ARTIFICIAL ISLANDS AND STRUCTURES AS A MEANS OF SAFEGUARDING STATE SOVEREIGNTY AGAINST SEA LEVEL RISE. A LAW OF THE SEA PERSPECTIVE.

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Abstract

According to reliable scientific data, Sea Level Rise due to Climate Change, is a fact. Amongst various social, economic and legal implications, the issue of State Sovereignty is one of the least taken into account. Certain methods, including the use of Artificial Islands and Structures (A.I.S.), for tackling the problem of gradual sinking of lands, especially in Small Island and Low Lying states, are proposed or already deployed (e.g. the "sovereignty marker", Yamamoto and Esteban, 2010). The use and status of A.I.S. has been dealt with only scarcely by the UNCLOS. On the other hand, environmental and safety issues have been much more thoroughly elaborated on national and regional level, but only for exploration and exploitation platforms.

The use of A.I.S., as a means of conserving Territorial Sovereignty over vanishing areas, is an upcoming aspect, which is yet to be taken under consideration by both scientific community and policy makers. Artificial Islands as human habitats, Land Reclamation Projects, Sovereignty Markers for submersing islands, are some of the most noteworthy ideas. The lack of an integrated and coherent framework on their legal status acts as a setback for their adoption as an effective means against the problems that Sea Level Rise poses on Territorial Sovereignty.

The scope of this presentation is to highlight the possible uses of A.I.S. vs. Sea Level Rise, to underline the lack of international legal framework concerning their deployment and use and to present several legal options and actions that should be undertaken in order to promote the use of A.I.S.

1. Introduction - The Problem of Sea Level Rise

It is beyond scientific doubt that climate change-caused sea level rise is a problem to be faced in the immediate future. According to reliable scientific data (IPCC Reports 1990, 1995, 2001 and most important IPCC Report 2007) the rise can vary between

0,18 and 0,58 meters[1], depending on areas and the rise of temperature in the next years. Such a level of rising, despite looking small can seriously affect low lying areas, such as atoll islands and river deltas, worldwide[2]. The areas bound to be more heavily affected are islands and coastal zones.

Consequences of this rise to local populations are both multifaceted and of major importance. Economic instability of coastal zones, natural disasters and population displacement are few of the most obvious ones. There are also ensuing problems on state level. The higher cost of civil protection, the inevitable loss of land areas to the sea and possible conflicts with other states are again the more obvious of problems[3]. An example of possible upcoming state conflicts is the ITLOS Case of Bangladesh vs. Myanmar, relating to the delimitation of maritime boundary in the Bay of Bengal, an area among the most heavily affected by sea level rise and flooding[4].

In this paper the major discussion issue will be the problem of land loss from the perspective of States and the deployment of Artificial Islands and Structures as a possible climate change adaptation solution. Presently the answer to the land loss of coastal zones is the use of land preservation and land reclamation techniques. Despite their high cost (Japan's cost of preserving the Okinotorishima islets is estimated at 29,3 billion yen so far and the cost of major preservation works in small states like the Maldives would be far beyond their capacity[5]) and their ambiguous effectiveness, as well as their temporary status, these techniques seem to be the way that States respond to land loss[6]. Land loss is important, especially to island States and low lying coastal States, because it can lead to serious sovereignty loss, due to the movement of maritime boundary baselines. In extreme cases (or not so extreme since a great deal of island States are threatened) this land loss can lead to the complete disappearance of a State, as it was presented by Tuvalu's Representative last December in COP 15 negotiations in Copenhagen[7]. In order to respond to this challenge, States are keen to

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[1] See Bindoff NL, et al. Climate change 2007: the physical science basis. Contribution of Working Group I to the 4th Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press; 2007, Solomon S, et al. Climate change 2007: the physical science basis. Cambridge University Press; 2007. Contribution of Working Group I to the 4th Assessment Report of the Intergovernmental Panel on Climate Change, and Meehl, et al. Global climate projections. Climate change 2007. The Physical Science Basis. Contribution of Working Group 1 to the 4th Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press; 2007.

[2] See Yamamoto, L., Esteban, M., Vanishing Island States and sovereignty, *Ocean & Coastal Management, vol. 53, pp 1-9.*

[3] On the subject of conflicts see Lusthaus, J., Shifting Sands: Sea Level Rise, Maritime Boundaries and Inter-state Conflict, *Politics, vol. 30, pp 113–118.*

[4] See ITLOS/Press 140 of 16 December 2009 and Schofield., Cl., Arsana, I.M.A., Beyond the Limits?: Outer Continental Shelf Opportunities and Challenges in East and Southeast Asia, *Contemporary Southeast Asia: A Journal of International and Strategic Affairs, vol. 31, Number 1, pp 47-48.*

[5] See Yamamoto & Esteban op.cit. pp. 7. The issue of developing island States and the unequal cost of their land survival due to climate change sea rise is one of moral and economical importance. A new international climate change agreement should include financial aid for adaptation measures as part of its adaptation policies.

[6] One aspect of land reclamation through artificial means is the effect on the surrounding marine environment. See Soons, A.H.A., The Effects of a Rising Sea Level in Maritime Limits and Boundaries, *Netherlands International Law Review, vol 37, pp 222.* More on the subject will be mentioned on 2.2.

[7] {http://www.youtube.com/watch?v=YgMTgQIDiFA} (accessed at August 23, 2010).

spend major amounts of money, to ensure that they minimize the potential economic and sovereignty loss. If one wanted to graphically present the above procedure, it would look like this.

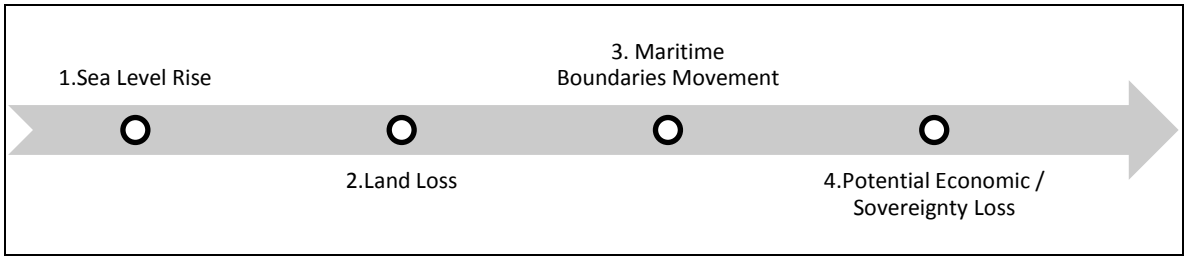

Chart 1: Sea Level Rise and Consequences

Since States cannot interfere and stop the procedure in initial stages (1 and 2) they try to postpone the procedure before it reaches stage 3. This is where this paper wants to focus.

Eminent scholars (Caron 1990 & 2008, Soons 1990, Kwiatkowska & Soons 1990) suggest that the threat posed by sea level rise to maritime zones/ baselines/ coasts should be tackled through *legal – institutional adaptation* (namely fixed baselines or outer limits). Part of this legal – institutional adaptation can be the deployment of Artificially Island and Structures (AIS) not only theoretically but as part of a future adaptation strategy.

On the other hand the deployment of AIS does not seem to be a fit-for-all situation, but can be a viable solution in special cases such as: preservation of fragile/ unique ecosystems, protection of highly fruitful/ strategic economic onshore and offshore activities, preservation of land sovereignty and habitats (e.g. cases for which the loss of land is of vital importance and not replaceable). Apart from sea level rise, other (usual) natural phenomena (notably soil erosion, deltaic formations, yearly melting of ice covered coasts) can cause alterations to the coastlines, thus posing the issue of "ambulatory" or non fixed baselines[8] as critical for defining the limits of state sovereignty. AIS could also serve as solutions to such events under a number of prerequisites. This will be examined on the Regime Suggestions and Perspectives part of this paper.

2. Contemporary Theory and Practice for the use of AIS for Climate Change Adaptation Measures regarding National Sovereignty

2.1. Introduction

Artificial Islands and Structures are already being used for various purposes. This paper examines the use of AIS as potential part of climate change and sea level rise adaptation measures. Therefore, focus will be given to:

[8] On climate change and its possible effects on maritime boundaries see Caron, D., D., *Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid Conflict, in* Seoung-Yong Hong and Jon M. Van Dyke (eds.) Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea, Brill Publ., 2009

- AIS used for Land Preservation/ Reclamation
- Artificial Islands and Structures as Human Habitats and
- Use of AIS as Sovereignty Markers.

2.2. Land Preservation/ Reclamation

As mentioned before, land preservation and reclamation is currently the most usual technique against sea level rise. The use of artificial islands and structures is a popular method for land preservation and reclamation, especially in South and South East Asian seas. There, the small size of island states creates spatial needs that are difficult to satisfy differently. Reclamation projects of AIS based on smaller islands is the usual case especially for major construction works such as airports or harbors[9]. Major examples of such activities are in Hong Kong, Singapore and the Maldives. The Hong Kong International Airport lies on an artificial island created on two smaller islands (which made up 25% of the surface area of the airport's platform)[10]. In Singapore, based on a number of small islands of less than 10 km^2, Jurong Island (reclaimed land area of 32km^2) was formed to home major petrochemical installations and a power plant. Finally in Maldives, next to the capital of Male, the local government created on the Kaafu Atoll the artificial island of Hulhurmale, to cover future needs on terms of housing, industrial and commercial development. The island also hosts the Male airport, and in contrast to the natural island of Male (which stands at maximum height at 1m above sea level) stands at 2m above sea level, in order to face a possible sea level rise[11].

Preservation of low lying areas and islands through artificial structures usually includes large protection works of high cost[12] and dubious results. As noted in Yamamoto & Esteban such works can have negative results in economic terms especially in heavily tourist-dependent areas plus are eventually temporary. Such practice can also cause major international disputes; especially in cases were the original land to be preserved is already cause of international consern. The case of the Japanese Okinotorishima islets (or rocks depending on the viewpoint) is the best known. In this case the existence of the twin islets provides Japan with an EEZ area of 400.000 km^2. Thus the Japanese government makes serious preservation efforts to make sure the islets survive natural wave and wind erosion, despite the Chinese claim that the Okinotorishima islets are rocks and the Japanese works are so extended that they could even be regarded as artificial islands[13]. This is case might be the first of several to follow in the future, especially if the less optimistic scenarios on sea level rise do apply, and more areas start "sinking" below sea level.

2.3. Artificial Islands and Structures as Human Habitats and Venues of Economic Activities

[9] See Artificial Islands of the World Report, available at {http://www.ead.ae/Tacsoft/FileManager/Quarterly/Artificial%20Islands/Artificial%20Islands%20of%20the%20World%20FINAL.pdf} (accessed at August 23, 2010).
[10] Ibid.
[11] Ibid.
[12] Yamamoto & Esteban op.cit. pp. 7 & Schofield & Arsana, Beyond the Limits op. cit. pp 46.
[13] On the case of Okinotoroshhima and its various aspects see Schofienld & Arsana op.cit. pp. 45-47 and Yamamoto & Esteban op.cit. pp. 4-6.

Another rapidly developing use of AIS over the last decades, is the use of AIS as human habitats. An idea originating back in the 50's, when offshore AIS used as radio stations first made their appearance in the North Sea and further developed during the 1970's with the appearance of famous private owned "states" such as Sealand, Minerva or Atlantis, the habitation of the oceans on AIS now starts to find more acceptable and thus practical applications. Examples of this practice were mentioned at the previous part, as in the case of the artificial island of Hulhurmale which was designed to house the increasing population of the Maldives capital of Male and was intentionally built at 2m above sea level. This shows the potential of the particular use of AIS. Its legal implications will be examined latter in this article. The similar practice of building AIS on Persian Gulf to host tourist installations (The World, The Palm Islands, the Burj al-Arab in Dubai and the Lulu Island in Abu Dhabi are the most renowned[14]) also has to be noted, especially considering the scale of the constructed installations. It's true that their current use is to facilitate tourists but these are samples of AIS used as human habitats.

It's true though, that constructions of such scale create severe environmental pressures, especially in cases such as the Persian Gulf (a semi-enclosed sea according to LOS). This has caused severe complaints from Iranian officials demanding that construction plans of similar AIS should be a subject of agreement between neighboring States[15].

2.4. Sovereignty Markers

The two previously mentioned uses of AIS are part of the contemporary practice of AIS, viewed from a climate change adaptation measures perspective. There is also another possible use, mainly in academic literature, focusing on the use of AIS as "markers" in case of a sea level rise that would submerge parts or even cover completely low lying States (such as Tuvalu, Kiribati and others).

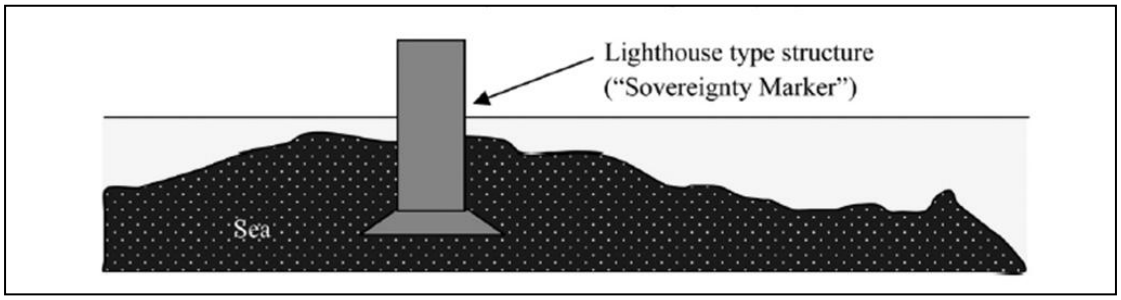

Figure 1: Sovereignty Marker. Source: Yamamoto & Esteban.

This use is part of the academic debate on baselines and the need for a legal institutional adaptation[16] and refers to the construction of permanent AIS to mark the

[14] Op.cit 9.

[15] Bahman Abai Diba, Legal Regime of the Artificial Islands in the Persian Gulf, *Soochow Law Journal*, vol 6, January 2009, available at {http://payvand.com/news/09/sep/1071.html} (accessed at August 23, 2010).

[16] See Soons, A. H. A., op.cit 6, Kwiatkowska, B., Soons, A. H. A., Entitlement to Maritime Areas of Rocks which cannot Sustain Human Habitation or Economic Life of their Own, *Netherlands International Law Review*, 1990 and Caron, D. D., When Law Makes Climate Change Worse:

vanishing states' baselines in order to ensure the non abolition of sovereignty and economic rights.
The exact use of sovereignty markers has not yet been defined. These could mark the baselines of maritime zones. Such a use, if accepted by the states could ensure the continuous possession of maritime zones by states that otherwise would lose parts or all of them[17]. It is however a clearly theoretical practice, since there is no current practice (not even contested one), leaving a possible gap in its application. Future events might prompt the States into such measures, in order to protect national interests.

Use	Examples	Possible Practice Problems & Legal Issues
Land Preservation & Reclamation	Hong Kong Singapore Maldives Okinotoroshima	Land Expansion Abuse Can AIS upgrade former Islands diminuted to Rocks?
Human Habitats & Venues of Economic Activities	Offshore Platform "States" Persian Gulf Artificial Islands	Status of Maritime Zones Are Safety Zones of 500 m enough? Can a State be fully comprised of AIS?
Sovereignty Markers	Theoretical	Can they be used to Generate Maritime Zones?

Chart 2: AIS uses countering Sea Level Rise

The above mentioned uses of AIS can be or are already being used for countering sea level rises. However, there are important issues to solve regarding to AIS before making them part of strategic plan to counter naturally or climate change caused sea level rise. These will be discussed on the next part, which examines the existing legal framework of AIS.

3. AIS Legal Standing in International Law and LOS / Prerequisites and Dangers for Effective Use

3.1. *Categories of AIS*

Even though the status of Artificial Islands and Structures has been included in the Montego Bay Convention, it seems that it was not one of the top priorities through the 3rd UN Conference ob the of the Sea[18]. Several articles refer to them[19]; nevertheless

Rethiniking the Law of Baselines in Light of a Rising Sea Level, *Ecology Law Quarterly*, vol 17, pp. 621-653.

[17] Yamamoto & Esteban, op.cit.

[18] The Geneva Convention on the Continental Shelf, 1958, refers to the construction, maintenance, operation, and decommissioning of "installations and other devices necessary for its exploration and

the term is not being defined. As it will be shown, the universal legal framework deals mainly with A.I.S. commissioned for exploration and exploitation of natural resources purposes, while just a few provisions refer to other uses. On the contrary, safety and environmental regulations have been further elaborated on a regional and national level[20].

The typology of A.I.S. dictates their division into four main categories, according to their use and purpose: i) A.I.S. used for exploration and exploitation of natural resources[21], ii) A.I.S. used for economic activities other than exploration and exploitation of natural resources[22], iii) A.I.S. used for military and state activities[23] and iv) A.I.S. used for scientific research[24].

3.2. UNCLOS

3.2.1. What is an AIS?

The UNCLOS contains several terms that refer to A.I.S.[25]. This variety has been deployed as a means of creating different rights and duties on states, according to the category, thus not signaling an indifference to the uniformity of terms throughout the text[26]. Some working definitions have been adopted by legal experts, in order to shape a commonly understandable term. Soons gives the following terms: "*Artificial Island* refers to constructions created by man's dumping of natural substances like sand, rocks and gravel on the seabed" and "*Installation* refers to constructions resting upon

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the exploitation of its natural resources" (art. 5, para 2), thus excluding the term "island", which was later on incorporated.

[19] With art. 60 being the most important and comprehensive.

[20] Safety and environmental regulations are of critical importance for oil and gas exploitation activities, therefore these issues have been already thoroughly tackled. Customs, fiscal, immigration etc regulations, have gathered little attention, even by the most active, in this field, states. see Esmaeili, H., *The Legal Regime of Offshore Oil Rigs in International Law*, Ashgate Publ., Aldershot, 2001, pp. 146-219 and 103-107, respectively.

[21] E.g. oil, gas and minerals extraction, wind, tidal and current energy production, maritime fisheries etc.

[22] E.g. recreation, human habitats, ports etc.

[23] E.g. military installations and devices, land reclamation projects, prisons etc.

[24] E.g. meteorological devices, biodiversity observatories, research platforms. In this field, also common are the endeavors of International Organizations.

[25] Off-shore installations (art. 11), artificial islands, installations and structures (art. 56, para 1,b,i), platforms or other man-made structures (art. 1, para. 5.5.a), scientific research installations (art. 249, para 1, a). All these terms regard only structures of fixed nature. Floating and semi-fixed structures (e.g. oil rigs, oil platforms, space object launching platforms etc.) do posses a totally different status, quite similar to this of vessels. For similarities and differences between fixed and floating structures, see Wegellein, op.cit., pp. 138-139 and Esmaeilli, op.cit, pp. 12-16.

[26] Though some inconsistencies, deliberate or not, have been noticed. E.g. article 111, para 2, reads "The right of hot pursuit shall apply *mutatis mutandis* to violations in the exclusive economic zone or on the continental shelf, including safety zones around continental shelf installations…", omitting to refer to Islands and Structures, or art. 60, para 3, "…Any installations or structures which are abandoned or disused shall be removed to ensure safety of navigation...", omitting to refer to Islands. However, these omissions do not seem to have as a scope to fragment the content of the term A.I.S. or adopt different sets of rules. By reviewing all the relevant UNCLOS articles, it is obvious that the legislator aims at constructing a coherent set of rules, though some slight variations are clearly introduced, in order to facilitate certain uses and purposes.

the seafloor and fixed there by means of piles or tubes driven into the seafloor, and/ or to concrete structures which become fixed there by there own weight"[27].

3.2.2. Who has the right to construct, operate and enforce jurisdiction?

On the High Seas all states enjoy the "freedom to construct artificial islands and other installations permitted under international law"[28], this being one of the six Freedoms of the High Seas, which are widely recognised as having customary law status. Even though this is a general right, certain rules and restrictions do apply. These tend to become more enhanced as we move towards the coast.

In this point, it is of high importance to make clear the following aspects: a) which state has the right to construct or authorize the construction of A.I.S., b) which state exercises jurisdiction and control over A.I.S., and c) which state is being held responsible for any unlawful actions deriving from A.I.S.

a) Construction

State sovereignty of a coastal state, stemming from its land territory, extends seawards into its *internal waters* and *territorial sea*. In these two zones, the coastal states exercise full and comprehensive sovereignty and hold exclusive rights regarding their use and disposal[29]. Among other rights, the coastal state is the sole responsible to construct or authorise the construction of A.I.S.[30], by domestic or alien persons. The most significant restriction, applying only to the territorial sea, is the coastal state's duty to prevent the hampering of the innocent passage right[31], posed by the construction (and further on, operation) of an A.I.S.

The Exclusive Economic Zone and the Continental Shelf zone, have a similar status, concerning the A.I.S.[32] Coastal states, have the "exclusive right to construct and to authorize and regulate the construction, operation and use of: (a) artificial islands; (b) installations and structures for the purposes provided for in article 56 and other economic purposes; (c) installations and structures which may interfere with the exercise of the rights of the coastal State in the zone"[33], and at the same time these "may not be established where interference may be caused to the use of recognized sea lanes essential to international navigation"[34]. The issue of variety of terms in use is here demonstrated in the most extreme way, as 3 different terms are used to include

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[27] Both definitions found in Soons, A. H. A., *Artificial Islands and Installations in International Law*, Occasional Papers, no 22, Law of the Sea Institute, University of Rhodes Island, 1973, p. 3. It is quite obvious that both terms are purely technical and simplistic. As Honein puts it, the latter is sensible as far as "it is difficult to elaborate more detailed definitions as such definitions would not be comprehensive enough because of the different uses of artificial islands and installations as well as the rapidly changing modern technologies", source: Honein, S. E., *The International Law Relating to Offshore Installations and Artificial Islands, An Industry Report*, Lloyd's of London Press LTD, London, 1991, p. 1. For other terms see also Papadakis, N., *The International Legal Regime of Artificial Islands*, Sijthoff Publ., Leyden, 1977, p. 6.

[28] UNCLOS, art. 87, para d.

[29] The right of innocent passage of foreign vessels through the territorial sea is provided by UNCLOS (and is accepted as customary law), thus differentiating substantially these two zones.

[30] Same rules apply in the case of *archipelagic waters* of archipelagic states, as far as "The sovereignty of an archipelagic State extends to the waters enclosed by the archipelagic baselines" (UNCLOS art. 49, para 1).

[31] UNCLOS, art. 24.

[32] This is evident by the application of UNCLOS article 60 ("*Artificial islands, installations and structures in the exclusive economic zone*") "*mutatis mutandis* to artificial islands, installations and structures on the continental shelf" (according to UNCLOS article 80, "*Artificial islands, installations and structures on the continental shelf*").

[33] UNCLOS art. 60, para 1.

[34] UNCLOS art. 60, para 7.

all possible types of A.I.S., which do posses the same legal status[35]. To sum up, the construction of A.I.S. on the E.E.Z. and the C.S. is subject to prior authorization by the relevant coastal state.

Finally, coming to the High Seas, the absence of state sovereignty in this Area provides for a different approach. The freedom to construct A.I.S. applies only on the International Seabed[36] and it is two-folded, making a distinction between those structures destined for the exploitation of the natural resources of the Area and all the other types of A.I.S. In the first case "such installations shall be erected, emplaced and removed solely in accordance with this Part [XI] and subject to the rules, regulations and procedures of the Authority"[37], while in the second "the erection of artificial islands and other installations for whichever purpose unrelated to the exploration and exploitation of the natural resources of the deep seabed, provided it is for peaceful purpose, would remain free"[38] and subject only to national[39] or regional legislation.

b) Jurisdiction

If A.I.S. are to be used more massively as human habitats or venues of economic activities, it is of critical importance to determine the authority and the length of jurisdiction to be exercised over them, since a meshwork of social, economic and administrative relations are going to emanate from daily life and activities taking place on them.

The procedure of construction and/ or authorization thereof, of an A.I.S. is of critical significance in order to define which state exercises jurisdiction[40] and control over an Artificial Island or Structure. Moving seawards again, the coastal state is entitled to

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[35] There has been a discussion on the significance of the terminology used in this article and whether it is exclusive or inclusive. We share the view that, as far as every A.I.S. is capable to "interfere with the exercise of the rights of the coastal State in the zone" since it appropriates a specified area on the seabed and the water column, art. 60 applies to all types of A.I.S. Honein, is also pursuant to this conclusion (see Honein, ibid, p. 11).

[36] While coastal states retain their exclusive right in cases that their C.S. extends further than the outer limits of their Exclusive Economic Zones and subjacent to the High Seas. If a third state wishes to construct an A.I.S. in this area, it ought to receive permission by the coastal state, irrespectively of the type of activity conducted on it. See also, Honein, ibid, p. 31.

[37] UNCLOS, art. 147, para 2.a. It is important to highlight that this right is granted not only to states, but also to persons (see UNCLOS, art. 137, para 3 "No State or natural or juridical person shall claim, acquire or exercise rights with respect to the minerals recovered from the Area except in accordance with this Part").

[38] See Honein, op.cit., p. 30.

[39] In contrast to the right of erecting A.I.S. for exploration and exploitation purposes, the relevant Freedom of the High Seas is conferred upon only to states and not persons. If a natural or juridical person desires to exercise this right, it is obligatory to ask for a permission of a state which, according to its legislation, will authorise the construction and operation and therefore it would assume international responsibility for any unlawful acts associated to it. For the enjoyment of the Freedoms of the High Seas by individuals, and esp. the Freedom of Navigation, see Wendel, Ph., *State Responsibility for Interferences with the Freedom of Navigation in Public International Law*, Springer, Berlin, 2007, pp. 84-87.

Proceeding to such activities without having first granted permission by a state, will have major implications since, according to Papadakis, "persons and objects on the high seas which are not shown to have a certain national character would probably assimilated to stateless ships" (source: Papadakis, ibid, pp. 137-138). For the legal consequences of being a *stateless vessel*, see Guilfoyle, D., *Shipping Interdiction and the Law of the Sea*, Cambridge University Press, Cambridge, 2009, 16-18.

[40] According to Shaw, "Jurisdiction concerns the power of the state under international law to regulate or otherwise impact upon people, property and circumstances and reflects the basic principles of state sovereignty, equality of states and non-interference in domestic affairs". Source: Shaw, M. N., *International Law*, 6th ed., Cambridge University Press, Cambridge, 2008, p. 645.

regulate all kind of activities taking place on A.I.S. positioned in its *internal waters* and *territorial sea*, due to the fact that the domestic jurisdiction principle applies. The UNCLOS is much more verbal on the issue of jurisdiction, for the next two zones. Art. 60, para 2 (and art. 80) states that "The coastal State shall have exclusive jurisdiction over such artificial islands, installations and structures, including jurisdiction with regard to customs, fiscal, health, safety and immigration laws and regulations". In this sentence, two are the key words. Firstly, the word *including*, which implies that the list that follows in only indicative, and secondly, the word *exclusive*, which reflects the will of the legislator to guarantee the preclusive essence of this rule.

The absence of territorial jurisdiction in the Area, sets different standards for the attribution of state jurisdiction. Even though not officially recorded, the form of jurisdiction over an A.I.S. is compared to the "flag state jurisdiction" that applies to vessels[41], implying that the state that constructs (or authorizes the construction) and operates the A.I.S. has the right to exercise exclusive jurisdiction on it, for all kinds of events and activities and events, even on foreign persons. If the activities carried out on it are related to the natural resources of the Area, then special regulations do apply[42]. Besides that, in the latter case, if the operator is a natural or juridical person, state jurisdiction of the authorizing state applies[43].

c) International Responsibility

The attribution of International Responsibility[44] to a State, for wrongful acts taking place on A.I.S. is subsequent to its State Jurisdiction status. As it will be discussed in the following part, International Responsibility regulations concerning A.I.S. have, mainly, been elaborated for the acts of operational and accidental marine pollution. Thus, a different sets of rules must be crafted, should the A.I.S. are to host or facilitate activities other than exploitation of natural resources.

In fact, general features of the International Responsibility principle currently do apply to all kinds of A.I.S., irrespectively of their position. Responsibility of a state could be involved where it is established that the injurious consequences are the result of a wrongful act committed by a state's organ, or where the inadequacy of the measures taken by the state's authorities, and/ or implied consent of these authorities, allows such an organ to commit an act leading to harmful consequences. Therefore, where a state is in a position to exercise its effective jurisdiction and authority, it ought to prevent and control any wrongful conduct emanating from the operation of artificial islands and structures, even when owned by individuals, since only this state has the right and duty to impose regulations deriving from international law.

3.2.3. What is their impact on baselines/ maritime delimitations?

[41] For discussion, see Honein, op.cit., pp. 36-43 and Papadakis, op.cit., pp. 127-128.

[42] Meaning, Part XI of the UNCLOS, plus regulations produced by the International Seabed Authority.

[43] It is far more easy to determine a natural person's nationality, than a juridical one's. When the *national character* of such a person (e.g. a multinational company or a consortium of companies) is not self-evident, then "an agreement might be reached whereby the [International Seabed] Authority would delegate its jurisdiction in favour of a state which hence would be permitted to exercise exclusive jurisdiction and control over the installation in question", source: Honein, ibid., p. 37.

It is sensible that if the nationality of such an endeavor is not clear, then the I.S.A. ought not to grant permission for any activity.

[44] According to Shaw, op.cit., p. 778, "whenever one state commits an internationally unlawful act against another state, international responsibility is established between the two. A breach of an international obligation gives rise to a requirement for reparation". For a deep insight, see Crawford, J., *The International Law Commission's Articles on State Responsibility. Introduction, Texts and Commentaries*, Cambridge University Press, Cambridge, 2002.

All maritime zones, which are directly connected to coastlines and deemed to project the continuity of land territory into the maritime space, have been established in order to ensure the rights of coastal states. These are drawn seawards from the *baselines,* which can be either *natural* or *straight,* while the landward space formulates the *internal waters* zone.

It is beyond doubt that A.I.S are not entitled to maritime zones, since they do not posses the status of natural islands[45]. This concept has been largely introduced in order to deteriorate the possibility of abuse of A.I.S. and to prevent their massive construction, intended to create or expand the maritime zones of coastal states[46]. On the other hand, the legislator did not pass over the issue, since states that construct A.I.S. hold the right to draw *safety zones* around them[47] (irrespectively of their position) in order to provide both for the safety of navigation and the structures themselves[48].

Article 12 of UNCLOS contains a rule that it is worth to be studied from an A.I.S. point of view. It refers to *roadsteds*[49], whose position and extent ought to be clearly identified[50], which are assimilated to the territorial sea, even if they are wholly or partly outside the outer limit of the territorial sea of the coastal state[51].

Unambiguously, roadsteds are maritime spaces and not structures, and it would be interesting to see what acceptance, concerning the territorial sea, would gain the construction of an A.I.S. within it.

A.I.S. might not be capable of generating maritime zones, but they are in position to affect the drawing of *baselines*[52]. Four cases are to be taken into concern:

1. Low-tide elevations[53]. These can serve as basepoints for straight baselines if "lighthouses or similar installations which are permanently above sea level have been

[45] UNCLOS, art. 60, para 8 "Artificial islands, installations and structures do not possess the status of islands. They have no territorial sea of their own, and their presence does not affect the delimitation of the territorial sea, the exclusive economic zone or the continental shelf".

[46] Bearing in mind that the Freedoms of the High seas can be enjoyed by all kinds of states, if A.I.S. were to generate maritime zones, we might have had to face the awkward phenomenon of land-locked states possessing territorial sea.

[47] These maritime safety zones, can have a minimum length of 500 meters and shall be designed to ensure that they are reasonably related to the nature and function of the structures and not to interfere with navigation. All the sea-faring nations must respect these safety zones and shall comply with generally accepted international standards (see art. 60, paras 4-7). State practice has shown the adoption of a variety of rules ranging from ban of certain activities within the zones (e.g. fishing) to restriction of the right of innocent passage (for details on state practice, see Esmaeili, ibid, pp. 123-125 & 128-129). However, these zones are of temporal character and should cease to exist when the structures are removed (see Honein, ibid, p. 48).

[48] In Section 3, Part II of UNCLOS, it is stated the "The coastal State may adopt laws and regulations, in conformity with the provisions of this Convention and other rules of international law, relating to innocent passage through the territorial sea" (art. 21, para b), thus giving another opportunity for coastal states to regulate uses and navigation around an A.I.S., always in conformity with international law.

[49] "Roadsted is an area near the shore where vessels are intended to anchor in a position of safety; often situated in a shallow indentation of the coast", source: Office for Ocean Affairs and the Law of the Sea, *Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea*, United Nations Publication, Sales No E.88.V.5*, 1989, pp. 60-61.

[50] According to UNCLOS, art. 16, para 1.

[51] UNCLOS, art. 12.

[52] As it will be discussed, this effect does not imply the generation of maritime zones by the A.I.S., rather it was introduced in order to facilitate their smoothest possible designation. Rules that support this view are UNCLOS, art. 13, para 2 and art. 11.

[53] Also known as drying rocks or banks.

built on them"[54]. Although not prominently, this provision is correlated to our topic, since the UN Office for Ocean Affairs and the Law of the Sea[55] recognizes that "installations similar to a lighthouse" can take two forms: a) installations related to the function of lighthouses, by means of warning navigators of danger and assisting them in fixing their position, or b) they could be towers and buildings which look alike a lighthouse *without serving* any purpose specifically connected with navigation[56].

2. Permanent harbour works. Permanent man-made structures[57] built along the coast, which form an integral part of the harbour system may be used as a part of the baseline for maritime zones. On the contrary, "off-shore installations and artificial islands shall not be considered as permanent harbour works"[58].

3. Land preservation techniques[59]. State practice in this field, does not go unattended by legal implications. According to Soons, "artificial conservation of the coastline, including that of islands, is fully permitted under public international law: this is proved by abundant State practice"[60]. This kind of conservation is applicable either in order to prevent total loss of an insular area (inundation)[61] or to prevent the change of island status (diminution to a *rock* – UNCLOS art. 121, para 3), but only under the condition that these techniques are deployed exclusively with the intention to preserve the baseline for the purpose of maritime delimitation[62].

4. Islands situated on atolls[63] and islands having fringing reefs[64]. Both atolls and fringing reefs are natural formations, but *land preservation techniques* can also be applied on them, in order to prevent their loss or to create new land[65]. A loss which apart from its environmental consequences will affect maritime zones, since "the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef"[66]. The area that stands landwards of the baseline is assimilated to the

[54] UNCLOS, art. 7, para 4. A similar provision applies to the drawing of *archipelagic baselines* (UNCLOS, art. 47, para 4). Low-tide elevations could also serve as basepoints when natural baseline system is deployed, but in this case, no special provision is made for A.I.S.

[55] See: Office for Ocean Affairs and the Law of the Sea, op.cit., p. 25.

[56] The category of Sovereignty Markers could benefit from this interpretation.

Soons supports that such an act, made exclusively for the purpose of preserving the basepoint, may be regarded as permissible. See Soons, A. H. A., The Effects of a Rising Sea Level on Maritime Limits and Boundaries, *Netherlands International Law Review*, 1990, pp. 223.

[57] These harbour works make have the forms of jetties, moles, quays or other port facilities, coastal terminals, wharves, breakwaters, sea walls, etc. Source: Office for Ocean Affairs and the Law of the Sea, op.cit., p. 56.

[58] UNCLOS art. 11.

[59] For relevant state practice, see above, Part 2.2.

[60] Source: Soons, A. H. A., The Effects of a Rising Sea Level on Maritime Limits and Boundaries, *Netherlands International Law Review*, 1990, pp. 222.

[61] See also Papadakis, op.cit., pp. 91-97.

[62] Soons, ibid 60.

[63] Atoll is a ring-shaped reef with or without an island situated on it surrounded by the open sea that encloses or nearly encloses a lagoon. Source: Office for Ocean Affairs and the Law of the Sea, ibid, p. 50. For a typology of atolls, see pp. 5-9 of the aforementioned source.

[64] Fringing reef is a mass of rock or coral which either reaches close to the sea surface or is exposed at low tide and is directly attached to the shore or continental land mass, or located in immediate vicinity. Source: Office for Ocean Affairs and the Law of the Sea, op.cit., p. 60.

[65] See the case of the artificial island of Hulhurmale, in Maldives, above Part 2.2.

[66] UNCLOS, art. 6.

internal waters zone, so coastal states have the right to manage it at will[67], as long as they do not expand the baseline.

3.3. Thematic legal frameworks

Parallel to the general legal framework being set by UNCLOS, several other specific topics are tackled in a more detailed way by other texts[68]. Unfortunately, with this being one of the major relevant legal handicaps, the majority of these regulations concern only *A.I.S. used for exploration and exploitation of natural resources*.

Not unduly, a substantial piece of Marine Environment Protection Law is about *marine pollution* (operational or accidental) and the *decommissioning* of A.I.S. It's true that most of them are being used for oil and gas extraction and the possibilities of serious incidents is more than apparent in a daily basis[69]. The prevailing frameworks are the following, 1) Operational pollution and Decommissioning[70]: OSPAR Convention[71], 2) Accidental Pollution: Civil Liability Convention, 1976 and the Nordic Environmental Protection Convention, 1974.

Last but not least, comes the issue of security of A.I.S. The sole international text referring to this issue is the *Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located On The Continental Shelf* (aka SUA Protocol, 1988)[72] and contains provisions for the protection of A.I.S. against threats such as seizure, acts of violence, destruction and injury/ kill of persons[73], on board or against them. This first attempt to regulate in this field has gained positive comments but it remains far from being a comprehensive attempt since it simply enacts only the "aut dedere aut judicare" principle[74] and applies only to A.I.S. *attached to the sea-bed for the purpose of exploration or exploitation of resources or for other economic purposes*[75].

3.4. Possible Practice Problems and Legal Issues

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[67] Another provision that underpins this is UNCLOS, art. 47, para 7 "For the purpose of computing the ratio of water to land under paragraph l, land areas may include waters lying within the fringing reefs of islands and atolls…".

[68] For the scope of this paper and economy, the most significant paradigms are being presented.

[69] The Deepwater Horizon accident has been characterized as the "September 11th for the environment". Accidents like the *West Atlas* platform, East Timor sea, 2009 and *IXTOC I*, Gulf of Mexico, 1979, should not go unnoticed, not only because of the environmental disaster they caused, but also for the institutional changes they have set off. For a quick insight, see Bourtzis, T., "The Deepwater Horizon Tragedy", *Perivallon 21*, vol 34, 2010, pp.16-17 (*in greek*).

[70] The issue of Decommissioning has been touched upon by IMO, but in an unsatisfactory way. For critics see Brown, E. D., The Significance of a Possible EC EEZ for the Law Relating to Artificial Islands, Installations, and Structures, and to Cables and Pipelines, in the Exclusive Economic Zone, *Ocean Development & International Law*, vol 23, is 2 & 3, 1992, pp. 115-144, esp. 126-130.

[71] See respectively, Doyle, A.B., Pappworth, S.S.R., Caudle, D.D., Drilling and Production Discharges in the Marine Environment, in Orszulik, S. T., *Environmental Technology in the Oil Industry*, 2nd edition, Springer, 2008, pp.155-187, esp. 171-172 and Osmundsen, P., Tveterås, R., Decommissioning of petroleum installations—major policy issues, *Energy Policy*, vol 31, is 15, 2003, pp. 1579-1588, esp. 1580-1581.

[72] This is a Protocol to the Convention for the Suppression of Unlawful Acts of Violence Against the Safety of Maritime Navigation, which entered into force in March 1st 1992 and has 145 contracting parties. Since 2005, SUA Convention has a second Protocol, which entered into force recently (July 28th 2010). For a brief history of the SUA texts see Klein, N., The Right of Visit and the 2005 Protocol on the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, *Denver Journal of International Law & Policy*, vol 35, no 2, pp. 287-332, esp. 287-289.

[73] SUA Protocol 1988, art. 2, para 1.

[74] SUA Protocol 1988, art. 3.

[75] SUA Protocol 1988, art. 1, para 3.

In an attempt to categorize the legal problems arising from the deployment of A.I.S. as a means of safeguarding state sovereignty against sea level rise, we can draw three levels, according to the pertinence of the legal framework.

3.4.1. Abuse of Legal Framework

In the first category, the drawback is the *abuse* of legislation. Certain obligatory regulations do exist, but they are often abused by states, without or with minor repercussions. For our discussion two cases are the most demonstrating, a) Land Expansion practice and b) events of attempting to upgrade the status of a *rock* to this of an *island* or preventing its diminution[76].

An indicative example of land expansion has been taking place since 30 years in Singapore[77], thus changing its normal baseline considerably. This practice is considered to be purely abusive and this is also proved by the fact that "Indonesia has argued, and Singapore has agreed, that Singapore's reclamation works will not impact on the delimitation of the maritime boundary between them"[78].

Upgrading the status of a rock and preventing its diminution follow a totally different mindset. While prevention is considered to be permissible[79], as it is an action that does not intent to expand land and maritime[80] sovereignty[81], upgrading is an act that is being condemned as abusive and expansionist. In most cases, it is really hard to distinguish which of the two practices take place, as well as to find liable scientific data in order to support one or the other position. The case of Okinotorishima is highly illustrative of the controversies[82] that can stem up by this category.

3.4.2. Insufficiency of Legal Framework

One of the major arguments for attributing maritime economic zones to islands was the idea of giving their permanent population the ability to sustain themselves[83]. Permanent residency on A.I.S. was not a concept perceived within the UNCLOS[84], and in combination with the fear of abuse, these venues were only boxed up in *safety zones*. So in the second category the drawback is the *insufficiency* of the legal framework. Since most of today's A.I.S. used as human habitats or economic venues

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[76] Apart from land preservation techniques, this can be achieved with the use of *sovereignty markers*, see part 2.4.

[77] See above, part 2.2.

[78] For an analysis of this topic see Beckman, R., Schofield, Cl., Moving Beyond Disputes Over Island Sovereignty: ICJ Decision Sets Stage for Maritime Boundary Delimitation in the Singapore Strait, *Ocean Development & International Law*, vol 40, no 1, 2009, pp. 21-22.

[79] See Soons, op.cit., pp. 222-223.

[80] It has been calculated that a tiny "island deemed capable of generating EEZ and continental shelf claims had no maritime neighbors within 400 nautical miles, it could generate 125,664 square nautical miles (431,014 km^2) of territorial sea, EEZ, and continental shelf rights. In contrast, if a feature were deemed a mere "rock" incapable of generating EEZ and continental shelf rights, only a territorial sea of 452 square nautical miles (1,550 km2) could be claimed", source: Prescott, J. R. V., Schofield, Cl., *Maritime Political Boundaries of the World*, Martinus Nijhoff Publ., Leiden/Boston, 2005, pp. 248–249.

[81] But rather to prevent it from becoming a *barren rock*, not suitable for habitation or economic activities. For the concept of *barren rock*, see Yamamoto, L., Esteban, M., op.cit.., pp. 4-6.

[82] For China's official reaction, see Schofield, Cl. Arsana. I. M. A., op.cit., p.47.

For two similar cases, see also Park, Ch. - H., The Changeable Legal Status of Islands and "Non-Islands, in Caron, D. D., Scheiber, H. N., (eds), Bringing New Law to Ocean Waters, Martinus Nijhoff Publ., Leiden, 2004, p. 489.

[83] Either on means of self-sustaining or by the means of generating income by exporting the harvested goods.

[84] Since most of its relevant articles concern exploration, exploitation or scientific purposes, thus of non – permanent character.

are built within the internal waters or the territorial sea[85], no particular problems have occurred. But what if A.I.S. hosting large numbers of population start being erected outside these zones, and especially on the High Seas? Would this 500 m. zone be enough to provide for the population's safety and prosperity?

3.4.3. Lack of Legal Framework

Finally, the third category is characterized by the *lack* of an appropriate legal framework. The aforementioned issue goes hand in hand with the issue of founding new states whose land solely comprise of A.I.S. In the past, several attempts have been carried out by individuals[86], but none of them seems to have accomplished its scope, namely the formation of a new state[87]. International law is settled as to when existing states may expand their territory, but is silent on the question of whether or not an individual may acquire territory to set up a new state[88]. While every sovereign state should at least fulfil the four criteria set by the Montevideo Convention[89], Papadakis supports that "individuals and/ or corporations cannot establish new independent States, under existing international law, through the construction of artificial islands. Ultimately, of course, such establishment may be legitimized through general recognition by the existing States"[90]. Though it seems quite clear that the emergence of a state on A.I.S. is, for the time being, impossible, if not illegal, in the future various complex and hybrid situations might arise. For example, what if a person (natural or juridical) decides to create A.I.S., on the High Seas, for exploration and exploitation of multiple natural resources accompanied by a habitat hosting the employers and their families, with a permanent character? Could this attempt claim statehood and would it receive recognition?

The option of creating new land in order to safeguard statehood has been considered mostly on a theoretical level[91], and is an option that may gain acceptance by *vanishing states*[92], since high-lying states seem to be reluctant on the ideas of either hosting vast

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[85] Thus being "protected" by the coastal state's jurisdiction.

[86] E.g. the *Minerva Republic*, the *Sealand Principality*, *Grand Capris Republic* etc. Similar characteristics with those attempts bore the institution of *pirate radio stations* in the High Seas, esp. in the North Sea, and under no authorization by any independent state. Though solely aiming at gain economic profit, these endeavors took the affected states by surprise, since there was no applicable legal framework coping with them. The action taken was, surprisingly, expeditious and effective, either on national, or regional level (see the *European Agreement for the Prevention of Broadcasts Transmitted from Stations Outside National Territories, 1965*, sponsored by the Council of Europe). For a short and comprehensive review of the issue, see Guilfoyle, D., ibid, pp. 170-179.

[87] The *Sealand Principality* is considered to have reached closest to it.

[88] Source: Dennis, Tr. A., The Principality of Sealand: Nation Buliding by Individuals, *Tulsa Journal of Comparative and International Law*, vol 10, is 1, 2002-2003, available at {http://www.uniset.ca/microstates/10TLSJCIL261.htm} (accessed at August 23, 2010).

[89] According to the Montevideo Convention on Rights and Duties of States, 1933, every state should have a) a permanent population, b) a defined territory, c) a government, and d) the capacity to enter into relations with other states. This set of criteria has gained sufficient recognition and is considered to be elementary.

[90] Papadakis, op.cit., pp. 114-115.

[91] Yamamoto, L., Esteban, M., op.cit., pp. 3 & 7 and Paskal, Cl., *Strange case of Disappearing Islands*, available at {http://www.nzherald.co.nz/news/print.cfm?objectid=10635956} (accessed at August 23, 2010).

[92] For *vanishing states* see: Rodotheatos, G., Bourtzis, T., States Under Extinction, 192-1=... A LOS Viewpoint, in Tsaltas, Gr., Katsibardis, K., (eds), *Copenhagen 2009: The Environment in Turbulence of Global Crisis*, I. Sideris Pub., Athens, 2010, *in press* (*in greek*). Two categories of states that face critical sea level rise are distinguishable a) *declining states*: states whose land and maritime territories tend to partially submerge and b) *vanishing states*: states who are faced with total inundation. The latter are only small island states, with Maldives, Marshall Islands, Tuvalu and Kiribati standing on the top of the list.

numbers of environmental migrants or merging with these states[93]. Contrarily to limited loss of land, or even loss of some insular areas, inundation of a state posses a series of very important problems, which can be concentrated in one term, "dissolution of a state". Same as the lack of framework for acquiring territory to set up a new state, public international law contains no regulations for this issue. Of course, inundation, is not equal to *vaporisation* of a state, since the two other main elements of the state do exist, population and government. The problem is that population has no safe habitat and the government has no land to dominate. In modern practice, certain rules do apply in cases when it comes to the alteration of state sovereignty. Occupation, prescription, cession, accession, and subjugation or conquest, some of them more conformant with international law, some other not, are the most common ways. Disappearance of a state is an issue that has slipped that attention of international law makers[94].

4. Regime Suggestions and Perspectives

Current knowledge suggests that *hardcore* adaptation is the prior option of states against sea level rise, even though highly costly and of ambiguous results. While this kind of adaptation is supported in this paper, it must be pointed out that the lack of adequate international legal framework acts as an impediment towards the best possible use of A.I.S. vs. Sea Level Rise. It is high time that adaptation of *institutions* and *laws* must be incorporated within the main pillars of a global adaptation strategy for the post-Kyoto era[95].

The *freezing* of baselines could be one of the options, but though effective and problem-solving, it cannot always be enough or appropriate. Sea level rise and land submerging is not a simpleminded problem. Till now, a loss of a few square meters of land seemed to be a negligent affair, but this is not true anymore. Liable scientific data and events prove that sea level rise is a serious threat.

Of course it is not possible to *secure* all the threatened coasts with sea walls or similar structures, nor to spread the oceans with artificial islands, but A.I.S. could serve as excellent solutions in situations that loss of land is not acceptable. Today's A.I.S. legal framework, serving mainly exploration and exploitation purposes, should be widened and reinforced, in order to provide safe grounds for other uses, to counter both sea level rise and natural phenomena.

The introduction of new provisions for uses of AIS other than exploration and exploitation purposes is a step on that direction. Such provisions could deal with a potential role of AIS as "safeguards" or as human habitats, as mentioned in examples before, before the creation of de facto conditions by state practice. Sooner or later the issue of rights deriving from AIS will ensue, especially in large scale reclamation

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[93] In essence, such a union would aim at on the one hand receiving the total of the displaced population and on the other to receive a portion of the sovereign, mostly economic, rights of the inundated state. Rayfuse describes some possible configurations, Rayfuse, R., W(h)ither Tuvalu? International Law and Disappearing States, *University of New South Wales Faculty of Law Research Series Articles*, no 9, 2009, available at: {http://ssrn.com/abstract=1412028} (accessed at August 23, 2010) pp. 8-9.

[94] Neither the UN Charter, nor UNCLOS seem to tackle directly this issue.

Paskal comments "Because a substantially changing coastline and large-scale disappearance of islands was not accounted for in the [UNCLOS] Convention, the answers may become less a matter of law and more a matter of politics" and goes on saying "This is literally uncharted territory, and developments and precedents need to be very closely monitored and assessed". Source: Paskal. Cl., Redrawing the Map, *The Journal of International Security Affairs*, no 18, Spring 2010, available at {http://www.securityaffairs.org/issues/2010/18/paskal.php} (accessed at August 23, 2010).

[95] Karageorgou V., Rodotheatos, G., Funding Adaptation to Climate Change. The Case of "Adaptation Fund in Tsaltas, Gr. Katsimbardis, K., (eds.), *International Climate Policy. The Road to Copenhagen*, I. Sideris Publ. Athens, 2009, pp 105-128.

constructions. It is better to consider the implications of man made sea habitats and similar AIS than to face the consequences in practice, at which point decisions would be taken under severe pressure. What rights could derive from such construction is open to debate, and not easy to answer. It is however only fair to assume that AIS of critical value for the preservation of a state should be regarded as part of that state. They should also not be used as an argument to deprive territory due to their man made nature[96]. It is also essential to incorporate the rights of the people of a possible submerged state to a legal framework, to make them able to use technology to produce man made constructions, which would substitute some aspects of their lost territory (economic rights, maritime rights or habitat).

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[96] It is already stated that artificial installations cannot deprive an island of its status.