

**Territorial Integrity and Sovereignty:  
Climate Change and Security in the Pacific and Beyond**

By Achim Maas and Alexander Carius

**Introduction<sup>1</sup>**

With resolution A/64/281, the United Nations General Assembly acknowledged that climate change may have implications for security in June 2009. The small island states were among the main drivers behind the resolution due to their concerns regarding the impacts of climate change. Two years earlier, in April 2007, several countries mentioned during the debate at the United Nations Security Council that the small island states are those which are particularly threatened by climate change. The General Assembly resolution was adopted without any objections in June 2009 and called for the United Nations Secretary-General, who emphasized this as well (UNSG 2009): The report identified statelessness induced by sea-level rise as one of the five main challenges of climate change.

Concurrently, the mass media often depicts small island states as climate victims at risk of submergence. Prior to the climate negotiations in Copenhagen, the cabinet of the Maldives symbolically held a meeting under water to highlight the impacts of climate change on the low-lying atoll country. Though key possible risks of climate change have been before (e.g. Barnett/Adger 2003), little research has been conducted on the actual security implications of climate change on small island states compared to other regions (see Maas/Tänzler 2009). This includes the questions of territorial integrity and sovereignty which will be affected by climate-induced sea-level rise – a threat unique to island states which may challenge the meaning of common statehood criteria, such as territory and resident population.

The present paper argues that the impacts of climate change on the Pacific region, in particular the Pacific island states, is underlined by a degree of complexity which goes beyond the current political discourse on “climate refugees” and vanishing atolls. In this paper we (1) review the implications of climate change on security for Pacific island states and (2) assess the wider regional and geopolitical implications. To achieve the set objectives, the paper was divided in the following sections: Firstly, the implications of climate change for the Pacific will be reviewed. Secondly, we outline the potential security implications of climate change at the domestic level. Lastly, the impacts on borders, territories and statehood will be discussed. In the closing remarks, we reflect upon five key challenges identified with regard to their global implications and how to possibly turn these challenges into opportunities.

This paper builds on an extensive literature review, document analysis, and a series of interviews and stakeholder consultations carried out in the Pacific region in 2009 in context of an EU-funded project on climate change and international security.<sup>2</sup>

**Climate Change and the Pacific: An Overview**

---

<sup>1</sup> The authors would like to thank Halvard Buhaug, Antoine Morin, Arne Janßen and Sanjin Ibrahimbegovic for their support and comments.

<sup>2</sup> For details of the project, see Carius/Maas 2009 and Carius et al. 2009.

The focus of this paper will be set on small and developing island states in the Pacific. In particular, we will look at the Cook Islands, the Federated States of Micronesia (FSM), Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea (PNG), Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. Their total combined population is approx. 9 million and have a land mass of around 500,000km<sup>2</sup>, which is comparable to the size of Spain, and PNG accounts for more than 60% of both. Yet, the combined maritime territory is approx. 20 million km<sup>2</sup>, around four times the size of the European Union (EU) (Carius et al. 2009, Chasek 2009).

Size, geography, development and population greatly vary from relatively large, high-rising island states such as Papua New Guinea with over five million inhabitants to small atoll countries such as Tuvalu, rising only a few meters above sea-level and having just over ten thousand inhabitants. Yet, PNG has the lowest population density with just 15 people per km<sup>2</sup>, while Tuvalu has 383 inhabitants per km<sup>2</sup> of land. Similarly, economic and human development also differs significantly across the island states.<sup>3</sup>

Despite these differences, the Pacific island states share a number of common traits: Subsistence farming and fishing are among the main sources of food, income and employment. Tourism is a large sector as well as a source of foreign currencies. Fishing rights within their exclusive economic zones (EEZ) are occasionally granted. Their resource base with regard to arable land and fresh water is in most cases limited due to their small size. Many goods need to be imported, including energy (mostly fossil fuels), processed food, raw materials and manufactured goods (cf. Booth 2006). Populations, settlements and economic activity are mostly concentrated in coastal areas (Carius et al. 2009). A further main source of income is remittances by islanders living abroad, which however started to temporally decline with the onset of the world financial crisis (UNDP 2009a; Asian Development Bank 2009). A newly emerging field for economic activity is deep sea mining, i.e. mining minerals and other natural resources on the ocean floor. A first mine is scheduled to become active in PNG waters in 2010 (Carius et al. 2009).

The small size of the island countries makes it difficult for them to profit from economies of scale, resulting in disproportionately large administrations and aforementioned need to import many goods (UNDESA 2007). Increasing population growth is expected to further exacerbate land and resource scarcity (Booth 2006). High population densities, tourism and unsustainable exploitation of natural resources negatively impact ecosystems, including among others ground water resources, soil fertility, forests and coastal areas (Carius et al. 2009; EU 2006). Overharvesting, underreported and illegal fishing pose a threat to food security, marine biodiversity and loss of state revenues (Michel 2008; Greenpeace 2006), and the recent food price crisis heavily impacted import-dependent small island states (Asian Development Bank 2009a). Furthermore, while deep sea mining may provide a new source of revenues, environmental concerns exist regarding the impact on marine ecosystems and thus fishing (Carius/Maas 2009). Despite the potentials, the possible trade-offs between deep sea mining and other uses are not yet well assessed throughout the Pacific (cf. Ibid.).

---

<sup>3</sup> For more socio-economic and demographic data, see UNPD 2008 and UNDP 2009. However, it should be noted that significant data gaps remain, and for instance for the Cook Islands, FSM, Kiribati, Nauru, Palau and others, there is insufficient data to calculate the human development index (see UNDP 2009).

However, the April 2010 oil leak in the Gulf of Mexico resulting from an accident on a Deepwater Horizon oil platform may highlight potential environmental damages. The response to stop the oil leak has proven to be extraordinarily challenging and may have vast economic and environmental costs (see e.g. NYT 2010; Deepwater Horizon Response 2010). The accident also highlights that even a disaster on the high seas may have repercussions for coastal communities. With the concentration of island states population and economic assets in coastal areas, such an event may have a proportionally larger impact than in the United States.

Generally, the Pacific island states are relatively peaceful and stable with few reported human rights abuses. However, Fiji, the Solomon Islands and PNG witnessed coups and violent conflicts in the past decades. Furthermore, violent riots have occurred in several countries. Land is mostly customarily owned in the Pacific and disputes over land tenure and land rights have been frequent; traditional and modern governance structures do not co-exist without friction, making dispute settlement more difficult (UNDP 2008). The 2004 violent escalations in the Solomon Islands have partly been attributed to land disputes (Pacific Islands Forum Secretariat 2008), but also had ethnic components looking at how Chinese residents and property were targeted (see Dobell 2007). Similarly, the 1987, 2000 and 2006 coups in Fiji have been related to tensions between indigenous Fijians and Fijians of Indian descent (Leuprecht 2008).

Against this background, climate change is likely to become a serious challenge for the Pacific island states. Three main concerns arise in particular:

- 1) Sea-level Rise:** While it is internationally agreed that sea-levels are rising, the estimates are strongly diverging. The Intergovernmental Panel on Climate Change (IPCC) estimates a potential global rise of sea-levels of 0.18m to 0.59m by the end of this century (Solomons et al. 2007). Local SLR in the Pacific could be even higher, with estimates for American Samoa ranging up to 0.88m (Mimura et al. 2007). However, more recent studies show that in the case of insufficiently mitigated climate change, 1m to 2m global SLR may be possible (Allison et al. 2009). The change will neither be uniform nor linear across the globe and may exhibit inter-annual and inter-decadal variability. The Pacific has already witnessed above average increases in the 1993-2003 period (Solomons et al. 2007: 412), however recently there have been indication that some islands may adapt as they consist largely of coral debris, which may accumulate over time and thus allow some islands to grow with SLR (Webb/Kench 2010). Still, unsustainable coastal management marked by severe erosion caused by an increased concentration of urban infrastructure and settlements may further aggravate the situation. Coastal erosion may be accelerated also by a likely increase in the intensity of extreme weather events (Carius et al. 2009). The geographical differences between the various island countries will lead to greatly varying impacts: Some, like Tuvalu and Kiribati, are low-lying atoll countries, rising only a few meters above sea-level. Any increase of sea-level will have considerable impacts on their land mass. Others, such as Fiji and PNG, are high-lying and host even mountains. While in all cases settlements are still concentrated in coastal areas, Fiji and PNG are thus far less threatened from inundation as low-lying island states.

Continued SLR is thereby a persistent threat: It is estimated, that sea-levels are likely to rise for the next centuries to come due to inertia of the oceans (Solomons et al. 2007). The full extent is unclear and is depending on many factors, but will be for all practical purposes a issue for many coming generations.

- 2) Extreme Weather Events and Disasters:** The Pacific is likely to experience an increase in frequency and intensity of extreme weather events. This includes heat waves and droughts, but also tropical cyclones and storm surges (Mimura et al. 2007). In the past, disasters often led to a decline in tourism due to the resultant impacts on tourism sites (Carius et al. 2009). A good example is the case of Niue: The 2004 Cyclone Heta resulted in waves in excess of 50m height devastating large parts of the island and destroying houses built as high as 25m above the sea level (Barnett/Ellemor 2007). Cyclone Orfa in 1990 even turned Niue from a food exporting country to a food importing country for two years due to the destruction of important agricultural infrastructure (Mimura et al. 2007). Climate-related SLR and coastal erosion are likely to make future disasters more devastating even if they do not increase in size and intensity.
- 3) Livelihood Degradation:** Sea-level rise will increase saltwater intrusion, thus degrading fresh water resources. Increased air temperatures will lead to higher evaporation rates, furthermore reducing to the availability of freshwater. This will diminish agricultural production unless new resistant crops are introduced to offset these impacts. In addition, coral bleaching may intensify further over the coming decades with a likely reduction in near shore fishing leading to a potential collapse of the fishing industry in the region (Carius et al. 2009: 9). As a consequence of degradation, human health and well-being are likely to be affected negatively due to the spread of climate-sensitive diseases (see Mimura et al. 2007).

The combined impacts are likely to compromise the socio-economic foundations of the islands states: Potentials for subsistence farming and fishing are diminishing while demands due to population growth will increase. Dependencies on imports are thus likely to increase; the case of Niue is interesting to note again, as past disasters transformed the country into a net food importer for a period of time. However, the recent food crisis highlighted the vulnerability of these countries to global market fluctuations (cf. ADB 2009). Disasters, coastal erosion and coral bleaching among others may diminish tourism potentials. Thus, main sources of income and employment may decrease as well, making it difficult to acquire goods internationally. Unless foreign aid and/or remittances increase, new sources of incomes may become necessary such as more concessions for deep sea mining or increased blue sea fishing (Carius et al. 2009).

### **Security Implications of Climate Change in the Pacific**

The impacts of climate change may result in two main challenges for island states. First, human security for the islanders as a result of these trends: It may increasingly become difficult for islanders to satisfy basic human needs and for governments to provide alternatives if necessary.

A second challenge emerges from the geographical alteration of productive landscapes and potential migration: Shrinking land mass and loss of income opportunities may fuel current migratory processes, particularly from outer islands to main islands (Carius/Maas 2009). Resource pressures on main islands may thus escalate, further aggravating the first challenge outlined above. However, as all land is customarily owned, re-settling on main islands may be difficult as people are then forced to settle in marginalized areas which may be still contested (cf. Pacific Island Forum Secretariat 2008). Furthermore, because all lands are customarily owned and have been passed down for generations, land is of high importance for the islanders' identity and social belonging. Indeed, the loss of land and uprooting could be traumatizing with climate-induced inundation of islands threatening the collective identities of communities and island societies (cf. UNSG 2009; Rayfuse 2009; Yamamoto/Esteban 2009; Carius/Maas 2009).

Out-migration of islanders to other countries as a result of climate change may also occur. However, it is unlikely that this will become a major issue internationally: The Pacific island states' total population is approx. 9 million and only a fraction of those have the necessary social and economic capital to migrate (Carius et al. 2009) - a very limited number compared to the widely diverging global estimates, which envisage several hundred million migrants related to climate change (see Brown 2007). Out-migration of skilled islanders would result in a brain drain: Due to the above-mentioned impacts, the opportunities for unskilled labor may diminish, thus increasing dependencies on remittances. It may also lead to an exodus of much needed skills to cope with the impacts of climate change locally. Still, high levels of education and development makes it considerably easier for islanders to move and some countries, such as Kiribati, intend to create dedicated educational programs to migrate in dignity and contribute actively to their host societies (see Carius/Maas 2009). As such, they may also be more welcomed in host societies. Negotiations with neighboring countries, particularly with Australia and New Zealand, are under way to facilitate migration, though with limited success so far (Rayfuse 2009).

The combination of impacts may lead to a third challenge: Political instability as a result of climate-accentuated pressures. The multiple stresses may give rise to several conflict constellations, where the interactions of climate change with other factors may increase the risk of violent conflict (see WBGU 2007).<sup>4</sup> Disputes over land as a result of inequalities and frictions between traditional and introduced land management systems as well as intra-state migration may become aggravated (Carius et al. 2009). Other islands may face developments similar to the Solomon Islands or PNG, as the impacts of climate change may increasingly compromise the capacities of states to mediate conflicting interests between different groups (see Pacific Island Forum Secretariat 2008; Carius et al. 2009).

While the majority of island states are currently relatively stable and peaceful, the impacts of climate change will be much more pronounced due to the small size of the respective countries and may accelerate already threatening trends. Addressing particular the first two challenges will be vital to avoid impacts on political stability and escalation into violent confrontation. The major risk is, that island states may become increasingly fragile, i.e. no

---

<sup>4</sup> For a more elaborate overview to the debate on climate change, security and armed conflict, please see WBGU 2007, Buhaug et al. 2008 and Gleditsch/Nordås 2009.

longer capable to provide public goods such as security, an operating justice system, welfare, participation and others (see Schneckener 2006). In such a situation, a singular crisis event – be it a food shortage crisis or a natural disaster – may trigger a violent release of tensions resulting from disputes (cf. WBGU 2007).

### **No Island, No Claim? Territoriality and Geopolitics**

In contrast to other world regions, island states face additional unique impacts arising from sea-level rise. They can be subdivided in two challenges: First, to the territorial integrity of Pacific island states due to rising yet fluctuating sea-levels, and second, a challenge to the sovereignty of Pacific island states in the case they become submerged or deserted (UNSG 2009). These challenges exist, even if islands would geologically adapt, as this is likely to be uneven, leading to changing shore lines (see Webb/Kench 2010).

Currently, the combined exclusive economic zones of the Pacific island states are several times larger than the whole EU (see Carius et al. 2009). With the potentials of blue sea fishing and deep sea mining, the EEZ are important economic assets. As has been outlined above, inter-annual and inter-decadal fluctuations of sea-level may thereby lead to contracting, but also expanding maritime territories. The UN Convention on the Law of the Sea (UNCLOS), however, is not designed to handle dynamically changing boundaries, but presumes a more or less “fixed” coastline, extending from the land mass of a country (see Paskal 2010). As a result of SLR and coastal erosion, it becomes uncertain, how far actually the EEZ and thus maritime territory of the island states may change, with conventional international law currently offering little advice.

The melting of the Arctic highlights the impacts of climate change on international relations (see Crawford et al. 2008). Fears have also emerged, that newly available resources in the Arctic may lead to confrontation between the littoral states (see Tänzler 2009, Paskal 2010). Although the chances of direct violent interstate conflict are low (see Lee 2009), disputes may become militarized as for instance the Canadian government stated its readiness to defend Canada’s sovereignty (Maas et al. 2010: 27).

Climate change poses similar dispute potential to the Pacific, but from a different perspective: Instead of opening up new resources, sea-level rise is likely leading to shrinking maritime territories and thus international disputes over extent of current boundaries. The resultant problematic is highlighted in two recent cases: First, in the Gulf of Mexico, one island claimed by Mexico could no longer be located (Paskal 2010a). As a consequence, the USA stated that without an island, there could also be no claim on the EEZ (Ibid.), which would lead to a dramatic reduction of maritime territory of Mexico – after all, even a small habituated island would have access to a 200 nautical miles radius of EEZ, a maritime territory of over 430,000km<sup>2</sup> which is nearly the size of Sweden. In a second case, a long standing dispute between India and Bangladesh over an island which even involved military deployments was resolved as the island disappeared due to sea-level rise and coastal erosion leading to the disappearance of the island (Singh 2010).

In the case of the Pacific island states, 95% of their territory is maritime in nature and every loss of land may result in loss of thousands of square kilometers of maritime territory

(Carius/Maas 2009). Theoretically, there are several ways to avoid the loss of territory. For instance, states could agree to fix maritime boundaries, e.g. based on satellite footage from a specific year (Paskal 2010a). However, this would require agreeing on a specific date, which could be difficult: As anthropogenic climate change is occurring already and increases in sea-levels have been identified in the past decades, it may be difficult to agree on date when coastlines are sufficiently unaltered by climate change. In such a case, the island lost by Mexico may re-emerge as well. Furthermore, the maritime territory of some island states may actually grow if coastlines of neighboring islands would due to geological reasons erode faster or more substantially - an incentive, to not agree on a date in the past to fix coastlines.

Alternatively, islands could be preserved by building sea defenses, called the “Dutch scenario” by Yamamoto and Esteban (2009). Aside from the technical difficulties, building and maintenance may be a costly activity as it may require building hundreds of kilometers of sea walls per islands. Given the uncertainty on the actual amount of SLR over the next decades and fluctuation of sea-levels, the size of such walls is difficult to estimate. The construction costs would thereby come on top of other adaptation costs to higher temperatures and disasters. It also poses the risk of preventing the aforementioned growth of islands.

Aside from actual changing coastlines, UNCLOS distinguishes between islands and rocks in article 121: The former is defined as naturally formed area of land, surrounded by water, which is above water at high tide and can sustain a human habitation. Rocks per definition cannot sustain human habitation or economic life of their own (Yamamoto/Esteban 2010: 21; Charney 1999). The latter also does not receive their exclusive economic zone, only a much reduced safety area. As climate change may make islands unviable – due to disasters, soil erosion, groundwater salinisation, etc. – the questions arises whether they become reduced to rocks according to UNCLOS (see Rayfuse 2009). Thus, even if islands do not become fully submerged and protected, territory may still be considered “lost” under international law.

Dynamically changing maritime boundaries will have implications for access to the maritime resources and may lead to legal disputes not only between island states: Several external powers have shown increasing interest in the natural resources in the Pacific, including fish, minerals and energy resources to meet growing domestic demands and to diversify import sources (see Wesley-Smith 2007). As climate change is compromising the current economic bases and major sources of income of Pacific island states, the dependency on external supporters may increase – which may provide opportunities for “win-win” situations, where Pacific island states trade access to resources for external support. Indeed, concessions for mining and fishing may be one of the few remaining major sources of income to finance adaptation or sea-defenses (see Carius et al. 2009).

However, a caveat is potential corruption, which has been a critical issue for several island states, leading to large amounts of lost revenues (Tsamenyi/Hanich 2006). Furthermore, there is increasing competition in the Pacific between regional powers such as Taiwan and China (see Paskal 2010). Both vie for increased influence in the Pacific island states, not only because of the riches the EEZ has to offer in terms of geological or biological resources:

In case of Taiwan, recognition by the island states provides it with legitimacy<sup>5</sup> and provides an avenue for indirectly accessing international organizations in its favor by convincing actual member states – such as island states – to vote in Taiwan’s favor.

China has broken formal diplomatic relations with those countries recognizing Taiwan and attempts to reduce Taiwan’s influence (Ibid.). The actions of both countries have been described as “chess game”, akin to the Cold War where the superpowers vied for influence in third countries (cf. Dobell 2007). Indeed, both countries exploited diverging positions within countries, leading to governmental instability (Paskal 2010). Some authors in part attribute the violence in Solomon Islands to the influence of external powers, as it fuelled corruption and polarized the society (Dobell 2007). The competition for access is not limited to Taiwan and China, but most pronounced between the both for historical reasons (Paskal 2010).

Concurrently, the difficult international landscape may receive an additional layer of complexity if sea-levels start to shift. This adds to the domestic challenges of climate change island states face and may further reduce the “interaction capacity” of states (Halden 2007): To tackle either of the emerging problems fully and sufficiently due to the constraining impacts they have.

## **Sovereignty and Climate Change**

Beyond the question of territory, another unique challenge arising for small island states and particular low-lying atoll countries – in the Pacific, this are the Marshall Islands, Tuvalu and Kiribati – is the threat of total inundation or that the islands become for all practical purpose uninhabitable. Indeed, several island states such as Tuvalu (Rayfuse 2009) and the Maldives (Paskal 2010) already negotiate relocation options with New Zealand and India, respectively. Such an event would challenge the definition of statehood and sovereignty and may affect privileges of statehood, such as membership in international organizations, diplomatic immunity, trade relations, being eligible for development aid or loans from the World Bank and the International Monetary Fund (IMF), accessing the International Court of Justice (ICJ), and others more.

No internationally or academically agreed definition of statehood or sovereignty exists (Yamamoto/Esteban 2010). While sovereignty is normally attributed to having control over a specific territory (Ibid.)<sup>6</sup>, this does not necessarily lead to state recognition: Many political entities such as Kosovo, the above mentioned Taiwan or other entities such as Abkhazia and South Ossetia only enjoy a very limited recognition. Some political entities such as Transnistria, Nagorny Karabakh and Somaliland are not recognized by any UN member

---

<sup>5</sup> Currently, 23 countries recognise Taiwan, including six Pacific island states: Kiribati, Marshall Islands, Nauru, Palau, Solomon Islands and Tuvalu (Taiwan Government Information Office 2009).

<sup>6</sup> For instance, the Montevideo Convention on Rights and Duties of States has as four defining criteria 1) a permanent population, (2) a defined territory, (3) a government and (4) the capacity to enter into relations with other states (CFR without date). The Convention, however, has only 33 signatories (Ibid.). The UN Secretary-General in his report on climate change and security also mentions territory as important aspect of statehood (UNSG 2009).



state. Somaliland is an interesting case as it is exhibiting state-like properties such as having a working constitutional democracy, its own currency and other aspects while it is unsuccessfully striving for international recognition as a sovereign state independent of its suzerain Somalia (see Bradbury 2008; ICG 2006). Instead, Somalia's transitional federal government (TFG) is recognized as a legitimate government, though it was formed outside of Somalia and subsequently relocated within Somalia – with limited success in re-establishing statehood throughout the country (see ICG 2008).

The case of Somalia highlights that *de jure* recognition as state by other states is of key importance for those having lost any territorial control – in contrast to entities such as Somaliland and Taiwan who exhibit state-like properties, as listed in the Montevideo Convention, but are only recognized by a few states, if any. States at risk of losing their territory may thus continue to be recognized even after relocation of their government seat and population. However, in the case of Somalia, there is at least the prospect of return to a defined territory – an option which may be unavailable for island states until sea-levels begin to fall again.

However, there are precedents for sovereign entities without territory: The Sovereign Order of the Military Hospitaller Order of St John of Jerusalem, of Rhodes and of Malta (SMOM) as well as the International Committee of the Red Cross (ICRC). The Order lost its territory in 1798 due to the Napoleonic wars, but continues to have bilateral relations with 104 countries.<sup>7</sup> SMOM also issues passports to its members (Corriere della Sera 2002). The ICRC is formed as an association under the Swiss civil code, but is mentioned explicitly in the Geneva Convention and has negotiated privileges with host countries similar to other international bodies (Gabor 2004). While both are considered as sovereign and have a standing invitation to the UN General Assembly, they are neither considered as non-member states (such as the Holy See) nor as international organizations (such as the EU). Accordingly, they also have no voting rights. SMOM and ICRC are funded through contributions made by members and donations.

Theoretically, island states may not necessarily be without territory: Historically, land has been traded between different countries such as when Alaska was bought by the USA from Russia. While this option may be conceivable, it appears unlikely today that territory may be ceded unless it is devoid of any other use or purpose, including being culturally insignificant to the selling state (Rayfuse 2009). Indeed, within Russia, politicians have even suggested to reconsider the selling of Alaska and re-integrating it into the Federation, although such activities are rather supporting nationalistic rhetoric than representing any plans for action (Lo 2008; Znamenski 2009). Portions of land which governments are ready to sell may be marginal, without infrastructure and/or significant natural resources and thus generally “expendable” (cf. Rayfuse 2009). When Australia answered negatively to a demand made by Tuvalu requesting the country to receive its population in the event of a total submergence was an interesting case to note (Ibid: 10). Thus, while it may be likely that countries offer residence to island states losing territory – such as SMOM – it appears unlikely that they would gain sovereignty over this land.

---

<sup>7</sup> See the official website of the Order of Malta: <http://www.orderofmalta.org/english> (21 May 2010).

Against this background, three possible developments become imaginable:

- First, island states with completely submerged territory continue to be recognized as sovereign states although their population and seat of government become relocated. Infrastructure, such as a lighthouse, may serve as a “sovereignty marker” (Yamamoto/Esteban 2010) to denote where once the island existed in case sea-levels decrease one day. The island states remain members of international organizations with voting rights.
- Second, some countries choose to no longer recognize states with fully submerged territory, effectively breaking-off diplomatic relations. However, according to article 6 of the United Nations charter, states could only be expelled for persistently breaking the principles of the charter and after recommendation of the UN Security Council.<sup>8</sup> Furthermore, non-recognition by other UN member states does not necessarily lead to expulsion from the UN or other bodies: For instance, Turkey does not recognize Cyprus, nor does North Korea recognize South Korea. Thus, this development would be similar to the first, but with reduced international recognition by other states.
- Third, fully submerged island states remain sovereign entities, but similar to SMOM lose their “statehood”, i.e. they are no longer member states of international organization nor eligible for them. While negotiations could assure relocation and privileges, such as extraterritoriality of embassies, they would lose their voting rights in international organizations and other benefits, but keep passports and other privileges of sovereign entities.

The last two developments may particularly exacerbate the potential “no island, no claim” situation outlined above. Yet, all three developments would imply that citizens of submerged islands do not necessarily become stateless, as even sovereign entities other than states such as SMOM issue recognized passports. Also, it appears unlikely that they will be removed from UN membership. The matter may be more problematic for organizations which have more preconditions for membership than the United Nations. An interesting case for example would be the Maldives, which are a member of the World Trade Organisation (WTO) but would no longer have any recognizable border (and thus authority over its customs, a precondition for WTO membership<sup>9</sup>) after their submergence. Thus, should the Maldives then be removed from the WTO?

While these developments will not fundamentally challenge the international system of mutually recognized states and sovereign entities, the phenomenon of “sovereignty without territory” would proliferate (Rayfuse 2009). It is unclear, how this may – if at all – affect current questions of sovereignty and recognition of Taiwan, Somaliland or others which are formally parts of other states (China and Somalia, respectively). More likely than not, the fate

---

<sup>8</sup> Taiwan represented China in the United Nations, but its place was taken by the People’s Republic of China – thus, from the perspective of the UN, Taiwan was not evicted, but replaced with the “legitimate” representative of China (cf. Hamilton 2004).

<sup>9</sup> See [http://www.wto.org/english/thewto\\_e/acc\\_e/acc\\_e.htm](http://www.wto.org/english/thewto_e/acc_e/acc_e.htm) (11 May 2010).

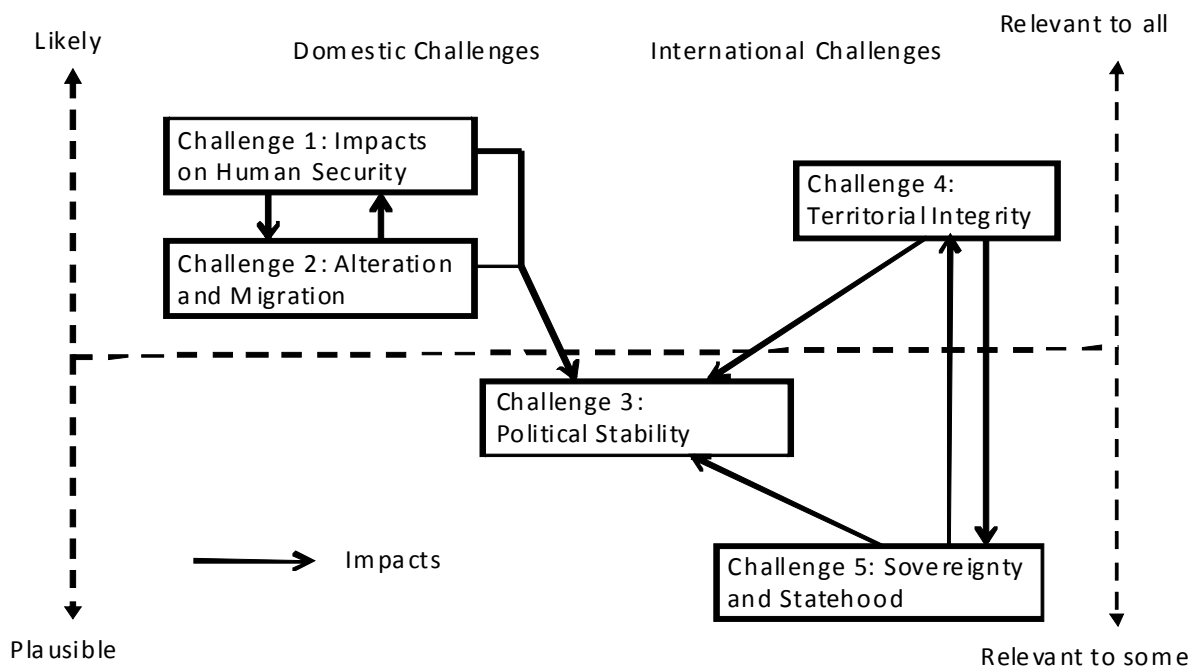
of islands may become a special case in international law and have no practical effect on the (non-)recognition of other states.

However, island states may become on the goodwill of other states to house their populations and governmental structures. Actually, this may make hosting island governments attractive for other states due to the ensuing dependency and potential privileged access to resources: The Maldives currently negotiate with India on a relocation, with India likely receiving access to the Maldives substantial EEZ in exchange (Paskal 2010).

### Reflecting on the Challenges and Opportunities of Climate Change

The Pacific island states will be particular impacted by climate change due to their vulnerability to sea-level rise and their limited resource base. Five major challenges have been identified for the Pacific islands, which will challenge them domestically and internationally. However, not all countries will be affected equally: Some challenges, such as SLR leading to potential changes in maritime territory will impact all island states. But only few, particular low-lying island states, will be threatened in their sovereignty and statehood. Similarly, while all face challenges to human security, not all may experience political instability as a result. However, political stability may be impacted by all challenges of climate change. If a country becomes unstable and no longer capable to respond to the other challenges, it may create a feedback loop leading to an exacerbation of all other challenges – and thus diminish the capacity of a country to peacefully mediate domestic and international conflicts. In case of an outbreak of violent conflict, this may have further implications for territorial integrity and sovereignty of the island states, as their capacities to reassert both diminishes.

Figure 1 summarizes the five main challenges for security:



The impacts of climate change will also reveal that current international structures and legislations are not well adapted to environmental change (see Paskal 2010). This includes not only the UN Convention on the Law of the Sea, but also what defines statehood and which entity is attributed the privileges of sovereignty. Possibly, the island states may become a special case, which do not fit in current international law. This opens the possibilities for conflict and disputes, particular when it comes to access to maritime territories.

These developments are plausible and expectable. However, difficult domestic socio-economic situations leading to frictions within societies or international border disputes are not new issues. Most likely, early recognition and action on adaptation to avoid that domestic stresses overwhelm local governing capacity may defuse tensions. Also, as the sections above on the flexibility of states in recognizing other states have exhibited, finding agreements with neighboring states may defuse tensions and conflict potentials and finding a pragmatic solution to sovereignty issues. Both will require the necessary political will on behalf of the concerned stakeholders.

Indeed, there is the possibility to turn the challenges into opportunities for further development: The migration from outer islands to main islands may support developing necessary economies-of-scale.<sup>10</sup> While questionable if they could ever become competitive on international markets, it may reduce the transactions costs within island states. Finding a sustainable solution for potential disputes due to customarily landownership is paramount for this and may defuse related conflict potentials. Another emerging opportunity arises from the challenge of sea-level rise and building disaster-resilient communities: Coping with this challenge will require innovation and education in the first place. The example of Kiribati could serve as a blueprint for educational programs on other islands. This knowledge could also become an economic asset, as many countries in the world and hundreds of millions face the risk of coastal erosion and sea-level rise and will be in demand of suitable solutions.

Lastly, taking advantage of the large EEZ may provide also much needed funds as global resource demands are likely to continue to grow for the foreseeable future. The Pacific Island Forum Secretariat as regional organization may provide a platform to mutually agree on maritime territories and fix them in mutual agreement and develop a common monitoring system. To avoid the risks of corruption, they could similar to states such as Uganda (see Westerkamp/Houdret 2010), approach countries like Norway in an effort to identify best practices to find a transparent mechanism to develop sovereign wealth funds for the good of society. They could also serve to support reconstruction, develop monitoring capacities for EEZs and mitigating against global price fluctuations for important goods such as food and energy. Of course, deep sea mining pose the risks of environmental disasters. However, as the case of the Deepwater Horizon oil spill in April 2010 shows, implementing existing standards may already have sufficed to avoid the oil spill (NYT 2010).

Given the current limited capacities of island states to monitor the maritime area as well as the smallness of their economies, they will require external aid in turning the challenges of climate change into opportunities. The adaptation funds within the United Nations Framework

---

<sup>10</sup> The authors would like to thank Halvard Buhaug for this idea.

Convention on Climate Change may provide an initial start and appropriate also to defuse conflict potentials (see Tänzler et al. forthcoming). However, significant amounts of funds will be necessary, which will require involvement by international financial institutions but also extra-regional entities which are less involved in regional rivalries such as the EU are important may provide important contributions here. Norway as neutral state with experience in managing resource wealth has already been mentioned. Such extra-regional stakeholders could also support monitoring and policing the area.

In addition to these immediate issues, more critical and innovative questions arise over the potential future kaleidoscope of international relations as a result of climate change: It may consist of “traditional” sovereign states; several state-like political entities having only limited recognition such as Taiwan or Kosovo and are not member of any international organization; supra-national entities such as the European Union; plus potentially island states losing their territory but remain recognized as sovereign states. These entities may have various memberships, being members of bodies such as WTO, but not the UN (e.g. the EU), or neither of them despite having state-like properties (such as Taiwan) or of both despite having lost its territory and authority (such as Maldives, if it becomes submerged). Also, boundaries and territories are likely to shift not only for island states, but virtually all states having a coast; the Arctic being another prominent example of climate-induced uncertainties regarding boundaries and territorial claims.

Various international fora, such as the climate negotiations or the Doha development round, revealed the great diversity of interests and thus also the very limited space for consensus in several policy areas. It appears unlikely that a global consensus on how to deal with the impacts of climate change on sovereignty and territory emerges. Instead, it is quite likely that fragmentation may further increase, with various states choosing to recognize or not recognize states dispossessed by climate change. The main consequence of climate change in the Pacific and elsewhere may thus be that international relations become more complex and approaches to deal with various entities claiming political legitimacy become more pragmatic in absence of global consensus.

Yet, this would erode the global system of nation states symbolized by the United Nations further, making the definition of states ever more arbitrary and blurred. While the fate of the island states may only be one factor among many, it may contribute that international relations are increasingly not resolved along globally recognized principles and laws, but instead largely based on pragmatic, geographically and possibly temporally limited approaches to accommodate these realities. In fact, the suggested actions above to turn the challenges of climate change into opportunities may also fuel regional solutions and approaches with limited global applicability. While such regional approaches would open up possibilities for developing innovative, more reflective and adequate institutions and mechanism on a regional level, this global devolution may also bear the risk of fracturing international solidarity in times when the challenges of climate change would require global, coordinated responses.

## List of Abbreviations

EEZ	Exclusive Economic Zone
EU	European Union
FSM	Federated States of Micronesia
ICRC	International Committee of the Red Cross
IPCC	Intergovernmental Panel on Climate Change
PNG	Papua New Guinea
SMOM	Sovereign Order of the Military Hospitaller Order of St John of Jerusalem, of Rhodes and of Malta
TFG	Transitional Federal Government
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
WTO	World Trade Organisation

## References

- Allison, I., N.L. Bindoff, R.A. Binschadler, P.M. Cox, N. de Noblet, M.H. England, J.E. Francis, N. Gruber, A.M. Haywood, D.J. Karoly, G. Kaser, C. Le Quéré, T.M. Lenton, M.E. Mann, B.I. McNeil, A.J. Pitman, S. Rahmstorf, E. Rignot, H.J. Schellnhuber, S.H. Schneider, S.C. Sherwood, R.C.J. Somerville, K. Steffen, E.J. Steig, M. Visbeck, A.J. Weaver 2009: The Copenhagen Diagnosis. Updating the World on the Latest Climate Science. Available at <http://copenhagendiagnosis.org/> (24 November 2009).
- Asian Development Bank 2009: Asian Development Outlook. Available at <http://www.adb.org/Documents/Books/ADO/2009/ado2009.pdf> (4 November 2009).
- Asian Development Bank 2009a: Annual Report: Pacific. Available at [http://www.adb.org/documents/reports/annual\\_report/2009/adb-ar2009-v1-chap9.pdf](http://www.adb.org/documents/reports/annual_report/2009/adb-ar2009-v1-chap9.pdf) (15 May 2010).
- Booth, Heather et al. 2006: Population Pressures in Papua New Guinea, the Pacific Island Economies, and Timor Leste. Background Paper. Washington D.C., World Bank.
- Barnett, Jon and Neil Adger 2003: Climate Dangers and Atoll Countries. In: *Climate Change* 61: 321-337.
- Barnett, Jon and Heidi Ellemor 2007: Niue after Cyclone Heta. In: *Australian Journal of Emergency Management* 22:1, 3-4.
- Bradbury, Mark 2008: *Becoming Somaliland*. Bloomington: Indiana University Press.

- Brown, Oli 2008: The numbers game. Available at <http://www.fmreview.org/FMRpdfs/FMR31/08-09.pdf> (15 December 2008).
- Brzoska, Michael 2008: Der konfliktträchtige Klimawandel – ein Sicherheitsproblem? In: Andreas Heinemann-Grüder, Jochen Hippler, Markus Weingardt, Reinhard Mutz und Bruno Schoch (eds) 2008: Friedensgutachten 2008. Münster: LIT, 195-206.
- Buhaug, Halvard, Nils Petter Gleditsch and Ole Magnus Theisen, 2008: Implications of Climate Change for Armed Conflict. Washington, DC: World Bank.
- Burke, Marshall B., Edward Miguel, Shanker Satyanath, John A. Dykema and David B. Lobell 2009: Warming increases the risk of civil war in Africa. In: Proceeding of the National Academy of Sciences 106:49, 20670-20674.
- Carius, Alexander and Achim Maas 2009: Climate Change and International Security. Technical Report. London: HTSPE.
- Carius, Alexander, Achim Maas and Janina Barkemeyer 2009: Climate Change and Security. Two Scenarios for the Indian-Pacific Ocean Island States. Brussels: European Commission.
- Carius, Alexander, Dennis Tänzler and Achim Maas 2008: Climate Change and Security – Challenges for German Development Cooperation. Eschborn: GTZ.
- CFR without date: Montevideo Convention on Rights and Duties of States. Available at [http://www.cfr.org/publication/15897/montevideo\\_convention\\_on\\_the\\_rights\\_and\\_duties\\_of\\_states.html](http://www.cfr.org/publication/15897/montevideo_convention_on_the_rights_and_duties_of_states.html) (20 May 2010).
- Charney, Jonathan 1999: Rocks that Cannot Sustain Human Habitation. In: The American Journal of International Law 93:4, 863-878.
- Chasek, Pamela 2009: Mind the Gap – Confronting the MEA Implementation Gap in the Pacific Island Countries. Paper submitted to the International Studies Association 50th Convention New York, NY, 15-18 February 2009. Available at [http://www.sprep.org/att/irc/ecopies/pacific\\_region/448.pdf](http://www.sprep.org/att/irc/ecopies/pacific_region/448.pdf) (9 November 2009).
- CNA 2007: National Security and the Threat of Climate Change. Available at <http://securityandclimate.cna.org/> (30 July 2007).
- Corriere della Sera 2002: The Knights of Malta at Service for the Poor. Interview given by the Grand Master of the Order of Malta, Fra' Andrew Bertie to Ludina Barzini, journalist of "Corriere della Sera", on the occasion of the official visit to the President of Italian Republic, Carlo Azeglio Ciampi. Available at <http://www.orderofmalta.org/news/en/139/%E2%80%9Cthe-knights-of-malta-at-the-service-of-the-poor%E2%80%9D> (20 May 2010).
- Crawford, Alec, Arthur Hanson and David Runmills 2008: Arctic Sovereignty and Security in a Climate-changing world. Available [http://www.iisd.org/pdf/2008/arctic\\_sovereignty.pdf](http://www.iisd.org/pdf/2008/arctic_sovereignty.pdf) (10 December 2008).
- Deepwater Horizon Response 2010: Ongoing Response Timeline. Available at <http://www.deepwaterhorizonresponse.com/go/doc/2931/543771/> (25 May 2010).

- Dobell, Graeme 2007: China and Taiwan in the South Pacific: Diplomatic Chess versus Pacific Political Rugby. Policy Brief. Sydney: Lowly Institute for International Policy.
- EU 2008: Climate Change and International Security. Paper from the High Representative and the European Commission to the European Council. S113/08, 14 March 2008. Available at [http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/reports/99387.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf) (3 July 2009).
- EU 2006: EU Relations with the Pacific Islands – a strategy for a strengthened partnership. Commission to the European Council. SEC 642/06, 29 May 2006. Available at [http://ec.europa.eu/development/icenter/repository/strategy\\_pacific\\_2006\\_en.pdf](http://ec.europa.eu/development/icenter/repository/strategy_pacific_2006_en.pdf) (30 October 2009).
- Gleditsch, Nils Petter and Ragnhild Nordås 2009: Climate Change and Conflict. A Critical Overview. In: Die Friedenswarte 84:2.
- Greenpeace 2006: Plundering the Pacific. Summary of findings of Greenpeace joint enforcement exercises with FSM and Kiribati, September 4<sup>th</sup> – October 23<sup>rd</sup> 2006. Available at <http://oceans.greenpeace.org> (25 June 2010).
- Haldén, Peter 2007: The Geopolitics of Climate Change. Stockholm: FOI.
- Hamilton, Jason 2004: An Overview of the Legal and Security Questions Concerning Taiwanese Independence. In: International Law Review 1:1, 91-101.
- ICG 2008: Somalia: To Move Beyond the Failed State. Africa Report N°147. Brussels: International Crisis Group.
- ICG 2006: Somaliland: Time for African Union Leadership. Africa Report N°110. Brussels: International Crisis Group.
- Lee, James R. 2009: Climate Change and Armed Conflict. Hot and Cold Wars. London and New York: Routledge.
- Leuprecht, Christian 2008: Migration as the Demographic Wild Card in Civil Conflict: Mauritius and Fiji. Available at [http://www.wilsoncenter.org/topics/pubs/ECSPReport13\\_Leuprecht.pdf](http://www.wilsoncenter.org/topics/pubs/ECSPReport13_Leuprecht.pdf) (10 May 2010).
- Lo, Bobo 2008: Axis of Convenience. Moscow, Beijing and the New Geopolitics. London: Chatham House.
- Luetz, Johannes 2008: Planet Prepare. Preparing Coastal Communities in Asia for Future Catastrophes. Asia Pacific Disaster Report. Bangkok: World Vision.
- Maas, Achim, Chad Briggs, Vicken Cheterian, Kerstin Fritzsche, Bernice Lee, Cleo Paskal, Dennis Tänzler and Alexander Carius 2010: Shifting Bases, Shifting Perils. A Scoping Study on Security Implications of Climate Change for the OSCE Region. Berlin: Adelphi Research.
- Mimura, Nobuo et al. 2007: Small islands, in IPCC: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge:



- Cambridge University Press, 687-716. Available at <http://www.ipcc-wg2.gov/AR4/website/16.pdf> (11 November 2009).
- NYT 2010: Gulf of Mexico Oil Spill (2010). Updated May 24, 2010. Available at [http://topics.nytimes.com/top/reference/timestopics/subjects/o/oil\\_spills/gulf\\_of\\_mexico\\_2010/index.html](http://topics.nytimes.com/top/reference/timestopics/subjects/o/oil_spills/gulf_of_mexico_2010/index.html) (25 May 2010).
- Pacific Islands Forum Secretariat 2008: Customary Land Management and Conflict Minimisation: Guiding Principles and Implementation Framework for Improving Access to Customary Land and Maintaining Social Harmony in the Pacific. Available at <http://www.forumsec.org.fj/resources/uploads/attachments/documents/LMCM%20synthesis%20report%20COMPLETE.pdf> (2 May 2010).
- Paskal, Cleo 2010: *Global Warring. How Environmental, Economic and Political Crisis will redraw the World Map*. Toronto: Key Porter Books.
- Paskal, Cleo 2010a: Strange case of disappearing island. Available at [http://www.nzherald.co.nz/world/news/article.cfm?c\\_id=2&objectid=10635956](http://www.nzherald.co.nz/world/news/article.cfm?c_id=2&objectid=10635956). (20 May 2010).
- Rayfuse, Rosemary 2009: *W(h)ither Tuvalu? International Law and Disappearing States*. University of New South Wales Faculty of Law Research Series Paper No. 9. Available at <http://www.austlii.edu.au/au/journals/UNSWLRS/2009/9.html> (20 May 2010).
- Rona, Gabor 2004: *The ICRC's Status. A Class of its Own*. Available at <http://www.icrc.org/web/eng/siteeng0.nsf/html/5W9FJY> (20 May 2010).
- Schneckener, Ulrich (ed) 2004: *States at Risk. Fragile Staatlichkeit als Sicherheits- und Entwicklungsproblem*. Berlin: Stiftung Wissenschaft und Politik.
- Singh, Shiv Sahay 2010: New Moore no more: rising sea claims island in Bay of Bengal. Available at <http://www.indianexpress.com/story-print/594929/> (20 May 2010).
- Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.) 2007: *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Available at [http://www.ipcc.ch/publications\\_and\\_data/publications\\_ipcc\\_fourth\\_assessment\\_report\\_wg1\\_report\\_the\\_physical\\_science\\_basis.htm](http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg1_report_the_physical_science_basis.htm) (21 May 2010).
- Tänzler, Dennis, Alexander Carius and Achim Maas forthcoming: *Climate Change Adaptation and Peace*. In: *Wiley Interdisciplinary Review: Climate Change*
- Tänzler, Dennis 2009: *The Challenge of Climate Security in the Arctic Region*. In: *Heidelberg Journal of International Law (HJIL)* 69:3, 695-703.
- Taiwan Government Information Office 2009: *The Republic of China Yearbook 2009*. Chapter 6: Foreign Relations. Available at <http://www.gio.gov.tw/taiwan-website/5-gp/yearbook/ch06.html> (10 May 2010).
- Tsamenyi, Martin and Quentin Hanich 2008: *Addressing Corruption in the Pacific Island States. A Report Prepared for prepared for the IUCN PROFISH Law Enforcement, Corruption and Fisheries Project*. Available at [17](http://www.illegal-</a></p>
</div>
<div data-bbox=)

- fishing.info/item\_single.php?item=document&item\_id=556&approach\_id=25 (25 June 2010).
- UNDP 2009: Human Development Report – Overcoming barriers, human mobility and development. Available at: [http://hdr.undp.org/en/media/HDR\\_2009\\_EN\\_Complete.pdf](http://hdr.undp.org/en/media/HDR_2009_EN_Complete.pdf) (2 November 2009).
- UNDP 2008: The Interface between Climate Change, Disasters and Potential for Conflict in the Pacific – Concept Note, December 2008.
- UNSG 2009: Climate Change and its Possible Security Implications. Report of the UN Secretary-General. Available at <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N09/509/46/PDF/N0950946.pdf?OpenElement> (6 November 2009).
- WBGU 2007: World in Transition – Climate Change as a Security Risk. Berlin and Heidelberg: Springer.
- Webb, Arthur and Paul Kench 2010: The dynamic response of reef islands to sea-level rise: Evidence from multi-decadal analysis of island change in the Central Pacific. In: Global and Planetary Change, doi:10.1016/j.gloplacha.2010.05.003.
- Wesley-Smith, Terence 2007: China in Oceania: New Forces in Pacific Politics. Available at [http://www.eastwestcenter.org/fileadmin/stored/pdfs/pip002\\_1.pdf](http://www.eastwestcenter.org/fileadmin/stored/pdfs/pip002_1.pdf) (10 May 2010).
- Westerkamp, Meike and Annabelle Houdret 2010: Peacebuilding across Lake Albert. Reinforcing Environmental Cooperation between Uganda and the Democratic Republic of Congo. Brussels: European Commission.
- Yamamoto, Lilian and Miguel Esteban 2010: Vanishing Island States and sovereignty. In: Ocean & Coastal Management 53, 18-26.
- Znamenski, Andrei 2009: History with an Attitude: Alaska in Modern Russian Patriotic Rhetoric. In: Jahrbücher für Geschichte Osteuropas 57, 346-373.