2015:545).

In Bögen therefore, society is becoming differentiated as it is reproduced. At one extreme, Tolpash is a little older than Zhaqsylyq, and lacks kin within the village: he is of a different *ru* from most of the village; his siblings left years ago; and his only son now works in Qazaly, although the youngest son should stay to live with his parents. He is not excluded from the fishery: he and two other elderly fishermen in a similar position fish in a boat provided by Amanbai. But the house is old and crumbling, and, unusually, has no *sarai*. His wife complains about the cost of groceries, and the amounts charged by *kommersanty* in the village. Most families are much better off than this: with several members of the household fishing, it is possible to maintain a reasonable standard of living.

Zhaqsylyq's family has, of course, benefited most from the return of the sea: the position of fish receiver is lucrative; and all the sons fish. In summer 2013, preparations were being made for the family's new house: 3000 bricks had to be made. Zhaqsylyq's *bazha* Müsïlïm and his sons were helping mix sand and clay in the baking sunshine. Müsïlïm stressed that they were helping as they were *aghaiyn*, 'relatives'. What no one voiced was the fact that Müsïlïm, who lives in Amanötkel, depends on Zhaqsylyq for access to the fishery. The following summer – after the end of my fieldwork – the new house was to be built, and soon Mūkhtar, once returned from the army, was to get married. The extensive financial capital the family accumulates in turn reproduces their symbolic capital, and the wedding in the large new house will be a performance of their new prominence.[8] Since Zhaqsylyq's sons are still fishing, it is too early to talk of class formation in Bögen as is evident in Trevisani's (2010) account of Uzbekistan's decollectivisation, but the differentiation is certainly there.

Conclusion

As money from zander feeds the ritual economy which reproduces society, chronotopes of neoliberal markets, natural abundance and fishing as a way of life intersect with the chronotope of the family. There are superficial parallels with Carsten's (1989) account of a Malay community, where fishing is a hierarchical and competitive activity, in which men seek to avoid working with kin; while there is some moral anxiety about money, money feeds into the reproduction of household and community, an order governed by reciprocity. Carsten's case-study is an important instance of what Bloch and Parry (1989), contesting earlier anthropologists' assumption of 'great divide' between societies based

[8] Similarly, Batyrkhan, nature user in Qaratereng, who has also built a lavish new house with bricks from Almaty, held a huge feast in honour of his recently deceased son, involving sports contests, with cash prizes given to winners.

on gifts and those based on commodities, or between embedded and disembedded economies, characterise as a divide within societies, between a short-term order based on competitive self-interest, and a long-term order over which society itself is reproduced.

But on closer examination, the Aral case does not mirror Carsten's example so well. As we have seen, there are instances of cooperation and claims based on social ties within the everyday practice of fishing. Furthermore, different fish, with different material qualities, enter very different patterns of exchange. Crucially, as elsewhere in Central Asia, the long-term order is characterised by competitive accumulation of symbolic capital. Indeed, Helgason and Pálsson (1997) question Bloch and Parry's assumption of a great divide within societies. They instead propose the metaphor of a single moral landscape, criss-crossed with different patterns of exchange and different moralities. While it makes sense in some ways to talk about processes of disembedding within the Aral region (if less advanced in Bögen itself), this is neither a transition from one sort of society to another, nor even a shift in emphasis from one pole to another. Rather, it is a transformation of this moral landscape, as the physical landscape is integrated into the time and space of contemporary capitalism. So too, the social relations which are reproduced within this moral landscape are being transformed, as fishermen are differentiated from *priëmshchiki* and nature users, and as fishermen in Bögen are differentiated from the proletarianised fishermen in other villages. Zander, in their entanglements with technologies of abstraction (boats, nets, UAZes) and with (formal and informal) property regime and markets, are playing their part in these transformations. During my fieldwork, as resources were abundant, no one was excluded from fishing altogether, despite differential access to boats and other means of production. Were that to change, evidently the hired fishermen would be the first to be laid off.

The stereotypes with which we began thus both contain a grain of truth, and are indeed connected. There is a level of social differentiation, though this is uneven across the region: in some contexts, fishermen are more exploited than in others. Fishermen certainly are concerned about making money, precisely because it is through money that social status is reproduced. At the same time, fishing is also a way of life, an identity – and the different forms of sociality which take place at sea, at the receiving-station, and at ritual events cannot be reduced to competition between households.

Chapter 9. Aral'sk today: fish, money, *ekologiia*

In summer 2013, I was roped into assisting with a school project. The schoolchildren, aged between 10 and 14, were entering a national competition to make a film about their region. In the film, they showed a foreigner, me, the sights of the town, while one of their teachers, Gulnar, translated into English for me. We began at a large white monument approximately representing a square-rigged sailing ship, near the station. The monument is rather inappropriate, as no such ships would ever have been seen on the Aral. It took several takes to get everyone in position, but eventually we were able to begin the dialogue. According to my instructions, I asked the children if they lived here. Could they tell me about this ship? One boy piped up his rehearsed lines: "Our region is primarily a fishing region, but the Aral Sea dried up (*tartylyp ketken*), and this monument is to commemorate our fishermen." But another of the teachers shouted from the sidelines that we would have to start again: "The sea is coming back (*tengïz qaityp kelïp zhatyr*)! You need to say that the sea is coming back!" A few more takes (the cameraman's patience wearing thin) and the boy had got his lines right, and Gulnar translated for my benefit: "The children think that the sea is coming back."

The rest of the tour presented Aral'sk to a putatively global audience. It was instructive both for what was and what was not included. We steered clear of the Soviet-era Hotel Aral, despised by locals and visitors alike. We spent much time on the wide, clean central square, the site of the town and raion akimats and a few banks. Some other schoolchildren were putting on a performance of traditional dancing accompanied by dombra. A drunk shuffled past smirking, spitting when he reached the end of the line. One of the boys with the dombra told me that there would be a concert in Astana, conjuring up a connection between Aral'sk and the capital where so much of Kazakhstan's sovereignty is imagined. We also filmed the Soviet-era monument of a fisherman with a fish. This square is the formal heart of the town, the site of the quiet activity of people going about their business.

Fig. 1: Aqkeme (white ship)

We next went back up the road towards the station, where the few apartment buildings in the town

are located – elegant if crumbling two-storey buildings, and of no interest to our tour; we also, like most inhabitants, ignored the mosque, which is on the same road. Our goal was the town museum, where we examined some traditional jewellery. We did not look at exhibits about the sea, or about the Soviet period in general; and in the whole tour, we did not visit any of the old Soviet enterprises explored in chapter 3: this sort of heritage was not of interest for the video. We then visited a local jeweller, before heading for independence square, which used to be salt marsh; today there is a tall monument to independence surrounded by some arid flowerbeds. Unlike the central square, which is frequently traversed by people on their business about town, no one walks across the centre of independence square, and it is something of a vacuum amidst its surroundings. Around the flowerbed, mud and dust give way to broken tarmac. One side is lined by small workshops offering car repair, welding services, and some shops; on the other side taxi drivers hawk their wares; beyond is the bus station, Soviet-era buses serving local villages, and long distance second-hand French coaches. Beyond the bus station is the bustling market, selling local meat, fish, dairy, and wool products; fruit and vegetables from further south; and tat from China. We just filmed the monument itself.

Fig. 2: Soviet-era building, Aral'sk

After this we drove round the town, along pot-holed roads and rutted tracks of saline mud and sand, to look at glossy new monuments of Kazakh national heroes – which are also sites for wedding photos. We ended at a small sports complex (incorporating a gym and a swimming pool) near the former harbour – this was recently opened by a local businessman, his gift to the town. In a sense, Aral'sk is like a microcosm of Kazakhstan as a whole: pockets of shiny newness purporting continuity with a distant pre-Soviet past, amidst expanses of decay. Tourists mostly perceive the decay, but it was the

newness which the children and their teachers wanted to display. Another point which was not represented of course was the differentiation of private space: the few wealthier houses marked by brick construction and new iron gates.

The little boy's uncertainty at the beginning of the tour speaks of the sea's marginality to the town today. Part of this marginality is simply physical: the nearest point on the sea is some boggy and reedy shallows about 20km away, and access is only possible by 4x4. Summer days out for swimming, beer and shashlyk are generally to Lake Qambash, which is much further, but can be reached by tarmac road. Generally, most people are aware that the sea has returned. On just a few occasions I was surprised to be asked if *I* thought the sea was coming back. Most people are positive about it: some older inhabitants say that the climate has improved and flowers have returned. There is a sense that if the sea is raised further, this will be good for the people (*khalyq*); and there is a hope too that tourism might flourish in the town if the sea returns. At the more pessimistic extreme is Svetlana Mikhailovna, my Russian landlady, who declared firmly that the sea coming back was 'drips' (*kapli*), i.e. it had done very little to resolve the town's problems. But in general there is ambivalence, and few imagine their or their family's future as connected with the sea. This chapter takes this ambivalence as its starting point. I locate it in recent sea-changes in the political economy, whereby Aral'sk is newly peripheral in a space characterised by a new sort of uneven development (Smith 1984), which relates to optics of 'seeing like an oil company' (Ferguson 2005), and, arguably, of opportunistic apparatchiks. These sea-changes generate concerns about lack of employment, shortage of money, and corruption – concerns which feed nostalgia for the gridded space of the USSR. Money is an ever-present concern in a context where the average salary ranges from 45-60,000KZT; and townspeople face similar concerns to villagers of expensive everyday goods and an increasingly monetised ritual economy. But it is possible to imagine a future in Aral'sk; and, as the opening anecdote shows, there is also a real sense of pride in the region. This chapter is also about how people juggle this pride with those other concerns.

This chapter thus explores two sorts of entanglements. The marginality of the sea is related to the restored sea's entanglement with a wild market: the sea is marginal to Aral'sk today because most fish do not reach Aral'sk for processing, so – although there is money in fish – the return of the sea has not translated into large-scale employment. Hence the comparison of Soviet times with today. The first half of the chapter locates the fisheries within the economy of the town, and explores the sense that the sea is marginal in terms of a failed connection between the town and sea; as such, it

becomes a vehicle for complaints about corruption. In the second half of the chapter, I broaden the discussion out away from the sea towards perceptions of environmental and economic problems more generally, which are tangled up in instructive ways in local discourse. Both sorts of discourse are rooted in real problems: unseen particles in the air continue to cause severe health problems;[1] opaque flows of goods and money transform 'moral landscapes' (Helgason and Pálsson 1997). If past informal practices are remembered as moral, smoothing the functioning of the command economy for the greater good (cf. ch.3), informality today is ambiguous. Such practices remain essential to everyday life, and people cling to their own behaviour as moral, while seeing everything else as greedy individualism, damaging the collectivity (cf. Pine 2015). All this generates concern about various forms of integrity: the integrity of the imagined community of the nation; of local society; and the integrity of persons, both moral and physical. Following the threads of these discourses, the point is not that they map neatly onto a clearly knowable reality. Rather, they represent unseen and unknowable realities obliquely, through allusion, association, and analogy; and the modes of reasoning speak of people's interests and concerns (cf. Alexander 2009a, 2009b, Pelkmans 2006:ch.7; Pelkmans and Machold 2011).

The fishing industry

The general perception is that 'there is no work' in Aral'sk. The only sector where people agree that there is abundant work is the state sector – the akimat, schools and hospitals. These employees benefit from the *ekologicheskaia zarplata*, the extra pay accruing to state employees in a state-recognised ecological disaster zone. But despite people's wilder estimates, Aral'sk is not beset with unemployment and stagnation. It benefits in particular from its position on key transport routes. During my fieldwork, the trunk road passing the town was being upgraded as part of a massive World Bank project to create a road from Western China to Western Europe. This provided some temporary work in the town. Most important however, as throughout the town's history, is the railway. The railway is a source of jobs in itself, and it also provides access to jobs in shift work, largely on oilfields in Aqtöbe oblast to the north and Qyzylorda oblast to the south, where there are jobs for those with and without educational capital. While this work requires spending two weeks away from home at a time, it allows people to stay living in Aral'sk, where land is abundant and housing relatively cheap, and it is this above all which allows people to imagine a future in Aral'sk. Of course, people also migrate further afield to Almaty or Astana on a more long-term basis. For example, Edïge needed to raise money to get married and renovate the family house, so moved to Almaty where he worked for

[1] See e.g. Nading (2014) for an approach to this sort of entanglement at the intersection between political ecology and medical anthropology.

international companies; he returned to look after his mother when she was ill.

There is also informal work in the market and in construction around the town. For first- and second-generation migrants from villages without educational capital, this may be preferable to moving further afield, where they lack kinship and social networks. Ownership of a vehicle also opens limited economic opportunities: any car can be used as a taxi; a UAZ van can be used for ferrying wedding parties to distant villages, or for collecting fish for *kommersanty*, or even for taking tourists to the sea (if one has an acquaintance in the NGO); a KAMAZ truck is useful for transporting building materials. Some families keep livestock, though increasingly few as the cost of feed rises. Finally, a growing number of people from the town today fish for Amanbai and Aimbetov in Saryshyghanaq bay, where for a long time plots stood empty.

The perception that there is no work in Aral'sk, then, alludes both to the sense that economic opportunity is elsewhere, and to the form of work: the predominance of temporary, informal jobs rather than the major enterprises and job security remembered from the Soviet era. Even access to the formal sector depends on personal connections and money. In addition to the perception that there are no jobs in Aral'sk, there are also constant complaints about the cost of everyday goods and fuel relative to salaries – which were exacerbated after the currency was devalued in February 2014 as a result of the falling price of oil.[2] High prices are partly put down to the town's remoteness. Only meat is relatively cheap because of the amount of livestock kept in the region. But there are complaints about the cost of fish, of which there is very little in the market. Indeed, much of the fish in the market in Aral'sk is suspected to be Caspian fish: Aral fish has a glint in its eyes. Given the financial tensions, informal, personal relations remain crucial to getting by and getting on in Aral'sk today – and we will explore some of these strategies below.

Fish factories

There is not much fish in factories around the town either, which is why the fishing industry is marginal to most people in Aral'sk, providing few jobs. Crucially, above-quota fish cannot be sold openly. In practice, buyers face two prices: a price for fish, and a price for documentation, through which 'black fish becomes white fish'. Factories in Aral'sk are liable to checking by the prosecutor's

[2] Previously the currency had been devalued in 2009 after the financial crisis. In an economy based on export of raw commodities, such moves render Kazakhstan's exports, including zander, competitive while having crippling effects on imported consumer goods.

office, and thus face cripplingly high prices for material to process. Without documentation, it is not too difficult to smuggle fish out of the region for processing elsewhere – crates can be re-stamped with different codes. Anderson (2002) finds that, despite high local demand for meat in Siberia, the particular shape of the market channels meat in certain directions so this demand is not satisfied. Similarly, because, as we saw in chapter 7, the market for fish in the Aral region is shaped by an 'atmosphere of intrigue', despite local demand for fish as food and as a source of jobs, fish do not reach Aral'sk.[3]

After Aralrybprom went bankrupt, it was sold off and dismantled. In 2007, Aimbetov, the last director of Aralrybprom, bought the derelict shell, 'for kopecks', as he put it. Assisted by a state loan, Aimbetov restored the factory for 100mn KZT, and in 2010 the factory started production as Aral Servis, employing about 50 people. The main production is zander fillets, and the factory has an EU code. But very little of the old building is used: there is no smoking or curing, although such production is popular across the CIS. Even the output of zander is very low: the factory only exported 104 tonnes of zander fillet in 2012. Despite the abundance of fish in the sea, not much is processed in the factory: until winning a tender for six plots on the sea in 2014, Aimbetov only had a small plot on the river.

There are a few other very small fish plants in Aral'sk, including Kambala Balyk, which employs about twenty. But Aimbetov's main competitor in the town is Atameken,[4] near the shipyard and the old military town. This is a shiny, futuristic building – unlike anything else in Aral'sk. Indeed, it purports to be the only such fish processing plant in the CIS. Atameken was originally part of Atameken Holding Company, which is mostly owned by a wealthy businessman originating from the Aral region; the holding has interests in construction, real estate, import/export and engineering across Kazakhstan and an international office in Paris. The factory, Atamekenrybprom, was built in 2009 and cost 12mn dollars, of which half was a state loan (Redaktsiia "Novaia Gazeta" – Kazakhstan 2012).

The factory is equipped with modern Korean technology, including an instant freezer; machinery for mincing off-cuts; and a smoking-chamber. But the first time the smoking-chamber was used it filled

[3] While many informants loosely blamed poachers, the scale of poaching is not enough to explain the problem.
[4] Formally, the factory is no longer called Atameken, but it is still known as such across the town.

up with smoke; the manufacturers have promised to repair it, but have not yet done so. Today the factory produces some smoked fish on a small scale without the fancy equipment, unofficially, for the local market. Atameken also acquired an EU standard code in 2012 and exports zander fillets to Germany and Turkey. The factory was built with a capacity of 6000 tonnes output, and was to employ 300 workers. But it has never run anywhere near capacity. Like Aral Servis, it does not have a plot on the sea and must buy fish from other nature users. In 2012, just 500 tonnes were processed – partly on the basis of fish bought from Balqash and the Caspian. Just 75 people work in the factory, and payment of salaries is fraught. In 2013 the manager was fired; it was reclaimed by state authorities and new buyers were sought.

Fig. 3: Atameken fish factory.

The social life of a fish factory

Atameken occupies an ambiguous place in the discourse of the town, and as such it provides an apt site for exploring broader preoccupations. ‘Atameken’ means ‘fatherland’, and, as a public-private partnership equipped with up-to-date foreign technology, the factory represented the glossy new Kazakhstan, integrating the restored environment of the North Aral Sea into the booming economic space of the country, and wider regional and global markets. Fish were to play their part in this transformation, bringing jobs to a depressed region. In one register, then, it is a symbol of newness and modernity, its architectural vernacular evoking the futuristic glass buildings of Astana rather than the Soviet past. People ask me if I have seen it, and praise its beauty and modernity. “Even the director looks like a foreigner!” beamed one woman (referring to the director who was later fired). As such,

when people talk about the fishing industry in the town, it is usually Atameken, not 'the old *rybokombinat*' (Aral Servis), that they refer to. Of course, some older people criticise the fact that such a large project was built by a private individual rather than the state. Indeed, when Svetlana Mikhailovna announced that there is no benefit to the town from the sea, it was because the factories were privatised, so all the profit goes 'to one person': her complaint straightforwardly reflected old Soviet assumptions about the evils of private property. But for most people, even among moderate nostalgics, the external form is more important than the ownership structure.

But though it symbolises a hoped-for future, the factory is also a vehicle for criticisms and dissatisfaction with the status quo. The failure of fish to reach Atameken represents a failed connection between the town and returned sea, which speaks of Aral'sk's place in Kazakhstan as a whole. The same people who praise the factory explain that it was not given a plot of its own on the sea, which is attributed to corruption of the fisheries inspectorate, based in Qyzylorda, who fixed it so that all the fish should go to Qazaly, rather than Aral'sk – after all, the head of the inspectorate is a Qazaly man.[5] However this decision was made, it is certainly true that Amanbai has three plots on the sea, and all his fish go to be processed in his factory in Qazaly. In fact, Qazaly is nearer both Bögen and Qaratereng than Aral'sk, but as Aral'sk is the historical centre of the fishing industry, its marginalisation is resented.

There are also extensive rumours, which are encouraged by media reports (e.g. Naumova 2012), that *kommersanty* come to buy fish off poachers, and that the fish mysteriously disappears out of the region unprocessed. The provenance of these *kommersanty* varies – often they are said to come from Shymkent, the crime capital of Kazakhstan and source of all rumours about anything bad; sometimes from the Caspian or from Aqtöbe; and sometimes from abroad – from Russia or from Georgia. On this view, Atameken is failing to deliver its promises because of penetration of the region by the outside. This forms part of a wider discourse about danger from the outside, which, as we see below, is a commentary on the vulnerability of Aral'sk to complex processes beyond anyone's control. But if those complaints speak of Aral'sk's place within Kazakhstan, the factory itself is not exempt from criticism.[6] It is also suspected of carrying on more production than is declared, cleaning and re-selling without processing, 'outside the factory' (Ru.: *vne zavoda*). People switch between praising the

[5] Cf. Timirkhanov et al. (2010), Naumova (2012) on the opacity of the tender process. This was confirmed by Aqshabaq.
[6] It has been debated in the press whether Atameken's woes stemmed from mismanagement or corruption of state organs: see Redaktsiia "Novaia Gazeta" – Kazakhstan (2012).

factory's beauty and criticising the high turnover of directors who simply pocket the money, buy a fancy Japanese 4x4, and leave. In this register, the factory management is not victim but agent: the factory does not provide jobs in the town because its directors are only interested in their personal profit.

Corruption of the inspectorate, *kommersanty* from outside, a shadow-factory: such rumours are a powerful commentary on corruption impinging on the region from outside, and corruption within. People know that fish mean money, but this is money for individuals, not for the broader good of the region. But perhaps these rumours are more than mere commentary (cf. Pelkmans and Machold 2011). Recall the invisibility that pervades fisheries even when fish are out of the water: people in Aral'sk know that the sea has been restored, and they can see that some people are getting rich from it, but everything in between is opaque. Rumours provide a means of reasoning in the absence of clear knowledge (Alexander 2009b). Indeed, invisibility is key to the system functioning: since above-quota fishing is routine, the system thrives on complicity between inspectors and nature users. In this context, speculation about personal connections between them may not be precisely accurate, but it makes sense.

There is a final point which no one mentions: if quotas were respected, under 500 tonnes of zander would be caught per year, which would not translate into any more factory jobs than there are today.[7] But zander makes up only about 10% of the total allowable catch: the rest is not processed in the region, despite high demand for smoked and cured fish in the CIS. Developing infrastructure like smoking-chambers (or fixing the faulty one in Atameken's case) requires capital, and given the difficulties of raising capital for investment, all the factories are geared only to processing zander, the most profitable sort of fish.

Pelkmans' (2006:ch.8) work on the social life of empty buildings in transitional Ajaria suggests that, while they are a vehicle for discontent about the present, they are also a means of imagining a bright future for all. He finds that, while there is some outrage that these buildings are empty, people do not query the decision to construct, and as such, they are co-opted into the vision of the future which such buildings represent. Both points are relevant here. Atameken is both a symbol of hope and a symbol of present chaos – and people switch rapidly between the two. I talked with one young state employee

[7] In 2012, the quota for zander was 407 tonnes, out of a total of 4105 tonnes.

who had worked in Almaty. He presented the problems of the factory as intrinsic to the transitional present: though he is optimistic about capitalism, he argues that people have not got used to it yet; more state oversight is needed to ensure that factories like Atameken work properly. But in a more common register, the factory has come to symbolise a present which is felt to be fairly stable, not a system-in-formation, but a fully formed system where corruption is intrinsic.

Indeed, the chaos of the present can point towards a darker future, as when I was talking to my landlady Ornyq, who told me about some Russian businessmen who had stayed with her four years ago. There were lots of fish then, she said. I was surprised and asked if there were not plenty of fish now. She gave a dismissive click. Why are there not fish now, I asked? Because, she replied swiftly and confidently, they divided the sea up, and now they just fish and fish, only thinking about money. In a lull in her tirade, I said that the future of the industry was one of the key questions for me, at which she said instantly: "There is no future." She blamed the absence of the state: there should be a state factory, state control. I said something about the inspectors, but she was dismissive: you just take a license, and fish and fish; some just get a license because their cousin is a minister, and there is no control – everyone only thinks about money. She concluded by noting that there is corruption everywhere – Africa, France, and especially in Kazakhstan. Whether or not Ornyq's prognosis about the future is accurate, her account of the present is contradicted by evidence of growing catches – and I never heard anyone else make such a claim. But the connections she makes, between money, corruption and resource depletion, speak of a moral universe which I explore fully in the final part of the chapter. Before doing so, however, I introduce some key informants in Aral'sk. Fish play a role in all their lives, but a marginal role – they are not a source of jobs, nor, in general, are they bought in the market.

The Russians

My Russian hosts, Sasha and Svetlana Mikhailovna[8] live in a house near the station, where they have a flourishing kitchen garden. They have three children, two in Togliatti and one in Almaty. The daughter in Almaty is a successful journalist, while the daughter in Togliatti is undergoing financial difficulties, so some of the money from my rent helped her out. Svetlana Mikhailovna worked in a nursery, and has received her pension since retirement, but does not feel that its value matches the labour she gave the state over the years – nor does it match the ever-rising cost of everyday goods. When the region was declared an *ekologicheskii raion*, retirement age was lowered, but this was

[8] Around Aral'sk, Sasha is referred to by the short form of his name, sometimes with a respectful Kazakh ending, 'Sake', while Svetlana Mikhailovna is known by her full name with patronymic.

cancelled on independence, so she had to go on working. Sasha kept working in the shipyard until it went bankrupt in 1995 when he was 45. From then until he could draw his pension in 2013, his only income was from repairing car batteries, for which he is known around town as *akkumuliator Sasha*; he claims that people trust him more than they would a Kazakh would be to do a good job.

Neither Sasha nor Svetlana Mikhailovna is in good health. Sasha's troubles date from a motorcycle accident on a hunting trip, when he dislocated his shoulder; Svetlana Mikhailovna blames his drinking for his ongoing problems. Svetlana Mikhailovna's problems related to kidneys and blood pressure, and she recently underwent a month's private treatment in Almaty, paid for by their journalist daughter. They are also sensitive to the health-problems of others: Sasha will greet people in Kazakh with elaborate enquiries about their health.

While they do not have relatives in the town, both Sasha and Svetlana Mikhailovna talk about how respected they are, and the importance of mutual aid, which they relate to Kazakh hospitality, implicitly opposing this to the uncaring state. They are invited to Kazakh festivals like Nauryz, and reciprocate at Russian holidays. When I first arrived, neighbours were helping Sasha get coal in for the winter, which was thanked with a drinking session. Sometimes their friends help pay for medicine. A neighbour sometimes assists them by printing out official documents – which on one occasion was reciprocated with fish. Indeed, fish play an important role in maintaining these relationships. Sasha is renowned for curing roach, bream, sabrefish, and so on, and for making *khe*, a Korean fish salad; he sends some to their daughters, but most is for renewing relations with friends around the town. A keen hunter, Sasha still goes hunting whenever possible, departing with gun, rubber boat, and vodka and returning with game and fish. He also relies on fishermen friends in villages, including Tolpash in Bögen. On one occasion a rather tipsy Sasha told me at length how Tolpash had sent them fish; if in the future Tolpash was not fishing, Sasha would send him a sack of flour: "Exchange (*obmen*)... that's how we live." But if, he went on, rubbing his fingers together, Tolpash had to go to the *kommersanty* in the village, then it would be expensive. Sasha would often use Tolpash as an example of the immorality of the current fisheries: he is, Sasha would say, completely dependent on, and exploited by, the *priëmshchiki* and *kommersanty*. In Sasha's accounts, there was a clear contrast between the relationships of delayed reciprocity and those mediated by monetary exchange.

But while the couple would often paint a rosy picture of their integration into the town, there were

limits to how much this support could help when pensions were so low. Help could be rallied getting the coal in, but the cost of coal would eat up a month's pension. In the past, they have had their electricity and phone line cut off for not paying. Furthermore, while giving fish is important for maintaining reciprocal relations, getting hold of fish is not straightforward. Without a UAZ, Sasha lacks access to fishing sites, and thus depends on acquaintances just to get hold of fish. My research needs were a help here: a few times my *komandirochnye raskhody* (business-trip expenses) covered trips for both of us to go to Tastübek.[9] Once, I paid Sasha's acquaintance Almatbek to take us. These trips highlighted Sasha's dependence: like me, Sasha was awkward about demanding fish off people he did not know, as his contact in the village had moved to Aral'sk. We were thus dependent on the self-confident Almatbek, who had relations in the village, to bully people into giving us fish. On the basis of Almatbek's UAZ and his social capital, we returned to Aral'sk with a good haul, to be divided evenly between Almatbek and Sasha. But back in Aral'sk, before the fish were divided up, neighbours and relatives of Almatbek took their share before the division was made. At that point, the larger fish all went to Almatbek. The unequal division of fish between Sasha and Almatbek demonstrated the inequality of the relationship.

Ornyq

Ornyq works in school administration. Her husband Samat is a veterinary inspector, and their unmarried son Zhakön works in the land registry in the akimat. Ornyq has two sisters and a brother, and their households are closely connected, often sharing meals and childcare. The *kelïn* (young bride) in the brother's household in particular is roped into household duties for all the siblings, especially when guests are round or there is a ritual occasion. But while the immediate family is close-knit, Ornyq complains about the financial obligations towards more distant kin at ritual occasions. Indeed, her brother recently took out a major loan to fund his daughter's wedding, and complained to me about the competitive aspect of ritual expenditure.

Samat goes on regular work trips to Qaratereng, for which he is assigned a Niva (Lada 4x4). As he cannot drive, he is driven there by Ornyq's brother, Ertai. Ertai is in his 50s, and retired early as an invalid: he has kidney problems and high blood pressure. Ornyq and Ertai's mother was from Qaratereng, so these trips are a means of maintaining relations with kin in the village. Hence Ertai and Samat often return with the car laden with fresh fish, which are distributed among close kin in

[9] Sasha wanted to complete my expenses claims by *pripiska*, having ample experience of *komandirovki* from when he worked in the shipyard. Entangled with ESRC guidelines, I reluctantly refused.

Aral'sk. Ornyq avoids buying fish in the market as they are too expensive and not fresh.

Although all three household members work, like everyone else Ornyq talks a lot about financial constraints, especially the impossibility of saving up for anything: you must always take out credit first, and then work to pay it back. They had been saving up for a Volga, but when newly independent Kazakhstan went over from the rouble to the tenge, their money became worthless – and since then, she said, they have not trusted banks. But the family recently purchased an Audi on credit; they are paying back 40,000KZT a month. While the Niva is just used for Samat's work, the Audi is an important marker of status for the family. Whenever possible, Zhakön drives very fast up and down the few streets in Aral'sk with his friends listening to Enrique Iglesias at full volume. But he is also at the beck and call of his mother: everyday he must drive her to and from work, and may be called upon at any time to buy her beer and *semechki*. Once the debt for the Audi is paid off, they plan to install a septic tank for an indoor bathroom.

Because of the credit repayment schedule, the household's finances were stretched – and often I would pay rent early to help with this. A further complication emerged while I was living there: Ornyq had, unbeknown to Samat, lent 150,000KZT to her sister's colleague, who had lent it to another woman, who Ornyq did not know. When the debtor had trouble repaying the money, Ornyq spent the evening on the phone to both women putting as much pressure on them as possible. The whole episode had given her a splitting headache and sent her blood pressure (*davlenie*) up. The situation seemed to be resolved in the end, though I am not sure how. Such loans are an obvious way of avoiding the punitive rates of commercial lenders, and depend on trust in social networks. As in other postsocialist settings, and in contrast to Simmel's assumptions, money therefore does not corrode social networks but puts them to new uses (cf. Ledeneva 2006, Wanner 2005, McGuire 2014).[10] But with this complication, because the money was lent outside Ornyq's network, the effect was to corrode trust.

Samalbek and Elmira, Mira and Zhūmakhan

Samalbek and Elmira, in their late 30s, live with their six children. Samalbek's father is from Tastübek and now works in Atyrau, on the Caspian, in a state organ, but looks forward to returning to his *tughan zher* on his retirement. Elmira was born in Qyzylorda but moved to Aral'sk in 1990 as her parents divorced and her mother was from Aral'sk. Elmira's time is full looking after their many children;

[10] Indeed, McGuire's (2014) data from rural Kazakhstan show how money is associated with trust over long time-spans, while barter is impersonal and immediate.

Samalbek works for the railway as a security guard. The family have in the past put tourists up via a contact in the NGO; at the moment they supplement their income by housing an engineer who is working on the Western China to Western Europe road. He lives in the house, while they are squashed into the *sarai*. Samalbek also owns a UAZ – he has recently upgraded to a newer and larger UAZ; he is in close contact with his cousin Qydyrbai in Tastübek, who is a source of fish, camel meat, fermented camel milk (*shūbat*), saigak, and seagull eggs.[11]

Samalbek has two brothers, and an older sister, Mira. She and her husband Zhūmakhan (the son of a former fisherman) are both religiously observant, saying namaz and fasting in Ramadan; he attends mosque every Friday. Samalbek is less religious, and when the two families share a *beshbarmaq*, Zhūmakhan is called on to say a prayer. Mira and Zhūmakhan's daughter has Marfan's syndrome, and Mira speculates as to whether *ekologiia* is the cause.[12] Some limited state support for this covers medical bills – and Mira stresses that she is grateful to Allah that they are alive today when such medical care is available.

Mira has a law degree from an Almaty university, but does not want to work outside the household. Zhūmakhan was offered shift work in a Chinese company, but it would have cost him a bribe of 90,000KZT. He refused, he said, on religious grounds, but also because he would need credit to pay the bribe; the salary would go on paying off the debt, and if he could not pay it, he might lose the job. Zhūmakhan once told me how his ancestors fled to Qaraqalpaqstan during the famine; but he concluded that, despite the repression, Stalinist times were better than today, because there was work, and you did not need to pay a bribe to get it. Such a combination of informal, personalised relations and financial transactions is increasingly typical of post-Soviet Kazakhstan (Werner 2000, Rigi 2004, Oka 2015) and other postsocialist countries (Humphrey 2002:ch.6, Humphrey and Sneath 2004, Wanner 2005). So Zhūmakhan works informally as a welder, mostly making doors and gates. Materials are brought by bus from a depot in Turkïstan, south of Qyzylorda, but all metal is priced the same, regardless of thickness, so he has to be on the lookout for metal which is *brak* ('waste, defective materials') or *kitaiskii* ('Chinese').

Mira and Zhūmakhan's children, like their cousins, study in a Russian-language school, which is

[11] I never saw anyone but Qydyrbai eat seagull eggs, which are tasty, but with a strong odour of fish.
[12] Marfan's syndrome is a genetic disorder leading to excessive growth.

over-subscribed, since economic opportunity is felt to depend on Russian language. Zhūmakhan in particular talks about the whole family moving to Russia, where he thinks there are more economic opportunities – the family watches Russian TV. But if Mira and Zhūmakhan's situation is rather insecure given the instability of his work, they are bolstered by their relationship with Samalbek. Recently Mira and Zhūmakhan moved to a larger house. To cover the difference in price between the old and new houses, Samalbek gathered a loan from all his neighbours to avoid a commercial company. Unlike the corrosion of trust that took place with Ornyq's loan, this seemed more successful, at least for as long as I was there.

Ecological entanglements

All these informants share a concern with money, which often constrains them to think about the short term. They also all have some sort of contact with ill-health, which they relate to varying degrees to their surroundings. As a result, there are various overlapping themes in the discourse of these and other inhabitants of Aral'sk, through which they respond to and endeavour to make sense of how their environmental and economic surroundings impinge on their lives. Like the discourse about the fishing industry, I suggest that we take these discourses seriously as attempts to seek knowledge amidst opacity.

One day a news story reported that a swarm of locusts had devastated land in Aqtöbe oblast. When I asked where they had come from, the reply (as I half-expected) was: "I don't know... from China probably. Everything bad comes from China." Indeed, there are stories about Chinese nets invading Kazakhstan and Russia and destroying the environment; absurd accounts (from Ornyq) of sweets infected with worms, bananas with HIV coming from China; and more reasonable complaints that China takes everything out of Kazakhstan without giving anything back. Not only oil and minerals flow to China: even the wrecked ships on the dried up seabed, local heritage which people feel should have been preserved, are scrapped and sent to China.[13] Another threat from the outside is the cosmodrome at Baikonur, which is leased to Russia: this is seen to be the source of local environmental problems; and it is also a threat to national integrity as Russian rockets spew their waste onto Kazakh soil, just as Kazakh lands were treated as *terra nullius* with nuclear testing in the east and the Virgin Lands programme in the north.

Perhaps the most common theme is corruption at all levels. Discourse about corruption veers from

[13] Cf. Mostowlansky (2014) on fear of China in highland Tajikistan.

the local to top-level bureaucrats (Ru.: *chinovniki*) in Kazakhstan to global corruption. The money motive is imputed everywhere. Local scientific institutions like KazNIIRKh or Barsakelmes are, apparently, motivated only by money, to the detriment of science; any official or NGO projects are dismissed as money-laundering; love of money, apparently, drives fishermen to take reckless risks; greedy nature users exploit the fishermen. While some, like Samalbek, are refreshingly candid about their own interest in money, most people locate greed elsewhere. But the boundary of elsewhere is fluid: while there is a strong discourse about the morality of Kazakh society, there is also a tendency to impute greed to anyone who is not connected to oneself – and sometimes even to acquaintances who one otherwise gets on well with.

It is hard to know how to approach this sort of talk. It is undoubtedly true that there is a flood of Chinese nets in the region, amidst other cheap commodities which are visible in the bazar; the value of scrap metal from the ships is doubtless driven by demand in China; and much oil extracted from Kazakhstan does indeed end up in China. It is undoubtedly nonsense that bananas from China are injected with HIV. The market is evidently not governed by the 'invisible hand', but is manipulated at different levels by real hands pulling strings; and money is indeed an ever-present concern for everyone; but not all behaviour can be reduced to greed or corruption.

Accordingly, some scholars see such talk as primarily a commentary on complex transformations. Concerns about the corrosive effects of money are common across postsocialist societies. For some authors, in line with Bloch and Parry's (1989) argument about shifting relations between long- and short-term transactional orders, citizens in postsocialist societies use money as a short-hand to conceptualise complex changes in their societies; discourse about money is a means of coming to terms with what money is in a capitalist system (Verdery 1996:ch.7, Ries 2002, Oushakine 2009). Thus Oushakine argues that conspiracy theories in Russia are a means of making sense of unseen forces like capital and the market; money is seen not as a medium of exchange or store of value but as "a condensed metaphor of change itself, as a 'false value'" (2009:90). But Oushakine ignores two facets of money in post-Soviet societies: with unpredictable inflation, it is an unstable store of value (cf. McGuire 2014:56); and with the monetisation of social networks based on reciprocity, and with the increasing rise of bribery, money is not an abstract, impersonal medium restricted to short-term exchanges (Humphrey 2002:ch.6, Rigi 2004, Humphrey and Sneath 2004, Ledeneva 2006, Wanner 2008).

As with the rumours about the fishing industry, it is helpful to see this talk as a means of reasoning "in the absence of compass" (Marcus 1999:5). As well as a commentary on change, it involves inferences about an opaque world based on known effects. These inferences and speculation are not abstract forms of reason: speaking subjects draw on the different discourses which are open to them – Soviet discourses about the evils of money; Kazakh and Islamic moral thinking about moderation (*qanaghat*); media discourse inflected with expectations about transparency; nationalist discourse. The forms of reasoning do not follow logical steps, hence the slippage between the sensible and the bizarre, especially when it is the integrity of the nation which is felt to be at stake (Pelkmans and Machold 2011). But, as Pelkmans (2006:ch.7) argues, these discourses rightly highlight core effects of postsocialist transformations – which transitologists are all too apt to dismiss as side effects. To put it bluntly, discourse about integrity reflects the different sorts of outside forces – flows of commodities and money – which shape and constrain people's lives in Aral'sk.

What interests me is the way in which understandings of *ekologiia* are entangled with these other sorts of threat to integrity. This is because *ekologiia* too is known only by its effects: it cannot be grasped directly (cf. Alexander 2009a). As a catch-all term for environmental problems which damage health, *ekologiia* mostly refers to dust and salt particles in the air. In everyday discourse, these are usually related to rockets going off from Baikonur rather than to the sea's desiccation, that is, to present rather than past concerns. Actual health problems are also related to the polluted water which inhabitants drank for decades, but it is much more common to blame dust in the air (Elpiner 1999). It is worth dwelling on this point, for it shows the extent to which environmental problems today are related to perceived threats in the present. There has been clean drinking water in Aral'sk since 1990, although it was not piped to individual households until later. If people are concerned about broken connections and threatened integrity, the provision of drinking water infrastructure was a powerful way of creating a new connection between state and citizens.[14] But such connections are noticed when they are missing: they attract less comment when they are present, as straightforward 'matters of fact', predictable in their effects (Latour 2004). *Ekologiia* as a problem in the present is related to present causes: the dust particles are 'matters of concern' – unknowable, beyond control, with no clear delineation of cause and effect. In the same way, corruption today is seen as a present problem, rather than an accretion of Soviet-era practices and ill-judged neoliberal reforms. In the following sections, I show how *ekologiia* is tangled up with other concerns in discourse. Flows of commodities and

[14] Alexander (2007b) talks about the reverse process, whereby privatisation of infrastructure in 1990s Almaty was felt to break the relation between state and citizens.

money; corrosions of trust; dust in the air; health problems in the body: all are real, but the connections between them are opaque, and the sorts of connections which are made speak of worldviews with which people make sense of disorientating change.

Ecological citizenship

Talk about *ekologiia* ranges from absolute certainty about its existence and effects, through shades of uncertainty and ambivalence, to stout denial that it even exists. At one extreme, Svetlana Mikhailovna blames her problems squarely on *ekologiia*. Every time a rocket goes off, she notes wearily that the weather has changed, a headache has kicked in and she has got *davlenie*. She once explained this to me: the sea used to absorb the pollutants in the air, but without the sea, there is no greenery, and no natural filtration. She continued that no one grew anything because Kazakhs are lazy, there was just bare steppe (*golaia step'*), and that is why it was made an *ekologicheskii raion*, and the pension age was set at 55 for women. But when the Soviet Union collapsed, this provision was cancelled, leaving her to work for several more years.

Svetlana Mikhailovna's complaints are shaped through the Russian tradition of cosmic forces arraigned against the hapless individual, and she frequently argues on the phone with pensioner friends in Russia about how much worse her lot is than theirs. They also draw on very Soviet understandings of the proper relation between state and citizen. For Svetlana Mikhailovna, the term *ekologicheskii raion* implies rights and entitlements. Petryna (2002) argues that the entitlements accruing to Chernobyl victims constituted a form of 'biological citizenship', predicated on a proven connection between cancer and radiation. But formally, the *ekologicheskii raion* only entails extra salary for state employees. It does not entail an addition to Svetlana Mikhailovna's pension, or any recognition of (or financial help with) her health problems, in contrast to the Chernobyl case. Her outlook is one of certainty: epistemological certainty that *ekologiia* exists and is responsible for her ill-health, and moral certainty that the state is failing to honour its obligations towards her. There is a clear secular theodicy here: old Soviet certainties giving way to an arbitrary Kazakhstani state which does not honour its commitments.[15]

In addition to these cosmic forces, Svetlana Mikhailovna also sees the local world around her as increasingly corrupt. She drinks milk for her health. She and Sasha used to buy it from trusted

[15] Werner and Purvis-Roberts (2014) similarly find a gap between meagre entitlements for victims of nuclear testing in East Kazakhstan, and state narratives which endorse their victimhood.

neighbours, but as that is no longer possible, they buy from someone more distant, and they suspect that the milk is watered down. They have told the sellers, and asked if they are not ashamed, as Allah is watching, but to no avail. Svetlana Mikhailovna characterises this as 'robbery' (*voruiut*), the same idiom she and Sasha use to talk about the behaviour of high up officials. Moral corruption impinges on local society, with effects on Svetlana Mikhailovna's own body. Like *ekologiia* itself, this corruption is part of Svetlana Mikhailovna's fate.

'*Ekologiia* is everywhere'

Ornyq once asked me over tea about health problems in the UK, before telling me about problems in Kazakhstan. When I asked about Aral'sk more specifically, she told me about asthma, heart disease, *davlenie* – which she related vaguely to *ekologiia*. But then she added that she had heard that there was heart disease all over the world. I made a non-committal sort of noise, at which she declared that she had heard that was the case, concluding, "So *ekologiia* must be everywhere." While Svetlana Mikhailovna insisted on the specificity of the region and of her fate, Ornyq generalised the issue, which is more typical. This generalisation was homologous with her generalisations from local to national to global corruption. In this context, it also allowed her to dwell on the positives of the region. She talked about the clean drinking water they have today, and about how much cleaner it is than water in Almaty, or water out of plastic bottles. At other times she would wax lyrical about the quality of the meat and fish in the region. The rhetorical move "*ekologiia* must be everywhere" defends the integrity of the region from the charge of pollution, while allowing her to dwell on its positive uniqueness.

But during this conversation, a news report came on the TV about a rocket exploding shortly after take-off, near Aral'sk. This prompted an outburst about how this had happened last year too – her relatives nearer Baikonur had seen a cloud of smoke, and immediately everyone's blood pressure went up. The Kazakhstan government insisted that there was no risk to health. But they get paid €50mn a year, she pointed out cynically, "and of course, that's all money in the pocket (Ru.: *den'gi v karmane*)." She then told me how everyone in Aral'sk has high blood pressure, citing as an example how her brother Ertai had recently collapsed, and had been lucky to survive.

This extraordinary progression of associations links national corruption, ecological damage and personal health. In a way, it mirrored her wild remarks about Chinese goods being infected with HIV to infect Kazakh children. In both cases, national and bodily integrity are at stake. But while her

remarks about China were based on lurid rumour, parts of the conversation above are indisputable, vis. the rocket launches (and crashes) themselves, and her brother's ill-health. In Ornyq's account, the integrity of Kazakh national territory is threatened by a corrupt government leasing out land to Russia, and this threatens the local environment and her brother's bodily health. The effects she sees are the rockets taking off and crashing, and her brother's ill-health. But she cannot see the money which facilitates the rocket launches and the putative particles of dust which contribute to her brother's ill-health. This is not, therefore, just paranoia: the particles of dust in the air, and the mysterious high-level circulation of money, are real forces, whose effects certainly do impinge on Ornyq's life.

"Do you notice *ekologiia*?"

Others are less certain about the existence of *ekologiia*. One Friday I was having lunch with Mira, and Samalbek came round with some fish from Tastübek. Samalbek teased his sister by expressing surprise that they had a foreigner round for lunch on a Friday. After some banter, he declared that he preferred whatever faith would allow him to make money – his older sister hit him with a rolled up magazine. During that Friday lunch, Samalbek asked me with some interest whether I noticed *ekologiia*. I said that I wasn't particularly aware of it, and asked him what he thought. He talked about the climate for a while – the extreme heat in the summer and extreme cold in the winter – but did not attach much importance to it. So I asked if it was worse when they were younger. He responded that they had not noticed anything. Then after a pause, he told me, part-reflectively, part-humorously (with a good deal of showing off to his sister, who giggled throughout), several anecdotes. For example, when they were little, they would play all day long outside (no TVs or computers back then!); and when they fell and cut themselves, they did not have time to go inside, so they would just sprinkle some sand on it and carry on playing – and they would heal. But at some point, he said, the sand 'lost its quality' – this was maybe, he supposed, because of *ekologiia*. Samalbek's manner in relating these anecdotes was speculative – as if something needed explaining, and *ekologiia* was a possible explanation.

After this I asked whether they had seen TV programmes in the 90s which showed Aral'sk as the epicentre of an ecological disaster. They had – and were unimpressed. Samalbek said scornfully that you can find impoverished *babushki* (old women, grandmothers) everywhere in the world. Of course there are a few in Aral'sk, so the film-makers picked on them, and then waited three or four days for a dust-storm, and made their film. Samalbek did not deny that dust-storms happen. But it was unfair to wait specially for a storm just to make it look catastrophic. He thus polemicised with discourse

about the Aral disaster, a discourse which itself threatens the integrity of a region in which people feel pride. Mira interjected. She mentioned that deformed children are sometimes born in the maternity hospital – that *is* scary, she said. Samalbek instantly replied that such things happen everywhere. To justify his assertion, he first cited the nuclear polygon in Eastern Kazakhstan, but then said that they happen everywhere. Mira agreed at once, saying: "Yes, because nowadays everything depends on money." Samalbek concurred, and a heated discussion ensued, largely about people being paid to donate blood.

The citation of the nuclear polygon suggests a link to the nationalist discourse about Kazakhstan as a *terra nullius* for Soviet projects. But instead the conversation veered into more global issues. After all, this conversation was taking place more than twenty years after the end of the USSR, at a time imbued with reports of global crises, a time when the ambiguities of Soviet domination are being replaced by new geopolitical ambiguities. However, the generalisation away from the local is also a means of defending the integrity of the region by showing that there is nothing unique to it. It is a way of dealing with the contradiction between awareness of problems, and deep attachment to place. Strikingly, there is a different level of certainty attached to *ekologiia* as cause, and money. This obviously relates to the varying knowability of their effects in daily life. Samalbek spends much time in Tastübek; his everyday interactions with the environment preclude any sense of pollution or ruination. Mira spends most of her time indoors. Her daughter is an invalid and she often feels unwell, but she can only speculate about the role of *ekologiia* in this. The particles of dust in the air are real enough, but their effects are uncertain and variegated. By contrast, money is an ever-present concern in everyday life – even if much of its circulation is unseen and unknowable. As we have seen, money is not simply an abstract medium of exchange facilitating the acquisition of things by persons: it also ties the region into increasingly volatile global market relations; and it is enmeshed with various sorts of personal relations. This perhaps explains why money is felt to be a threat to the integrity of human bodies across the globe.

The spectre of oil

If Mira and Samalbek were doubtful, others deny that *ekologiia* exists altogether. Daniiar – who we met in chapter 3 bringing fish from all corners of USSR – regularly goes on illicit fishing trips. As he keeps this fish for personal consumption or to help out friends like Sasha, he characterises these trips as strictly moral, while the formal fishery is, like everything else in Daniiar's vision of the contemporary world, scored with greed and corruption. Although in his 70s, Daniiar is in rude health, for which reason he is particularly strident about the absence of *ekologiia*, arguing, with some

justification, that the prevailing wind is from the north, so most of the dust and salt from the dried up seabed is blown away to the south. He drew a sharp contrast with cities like Almaty where the air was dirty and water recycled. Again, the integrity of the local is at stake: pollution must be located elsewhere. Towards the end of this conversation, I said something about the characterisation of Aral'sk as a disaster zone. At this he replied furiously:

> When they start extracting oil from here, *then* it will be catastrophe... in Atyrau – have you been there? There aren't even ants there, not just no birds, there aren't even ants, no ants; not just no cockroaches, NO ANTS! My relative lives there, and I look – there *aren't even ants*, THOSE are catastrophic effects... dirty... the atmosphere...

I interjected: "But no one talks about that." He went on:

> But of course, it's just money money money, they don't think about their own health, just money money money.

Not only is pollution elsewhere, but it is also a threatened future – where lust for money threatens the integrity of nature and human health. If global visions link the Aral catastrophe to Soviet socialism, Daniiar turns this on its head by putting disaster discourse into dialogue with Soviet moralising about the evils of money.

Daniiar is not alone in fearing that oil will threaten the integrity of the local environment; nor is he alone in mixing this with the money motive. For some, concern about oil is embedded in national concerns about the relationship with other countries, especially China. For Zhūmakhan, the threat of oil turning Aral'sk into a truly *ekologicheskii raion* means that the family will have to leave some time in the future. But this is not, of course, the only way of thinking about oil. In 2002, NGO workers asked schoolchildren to draw the past, present and future of the Aral region. For the past, they imagined the sea full; the present showed dried up seabed, skeletons of fish and rusting ships; their visions of the future included a full sea, but also oil rigs pumping out oil; and Aral'sk was a thriving town full of large buildings. Apparently there were media reports at that time that oil was going to be extracted. What is striking is that the children imagined it as part of a bright future for the town, quite unlike Daniiar's apocalyptic vision. The exercise of making schoolchildren draw the past, present and future was repeated while I was there. This time there were no oil rigs. Indeed, I did not hear much about oil while I was there: if rumours and media reports were rife ten years previously, they were not when I was there, and oil was imagined, in all its ambivalence, elsewhere.

Bright futures?

Fig. 4: Child's representation of the future, 2013.

Ecological change, as we have seen throughout this thesis, does not come alone. Entangled with the wild market, its effects are variegated, and modernist assumptions that fish will bring a high-employment industry are confounded by the opaque realities of a financially constrained fishery. When invisible particles impinge on people's health at the same time as unseen flows of money and commodities reproduce Aral'sk's marginality, modes of apprehending the two become entangled, leading at times to dire predictions for the future. At the same time, the tour with which I opened the chapter suggests a mode of imagining a different sort of future for Aral'sk, where its heritage is a source of pride and a site of global interest, without the stigma attached. If the recent pictures of the future did not show oil-rigs, many still depicted large modern buildings, including Atameken. While I was there, there was also a competition for pupils to think of ways to attract tourists to the town. Most of the projects explained about the Aral Sea disaster (*apat*) in terms strikingly similar to the global discourse, though blandly devoid of moral content, at least one drawing on Wikipedia. Their descriptions were also devoid of the political economy of the fishery which older generations dwell so much on. Local history was felt to be of interest to visitors – but only distant history, not Soviet history.

Overall, responses expressed pride and optimism for the region, and many went beyond their brief to imagine a future where unemployment was eliminated through development of light industry, food processing and local crafts. The fishing industry, in the form of Atameken, was present in just one presentation. Recent developments in the region – new buildings and monuments in Aral'sk, the Western China/Western Europe road – were cited as a source of hope that new connections would put Aral'sk firmly on the map. If these imaginings – geared, of course, to the teachers' expectations – represented a town with its economic problems eliminated, some pupils also expressed hope that stigma attached to the ecological problems for which the town is known will go away. But most ignored the negative connotations of the region altogether, focusing instead on the health benefits of the region – the warm waters of Qambash (very few suggested taking tourists to the sea itself); hot springs at Aqespe and Aqbasty; the healing properties of wormwood from the steppe, and of dairy products like *shūbat*, *qymyz* and *qūrt*. Taken together, these projects imagined a future free of the entanglements of economic and ecological problems which preoccupy so much of the discourse of the town today.

Postscript: Lessons for an anthropology of global climate change

Last winter, I heard, the sea did not freeze properly, and fishing was impossible for much of the time. Was this, I wondered, a sign of a changing climate, or just an abnormality in the weather? I thought about the different ways in which the warm winter would have affected people in the region: families of poorer fishermen short of money for everyday goods; less money to spend on weddings. Would there be a more intensive fishing season in the spring, when fish are spawning? How did people make sense of the abnormally warm winter? Was it just understood as natural variability? Was it blamed on rockets going into the cosmos, as Crate (2008) finds in Siberia? Might people make a link between the oil extracted from Kazakh land, the changing global climate and local weather abnormalities?

Since my fieldwork, the tenge has continued to plummet amidst falling oil prices and geopolitical tensions. As someone concerned about global climate change, I welcome the falling price of oil if it lowers profit margins for new investment. But for many friends in Kazakhstan, the effects are disastrous. Although the price of zander for export has doubtless gone up further, so has the cost of imported goods – inflation in 2015 was 13%. I expect that this story matters more to most people in the region than the warm winter. Indeed, for many, the savings on coal over the winter will have been a crucial boon.

As we have seen, in coming years the melting of glaciers may affect the amount of water for the Small Aral, and indeed for all Central Asia. Then again, it may not: scientific climate projections are shrouded in uncertainty; on a different dimension of uncertainty, it is equally difficult to forecast how much water will be used for irrigation and hydroelectricity.[1] But regardless of the uncertainty, climate change is the latest authoritative discourse to shape development interventions in Central Asia: in 2015, the World Bank started a project with Central Asian governments to increase 'climate resilience' (World Bank 2015). One thing is certain: whatever environmental changes affect the region as a result of global warming, they will not come alone, but will be tangled up with political-economic processes

[1] Cf. Barnes (2015) on the interaction between these two sorts of uncertainty in Egypt. Maintaining the Small Aral at its current level requires 3.5km^3 of water to compensate for evaporation (Micklin 2007:63). Annual average flow into the Small Aral from the Syr Dariya over 2000-2010 was 6.8km^3 (Micklin 2014b:130). IPCC's worst-case scenario is a reduction in runoff from Tien Shan glaciers by 6-12km^3 (Sorg et al. 2012:729), though this should (but may not) be mitigated by increased precipitation. Evidently, what happens to the sea also depends on the – political – question of what happens to the water in between.

and crises, new sorts of development intervention, geopolitics, and so on.

What can the perspectives developed in this thesis contribute to anthropological engagements with climate change? Though the two issues are of a different order of complexity and scale, they share important commonalities. In what follows, I explore these commonalities to suggest a framework for thinking about climate change, and I suggest a way of approaching local perspectives ethnographically. I also argue for a critical approach to dominant discourses about climate change, and critique and reformulate the problematic resilience/vulnerability paradigm in light of my arguments about entanglement. Finally, I revisit the nostalgia for gridded space explored in chapter 3, to ask how the deeply ambivalent legacy of modernist projects can be used to look forward in formulating visions for the future.

Uneven development

In my analysis in chapter 1, the Aral regression was the outcome of uneven development, whereby those most peripheral to socialist development were most vulnerable to environmental damage. Similarly, carbon-fuelled development has shaped an unequal world, in which those who have benefited least tend to be the first to suffer the consequences of carbon emissions (cf. Barnes et al. 2013, Baer and Singer 2014, Barnes and Dove 2015b, Klein 2016). But, as we have seen, even those most peripheral to state socialism had a stake in the promise of rising living standards: modernity comes with expectations, which interact with local structures of value. Similarly, capitalism is not just an alien imposition on local worlds: once entangled with it, however unfairly and unequally, people become dependent and have a stake in it. Another related commonality is the transformation of environments before the advent of large-scale environmental change. Before its regression, the Aral had already become an object of economic value, not to mention the material transformations in its fish populations. Likewise, while seemingly pristine Arctic landscapes justifiably capture the global imagination, most of the landscapes affected by climate change have already been shaped by processes of human intervention, which themselves are often bound up with the expectations of modernity.

Visions

Environmental change, as this thesis has shown, never comes alone: it overlaps with patterns of uneven economic growth and crisis with which, at a very abstract level of analysis, it is connected. We thus need to be alive to the connections which people make between them. Indeed, increasingly illegible weather and environments coincide with a contemporary global economy characterised by

opaque flows of commodities. Modernity continues to carry expectations, but when they are delivered via the wild market rather than the grid, their fulfilment is more contingent and more uneven. As chapter 9 showed, when things are illegible and opaque, the connections people make are instructive. If we argue at an analytical level that there is a connection between political economy and anthropogenic climate change, we need to look ethnographically at how people think through that connection in the absence of clear knowledge. Such connections may not be strictly logical, any more than the connections between *ekologiia* and money are logical. But insofar as they speak obliquely of underlying realities, such connections critique present conjunctures from diverse moral universes. Such local constructions of environmental change are not 'truer' than the scientific vision, nor should we assume a gulf between 'local' and 'authoritative' discourses. But by orchestrating different voices, anthropology can highlight the multiple ways in which environmental and economic change make themselves felt in people's lives. These different voices can ultimately make a contribution to formulating new visions.

At the same time, we should approach dominant perspectives critically. Myopic visions shaped by powerful interests justified irrigation, just as vested interests have marshalled data and arguments to undermine certainty about climate change. But all visions are sited; there is no final word on a pre-discursive reality. We need, therefore, to pay attention to how problems are constructed, particularly as global climate change increasingly becomes an authoritative discourse. Chapters 2 and 5 showed how Soviet and post-Soviet visions of the Aral regression were also myopic, abstracting isolated causes (environmental) and effects (economic and social) from their contexts. Similarly, Hulme (2011) proposes that climate change has become a contemporary variant of climate determinism, whereby changes in the climate directly change society. Furthermore, just as World Bank visions of environmental disaster were shaped by notions of Soviet backwardness, climate-change discourses about different places are influenced by pre-existing visions, shaped over centuries of colonialism and development (Orlove et al. 2015). Critical examination of dominant visions matters because, as chapters 2, 5 and 6 showed, the way problems are constructed dictates how they are dealt with. Nevertheless, no discourse is monolithic: we should be cognisant of the possibilities within particular discourses and attentive to local resonances, as the Danes were.

Resource dependence, resilience and vulnerability

One dominant framework for addressing climate change is resilience and vulnerability. The planners of the World Bank climate resilience project cited above assume that, because local people depend on natural resources, they are vulnerable to changes in those resources, and vulnerability is

exacerbated by institutional factors. This thesis suggests that we need to problematize the posited relationship between people and their environments, by looking at the multiple ways in which resources get entangled in human economies. I will leave aside for now those whose dependence on the environment is less direct, like the fish processors, who are largely occluded from the resource-dependence perspective.

Chapters 4, 7, and 8 show how the Aral has been differently constituted under different management regimes and within different political-economic spaces. Moral landscapes have been transformed as fish have acquired different sorts of value: objects of immediate consumption; mediating a connection with the state; pure commodities. People have depended on fish in different ways – for food, for social entitlements under socialism, for their exchangeability with money today. Fish both sustain day-to-day living, and they sustain social reproduction. Today, they transform the day-to-day and the long-term reproduction of society, as everyday inter-household cooperation declines and ritual competition increases. This is a more complex web of dependencies than 'resource-dependence' implies. If as the global climate changes, resources in particular places become scarce, we should not therefore start from the assumption of a single link between 'local' community and their resources, but rather analyse the different sorts of dependency at different scales, on resources, markets, state organs, kin and neighbours, and so on, and ask what they are sustaining over what time-scale.

Development interventions, and much social science, locate resilience and vulnerability in communities, relegating everything else (political economy, inter-scalar linkages, etc.) to contextual factors. At its worst, this paradigm is perniciously depoliticising (Hornborg 2009, Cameron 2012): a language of 'evolution' and 'adaptation' is applied to small-scale, especially indigenous, societies, as if they are somehow closer to nature. This is unsurprising, for the term resilience in this context derives from ecology: resilience is ecosystems' capacity to maintain most relationships in place when certain relationships change (Holling 1973); then it was usefully applied in resource-management literature to 'socio-ecological systems' (Berkes and Folke 1998); and thence to societies themselves (Adger 2000). The problem with this trajectory is that the language used for talking about society is very limited, often reducing social relations to institutions. Furthermore, interventions to enhance resilience may keep people trapped in positions of dependency.[2] After all, chapters 1 and 2 showed that the resilience of irrigation interests precluded any change of course, maintaining an entanglement

[2] Thanks to Lyla Mehta for pointing this out.

that above all served certain apparatchiks. Resilience, then, should not be analysed as an unambiguous good. But since resilience and vulnerability are now part of the development agenda, I suggest we go beyond critique, and reframe these concepts by identifying resilience and vulnerability in the webs of connections within which local worlds are constituted.

The vulnerability of the Aral region evidently derived from its mode of incorporation into Soviet gridded space. But enduring relationships between people and place after the sea had gone also depended on their incorporation into gridded matrices: resilience did not lie beneath or in resistance to the grid. What resilience there was lay in the creaking structures of the command economy to deliver fish, to send fishermen to other lakes. The affective connections to *tughan zher* and the stories about previous regressions, though significant, need to be contextualised in these relationships. Those who stayed could do so because of the connection with the state: the endurance of that relationship ensured the endurance of others. This is not to deny the severity of the crisis. In any case, the Soviet Union itself was hardly resilient: its own integration into the global economy rendered it vulnerable to exogenous shocks like falling oil prices. When the Soviet Union unravelled, new vulnerabilities were generated at different scales as spaces were disconnected from the Soviet grid: independent Kazakhstan was vulnerable to asset-stripping and political contestation; and Aral fishermen were suddenly much more vulnerable to their damaged environment as the infrastructure which provided them with a meagre livelihood collapsed.

Local resource-dependence must not therefore be abstracted from resources' multiple entanglements. Rather than focusing on a local community's dependence on, for example, fish, we should follow the fish, analysing the dependencies they shape at different scales, which may be enabling, constraining, or both. Given the shape of the market, do higher prices for zander mitigate last winter's limited fishing? Who is most vulnerable if prices fall? Within the stratified dependencies of the contemporary fishery, where state support for fishermen is absent, which relationships prove resilient to bad weather or price fluctuations? If the overall shape of the fishery is maintained despite exogenous shocks, does everyone benefit from such resilience, or are some more vulnerable than others?

Longing for the grid

Unlike other buzzwords in development, resilience has (so far) been given a fairly easy ride by anthropologists. This arguably relates to a nostalgic tendency within anthropology towards celebrating local agency, whether in face of deteriorating environments, incursions of global

capitalism, or the encroachments of the state (cf. Berliner 2014, Jansen 2014). Indeed, I myself was initially keen to unearth *local* narratives about *local* contributions to earlier attempts to build the Kökaral dam; I wanted a heroic story about local resilience. But, as we have seen, Aral villagers stress the limits of their agency. This is not to suggest that they are passive: chapter 8 in particular showed how actions within villages are enabled by, on the one hand, Kökaral, on the other, markets for Aral fish – within both of which agency is distributed far beyond the village.

Indeed, given the uncertainty inherent in entanglements of human and material worlds, if we valorise local over expert knowledge, we miss the point that *no* knowledge-system has a perfect grasp of the future. In conditions where all knowledge is limited, sometimes the synoptic viewpoint, 'higher up' is useful, as SYNAS-1 showed. After all, the failure in Soviet times to produce an *integrated* plan for using the water resources of the *whole* Aral basin exacerbated the problem. No actor took a sufficiently schematic viewpoint, either spatially or temporally, to see how water resources could best be used. They were always caught up in the chaotic day-to-day business of meeting plans for their own department. This is an unfashionable argument within anthropology, which often positions itself against the state and against higher agents of transnational governmentality (cf. Jansen 2014), and it runs counter to the decentralised politics advocated by environmentalists (e.g. Klein 2016). Furthermore, such an argument does not resonate among development workers, who, from the rarefied air of the World Bank, suggest grassroots initiatives and the decentralised work of the 'market'.

But if some sort of synoptic vision is necessary, the question is what sort. I have suggested that we take seriously postsocialist nostalgia in Aral'sk as a critique of the present, a yearning for the incorporating grid of the state (cf. Jansen 2014). Here I should come clean about my own nostalgia. Recall my rather too hasty agreement with Daniiar's assessment of socialism in chapter 3: much of this thesis is imbued with my own nostalgia for a time and a place which was already passing when I was born. After fieldwork, I was hauntingly reminded of Aral'sk when I read Meek's (2015) eerie evocation of Grimsby, its decline reflecting not only decimated fish stocks, but also its abandonment within contemporary Britain. If the optic of seeing like an oil company increasingly shapes contemporary Kazakhstan, contemporary British space is differentiated by the optic of the banker, who focuses primarily on asset value.

Fig. 1: Crane, Aral'sk

Of course, my own nostalgia is just as rose-tinted as that of my informants in Aral'sk: what advances were made in pre-Thatcher Britain were made within a profoundly unequal world-system which had been shaped, in no small part, by cotton (Beckert 2014), and were dependent on rising carbon emissions. Similarly, though I take nostalgia in Aral'sk seriously as critique of the present, this is not, of course, to argue for a revival of state socialism – which wrought so much environmental, and other, damage. Even importing fish from the oceans depended on centralisation of resources, and Soviet factory ships themselves contributed to the overfishing of the world's oceans, just as Soviet industry contributed to global carbon emissions. In neither case is it simply a matter of separating out the good bits from the bad bits, since both models of development produced good and bad, resilience and vulnerability, incorporation and marginalisation.

Both state socialism and western social democracy, then, ultimately failed. But the demise of the social-democratic welfare state, like the demise of state socialism, represents a contraction of gridded matrices incorporating people and territories. The new modes of seeing, leading to ever wider differentiation of space, more constraining dependencies and more uneven distribution of risk, are, I suggest, singularly unsuitable for the challenges raised by climate change – from the floods in northern Britain in 2015 to the drought in Syria in the 2000s (De Châtel 2014), extreme weather events are all exacerbated by state withdrawal.

The nostalgic perspective I am suggesting should not be blind to the investment and hope people place in new modes of governance or the new sorts of belonging promised by the shiny new fish factory in Aral'sk. Nor should we deny that modernity continues to carry expectations, even if we wish that these expectations involved less of a toll on the environment. But we should also be attentive to the mismatch between the ever multiplying promises of modernity and the uneven and contingent ways in which they are delivered by opaque markets and illegible modes of governance, a mismatch that may be heightened by ecological degradation. Rosy memories of ocean fish materialising the right to stable employment within a morally structured space suggest a starting point for new visions. The task, looking forward, is to imagine a more encompassing sort of project than is currently on offer, new forms of gridded governance, delivering decent, stable jobs without producing vulnerability or destroying environments.

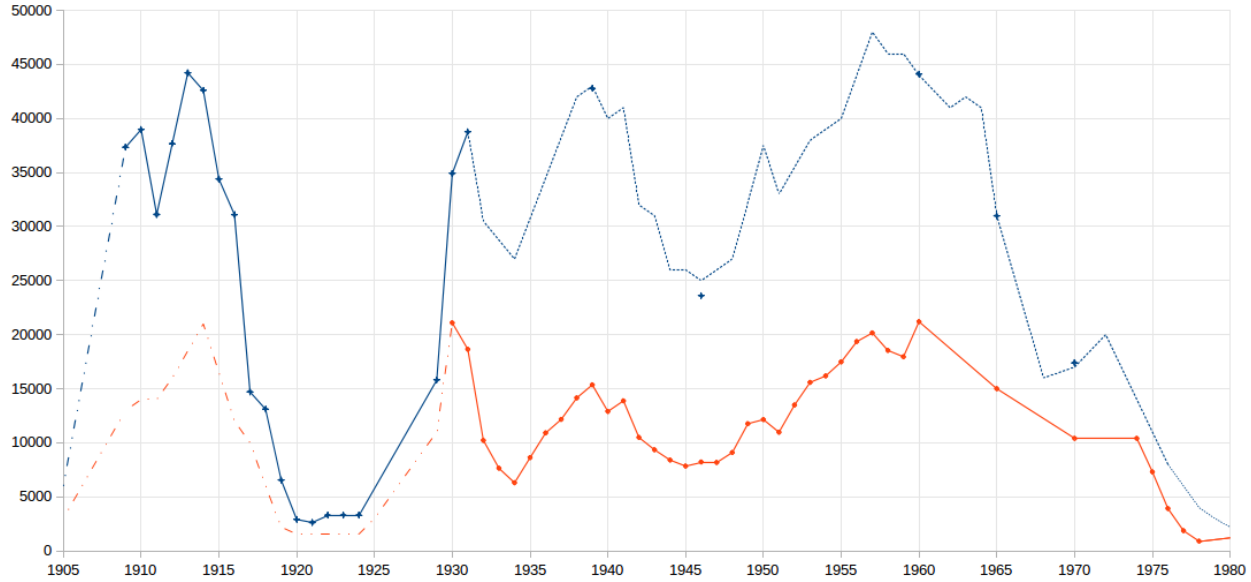
Using the past to imagine a better future is of course utopian – and the hope it offers is meagre in a world of escalating political, economic, humanitarian and ecological crises, entrenched vested interests, and opportunistic demagoguery. But hope does not have to be utopian. Even partial visions can effect positive change. There were certainly dissonances between the Danish vision of the region and local perspectives, and they ultimately shaped a rather specific hegemonic reconstruction. But in the meantime, they, together with flounder, local activists and fishermen themselves, turned a remnant of the Aral again into a living sea. Similarly, the World Bank project relied on simplifications and unilateral action – but without that, it may not have happened. Ferguson (1994) showed how complex contradictions in Lesotho's political economy were reduced to technical problems. In Lesotho, the technical problems were badly identified. But in contexts where holistic transformation of political economy – and ecology – is impossible, technical fixes may be better than nothing.

* * *

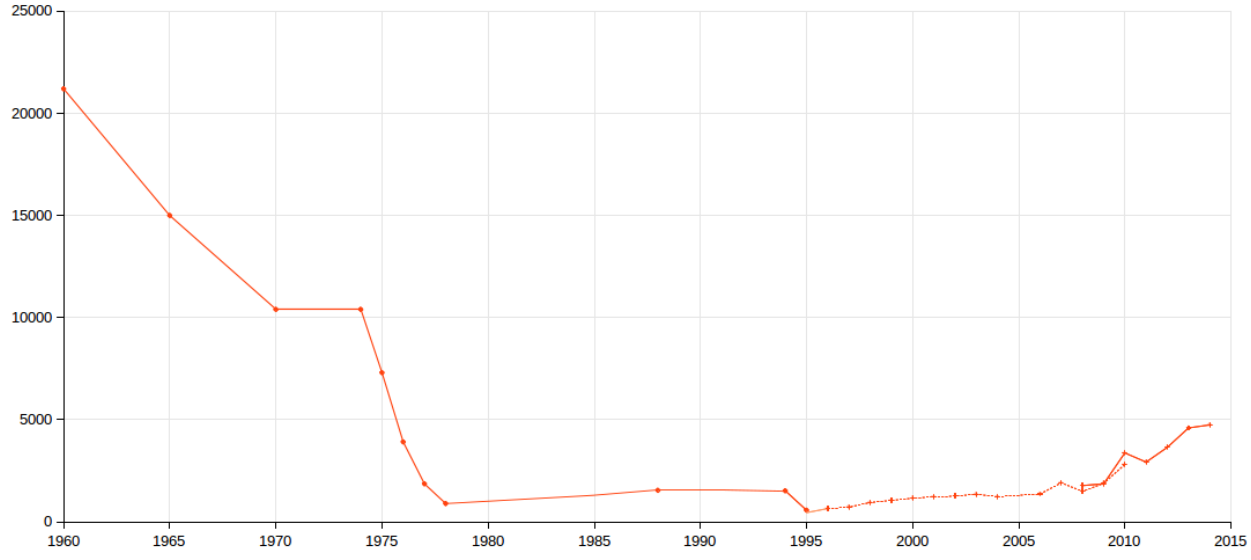
Global climate change presents far more intractable problems than the Aral Sea. Limited, technical solutions, isolating particular causes or effects, will necessarily misrepresent the complex realities which anthropology is so good at depicting. Such interventions will often be blind to the entanglement of environmental change with political-economic processes which this thesis has explored – entanglements which our informants may see more clearly than those 'higher up', with their schematic simplifications. But simply highlighting irreducible complexity does not get us very far. Anthropology can play a role in formulating technical problems better. By highlighting resonances between different visions, we can incorporate local perspectives without romanticising local agency. In particular, by following the social lives of particular resources within particular political-economic

configurations, we can analyse what environmental change means to the different people who depend on those resources. This is key to thinking about how environmental damage can be mitigated. At the same time, we should be guided by a vision of a more holistic transformation: what shape do we want future entanglements to be? Remembering the modernist gridded spaces of the last century, we should recall both the destruction wrought within them, and their promise to deliver the expectations of modernity. The task of anthropology here lies between pragmatism and critique: not being so utopian that it goes unnoticed, but being utopian enough to imagine a better future.

Appendix: Fish catches, 1905-2014



Graph 1: Fish catches in tonnes, in all Aral Sea (blue), and in the northern (Kazakh) part of the sea (red), 1905-1980. Solid lines connect points marking figures I have found documentary evidence for (see table below). The dotted line marks a curve taken from Zholdasova et al. 1998:233 (no data set provided). Figures I have found elsewhere are marked with blue crosses. The faint dashed lines mark informed estimates.



Graph 2: Fish catches in tonnes, in the northern (Kazakh) part of the sea/Small Aral Sea, including Syr Dariya delta lakes, 1960-2014. The dotted line 1995-2010 marks catches in the North Aral Sea alone (excluding delta lakes).

These graphs are intended to give a broad picture only, as all statistics are of course questionable, especially given the high level of unreported catch in the post-Soviet period in particular. See Table

1 below for their sources. A further complication is that different figures may refer to rather different areas – it is not always clear how much of the lower reaches of the rivers are included. Additionally, the figures for the north are taken from Aralgosrybtrest/Aralrybokombinat, whose fishermen were not confined to what is now the Small (north) Aral Sea.

Sources for graph data

Years	Source for whole sea	Source for north	Comments
1899		Plotnikov et al. 2014:56	The authors state that the catch on the Syr Dariya delta and northern part of the sea was 3,015 tonnes. They do not have a figure for the south.
1909-1913, 1921	AFGAKO 4/1/8:26		
1914-1924	AFGAKO 4/1/8:7		
1929-1931	AFGAKO 7/1/12:2		
1930-1959		AFGAKO 4/2/10:77	
1939, 1946	Plotnikov et al. 2014:58		
1960, 1965, 1970	TsGARK 1130/1/1484:148	TsGARK 1130/1/1484:148	
1961, 1971-1980	Ermakhanov et al. 2012:7		This is recently published data of the director of Aral'sk KazNIIRKh. It seems that these data only cover the sea, not the delta lakes.
1974		AFGAKO 4/1/491:44	
1975		AFGAKO 4/1/509:54	
1976		TsGARK 1130/1/1898:77	
1977		TsGARK 1130/1/1898:77	
1978		TsGARK 1130/1/1861:119, 1130/1/1938:66	According to the first document, 33 tonnes were caught on the sea, the second that 860 tonnes were caught on lakes.
1988		AFGAKO 4/3/935/13	
1991-2010		Ermakhanov et al. 2012:7,8	This is data of the director of Aral'sk KazNIIRKh. 1991-2005 concerns catches of flounder, 2005-2010 is catches of all species on the Small Aral.
1994-1997		Landsforeningen Levende Hav 1998	Figures for earlier years are questionable, and may include Aralrybprom catches on other lakes in Kazakhstan.
2008-2014		Qyzylorda statistical agency figures, http://kyzylorda-stat.kz/bulletins/sites/default/files/bulletins/, accessed 06/05/16	Figures cover all Aral'sk raion.

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Fond 5, *Aral'skoe upravlenie regulirovaniia rybolovstva*
Fond 7, *Pravleniia Aral'skogo rybatsko-kolkhoznogo soiiuza*
Documents are cited in the format: *Fond*, *opis'*, *delo*: *list*.

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