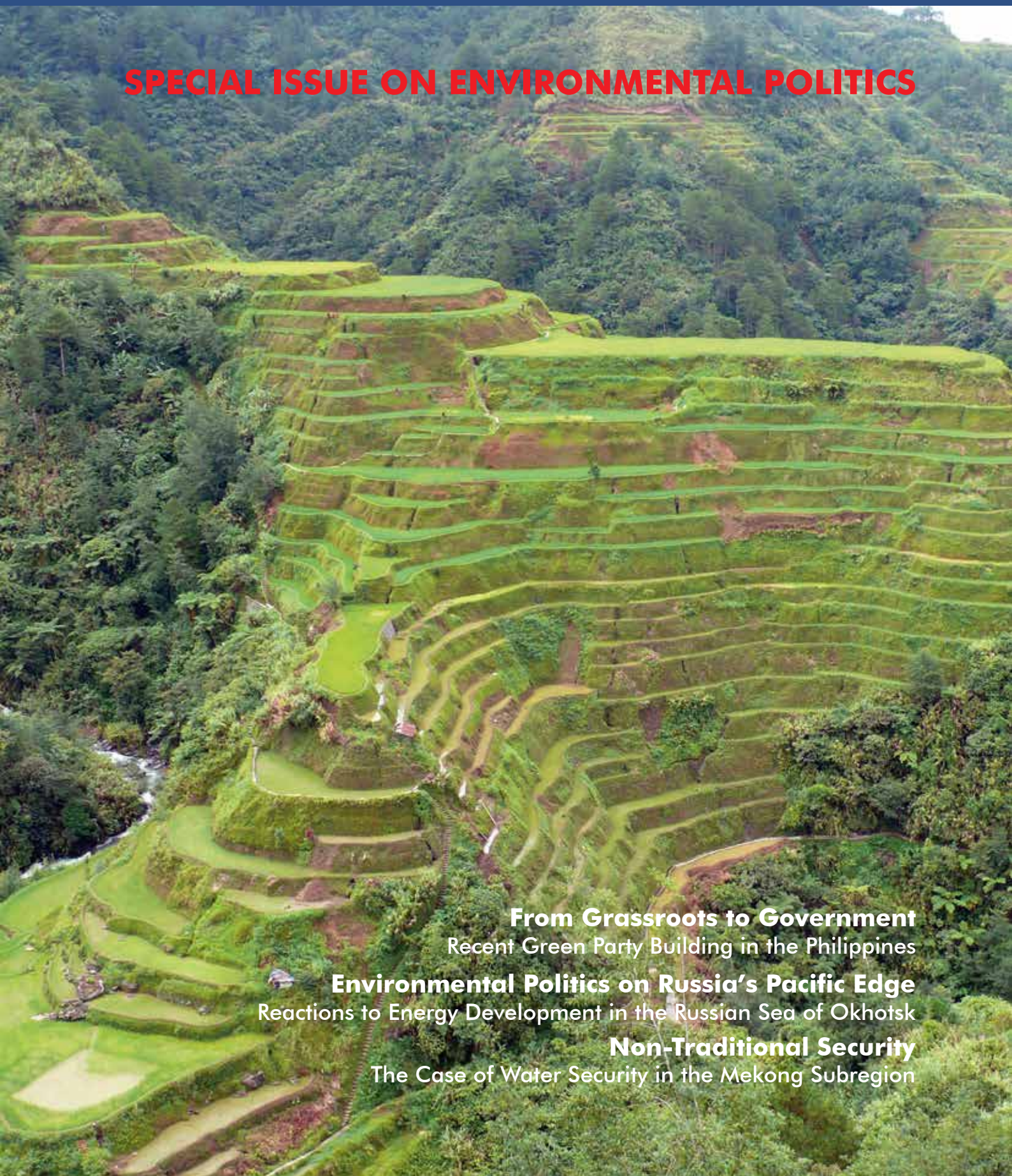
Issue #40 | July / August 2013 | www.pacific-geographies.org | ISSN (Print) 2196-1468 / (Online) 2199-9104

Pacific Geographies

Research | Notes | Current Issues from the Asia-Pacific Region



SPECIAL ISSUE ON ENVIRONMENTAL POLITICS

From Grassroots to Government
Recent Green Party Building in the Philippines

Environmental Politics on Russia's Pacific Edge
Reactions to Energy Development in the Russian Sea of Okhotsk

Non-Traditional Security
The Case of Water Security in the Mekong Subregion

CONTENTS #40 | July/August 2013

From Grassroots to Government: A Study of Recent Green Party Building in the Philippines – 5

Environmental Politics on Russia's Pacific Edge: Understanding Energy Development in the Sea of Okhotsk – 11

Minamata, Fukushima, and Modernity: Pollution and Environmental Justice in Modern Japan – 23

GUEST EDITORIAL

Environmental Politics: Regulating Nature & Human Interactions?

Dear readers,

Environmental politics is a wide-ranging field of enquiry with the common basis that it is concerned with analysing the regulation of interactions between nature and humans – if indeed such a distinction is useful. As there are many human-nature interactions in various social, historical, political and economic contexts, at and across different scales, with differing outcomes, it is a challenging and complex field of research. My aim with this editorial is to (briefly) combine the contributions in this special issue with wider thematic developments in the field of environmental politics as a way of introduction.

At the inception of environmental politics as a research interest, politics was squarely at the core of the field. Researchers were interested in analysing the institutionalising of environmental concerns within political parties and the formation of new (green) parties that were embedded in environmental movements and their ideologies. While historically, this has happened in the global North, the contribution by Erhat Sünaldi analyses how the recently created green party in the Philippines has evolved from environmental movements. He suggests that an increasing understanding of the links between sustainable livelihoods and environmental quality have negated Inglehart's (1977) thesis that societies are first and foremost concerned with basic materialist needs of existence before engaging with moral or philosophical needs.

Although the formation of new political institutions (and their stance on environmental issues) is clearly of continued importance for environmental politics, the role of the nation-state and national institutions is changing and has become a point of interest for scholars of environmental politics.

to be continued on page 4

Pacific Geographies

Pacific Geographies (PG), ISSN (Print) 2196-1468 / (Online) 2199-9104, is the peer-reviewed semi-annual publication of the Association for Pacific Studies. From 1992-2012 it was labelled Pacific News (ISSN 1435-8360). It is published through the Department of Human Geography of Hamburg University, Germany.
The PG provides an interdisciplinary platform for an academic discussion of social, cultural, environmental, political and economic issues in the Asia-Pacific region.
In order to uphold scientific standards, the PG is implementing a peer-review process. Articles marked as „scientific papers" have been peer-reviewed by two external reviewers. Articles marked as „research notes" have been peer-reviewed by one external reviewer and a member of the editorial board. All other articles have been reviewed by the editorial board.
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The Association for Pacific Studies (Arbeitsgemeinschaft für Pazifische Studien e.V., APSA) was founded in 1987 at the Department of Geography of the University of Technology in Aachen. Activities include workshops, conferences, public lectures and poster exhibitions. The book series Pazifik Forum was initiated in 1990. In 1992, it was complemented by the publication of the journal Pacific Geographies. The latter has developed into the major activity of APSA in recent years.
The APSA sees itself as one of the largest scientific networks in Germany for academics and practitioners with an interest in the Asia-Pacific region as well as academic exchange.

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COVER PICTURE
The Banaue rice terraces
© Serhat Ünaldi

The title image shows the famous Banaue Rice Terraces in the North of Luzon Island / Philippines.

Guest Editorial:

Environmental Politics: Regulating Nature & Human Interactions?

Jan Mosedale

follow-up from page 3: Neoliberal state re-structuring has led to a transfer of power to regional and sub-national institutions; at the same time the focus has changed from government via political institutions to governance networks involving a multitude of different actors (e.g. national, regional and local state institutions, quangos, NGOs, public-private partnerships and elites). This in itself raises a number of issues in terms of accountability and democratic decision-making as non-elected actors (e.g., elites, firms, special interest groups etc.) are increasingly involved in policy and planning processes.

In contrast, some national governments continue to maintain 'big government' and have retained state-owned companies in strategic industries. Jessica Graybill, for instance, demonstrates how the Russian government has renegotiated oil and gas extraction contracts with transnational corporations to the benefit of state-owned regional firms in order to circumvent possible environmental impact assessments as prerequisites for international investment. The 'target' for environmental protests has thus changed from transnational corporations to the national government leading to 'multiple politicized actions'.

The location of power within wider environmental political economy has clear implications for environmental justice. This academic field of interest has emerged from social movements against environmental decline in the 1980s (particularly in the US) and focuses on the unequal social and geographic distribution of environmental impacts, who has access to a clean environment and who is excluded from environmental decision-making. Environmental justice approaches also offers insights into how society and individual actors think, act and talk about environmental concerns. In that vein, Aoyama and Hudson analyse the responses to the industrial mercury poisoning in Minamata, Japan in the 1950s as background for understanding the 2011 nuclear disaster in Fukushima following an earthquake and tsunami. They posit that Japan has not heeded lessons from the 'negative heritage' of environmental justice in Minamata and that Japanese society's unchanged culture of modernity has contributed to the recent nuclear disaster in Fukushima.

Fukushima can also be seen as an example of non-traditional security challenges, where the security of a nation-state is not threatened by military might but by non-traditional sources such as diseases, pollution, immigration, poverty, environmental disasters etc. Nature, especially, is a key factor for national security as it is often the cause or facilitator of non-traditional security issues, but access to resources (e.g. water) is also a key source of political and military challenges to a nation-states' sovereignty. Andrea Haefner, for instance, focuses on the Mekong region as a transnational river system which crosses China, Myanmar/Burma, Thailand, Cambodia, Vietnam and Laos and suffers from environmental degradation thus posing a non-traditional, environmental security risk. She discusses how non-traditional security risks have developed from unsustainable economic practices in the subregion that have led to deforestation and land degradation, followed by floods and landslides and finally by the displacement of people, diseases and famine. Nation-states of the region view the importance of the river in different ways: China and Laos see the Mekong as a promising source of hydropower to satisfy the increasing energy demand of continued economic development or to export power to neighbours (respectively), whereas Vietnam (downriver) is concerned about the salinization of rice paddies.

The subregional contribution by Haefner demonstrates the need for transboundary environmental issues to be addressed across different geographical scales and including a variety of actors. This need for a transboundary approach is further highlighted by a local case study of the wider Mekong region presented by Claudia Kuenzer in her research note on Tonle Sap in Cambodia. She highlights the local challenges faced by the largest freshwater lake in Southeast Asia that are often caused by development upstream in the wider Mekong region. Both these contributions, Haefner from a subregional perspective and Kuenzel from a local perspective demonstrate the need for cooperation when dealing with non-traditional security threats.

This special issue is only able to provide a brief glimpse of some thematic contributions set in the Asia-Pacific region, but the subject is of key importance for the future, so I hope this special issue will provide a stimulus for further discussions on human-nature interactions within the remit of Pacific Geographies.

I hope you enjoy this issue of Pacific Geographies.

Jan Mosedale (University of Applied Sciences HTW Chur)

From Grassroots to Government:
A Study of Recent Green Party Building in the Philippines

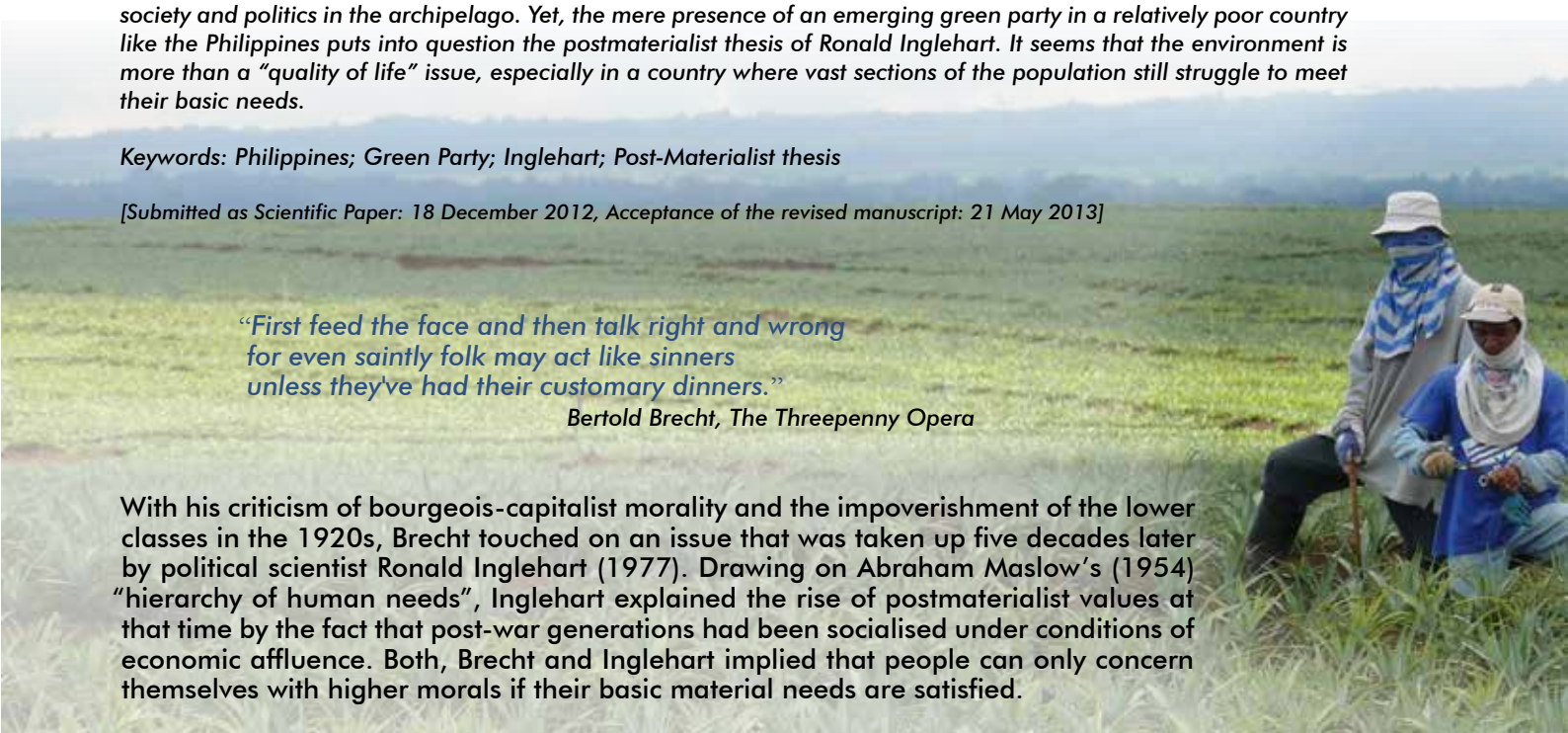
Serhat Ünaldi

Abstract: This article explores the history, ideology and political strategy of the Partido Kalikasan (PK, Nature Party), a grassroots-based green party in the Philippines. The PK was established in 2003 but its development is constrained by the lack of resources and strategic differences internal to the party and by the distinct history and setting of civil society and politics in the archipelago. Yet, the mere presence of an emerging green party in a relatively poor country like the Philippines puts into question the postmaterialist thesis of Ronald Inglehart. It seems that the environment is more than a "quality of life" issue, especially in a country where vast sections of the population still struggle to meet their basic needs.

Keywords: Philippines; Green Party; Inglehart; Post-Materialist thesis

[Submitted as Scientific Paper: 18 December 2012, Acceptance of the revised manuscript: 21 May 2013]

"First feed the face and then talk right and wrong
for even saintly folk may act like sinners
unless they've had their customary dinners."
Bertold Brecht, The Threepenny Opera



With his criticism of bourgeois-capitalist morality and the impoverishment of the lower classes in the 1920s, Brecht touched on an issue that was taken up five decades later by political scientist Ronald Inglehart (1977). Drawing on Abraham Maslow's (1954) "hierarchy of human needs", Inglehart explained the rise of postmaterialist values at that time by the fact that post-war generations had been socialised under conditions of economic affluence. Both, Brecht and Inglehart implied that people can only concern themselves with higher morals if their basic material needs are satisfied.

Accordingly, it was argued that the first green parties were established in the West because only here old cleavages between workers and industrialists, between the poor and the rich, had given way to new politics that no longer revolved around matters of physical sustenance but focussed on the quality of life, e.g. the environment. But what then about a green party in a country like the Philippines where one fourth of the population still lives below the poverty line (ADB, 2012, 62) and materialism remains the socio-political driving force? Following Inglehart, such a party constitutes an anomaly. And yet people from throughout the Philippines aim to register the first grassroots-based green party of Southeast Asia, the Partido Kalikasan (Nature Party).

Based on personal semi-structured interviews with leaders of the party – selected on the basis of high visibility within, and long-term commitment to, the Partido Kalikasan – and on the study of party documents, this paper questions Inglehart's thesis because it cannot account for the emergence of green parties in the Global South and does not pay sufficient attention to the possibility of an environmentalism driven by materialism. It seems that other factors are more crucial than postmaterialist values since green parties have struggled to win seats in many Western, supposedly postmaterialist nations as well.

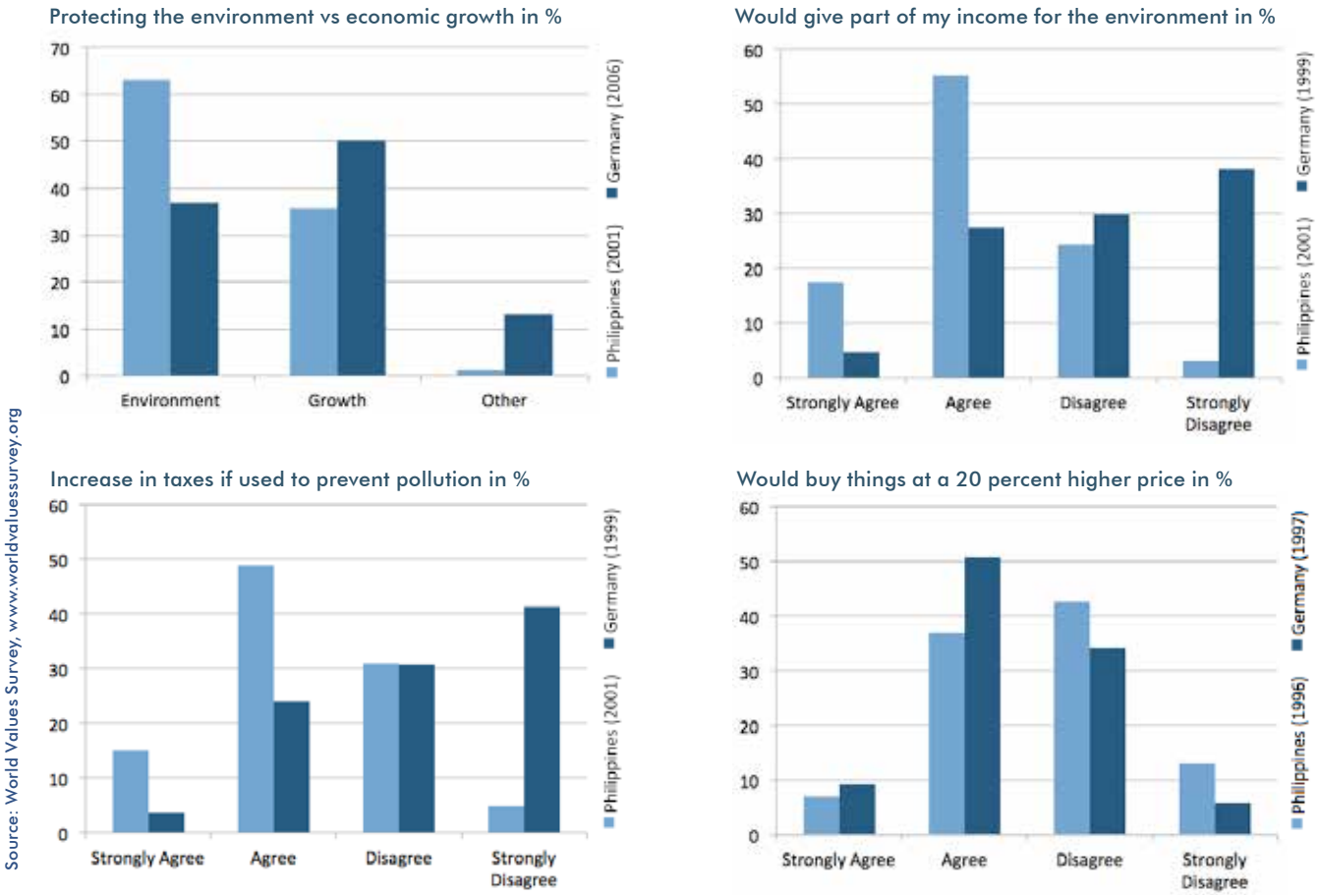
The postmaterialist thesis revisited

An early definition of Inglehart's thesis summarised his reasoning as follows:

"[T]he age cohorts who had experienced the wars and scarcities of the era preceding West European economic miracles would accord a relatively high priority to economic security and to what Maslow terms safety needs. For the younger cohorts, a set of "post-bourgeois" values, relating to the need for belonging and to aesthetic and intellectual needs, would be more likely to take top priorities (Inglehart, 1971, 991-92)."

Consequently, these postmaterialist values led to the emergence of left-libertarian green parties in Europe. Obviously, green parties in the Global South like the Partido Kalikasan (PK) are formed in a different historical and socio-political context and yet many of their stated aims resemble those of European parties. This puzzle has hitherto remained underexplored because Inglehart's postmaterialist thesis contributed to a general bias against the possibility of green parties in developing countries. If postmaterialism is established as a precondition for green party success then why bother examining respective developments in materialist societies?

Figure 1: Pineapples near Bukidnon. Source of all pictures: Serhat Ünaldi.



Source: World Values Survey, www.worldvaluessurvey.org

Table 1: Comparison of environmental values between the Philippines and Germany

But Inglehart's assumptions did not go unchallenged. Brechin and Kempton (1994, 245-46) critisised that they play

> "(...) nicely into the strategies of developing-country leaders, who use "We can't afford to worry about the environment" as one pillar to support their case for increased aid as a precondition for environmental protection. [...] Paradoxically, the assumption of lower developing-country environmental concern has simultaneously served conservative and pecuniary arguments that industry should be developed without concern for its environmental impacts in poor countries."

In fact, statistical data have shown that environmental concern is a global phenomenon (Brechin & Kempton, 1994; Dunlap & Mertig, 1997, 25). If the attitudes towards environmental protection of, for example, German and Philippine publics are compared, the latter show even more support in most cases (see Table 1). The data presented in table 1 are taken from the World Values Survey, initiated by Inglehart. The greater willingness of Filipinos to pay higher taxes compared to Germans casts doubt on Inglehart's (1995, 57) assumption that "countries that have relatively postmaterialist publics, rank relatively high in their readiness to make financial sacrifices for the sake of environmental protection". The disposition of many Filipinos to green activism was confirmed by others (eg. Broad, 1994, 811). In this context Lee and So (1999, 9) offer a useful distinction between an "environmentalism rooted in affluence versus one rooted in misery or dislocation".

Most importantly, explanations based on postmatrialist values do not account for the fact that green parties have not been successful in many wealthy countries. As Walden Bello, member of the House of Representatives for the social democratic party Akbayan and one of the Philippines' most well-known activists, (personal interview, 22.6.2009) puts it:

> "The reason I don't think it's a developed versus a developing country thing is because of the United States and a whole lot of advanced capitalist countries where green parties have not been notable successes [...]. It's probably partly the structure of the political system. There might be something in the structure of certain countries like Germany that allows for better electoral success of an independent green party rather than in others."

This paper follows Bello's reasoning. It seems that it is the political system and the specific historical trajectory of the Philippines which challenges the PK the most.

In any case, the more pressing the threat of climate change becomes, the less valid the postmaterialist thesis will become. The consequences of natural disasters, their economic impact and the potential for green jobs will lead voters to cast their votes for parties espousing green values out of immediate materialist self-interest. Inglehart himself later qualified his postmaterialist thesis by arguing that – when a healthy environment becomes a matter of survival – environmentalism may be supported by both, materialists and postmaterialists (Inglehart, 1997, 242).

Partido Kalikasan and its beginnings

The PK will be defined here as the first grassroots-based green party of Southeast Asia as it is made up of environmentalists who are linked to local constituencies throughout the country and pursue a long-term bottom-up strategy. This contrasts with earlier attempts in the region, for instance in Thailand where, in 2001, a green party was rather hastily created by "progressive bureaucrats and politicians" whose "focus was not at the local level but more on the national one by appealing to middle-class voters who had access to the media" (Narut, 2005, 49). In this sense, the PK definitely blurs "the boundary between institutionalized and noninstitutionalized politics" (Goldstone, 2003, 11) and fosters a rethinking of the binary opposition between parties and social movements. It also challenges the definition of "movement parties" by Gunther and Diamond (2001, 29) who, echoing Inglehart, limit their discussion of such groups that straddle "the conceptual space between 'party' and 'movement'" to the postmaterialist orientations of their (European) members.

The PK was founded on 6 December 2003 as Ang Partido Kalikasan, Inc. (APKI) when it held its first National Assembly which was composed of more than fifty NGO-activists and academics. The preamble of the Draft Constitution did not expressly state the aim of participating in elections and the assembly's proceedings suggest that this was a controversial issue (APKI, 2003). Although organising committees were established in 24 localities throughout the Philippines it remained unclear whether APKI would become a full-blown national party or a party list group. Party list groups are supposed to make up 20 per cent of the membership of the Lower House and are elected under a proportional representation (PR) voting system to enable the election of underrepresented sectors to Congress while the five biggest parties are banned from running for these seats.

APKI's draft constitution only mentions the group's aim to support green candidates in elections but not the objective of party members to run themselves. Moreover, early concerns about the lack of staffing and funding have haunted the party ever since. Discussions that led to the replacement of "Almighty God" with "Creator" in the preamble indicate that the role of the Christian Faith was not settled. The seeds for future debates were sown.

Shortly thereafter the assembly leadership disintegrated due to conflicts of interest. Although the party was beheaded, its heart continued beating. Under pressure from local chapters the party was revived as Partido Kalikasan. Simultaneously the Partido Kalikasan Institute (PKI) was set up and registered as an NGO, giving the grouping legal recognition. The party itself was not yet registered with the Commission on Elections (COMELEC).

The PK today

Today, the PK has an estimated membership of about 3000. The party chapter in Cagayan de Oro/Northern Mindanao is the largest with a projected membership of 2000 as the anti-logging coalition, Task Force Macajalar (TFM), joined the PK party. However, it is not clear if all members of the TFM are actually aware of their membership in the PK. According to environmental lawyer Maning Ravanera (personal interview, 2.7.2009), PK chairman in Northern Mindanao who not only co-founded TFM but also promotes the rights of disadvantaged pineapple farmers in Bukidnon, the main reason for the lack of a party identity are previous uncertainties: "Partido Kalikasan was formed, not formed, not registered…".

To foster a common identity the party's internal rules stipulate that seminars should be part of the membership application process but practice lags behind intent. Member-

Figure 2: PK focusses on local knowledge: A shamanistic ritual entailing the slaughtering of a pig in an Ifugao village, Banaue.

Figure 3: The Banaue rice terraces: Ancient wisdom or historical baggage?

ship fees too are not consistently collected which adds to the party's financial difficulties. State funding, which has contributed to the success of the green party in Germany, is not available. Hence, the PKI was established as a support organisation for the party. As a registered NGO, funds could in future be channelled through the institute. Only if and when resources become available can the PK focus on elections.

The internal party structure is divided into national, bio-regional and district levels as well as small operating units, the cells and caucuses. The local party chapters are internally organised along bio-regions to reflect traditional communities based on geographical rather than political boundaries, e.g. rivers, lakes and islands. The autonomous nature of local PK chapters allows for the adoption of platforms of governance which reflect locally specific positions on particular issues. However, as soon as PK participates in elections it will have to organise along established electoral district boundaries. At the national level, the Council of Local PK Leaders is supposed to be the most important decision making body and meets once a month online. The lack of resources and the geography of the archipelago set hurdles to frequent face-to-face meetings.

The party programme

Programmatically, the party's unifying principles are 1) ecological integrity; 2) social justice; 3) national solidarity and active non-violence; 4) participatory democracy; and 5) personal integrity. When asked where the party ranks itself on the political spectrum, PK-Secretary General Roy Cabonegro (personal interview, 18.6.2009) answers: "Neither left nor right but for the community", echoing the green slogan "neither left nor right but in front". The community is at the core of PK ideology.

According to this line of thought, the historical roots of environmental problems are to be found in Spanish colonisation. Pre-colonial times are regarded as a golden age when communities were ruled sustainably by benevolent chieftains who were elected by a council of elders who represented the families within the communities. With the advent of colonialism, the local chieftain was no longer accountable to those below but to those above him. The community-focus was lost and "whatever we create now simply does not fall within our socio-cultural frame that has worked for us before" (Cabonegro, personal interview, 18.6.2009). Hence, local knowledge needs to be reactivated (see Figure 2).

Considering the leftist roots of Philippine green activists (see below) – and given that the state has often disappointed Filipinos – their retreat to the local is understandable. Yet it is not clear how the 15% and 50% of Filipinos working in the globally-oriented industrial and service sectors, respectively, can be convinced to vote for the PK. Utopian visions of society – whether cosmopolitan or communitarian – often "jump too far into a projected future to be likely to carry most […] peoples", as Eckersley (2004, 200) notes.

Even if indigenous knowledge may often be an asset, there is no reason to uncritically call for a "back to the roots" approach. If PK-members point to the ancient rice-terraces of Northern Luzon (see Figure 3) as an example of sustainable agriculture they also have to acknowledge what biologist Heaney noted:

> "[T]he Cordillera tradition of burning the forest adjacent to the rice terraces in order to control the rat population was one of the worst things they could do. In natural forests, the native species are competitively dominant and they don't go into the rice terraces (in Lichauco de Leon, 2009)."

De Leon considers the Philippines' dramatic population growth one of

the main threats to the country's biodiversity. Poverty has contributed to overfishing (DA-BFAR, 2004, 348). These are not problems that can be solved exclusively at the community level. They are national in scale.

Most parties are set up with utopian aims and tend to become more realistic as the party matures. Yet, in the case of the PK the pace of party building is hampered by practical and ideological obstacles. Without sufficient financial resources and a substantial membership base an early involvement in elections may indeed prove unsuccessful, particularly in a political environment dominated by landed elites and oligarchs, cronyism, strong presidents, political fragmentation, party switching and lack of party funding. However, after years of delay, other PK followers are getting impatient and believe that there are reasons enough to finally field candidates in elections. PK member Albert Banico (personal interview, 18.6.2009, see Figure 4) is worried that other groups and parties will capture the green label while the PK is hesitant to act. Especially KALIKAS, the party's youth arm, is losing patience with the older generation of party leaders who seem to carry historical baggage.

The party has been trapped in an identity crisis reflective of the wider movement's history. Disillusioned with the radicalisation and centralising tendencies within the communist party many Philippine activists found a new home in the environmental movement in the early 1990s. This older generation of environmentalists now finds it difficult to shift the focus from issue-based civil society campaigns back to party politics. However, in theory the PK realises that such campaigns are not sufficient. As Cabonegro (personal interview, 18.6.2009) explains: "These are not the buttons that make things work. We have so many laws, we have so many advocacy groups, but the problem remains."

This perception fits Bevis' (2006, 61) argument that a programmatic party is formed when its founders believe that "other vehicles, like civil society groups, are likely to be less effective means of achieving reform goals". According to Bevis (2006, 52), the time for party building has come when "structural factors provide enabling conditions". The PK seems to consider structural conditions such as the rise of an environmental consciousness and institutional changes like the introduction and recent strengthening of the party list system as sufficient for the establishment of a green party. Ahead of the 2010 national elections some within the party therefore argued (unsuccessfully) in favour of running nationally for the party list, reasoning that the PK would finally get national recognition.

But even if the PK decides to run for the party list in future it faces a dilemma. Because some members feel that the party should represent underprivileged sectors they want to field fishermen and farmers as candidates. "We simply don't want to make that compromise [of speaking for the sector we represent]", says Cabonegro (personal interview, 18.6.2009). However, cooperation with organised farmers and fishermen proved difficult in the past due to already existing loyalties within these groups.

Another strategy involves the endorsement of green candidates. In 2010, the decision of well-known environmentalist Nicanor Perlas to run for the presidency was met with enthusiasm by many PK members. Building connections with distinguished green personalities may pay off in the long run.

Alliances could also be forged with some of the many civil society organisations in the Philippines, especially with the omnipresent Catholic Church. However, many party leaders are critical of church-based activism (Cabonegro, personal interview, 22.6.2009). Particularly the pressing issue of population control presents the greatest potential for conflict between the clerics and environmentalists. Yet, open opposition to the Church could alienate the religiously motivated factions within the PK as some influential members were educated at elite universities which have long been in the hands of Jesuits (Hedman, 2006, 30). Ravanera (personal interview, 2.7.2009), PK leader in Cagayan de Oro, recounts:

> "I entered the Society of Jesus, the Jesuits, at Ateneo [de Cagayan University]. My brothers were also schooled there. The Jesuits here – and the Jesuits also in Latin America –were into fighting against oppressive governments. And so a lot of ideas came out how to take care of the oppressed. And after a while we thought: Why don't we try protecting the environment?"

Yet, apart from the Jesuit influence Ravanera refers to Paulo Freire's Pedagogy of the Oppressed, communist ideology and Hegel as having had an influence on him. "Jesus Christ, his principles are right. But you have to separate it […]. Theocracy has never proven to be good", says Ravanera. It seems that Catholic education does not necessarily translate into uncritical acceptance of church positions.

A church-based group, called KAA-

Figure 4: PK Secretary General Roy Cabonegro.

LAGAD (Kaalagad Katipunang Kristiyano), was behind an unsuccessful attempt in 2008 to unite several environmental groups – including the PK – in one unified green political body. Already in 2007 a group of local donors had tried to facilitate cooperation between the PK and the Philippine Greens, an NGO that follows an eco-socialist approach. However, these plans failed due to different perceptions of political opportunities: PK is pro, the leftist Philippine Greens are against party building. As Cabonegro (personal interview, 18.6.2009) explains:

"We have basically the same positions on issues as the Philippine Greens. But they are purists, they believe we are not yet ready to form a party. We told them we need to offer an alternative, not hide behind movement building."

Apart from domestic religious and environmental groups, the PK is also not immune to international influences. For example, membership in the Asia Pacific Greens Network connects the party with groups elsewhere. Still, PK leaders tend to stress the distinctiveness of Philippine environmentalism and focus on the local. Conversely, the Heinrich-Böll-Foundation – a German political foundation which is affiliated with the German green party, Bündnis90/Die Grünen, and is present in Southeast Asia with a regional office in Thailand – has not reached out to the PK as it currently has no focus on the Philippines.

The disinterest is mutual. Some PK members are disenchanted with the performance of European green parties in government. As PK member Albert Banico (personal interview, 18.6.2009) notes: "What I understand, the Green party in Germany – particularly the agenda and some personalities – were absorbed in the mainstream parliament and it led to a natural process of decay or decline."

PK members seem to be uncomfortable with the compromises that parliamentary politics demand from parties. This fear of having to relinquish an ideal vision of community-based politics has surely contributed to the PK's reluctance to speed up party building.

Conclusion

As the first country in Southeast Asia, the Philippines produced a green party born out of civil society activism but not out of economic affluence. After its establishment in 2003, the Partido Kalikasan went through a phase of death and resurrection mainly due to pressure from environmental groups in the provinces which gave the PK a distinct grassroots-imprint. Yet the timing and nature of political involvement remains a controversial issue among party members. Reasons for their hesitance are the presidential system which weakens party coherence, the historical baggage of the Philippine environmental movement, lack of funding, competition with established parties on the political left and a limited and defective party list system. Attempts to unite with other green groups to build a stronger political force were unsuccessful due to differing assessments of political opportunities. Acknowledging these concerns, many PK members concluded however that the time has come for a green party.

As was shown, in the Philippines it is the political environment and the country's historical trajectory rather than the dominance of materialist values that set limits to green party success. That the first grassroots-based green party in Southeast-Asia has emerged in the Philippines and not in one of the economically stronger neighbouring countries puts Inglehart's post-materialist thesis into question. Surveys have shown that Filipinos express consistently more concern for the environment than, for example, people in Germany. It seems that environmentalism can potentially be rooted as much in affluence as in deprivation. The environmental consciousness of local communities has been realised by the PK and constitutes its main ideological and strategic base. However, the more urgent climate change becomes, the less it makes sense to maintain the division between materialist and postmaterialist reasons for green party formation anyway.

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Environmental Politics on Russia's Pacific Edge: Reactions to Energy Development in the Russian Sea of Okhotsk

Jessica Graybill

Abstract: In two regions of Pacific Russia, Sakhalin Oblast and Kamchatka Krai, emergent environmental politics are associated with political and socioeconomic transformation in the post-Soviet period. While transnational development of hydrocarbons in the Sea of Okhotsk is in the spotlight, the socio-cultural milieu and ecological settings in which extraction occurs is also replete with change. As in resource peripheries in other global locales, long-time residents of Sakhalin and Kamchatka question their cultural identities, socioeconomic futures and rights to land and resources as transnational development continues, leading to multiple politicized actions related to the environment.

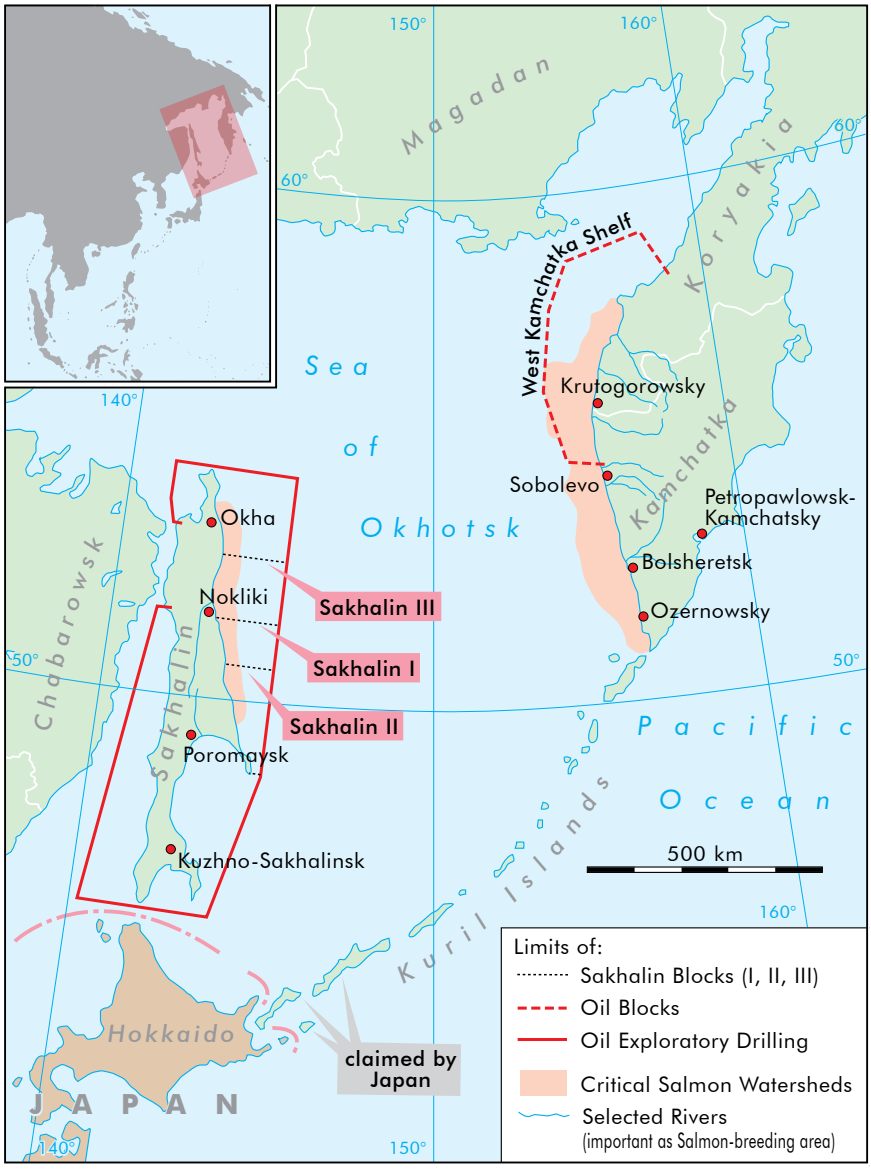
Keywords: Sakhalin, Kamchatka, environmental and indigenous activism, oil and gas development, Sakhalin-2, West Kamchatka Shelf

[Submitted as Scientific Paper: 23 February 2013, Acceptance of the revised manuscript: 4 June 2013]

Imagining the Russian Federation as a Pacific nation is not a dominant vision, yet two of its regions, Sakhalin Oblast and Kamchatka Krai, border the North Pacific Ocean. Considering Pacific marginal seas—the Bering Sea and the seas of Japan and Okhotsk—as part of the Pacific Ocean, Russia is firmly understood as a Pacific nation with over 4500 km of oceanic coastline. Many ecological phenomena link Russia to the Pacific: wetlands attracting migratory birds along the East Asia-Australasia Flyway and riverine and marine waterways where numerous species of anadromous fish spawn, mature and die over their lifespans. Since collapse of the USSR in 1991, transnational extraction of natural resources ties Russia to Asian and Pacific markets. Entry into regional and global market economies affects human and natural environments in Pacific Russia by opening new markets to sell Russia's raw resources, especially timber, oil and gas, metals (e.g., gold, platinum), fish and marine resources (e.g., salmon, crab, scallops, pollock) and other "exotic" animal resources (e.g., Amur tiger products). From Pacific Russia these resources are extracted and transported, processed and consumed mostly in other Asian and Pacific countries, including China, Japan, Mexico and the U.S.

Source of all pictures: Jessica Graybill

Indigenous protest at Day of the Caribou Herder, Sakhalin



Pacific Geographies Cartography: © Claus Carstens 2013

Map: Sakhalin Okhotsk

Long considered places used exclusively for development of Tsarist and Soviet empires, Sakhalin Oblast and Kamchatka Krai are two examples of Pacific Russia's resource periphery, a term describing a place from which economically viable raw resources are extracted, processed to a limited degree, then sold and consumed elsewhere (Hayter et al. 2003). Perceiving Sakhalin and Kamchatka as peripheral or remote today, however, is disillusioning. Resource wealth derived from Pacific Russia is central to Russian and global corporations and markets. Sakhalin Oblasts's centrality to Russia's economic future is signified by the amount of foreign direct investment (FDI) that reaches the island, which is the third highest after Moscow City and Moscow Oblast (Strasky and Pashminova 2012). Kamchatka is central to the Russian economy because of the rich marine resources in the Sea of Okhotsk and Pacific Ocean (Shirkov et al. 2002, Sharakhmatova 2011).

Social scientific research and personal insight on environmental politics from my field research on Sakhalin since 2003 and on Kamchatka since 2009 illustrate three important post-Soviet developments. First, local actors on Sakhalin Oblast and Kamchatka Krai are concerned about the environmental integrity of their ecological homelands (Wilson 2003, Graybill 2013). Second, local and indigenous communities fear for their future cultural identities, as (re)building past traditions may be threatened by socioeconomic globalization in the 21st century (Grant 1995, Graybill 2008). Thus far, major beneficiaries from regional industrial development are the federal and regional governments and transnational corporations. Long-term, tangible benefits from hydrocarbon projects have not reached local and indigenous communities (Meier 2000, Wilson 2003). Third, regional—global environmental activists work locally and globally to conserve Pacific Russia's rich natural resources, impossible prior to 1991 (Newell 2004, Bradshaw 2005, Graybill 2009, Henry 2010). However, environmental activism is stymied today where socioeconomic infrastructure does not exist, especially outside regional hubs (Murashko and Sulyandziga 2000) and under increasing restrictions on activism (Bellona 2013).

Environmental politics in Pacific Russia reflect three major concerns: (1) conservation of natural resources, (2) changing quality of and access to critical resources for subsistence resource users, and (3) protection of newly (re)emergent cultural identities among local and indigenous communities with emotional environmental ties. These concerns exist across Pacific Russia, yet the politics of environmental transformation are most poignantly felt where transnational development dominates socioeconomic transformation and where encroaching industrial development threaten conservation efforts, subsistence-level resource use and cultural continuity. The most contentious environmental transformations have occurred alongside offshore oil and gas development in the Sea of Okhotsk, affecting human and ecological communities on Sakhalin Island and, projected for the future, on western Kamchatka Peninsula (Wilson 2003, Graybill 2012). Below, I sketch the history and context of environmental politics on Sakhalin Oblast and Kamchatka Krai related to offshore oil and gas extraction in this rich resource region.

Sakhalin Oblast: Pacific Russia's hydrocarbon frontier

In the Sea of Okhotsk, Sakhalin Island is the largest of the islands comprising Sakhalin Oblast, an administrative unit in Russia governing Sakhalin and the Kuril islands. Long called "edge of the world" (krai mira) by inhabitants and visitors, multiple countries have exploited Sakhalin's marine resources. For centuries, Asian and Pacific nations claimed these islands: first the Mongols and Chinese, then the Japanese, and most recently the Russians. Russia officially claimed

Sakhalin Island in 1875 from the Japanese (Stephan 1994; Vysokov 1996) while Japan continued to govern the Kuril Islands. Retaken by Japan during the 1905 Russo-Japanese War, Sakhalin was divided with Russia ruling Sakhalin's northern half (above 50° north) and Japan ruling the southern half. Soviet control of all islands after 1945 led to establishment of the regional capital, Yuzhno-Sakhalinsk, and efforts to Sovietize Sakhalin Oblast razed entire Japanese villages and forced the migration and collectivization of multiple ethnic groups across the islands, including Ainu, Nivkh (Gilyak), Orok (Uilta) and Evenk. Throughout this multinational history, outnumbered native peoples tolerated resource extraction from the islands and their nearshore environments alongside the expansion of increasingly permanent settlements linking Sakhalin to more central national regions. Japan's 20th century interest in Sakhalin centered on gaining rights to marine and hydrocarbon resources (Vysokov 1996). Currently, Russia and Japan dispute the ownership of the four southernmost Kuril Islands (Stephan 1994).

In its Russian history, Sakhalin has been treated as a resource periphery, where the Russian Empire, the Soviet Union, and now the Russian Federation extract raw materials for state benefit. Long-term treatment of the island's territory and people as peripheral to the powerful economic center, Moscow, has created an economy and culture locally where resource extraction is perceived as Sakhalin's only viable development option (Wood & French 1989; Newell 2004). Distance from the center (9000 km from Moscow) and under-developed land and sea transportation routes allow for partially unregulated resource extraction (Stephan 1994). For most of the twentieth century, forest and fish industries dominated local production, and onshore oil dominated northern Sakhalin (Wood and French 1989; Vysokov 1996). Since 1991, forest and fish resources are declining due to island-wide over-harvesting (Newell 2004).

Today, offshore oil and gas extraction fuel Sakhalin's resource-based economy. Sakhalin's hydrocarbon production lifetime is at least until 2035 (Thornton and Ziegler 2002) but exploration of offshore fields continues. Sakhalin's offshore projects are unique in Russia's oil and gas landscape because capital and technological investments necessary for extraction are provided by multinational joint-venture companies operating under production-sharing agreements (PSAs) between the Russian government and foreign partners in the Sakhalin-1 (Exxon Mobil, Sakhalin Oil & Gas, OGNC Videsh, Rosneft) and Sakhalin-2 (current composition: Gazprom, Shell, Mitsui, Diamond) projects. Sakhalin-2 was the first PSA ever signed in Russia, in 1994, and its development has been fraught with environmental politics. In this agreement, the Russian government profits from hydrocarbon development only after investors recoup most production costs. Because Sakhalin Energy's projected costs have more than doubled since the first estimate—to at least $22 billion—the Russian government may have quite some time to wait. Sakhalin-1's PSA is less problematic for Russia than Sakhalin-2's because the federal government already receives profits from Sakhalin-1 (Rutledge 2004, Bradshaw 2006).

Before December 2006, Sakhalin-2 was Russia's only large-scale energy project operating without a Russian partner. In late 2006, the federal and regional governments criticized Sakhalin-2 for environmental degradation and violation of Russian environmental laws (Bradshaw 2006). Concerns about environmental harm and transnational development impacts on (re) emergent cultural indigenous identities in the post-Soviet period are also voiced by local and indigenous environmentalist and cultural activists interested in preservation of landscape, ecology and cultural traditions. On- and offshore environmental degradation include oil spills, disruption of salmon-bearing streams for onshore (pipelines, roads) infrastructure, and noise pollution in Korean Grey Whale breeding grounds (Newell 2004, Bradshaw 2005). Bolstered by international environmental non-governmental organizations (E-NGOs) such as Greenpeace, Pacific Environment, Wild Salmon Center and Friends of the Earth Japan, local environmental and cultural activist groups battled transnational development from the mid-1990s until 2006.

Perceiving environmental injustice to be occurring to Russian places and populations resulted in a federal mandate to halt Sakhalin-2' operations on 18 September 2006. To resume work, a majority interest, 50 percent plus one share, was ceded to Gazprom, Russia's state-owned gas company, on 21 December 2006. Political maneuvering by the Russian government wrested control away from transnational corporations and secured national participation in regional hydrocarbon development. This trend is not unique to Sakhalin: other foreign investors in other Russian resource peripheries are also asked to renegotiate energy development deals made in the 1990s (e.g., BP-TNK's investment in the Kovykta Field near Irkutsk; Boykevich 2006).

Until 2006, local to global environmental and cultural activists ensured that understandings of the struggle over resources, both hydrocarbon and subsistence, were widely and continually publicized (Bradshaw 2005). Since 2006 and the transfer of majority hol-

Logging truck and pipes truck crossing paths, Sakhalin

ding in Sakhalin-2 to Gazprom, international financing institutions will not finance this project (i.e., the European Bank for Reconstruction and Development; Williams 2007). Previously, environmental impact assessments written for international lenders ensured that environmental issues would be addressed. Indeed, many indigenous activist groups were emboldened by progress in this direction, requesting "cultural impact assessments" in protests against extraction projects (see Graybill 2009). This checks-and-balances approach, alongside local—global environmental and indigenous activism, helped ensure that hydrocarbon development followed international standards. Gazprom's majority control since 2006 has hushed discussions and knowledge of environmental conditions of Sakhalin-2, and some speculate that greening is unlikely to increase with Gazprom as the major operator (Bradshaw 2006). It remains to be seen whether further greening—or even browning of this project—will occur and whether environmental and cultural activists will regain the power they attained in the early 2000s.

Ultimately, the struggle over control of Sakhalin's resources is most detrimental to regional environments and the local and indigenous people who depend on them for survival. Since 2006, strategies for political actors concerned about environmental and human well-being have changed: instead of fighting transnational hydrocarbon corporations to green extraction processes, those formerly siding with federal and regional governments against transnational development now find their targets to be the government or global project financiers, far more difficult targets (Sakhalin Environmental Watch, personal communication). Gazprom's entry into Sakhalin's development means changes in environmental political strategies and environmentalists may have a murkier—and the environment a browner—future here.

Kamchatka Krai: a salmon stronghold

Accessible only by costly air or boat travel or long terrestrial voyage across Arctic Siberia, Kamchatka has always been remote and culturally marginal to Russia. Vitus Bering founded the first city, Petropavlovsk-Kamchatksy, in 1740 as a Russian Navy outpost. Russian explorers, scientists and naturalists have long considered Kamchatka's pristine and breathtaking environments, partly in the Pacific Ring of Fire, worthy of study and environmental conservation. Wild salmon runs throughout Kamchatka are some of the world's last for several species. Kamchatka's remote and peripheral location has also created strong indigenous communities and cultural traditions that remained largely untouched by global influences well into the 20th century. Indigenous peoples include the Koryak, Itel'men (Kamchadal), Chukchi, and Aleut and Even (Slezkine 1994).

Geopolitically, Kamchatka was important to the Russian Empire and Soviet Union for border security and its naval base (Stephan 1994). During the Soviet era, the cultural and economic activities of local and indigenous peoples received federal subsidies as part of northern development schemes (Heleniak 2010). Resettlement of nomadic and semi-nomadic indigenous communities, scattered across the region prior to the 1930s, placed people in compact villages and reallocated individual and community-owned caribou herds into state farms (Stephan 1994). The Soviet model continued until 1991 when federal subsidies ceased flowing and local communities and economies were devastated. People (re)turned to subsistence and semi-subsistence practices, including salmon roe poaching, to survive the political and socioeconomic upheaval of regime collapse (Graybill 2013).

With waning geopolitical importance since 1991, decline of naval bases, urban settlements and indigenous community centers is visible across Kamchatka. Regional populations have declined over 30% since 1991 (Russian Censuses; 1989, 2010) and similar to other northern and peripheral regions, socioeconomic, political and cultural transformations include but are not limited to: out-migration from regional towns and villages; in-migration from the Krai to the capital city of Petropavlovsk-Kamchatksy; economic decline across sectors; individual impoverishment; inflation for everyday goods and services; physical (e.g., buildings, heating systems) and social (e.g., primary through tertiary education, health care) infrastructural decay; and difficulty maintaining transportation of goods, services and people to the rural and remote communities across the Krai (Heleniak 2010). Kamchatka's economy remains centered on fisheries at large commercial, small business (e.g., local or indigenous collectives) and family subsistence levels (Shirkov et al. 2002, Newell 2004). Fish and seafood products are sold legally and illegally and for those not involved in the fish economy, everyday life is plagued by multiple concerns including low salaries, high prices for goods and services, and slow development of new jobs in a market-oriented economy (Graybill 2013). Great hopes exist for development of ecological and indigenous tourism (van Zoelen 2002).

Environmental politics about hydrocarbon extraction in the rich marine waters of the WKS are related to the impacts of drilling on marine and salmonid resources (Shirkov et al. 2002, WWF Russia 2013). Drilling occurs in fishing grounds vitally important for commercial and indigenous fishermen, leading to outcry by fisheries representatives, conservation biologists and other activists concerned about pollution and disruption of anadromous salmon runs. Numerous delays, some due to environmental activism, plague geologic exploration of the WKS. Originally slated in 2008, Rosneft began exploring only in 2011 and was later fined by Russia's Environmental Conservation Agency, Rospirodnazor, for non-adherence to Water Code regulations (Interfax 2012).

Russian and South Korean investors hoping to continue the offshore development begun near Sakhalin are exploring prospects in the West Kamchatka Shelf (WKS) oil and gas block. Having learned many lessons from the Sakhalin PSAs, Rosneft (Russia's state-owned oil corporation) has limited investment by Korean National Oil Company to exploration but not future operations. Additionally, Rosneft will maintain rights to production profits before KNOC recovers its full investment (Oil Voice 2005).

Rosneft was not the only stakeholder to learn from Sakhalin's energy development projects. Local—global environmental and local indigenous activists (especially at Lach Ethnoecological Information Center in Petropavlovsk-Kamchatsky) are prepared to protest energy development (WWF Russia, personal communication). Before exploratory drilling commenced, they organized opposition

by obtaining scientific expertise from Russia's conservation and fisheries biologists and garnering support from local-global ENGOs, such as the numerous local environmental groups on Kamchatka, Pacific Environment and World Wildlife Federation Russia. Indigenous communities and activist groups work to increase indigenous knowledge about socioeconomic and environmental changes and to increase non-native understandings of indigenous communities' dependence on local resources for survival (Lach, personal communication). However, while environmental activism swells on Kamchatka, ENGOS across Russia face increased scrutiny. In 2012, President Putin issued a new NGO law under which civil society actors criticizing governmental measures can be labeled "foreign agents" and individuals can be legally prosecuted as traitors or terrorists (Russia Monitor 2012).

Currently, what saves the WKS from further exploration and drilling are Kamchatka's rich fisheries, which are robust and critically important for Russia's economy. Activists from numerous interest groups – conservationists, indigenous rights, ecotourism, commercial fisheries –have played key roles in delaying development of this hydrocarbon block, thus slowing fisheries degradation in the Russian Sea of Okhotsk (Shirkov et al. 2002).

Legal and illegal salmon roe sales, Kamchatka markets

Concluding Thoughts

Contextualization of environmental politics on Sakhalin and Kamchatka with scholarly research and personal insight from my field research suggests that while transnational development of offshore oil and gas is in the international spotlight and may eventually bring transformative development to these resource peripheries, local and indigenous people and places have not yet benefitted from transnational development. Increasing threats to ecological homelands have caused those who value—economically or emotionally—the resources of Sakhalin and Kamchatka to develop social and cultural identities that reflect environmental values. Interestingly, environmental identities and values are not easily cleaved along lines of "local," "indigenous" or "expatriate" identities (see Graybill 2009). Identity (re)formation induces increased politicization of environmental transformations in multiple kinds of actors, noted in protests against hydrocarbon development on Sakhalin (Bradshaw 2005); attachment to ecological homelands where hydrocarbon and subsistence resource extraction coincide on Sakhalin (Graybill 2012) and increased questioning of cultural and environmental identities on Sakhalin and Kamchatka as socioeconomic futures and rights to land and resources change with economic globalization (Wilson 2003, Graybill 2013). Mobilization of cultural identities to protest unwanted changes or unwarranted pollution is gaining in importance across Russia, but is most poignantly felt in Russia's resource peripheries, two of which lie in the Pacific region. Narrow economic focus on extractive resources, by national and multinational corporations, has not yet created conditions for socioeconomic diversification and growth. However, there is hope that extractive resource development will bring transformative change, such as revitalization of other economic sectors, especially eco-ethno tourism; new social and built infrastructure; and new educational options for the future of Pacific Russia.

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Source: Jessica Graybill

Salmon run, Kamchatka

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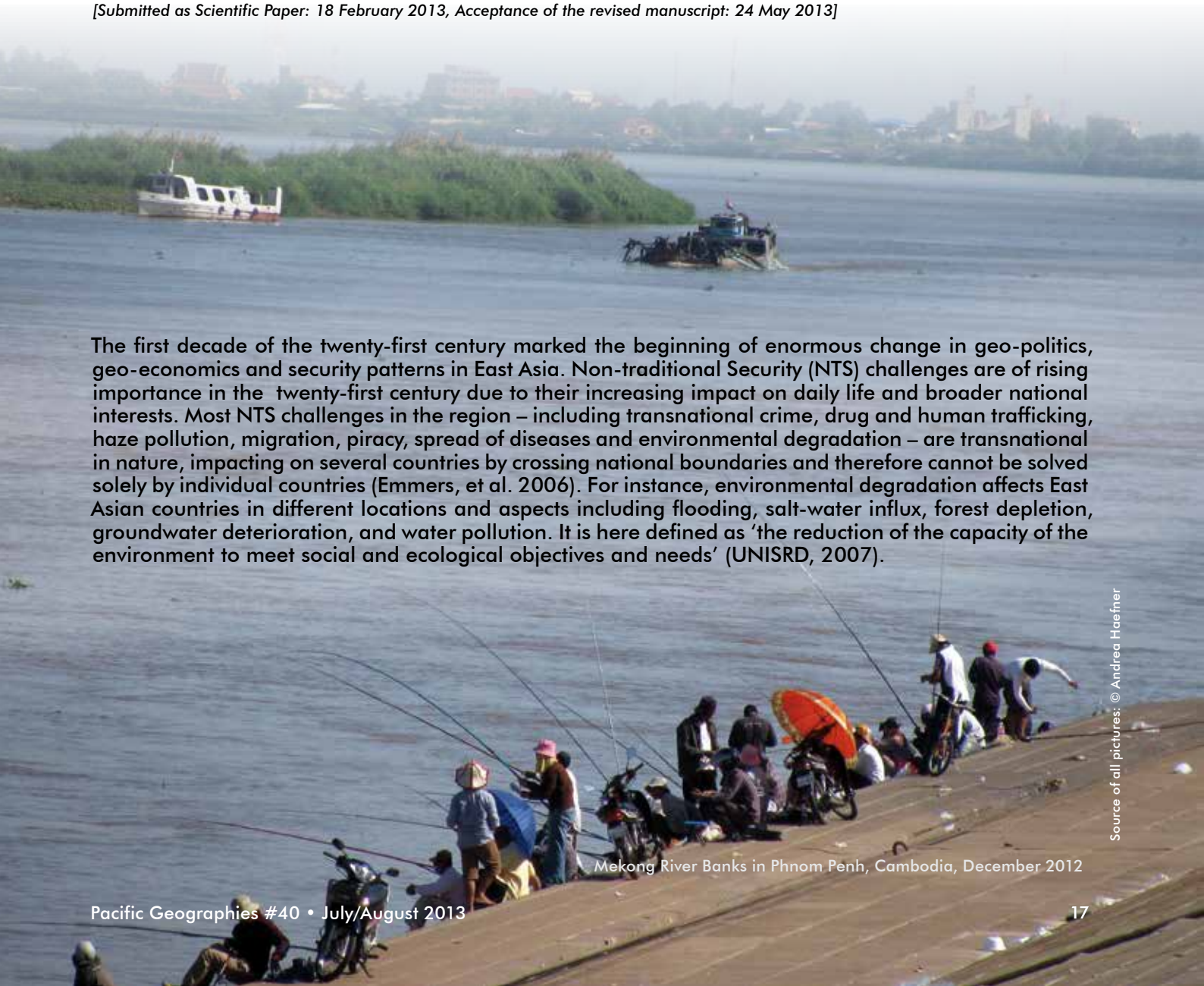
Non-Traditional Security:
The Case of Environmental Challenges in the Mekong Subregion

Andrea Haefner

Abstract: In the first decade of the twenty-first century Non-Traditional Security (NTS) challenges are of rising importance due to their increasing impact on daily life and broader national interests. This paper focuses on the Mekong Region as an important subregion due to its significance for more than 70 million people living directly on the river banks and its importance for the economic development of the six riparian countries. This paper investigates NTS challenges in the Mekong Subregion with a focus on environmental challenges and argues that NTS are of increasing importance in the region and will increase in the future. Whereas economic growth is crucial for the improvements of the livelihoods on the Mekong River and the overall economic performance of the riparian states, environmental protection cannot be disregarded as doing so would have devastating impact on the subregion and the wider region in the future.

Keywords: Non-Traditional Security; Mekong Subregion; Environment; Water governance; East Asia

[Submitted as Scientific Paper: 18 February 2013, Acceptance of the revised manuscript: 24 May 2013]



The first decade of the twenty-first century marked the beginning of enormous change in geo-politics, geo-economics and security patterns in East Asia. Non-traditional Security (NTS) challenges are of rising importance in the twenty-first century due to their increasing impact on daily life and broader national interests. Most NTS challenges in the region – including transnational crime, drug and human trafficking, haze pollution, migration, piracy, spread of diseases and environmental degradation – are transnational in nature, impacting on several countries by crossing national boundaries and therefore cannot be solved solely by individual countries (Emmers, et al. 2006). For instance, environmental degradation affects East Asian countries in different locations and aspects including flooding, salt-water influx, forest depletion, groundwater deterioration, and water pollution. It is here defined as 'the reduction of the capacity of the environment to meet social and ecological objectives and needs' (UNISRD, 2007).

Source of all pictures: © Andrea Haefner

Mekong River Banks in Phnom Penh, Cambodia, December 2012

The research underpinning this article is based on primary and secondary research on the Mekong region and highlights the significance of NTS in the subregion and its impacts on the population. Primary data was collected through semi-structured interviews, mainly in Thailand, Laos and Cambodia. This encompassed practitioners, academics, NGO leaders, representatives from active aid agencies and officials. Secondary data was obtained through journal articles, local publications and the national, regional and international media. The article outlines the importance of the Mekong subregion and its unique characteristics before focusing on the theoretical dimensions of NTS with an emphasis on water governance and the challenge of regional hydropower development. This is followed by combining a focus on both areas and, finally, some recommendations.

What is at stake at the Mekong Subregion?

This article focuses on the Mekong Region (see Map 1) as an important subregion due to its significance for more than 70 million people living directly on the river banks covering six riparian countries - China, Myanmar, Thailand, Cambodia, Vietnam and Laos. The region is also critical for the economic development of the six riparian countries, which include some of the poorest countries in East Asia (Mehtonen, et al. 2008). For instance, Laos and Cambodia's per capita GDP was estimated in 2012 to be around 3,000 USD and 2,400 USD respectively (CIA, 2013a, 20113b). Moreover, because the Mekong Region links the Association of Southeast Asian Nations (ASEAN) with China, it has implications for the whole region in regards to both NTS developments and regional cooperation.

The Mekong River is the largest river in Southeast Asia and the eight largest in the world (Campbell, 2009). It has enormous economic and ecological resources as well as political significance (Goh, 2006; Osborne, 2006). The Mekong River is central for food, accommodation and employment to millions and is also vital for the development of the entire Mekong region. However, these developments are currently at a crossroad which could lead towards peace, cooperation and harmony or conflict, dispute and insecurity. Floods, droughts, famines, environmental disaster, soil erosion and deforestation are issues not only influencing regional and national developments but also directly impacting on the large population living directly on its banks, depending on the river for subsistence (Elliott, 2009). Additionally, the river is ecologically diverse with over eighty listed families of indigenous fish species in a significant and unique ecosystem with some of the world's highest diversities of fish and snails, including the endangered and iconic Irrawaddy dolphin and the giant Mekong catfish (Campbell, 2009).

A major cause of environmental degradation and resource scarcity has been the industrialisation of the countries combined with increasing consumption rates, urbanisation, growing energy demand and production changes (Mattew, 2011). Environmental degradation has many extensive consequences in the Mekong Region resulting in environmental refugees, loss of biodiversity and instability. Practices such as deforestation and land degradation destroy natural resources and foster natural disasters, such as flooding in China and the Mekong region in 2010 or landslides in Thailand 2009. These disasters have enormous economic, environmental and social consequences such as displacement, health problems or rising famines which can only be tackled successfully through transnational cooperation (Elliott, 2009; Mattew, 2011). Moreover, the well-being of the livelihoods is also closely related to potential ecological problems associated with (for example) damming on the Mekong. Hydropower developments on the mainstream of the river but also on its key tributaries are an acute challenge to the subregion with the current construction of the first mainstream dam build on the Mekong, the Xayabouri dam in Laos, which will be followed by several othWer planned projects as visible in Table 1. It is evident from similar cases globally that damming can trigger four key ecological problems. As highlighted by Evelyn Goh, this can include the impoundment of large amounts of water behind dams, which is often dangerous and unreliable as construction of dams foster more frequent and larger landslides and earthquakes in the immediate area. Further, during the filling period of dams, the downstream countries can have dramatic falls of water in the dry seasons (Goh, 2006, p. 229). Secondly, flood and drought control capacity of Chinese dams are debatable, as the main

Map 1: Mekong Greater Subregion

	Mainstream		Tributaries		
	Existing or under construction	Planned	Existing or under construction	Planned	Total
China	5	3	0	0	8
Lao PDR	0	6	14	19	39
Lao PDR/Thai	0	2	6	0	8
Cambodia	0	2	0	4	6
Vietnam	0	0	10	2	12
Total	5	13	30	25	73

Source: MRC 2009, p.1

Table 1: Hydropower dams on the mainstream of the Mekong and tributaries

	Importance of flow	Water quality index	Environmental flows	Sustainability of water	Biodiversity	Total
Cambodia	5	4	5	4	5	23
China	3	5	1	2	3	14
Laos	3	5	4	3	4	19
Myanmar	2	5	1	5	5	18
Thailand	4	5	4	3	3	19
Vietnam	5	4	5	3	5	22
Average	3,7	4,7	3,3	3,3	4,2	19,2

Source: Adjusted from Phillips et al. 2006, pp. 128-129.

Table 2: Selected environmental-related indicators for the sixriparian countries on the Mekong River

purpose is water storage and electricity generation. However, the control of water and the reduction of normal flood peaks can have negative impacts on the ecological and agricultural patterns affecting nutrients and sediments which will reduce the natural soil fertility over wide areas used for rice cultivation in the lower Mekong (Goh, 2006). The importance is visible as 80% of Cambodia's rice paddies are closely tied to annual floods (Roberts, 2001, p. 8). Additional implications of watWer control include fewer and lower floods resulting in increased salinity in the delta.

Fish and other aquatic species adapted to the ecosystem will be disrupted in feeding, spawning, and nursing in specific parts of the Mekong. This would foster a decline in biodiversity and would have adverse effects on wild-capture fishery productivity. Further, as highlighted by experts, this will drastically affect the fisheries which provide employment and are also the main source of protein. Lastly, damming would impact on sediment patterns in the Mekong and, according to Blake, half the Mekong's annual sediment load which originates in the Chinese part of the river basin

Nam Ngum 1 hydropower dam - the first dam built in Laos

would be trapped on the way due to infrastructure. This would result in more erosion downstream which will alter the channel's course, weaken structure and increase coastal erosion and salinity (Blake, 2001, p. 5). These forecasted problems regarding new dams can be worsen by the increasing private investment in the region which could lead to lower standards as in previous projects such as the Nam Theun II dam. Further, these problems combined with other challenges such as population growth, food and water scarcity, pollution, diseases and refugee movements add to the pressure on water and other natural resources in the subregion.

NTS challenges: A theoretical approach

The traditional notion of 'national security' (defined as protection of the state's sovereignty and territorial integrity from external military threats) is still of major importance. However, states – as well as non-states actors – have also raised broader, contemporary concepts that go well beyond external military threats, including human and environmental security. As one observer pointed out nearly thirty years ago at the World Commission on Environment and Development: 'Today we cannot secure security for one state at the expense of the other. Security can only be universal, but security cannot only be political or military, it must be as well ecological, economical, and social. It must ensure the fulfilment of the aspirations of humanity as a whole' (Timoshenko in WCED, 1987).

Environmental security is central to national security, comprising the dynamics and interconnections among the natural resources, the social structure of the state, and the economic drivers for local and regional stability. Interconnectedness is one of the major characteristics of environmental causes and consequences and can trigger conflict between states or within a state as a result of environmental degradation (Elliott, 2003, p. 47). As a result it can threaten the security of a state, its people or even a whole region. This is supported by China and ASEAN which share the perspective that if economic stability and growth falter, regime survival could be in danger (Arase, 2010).

The environment and security can be linked in different ways through traditional or non-traditional lenses (Goh, 2006). The traditional notion of security links environmental degradation with conflict and contributes to potential interstate conflict. The non-traditional realm of security focuses on the relationship between environmental degradation and social welfare relating to the effects of environmental scarcity and degradation on the well-being of communities and individuals (Goh, 2006, p. 229). This includes a focus on human security, which is increasingly defined as the security of individuals as human beings instead of only being a citizen within a specific territorial entity (Graeger, 1996). Although non-state actors are the drivers behind NTS, this research uses the traditional way and focuses on the state level and the negotiation process. However, this is intertwined with the NTS aspect because states need to provide clear and sufficient water for their citizens, economies and industries. Those in the Copenhagen School argue that war and force are not the only core elements of security studies and use a broader definitional catchment in conceptualising security by including many different types of threats.

This leads to another often discussed point in environmental security focusing on the inclusiveness or exclusiveness of water security, energy security, food security and others in the area of environmental security and its implications. To add another large field such as water or energy security into environmental security broadens the topic and makes it more bulky and difficult. However, for this research on a transboundary river it is important and necessary because of the rapid growing demand of developing countries such as China and possible conflict between water resources and energy demand. Gleick argues that the regional level plays an important role as conflicts are more likely to occur on local or regional levels in developing countries because common property resources may be more critical to survival and less easily to replace or supplement (Gleick, 1993).

This is visible on the Mekong as water governance is closely related to the environmental effects, especially regarding water quality and water flow. For instance, damming on the upstream river not only reduces the water flow influencing the problem of water scarcity or allocation in the downstream countries, but also influences the water and soil quality (Lowi, 1999). This is also supported by the study of Phillips et al and the adjusted Table 2 which illustrates the significance of environmental-related indicators for all riparian states in the Mekong basin ranked on a scale from 1-5 with 5 indicating a high importance for the country. The result is that environmental issues play a significant role for all countries and that the most pressing ones basin wide are water quality, biodiversity and the flow regime (including base flow) which would be affected by the planned regional hydropower projects affecting all countries but severely the most downstream countries Cambodia and Vietnam (Phillips et al, 2006, p.128-129).

Whether water scarcity or security can be seen as a national security threat in addition to an environmental threat depends on several factors. According to Lowi these include water dependency on one special river and the physical location on the river, relating to the upstream-downstream phenomenon. Further factors are the countries climate and condensation, the demand of a growing population and the political relations within the given country and the region (Lowi, 1999, p. 380). For instance, China's role as the most powerful country on the upstream on the Mekong River with several other water resources is different to the role of the most downstream country, Vietnam, with a rapidly growing population and a strong focus on agriculture as one of the largest exporters of rice (it was the world's second largest rice exporter in 2012) (Fernquest, 2012). Similarly, for instance, Cambodia depends to 82 % on water originating from outside their borders, which shows that water scarcity could develop into a national security threat (Gleick, 1993, p. 103). Growing energy demand is one of the other major aspects in the subregion and often conflict through hydropower developments with environmental challenges. Food and energy depend on access to water and add to the dilemma on transnational river basins such as the Mekong River (Schneider, 2011).

Transboundary dilemmas: A fight for water?

IThe Mekong region continues to be of great political interest for the region and beyond as future development will be linked more and more closely to China. China's main interest in the region is twofold. First, the physical suitability for hydropower at the Mekong River to fulfil the exponential growing energy demand in the major

Chinese cities; and second, to contribute to China's main goal of economic development, especially in the western agricultural provinces which are deficient to the rapid developments in the urban areas. The Chinese National Defence Paper of 2002 states that the Mekong area is strategically important for China's security, especially in regards to NTS threats but also as connection and boost for Western provinces and continental Southeast Asia through major connecting roads or improved navigation on the river (Hensengerth, 2009b; PRC, 2002).

Laos' future economic growth depends heavily on hydropower development for its own energy demand, but more importantly as an important source of revenue through energy exports to its neighbours (including Thailand, China and Vietnam), which face increasing energy shortages. Thailand's interest is positioned in water diversion and irrigation projects to advocate its arid northeast region. Vietnam's focus is on reducing damming on the Upper Mekong as around 50 % of Vietnam's annual rice crop is produced in the Mekong delta which shows increasing salinisation; however, on the other side, Vietnam also needs to satisfy its growing energy demand (Campbell, 2009; Hensengerth, 2009a). Cambodia is primarily concerned about the Tonal Sap Lake, the biggest lake in Southeast Asia, which depends on the Mekong River's enormous water flows in the wet season in order to reverse the direction in the dry season. This results in the carrying of high amounts of fish and other aquatic life which bred in the lake during the wet season and count for at least up to 60% of the annual protein intake of Cambodia's population (Osborne, 2000).

Energy, security and the environment have become intimately connected as is evident in the dilemma of water security between dam constructions juxtaposed with the need to preserve river flow and fishing necessities on the Mekong. Further damming of the Upper Mekong results in habitat loss for people, can obstruct the 600 migratory fish species that swim to their spawning ground, and fosters the trapping of sediment which influences the Mekong's delta nutrients (Arase, 2010; WWF, 2010). This could also be intensified through Lower Mekong dams such as the Xayabouri dam in Laos which is planned and currently under construction (International Rivers, 2013).

Besides the individual goals of the six riparian governments, transnational organizations such as multinational companies, epistemic groups and financial institutions within the region, play a significant role and often cut across national and international boundaries with different plans and demands (Greene, 2005; Sneddon & Fox, 2006). This includes fishers, boat operators, NGOs, energy suppliers, construction companies and environmentalists pursuing different and sometimes contradictory interests and goals in the Mekong region. For instance, external countries and companies have interests in large scale hydropower and other infrastructure projects or through extensive aid programs.

Recommendations & conclusion

Whereas throughout human history, environmental impacts such as pollution or over excessive exploitation have been local problems, today environmental issues connect local, national, and international processes and therefore adequate responses are needed in an interdependent world (Greene, 2005). NTS issues are an important challenge in East Asia and although efforts are made on the national and regional level, transboundary effects remain a problem and will likely increase in the future. Environmental degradation is likely to continue requiring long term political decisions. These need to include the problems of growing population pressures, the fight against poverty, policy failure, political instability and the rising demand for energy, food and other resources (Elliott, 2009; Greene, 2005). Besides several external and regional challenges, each of the six riparian countries also faces several internal challenges and problems which influence regional development and the countries' own goals for the Mekong River. Whereas economic growth is crucial for improving livelihoods on the Mekong River and the overall economic performance of the riparian states, environmental protection cannot be disregarded as doing so would have devastating impacts

Wood transporter on the Mekong, Luang Prabang, Laos, March 2013

Gold panning in the dry season – important income for many villages along the Mekong, Luang Prabang, Laos, March 2013

on the subregion and the wider region in the future. Increased transnational cooperation in regional institutions, including NGOs, local communities and global organisations, are the key to reach long-term economic, social and environmental security in the region. Today's political decisions and guidelines are crucial to the livelihoods of current and future generations. These decisions will guide the region towards its destiny. As a result, decisions on the river's usage, development, policies and partnerships need to be as collective as possible and made with the best possible knowledge, principles, values and conscience.

Acknowledgement

The author is grateful to Andrew O'Neil for valuable comments and feedback on the article.

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Minamata as Negative Heritage:
Implications for Fukushima

Mami Aoyama and Mark J. Hudson

Abstract: This paper examines the industrial pollution that led to mercury poisoning around Minamata Bay in Kumamoto Prefecture, Japan from the 1950s. It is argued that the social and political 'lessons' of Minamata constitute a type of 'negative heritage' that presents a microcosm of many of the problems associated with modernity in Japan. Similarities between Minamata and the 2011 Fukushima nuclear accident are discussed and some reasons why the negative heritage of Minamata was ignored at Fukushima are briefly considered.

Keywords: Industrial pollution; Japan; Minamata disease; Fukushima nuclear accident; heritage

[Submitted as Scientific Paper: 21 January 2013, Acceptance of the revised manuscript: 28 May 2013]

This paper argues that in order to think about the environmental politics of the Fukushima nuclear disaster, it is useful to return to Minamata, one of the best-known cases of environmental pollution in Japan. Named after the town in Kyushu where it was first described, Minamata disease was caused when organic mercury in factory wastes polluted the sea and accumulated in fish and shellfish; people who ate contaminated seafood became ill. The mercury worked up the food chain and poisoned people who thought they were eating fresh, healthy food. Although the accident at the Fukushima nuclear power plant in March 2011 differs from Minamata in many respects, it has also led to the dispersal of an invisible poison into the environment – with health impacts that are, as yet, not fully understood. The discrimination experienced by the Minamata patients is being repeated in Fukushima. Despite the history of suffering associated with Minamata disease, Japan has once again produced a disaster with many victims. What are the lessons we should have learnt from Minamata?

Statue of Ebisu, the Japanese god of fisherfolk, in the village of Modo. Modo village was one of the fishing villages most seriously affected by Minamata disease.

Source of all pictures: Mami Aoyama and Mark J. Hudson

Remembering Minamata

The March 2011 earthquake, tsunami and nuclear disaster in eastern Japan came at a time of growing concern over global environmental crises. The two years since the so-called '3.11' disaster have seen an outpouring of research and writing on Fukushima and its impacts, both in Japan and beyond (Birmingham and McNeill, 2012; Funabashi, 2012; Hasegawa, 2012; Hirose, 2011; Kingston, 2012; Pritchard 2012;). Fukushima has already convinced many countries to phase out or reconsider nuclear power (Bradford, 2012; Uekoetter, 2012). Japan is no stranger to environmental disasters; earthquakes, tsunami and volcanic eruptions have played a prominent role in Japanese history since ancient times. As the first nation in Asia to industrialize, Japan has also suffered many cases of industrial pollution. Each example of environmental disaster in Japan has its own particular causes and impacts, yet it is also clear that there are important commonalities to the disasters experienced by modern Japan, deriving from contradictions in the culture of modernity. Here we consider Japan's most infamous case of industrial pollution in Minamata as a way to think about the Fukushima crisis.

Minamata disease is organic mercury poisoning caused by consuming fish which had accumulated mercury discharged from a chemical factory. Minamata disease is a microcosm of modernity and of the history experienced by Japan from the Meiji era (1868-1912) until after World War II (Got□, 1995). We cannot understand Minamata (or Fukushima) without understanding the culture of modernity. The Chisso chemical factory in Minamata City, which caused Minamata disease, brought work and happiness to many people; but it also brought unbelievable suffering to many others. Although the history of the Minamata disease incident has been discussed in English, in the aftermath of Fukushima it is worth summarizing again the background and impacts of the affair. The following description of the Minamata disease incident uses published histories in Japanese and English as well as the results of Aoyama's (in press) analysis of patient testimonies from Minamata.

Pollution in Minamata

In 1908, the Nihon Chisso Fertilizer Company (usually abbreviated as 'Chisso') established a chemical factory in Minamata in a poor region of Kyushu in southwest Japan. Before the factory was opened, Minamata had been a small town facing the Shiranui Sea, which was called "the sea where fish gushed out". Fishing folk lived along the coast and depended on its produce to make their living. The sea was so rich that one resident remembered, "If a visitor came, they would put the kettle on the stove, then go down to the sea, catch a fish or an octopus and be back just as the kettle started boiling" (Kurihara, 2000, 2).

Many people from neighboring villages came to work at the Minamata factory. In 1932, wastewater containing organic mercury began to be discharged from a plant producing acetaldehyde. Despite damage in World War II, the Chisso Minamata factory was reopened in 1945 and became a symbol of hope for the reconstruction of Japan. Minamata grew to over 40,000 people and was designated a city in 1949. More than half of the inhabitants of Minamata worked at Chisso or in Chisso related companies.

From 1954, cats in fishing villages around Minamata began to 'go mad' and die and symptoms soon spread to humans. 1956 saw the official discovery of Minamata disease by the Public Health Office. Rumours of a strange epidemic became one cause of discrimination against Minamata patients. Kumamoto University reported that poisoning from seafood caught in Minamata Bay was a possible cause of the disease. This led Minamata City to institute a voluntary directive against fishing and shellfish collecting in the Bay. Unable to sell their products, the Minamata fishers lost their main source of income and, with no other food, had to eat seafood, even though they knew it was dangerous. The fishing harbour at Minamata became a "boat cemetery" full of "empty, half-rotten boats" (Ishimure, 2003, 69).

In 1959, the Chisso company hospital began an experiment in which effluent from the acetaldehyde plant was put on food given to cats. In October, cat No. 400 developed symptoms of Minamata disease. This demonstrated that the wastewater was the cause of Minamata disease, but Chisso kept the results of the experiment hidden and continued to produce acetaldehyde until 1968 (George, 2001, 60-61). Chisso dumped wastewater containing organic mercury into the sea for 36 years and for nine years after it had confirmed that its own wastes were causing Minamata disease.

Impacts of the disease

Organic mercury taken into the body damages the internal organs beginning with the brain and nerves. Major symptoms of Minamata disease

The Minamata cenotaph

include sensory impairment of limbs, ataxia, vision and hearing impairments, speech disorders, and convulsions. Severe cases experienced extreme pain and many patients become deranged and lost consciousness before death. Mothers passed the mercury in fish they had eaten to their placentas. One mother lamented that, "When my baby was in my belly, I ate a lot of fish to give it plenty of nourishment. But then the baby was born with Minamata disease. The baby was a Minamata disease patient from the moment it was born, but there was nothing at all wrong with me" (Higashijima, 2010, 128).

Many of the patients who developed severe symptoms in the first decade after Minamata disease was officially recognized died within three months. In 1965 the mortality rate was 44.3%. Later, many people were recognized to have less severe symptoms. In 2012, a total of 2,273 certified patients was known. However, more than 65,000 people applied under the Minamata Disease Special Measures Law that was passed in September 2009 and held open for applications until July 2012 (Aoyama, in press). Despite these numbers, it is thought that further hidden patients still remain uncounted.

Although the pollution that caused Minamata disease came initially from only one factory and the cause of the disease was identified quite quickly, the incident continued for decades and affected many people over a wide area. Impacts included the destruction of the natural environment, poverty and livelihood disabilities, the collapse of communities, discrimination and psychological distress. Discrimination still exists today (Aoyama, in press).

Minamata disease ruptured the traditional occupation of fishing in the area and young people left the villages, never to return (Ishimure, 2003, 5). Despite their own symptoms, Minamata patients had to look after their families even though they could not sell their fish to make ends meet. Some shops would no longer sell them rice even if they had money. A 1969 lawsuit seeking responsibility from Chisso brought further discrimination for the Minamata patients since it made enemies of almost all inhabitants of Minamata, who worked in industries connected to Chisso.

Democracy and Minamata

In 1959, fishermen forced entry into the Chisso factory, demanding stoppage of the waste discharges. Following this incident, the mayor of Minamata petitioned Kumamoto Prefecture, requesting that the discharges not be stopped. A basic structure developed wherein Chisso and its supporters were in the majority, whilst the victims were a minority. A minority of fishermen was demanding that the factory wastes be stopped while a majority was asking that business be continued as usual. The profits of the majority were built on the sacrifices of a minority (Higashijima, 2006, 140). For the workers of the town, the existence of the Minamata disease patients and their lawsuits were nothing but threats to their livelihoods.

It was known since 1956 that Minamata disease was caused by seafood from Minamata Bay, but the Ministry of Health and Welfare did not regulate fishing, on the basis that, "There is no clear evidence that all fish and shellfish in … Minamata Bay are poisonous." A few months after the publication of the mercury theory, the Ministry of International Trade and Industry (MITI) announced that, "There are many doubts that the poisonous compounds in fish and shellfish are derived from organic mercury and we believe that we can't attribute the cause of Minamata disease to the waste discharges from the Chisso Minamata factory." MITI stated in court that, "The role of the Ministry … is to promote industry, to increase production, and the production of acetaldehyde is the first consideration" (Higashijima, 2010).

Waste sluice from the Chisso Minamata factory today

The government weighed the prevention of the spread of Minamata disease against rapid economic growth and privileged the protection of big business and the wealth of the general population against the lives and health of some citizens. It was only in 1973 that the Kumamoto District Court finally ruled against Chisso and it took a total of 31 years before the responsibility of the national and prefectural governments was recognized in 2004.

Responsibility for the outbreak of Minamata disease and for its spread and prolonged nature was held by the Chisso company, by the national and local governments, and by the medical and academic communities. These social powers worked in cooperation with each other to encourage an 'affluent society' that gave priority to the economy and to making Japan an economic superpower. The mass media helped transmit such values to the general populace. The media reported on Minamata disease, but that was overshadowed by reporting that contained 'commercials' for the right of postwar society to promote 'affluence' through economic development. Afraid that their own livelihoods would suffer, most inhabitants of Minamata City also opposed stopping production at the Chisso factory. Finally, consumers across Japan bought large quantities of goods made using materials produced by Chisso. It can be said that almost all of the people who constructed Japanese society bore some responsibility for the sufferings of the Minamata disease patients. In thinking about responsibility for Minamata, the writings of fisherman and activist Masato Ogata, himself a sufferer from Minamata disease, have been very influential in Japan. Ogata argues that within the value system of contemporary society, it is possible for anyone to become like Chisso or the townsfolk of Minamata and thus that we all carry Chisso within us (Oiwa, 2001, 146).

Minamata as negative heritage

The concept of 'negative heritage' was proposed by archaeologist Lynn Meskell (2002, 558) as a way of thinking about sites of conflict that become "the repository of negative memory in the collective imaginary". This concept has become widely used in Japan, particularly in debates over the heritage status of the Hiroshima and Nagasaki atomic bomb sites. We propose that Minamata also serves as a type of negative heritage, a place and a series of sites which remind us of the great sacrifices involved in the modernization of Japan. After the suffering of World War II, the Japanese people saw the Chisso Minamata factory and other sites of industrial production as symbols of hope for a bright future. The Korean War triggered Japan into an era of rapid economic growth during which the Japanese economy experienced an unprecedented average growth of 10%. By 1968, Japan's GNP was second only to the United States. Consumer goods such as televisions, refrigerators, washing machines, electric rice-cookers, cameras, lipsticks, air-conditioners and cars became widely used in ordinary homes by the 1960s (Yoshikawa, 1997). The Tokyo Olympics in 1964 and the Osaka Expo in 1970 were events that symbolized Japan's new position as an economic giant.

Plastics, vinyls and other chemical products supported Japan's rapid growth. The Chisso Minamata factory was the leader of Japan's chemical in-

dustry and the citizens of Minamata talked proudly about how the growth of the factory had led to an economic boom in the city. A retired factory manager became mayor and most of the local councilors were also connected to the factory. The city finances were supported by Chisso and the majority of the inhabitants of Minamata worked in jobs that were connected to the company (George, 2001). For the mayor and other officials, protecting the citizens of Minamata meant protecting the Minamata factory.

Although most people knew little about the suffering of Minamata disease, products using materials made by Chisso were everywhere in postwar Japan. Chisso's technology helped make our lives convenient and comfortable. The consumption behaviour of the general population was directed toward increased affluence for individuals and their families, but the resulting mass consumption supported Chisso's factory production, encouraging environmental pollution, and, as a result, caused Minamata disease and increased the number of victims. This meant that, as consumers, the general populace of Japan was an unwitting accomplice to the perpetrators of the Minamata incident. Furthermore, they elected politicians who would guarantee this affluent lifestyle and strengthened the structures of social power and material and economic 'affluence'.

Prejudice and discrimination from the local community worsened the suffering of the Minamata patients. Many people were worried that if Chisso went out of business, their incomes would be cut off and they would be unable to maintain their livelihoods. It is for similar reasons that opposition to closing nuclear power plants is common in areas around those plants. In order to promote the move away from nuclear power, there is a need to discuss how to avoid the trap of sacrificing people's basic livelihoods

From Minamata to Fukushima

To refer to Minamata as a type of negative heritage implies that it is not just a site of remembrance but that it can also be used in the present to help us debate and learn about the past in order to build a better future. What role, for example, might Minamata have to play in debates over Fukushima? There are a number of striking similarities between Minamata and Fukushima which suggest that many basic lessons from the earlier incident were not learnt. Environmental pollution is the pollution of future lives, often in ways not foreseen by existing science. Like the mercury in Minamata Bay, the radiation from the Fukushima nuclear power station not only affects humans through external exposure, but is also concentrated in the natural world and taken in through food. It is possible that these accumulations will cause delayed health impairments and the effects on children are a particular concern (McCurry, 2012). Just as one of the basic causes of the Minamata disease incident was prioritizing production and growth, nuclear power stations were supported as essential to affluent lifestyles that utilize large amounts of energy. Even after it became economically affluent, Japan was dominated by social values that prioritorized the economy over nature and life.

Despite the similarities, there are also a number of significant differences between Minamata and Fukushima. In the case of Minamata, the pollution primarily affected the local marine ecosystem which provided the main livelihood for one group in the community. The pollution at Fukushima, however, covers a much wider area and affects all groups of society. 'Technological stigma' (Gregory et al., 1995) played a role in the discrimination against those affected by Minamata disease but its effects were limited in geographical scope. The technological stigma of Fukushima, by contrast, affects a huge area of eastern Japan including, for some people, the capital of Tokyo. Given Japanese cultural taboos over pollution (Kirby, 2011) it is yet unclear how the sheer scale of this stigma will affect Japanese society. The effects of Fukushima are not only much broader than Minamata but also still largely uncertain. Ulrich Beck (2011), writing in the Japanese journal Sekai, has noted that Fukushima has brought Japan into the world risk society.

There are, of course, other factors related to the politics of energy policy in Japan that constitute differences from the Minamata incident. The complex range of actors supporting

Between 1977 and 1990, Minamata Bay was filled with earth, burying many fish affected by mercury poisoning. Local people have carved many Jizo bodhisattva statues which they place facing the sea on this reclaimed land.

and opposing nuclear power in Japan is summarized by Funabashi (2012). Despite such differences, however, both Fukushima and Minamata are disasters exacerbated by powerful circles of vested interest that include major companies such as Chisso and TEPCO, smaller companies that relied on business from these industrial leaders, local and national governments, the courts, certain scholars and academic associations, and elements of the mass media (Funabashi, 2012; George, 2001; Hasegawa, 2012; Higashijima, 2010). Uekoetter (2012, 26) notes that, "After Fukushima, we can see clearer than ever how expert systems, like those of the nuclear complex, challenge our democracy" yet the roots of this challenge were already clear from Minamata.

Another important element of the heritage of Minamata has been debates over the democratization of knowledge. Teruo Kawamoto, chairman of the Chisso Minamata Disease Patients Alliance, noted that, "Our movement will return correct knowledge and information about Minamata disease into our own hands. (…) If we can't achieve that, our responsibility will be heavy" (Kurihara, 2000, 111). However, groups with social power concealed, manipulated and complicated inconvenient information about Minamata disease. After the explosions at the Fukushima power station, it has also become difficult to obtain accurate information. People concerned about the dangers of nuclear power have used social media to organize demonstrations across Japan but there has been little mainstream reporting of these activities. Two years after 3.11, information about the conditions and suffering of the victims of the disaster rarely reaches other parts of Japan. As with the Minamata incident, attempts have been made within the social system of Japan to deal with this great sacrifice as cheaply as possible. The safety myth of nuclear power has, however, been broken and constitutes a problem with major implications for people's lives and the future of humanity. In order for each individual to confront the problem of nuclear power and to choose their own future, accurate information is required about the effects of radiation and the safety of nuclear energy. Moreover, the dominance of values giving priority to the economy and of behaviours that seek material affluence without giving thought to its implications are not just problems of the exhaustion of energy and resources, but also bring health impairments, poverty and discrimination, and can even go beyond the human world to cause the extinction of plants and animals. We have to recognize these victims as well. The first step toward a just and autonomous society is for each person to accept 'human responsibility' for these problems and to engage with them.

If, as we have argued, there are many basic similarities between Minamata and Fukushima, why wasn't the negative heritage of Minamata used to prevent the next crisis? Minamata has been one of the most extensively studied cases of industrial pollution from anywhere in the world. Although Chisso and many other actors involved in the pollution have done their best to hide incriminating evidence, we now know a great deal about the basic history of the Minamata incident. Yet that history has been one of concealment at all levels, a concealment that by its very nature has made it difficult to fully understand the meaning of Minamata. Furthermore, the victims of both Minamata and Fukushima have been victims of state policy at the highest level, fact which also makes it difficult to sustain contradictory narratives. The question of how to effectively employ the negative heritage of Minamata is made even more critical by the Fukushima disaster.

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Threatening Tonle Sap:

Challenges for Southeast Asia's largest Freshwater Lake

Claudia Kuenzer

Source: Michael Waibel 2009

Abstract: The Tonle Sap ecosystem in Cambodia is Southeast Asia's largest freshwater lake; strongly impacted by the Mekong river flood pulse. The lake is home to exceptional biodiversity, and rural communities living in free floating villages on the lake and on its shores. The fragile niche ecosystems as well as the rural livelihoods of Tonle Sap are under severe threat. Overfishing, illegal wood harvesting, further resource exploitation, and water quality deterioration all impact the stability of the socio-ecological system of Tonle Sap. At the same time, expected flood pulse changes due to regulatory measures in the context of hydropower development upstream on the Mekong are a severe threat for Tonle Sap's ecosystem stability. The area needs to shift into the focus of attention of national and international researchers, stakeholders, and decision makers, to find suitable pathways for a future sustainable development of this unique and pristine region.

Key words: Tonle Sap Lake, flood pulse ecosystem, floating villages, rural livelihoods, fisheries

[Submitted as field note: 16 March 2013, Acceptance of the revised manuscript: 31 May 2013]

Introduction to Tonle Sap Lake's Socio-Ecological System: Tonle Sap Lake in Cambodia is the largest freshwater lake in Southeast Asia. The permanent water body of the Tonle Sap exceeds 2.500 km² in the dry season, and this area more than quadruples to 12.000 km² in the rainy season (August to November). In late June the monsoon waters of the Mekong river arriving from the North pour into Tonle Sap River, which then reverses its flow direction towards the North and feeds the lake from its southern tip. During this time the lake's surface expands four- to fivefold and the water volume multiplies up to 50 times, with water depths increasing from one to over 12 meters (Osmose, 2013).

Source of all other pictures: Claudia Kuenzer 2013

The Tonle Sap is unique in many ways. Not only the hydrologic regime with its vast fluctuations is exceptional in the world. The lake is one of the world's top fresh-water fisheries, as well as one of the world's largest habitats for snakes, and hosts the largest colonies of endangered water birds in Southeast Asia, among them 15 endangered species such as grey-headed fish eagles, spot billed Pelicans, black-headed Ibises, and Adjutants. Mammals include macaque monkeys, otters, fishing cats, flying foxes and bats, civets, lorises, as well as domestic animals living close to men. At the same time – due to high water level fluctuations – it is the largest seasonally flooded fresh-water swamp in Southeast Asia. Shrubs and trees withstand week-long flooding – a unique habitat of unique floristic composition consisting of gallery forest, short-tree shrub lands, and herbaceous aquatic vegetation. Most plants shed their leaves during submersion in the wet season. Leafs then sprout on the trees again from top to bottom (an uncommon oddity) after the flood waters recede (Osmose 2013).

About 100,000 people, of which most are Khmer, live in the over 150 floating villages scattered alongside the lake. Most of them live from the rich fisheries: as fishermen, fish traders, fish processing experts, or maintaining services (floating gas stations, schools, churches, police stations etc.). Some villages are fully floating villages perfectly adapted to the rise and fall of water levels. The location of those villages may shift for several tenths of kilometres between the dry and the wet season. Mixed villages contain fully floating homes as well as stilt homes built on 8-10 meter high stilts. Villagers have adapted their life perfectly to the water environment. Children are picked up by "school-boats" to visit their

floating schools, domestic animals such as pigs are kept in floating cages, people catch the daily dinner right in front of their floating house, and plants such as invasive water hyacinth or floating coconuts etc. are used to weave mats, baskets, or carve bowls. The floating communities of Tonle Sap Lake are outstanding in their adaptation to their natural environment. Many of them are located within the "Tonle Sap Biosphere Reserve", which was established in 2001 by the Cambodian government, after UNESCO had declared Tonle Sap an ecologic hot spot.

Major challenges

Some authors claim the Tonle Sap and the Mekong floodplains to be the most productive freshwater ecosystems in the world (Kummu et al. 2010), depicting the fish yield in the Tonle Sap (139-230 kg/ha/yr) to be 700-850 per cent higher than in the floodplains of e.g. the Amazon or the Brahmaputra (van Zalinge 2002). Migratory fish species (so called white fish) and residential fish of the lake itself (so called black fish) are differentiated. However, even though Baran and Myschwoda (2008) report that fish catches in the Tonle Sap and Lower Mekong Basin are (weight wise) greater now than in past decades (attributed to modern and partially illegal catch methods, such as the use of explosives, poison, and electrofishing, Valbo-Joergensen et al. 2009), they also find that there is a shift in catch characteristics (diminishing size and quality), from medium size and large fish towards an increasing amount of very small fish, which do not have a high market value (Kuenzer et al. 2012). Overfishing occurs due to the local fishery laws, which distributes part of the lake into different so called 'lots', in which lot operators fish as much as possible. Even though overfishing and coastal forest destruction is prohibited, the limitations are not specified (what IS overfishing), and law enforcement does not take place. In addition, migratory fishermen (e.g. from northern Thailand) as well as Cambodian rice farmers, which fish only during the rainy season, come into the area to fish. This overfishing as well as illegal wood harvesting has a direct impact on livelihoods and in the mid-term will aggravate poverty. At the same time, alternatives for income generation are rare: local fishermen need to overfish to survive as allowed catch amounts would simply not be enough to supply an income to the average rural household of seven people (5 children average). The decrease in fish has – in many areas – led to a drastic decline in migratory birds and disturbances in the food chain. On top of this, water pollution due to socio-economic development around the lake threatens local people's drinking water supply and lead to the explosive development of harmful invasive plant species, such as water hyacinth.

Rural livelihood of a coal fisher's family

These threats are further aggravated by upstream developments in the Mekong Basin. Hydropower developments along the main stem and its tributaries cause transboundary effects within the whole Basin (Kuenzer et al., 2012, Zhao et al. 2008). On the one hand, the provision of hydropower increases economic activity and meets the rising energy demand of Mekong riparian countries. On the other hand, the negative impacts of dam construction, mainly altered water flow and reduced sediment load, confirm downstream country's fears (Kuenzer et al., 2012). As the Tonle Sap is connected with the Mekong via the 100km long Tonle Sap River, the impact will be directly felt (Lamberts 2008). Only slightest changes in the flood pulse characteristics such as the timing and duration of the flood, the rate of rise and fall of the flood water as well as the height of dry and wet season water level may alter the complex ecologic niches and habitats and the associated processes that determine the Tonle Sap's ecosystem productivity (Valbo-Joergensen et al. 2009, Welcomme and Halls 2004, Lamberts 2008). Lamberts (2008) investigated the consequences of Mekong river flow alterations for the Tonle Sap ecosystem and compiled an impressive table of major flood pulse characteristics and their susceptibility to being affected by anthropogenic flow alterations in the Mekong River. For the lake, the timing of the flood is a crucial factor to allow the synchronisation between physiological readiness (for migration, spawning etc.) of the fish and the flood phase. Nesting species' reproductive cycle, for example, may be disrupted if water levels rise too fast, and eggs can become emerged if flood water falls too fast. According to a Cumulative Impact Assessment report, which was initiated by the World Bank and the Asian Development Bank and which aimed at examining the consequences of hydropower induced water level changes, dry season water levels are expected to rise up to 70 cm at Chaktomuk junction of the Tonle Sap and the Mekong River (Miyazawa et al. 2008). Such drastic changes would severely change the local ecosystem.

Conclusion and future needs

Summarizing, current threats to the Tonle Sap ecosystem are:

Floating stores and storage supplies

- regulatory measures (hydropower, but also water diversion projects and increasing irrigation) at the upper reaches of the Mekong and its tributaries, directly impacting the flood pulse and therefore sensitive niche-ecosystems,
- the loss of flooded forest due to wood consumption and clear cutting, leading to changes in the ecosystem (decreasing spawning and resting grounds for aquatic animals, decreased erosion and lake floor protection etc.),
- overfishing spurred by destructive and illegal fishing techniques (leading in the long run to alternative requests for protein, and thus landuse change in the Mekong Basin),
- water pollution through nearby cities, villages, and the use of agrochemicals (impacting biodiversity in and around the lakes, as well as food quality and finally human health),
- the spread of invasive water plant species (hindering transport and leading to further water quality deterioration),
- a lack of income alternatives for the local population and the need for extensive resource exploitation in the absence of law enforcement.

Although ecotourism is on-going at small scale, and although first non-governmental organizations have set foot into the area to support sustainable resource management, extended research, capacity-building, and awareness-raising on the complex relationships within this unique and pristine ecosystem is needed. It is crucial that the rural population of the floating villages of Tonle Sap can maintain their safe livelihoods in the future. Furthermore, incentive programmes for local communities to engage more in the protection of their own environmental resources are urgently needed to stress the value of biodiversity. Incentives and the development of new income sources, such as well-controlled and limited eco-tourism can also help to overcome the poverty of the rural people living near and on Tonle Sap. At local and national level in Cambodia most important is an improved law enforcement to mitigate activities of overfishing and resource destruction.

At regional, international level, the ecosystem of Tonle Sap deserves an even greater attention within the transboundary Mekong related dialogue of organisations and initiatives such as the Mekong River Commission, MRC, the Greater Mekong Subregion Initiative, GMS, and with further players such as governmental research agencies, non-governmental organisations, international research and development projects, as well as development aid implementation agencies.

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Socio-Spatial Fragmentation within Ho Chi Minh MEGA City
View from City Garden Towers © Michael Waibel 03/2013