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Administration
Da-eun Lee, Staff, Korea Maritime Institute, Korea
Tel: +82-51-797-4385 E-mail: journal@kmi.re.kr

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Jong-Deog Kim
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CONTENTS

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Standard of Plausibility in Provisional Measures Prescribed by the International Tribunal for the Law of the Sea

Gustavo Leite Neves da Luz*

ABSTRACT

The work will analyze the requirement of plausibility in provisional measures prescribed by International Tribunal for the Law of the Sea (ITLOS) and comparing the application of this requirement by other International Courts and Tribunals. For this purpose, the project will be divided in three parts. First, the author verifies the scope of provisional measures issued based on how United Nations Convention on the law of the Sea (UNCLOS) defines its concept, aim, and the requirements necessary to be prescribed by the Tribunal. Second, the article will be digging deeper into the plausibility requirement by showing what this requirement means by analysing its evolution, object, and standard. Third, this paper will address the central theme proposed by the author, which is the standard of application of the plausibility by ITLOS and if it fits the same application by other Courts and Tribunals, such as UNCLOS Annex VII's Arbitral Tribunals and International Court of Justice (ICJ). In its preliminary conclusion, the current research shows that ITLOS does not clarify a standard of application of the requirement that fits the same standard of other Courts and Tribunals, leading to further questions.

Key words : United Nations Convention on the law of the Sea (UNCLOS), International Tribunal for the Law of the Sea (ITLOS), provisional measures, plausibility, standard of application

* LLM Graduate, International Law LLM Graduate at Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil, gustavoleiteluz@gmail.com

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1. Introduction

In the context of provisional measures prescribed by the International Tribunal for the Law of the Sea (ITLOS), the requirement of plausibility has been gaining strong evidence. The plausibility of certain rights inherent to the process is necessary for prescribing provisional measures, and the parties must not only demonstrate the right but its success on the merits.

However, the lack of a definitive standard of the requirement makes its application a reason for debates in doctrine and jurisprudence. In this sense, this research aims to analyze the application pattern of plausibility requirement in ITLOS. To achieve this purpose, the work will be divided into three parts.

First, it will verify how International Courts and Tribunals generally apply provisional measures. By verifying its requirements, concept and purpose, a broad observation will be allowed before delving into the central theme of this work.

Next, the plausibility requirement will be presented. The author will seek to present the main characteristics of the requirement in order to present its purpose in the issue of provisional measures by the Courts and Tribunals. In addition, the author will seek to verify the debate about the lack of standards for applying the requirement. In the next section, the analysis of the application of the standard by ITLOS is presented.

Finally, the author seeks to verify the standard of application of plausibility in ITLOS. Through the analysis of jurisprudence, the work will seek how the Tribunal applies plausibility and verify if there is a possible differentiation between the forms of application of the requirement between the prescribed measures based on Article 290(1) and on Article 290(5) of the United Nations Convention on the law of the Sea (UNCLOS).

In its conclusion, the work demonstrates that although the standard of application of the plausibility requirement in ITLOS follows what was initially presented by the International Court of Justice (ICJ), however, some procedural aspects need to change application of the requirement in some cases at the Tribunal. In other words, depending on the modality of provisional measures applied, plausibility must meet different forms of application for the cases under Article 290(1) or Article 290(5).

2. Provisional Measures Prescribed under UNCLOS

Provisional measures are incidental proceedings with the primary purpose to protect the right of the parties against damage to their respective rights. To fulfil

its purpose, its measures can modify situations occurring or take actions to guarantee the protection of the parties' rights. In other words, provisional measures protect the object of the litigation during the process. Additionally, these measures are essential instruments to prevent damage to the rights or the extension of the dispute or protect the environment, either on the parties' initiative or on their initiative at ITLOS (Karaman, 2012, pp. 138-141; Palchetti, 2008, p. 624).

Some characteristics are relevant to measures in general, such as the two possible forms of measures issued by ITLOS, measures prescribed in accordance with Article 290(1) and 290(5). UNCLOS Article 290(1) measures are no more than incidental procedures incorporated into a main extensive process. Additionally, UNCLOS gives the possibility in its article 290(5) of instituting an autonomous process pending the constitution of an arbitral tribunal based on Annex VII from UNCLOS. In that sense, Article 290(5) allows the parties to request provisional measures to ITLOS pending the constitution of the Annex VII Arbitral Tribunal, consequently working as an independent process (Brown, 2007, p. 120).

In this sense, another characteristic that differentiates such measures is present in the possibility of re-analyzing them in one its requirements for their prescription, the *prima facie* jurisdiction. In the provisional measures prescribed in terms of Article 290(1), it is only necessary to verify the jurisdiction of ITLOS for the indication of such measures as repeatedly happens in cases of incidental proceedings. However, in the provisions of Article 290(5), in addition to demonstrating the jurisdiction of ITLOS, the claimant must state the legal bases of the Arbitral Tribunal's jurisdiction, which may subsequently be confirmed, revoked or changed. Such verification is called "Residual Jurisdiction" by Mensah (2002, pp. 43-50). Depending on the Tribunal, the measures will have a greater or lesser provisional nature.

The Tribunals' discretion based on UNCLOS in prescribe provisional measures is reduced concerning other bodies such as ICJ. This is because, according to UNCLOS' Article 290(3), the measures can only be prescribed, revoked or modified if requested by the parties (Marr, 2000, p. 819). It can be briefly summarized in the observance by ITLOS in prescribe measures in cases where the evidence shows a real need to protect the right until the final decision by ITLOS.[1]

For its prescription, some requirements essentially developed within the scope of decisions of International Courts and Tribunals must be met, which are: (a) *prima facie* jurisdiction, (b) connection between the measures and the right

1 However, according to Barboza, there is a danger to the protection of rights *pending lite* if the provisional measures become too exceptional by highlighting that: "Their being exceptional means no more than that they are based on different principles and have a different nature than other judicial decisions, for instance, that they are not res judicata and therefore may be reversed at any moment *pendente lite*. It is true that special caution should be employed to avoid anticipation of the final judgment through a provisional measure, but it should also be borne in mind that abstaining from indicating one may have at times the same anticipatory though opposite effect (Barboza, 2007, p. 144).

alleged in the case, (c) danger of irreparable harm, (d) urgency, and (e) plausibility (Tanaka, 2019, pp. 519-526).

The *prima facie* jurisdiction is the requirement that is basic in the consent of the parties and precondition for the existence of the cases themselves (ICJ, 1954, pp. 19-32; 1959, pp. 48-51; 1978, pp. 3-45; 1995, pp. 77-80; 1998, pp. 432-469; 2011d, pp. 537-542.).[2] UNCLOS expresses that: "A court or Tribunal referred to in article 288 shall have jurisdiction over any dispute concerning the interpretation or application of this Convention which is submitted to it in accordance with this Part." [3] Additionally, the Court or Tribunal must be facing a dispute between the parties, its subject has to be a disagreement on the application or interpretation of UNCLOS and, the conflict must still occur at the date that was submitted to the Court or Tribunal.[4]

UNCLOS Article 290 has two types of jurisdiction that ITLOS can utilize to prescribe its measures depending on the situation: jurisdiction over disputes regarding the application or interpretation of UNCLOS in cases presented to the Tribunal and over disputes about the prescription of provisional measures pending the creation of the Annex VII Arbitration Tribunal, corresponding to paragraphs 1 and 5 of article 290 respectively (Miles, 2016, pp. 156-158). In article 290(1), the Tribunal determines its jurisdiction by analyzing the legal grounds on which the case will be constituted. In *M/V Saiga* (No. 2), the Tribunal expressed that it would not need to restate its analysis of jurisdiction about the case and could not apply the measures unless the provisions presented by its applicant appeared to be *prima facie*, to provide the basis of ITLOS's jurisdiction for the application of the procedure.[5] In another way, the measures of article 290(5) have particularities for determining their *prima facie* jurisdiction, since ITLOS considers provisional measures pending the creation of the Annex VII Arbitral Tribunal, the claimant must indicate the legal grounds on which the arbitral Tribunal will have jurisdiction (Karaman, 2006, pp. 120-131; Mensah, 2005, pp. 61-69; Vicuña, 2007, pp. 459-

2 ICJ. *Monetary Gold Removed from Rome in 1943 (Italy v. France, United Kingdom of Great Britain and Northern Ireland and United States of America)*, Preliminary objections, 1954, pp. 19-32; ICJ. *East Timor (Portugal v Australia)*, Summary 1995/2, 1995, pp. 77-80; ICJ. *Fisheries Jurisdiction* (*Spain v. Canada*), Questions of jurisdiction and/or admissibility, Judgment of 4 December 1998, 1998, pp. 432-469; ICJ. *Interhandel* (*Switzerland v. United States of America)*, Separate Opinion of Judge Wellington Koo, 1959, pp. 48-51; ICJ. 1978. *Aegean Sea Continental Shelf (Greece v. Turkey)*, Questions of jurisdiction and/or admissibility, Judgment of 19 December 1978, 1978, pp. 3-45; ICJ. *Request for Interpretation of the Judgment of 15 June 1962 in the Case Concerning the Temple of Preah Vihear (Cambodia v Thailand), Provisional Measures*, Order of 18 July 2011, 2011d, pp. 537-542.

3 Art. 287, UNCLOS.

4 ITLOS. "*Enrica Lexie*" *(Italy v. India)*, Provisional Measures, Dissenting Opinion of the Judge Ndiaye, 2015 b, p. 185; para. 14.

5 ITLOS. *M/V "SAIGA*" (No. 2*) (Saint Vincent and the Grenadines v. Guinea)*, Separate Opinion of Judge Laing, 1999a, p. 191; para. 56; In that same sense *see* PCA. *The MOX Plant Case (Ireland v. United Kingdom)*, Arbitration Tribunal Constituted Pursuant to Article 287, and Article 1 of Annex VII, of the United Nations Convention on the Law of the Sea for the Dispute Concerning the MOX Plant, International Movements of Radioactive Materials, and Protection of the Marine Environment of the Irish Sea, Order N° 4. 2003, pp. 2-3; ITLOS. *MOX Plant (Ireland v. United Kingdom)*, Provisional Measures, Order of 3 December 2001, 2001b, p. 110, para. 84; Ibid., p. 97, para. 14.

461). In this sense, a double analysis of jurisdiction can be understood as a benefit, removing the doubt about its existence in the cases of Article 290(5).[6]

As for the nexus between the measures and the rights requested by the parties, the main objective of the provisional measures is to preserve the parties' rights to the dispute, so there must be a correspondence between the main object of the dispute with the provisional measures' requests. In other words, the requested measures must demonstrate a nexus with a right explained in the request (Lee-Iwamoto, 2012, pp. 241-247; Oelers-Frahm, 2012).

Article 290 of UNCLOS does not expressly address this requirement. However, while ICJ jurisprudence has developed it significantly over the years, comparatively, the provisional measures prescribed by the Tribunals constituted based on UNCLOS took more time to evidence the requirement.[7] ITLOS, for example, used the expression "the Court or tribunal may prescribe any provisional measures which it considers appropriate under the circumstances to preserve the respective rights of the parties to the dispute" (KLEIN, 2005, pp. 52-53).[8] It was only in *Dispute Concerning Delimitation of the Maritime Boundary Between Ghana and Côte d'Ivoire* that ITLOS Special Chamber explicitly introduced the requirement by referring to the same ICJ terminology.[9]

In this sense, although not constantly referring to it,[10] the analysis of the connecting element between the request and the provisional measures requested by the parties in ITLOS reinforces the conclusion that the consolidation of the provisional measure's requirement will be a construction that will be prolonged and evolve as cases develop.

The requirement of irreparable harm to the rights concerns the impact on a specific situation protected by a right (Bendel, 2019, p. 507). The first mentions to the requirement took place in the Permanent Court of International Justice, as in the case *Denunciation of the Treaty of 2 November 1865 between China and Belgium*.[11] Over the years, the requirement was present in ICJ decisions, until it

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6 ITLOS. *Southern Bluefin Tuna (Australia v Japan; New Zealand v Japan),* Separate Opinion of Judge ad hoc Shearer, 1999b, pp. 320-329.

7 ICJ. *Immunities and Criminal Proceedings (Equatorial Guinea v. France)*, Request for the Indication of Provisional Measures, 2016, p. 1166; para. 72; Contudo, apesar da relevância desses casos, é importante enfatizar que o requisito apareceu inicialmente no caso Arbitral Award of 31 July 1989 (Guinea-Bissau v Senegal), que tratou da determinação de áreas marítimas entre Guiné-Bissau e Senegal. ICJ. *Arbitral Award of 31 July 1989 (Guinea-Bissau v Senegal)*, Provisional Measures, Order 2 March 1990, 1990, pp. 69-70; para. 25; ICJ. *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Provisional Measures, Order of 13 July 2006, 2006a, pp. 113-135; Miles, *supra note* 12, at 184.

8 Art. 290, UNCLOS. (emphasis added); ITLOS. *MOX Plant (Ireland v. United Kingdom)*, Provisional Measures, Order of 3 December 2001, 2001b, p. 110; para. 81; ITLOS. *ARA Libertad (Argentina v Ghana)*. Provisional Measures, of 15 December 2012, 2001a, p. 349; para. 100.

9 ITLOS. *Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana v; Côte d'Ivoire),* Provisional Measures, Order 25 April 2015, 2015c, p. 159; para. 63.

10 In that sense, even though the Enrica Lexie incident did not make any mention of the requirement, it can be seen that it is still a requirement under construction. ITLOS. *The Enrica Lexie Incident (Italy v. India)*, Provisional Measures, Order of 24 August 2015, 2015a, pp. 183-205; para. 1-141.

11 The Court states that: "Whereas, this being so, the object of the measures of interim protection to be indicated in the present case must be to prevent any rights of this nature from being prejudiced." ICJ.

became expressly mandatory in the *Nuclear Tests* cases.[12]

As in ICJ, the requirement was added from the decisions of UNCLOS Tribunals (Laing, 1998, pp. 64-65). However, as Mensah demonstrates, in the early cases of provisional measures in ITLOS (Mensah, 2002, pp. 47-48), the Tribunal was reluctant to link irreparability to the irreparable harm requirement, only appearing in the judges' individual opinions to the cases.[13] This trend was reversed only in the Annex VII Arbitral Tribunals judgment of the *MOX Plant* case. The Tribunal refrain what had been elaborated in ITLOS and resorted to ICJ requirement standard.[14] In this sense, despite the initial reluctance, irreparable damage in UNCLOS Tribunals is currently considered a requirement for the prescription of provisional measures, as the most recent decisions demonstrate.[15]

Although not expressly present, both in Article 41 of ICJ Statute, as in Article 290(1) of UNCLOS (Laing, 1998, p. 55), urgency is an inherent requirement of provisional measures (Karaman, 2012, p. 141). Nevertheless, ITLOS and the Arbitral Tribunals established under Annex VII showed equal concern about the requirement. Both adopted an urgency model similar to that applied by ICJ (Miles, 2016, p. 243).

In the cases established under the terms of Article 290(5), the requirement of urgency was widely discussed. The requirement expressly mentioned in the paragraph by stating that: "if it considers that prima facie the tribunal which is to be constituted would have jurisdiction and that the urgency of the situation so requires (…)."[16] The question of urgency under Article 290(5) must be manifested within the limits of the Tribunal's ability to conduct the case and it must institute

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Denunciation of Treaty of November 2nd, 1865, between China and Belgium (Belg. v. China), 1927 P.C.I.J. (ser. A) No. 8 (Order of 8 January 1927) Publications of the Permanent Court of International Justice Series A – No. 8; Collection of Judgments. A.W. Sijthoff's Publishing Company, Leyden, 1927, para. 11.

12 ICJ. *Nuclear Tests (Australia v. France)*, Interim Protection, Order of 22 June 1973, pp. 113-110; para. 20-30; ICJ. *Nuclear Tests (New Zealand v. France)*, Provisional Measures, Order of 22 June 1973, 1973, pp. 139-141; para. 20-30; ICJ. *Fisheries Jurisdiction (Germany v. Iceland)*, Provisional Measures, Order of 17 august 1972, 1972a, p. 34; para. 22-23; ICJ. *Fisheries Jurisdiction (United Kingdom v. Iceland)*, Provisional Measures, Order of 17 august 1972, 1972b, p. 16; para. 20-21.

13 ITLOS. *M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines v. Guinea)*, Separate Opinion of Judge Laing, 1999a, p. 187; para. 50; ITLOS. *Southern Bluefin Tuna (Australia v Japan; New Zealand v Japan)*, Provisional Measures, Separate Opinion of Judge Treves, 1999c, p. 317; para. 5; ITLOS. *ARA Libertad (Argentina v Ghana)*, Provisional Measures, Separate Opinion Judge Paik, 2012, pp. 253-254; para. 5-6.

14 ITLOS. *MOX Plant (Ireland v. United Kingdom)*, Provisional Measures, Order of 3 December 2001, 200 a, p. 109; para. 73.

15 ITLOS. *Land Reclamation in and around the Straits of Johor (Malaysia v. Singapore)*, Provisional Measures, Order of 8 October 2003, 2003, pp. 27-28; para. 106(1)(c); ITLOS. *M/V Louisa Case (Saint Vicent Grenadines v. Spain)*, Provisional Measures, Order of 23 December 2010, 2010, p. 69, para. 72; ITLOS. *Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana v; Côte d'Ivoire)*, Provisional Measures, 2015, Order 25 April 2015, 2015c, pp. 161-164; para. 74-96; ITLOS. *The Enrica Lexie Incident (Italy v. India)*, Provisional Measures, Order of 24 August 2015, 2015a, p. 197; para. 87; ITLOS. *Concerning the Detention of Three Ukrainian Naval Vessels (Ukraine v. Russian Federation)*, request for Provisional Measures, Order 25 May 2019, 2019a, pp. 25-28; para. 100-113; ITLOS. *The M/T San Padre Pio Case (Switzerland v. Nigeria)*, Request for the Prescription of Provisional Measures, Order of 6 July 2019, 2019b, pp. 27-32; para. 111-131.

16 Art. 290(5), UNCLOS. (emphasis added).

its measures in a shorter period than the usual one for prescribe necessary measures pending the constitution of the Annex VII court (Miles, 2016, p. 246).

On the other hand, according to the understanding of some authors related to the temporal perspective (Tanaka, 2019, pp. 524-525), both the cases of provisional measures according to Article 290(1) as in the cases judged under Article 290(5) urgency is present until the final decision. From the temporal perspective, two classifications emerge. The first just put urgency as a synonym of imminent danger. The second place the requirement as an ongoing fact. This is evident when cases involve damage to the marine environment due to ongoing damage committed by one of the parties.[17]

About the last requirement, this article will delve into the requirement of plausibility in the next chapter.

3. Requirement of Plausibility

Plausibility can be understood as a test to establish that the rights asserted by applicant states might exist on the merits of the case (Lando, 2018, p. 641; Miles, 2018, p. 193). Such right must be plausible concerning the provisional measures requested (Marotti, 2014, p. 761).

In developing the requirement, the International Courts and Tribunals have developed a consolidated understanding on how to establish the requirement (Sparks and Somos, 2021, p. 81). In the analysis of provisional measures, the Courts and Tribunals must follow the procedures necessary to fulfil the requirements for the prescription of measures. First, the existence of *prima facie* jurisdiction is analyzed, and, if satisfied, it can analyze the other requirements in order to prescribe the measures. After its verification, the analysis of the other requirements already mentioned begins due the nexus between the measures and the rights requested by the parties, irreparable harm, urgency, and the focus of this article, Plausibility (Miles, 2018, pp. 1-2).

Despite its importance, plausibility has some imprecision in its standard. International Courts and Tribunals need to consider the probability of the claimant's right to have a chance of succeeding on the merits. Consequently, this requirement leads to multiple possible interpretations as it is up to the discretion of judges how necessary the rights must be to achieve success (Le Floch, 2021, p. 28). Such subjectivity can lead to some problems with the appearance of preliminary consideration of merits (Miles, 2016, p. 194). On the other hand, it prevents parties from submitting provisional measures with frivolous and baseless requests

17 ITLOS. *Southern Bluefin Tuna (New Zealand v. Japan; Australia v. Japan)*, Provisional Measures, Dissenting Opinion of Judge Vukas, 1999d. pp. 330-335; para. 1-6; ITLOS. *MOX Plant (Ireland v. United Kingdom)*, Provisional Measures, Order of 3 December 2001, 2001b, pp. 95-110.

(Oellers-Frahm, 2012 , p. 1042).

Another problem present in the high discretion of the plausibility requirement lies in the absence of an application standard (Lee-Iwamoto, 2012, pp. 241-247). However, a Plausibility test is required for a case to be considered for its verification.[18] For example, in ICJ *Pulp Mills* case, Judge Abraham expressed that the Court could not prescribe provisional measures without a minimum degree of proof by the applicant in its submissions.[19] Nevertheless, it was only in the case concerning the *Questions Relating to the Obligation to Prosecute or Extradite* that the Court finally incorporated plausibility as a requisite by stating that: "[T]he power of the Court to indicate provisional measures should be exercised only if the Court is satisfied that the rights asserted by a party are at least plausible."[20] This formula was repeated in other cases, but it was still uncertain what would be the degree of plausibility necessary for fulfilling such a requirement.[21]

The ICJ still does not clarify what the definitive standard would be to measure the necessary degree of evidence in the plausibility test (Marotti, 2014, p. 761). When we observe a high degree of proof, it can be observed that little is advocated in its favor (Kolb, 2020, p. 380), as it could constitute a previous analysis of merit. On the other hand, much is discussed about the low degree of proof. As already highlighted, plausibility seeks to avoid possible frivolous and baseless cases.[22] Therefore, a minimum degree of plausibility may be required in the analysis of the requirement, leaving the examination of the merits by the Court in its decision a more rigid degree to be debated (Kolb, 2020, p. 381). Furthermore, according to Kolb (2020, p. 381), it would be illogical to demand a high level of proof since provisional measures require urgency in their analysis to fulfil their objective of guaranteeing the protection of the right in the pending case.

In this sense, highly complex proofs could delay the prescription of measures (Kolb, 2020, p. 381). Likewise, when delving into this standard, ICJ tends to establish a lower degree of proof, as in the case of *Questions Relating to the Obligation to Prosecute or Extradite*, *Certain Activities carried out by Nicaragua in the Border Area* and the *Request for Interpretation of the Judgment*

18 ICJ. *Certain Criminal Proceedings in France (Republic of the Congo v. France)*, Provisional Measure, Order of 17 June 2003, I.C.J. Reports 2003, p. 25; para. 20.

19 ICJ. *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Separate Opinion of Judge Bennouna, 2006b, p. 145, para. 7-12; ICJ. *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Separate Opinion of Judge Abraham, 2006c, pp. 140-141, paras. 8-9.

20 ICJ. *Questions Relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal)*, Provisional Measures, Order of 28 May 2009, 2009, p. 151, para. 57 (emphasis added).

21 ICJ. *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, Order of 8 March 2011, 2011a, pp. 18-20; para. 53-59; ICJ. *Request for Interpretation of the Judgment of 15 June 1962 in the Case Concerning the Temple of Preah Vihear (Cambodia v. Thailand) (Cambodia v. Thailand)*. Judgment of 11 November 2013, 2013, p. 295; para. 33.

22 "Yet, the examination of the plausibility of the alleged rights at the stage of provisional measures may run the risk of dealing with matters which should be examined at the stage of the merits and, consequently, the order of provisional measures may come close to the interim judgment. If this is the case, there is a concern that the plausibility test may make the distinction between provisional measures and pre judgment obscure" (Tanaka, 2021, p. 172).

of 15 June 1962 in the Case Concerning the Temple of Preah Vibear.[23] It is, therefore, notable that the Court adopted a low degree of plausibility proof standard (Lee-Iwamoto; 2012, p. 251). On the other hand, it is worth mentioning that a low degree of proof should not be understood as low quality of proof. In other words, the quality of the evidence should not be lower for reasons of urgency in the prescription of provisional measures to protect the right in the dispute (Thirlway, 2013, p. 937).

Despite a consolidated jurisprudence, the idea of an application standard linked to the plausibility requirement is something that is still in constant development. As we will see in the next section, despite ITLOS decisions being based on the same standard on the requirement, it is observed that the Tribunal followed a somewhat divergent path on the same.

4. Standard of Plausibility Applied by ITLOS

Because ICJ and ITLOS practice are closely related, it was natural for the Tribunal to incorporate the requirement initially developed by the Court. When we look at the history of the development of provisional measures in UNCLOS, it is clear that the Convention, in essence, incorporated article 41 of ICJ statute (Boyle and Chinkin, 2007, p. 376).

In ITLOS, plausibility needed a longer time to be finally considered an explicit requirement, albeit already implicit in some cases. This occurred because the jurisdiction of the Tribunals constituted based on UNCLOS is restricted only to disputes about the application and interpretation of the Convention, not being necessary to analyze the law beyond the Convention (Miles, 2016, p. 194).[24] Such fact could make it difficult to incorporate the requirement, as demonstrated in the case *Questions relating to the Seizure and Detention of Certain Documents and Data* which ICJ determined that, under Article 288 of UNCLOS, if the rights were present in the analysis of jurisdiction then the rights claimed by the parties would be evident (Miles, 2016, p. 201).[25]

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23 ICJ. *Questions Relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal)*, Provisional Measures, Order of 28 May 2009, 2009, p. 37; para. 60; ICJ. *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, Order of 8 March 2011, 2011a, para. 40.

24 "Art. 288(1): A court or Tribunal referred to in article 287 shall have jurisdiction over any dispute concerning the interpretation or application of this Convention which is submitted to it in accordance with this Part. *UNCLOS*.

25 ICJ. *Questions relating to the Seizure and Detention of Certain Documents and Data (Timor-Leste v. Australia)*, Order of 3 March 2014, 2012, pp. 152-153; para. 25-28; ITLOS. *M/V "SAIGA"(No. 2) (Saint Vincent and the Grenadines v. Guinea)*, Provisional Measures, Order of 11 March 1998, 1998, p. 20; para. 30; ITLOS. *M/V Louisa Case (Saint Vicent Grenadines v. Spain)*, Provisional Measures, Order of 23 December 2010, 2010, p. 67, para. 53; ITLOS. *ARA Libertad (Argentina v Ghana)*, Provisional Measures, Order of 15 December 2012, 2012, p. 345; para. 69; ITLOS. *The Arctic Sunrise Case (Netherlands v.*

Even if more restricted, ITLOS adopted the plausibility requirement as one of paramount importance in its prescription of provisional measures, but it took some time to evolve. In the *M/V Louisa* case, implicitly referring to the need to demonstrate the existence of certain claimed rights, the Tribunal considered that it was not necessary to "Establish definitively the existence of rights claimed".[26] Even using a different language from that used by ICJ, the Tribunal established the idea that the parties would not need a high degree of proof, that is, a low degree of proof would be required. The Tribunal adopted the same reasoning in the *ARA Libertad* and *Arctic Sunrise* cases.[27] In *ARA Libertad*, for example, ITLOS understood that it would only be necessary to demonstrate an existing right without any direct references to the requirement.[28]

The requirement only appeared explicitly in the *Dispute Concerning Delimitation of Maritime Boundary between Ghana and Côte d'Ivoire*. Citing the *Questions relating to the Seizure and Detention of Certain Documents and Data* case, in stating that the Special Chamber would need to understand that the right alleged by Côte d'Ivoire on the merits should be at least plausible, under the terms of Article 290(1), the Tribunal considered that: "(…) the Special Chamber need not therefore concern itself with the competing claims of the Parties, and that it need only satisfy itself that the rights which Côte d'Ivoire claims on the merits and seeks to protect are at least plausible."[29]

From that case on, ITLOS started to consider the requirement expressly, as in the *Enrica Lexie* case, which considered the need to demonstrate whether the alleged right in the case would be plausible or not by the parties.[30] Referring to the *Dispute Concerning Delimitation of Maritime Boundary between Ghana and Côte d'Ivoire* case, the Tribunal considered that both parties demonstrated that the alleged rights would be plausible and that it need not be concerned with claims to the parties' competing claims, but only make sure that: the rights which Italy and India claim and seek to protect are at least plausible and that it needs only to satisfy

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Russia), Provisional Measures, Order of 22 November 2013, 2013, p. 249; para. 89; ITLOS. *ARA Libertad (Argentina v Ghana)*, Provisional Measures, Order of 15 December 2012, 2012, p. 243; para. 54.

26 ITLOS. *M/V Louisa Case (Saint Vicent Grenadines v. Spain)*, Provisional Measures, Order of 23 December 2010, 2010, p. 67, para. 53.

27 ITLOS. *ARA Libertad (Argentina v Ghana)*, Provisional Measures, Order of 15 December 2012, 2012, p. 243; para. 54; ITLOS. *The Arctic Sunrise Case (Netherlands v. Russia)*, Provisional Measures, Order of 22 November 2013, 2013, p. 249; para. 89.

28 "Considering that at this stage of the proceedings, the Tribunal does not need to establish definitively the existence of the rights claimed by Argentina and yet, before prescribing provisional measures, the Tribunal must satisfy itself that the provisions invoked by the applicant appear prima facie to afford a basis on which the jurisdiction of the Annex VII arbitral tribunal might be founded." ITLOS. *ARA Libertad (Argentina v Ghana),* Provisional Measures, Order of 15 December 2012, 2012, p. 343; para. 60.

29 ITLOS. *Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana v Côte d'Ivoire)*, Provisional Measures, Order 25 April 2015, 2015c, p. 158; para. 58; ICJ. *Questions relating to the Seizure and Detention of Certain Documents and Data (Timor-Leste v. Australia)*, request for indication of provisional measures, Order of 3 March 2014, 2014, p. 153; para. 27; Lando, Supra Note 8, at 643.

30 ITLOS. *The Enrica Lexie Incident (Italy v. India)*, Provisional Measures, Order of 24 August 2015, 2015b, p. 197; para. 84.

itself that the rights which Italy and India claim and seek to protect are at least plausible.[31]

On its last provisional measures case until now, the Tribunal when prescribed its order on *San Padre Pio* did a deeper analysis about the plausibility of the alleged rights by Switzerland.[32] Beside, considered plausible the statements that seeks to protect are rights to the freedom of navigation and other internationally lawful uses of the sea related to this freedom in the exclusive economic zone under article 58 of the Convention,[33] ITLOS was not unanimous about the claims. Switzerland claimed that Nigeria's obligation to have due regard to rights and duties of Switzerland in the EEZ includes "its right to seek redress on behalf of crew members and all persons involved in the operation of the vessel, irrespective of their nationality."[34] However, the Tribunal understood unnecessary to make a determination of the plausible character of its claimed rights since the legal and factual issues were not fully addressed by the parties in the proceedings.[35] Therefore, the plausibility requirement can be considered essential when prescribing provisional measures in ITLOS.[36]

When looking at the plausibility standard in ITLOS, as in ICJ, the Tribunal did not determine a precise application standard for the plausibility. The application of plausibility can raise several questions, especially when the argument involves a requirement imported from another dispute settlement system. In this sense, it is worth highlighting the differences between the plausibility requirement applied by ITLOS and ICJ and the possible solutions given by each system (Marotti, 2021, p. 134).

Plausibility is divided into two classifications: rights and claims. The plausibility of rights is the verification of whether the rights claimed by the applicant are based on International Law, that is, the plausibility of the rights. While the plausibility of claims verifies whether the defendant's conduct violates the plausibly claimed rights, that is, it is the plausibility of the claims. In the ICJ for the plausibility check, a two-step test needs to be fulfilled, helping both the work of the courts and tribunals and the way the parties proceed (Lando, 2018, p. 667; Lee-Iwamoto, 2012, pp. 247-251).[37]

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31 *Ibid*., p. 197; para. 83-85.

32 ITLOS. *The M/T San Padre Pio Case (Switzerland v. Nigeria)*, Request for the prescription of Provisional Measures, Order of 6 July 2019, 2019b, pp. 393-400; para. 77-110.

33 *Ibid*., p. 399; para. 106-108.

34 *Ibid*., p. 400; para. 109.

35 *Ibid*., p. 400; para. 109.

36 "As with the link test, provisional measures for the protection of the marine environment are also exempt from the plausibility requirement. The test assesses the existence of rights which are contested on the merits. As the right to seek provisional measures arises not from the merits themselves, but from an express grant of power under the terms of UNCLOS Article 290, the particular hoop need not be jumped through by the applicant. In such situations, the true test is whether the serious environmental harm hypothesized will actually come about – a question that arises in relation to the requirements of irreparable harm and urgency" (Miles, 2016, p. 203).

37 Elucidating the issue, the ICJ highlighted in the *Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All*

When we look at ITLOS, we see a different approach to how the Tribunal applies plausibility. UNCLOS Tribunals have restrictions on the rights to be protected concerning the interpretation and application of the Convention itself. According to Marotti, the assessment of the plausibility of rights in disputes in the context of UNCLOS: "overlaps with the assessment of *prima facie* jurisdiction, which is aimed at establishing whether there exists a dispute on the interpretation and application of the Convention" (Marotti, 2021, p. 134; Miles, 2016, pp. 201-202). In this sense, the Tribunal understood the requirement of the plausibility of rights as an autonomous requirement in granting provisional measures.[38]

As for the plausibility of claims, ITLOS takes a different approach from ICJ. In examining the plausibility of claims, the Court needs to make a thorough examination of the merits to seek an adequate examination of the evidence. On the other hand, ITLOS is restricted to the interpretation and application of the Convention, leading it to adopt a "light" approach to plausibility. Therefore, the Tribunal should be cautious about rights and claims that must be further investigated at the merits stage.[39] In this sense, the Special Chamber in the *Dispute Case Concerning the Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean* expressed that: "before prescribing provisional measures, the Special Chamber does not need to concern itself with the competing claims of the Parties, and that it need only satisfy itself that the rights which Côte d'Ivoire claims on the merits and seeks to protect are at least plausible" (Miles, 2018, p. 85).[40]

Another issue faced by ITLOS and the existence of its forms of provisional

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Forms of Racial Discrimination: "In effect, in the present Order, the ICJ uses the term "plausible" not only in respect of rights (…), but also more widely in respect of the application of international instruments (…), thus disclosing two distinct forms of legal "plausibility". Like-wise, in the present Order, the ICJ uses the term "plausible" also in relation to facts (…), thus referring to another distinct form, this time of factual "plausibility". The term is used even by reference to "intent" and "purpose" (…). And the ICJ, in the present Order, further uses the term "plausible" also in relation to arguments or allegations (…)." ICJ. *Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation),* Provisional Measures, Separate Opinion of Judge Cançado Trindade, Order of 19 April 2017, 2017, pp. 169-170; para. 38. (emphasis added).

38 The fact that the Special Chamber refers for the first time to plausibility as a separate requirement for the prescription of provisional measures may be linked to the circumstance that, in this case, jurisdiction was based on a special agreement between the parties. ITLOS. *Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana v. Côte d'Ivoire)*, Provisional Measures, Order 25 April 2015, 2015d, p. 315; para. 58.

39 "The Tribunal considers that the question of whether the third right asserted by Switzerland is plausible would have required the examination of legal and factual issues which were not fully addressed by the Parties in the proceedings before it. Having established that the first and second rights asserted by Switzerland are plausible, the Tribunal, therefore, does not find it necessary to make a determination of the plausible character of the third right at this stage of the proceedings." ITLOS. *The M/T San Padre Pio Case (Switzerland v. Nigeria)*, Request for the prescription of provisional measures, Order of 6 July 2019, 2019b, p. 400; para. 110.

40 ITLOS. *Dispute Concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana v. Côte d'Ivoire)*, Provisional Measures, Order 25 April 2015, 2015d, p. 315; para. 58.

measures is provided by Article 290(1) and 290(5), which are the measures under the Tribunal itself and in UNCLOS Annex VII Arbitral Tribunal, respectively (Marotti, 2021, p. 135). ITLOS should adjust the plausibility according to the type of measures it should prescribe. This will undoubtedly be reflected in the way the Tribunal should establish its application standard or in a possible need for the existence of more than one standard for each of the forms. In the provisional measures of article 290(1), the Tribunal may have greater discretion regarding the provisional measures and the standard of application of plausibility since the merits will be decided in the same body, with the measures functioning as incidental procedures within a more significant disputed case.[41] As for the measures prescribed under Article 290(5), ITLOS is only authorized to prescribe the provisional measures pending the establishment of the Annex VII Arbitral Tribunal that will decide the dispute. Therefore, the plausibility applied to the measures in paragraph 5 by ITLOS should be less intrusive in merit analysis (Tomka, 2017, p. 184).[42]

5. Conclusion

The standard of application of plausibility has not yet reached a definitive form. Much remains to be discussed concerning the plausibility, especially in ITLOS, where it is a requirement that has just been explicitly incorporated by the Tribunal's jurisprudence, and it is something that is still in constant development. However, in addition to the difficulty in establishing a standard, ITLOS still needs to consider that it has the two forms of provisional measures in Article 290(1) and 290(5) of UNCLOS, for cases submitted to the Tribunal itself and the measures from the Annex VII Arbitral Tribunals, respectively. This difference leads to a need to adapt the plausibility to each case. While in the measures of paragraph 1 the Tribunal is more open to slightly examine the merits, in the cases of paragraph 5, ITLOS have to be stricter to its limits since the tribunal does not have jurisdiction over the merits of the final decision in the dispute. Therefore, as previously noted, a less rigorous approach to the requirement should be observed in the cases of paragraph 5. This may reflect in the way the Tribunal should establish its application standard or in a possible need for the existence of more than one standard for each of the forms when there is the need to demonstrate whether the alleged right in the case would be plausible or not by the parties. As mentioned above, in the *San Padre Pio* case, the Tribunal understood against the exitance of the plausibility since the legal and claimed issues were not fully addressed by the parties in the proceedings. This might be a prevision of what approach ITLOS is

41 *Ibid*., p. 134.

42 ITLOS. *The M/T San Padre Pio Case (Switzerland v. Nigeria)*, Order of 6 July 2019, Dissenting opinion of Judge Kateka, 2019c, p. 475; para. 3.

going to pursue in its future cases, a more rigorous approach to the requirement to be observed in cases of paragraph 1. However, it is uncertain with what approach the Tribunal is going to prescribe the provisional measures.

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Integrating the Climate Change Migration Paradox into the Maritime Jurisdiction of Small Island Developing Countries (SIDs)†

Baker Matovu* · Mathew Elsa Raimy**

ABSTRACT

The United Nations Convention on the Law of the Sea (UNCLOS) provides monumental effort in maritime jurisprudence. However, Climate change (CC), and its impacts are threatening the preservation of maritime rights especially for Small Island Developing States (SIDS). The complex effects of CC are meted out on SIDS populations, their jurisdiction and in a worst-case scenario-loss of territory. This review paper probes this through a lens that analyzes Maritime Law policy challenges facing SIDS, and emerging legal challenges therein due to CC. The core effects of CC explored relate to how CC affects the determination of the rights of SIDS and their complex socioeconomic systems. Current literature shows a gap in addressing the concerns of SIDS. We propose two policy suggestions (i) draft an article/injunction in UNCLOS to define future jurisdiction for SIDS and (ii) create specific provisions specifically on safeguarding the sovereignty of SIDS and CC vulnerable populations.

Key words : climate change migration, maritime jurisdiction, climate change refugees, small island developing states, blue economy

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* Corresponding author, Ph.D. Candidate in Sustainable Development, School of Sustainable Development, Amrita Vishwa Vidyapeetham, India, Matker2010@gmail.com
** Master of Social Work, Amrita Vishwa Vidyapeetham, India, Baker.matovu@ammachilabs.org

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1. Introduction

This paper explores the maritime laws and jurisdictional rights related to Island states to document the different legal mechanisms in Small Island Developing States (SIDS) and the extent to which the concept of climate change (CC) refugees and SIDS' maritime jurisdictional rights are addressed by current maritime legislations.

For the last four decades, the United Nations Convention on the Law of the Sea (UNCLOS); dubbed '*the constitution of the Oceans*' has successfully provided legal guidance and sanctity on maritime law of both coastal states and SIDS (Ashley Roach, 2014; Hassanali, 2022). Unfortunately, increasing evidence of CC and its global impacts are increasingly threatening the benchmarks used in negotiating maritime jurisprudence; especially for SIDS in the 21st century (Boyle, 2005; IPCC, 2022). Maritime research has demonstrated that the increasing frequency and magnitude of CC-induced disasters such as drought, floods, typhoons and storm surges, tsunamis, cyclones, and global ocean warming are threatening livelihoods, socioeconomic systems, and infrastructure (IPCC, 2021). On a spatial and temporal scale, CC effects are projected to be more devastating to coastal regions and poor SIDS (Yamamoto and Esteban, 2011). The increasing sea-level rise and ocean acidification has exposed low-lying coastal zones and SIDS to vulnerabilities of submergence (Rayfuse, 2009). Since the 1990s, the number of vulnerable coastal people due to sea-level rise has increased from 160 million to 260 million; 90 percent of whom are sedentary in poor developing states and SIDS (UNHCR, 2021). Storm surges, typhoons, and tsunamis have accelerated coastal erosion and biodiversity loss reigniting prospects of 'climate change refugees, loss of SIDS territory, and loss of state sovereignty due to the projected disappearance of some SIDS in the near future (IPCC, 2022; Rayfuse, 2009; Yamamoto and Esteban, 2011). The Ecosystem Threat Register (ETR) projects that about 1.2 billion people could be '*Climate change-induced Refugees'* by 2050 and urgent policies to mitigate and adapt to this reality are urgently needed (Institute for Economics and Peace, 2018). According to the Convention on Biological Diversity Strategic Plan (2011–2020), supporting SIDS and protecting their maritime territories could supplement efforts for sustainable territorial protection and management (Techera, 2019). These benefits extend even to Areas Beyond National Jurisdiction (ABNJ) surrounding SIDS that are crucial in enforcing other legislations such as on migratory species (Coelho, 2022).

However, there is increasing recognition of the CC effects on marine ecosystems and resources in ABNJ, there is limited scholarship on understanding the issue of climate displaced persons-climate refugees and the future jurisdiction of SIDS in a scenario of CC-induced disappearance (The Commonwealth, 2014). In other words, SIDS face uncertain futures because of the very real threat of CC causing sea level rise and submergence of their land territory (inundation)-that

could extend continental shelves of some territories; e.g., in the Continental Shelf Outer Limit Claims of 2008 between the Bahamas, Barbados, Costa Rica, and Suriname scenario (Russell and Macnab, 2008; UNIDO, 2019). The threatened loss of their homes, extinction of SIDS people's cultures, and the unwelcome prospect of becoming CC refugees prove a looming eventuality of SIDS of losing their rights of sovereignty in International law (Turkas, 2022; World Bank, 2020).

Several studies concur that laws and regulations are critical in ensuring maritime governance and protection of territorial iintegrity (Techera, 2019); but current provisions in International refugee law and the UNCLOS are either subjective on the issue of CC refugee stipulation or do not directly or adequately address the concerns of SIDS threatened by inundation respectively. Article 1(A) (2) of the 1951 Refugee Convention (Geneva Convention) and the 1967 Protocol Relating to the Status of Refugees are subjective on CC-induced refugees (Hathaway, 2005). In addition, the criteria enumerated in the Montevideo Convention in the case of an inundated state crop up worrying conclusions and questions for the SIDS threatened with inundation such as *permanent population* and *defined territory* (Huang et al., 2021; World Bank, 2021). In other words, what criteria will determine the permanent population of a given SIDS if CC has denuded her maritime territory and rights? Will other states continue to recognize the sovereignty of inundated SIDS? And if so, how long will such sovereignty last given the absence of territory or population? (Hathaway, 2005).

Furthermore, Article 76 of the UNCLOS places undue emphasis on complying with the demands of the Technical, and Scientific Guidelines (CLCS/11) that deters the designing of a holistic approach to seabed exploration and subsequent sustainable exploitation in threatened SIDS Exclusive Economic Zones (EEZs) (Burgess et al., 2021; Russell and Macnab, 2008); the stipulated survey methodologies for non-living resource skews water measurements for bathymetry and marine biological research (Artack and Lal, 2004). Thus, most SIDS with wide EEZs are increasingly vulnerable to logistical and financial requirements for commissioning and conducting surveys as stipulated under Article 76 of the UNCLOS yet feasible legal frameworks such as the Warsaw International Mechanism for "Loss and Damage" associated with impacts of CC is in its infancy (SPLOS, 2008). This raises several concerns related to SIDS: the identification and creation of support mechanisms to reduce their vulnerabilities related to CC and strengthening of maritime provisions to ameliorate tensions related to the challenges in implementing maritime law that most SIDS do face.

Thus, there is a palpable risk that under current provisions of the UNCLOS, loss of territory might extinguish existing claimed maritime boundaries of SIDS-as maritime boundaries are calculated from the coastal baselines or marine resources, and populations of inundated SIDS might lose their rights as most countries hardly apply the "*non-refoulement principle*" (UNHCR, 2018). This insightful and thought-provoking debate formed the focus of this literature review paper

that aims at probing and identifying the current and projected CC-induced risk facing SIDS, existing gaps in the regime of SID, and document the current interventions (legal and socioeconomic) aimed at sustainably protecting the jurisdiction of SIDS in case of CC and environmentally induced disasters.

2. Methodology

This research paper is based on a non-systematic desktop review of maritime laws and regulations related to SIDS. These maritime laws and regulations analyzed were extracted, reviewed, and examined from reports, articles, and resolutions relating to the maritime jurisdiction, dated until March 2022. Jurisdictional laws and regulations related to SIDS were specifically analyzed partly because SIDS share more or less similar concerns related in part to their being developing states such as a lack of special rules related to Marine Scientific Research (MSR) and technology in the Area (Coelho, 2022), highly dependent on the maritime environment (Djunarsjah and Putra, 2021), and are experiencing increasing threats of CC such as in Kiribati (Techera, 2019). Most of these rules avail contradicting legal systems and are hardly implemented related to their application in SIDS' issues and emerging efforts by SIDS to advance their maritime challenges have not fully been incorporated into crucial legal discussions (Alam et al., 2013).

This paper, therefore, is based on a state-of-the-art analysis of maritime laws and literature related to SIDS maritime rights and territorial jurisdictions. To obtain the literature, an online search of important legislative instruments was conducted including PacLII (https://www.paclii.org), AustLII (https://www.austlii.edu.au), FAOLEX (https://www.fao.org), the United Nations Division of Ocean Affairs and Law of the Sea (DOALOS), and International Maritime Organization (IMO). A further search was conducted on legal databases for maritime jurisdiction that governs BBNJ, and the Area and this was accessed through reports and publications of international and regional maritime organizations and divisions such as the United Nations Office for Disaster Risk Reduction (UNDRR), Regional Law of the Sea Institutes such as Yeosu Academy of the Law of the Sea (YALOS), Korea Maritime Institute (KMI), International Maritime Law Institute (IMLI), and subnational institutes such as the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the Association of Southeast Asian Nations (ASEAN), The Pacific Community (SPC), and Alliance of Small Island States (AOSIS), and subnational institutes such as the ESCAP and the ASEAN, SPC, and AOSIS.

A broader search was also conducted using specific search terms such as 'climate change refugees', 'the Small Island States and maritime laws', 'SIDS and climate change', 'UNCLOS and SIDS', and 'Environmental Refugees and SIDS.' The results obtained were sieved through by reading their abstracts after which

legislative reports and publications that were not related to SIDS, UNCLOS, and CC were removed. The scoped results mainly included statutes and legal instruments related to Island States, Area, and emerging concerns in the BBNJ and related ordinances and Acts especially in the Pacific and Caribbean Island Developing States that are specifically designated to address the governance challenges of SIDS (Table 1).

Using the online search tool accessed via the website of the United Nations Codification Division, statements and legislative interventions related to SIDS were further accessed; especially those related to the consent regime, and the developments in legislation related to the maritime jurisdiction of SIDS. Each identified legislation, ordinance, or Act obtained was further analyzed to identify the extent to which it incorporates the issues of SIDS especially CC, the maritime resources, and populations of SIDS in tandem with the recommendations of Principle 10 of the 1992 United Nations Conference on Environment and Development. Most of the identified sources included plenary discussions and resolutions, meetings, and resolutions from committees; though not all sources were included as they did not directly relate to CC and SIDS. To identify the feasibility of existing maritime laws in addressing the CC concerns and jurisdictional rights of SIDS, a typology of key elements were considered in analyzing the legislation (i) the meaning of a concept in relation to existing legislative practice, (ii) implementation procedures and processes in relation to SIDS and (iii) current gaps related to the state of SIDS in relation to environmental issues, maritime powers, and ability/inability to implement a given maritime law within their (SIDS) jurisdiction. Based on this

Table 1. Selected maritime legislations scoped and analyzed in the study

Scoped and analyzed maritime law	Area of jurisdiction
UNCLOS (1982)	International
Geneva Convention (1951)	International (refugees)
Montevideo Convention (1933)	International (refugees)
Protocol Relating to the Status of Refugees (1967)	International (refugees)
Convention on Biological Diversity (1993)	International
Rio Declaration on Environment and Development (1992)	International
High Seas Treaty (2022) (Proposed)	International (area)
Protected Area Act (2010)	Solomon Islands
MARPOL (1978)	International
Pacific Islanders Protection Act (1872)	Pacific Island States
Caribbean Basin Economic Recovery Act (CBERA) (1983)	Caribbean States
Marine Protected Area Ordinance (2016)	Pitcairn Islands
Suva Declaration on CC (2013)	Pacific Islands States

CC: climate change; UNCLOS, United Nations Convention on the Law of the Sea.

analysis, the article is portioned into sections including (a) Contextual meaning of Island states in Maritime Law, (b) Existing risks and challenges facing SIDS, (c) Legal challenges facing SIDS in relation to Maritime Law, (d) Current interventions relating to the jurisdiction of SIDS.

3. The Contextual Origins of the Meaning of Island and the Challenges Facing SIDS in Maritime Law

The Second World Ocean Assessment report portrays the vulnerabilities of SIDS in relation to their maritime rights and capacities stemmed from the inequalities in the initial international negotiations relating to the ocean (Vadrot et al., 2021). The historical maritime law negotiations and resolutions were hardly linear and reinforced the powers of major coastal states which restrain interpretation (partly due to colonial science in SIDS) and clarity on several provisions; especially related to marine research in Part XII and Part XIII (Long, 2007); and thus require review and revisiting of several 'consent regimes' (Galindo, 2015). These gaps have perpetuated misrepresentations and promulgation of crucial provisions for SIDS (De Vos, 2020). During UNCLOS I, the SIDS imbalances and crippled representation of SIDS' needs and future aspirations came to the fore as only Cuba, Haiti, and the Dominican Republic represented SIDS (UNCLOS, 1958). During UNCLOS III, most SIDS' interests related to their maritime jurisdictions were compromised by either their previous colonial masters or the lack of capacity in maritime research and negotiations (Tanaka, 2013). Sound actions and discussions only gained ground after the adoption of the New International Economic Order (NIEO) (Grote, 2010); though these positive discussions started to fold in the late 1980s (Coelho, 2022). This implied that most resolutions of the UNCLOS do not have special rules devoted to SIDS and interventions to reduce environmental vulnerabilities such as CC are spearheaded through regional bodies in SIDS regions such as CARICOM and AOSIS (Chasek, 2005).

The lack of a binding force and mechanism to promote maritime governance of SIDS has been well documented in the subjective nature of definitions of maritime rights of SIDS and the inequalities in accessing maritime resources or enforcing their maritime jurisdictional rights in their territories (Slade, 2003). The International Law Commission report reported that though current ABNJ and BBNJ negotiations are partly focusing on the revision of the common heritage of humankind principle, persistent asymmetries related to CC vulnerabilities of SIDS are less incorporated (Rogers et al., 2021).

3.1 Contextual, and Historical Definition of an Island in Maritime Law

Several scholars have documented that one of the great concerns in ocean governance has been the failure of the negotiating groups in the 1950s–1970s to define the islands (Coelho, 2022). Though the contextual discussions came to the fore in the 1930 Hague Codification Conference (Hiro, 2014); the definitions lack mechanisms that incorporate spatial and temporal changes emanating from demographic, social, and environmental changes (Colombos, 1973). Initial descriptions related to "*An island near the mainland. An island at a distance from the mainland. A group of islands; how near must islands be to one another to cause the whole group to possess a single belt of territorial waters.* "According to Quirk and Hanich (2016), this description negated the issues of ecological connectivity and traditional knowledge of SIDS related to the BBNJ around their maritime zones.

The 1956 International Law Commission Report defined under Provision II (Articles concerning the law of the sea), Part I (Territorial Sea), Section II (Limits of the Territorial Sea), and Article 10 (Islands) expounded that; "*Every island has its own territorial Sea. An island is an area of land surrounded by water, which in normal circumstances is permanently above the high-water mark"* (Colombos, 1973). However, the report was dotted with cynical gaps relating to the future loss of Island territory (Hiro, 2014). For instance, Article 10 contradicts the use of the term "abnormal circumstances" due to climatic or weather conditions in contrast to "normal circumstances" (Yamamoto and Esteban, 2011). Defining islands as "*permanently* above the high-water mark," negates the prospect of the island lying below the high-water mark, regardless of the circumstances (Burgess et al., 2021). This can be interpreted as intended to withhold the status of an island from land that is below the high-water mark in other than "normal circumstances" (Hiro, 2014). Based on the current provisions of UNCLOS III, a state or island ceases to be considered so, and does not possess territorial waters; if; technical installations are set up on the seabed for exploitation of the continental shelf, or when it is submerged as elevations must be above the high tide elevations (UNCLOS Article 121). Even if an installation is built on such an elevation and is itself permanently above water--a lighthouse, for example--the elevation is not an island. Paragraph 3 of Article 71 in the draft states: Such installations, though under the jurisdiction of the coastal State, 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 of the coastal State (Burgess et al., 2021). This further means that SIDS maritime jurisdictions negate temporal social and territorial changes as provided for in Article 10 of the 1958 Convention on the Territorial Sea (CTS) which states that an Island is; *A low tide elevation is a naturally formed area of land which is surrounded by and above water at low tide but submerged at high tide*.

The current legal regime and definition of an Island in under the UNCLOS hovers around naturally formed land areas that are wholly surrounded by water

(Sea) (Caron, 1990). This implies that an Island in Maritime Law can be a Rock, Atoll, or Reef (Hiro, 2014). In addition, the Law of the Sea Convention (LOSC) postulates that Islands possess the same maritime zones as other landmasses, including a territorial sea, contiguous zone, EEZ, and continental shelf (Russell and Macnab, 2008). Therefore, an Islands does not need to be inhabited to create those maritime zones; rather it should be *capable* of sustaining human habitation or economic life (UNCLOS, 2016, Part VIII, p. 63). An Island can be an archipelagic state or a part of an archipelagic state (Article 46 (a) (b)). However, UNCLOS Article 121 (3) highlights that if a rock does not have human habitation, or sustain economic activity, it '*shall have no exclusive economic zone or continental shelf*.' Thus, the definition of rock is just a legal term and does not refer to any particular type of coastal geological formation (Yamamoto and Esteban, 2011). For example, a sand spit or sand bar can be considered a rock (Hiro, 2014). Therefore, the core definition of islands is embodied in UNCLOS Article 121, and the CTS Geneva treaty regulates islands in Article 10. Article 121 (1) of the UNCLOS defines an Island as "*An island is a naturally formed area of land, surrounded by water, which is above water at high tide*." p. 66. UNCLOS Article 121 (2) further explains the criteria for determining an Island as; "*Except as provided for in paragraph 3, the territorial sea, the contiguous zone, the exclusive economic zone, and the continental shelf of an island are determined in accordance with the provisions of this Convention applicable to other land territory*" (UNCLOS, 2016, Part VIII, p. 63).The UNCLOS definition of an Island shows that artificial islands even in the EEZ of a coastal state hardly qualify as islands; as they are not naturally occurring; which subdues sustainability regulations for SIDS in strengthening scientific and technological needs due to environmental changes (Coelho, 2022). In addition, UNCLOS Article 60 applies *mutatis mutandis* to artificial islands, installations, and structures on the continental shelf, and EEZ (UNCLOS Part V, p. 41). Article 60 (8) categorically states that, "*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*." (p. 45).

The description of an Island is precisely problematic due to a lack of a consensus among parties on which mechanism to classify an Island; especially for coastal states and also the fear by major coastal states to forfeit colonial science gains from the privileges of Article 5 (8) of the CSC related to the freedom of seas; especially in conducting MSR in the BBNJ and around the EEZ of SIDS with less capacity in technology, finance, and human capital (Tanaka, 2013). According to Gorina-Ysern (2003), UNCLOS III provisions on Islands preclude the need to revise the long-standing principle for sustainable development developed during the Rio Summit of 1992 and Agenda 2030 on ocean and CC vulnerabilities facing SIDS (World Ocean Assessment II, 2021).

3.2 Definition and Extent of Small Island Developing States (SIDS)

Since 1992, SIDS have been championing equity in maritime governance and the sustainable use of marine resources (UNCTAD, 2014a). The conceptual meaning of SIDS is documented in international policy frameworks focusing on the Blue Economy (BE) which shows that SIDS are scattered across the Caribbean Sea, the Atlantic Ocean, the Indian Ocean, the South China Sea area and the Pacific Ocean (UN-OHRLLS, 2018). Crucial commonalities of SIDS are they share a history of colonialism, consider the ocean as sacred, and the source of their livelihood (Coelho, 2022). The United Nations International Development Organization (UNIDO) defines SIDS as relating to the magnitude of environmental vulnerabilities and risks, geographical location in the Maritime Areas, small geographical size, and high dependence on limited natural resources (UNIDO, 2019). SIDS are marine island nations experiencing high levels of socioeconomic, and environmental vulnerabilities mainly due to changing CC and declining marine ecosystem resources (World Bank, 2020). The maritime location and disadvantaged geography of SIDS increasingly make them vulnerable to environmental shocks as they have a small resource base, are highly dependent on imports, face high energy costs, have infrastructure and transportation problems, fragile natural environments, and very less resilience to natural disasters (ECLAC, 2010; The Commonwealth, 2014). The increased vulnerabilities of SIDS have created special case scenarios to develop pathways for sustainable development of SIDS in line with the United Nations BE Framework and Agenda that was birthed at the Rio Earth Summit (CBD, 2013; Conservation International, 2013; UNCTAD, 2014b).

Geographically, SIDS are located in a typology of maritime geographical regions: (i) Caribbean, (ii) Pacific, and (iii) the Atlantic, Indian Ocean, Mediterranean, and South China Sea (AIMS) (UNHCR, 2021). According to the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States (OHRLLS), currently, there are 38 SIDS are UN member states (Table 1) and 20 SIDS are either

Table 2. UN Member SIDS

Country	Maritime geographical region/ zone/ocean	Country	Maritime geographical region/ zone/ocean
1. Bahrain	AIMS (Indian Ocean)	5. Maldives	AIMS (Atlantic Ocean)
2. Guinea-Bissau	AIMS (Atlantic Ocean)	6. Seychelles	AIMS (Atlantic Ocean)
3. Sao Tome and Principe	AIMS (Atlantic Ocean)	7. Comoros	AIMS (Atlantic Ocean)
4. Cape Verde	AIMS (Atlantic Ocean)	8. Mauritius	AIMS (Atlantic Ocean)

9. Singapore	AIMS (Atlantic Ocean)	24. Dominica	Caribbean
10. Antigua and Barbuda	Caribbean	25. Barbados	Caribbean
11. Belize	Caribbean	26. Fiji	Pacific Ocean
12. Dominican Republic	Caribbean	27. Federated States of Micronesia	Pacific Ocean
13. Haiti	Caribbean	28. Papua New Guinea	Pacific Ocean
14. Saint Lucia	Caribbean	29. Timor-Leste	Pacific Ocean
15. Trinidad and Tobago	Caribbean	30. Vanuatu	Pacific Ocean
16. Bahamas	Caribbean	31. Kiribati	Pacific Ocean
17. Cuba	Caribbean	32. Nauru	Pacific Ocean
18. Grenada	Caribbean	33. Samoa	Pacific Ocean
19. Jamaica	Caribbean	34. Tonga	Pacific Ocean
20. Saint Vincent and the Grenadines	Caribbean	35. Marshall Islands	Pacific Ocean
21. Suriname	Caribbean	36. Palau	Pacific Ocean
22. Saint Kitts and Nevis	Caribbean	37. Solomon Islands	Pacific Ocean
23. Guyana	Caribbean	38. Tuvalu	Pacific Ocean

Source: Sustainable Development Goals Knowledge Platform (2020). https://sustainabledevelopment.un.org/
SIDS, Small Island Developing States.

Table 3. Non-UN Members/Associate Members of Regional Commissions SIDS

Country	Maritime geographical region/zone/ocean	Country	Maritime geographical region/zone/ocean
1. American Samoa	Pacific	11. Martinique	Caribbean/Atlantic
2. Bermuda	Caribbean	12. Niue	Pacific
3. Guam	Pacific	13. Turks and Caicos Islands	Atlantic Ocean
4. New Caledonia	Pacific	14. Aruba	Caribbean
5. Sint Maarten	Caribbean	15. Cayman Islands	Caribbean
6. Commonwealth of Northern Marianas	Pacific	16. Curacao	Caribbean
7. Anguilla	Caribbean	17. Guadeloupe	Caribbean
8. British Virgin Islands	Caribbean	18. Montserrat	Caribbean
9. Cook Islands	Pacific	19. Puerto Rico	Caribbean
10. French Polynesia	Pacific	20. U.S Virgin Islands	Caribbean

Source: Sustainable Development Goals Knowledge Platform (2020). https://sustainabledevelopment.un.org/
SIDS, Small Island Developing States.

Non-UN member states or Associate members of Regional Commissions (Table 2, 3) (UN-OHRLLS, 2018).

4. Existing Risks and Vulnerabilities Facing Small Island Developing States (SIDS)

Studies show that since the initial negotiations related to maritime governance in UNCLOS I, concerns about SIDS have been secondary (Rogers et al., 2021). The inequalities have been perpetuated under UNCLOS II and III, especially in relation to frameworks related to the MSR (Manoa, 2016). The level of risk is compounded by a lack of a core legal instrument to regulate the activities in the jurisdiction of SIDS and the top-down nature of initiatives or institutional mechanisms to help in maritime governance in SIDS (Coelho, 2022). In most cases local initiatives; some of which predate international maritime governance efforts such as the *tabu* in Vanuatu have been ignored in maritime governance discussions (Techera, 2005). In addition, as Techera (2019) observed, most of these initiatives lay less emphasis on sustainable legislation related to CC issues that threaten the maritime jurisdictional rights of SIDS. SIDS are documented as highly volatile countries with a plethora of vulnerabilities (UN, 2015). Equally relevant is that the influence of SIDS in most discussions and negotiations is in form of observer status thus constraining the championing of inclusive debates to create a binding legal instrument to support SIDS (Tanaka, 2013).

The SAMOA Pathway recently reported that SIDS, especially in the Pacific-rim such as Kiribati and Tuvalu are prone to myriad environmental hazards and several disasters owing to its geography and location in the '*Pacific Ring of Fire*' (ADB, 2015; Polidoro et al., 2022). The spatial disadvantages of several SIDS that are located in disadvantaged and farfetched zones affect the economy of most SIDS, low economic base, heavy reliance on nature and imports, and fragility of ecosystems due to high dependence (UNDRR, 2017). The breakdown of anthropogenic technical, structural, and environmental risks and vulnerabilities below puts into perspective the challenges facing SIDS (UNWTO, 2012).

4.1 Marine Pollution and Waste

Historically, SIDS have been the least global polluter. SIDS generates about 0.02% of greenhouse gas emissions (UNDRR, 2017). The ratio of waste generation in SIDS is low compared to OECD countries at 1.2: 1.35 kg/capita/day respectively (Mohee et al., 2015). But SIDS are among those who stand to experience the most risks and challenges emanating from terrestrial and marine pollution (UNDRR, 2017). SIDS are located in the paths of marine plastic gyres, have a small land area for setting up landfills, and the poor waste management attitudes (Polidoro et al., 2022; UNEP, 1999). This could have dire effects on the revenues emanating from services such as tourism owing to health warnings about infec-

tious and vector-borne diseases, and the poor aesthetics of litter in the streets (UNIDO, 2019). The health concerns relating to waste management in SIDS have affected local food markets and the exportation of seafood emanating from SID to OECD (ADB, 2015). The cost of internally and externally generated waste and its management is increasing in SIDS (UNCTAD, 2021). In Tonga, for instance, the cumulative annual economic cost of improper waste management and disposal has skyrocketed to about 5.6 million USD! (Agamuthu and Herat, 2014). In addition, the application of the Basel and Waigani Conventions has been subjectively applied in SIDS; especially in the South Pacific Zone as ballast and other hazardous waste is spilled over by long-liners and vessels in their EEZs (Mohee et al., 2015; UNEP, 1999). Globally, Maldives has the highest level of microplastic pollution affecting pristine marine life and food sources that sustain the local economy (Phys.org, 2020).

In addition, SIDS especially in the Caribbean such as Barbados, and Jamaica are stifled by the legal and technical obstacles preventing the efficient implementation of MARPOL 73/78, and application of Special Area statutes for the Wider Caribbean area under Annex V of MARPOL such as the development of robust systems for port waste reception facilities and public awareness campaigns (UNIDO, 2019).

4.2 Limited Financing, Technical Expertise, and Trade for Development

The paucity of human and financial resources limits the range of possible options for the sound development of sustainable investments and solutions for disaster risk financing and recruitment of technical expertise for the development of inclusive solutions for SIDS (Russell and Macnab, 2008). Geospatial isolation of SIDS shots up travel costs for potential economic sectors and investments in marine sectors such as tourism (UNWTO, 2012). The World Trade Organization (WTO) financing criteria are rocket science for most poor SIDS such as Tuvalu due to stringent financing conditionalites (Mohee et al., 2015; The Commonwealth, 2014). 37 percent of SIDS are Non-UN Member states thus deprived of the international fora on financing and global trade regulating organizations-International Monetary Fund (IMF), World Bank, and WTO respectively (Sustainable Development Knowledge Platform, 2020). Jamaica has experienced annual average losses between 1991 and 2011 equivalent to 2.6 percent of its average annual investment leading to impeded and sluggish national growth (UN-OHRLLS, 2018). In addition, Official Development Assistance (ODA) to SIDS is low. In 2011, Anguilla received a paltry 0.42 million USD in ODA (OECD, 2011)! During the COVID-19 induced lockdowns the Gross Domestic Product (GDP) of SIDS was projected to decline further by 9 percent (UNCTAD, 2021). The 2006 UNESCO report from the 3rd Global Conference on Oceans, Coasts, and Islands categorically lays bare this conundrum that; "*Despite the fact that SIDS have large ocean areas rich in resources (fisheries, oil and gas, minerals, renewable energy), many island States*

are unable to benefit from the existence of these resources within their EEZ as a result of inadequate technical, financial, and management capacity." (Russell and Macnab, 2008).

4.3 Marine Transportation and Communication Hiccups

Because of their geographical location, small population, and high investment costs (UNIDO, 2019). SIDS have been vulnerable to accessibility and connection problems which have increased transnational crime, laundering, and trafficking. SIDS are increasingly experiencing varied, complex and many marine transport challenges with a great external threat stemming from globalization (UN, 2015). The vast EEZs are increasingly leading to ocean added security vulnerability of the islands emanating from Non-Flagged vessels, as did the growth in transnational organized crime, which tests the ill-equipped law enforcement agencies (The Commonwealth, 2014).

4.4 Natural Disasters

For the last 50 years, over 650 hydro-meteorological disasters have impacted SIDS, affecting more than 35 million people and causing approximately US$ 34 billion in damages (WMO, 2022). Since 2001, the magnitude and frequency of natural hazards of meteorological, hydrological, and climatological nature have exponentially increased (Center for Research on the Epidemiology of Disaster, 2020). Extreme weather events such as floods, geophysical hazards such as tsunamis and earthquakes and CC are affecting SIDS populations and increasing the cost of mitigation and adaptation (UNDRR, 2022). The 2016 Hurricane Matthew in Haiti decimated over 600 people and led to losses equivalent to 32 percent of Haiti's Gross Domestic Product (Global Platform for Disaster Risk Reduction, 2017). The small geographical sizes and small populations of SIDS accelerate disaster risk as to the recurrence of natural disasters such as storms surges, hurricanes, and floods delays short-term and long-term socioeconomic recovery mechanisms (Huang et al., 2021). In fact, SIDS are prone to the most catastrophic form of floods worldwide that emanate from catastrophic events such as quakes (WMO, 2018).

4.5 High Dependence on Marine Natural Resources

One of the covert risks facing SIDS is over-dependence on finite marine natural resources (IORA, 2019). 90 percent of SIDS either directly or indirectly rely on marine goods, resources, or services for their socio-economic development (The Commonwealth, 2014). SIDS such as Guinea Bissau, Tuvalu, and New Caledonia basically rely on natural biodiversity resources for socioeconomic survival

(UNDRR, 2022). Increased Illegal, unreported, and unregulated marine resource exploitation practices such as IUU fishing in the EEZs of SIDS have ruined socio-economic survival and led to expulsion from marine fishing cooperation (UNCTAD, 2021). The issuance of a 'yellow card' to Kiribati over unregulated fisheries governance by the European Union from 2016-to 2020 threatened local revenue sources secured through the selling and issuance of access permits to distant marine fishing nations such as Japan and China (Holland, 2020).

Overfishing by local fish communities in SIDS and increasing IUU fishing have drastically reduced valuable marine species such as sea turtles, some shark species, and corals in contravention of Appendix 1 and 2 of the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) (The Commonwealth, 2014; UNCTAD, 2014b). The intricacies of dependence have stymied the GDP of SIDS. The average GDP of SIDS is estimated at 13.7 billion USD though states such as Singapore fetch in excess of 222.7 billion USD (World Bank, 2011).

5. Legal Challenges Facing Small Island Developing States (SIDS) in Relation to Climate Change and Maritime Law

5.1 Catastrophic Sea-Level Rise

One of the wicked challenges engulfing SIDS is the increasing sea-level rise mainly emanating from CC (IPCC, 2022). The ripple effects of CC such as an increase in coastal flooding, and storm surges are more pronounced across the globe; especially in the Pacific Ocean dotted with Atoll states such as Tuvalu, Kiribati, and the Marshall Islands (World Bank, 2020). Studies postulate that in the West Pacific Ocean, the sea level has been rising at a rate of 2–3 times higher than the global average (World Bank, 2021). By 2100, it is estimated that the sea levels will rise between 0.5 to 1.1 meters (IPCC, 2021). An increase in sea level is increasingly jeopardizing the historical maritime regime in relation to entitlement to marine resource zones, survival of marine resources such as coral reefs, and increase in 'climate change and environmental refugee populations' that the global and maritime regime has not addressed (The Commonwealth, 2014). The core maritime challenges resulting from sea-level rise include:

5.1.1 Changes in coastal baselines

UNCLOS Section 2 Articles 5, 6, 7, and 8 provide guidelines for determining coastal baselines. Under Article 6 on the determination of baselines for Reefs,

it is stated that; '*In the case of islands situated on atolls or of islands having fringing reefs, the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef…*' (pp. 22-26). However, sea-level rise especially in SIDS situated on Atolls such as Maldives and Tuvalu has increased the ambulatory nature of the baselines depending on the sea level (ADB, 2015). This creates a conundrum of challenges such as a likely loss of legal entitlement in the Territorial Sea and EEZ, a need to redraw boundaries, and an increase in vulnerable populations yet legislation for CC migrants, CC-induced state loss in maritime jurisdiction is either inadequate or lacking (Yamamoto and Esteban, 2011). For instance, though UNCLOS Article 14 states that '*the coastal State may determine baselines in turn by any of the methods provided for in the foregoing articles to suit different conditions'*, it is subjective on the meaning of 'different conditions.' This increases ambiguity on the plight of SIDS and SIDS populations in a scenario where there is increased loss of territory (Rayfuse, 2009).

In addition, the increase in the submergence of coastlines of SIDS threatens coral reef survival (Caron, 1990). Increased siltation, typhoons, and storms have precipitated coral mortality (IORA, 2019). About 75 percent of coral reefs are being threatened globally by CC-induced sea-level rise (Burke et al., 2011; Yamamoto and Esteban, 2011). It is further estimated that by 2050 if sea-level rise increases and carbon dioxide levels reach 450 ppm, geological structures onto which reef occupying states will be lost increasing stateless populations (UN-OHRLLS, 2018). The loss of geological structures leads to the entire submergence of Islands that form most SIDS such as Kiribati, Tuvalu, and Fiji (Jha et al., 2013; UNWTO, 2012); and thus ceasing to have jurisdiction as they will fall under rocks and thus cease to have an EEZ and Continental Shelf as stipulated in UNCLOS (2016) Part VIII Article 121 (3).

5.1.2 Loss of the Territorial Sea, exclusive economic zone (EEZ), and continental shelf

SIDS have been documented as vulnerable to submergence (UNISDR, 2013; World Bank, 2020). The Intergovernmental Panel for Climate Change (IPCC) report documented that a small increase in sea level around the Pacific Island States such as Kiribati especially at Tarawa Atoll could trigger a mass loss of land territory due to the presence of low lying coastlines (IPCC, 2021). In the Maldives, a rise in sea level by 100 cm by 2100 is projected to wipe out some Atolls such as Seenu and Gnaviyani (ADB, 2015). With increasing submergence, the loss of territory is a real and clear unprecedented threat to the future existence of SIDS and particularly Atoll states in the Pacific which poses unprecedented legal questions (Yamamoto and Esteban, 2011). The 2008 Fourth Global Conference on Oceans, Coasts, and Islands in Hanoi, Vietnam observed that "… *the rising sea level and increases in storm intensity and frequency is subjecting SIDS to loss of coastal*

protection and increased erosion" that is affecting their maritime jurisdiction and maritime territory (Russell and Macnab, 2008).

Under UNCLOS Article 4 on the Outer Limit of the Territorial Sea, submergence of Atoll states leads to the loss of the territorial sea due to loss of the Terrestrial sea breadth (Hiro, 2014). In addition, increased submergence of SIDS affects their jurisdiction as defined in UNCLOS (2016) Part VIII on Islands leading to loss of their EEZ and Continental Shelf (Burgess et al., 2021). Pursuant to UNCLOS Part V Article 56 (1)(a), on the rights of the coastal state in the EEZ, it is probable that SIDS will lose their sovereign rights to explore, exploit, conserve, and manage their natural resources as there is a subjective regime on the rights of lost territories and rights as well as populations (Hiro, 2014; Russell and Macnab, 2008).

5.1.3 Alteration of maritime zones, baselines, and delineation zones

Sea level rise around SIDS has sprawled a plethora of puzzles relating to the demarcation of maritime zones such as the Territorial Sea and Contiguous zone as provided for under UNCLOS Section 1 on General Provisions (The Commonwealth, 2014). UNCLOS Article 1 (2) provides that; '*The sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent belt of sea, described as the territorial sea'* and this extends to the bed, subsoil, and airspace (UNCLOS, year, Part I, p. 22). Article 5 on the determination of normal baselines further states that '*the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State*.' (UNCLOS, year, SECTION II, p. 23).

These provisions partly debunk the current prospect of the impact of sea-level rise on baselines of coastal states that are flooded, or submerged (Yamamoto and Esteban, 2011). A rise in sea level effectively downsizes and downgrades the status of some SIDS, especially Atoll states such as Maldives and Kiribati into rocks or low-tide elevations (UNCTAD, 2021). This sprawls the loss of EEZ, Territorial Sea, and maritime jurisdiction on living organisms therein (ADB, 2015). Provisions and legal guidance on the effect of sea-level rise and CC on altered maritime delineation zones are still subjective (Burgess et al., 2021).

5.2 Contradictory and Abstract Definition of Islands in Maritime Law

The meaning of Islands and their rights-especially in relation to the concept of habituation is an incentive for legal debate (AOSIS, 2021). Though some provisions on Islands under Part VIII Article 121 on the regime of Islands provide candid jurisdictional focus on the rights of coastal states-SIDS creating an incentive for States to obtain island status for their deep ocean features; Article 121 (3) paradoxically creates a critical debate on the sovereignty of SIDS affected by CC

effects (Chand and Sloan, 2021). In addition, jurisdictional control of Islands in their Territorial Sea and EEZ over rocks and low-water elevations creates futuristic puzzles on the jurisdiction of CC affected SIDS (Kench et al., 2015). This scenario is prominent in those areas rich in marine resources such as in the case of Spratly Islands in the South China Sea where debate on whether some small features such as rocks (that might not fully constitute) islands deserve full control over their EEZ and in the case of the Okinotorishima which some States such as China dispute its claim for the EEZ as it is claimed that it is an artificial Island (Yamamoto and Esteban, 2011).

5.3 Stringent Terms for the Extended Continental Shelf (ECS) and Conditionalites for Marine Research

The guidelines for conducting marine research provide a basis for the determination of maritime jurisdictional rights for coastal states (Creel, 2003; Russell and Macnab, 2008). Article 76 of the UNCLOS provides for Coastal states collection, assembly, and analysis of a body of relevant hydrographic, geological and geophysical data in accordance with the provisions outlined in the Scientific and Technical Guidelines (Chand and Sloan, 2021). The technical guidelines aid in the collection of data that aids in the provision of *inter alia*; datasets for the Extended Continental Shelf (ECS) delineation, lodging of a claim, preparation, presentation, and defense of a submission on the Commission for the Limits of the Continental Shelf (CLCS) (Geloso, 2007; Russell and Macnab, 2008; Yamamoto and Esteban, 2011).

The 2008 Island Business Report for the South Pacific Applied Geoscience Commission (SOPAC) concluded that the potential ECA entitlement of the 8 participating SIDS in the region could extend their maritime jurisdiction to a gross 1.5 million square kilometers of seabed and subsoil-a 10 percent increase in their EEZs and a potential for increased collection of data and utilization of maritime resources for sustainable development, resilience and adaptation to technological and logistical gaps in preserving their maritime rights and jurisdiction in the face of the increasing CC impacts (Russell and Macnab, 2008; Yamamoto and Esteban, 2011). Under Article 76, the EEZ delimitation Constraints affects mechanisms to extend the continental shelf beyond 200 nautical miles (Kench et al., 2015).

The hesitancy to conclude boundary agreements in EEZs of SIDS endowed with huge sums of valuable marine resources constraining SIDS from directing resource utilization and seeking partnership for sustainable mapping of their zones (Burgess et al., 2021). Most SIDS are constrained to signing passive and exploitative licenses for research and natural resource exploitation (The Commonwealth, 2014). The complexity and deliberate conservative regulations affect SIDS from securing financial resources for exploration, fair partnerships in research and reduce the net benefit they gain from the presence of resources in their EEZs (3rd

Global Conference on Oceans, Coasts, and Islands, 2006). The bureaucracy in delineation has scaled up conflicts among SIDS such as in the case of Barbados and Trinidad and Tobago over fishing rights (AOSIS, 2021).

Most SIDS are bulldozed by neighboring stronger coastal powers due to imbalances in expertise for negotiations, and resources in securing technical experts in negotiations (Webb, 2005). By 2005, 39 highly potential maritime boundary delimitation claims were unresolved (CARICOM, 2005). The 2008 SPLOS report observed that the complexity, scale, and cost involved in conducted maritime research as stipulated under Article 76 to compile a credible submission are rocket science to SIDS and increase their vulnerability to maritime jurisdictional conflicting issues (Russell and Macnab, 2008; SPLOS, 2008). Furthermore, the UNCLOS jargon relating to claims for the ECS are ambiguous and disadvantage SIDS implying that SIDS will lose more jurisdictional rights due to their increased vulnerabilities emanating from CC (Russell and Macnab, 2008).

6. Current Interventions and Strategies Relating to the Jurisdiction and Sustainable Development of Small Island Developing States (SIDS)

SIDS are exponentially disadvantaged owing to their geographical location, small territory, weak socioeconomic systems, and their limited human resources to spur sustainable development (World Bank, 2020). The increasing vulnerabilities of SIDS due to CC catastrophically increase the risk of losing the limited maritime rights that are crucial in sustaining SIDS economies through the utilization of marine resources (UNCTAD, 2021). Thus, multi-faceted and sustainable solutions that reduce vulnerability to environmental risks such as CC and increase the functioning of socioeconomic systems in SIDS are crucial in promoting resilience and adaptation (The Commonwealth, 2014). Global institutions, partners and different stakeholders are increasingly designing bold interventions at regional and global scales that focus on promoting and protecting the sovereignty and socioeconomic development of SIDS (UNIDO, 2019). The exiting policy interventions aim at increasing resilience, adaption, and recovery through legislation, financing, research, capacity building and training (UN-OHRLLS, 2018). Prominent interventions include:

6.1 The 2021 Declaration on Preserving Maritime Zones in the Face of Climate Change Related Sea Level Rise

The 2022 IPCC Report categorically concluded that SIDS are one of the most vulnerable due to the impacts of CC (IPCC, 2022). Climate induced disasters such as typhoons, storm surges, and sea level rise has led to the loss of territory of SIDS (Rayfuse, 2009). In fact, about 26 percent of SIDS have their terrestrial land surface at less than 5 meters above sea level (UNISDR, 2013). Countries such as Maldives and Tuvalu have all their land area at 5 meters or less above sea level (ADB, 2015). Studies in Kiribati have documented a loss of Island zones in Kiribati due to sea-level rise (Chand and Sloan, 2021). Moreover, legislation on protection of the maritime zones of lost territory is lacking (Yamamoto and Esteban, 2011). In addition, increased sea level rise has led to coastal flooding and environmentally threatened refugees (AOSIS, 2021). Reports have documented that SIDS in the Pacific Ocean zone such as Kiribati, Tuvalu and Marshal Islands are more likely to lose more territory and thus require urgent action through financing and legislation (UN-OHRLLS, 2018). In 2021, through the Pacific Island Forum (PIF), 12 Pacific Ocean SIDS have a declaration to maintain the jurisdictional rights of SIDS (World Bank, 2021). Through the program, the PIF aims at addressing gaps in UNCLOS Article 76 on maritime delimitation and research (Turkas, 2022).

The declaration will help in clarifying how territorial and maritime entitlements including resources of SIDS can be preserved in the face of rising sea levels (World Bank, 2021). To address the funding gaps in promoting maritime research, promoting sustainable projects, claims, and submission, the PIF has secured and attracting financing through the Global Facility for Disaster Reduction and Recovery (GFDRR) to launch livelihood projects (UNIDO, 2019). A 2 billion USD partnership among 12 Pacific Ocean SIDS is supporting 87 projects at a for sustainable livelihood projects including climate resilience (World Bank, 2021). Increasing partnership among small atoll states such as Kiribati has led to the launch of the Building Resilience in Pacific Atoll Island Countries (UNIDO, 2019).

6.2 The 2014 Samoa Pathway

Since the beginning of the 21st century CC anomalies and vulnerabilities have been increasing (ADB, 2015). The disproportional effects, and vulnerabilities imply that poor communities, and countries are projected to bear more brunt of the effects of climate change (IPCC, 2021). SIDS and Member Island Territories have inadequate systems to strengthen weather and climate monitoring, mitigation and adaptation strategies (UNIDO, 2019). The Third International Conference on SIDS in Apia in Samoa endorsed the SIDS Action Platform leading to the birth of the Accelerated Modality Action (S.A.M.O.A) Pathway to boost climate resilience and adaptation to protect SIDS (The Commonwealth, 2014; World Bank, 2020).

The pathway has laid a platform for designing of targeted and feasible action programs to build capacity in weather monitoring, national meteorological and hydrological services and application of science-based climate knowledge and information in decision making on resources, livelihoods, and protection and conservation of marine resources (UNDRR, 2017). In 2015, through the Seventeenth World Meteorological Congress (Cg-17) the adoption of Resolution 54 targeting SIDS has increased capacity development and research of SIDS National Meteorological and Hydrological departments (WMO, 2022).

Further funding of SIDS' National Meteorological and Hydrological Services avails new early warning systems for environmental and marine use related risks to aid the sustainable socio-economic development of Small Island Developing States and Member Island Territories (UNIDO, 2019). The World Meteorological Organization (WMO) supports its Members in developing adequate structures and building capacity to ensure is boosting the development of structures and systems for proactive disaster risk management relating to CC, sea-level rise, environmental degradation, agriculture, fishing and mariculture, freshwater resources, coastal zone management, transport by sea and air, energy and tourism (WMO, 2022). The SAMOA Pathway has birthed the development of the 2019–2025 SIDS Strategy to create enabling pillars for strengthening knowledge and institutions in inclusive and shared prosperity, socioeconomic development and sustainable environmental management (UNIDO, 2019).

6.3 The United Nations Blue Economy Framework

The maritime economy of the SIDS is one of the most lucrative globally (UNCTAD, 2014a). Most SIDS; especially in the Pacific Ocean poses massive EEZs that are habitats to vast amounts of living and non-living marine resources (The Commonwealth, 2014). Though SIDS cover only about 3 percent of the earth's surface, it is estimated that about 20 percent of marine plants, birds, and reptile species habituate in the Marine EEZs belonging to SIDS (UN-OHRLLS, 2018). 10 out of the 34 global biodiversity hotspots are located in SIDS zones (Conservation International, 2013). However, SIDS have not reaped from the potential of maritime resources (World Bank, 2020). Overexploitation by powerful neighbors, CC, and unfavorable maritime jurisdictions on marine species have made most of the species endemic (World Bank, 2011). The Convention on Biological Diversity (CBD) reported that 90 percent of the global reptile extinctions have occurred in zones near SIDS (CBD, 2013). In the Caribbean Island, for instance, 93.4 percent of the 502 reptile species have experienced endemism (Conservation International, 2013).

To promote sustainable development and inclusive gaining of benefits from the marine economy, the SIDS at the 'Rio +20' United Nations on Sustainable Development advocated for the refinement of the global agenda and framework on the sustainable development of oceans leading to the birth of the BE (IORA, 2019;

UNCTAD, 2014b). The BE endorses the principles of socioeconomic inclusiveness through initiatives of low carbon, resource efficiency, and social inclusion, grounded in a developing world context and fashioned to reflect the circumstances and needs of countries whose future resource base is marine (United Nations Blue Economy Concept Paper, 2014). The BE is not only envisioned to reduce the energy costs and levels of energy vulnerability facing SIDS but also to aid in sustainable practices in marine resource use that SIDS rely on (World Bank, 2014; World Bank, 2020).

Crucially, the BE is viewed as a paradigm shift in the maritime jurisdictional rights of SIDS due to calls to consider SIDS as 'large ocean states' with equal marine powers and rights to terrestrial coastal states (Turkas, 2022). This will give SIDS more jurisdictional rights on the utilization of maritime resources, management of their maritime zones, and claims on maritime research and resource protection that are ambiguous under UNCLOS Provisions, especially Article 76 (Russell and Macnab, 2008).

6.4 Mauritius Strategy of Implementation 2005

The MSI was born out of a review of the Barbados Programme Of Action (BPOA) for the Sustainable Development of SIDS (Sustainable Development Goals Knowledge Platform, 2022) (UNIDO, 2019). The comprehensive review of the gaps in the 14 thematic areas under the BPOA set forth the identification of 19 priority areas for the SIDS (United Nations, 2005). Under the mandate of the United Nations Resolution (A/57/262), the MSI hinges on the need to graduate SIDS from least developed country status, trade, sustainable production and consumption (as called for by the JPOI), health, knowledge management, build resilience to CC, maritime challenges and culture – all of which are intended to support SIDS in achieving internationally agreed targets and goals under Agenda 2030 of the United Nations Sustainable Development Goals (The Commonwealth, 2014; World Bank, 2020).

The MSI has acted as a conduit for the initiation of a Commission on Sustainable Development (CSD) of SIDS to address the future environmental vulnerabilities of SIDS (United Nations, 2005). The International Strategy for Disaster Reduction (ISDR) recommended in subsequent MSI conferences has led to increased financing in telecommunication for SIDS, adoption of strategies for renewable energy generation in SIDS, and adoption of the 2005 Hyogo Framework for the monitoring of disaster risk progress among SIDS (World Bank, 2011). The 'SIDS DOCK' initiative for the harnessing of Blue Energy technologies in SIDS is increasing linkages between SIDS and the global financial market in energy trading (UNIDO, 2019).

7. Do Current Initiatives and Maritime Provisions Resonate with the Concerns of Small Island Developing States (SIDS) in Relation to CC and Maritime Rights?

For almost a century since the 1930 Hague Codification Conference developing a comprehensive definition and legislation for SIDS has been part of the international discussions (Hiro, 2014). However, as Panke et al. (2017) observed, the participation of SIDS in these discussions has been minimal and the positive debates and legislation on SIDS sovereignty have been ambiguous. Since UNCLOS II and III, the main issues of discussion related to SIDS have mainly related to MSR, capacity building, and technology advancements which mainly favor large coastal states (Tanaka, 2013). New advances in the maritime legal framework obliterate the ability of SIDS to keep pace with conflicting interests; especially on resources around the EEZ of SIDS and the Area (Coelho, 2022). Consequently, the powers of most SIDS have been subdued or subverted and their interests have increasingly been taken over by former colonial powers; especially in discussions relating to the principle of the freedom of the seas and Article 5(1) of the CSC (Gorina-Ysern, 2003). Under Articles 246 (5) and 246 (6), SIDS are frequently compromised and normally accept restrictive forms of consent regimes in exploratory operations around their maritime zones affecting the integrity of the Continental Shelf regulations (Clegg et al., 2020).

In addition, discussions relating to CC-inducted vulnerabilities of SIDS territory are abysmal (UNIDO, 2021). The International Science Council observed that the interests of SIDS related to CC vulnerabilities and resource interests have gained less attention yet the resources of SIDS promote the principle of 'mutual benefit' under Article 242 (1) in maritime governance (Manoa, 2016). These examples highlight an implementation gap in major coastal states' practices in the sharing of maritime benefits, the inability of SIDS to adapt to environmental threats such as CC, the enforcement of their needs, and interests. Though the current negotiations in the BBNJ and ABNJ can recuperate some of these concerns, uncertainties still linger on how SIDS could sail through in case of CC catastrophe if strenuous compromises and legislation are not undertaken.

8. Conclusion

Based on recent studies; especially in the CARICOM and Pacific Island

states, it is evident that CC is increasingly threatening SIDS (Coelho, 2022) and the interest in SIDS needs to become more prominent in UNCLOS III negotiations than ever before; especially in relation to BBNJ, Marine biodiversity, and territorial loss (Hassanali, 2022; Murtasidin and Sujadmi, 2021). Several authors have highlighted that for SIDS, consent regimes on MSR, international cooperation, and transfer of marine technology, research, and knowledge could help in reducing CC and anthropogenic-induced vulnerabilities facing SIDS. However, as observed in most UNCLOS negotiations and discussions, most of these approaches and strategies are either less regionally strategized, manipulated, or dominated by interest groups that exploit SIDS' resources (Panke et al., 2017). In addition, the chronic postponement of formal proceedings relating to the protection of CC refugees and vulnerable states including the Pacific Small Island States (PSIDS) has increased the complexities related to the common strategy on the future sovereignty of SIDS.

Within the realm of SIDS and the provisions of UNCLOS related to 'Islands' and their maritime jurisdictional rights, a judicious approach to secure a sustainable and coherent mechanism for SIDS should be developed to reduce the juxtapositions related to current definitions and rights of SIDS. Based on the concerns of SIDS in relation to their legitimate concerns, some policy suggestions and action plans could be brought to the fore.

Foremost, a draft article or subsection in the UNCLOS could be inserted to define Islands and their territory or resources lost by CC, and the future jurisdiction of SIDS which might lose its territory or maritime rights due to CC. Within the context of the legal architecture and definitions of UNCLOS that have been subjective to the sovereignty of SIDS is Article 121; especially when there is a loss of territory. This can help in remedying possible breaches in maritime laws related to the sovereignty of SIDS. A study on governance in the Indo-Pacific SIDS further recommended that developing clear legislation related to SIDS can help reinforce the customary uses and traditional rights of such states as currently applied in the case of Samoa and Cook Islands (Clegg et al., 2020).

Secondly, immediate provisions specifically focused on safeguarding the sovereignty of SIDS, their maritime space, and vulnerable populations affected by CC-induced vulnerabilities to maritime rights. With the UNCLOS III and BBNJ negotiations being negotiated, this could serve as an opportunity to develop a sustainable agreement for equity for SIDS' resources and CC-threatened communities. Devoting attention to safeguarding the sovereignty of SIDS is critical in garnering support for BBNJ resource management and also developing procedural rights and guidelines on the management of SIDS' resources and populations threatened by CC. This correlates with the temporal dimension of the UNCLOS which is considered a 'living instrument' (Coelho, 2022) and thus can accommodate the changing circumstances and needs of countries such as SIDS which are chronically affected by CC (Tanaka, 2013).

This paper has given insight into the legislative status of SIDS and how CC

risks and effects are threatening the maritime jurisdictional rights of SIDS. Several studies included in the paper document that UNCLOS has provided a sound legislative instrument that defines an Island and the rights of such states. Related legislation and statutes; however partly address the rights of SIDS under a CC scenario or risk to both the resources and populations of SIDS. In this regard, therefore, I argue that since there is an overt inconsistency in provisions on maritime rights and contestations over authority for SIDS that are threatened by CC, it is possibly crucial to develop a specific legal option to safeguard the rights of SIDS. By developing such provisions, there could be a realization of connectivity between maritime laws with the sustainable management of territorial rights of both communities and resources of SIDS threatened by CC.

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Using Learning Management System to Motivate Merchant Ship Crew to Learn Maritime English

Shamsul Rizal bin Haji Mohd Rosedi*

ABSTRACT

This paper evaluates the uses of the Learning Management System (LMS) in motivating merchant ship crew members to learn Maritime English. The study was conducted in February 2022 on 26 participants who were undertaking the Ratings' Maritime English course at a premier maritime education and training institution in Malaysia. The findings of the quantitative study which used the Instructional Materials Motivational Survey showed that there was a medium to high level of motivation in all evaluated domains of the Attention, Relevance, Confidence and Satisfaction Model of Motivation. Further Pearson correlation indicated that there were significant correlations between the good organization of the LMS content with learners' confidence and between the layout of the LMS with learners' enjoyment learning the lesson. These findings help to further improve the delivery of the course and the development of LMS especially in features that could enhance learners' motivation to learn Maritime English in asynchronous mode.

Key words : Maritime English, Learning Management System, student motivation, Attention, Relevance, Confidence and Satisfaction (ARCS) model of motivation, merchant ship crew

* Senior Lecturer, Center for Liberal Studies, Malaysian Maritime Academy, Melaka, Malaysia shamsulrizal 2010@gmail.com

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1. Introduction

The global pandemic of Covid-19 has resulted in the emergence of alternative and innovative delivery methods of the International Conventions on Standards of Training, Certification and Watchkeeping for seafarers (STCW) courses in the world and in Malaysia especially, for example, the online distance learning (ODL), among others. The regulator of the STCW programs in Malaysia, the Marine Department of Malaysia has already mandated the delivery of courses via the ODL method to all 37 maritime education and training (MET) institutions during the Movement Control Order periods from March 2020 to March 2022. This enforcement has resulted in drastic changes in the whole teaching, learning and assessments (TLAs) of the STCW courses. The training of merchant ship crew members too, has experienced these drastic changes as it must also be effectively conducted, regardless of the turmoil of the pandemic.

Within the ODL method, many higher learning institutions have also embedded the use of Learning Management System (LMS) to further support TLAs initiatives. Like the rest, Akademi Laut Malaysia too, has its own LMS platform, which is based on Moodle applications since 2016. The Covid-19 pandemic has galvanized the usage of LMS as it has been an ideal solution in providing asynchronous and synchronous lessons, interactive learning materials and formative and summative quizzes to learners, especially in closing the gap of ODL. As concluded by Bandura (1994), Biggs (1991), Buckley and Doyle (2016), Cook et al. (2009), Gagné (1985), Kapp (2012), Keller (1979) and Maslow (1943) that motivation leads to meaningful learning, the online delivery of the STCW course too, shall be motivating in nature. Hence, for the first time ever in the history of STCW delivery in Malaysia, this study provides better insights on motivational characteristics of LMS in teaching Maritime English to merchant ship crew (Ratings' Maritime English course), as experienced in February 2022.

To briefly define the LMS, Annamalai et al. (2021) reported that it is specifically used in tertiary education 'to integrate teaching and learning technology' (p. 1). Dobre (2014) helped to narrow down the scope by highlighting further that it is a 'set of software platforms, delivered to users by instructors through internet and by the use of various hardware means' (p. 314). In short, LMS can be defined as a technology-based enabler to have convenient access to learning content and its management (Berking and Gallagher, 2013). In simpler words, LMS carries the concepts of 'learning portals, distributed learning systems, content management systems, course management systems and online learning platforms' (Ahmed and Mesonovic, 2019, p. 582). The LMS has been well-known of its flexibility in learning, timesaving, universal and cost-efficient, as stated by Fernando et al. (2008) and Park and Choi (2009). It diversifies learning by attending to diverse learners' needs and levels of education in e-learning (Bervell and Arkorful, 2020; Saidi et al., 2021).

In this study, the LMS was used as a central point for learning where it provided the learners with the much-needed learning resources (video, audio, images, animation, reading texts and etc.) in addition to lecture sessions on Microsoft Teams app. Students downloaded notes for lectures, streamed video and audio clips for assigned tasks in listening and speaking, completed online quizzes for English Grammar, read and recognized Simple Sentences and safety-related phrases of the Standard Marine Communication Phrases (SMCP). Hence, as posited by Davis and Tesh (2022) that more research is needed for LMS as a motivating factor, there was a need to investigate further the motivational factors of the LMS as a tool for learning Maritime English.

2. Methods

This quantitative research used a quasi-post-test experimental design as proposed by Shadish, Cook and Campbell (2002). The sampling technique of respondents involved total sampling that included the entire class of future merchant ship crew members at a premier maritime institution in Malaysia (32 respondents in total). They were undertaking a 5-month preparatory course to become merchant ship crew members which was conducted via ODL mode due to the Covid-19 pandemic. This research took place during the 3-week course of Maritime English which had been rebranded as the Ratings' Maritime English. 32 sets of questionnaire had been distributed via WhatsApp link to all student respondents in class. However, only 26 responded (81.25%) at the closure period of data collection.

For questionnaire design, this study adopted the Instructional Material Motivational Survey (IMMS) questionnaire which had been developed by Keller (2006). The full questionnaire of the IMMS is attached in Appendix 1 for further reference. A reliability and validity test on the questionnaire resulted in a Cronbach's Alpha value of 0.788 for all 36 items that had been tested. By default, Keller's IMMS has an Alpha value of 0.950, which is very high and reliable. Nunnally (1978) proposed a high value of 0.7 for research reliability and validity and hence, the value for this research was higher than Nunnally's proposal (1978). Table 1 below presents the Cronbach's Alpha value for the survey questionnaire in this study.

Data was collected once, after respondents underwent 3 online modules of the Ratings' Maritime English on the institution's LMS platform. The modules

Table 1. Cronbach's alpha value for survey questionnaire

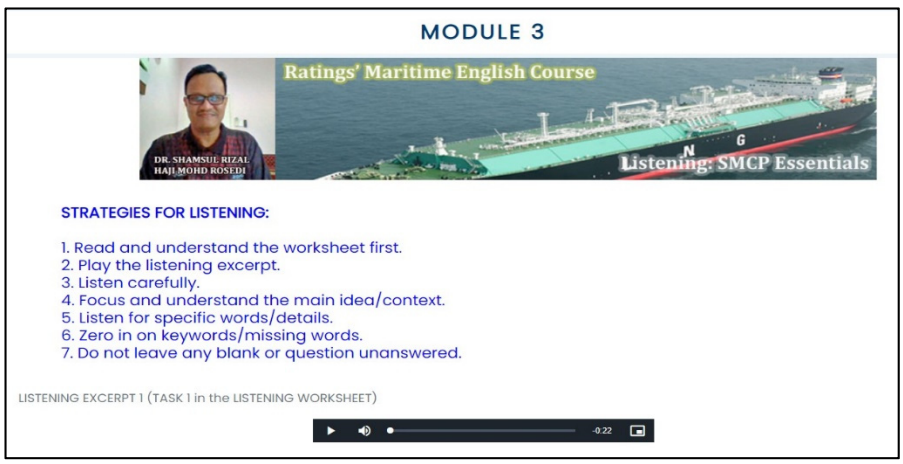
N	Items	Cronbach's α
26	36	0.788

were Basic English Grammar, English Sentences, and Introduction to SMCP and consumed 6 hours of total access time in asynchronous mode (independent access) to be completed by all respondents. This was the first time for LMS to be used in the Ratings' Maritime English course which had been conventionally taught in the pre Covid-19 pandemic period. All respondents were not informed of the intended survey either at the beginning or after the completion of all modules. This was done with the intention of maintaining the focus on LMS (learning), rather than on the survey/experiment. Figure 1 below shows one of the LMS modules used in this study (Module 3 – Listening for SMCP).

The main objective of this research is to measure the motivational features of Ratings' Maritime English LMS. In other words, the study aspires to identify and measure learners' motivation level when they used the LMS for their online Maritime English class, without any intervention by the lecturer himself. The other objective is to look at correlational relationships that may exist among motivational characteristics and domains used in the study. Therefore, to be more conclusive and to further guide the direction of research in this study, the following research questions have been developed.

1. What was the overall level of motivation of ship crew students when they underwent the Maritime English lessons via the LMS?
2. Is there any significant relationship between good organization of LMS content with learners' confidence?
3. Is there any significant relationship between the layout of LMS with learners' enjoyment learning the lesson?
4. Is there any significant relationship between the variety of reading passages, exercises, and materials with learners' satisfaction?

Figure 1. LMS module 3 on listening: SMCP essentials.



LMS, learning management system; SMCP, standard marine communication phrases.

Based on the above, there are four areas that need to be investigated by this study. Hence, the following section presents the outcomes of the study based on the enquiries as established above for further evaluation and understanding. The discussion section will further clarify the findings which leads to the conclusion of the study.

3. Results

This section presents the analyzed data in the form of results according to respective research objective and hypotheses as stated in No. 1–No. 4 of the previous section. Even though data were obtained from only 26 respondents, it represented 81.25% of the target population (total sampling). As it was meant to have total sampling for the survey, it is unfortunate to assert that 6 respondents were unable to respond due to personal and technical difficulties. However, the total sampling technique used was still considered relevant. The age range of respondents was between 19–25 years old, and they came from all over Malaysia. All students were self-paid candidates, and this was the first batch of such learners since 2018 being admitted into the academy. During the experiment and survey duration, all 26 respondents were based at their respective homes, not on campus due to the Covid-19 pandemic.

Research Question 1: What was the overall level of motivation of ship crew students when they underwent the Maritime English lessons via the LMS?

Table 2 below presents the findings for Research Question 1 which aimed to evaluate respondents' level of motivation when using the LMS for Maritime English lessons. The findings provide a straightforward answer to this research question. The IMMS questionnaire has 36 questions which are attributed to the four domains of Keller's ARCS Model of Motivation, namely Attention, Relevance, Confidence and Satisfaction (ARCS). But the questions are not equally distributed among all domains in the ARCS Model of Motivation. Attention consists of 12 questions while Relevance has 9 questions altogether. Meanwhile, Confidence has 9 questions and the last domain, Satisfaction, is left with only 6 questions. These questions are randomly arranged in the questionnaire by Keller (2010) to reduce the effect of question familiarization and also for acquiescent purposes.

Table 2 above lists down all motivational domains as tested in the IMMS questionnaire, the number of questions that are attributed to specific domain and most importantly, the total mean scores for all questions in each particular domain. The highest score was obtained by the *Satisfaction* domain with a mean of 4.10 (6 questions). The lowest score was demonstrated by the *Confidence* domain with a

Table 2. Respondents' level of all domains in the ARCS model

Dimension	No. of questions	Total mean scores
Attention	12	3.97
Relevance	9	3.94
Confidence	9	3.73
Satisfaction	6	4.10

ARCS, attention, relevance, confidence and satisfaction.

mean of 3.73 (9 questions). The other two motivational domains, *Attention* and *Relevance* had mean scores of 3.97 (12 questions) and 3.94 (9 questions) respectively. However, suffice to mention here the lowest and highest means or the range of means that were scored by all items for better understanding. For the *Attention* domain, the lowest and highest mean scores were recorded as 3.73 and 4.38 respectively. This means that the range of mean scores for this domain was between 3.73 to 4.38. As for *Relevance*, the range of mean scores was recorded from 3.88 (lowest) to 4.15 (highest) while *Confidence* recorded 3.23 (lowest) to 4.04 (highest) for all the questions. The last domain, *Satisfaction*, was found to be between 3.92 as the lowest mean score, to 4.38 as the highest mean score.

The total mean scores and also the range of scores obtained by all domains support that the levels of student motivation investigated in this study were identified at medium to high level of performance. Three domains fell under the medium level (mean score<4.00). They were the attention, relevance and confidence, domains while only one domain, which was Satisfaction, fell under the high level of acceptance (mean score>4.00). These findings helped to answer Research Question 1 that the overall level of motivation of ship crew students was found at medium to high level when they underwent the Maritime English lessons via the LMS.

Research Question 2: Is there any significant relationship between good organization of LMS content with learners' confidence?

To answer Research Question 2, the researcher used Pearson Product Moment correlation to investigate the relationship between good organization of LMS content with learners' confidence. Table 3 below explains further the correlation as being investigated.

From Table 3 above, the results indicated that the calculated r-value of 0.588 is greater that $p=0.000<0.01$. This showed that there was a significant positive relationship between good organization of LMS content and learners' confidence in the study. The finding suggests that the better organization of LMS content will result in higher confidence of the learners. Indeed, this is a crucial feedback that must not be taken lightly but must be further considered in the improvement of LMS content in near future. Hence, it is asserted here that the

Table 3. Pearson (r) statistics showing the relationship between good organization of LMS content with learner's confidence

Variables	N	Mean	SD	Cal. r	*p*–value
Good organization of LMS content	26	4.52	.701	.588*	0.000
Learner's confidence	26	4.32	.806		

*Sig. at $p<0.01$.
LMS, learning management system.

relationship between the good organization of LMS content and learners' confidence is found to be positive and significant.

Research Question 3: Is there any significant relationship between the layout of LMS with learners' enjoyment learning the lesson?

To answer Research Question 3, like the previous Research Question 2, the researcher used Pearson Product Moment correlation to test whether or not, there is a relationship between the layout of LMS with learners' enjoyment learning the lesson. Table 4 below presents the related finding for better discussion.

From Table 4, the results indicated that the calculated r-value of 0.46 is greater that p=0.000<0.01. This showed that there was a significant positive relationship between the layout of the LMS with learners' enjoyment learning the lesson, as investigated in this study. This suggests that any improvement in the layout of LMS will result in more enjoyment of the learners' to learn the lessons. Therefore, to answer the question, it is asserted here that the relationship between the layout of the LMS and learners' enjoyment learning the lesson is positive and significant.

Research Question 4: Is there any significant relationship between the variety of reading passages, exercises, and materials with learners' satisfaction?

For answering this question, the same Pearson Product Moment Correlation was selected. There was a need to look at the relationship between the variety of reading passages, exercises, and materials with learners' satisfaction for this study. Table 5 below presents the finding for better discussion.

Table 4. Pearson (r) statistics showing the relationship between the layout of LMS with learners' enjoyment learning the lesson?

Variables	N	Mean	SD	Cal. r	*p*–value
The layout of LMS	26	4.45	.708	.460*	0.000
Learners' enjoyment learning the lesson	26	4.47	.699		

*Sig. at $p<0.01$.
LMS, learning management system.

Table 5. Pearson (r) statistics showing the relationship between the variety of reading passages, exercises, and materials with learners' satisfaction

Variables	N	Mean	SD	Cal. r	*p*–value
Variety of reading passages, exercises, and materials	26	3.96	.958	.435*	0.000
Learners' satisfaction	26	4.38	.804		

*Sig. at $p<0.05$.

From Table 5, the results indicated that the calculated r-value of 0.435 is greater that p=0.000<0.05. This proved that there was a significant positive relationship between variety of reading passages, exercises, and materials on the LMS and learners' satisfaction in the study. The finding also suggests that if there are more reading passages, exercises, and materials being included on the LMS of Ratings' Maritime English, the learners will be more satisfied with the lesson. Hence, in answering this research question, the finding has proved that there is a significant positive relationship between the variety of reading passages, exercises, and materials with learners' satisfaction.

4. Discussion

The findings of Research Question 1 show that the level of respondents' motivation when using the LMS in learning Maritime English was at medium-high level. This was a good indicator in a such preliminary study on motivation and usage of LMS in the MET which had been relying on conventional face to face methods in the pre-pandemic period. Suffice to mention that the respondents were freshmen who were first time users of LMS and there could be many factors affecting their access to LMS modules and interactive materials. Accordingly, the grand mean scores of all motivational domains in Keller's ARCS Model of Motivation were all above 3.50 (>3.50) which ranged from 3.73 to 4.10. Confidence gained a grand score of 3.73, which was the lowest of all four domains. This was logical since all respondents were not only first-time users of LMS, but also first timers in going through online classes and Maritime English lessons. On the other hand, Relevance came with a much better grand mean of 3.94, which signified that to some extents, respondents had significantly related the lessons with job requirements on board of merchant ships. Next, the domain of Attention obtained a higher grand mean of 3.97, which was the closest to the high level of motivation. Moreover, this domain had the highest number of questions (12 questions altogether) and the high grand mean score proved that the LMS, to some extents, had successfully gained the attention of respondents in this study. Most of this had been attributed to the rich multimedia content (video and audio clips),

layout, graphics, and images together with exercises that could reinforce learners' understanding of the subject matter (Maritime English). Most importantly, the last domain in Keller's ARCS Model of Motivation which was satisfaction, summed up the experiment and study with a very significant result. The domain of satisfaction proved to gain the highest grand mean score of all motivational domains in the study with 4.10 (mean score>4.00). This concluded the study with the notion that despite all the challenges and new experience in online learning, especially in using the LMS, all learner respondents recorded high level of satisfaction when using the LMS for learning Maritime English. This provides conclusive evidence that LMS could be used not only to achieve the learning objectives of lessons, but also to attract learners' attention, provide relevant content with the industry, help them to build up confidence and finally, lead to the feeling of contentment (satisfaction) at the end of lessons/module.

The finding of Research Question 2 (Hypothesis 1) had pointed out that there was a significant relationship between the good organization of LMS content with learners' confidence. The r-value for Pearson Correlation of .588 showed a strong relationship and hence, it can be concluded that the learner respondents in this study gained confidence from the systematic arrangement of content, which were the reading passages, lessons, exercises together with multimedia content which had been specifically developed and included to the lesson proper and its learning objectives. Furthermore, the excitement of accessing LMS and going through the lessons in their own pace provided learner respondents with the opportunity to complete the learning tasks according to their own learning pace. This personalized learning helped them to build the needed confidence not only in successfully completing the tasks but also in mastering the skills as planned such as the basic marine vocabulary (BMV), basic marine sentences (BMS) and ultimately, Part B of IMO SMCP.

For Research Question 3 (Hypothesis 2), it was proven that the null hypothesis had been rejected due to significant correlation between students' active class participation with student engagement. The r-value of Pearson Correlation of .460 showed a significant relationship between the two variables. This further supports the 100% completion of lessons (all three Maritime English modules) within the stipulated period, even though there was not close supervision by the lecturer/researcher for that particular access period (class hours and extended class hours). Majority of learner respondents had repeatedly gone through the lessons/modules, and they kept on highlighting and sharing their experience in group discussion. This had also increased interaction with peers and with the lecturer/researcher and brought to the conclusion that they were engaged in their lessons by their access to the LMS.

Lastly, the Research Question 4 (Hypothesis 3) had also resulted in the rejection of null hypothesis as there was a significant correlation between variety of reading passages, exercises, and materials with learners' satisfaction. A significant r-value of Pearson Correlation of .435 proved that all respondents in

this study were satisfied with the sufficient coverage of lesson whereby the reading passages, exercises, and materials (audio, video clips) had helped them to successfully complete the modules and achieve the intended learning objectives either in mastering BMV or BMS, shipping, and maritime terminologies and also Part B of the IMO SMCP (on-board safety related phrases).

5. Conclusion

From the results of this study and also from the discussion held earlier, it is obvious that the level of student motivation was at medium-high level when they used LMS in learning Maritime English during their online classes in February 2022 (3 weeks of intensive mode). Even though the number of respondents was relatively small, but it has involved the whole class of future merchant ship crew members. The LMS for teaching Maritime English to these future merchant ship crew members had been designed and developed within the framework of Keller's ARCS Model of Motivation and as such, the assessment tool used in evaluating the level of motivation came from the same model (the IMMS-Instructional Materials Motivation Survey). To the extreme point, it can be concluded that the result of studies, which was the medium-high level of motivation could be attributed to all elements/domains of the ARCS that had been used to develop the LMS. As such, it is not too much to assert that the results that were obtained had been much anticipated earlier.

The elements of ARCS had been thoughtfully considered and used to develop the LMS in this study and it is not surprising to note that the results were not that far from the results that had been aspired by Keller (2006). Keller (2006) proposed the level between medium-high to high level of motivation if the ARCS Model of Motivation had been carefully used and implemented in the design and development of lessons. Hence, it can be concluded also that the results were in conjunction with the anticipated outcomes as proposed by Keller (2006). However, the medium-high level as indicated by respondents in this study needs to be further investigated and explained as there may be other unknown underlying factors yet very significant to be discovered. It is also proposed that more related studies in this capacity could be conducted in order to arrive at more solid knowledge and findings. But all in all, this study has added significant findings to the existing body of knowledge in using LMS in ODL. Hopefully, they will assist other MET institutions in developing and using LMS in the teaching and learning of STCW.

6. Limitations of Study

Besides the results that have been obtained by this study, there were also a few limitations that were faced by the researcher that are worthwhile to be highlighted. A research is not complete without highlighting the limitations in terms of survey method, number of respondents, lesson coverage and also extended population/location of research. As this study is considered an inaugural research on the use of LMS in motivating learners in learning Maritime English and also the first of its kind in the MET in Malaysia, suffice to mention that it is proposed for future similar research to add a qualitative study to complement the findings from quantitative method. In other words, interviews should be conducted to obtain better insights and understanding on learner respondents' perception and experience in using the LMS. This could better support the findings either the level of motivation, correlations and even the factors associating with the obtained results. In addition, the immediate feedback from respondents during interviews provide straightforward responses on their motivation in accessing the LMS. Words and phrases associated with ARCS are easily identified and documented and they are very useful in supporting and reinforcing the quantitative findings. Hence, the findings could be of holistic in nature and explain further the situations and circumstances that may not be captured by the research questionnaire.

It is also hoped that the future related studies could increase the number of participants/respondents in order to increase the reliability of the results. As the study was conducted during the pandemic on a small class of future deck crew members (32 respondents but only 26 valid), the results could not be generalized and applied in larger classes (>40 respondents) or even batches (>100 respondents). Hence, an immediate suggestion is to conduct the same study on future navigation officers or engineering officers in order to gain better results, whereby the number of each pass surpasses 100. Perhaps this way could deliver more conclusive and valid results on the motivating factors that LMS could provide when learning Maritime English. One good thing to emphasize here is that the subject of Maritime English is compulsory to both crew and officers in the shipping/maritime industry and hence, it is crucial to warrant a larger scale study for better conclusive results.

The next limitation to be considered is the number of modules/lessons on the LMS. As this study had involved only three topics namely *Basic English Grammar, English Sentences,* and *Introduction to SMCP*, it is strongly recommended that the future similar research to include other important topics such as the *Types of Merchant Vessels*, *Shipboard Organization and Safety on-Board* in order to evaluate the strengths and weaknesses of the said LMS in reinforcing learning. More topics will create more variables, reactions, and diversified experience since difficulty in learning is also attributed to the complexity of topic/content of lesson. This will provide more diversity in learning experience and level of understanding thus generate more feedback on the strengths or weaknesses

of the LMS in motivating further the learner respondents.

The last limitation in this study is the about the extended location/ population of research. Besides the current location, it is advisable for future similar research to include other maritime institutions and different groups of learner respondents as well. This will increase the reliability and validity of the research especially the results obtained as the number of institutions and population increases, the diversity of feedback and results also increases. As the coverage has been extended, the study can also be increased in its acquiescence and independence as learner respondents are not familiar with the researcher/ lecturer and the feedback obtained will be solely based on the research but not on the impact from researcher/lecturer intervention or influences. As for the number, again, more diversified population will provide more diversified feedback. This will further provide more insights and understanding on learners' motivation, the lessons, the LMS and even the student engagement as there are larger factors and variables to be considered, involved, and studied.

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Notes to Contributors

Manuscript. Submissions should be clear and concise. Manuscripts will be accepted with the understanding that their contents are unpublished and not being submitted for publication elsewhere. All parts of the manuscript, including the title page, abstract, tables and legends should be typed in English. Allow margins of at least 3cm on all sides of typed pages. Pages must be numbered consecutively throughout the paper.

Title. Must be as brief as possible and consistent with clarity (6 to 12 words). Authors should also supply a shortened version of the title suitable for the running head, not to exceed 50 character spaces.

Author Affiliation. Include the full names of authors, academic and/or professional affiliations and the complete mailing address of the author to whom proofs and correspondence should be sent as well as the address information of all of the authors.

Abstract. Each paper should be summarized in an abstract of not more than 150 words. Avoid abbreviations, diagrams and references to the text.

Key words. Authors must supply three to five keywords or phrases which identify the most important subjects covered by the paper.

Mathematical Notation. Use only essential mathematical notation as it is costly to typeset and may limit readership. Where mathematical notation is essential, keep it simple and in conformance with conventions of the profession.

References. Citations within the text must include the author name(s) and the data in parentheses [i.e., Smith, Jones, and Cutler (1993)]. Use et al. in the text only when four or more authors are cited. Do not use et al. in the references. Alphabetize the reference section and include all text citations. For more information, consult the *Chicago Manual of Style*. Follow these examples:

- **Journal** - Koenig, E. F. (1984) Fisheries Regulation Under Uncertainty: A Dynamic Analysis. *Marine Resource Economics* 1(2):193-208.
- **Book** - Heaps, T. and Helliwll, J. F. (1985) *The Taxation of Natural Resources. Handbook of Public Economics*, Vol. I, Auerback, A. J. and Feldstein, M. (eds.), pp. 21-72. Amsterdam: North-Holland.

Data and Documentation. Data sources, models and estimation procedures are expected to be documented to permit replication by other researchers. Data used in the analyses should be made available to other researchers for replication purposes. Submission of appendices, model documentation and other supporting materials is encouraged to facilitate the review process.

The Ethical Guidelines

Preamble

The KMI International Journal of Maritime Affairs and Fisheries (hereinafter referred to as the "the journal", www.kmij.org) is a peer-review journal of ocean policy studies and marine data analytics. The journal offers researchers, analysts and policy makers a distinct combination of legal, political, social and economic analyses. The journal covers a range of international, regional and national marine policies; management and regulation of marine activities including fisheries, ports and logistics; marine affairs, which encompasses the topics of marine pollution and conservation as well as the use of marine resources. Editors of the journal are responsible for organizing and keeping guidelines of reviewing and accepting manuscripts submitted to the journal.

1. General rules

- The guidelines describe measures to set up ethics and hinder malpractices in management of the journal.
- The guidelines apply to those who join the publication of the journal.
- The terms are defined as follows.

Forgery implies the behavior of distorting data.

Falsification implies the behavior of twisting the truth of research performance or findings by deforming research findings, processes, devices, etc., artificially transforming or deleting data arbitrarily.

KMI is an initialism for the Korea Maritime Institute.

Plagiarism implies the behavior of borrowing the concepts, research facts, results, etc., of other people without proper references or notations.

Display of unjustified manuscript and paper authors implies the behavior of granting authorship to a person who has not given or made technical or scientific contribution to the content or results of research.

Double publication implies the act of publishing texts identical or similar to two or more academic journals.

Self-plagiarism implies a sort of **Plagiarism** in which an author republishes a previous work entirely or partially without referring to the previous publication.

The guidelines refer to the Ethical Guidelines.

2. Ethical rules for editors

- **Liability of editors:** Editors should be responsible for deciding whether to respect authors' character, independently as scholars, and publish submitted manuscripts and papers.
- **Fairness of paper treatment:** Editors should treat manuscripts and papers fairly on the basis of manuscript and paper quality and the Ethical Guidelines regardless of gender, age, nationality, organization, prejudice, or private relationship.
- **Objectivity of reviewer selection:** Editors should assist the reviewers utilizing their expertise and fair judgment to evaluate submitted manuscripts and papers. Editors should ensure manuscripts and papers evaluated as objectively as possible by avoiding the reviewers who may have an antagonistic or positive bias towards certain authors.
- **Non-exposure of the manuscripts and the paper review process:** Editors should not expose information on authors or submitted manuscripts and papers to persons except reviewers until it is decided whether to publish the manuscripts and papers.

3. Ethical rules for reviewers

- **Honesty and punctuality of manuscript and paper review:** Reviewers editors assigned to assess should evaluate the manuscripts and the papers reliably and give notice of the results to editors within a certain period of time. When considering themselves disqualified for review, reviewers should inform editors of the fact without hesitation.
- **Impartiality of manuscript and paper review:** Reviewers should review the manuscripts and papers evenly in accordance with the objective criteria. The reviewers should not depreciate the manuscripts and the papers without sufficient basis or refuse them for the reason of colliding with their own views or interpretations.
- **Validity of manuscript and paper review:** Reviewers should respect the intellectual tendency of the author. The reviewers should clarify their judgments and explain in detail the reasons for supplementation in an evaluation sheet, if necessary.
- **Confidentiality of review and disallowance of prior citation:** Reviewers should maintain confidentiality of the contents within the manuscripts and the papers. Except when seeking special advice for evaluation, it is recommended that reviewers do not show manuscripts and papers to others or discuss them on any level. Additionally, reviewers should not cite manuscripts and papers without authors' consent before the publication of the journal that includes the manuscripts and the papers.

4. Ethical rules for authors

- **Research wrongdoing:** Authors are not allowed to forge, falsify or pirate manuscripts and papers, or display unreasonable authorship.
- **Double publication:** Authors are not allowed to submit the studies previously published, nor those set to be published, nor those under review to other academic journals or

publications. This principle does not apply to manuscripts and papers presented at research conferences, research reports, dissertations, nor those openly unpublished, etc. In this case, the fact should be notified to editors and readers.

- **Citation:** Academic materials should be cited precisely and along with their clear and distinct sources. Data privately obtained should be cited only after receiving agreement from the person who produced the information. If the writings or ideas of others are cited or borrowed, respectively, the fact must be specified using footnotes.

5. Enforcement guidelines for research ethics

- **Vow of ethics keeping:** Authors who submit their manuscripts and papers to the KMI or are entrusted with manuscript review and paper review will be considered to have pledged to keep these guidelines.
- **Report of ethics violation:** If authors or reviewers have violated research ethics, the editor-in-chief of the journal as a representative of KMI should rectify the problems involving processes or results. If any problem has proved to be a clear violation of research ethics, the case should be assigned to the Ethics Committee of the journal. The editor-in-chief of the journal nominates the Director and four members of the Ethics Committee of the journal.
- **Composition and convocation of the Ethics Committee:** The Director should convene a meeting of the Ethics Committee within 7 working days after the appointment of the Director and the four members. The Director should be the Chair of the Ethics Committee meeting.
- **Request for attending and material submission:** The Ethics Committee may request informer and suspect to submit materials and to attend its meeting. In this case, suspects should accept the request. The very non-acceptance of suspects violates research ethics.
- **Right protection and confidentiality of informer and suspect**: The identities of informer shall not be disclosed to any third person directly or indirectly. Care should be taken lest the suspects' honor or rights should be infringed on until verification is completed on whether they are involved in any wrongdoing.
- **Judgement of the Ethics Committee meeting:** The Ethics Committee meeting can discuss with more than half of the members present and vote on the contents and results with two-thirds of the members or more present.
- **Report of the Ethics Committee meeting:** The Director shall prepare a results report of the Ethics Committee meeting and submit the result to the editor-in-chief of the journal in five working days following the judgement.
- **Notice of the judgement and decision of editor-in-chief to the author:** The editor-in-chief of the journal shall accept the **Judgement of** the Ethics Committee meeting if any prejudice or private interest of the Ethics Committee is not found. The **Judgement of** the Ethics Committee includes ethics violation, measures and sanctions for the ethics violation. The editor-in-chief of the journal shall notice **the judgement of** the Ethics Committee and the final decision of the editor-in-chief **to the author** in five working days after the arrival of the judgement. If the editor-in-chief of the journal finds any prejudice or private interest

of the Ethics Committee, the editor-in-chief re-appoints the Director and four members of the Ethics Committee of the journal.

- **Opposition of the author:** If the author or the information provider of the **ethics violation is not satisfied with the judgement of** the Ethics Committee and the decision of the editor-in-chief, the author or the information provider may file up the objection to the editor-in-chief. In that case, the editor-in-chief shall give notice of the objection to the Director within 7 working days after the filing. The Director shall review the case within 12 working days after notice is given by the editor-in-chief.
- **Measures and sanctions for ethical violations:** The Ethics Committee shall apply measures and sanctions in accordance with the types, contents, and degrees of the intention of ethical violations, such as amendment or prohibition of publication in the journal, cautions or warnings, and restrictions of submission of an article to the journal.

6. Date of Enforcement

The guidelines shall come into effect as of the 29th of May, 2021.