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EXECUTIVE SUMMARY

Lack of transparency is considered one of the main contributing factors to the persistence of illegal, unreported and unregulated (IUU) fishing worldwide. It undermines the international community’s existing efforts, which have employed various instruments in the fight against IUU fishing. Due to the complex, transnational nature of IUU fishing, it is challenging to detect, let alone deter such activities without transparency. Greater transparency in the seafood supply chain would enable authorities and the public to recognise IUU fishing products, along with the vessels and their owners who are responsible for them. At the global level, one of the most critical initiatives to improve transparency is the Global Record Initiative (GRI); introduced by the Food and Agriculture Organization (FAO), its purpose is to establish a global record containing information on the identity of fishing, refrigerated fishing and supply vessels, along with the ownership benefitting from their operations.

GRI is still in its early phases. It has been tested out in 11 project partner states, resulting in an extensive database of vessels, which can be accessed by public via the GRI website. Subject to further development, the Committee on Fisheries (COFI) has selected six information modules that can be made available within the record. They are vessel detail, historical information, authorisations, inspections/surveillance, port entry/denial, and IUU Fishing Vessel List. So far, out of these modules, FAO only requires states to submit vessel information; in particular, Unique Vessel Identifier (UVI), current flag, overall length, vessel name, and Gross Tonnage (GT) or Gross Registered Tonnage (GRT). Unique to this initiative is the additional introduction of UVI for every vessel registered in the database. The UVI refers to the International Maritime Organization (IMO) number associated with the fishing vessel, regardless of changes in flags and ownership. The GRI is therefore intended to supplement the implementation of the Agreement on Port State Measures (PSMA) and Voluntary Guidelines for Catch Documentation Schemes (CDS).

However, the number of states participating in the GRI remains limited. As of November 2020, 65 participant states in this initiative have registered a combined total of 11,687 vessels. In the Arafura Timor Seas (ATS) region, only two littoral states – Australia and Indonesia – have participated in the GRI thus far. Therefore, the following report aims to make recommendations for all of the ATS littoral states in relation to how they can maximise – or indeed initiate – their participation in the GRI. For Timor-Leste and Papua New Guinea (PNG), this report is intended to support their participation and help formulate preparatory works for that purpose. To that end, the authors have conducted mapping and assessments of each ATS littoral states' national regulations concerning monitoring, control and surveillance (MCS) of fishing and navigation. Such works have been conducted through desk study of various literature, publications, legislation and country reports submitted in relation to the FAO Global Record Initiatives.

Australia has submitted information pertaining to vessels and a list of ports to the GRI. In general, its national regulations are already compatible with the information required. Fishing and other fishing-associated vessels are recorded and monitored throughout their operations, starting from pre-production and continuing through until post-production. In terms of movement, vessels are tracked through the Vessel Monitoring System (VMS), routine patrols at sea and information exchange with foreign port authorities for vessels operating beyond the Australian Fisheries
Zone (AFZ). The main challenge with regards to effective GRI participation for the Australian authorities is the absence of IMO number regulations for fishing vessels.

Indonesia has also recorded and monitored fishing vessels and fishing-associated vessels flying its flag, whether operating in Indonesian fisheries management areas or on the high seas. The exception is small fishing vessels, which are regulated differently. In monitoring fishing vessels’ movement and fishing activities in Indonesian waters and the high seas, the Indonesian authorities rely on a combination of VMS, observers and routine patrols at sea. However, this report found two legal gaps concerning VMS: first, compliance is not currently a prerequisite for a fishing license; second, fishing vessels below 30 gross tonnage (GT), which account for around 90% of Indonesia's total fishing fleets, are exempt from VMS obligations. The Indonesian authorities therefore encounter serious difficulties when trying to detect them. These challenges are further exacerbated by Indonesia's enormous area and a lack of coordination between government agencies.

Compared to Australia and Indonesia, PNG faces considerable challenges relating to GRI participation. Before making any decisions, national regulations on the monitoring, control and surveillance of fishing and fishing-associated vessels need to be substantially improved. Most local fishing vessels in PNG are small scale, while licensed foreign fishing vessels are also permitted to operate in its waters. The necessary improvements may be initiated by requiring vessels’ owners, including those owning licensed foreign vessels, to submit information relating to ownership, including previous flags and vessel name. In terms of monitoring at sea, the PNG authorities rely on VMS and the Global Maritime Distress and Safety System (GMDSS) for specific distress situations. However, staff capacity constraints in the authorities also present an enormous challenge to effective participation in the GRI.

If they decide to participate in the GRI, Timor-Leste would have to deal with significant challenges. One of the main problems is the number of small fishing vessels, representing more than 90% of the total fishing fleet registered in Timor-Leste. Unlike Indonesia, Timor-Leste requires small fishing vessels, even those below 10 GT, to have a license. Such a license includes basic information, such as the ownership and history of vessels. Regarding monitoring at sea, the authorities rely on the IUU reporting system that involves fishers during the process. Fishers can press the buttons on the personal GPS locator beacons (PLB) to anonymously report the time, date and position of IUU fishing activities to the Maritime Police and Fisheries Inspection departments. Nonetheless, this is not supported by governmental capacity to follow-up on the report, simply because they do not possess any patrol boats; similarly, the authorities lack the capacity to collect and process vessels and their owners’ data.

All in all, there are three main challenges that ATS littoral states must face when taking part in the GRI, which are as follows:

1. The GRI, which is still only in its second phase, lacks relevance in the governance of ATS for two main reasons; first, the majority of fishing fleets in the ATS region are small scale and below 30 GT; second, ATS is a semi-enclosed sea with no high seas.

2. Unsupportive national laws and regulations in relation to system requirements. For example, to put IMO numbers as a prerequisite for obtaining a license; the majority of fishing fleets
operating in the ATS are those below 30 GT, which are excluded from the existing IMO numbering scheme.

3. Technical hindrances, such as complicated upload methods and system performance.

4. Capacity constraints. For example, the limited capacity to manage data originating from multiple systems and sources, no designation of national authorities and the limited availability of experts.
RINGKASAN EKSEKUTIF


GRI masih dalam tahap awal. Inisiatif ini telah diuji dengan sebelas negara yang menjadi mitra proyek yang menghasilkan daftar informasi tentang kapal yang mengibarkan benderanya di database GRI yang dapat diakses untuk umum di situs GRI. Dalam pengembangan lebih lanjut, Komite Perikanan (COFI) telah memilih enam modul informasi yang dapat disediakan dalam GRI yaitu detil kapal, informasi terkait riwayat otorisasi, inspeksi/pengawasan, masuk/penolakan di pelabuhan, dan daftar kapal penangkap ikan IUU. Sejauh ini, dari modul yang telah ada, FAO hanya mensyaratkan negara untuk mengirimkan informasi kapal, khususnya, Unique Vessels Identifier (UVI), bendera kapal saat ini, nama, panjang keseluruhan dan tonase kotor atau tonase kotor yang terdaftar dari suatu kapal penangkap ikan. Yang unik dari inisiatif ini adalah pengenalan UVI untuk setiap kapal yang terdaftar dalam database. UVI, yang merupakan nomor yang dimiliki oleh Organisasi Maritim Internasional (IMO) saat ini akan tetap terikat dengan kapal penangkap ikan terlepas dari adanya perubahan bendera dan kepemilikan. Oleh karena itu, GRI diharapkan dapat menjadi alat untuk membantu melengkapi implementasi perjanjian Tindakan Negara Pelabuhan (PSMA) dan Panduan Sukarela untuk Skema Dokumentasi Tangkapan.

Meski demikian, jumlah negara peserta GRI masih tergolong terbatas. Per November 2020, 65 negara telah menjadi peserta dalam inisiatif ini yang mendaftarkan kapal dengan total 11.687 kapal. Di kawasan Laut Arafura dan Timor (ATS), hanya dua negara yang berpartisipasi dalam GRI yaitu Australia dan Indonesia. Oleh sebab itu, laporan ini bertujuan untuk merekomendasikan semua negara pesisir ATS tentang bagaimana mereka dapat memaksimalkan partisipasi negara dalam GRI. Untuk Timor-Leste dan Papua Nugini, laporan ini dimaksudkan untuk membantu mereka mempertimbangkan partisipasi mereka di dalamnya dan diharapkan dapat merumuskan persiapan yang perlu dilakukan untuk dapat bergabung. Untuk itu, penulis melakukan pemetaan dan penilaian regulasi nasional masing-masing negara ATS tentang Pemantauan, Pengendalian, dan Pengawasan (MCS) penangkapan ikan serta navigasi. Pekerjaan tersebut dilakukan melalui studi pustaka atas berbagai literatur, publikasi, undang-undang, dan laporan negara tentang penyerahan data ke pada GRI.
Australia telah menyerahkan informasi tentang kapal dan daftar pelabuhan ke GRI. Secara umum, peraturan nasionalnya sudah sesuai dengan informasi yang disyaratkan oleh GRI. Kapal penangkap ikan dan kapal lain yang menjadi objek GRI dengan penangkapan ikan dicatat dan dipantau selama operasinya, mulai dari pra-produksi hingga pasca-produksi. Dalam hal pergerakan kapal, mereka dipantau melalui Sistem Pemantauan Kapal Perikanan (VMS), patroli rutin di laut, dan pertukaran informasi dengan otoritas pelabuhan asing untuk kapal yang beroperasi di luar Zona Perikanan Australia. Tantangan utama partisipasi efektif GRI bagi otoritas Australia adalah tidak adanya peraturan Nomor IMO untuk kapal penangkap ikan.

Indonesia juga mencatat dan memantau kapal penangkap ikan dan kapal penangkap ikan yang mengibarkan benderanya, baik yang beroperasi di wilayah pengelolaan perikanan Indonesia maupun di laut lepas. Pengecualianannya adalah kapal penangkap ikan skala kecil, yang diatur secara berbeda. Dalam memantau pergerakan kapal penangkap ikan dan aktivitas penangkapan ikan di perairan Indonesia dan laut lepas, pihak berwenang Indonesia mengandalkan VMS, program pengamat/observer, dan patroli rutin di laut. Namun, laporan ini menemukan dua celah hukum terkait VMS. Pertama, kepatuhan terhadap kewajiban VMS tidak ditetapkan sebagai salah satu syarat untuk menerbitkan izin penangkapan ikan. Kedua, kapal penangkap ikan di bawah 30 GT, yang mencakup sekitar 90% dari total armada penangkapan ikan Indonesia, dibebaskan dari kewajiban VMS. Karena itu, pihak berwenang Indonesia menghadapi kesulitan yang serius untuk mendeteksinya. Kesulitan-kesulitan ini diperburuk oleh luasnya wilayah Indonesia dan kurangnya koordinasi antara badan-badan pemerintah.

Dibandingkan dengan Australia dan Indonesia, Papua Nugini menghadapi tantangan yang cukup besar dalam berpartisipasi dalam GRI. Sebelum memutuskan partisipasi ini, peraturan nasional tentang MCS untuk para penangkap ikan dan kapal terkait penangkapan ikan perlu ditingkatkan secara substantiel. Sebagian besar kapal penangkap ikan lokal di Papua Nugini berskala kecil sedangkan kapal penangkap ikan skala industry adalah kapal asing berlisensi yang diizinkan beroperasi di perairannya. Perbaikan substantiel dapat dimulai dengan mewajibkan pemilik kapal, termasuk yang memiliki kapal asing berlisensi, untuk menyampaikan informasi tentang kepemilikan, bendera sebelumnya, dan nama kapal. Dalam hal pemantauan di laut, otoritas Papua Nugini mengandalkan VMS dan Global Maritime Distress and Safety System (GMDSS) untuk situasi bahaya tertentu. Hambatan kapasitas staf di pihak berwenang juga menghadirkan tantangan yang sangat besar untuk partisipasi yang efektif dalam GRI.

Timor-Leste juga dihadapi tantangan yang signifikan jika mereka telah memutuskan untuk berpartisipasi dalam GRI. Salah satu tantangan utama adalah besarnya jumlah kapal penangkap ikan kecil, yang mewakili lebih dari 90% dari total armada penangkapan ikan di bawah daftar kapal di Timor-Leste. Berbeda dengan Indonesia, kapal penangkap ikan kecil, bahkan kapal di bawah 10 GT perlu untuk memiliki lisensi. Lisensi semacam itu berisi informasi yang lebih mendasar, seperti kepemilikan dan sejarah kapal. Terkait pemantauan di laut, pihak berwenang mengandalkan sistem pelaporan IUU yang melibatkan nelayan selama prosesnya. Nelayan dapat menekan tombol pada personal GPS locator beacon (PLB) untuk melaporkan waktu, tanggal, dan posisi aktivitas penangkapan ikan IUU secara anonim ke Polisi Maritim dan Departemen Inspeksi Perikanan. Namun, hal tersebut tidak didukung oleh kemampuan pemerintah untuk menindaklanjuti laporan tersebut karena tidak memiliki kapal patroli. Terakhir, otoritas tidak memiliki kapasitas untuk mengumpulkan dan memproses kapal dan data pemilik.
Secara keseluruhan, tiga tantangan utama yang akan dihadapi negara-negara pesisir ATS dalam mengambil bagian dalam GRI adalah sebagai berikut:

1. GRI, yang masih dalam tahap ke-2, kurang relevan dalam tata kelola ATS karena dua alasan utama. Pertama, mayoritas armada penangkap ikan di dalamnya berskala kecil dan di bawah 30 GT. Kedua, ATS adalah laut semi tertutup tanpa laut lepas.

2. Undang-undang dan peraturan nasional yang tidak mendukung persyaratan sistem. Misalnya, menempatkan nomor IMO sebagai syarat prasyarat untuk mendapatkan lisensi. Mayoritas armada penangkapan ikan yang beroperasi di ATS adalah yang di bawah 30 GT, yang dikecualikan dari Skema Penomoran IMO yang ada.

3. Hambatan teknis, seperti metode pengunggahan yang rumit dan kinerja sistem

4. Batasan kapasitas, misalnya, terbatasnya kapasitas untuk mengelola data yang berasal dari berbagai sistem dan sumber, tidak ada penunjukan otoritas nasional, dan terbatasnya tenaga ahli.
SUMÁRIU EZEKUTIVU

Falta transparencia considera hanesan fatór ida hosí fatór kontribuinte siraseluk ba persisténsia iha haka’er-ikan ilegál, la relata, no la’ós regula (IRR) iha mundu tomak. Ida ne’e prejudika comunidade internasional nia esforsu ezistence, ne’ebé adopta tiha ona instrumentu internasional wa’in hodí kombaite hasoru IRR. La-hó transparencia, sei diffisil atu deteta, saa-tan atu satan atividad haka’er-ikan IRR bás asaun ne’e ho natureza transnasional no kompleksu. Iha sorin seluk, transparencia ida bo’otliu iha kadeia fornesimentu na’an-tasi maka sei hafasil autoridade no públiku atu determina produtu haka’er-ikan IRR, hamutuk ho ró no na’in ne’ebé responsável ba produtu hirak ne’e. Iha nível global, inisiativa ida kritiku liu entre siraseluk hodí hadí’ak transparencia iha Inisiativa Rekorda Global (IRG), ne’ebé introdúz hosí Organizasaun ba Ai-han no Agrikultura (OAA). Objetivu hosí OAA maka atu estabelese rekorda global débó ne’ebé fornese informasaun ida disponível kona-ba identidade haka’er-ikan, haka’er-ikan jeladu, ró fornesedór, hamutuk ho siru nia propriedade efetivu no operasaun ba haka’er-ikan nian.

IRG sei iha faze iniísiu hela. Ida ne’e koko tiha ona ho estadu parseiru ba projetu hamutuk sanulu resin-ida, rezulta ho inkluaun kona-ba informasaun ba ró ne’ebé dada sirá nia bandeira iha baze-de-dadus IRR nian. Bade-de-dadus ida ne’e bele asesu ba públiku iha website IRG. Sujeitu ba dezenvolvimentu contínua, Komité ba Peska (KOPE) hili tiha ona móduulo informasaun neen ne’ebé sei sai disponivel iha rekorda nia laran. Sira ne’e maka detailli kona-ba ró, informasaun histórik, autorizasaun, inspsesaun/vijilán, sama portu ka la autoriza tama portu, no Lista Ró Haka’er-ikan IRR. To ohin lorn, hosí móduulo sira ne’e, OAA rekere dë’ti hosí estadu sirá atu hatama informasaun kona-ba ró, partikularmente Identifikadór Úniku ba Ró (IUR), bandeira ezistence, ró nia naruk enjerál, ró nia naran, Tonelájen Brutu ka Tonelájen Rejistrada Brutu. Úniku ba inisiativu ida ne’e nian mós maka introduusaun IUR ba ró rejistradu idaidak iha baze-de-dadus. IUR, ne’ebé mós hanesan Númeru Organizasaun Marítima Internasional (OMI) nian ba momento ida ne’e, kontinua asosiadu ho ró haka’er-ikan nian independentemente hosí mudansa ba bandeira no ba propriedade. Nune’e, iha espatetu atu IRG komplementa implementasaun ba Akordu Sasukat Estadu ba Portu no Matadalan Voluntáriu ba Eskema Dokumentu Haka’er nian.

Maske nuen’e, número ba estadu partisipante nian iha IRG sei limitadu. To’o Novémbru tîn 2020, estadu partisipante hamutuk 65 iha iniisitivu ida ne’e, rejístu ba ró ho totál 11,687. Iha área Arafura-Tasi Timor, iha estadu litorál rúa de’it, maka hanesan Australia no Indonézia, ne’ebé partisipa tiha ona iha IRG. Hasoru klala’ok ne’e, relatiróu ida ne’e ho objetivu atu rekemenda estadu litorál ATT hototu kona-ba oinsá sirá bele maksimiza sirá nia partisipasaun iha IRG. Ba Timor-Leste no Papua Nova Guiné, relatiróu ida ne’e ho intensaun atu tulun sirá konsidera sirá nia partisipasaun no halo formulasaun ba serbisu preparatóriou ba objetivu ida ne’e. Ba objetivu ida ne’e, autór sirá hala’o mapamentu no avilasaun ba estadu litorál ATT idaidak nia regulamentu nasional relasiona ho monitoriamentu, kontrolu, no vijilán, ba haka’er-ikan no navegasaun. Serbisu ida ne’e hala’o liuhosi estudu dokumentáriu ba literatura oioin, publikasaun, lezislasaun, no relatiróu paíz nian ne’ebé hatama ba IRG OAA.

Australia hatama tiha ona informasaun kona-ba ró no lista portu nian ba IRG. Jeralmente, Australia nia regulamentu nasional kompativel ona ho informasaun ne’ebé rekere hosí IRG. Haka’er-ikan no ró haka’er-ikan asosiadu siraseluk rekorda no monitoriza tiha ona liuhosi sirá nia
operasaun, hahuu hosí pré-produsaun to’o pós-produsaun. Kona-ba movimentu ró nian, sira ne’e monitoriza luhosi Sistema Monitorizamentu ba Ró, patrulla rutina iha tasi, no troka informasaun ho autoridade portu rai-li’ur ba ró sira ne’ebé hala’o operasaun liu fali Zona ba Peska Australia nian. Dezafiu prinsipál ba Australia ba iha partisipasaun efetivu iha IRG maka falta regulamentu Númeru OMI ba ró haka’er-ikan sira.

Indonézia mós rekorda no monitoriza ró haka’er-ikan no ró haka’er-ikan asosiadu sira ne’ebé dada sira nia bandeira, tantu ba sira ne’ebé hala’o operasaun iha área jestaun ba peska Indonézia nian ka iha tasi-aas. Ezepsaun maka ró kiik haka’er-ikan sira, ne’ebé regula diferente. Monitorizasaun ba movimentu ró haka’er-ikan no atividade peska iha Indonézia nia bee no iha nia tasi-aas, autoridade Indonézia depende ba uza Sistema Monitoriamentu ba Ró (SMR), observadór, no patrulla rutina iha tasi. Maske nune’e, relatóriu ida ne’e hetan suut juríduku rua relasiona ho SMR. Dahuluk, konformidade obrigasaun SMR nian la estabelese nu’udár kondisaun ida hosí kondisaun siraseluk hodi fó-sai lisensa haka’er-ikan nian. Daruak, ró haka’er-ikan tuun hosí 30 GT, ne’ebé signifika kuâze 90% hosí totál frota haka’er-ikan iha Indonézia, ne’ebé haketak tiha hosí obrigasaun SMR nian. Autoridade Indonézia, nune’e, hasoru difikuldade bo’ot atu deteta sira. Difikuldade ida ne’e sai todan liutan ho Indonézia nia área ne’ebé luan tebtebes, no fa’al koordenasaun entre ajénsia governu nian.

Kompara ho Australia no Indonesia, Papua Nova Guiné hasoru dezafiu konsiderável ba partisipasaun iha IRG. Molok deside ba partisipasaun ida ne’e, regulamentu nasionál kona-ba monitoriamentu, kontrolu, no vijilânsia ba haka’er-ikan no ró asosiadu haka’er-ikan presiza tebtebes atu hadi’ak. Maioria ró lokál haka’er-ikan nian iha Papua Nova Guiné ho eskalaun-kiik, no ró rai-li’ur haka’er-ikan ne’ebé iha lisensa hetan autorizasaun atu hala’o operasaun iha sira nia bee. Buat importante balun ba hadi’ak ne’ebé bele hahuu maka husu ba ró-na’in sira, inklui sira ne’ebé iha lisensa ba ró rai-li’ur, atu hatama informasaun kona-ba propriedade, bandeira anteriór, no ró nia naran. Relasiona ho monitoriamentu iha tasi, autoridade Papua Nova Guiné depende ba Sistema Monitoriamentu ba Ró no Sistema Global ba Sokóru no Seguransa Marítima (SGSSM) ba situasaun sokóru espesifiku sira. Difikuldade kapasidade ba funsionáriu autoridade nian mós aprezenta dezafiu boot tebtebes ba partisipasaun efetivu iha IRG.

Timor-Leste mós sei hasoru dezafiu signifikante bainhira sira deside atu partisipa iha IRG. Ida hosí dezafiu prinsipál sira ne’e maka ró kiik haka’er-ikan nian ne’ebé bara barak tebtebes, ne’ebé reprezentu liu 90% hosí totál frota haka’er-ikan banati ba Timor-Leste nia rejistraus. Oin-seluk hosí Indonézia, Timor-Leste presiza ró kiik haka’er-ikan, inklui ró tuun hosí 10 GT, atu hetan lisensa. Lisensa ne’e liuliu konstitui informasaun báziku, hanesan propriedade no história ró nian. Relasiona ho monitoriamentu iha tasi, autoridade sira depende ba sistema relatóriu IRR nian ne’ebé involve peskadór sira durante prosesu tomak. Peskadór bele hanehan butaun kona-ba faról lokalizadór ba GPS pesoaól (FLP) atu bele komunika anonimamente kona-ba óras, data no pozisaun atividade haka’er-ikan IRR ba Polísia Marítima no Departamentu Inspesaun ba Peska. Bi’ár nune’e, seidauk suporta hosí kapasidade governu hodi atualiza komunikasaun tanba sira la iha ró patrulla nian ruma. Ikusliu, autoridade sira faltar kapasidade atu halibur no prosesa ró no ró na’in nia data.

Buat sira ne’e hotu, dezafiu prinsipál tolu maka estadu litorál ATT sei hasoru bainhira partisipa iha IRG maka hanesan tuirmai:
1. IRG, ne’ebé maka sei iha faze daruak, falta relevânsia iha governasaun ATT ba razaun bo’ot rua. Dahuluk, maioria hosi frota haka’er-ikan mesak ho eskalaun-kiik no tuun hosi 30 GT.

2. Lei nacionál no regulamentu sira ne’ebé ajuda tuir sistema nia rekezitu. Purejéemplu, atu hatuuar número OMI nu’udár kondisaun prerekezitu atu hetan lisensa. Maioria frota haka’er-ikan maka hala’o operasaun iha ATT maka sira ne’ebé tuun hosi 30 GT, ne’ebé la inklui iha Eskema Número OMI ezistente.

3. Obstákulu tékniku, hanesan métodu hatama iha komputadór no sistema dezenpenu ne’ebé komplikadu.

4. Difikuldade kapasidade, purejéemplu, kapasidade limitadu atu jere data ne’ebé maihosi sistema no fonte múltiplu, la iha dezignasaun ba autoridade nacionál, no pérítu ne’ebé limitadu.
CONTENTS

Executive Summary ................................................................................................................................. i

Ringkasan Eksekutif .............................................................................................................................. iv

Sumário Ezekutivu ................................................................................................................................ vii

Contents ................................................................................................................................................... x

List of figures ........................................................................................................................................ xi

List of Tables ........................................................................................................................................ xi

List of Abbreviation .............................................................................................................................. xii

Chapter 1. Introduction .......................................................................................................................... 1

Chapter 2. Global Record Initiatives ..................................................................................................... 3

  2.1 Basic Concept ................................................................................................................................. 3

  2.2 Legal Status and Framework ........................................................................................................ 5

  2.3 Progress ......................................................................................................................................... 5

Chapter 3. Global Record Initiatives and Arafura-Timor Sea Bordering States ................................ 6

  3.1 Australia ...................................................................................................................................... 10

    Monitoring, Control, and Surveillance ......................................................................................... 10

    Challenges ................................................................................................................................. 15

    Recommendation .................................................................................................................... 16

  3.2 Indonesia ..................................................................................................................................... 16

    Monitoring, Control, and Surveillance ......................................................................................... 16

    Challenges ................................................................................................................................. 20

    Recommendation ...................................................................................................................... 21

  3.3 Papua New Guinea .................................................................................................................... 22

    Monitoring, Control, and Surveillance ......................................................................................... 22

    Challenges ................................................................................................................................. 26

    Recommendation ...................................................................................................................... 27

  3.4 Timor-Leste ................................................................................................................................ 28

    Monitoring, Control, and Surveillance ......................................................................................... 28

    Challenges ................................................................................................................................. 33

    Recommendation ...................................................................................................................... 34

Chapter 4. Conclusion ............................................................................................................................ 36

References .............................................................................................................................................. 38
LIST OF FIGURES

Figure 1. Monitoring, Control, and Surveillance Mechanism of Capture Fisheries in Indonesia ...................... 18
Figure 2. Licensing procedure in Papua New Guinea ......................................................................................... 24
Figure 3. Licensing procedure before 2011 in Timor-Leste ................................................................................. 29
Figure 4. Licensing procedure through mobile licensing team after 2011 ........................................................ 29
Figure 5. Personal GPS Locator Beacons in Timor-Leste ................................................................................... 30
Figure 6. PeskAAS Digital Fisheries Monitoring System Process ........................................................................ 32
Figure 7. Main Page of PeskAAS, a near-real time small-scale fisheries catch documentation from Timor-Leste ..................................................................................................................................................... 33

LIST OF TABLES

Table 1. Compilation of identified challenges from GRWG meetings ................................................................. 7
Table 2. Availability of Australia’s Data compared to GRI Information Modules .................................................. 14
Table 3. Availability of Indonesia’s Data compared to GRI Information Modules ............................................... 21
Table 4. Comparison of document required to obtain a license between general and Torres Strait Management Plan .................................................................................................................................. 24
Table 5. Availability of Papua New Guinea’s Data on Vessel List compared to GRI Information Modules ...... 27
Table 6. Availability of Timor-Leste’s Data on Vessel List compared to GRI Information Modules ............... 35
### LIST OF ABBREVIATION

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABF</td>
<td>Australian Border Force</td>
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<tr>
<td>ADoD</td>
<td>Australian Department of Defense</td>
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<tr>
<td>AFMA</td>
<td>Australian Fisheries Management Authority</td>
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<tr>
<td>AFP</td>
<td>Australian Federal Police</td>
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<td>AFZ</td>
<td>Australian Fishing Zone</td>
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<tr>
<td>AMSA</td>
<td>Australian Maritime Safety Authority</td>
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<tr>
<td>ASEAN</td>
<td>Association of Southeast Asia Nations</td>
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<tr>
<td>ATS</td>
<td>Arafura and Timor Seas</td>
</tr>
<tr>
<td>ATSEA</td>
<td>Arafura and Timor Seas Ecosystem Action</td>
</tr>
<tr>
<td>BAKAMLA</td>
<td>Badan Keamanan Laut/Indonesian Coast Guard</td>
</tr>
<tr>
<td>BKP</td>
<td>Buku Kapal Perikanan/ vessel registration certificate</td>
</tr>
<tr>
<td>CCAMLR</td>
<td>Commission for the Conservation of Antarctic Marine Living Resources</td>
</tr>
<tr>
<td>CCSBT</td>
<td>Commission for the Conservation of Southern Bluefin Tuna</td>
</tr>
<tr>
<td>CDS</td>
<td>Catch Documentation Scheme</td>
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<tr>
<td>COFI</td>
<td>FAO Committee on Fisheries</td>
</tr>
<tr>
<td>CPUE</td>
<td>Catch Per Unit Efforts</td>
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<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<tr>
<td>FLUX</td>
<td>Fisheries Language for Universal eXchange</td>
</tr>
<tr>
<td>GMDSS</td>
<td>Global Maritime Distress and Safety System</td>
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<tr>
<td>GPS</td>
<td>Global Positioning System</td>
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<td>GRI</td>
<td>FAO Global Record Initiative</td>
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<tr>
<td>GRWG</td>
<td>Global Record Informal Open-Ended Technical and Advisory Working Group</td>
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<tr>
<td>GT</td>
<td>Gross Tonnage</td>
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<tr>
<td>HPK</td>
<td>Hasil Pemeriksaan Kapal/Minutes of Vessel Inspection Results</td>
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<tr>
<td>HSVAR</td>
<td>High Seas Vessels Authorization Record</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organization</td>
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<tr>
<td>IOTC</td>
<td>Indian Ocean Tuna Commission</td>
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<tr>
<td>ISSCFV</td>
<td>International Standard Statistical Classification of Fishery Vessels by Vessel Types</td>
</tr>
<tr>
<td>IUU</td>
<td>Illegal, Unreported, Unregulated</td>
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<tr>
<td>LAC</td>
<td>Licensing Advisory Committee</td>
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<tr>
<td>LOA</td>
<td>Length Overall (Vessel)</td>
</tr>
<tr>
<td>MAF</td>
<td>Ministry of Agriculture and Fisheries, Timor-Leste</td>
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<tr>
<td>MCS</td>
<td>Monitoring, Controlling and Surveillance</td>
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<tr>
<td>MMAF</td>
<td>Ministry of Marine Affairs and Fisheries, Indonesia</td>
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<tr>
<td>NAP</td>
<td>National Action Plan</td>
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<td>NDFA</td>
<td>National Directorate of Fisheries and Aquaculture, Timor-Leste</td>
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<tr>
<td>NFA</td>
<td>National Fisheries Authority, Papua New Guinea</td>
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<tr>
<td>NMSA</td>
<td>National Maritime Safety Authority</td>
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<tr>
<td>NPOA</td>
<td>National Plan of Action</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>NSCC</td>
<td>National Surveillance Coordination Centre</td>
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<tr>
<td>PeskAAS</td>
<td>Automated Analytics System for Small Scale Fisheries in Timor-Leste</td>
</tr>
<tr>
<td>PLB</td>
<td>Personal Locater Beacon</td>
</tr>
<tr>
<td>PNG</td>
<td>Papua New Guinea</td>
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<tr>
<td>PSMA</td>
<td>FAO Agreement on Port State Measures to Prevent, Deter and</td>
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<tr>
<td>RAN</td>
<td>Royal Australian Navy</td>
</tr>
<tr>
<td>RFMO</td>
<td>Regional Fisheries Management Organizations</td>
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<tr>
<td>RPOA</td>
<td>Regional Plan of Action</td>
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<tr>
<td>SIKPI</td>
<td>Surat Izin Kapal Pengangkut Ikan/Fish Carrier Vessel License</td>
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<tr>
<td>SIOFA</td>
<td>Southern Indian Ocean Fisheries Agreement</td>
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<tr>
<td>SIPI</td>
<td>Surat Izin Penangkapan Ikan/Fisheries Catch License</td>
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<tr>
<td>SIUP</td>
<td>Surat Izin Usaha Perikanan/Fisheries Business License</td>
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<tr>
<td>SLO</td>
<td>Surat Laik Operasi/Operational Letter</td>
</tr>
<tr>
<td>SPOT</td>
<td>Personal Tracker</td>
</tr>
<tr>
<td>SPRFMO</td>
<td>The South Pacific Regional Fisheries Management Organisation</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UN/CEFACT</td>
<td>United Nations Centre for Trade Facilitation and e-Business</td>
</tr>
<tr>
<td>UN/LOCODE</td>
<td>United Nations Code for Trade and Transport Locations</td>
</tr>
<tr>
<td>UNFSA</td>
<td>United Nations Fish Stock Agreement</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>UVI</td>
<td>Unique Vessels Identifier</td>
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<tr>
<td>VGCDS</td>
<td>Voluntary Guidelines for Catch Documentation Scheme</td>
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<tr>
<td>VMS</td>
<td>Vessel Monitoring System</td>
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<tr>
<td>WCPFC</td>
<td>The Western and Central Pacific Fisheries Commission</td>
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CHAPTER 1. INTRODUCTION

The global fight against IUU fishing is far from done. A study in 2009 estimated that around 20% of the world fish are caught illegally.1 While several international instruments have been adopted to combat IUU fishing,2 a steady increase of overfishing from 1970 denotes their insufficiency.3 In 2017, 34.2% of world fish stocks were overfished or exploited at biologically unsustainable levels, and nearly two half of world fish stocks were fished at maximally sustainable levels.4 Had this situation remained, the United Nations Sustainable Development Goals Target 14.4, which urges the international community to end overfishing and IUU fishing by 2020, were unlikely to be achieved.5 The international community, thus, needs to intensify their efforts in this fight, starting with identifying the contributing factors to the persistence of IUUF. Apart from regulatory and policy gaps in the fisheries management,6 lack of transparency is consistently a factor in scholarly literature and reports.7 Without transparency, it would be extremely difficult for buyers to know whether the products are resulted from IUUF or not.

Indeed, transparency in fisheries management is crucial for the fight against IUUF, primarily because of the latter’s complex and transnational nature. For example, fish can be caught illegally by a vessel flying the flag of China on the high seas, transferred to a vessel under the registration of Panama, landed in Vietnam, before eventually sold to the EU. This complexity is exacerbated by general patterns in the IUUF operations, for instance operating under the flag of convenience, landing catches in the port of convenience, and producing false and fraudulent documents.8 Also, since vessels can be reflagged and renamed, under international law, identifying IUUF vessels and monitoring their movement can be truly burdensome for states (be they coastal, port, flag, or market states) and RFMOs.

A question would arise as to what role can transparency have in dealing with such issues? Transparency in fisheries management is frequently, if not always, linked to traceability. Taken together, they denote the demand for greater ‘visibility and accountability’ of how the fish

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3 Overfishing is mainly caused by IUU Fishing. Pearce (2009): There is no update on the estimated volume of IUU fishing after the 2009 study. The FAO is still working on this estimation.
5 Ibid, p. 54.
industry discloses relevant information, including vessel locations, vessel identity, catch area, source of fish products, and other basic information, either to authorities or the public. Transparency, thus, may be useful in determining (i) whether the products are resulted from IUU fishing, as well as (ii) the identity of vessels and their owners that are responsible for IUUF products.

Many initiatives have been carried out by multiple stakeholders to improve transparency in this industry. At the global level, the FAO introduced a global record that basically incorporates available information on the identity of fishing, refrigerated fishing, and supply vessels along with their beneficial ownership and fishing operations. This record is later called the Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels or so-called the Global Record Initiative (‘GRI’). Actually, the idea of a global record can be traced back to 1993, the year of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (‘Compliance Agreement’) was adopted.

Moreover, the Agreement for the Implementation of the Provision of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks 1995 (‘UNFSA’) incorporated a similar concept into its provisions. Nonetheless, the idea of GRI is slightly different from the one the latter two instruments envisaged, which will be explained in this report. Important to note that the GRI is still in early phases and only a few FAO Member States are willing to participate in this voluntary initiative. More studies and reviews on this tool are, thus, essential to further develop this tool and convince other states to partake in this global initiative.

This report aims to identify efforts that should be taken by the ATS littoral states (Australia, Indonesia, PNG, and Timor-Leste) in ensuring their effective participation in the GRI. To that end, it begins with explaining the GRI and its importance to the fight against IUU fishing worldwide. This chapter might be especially relevant to PNG and Timor-Leste in deciding whether they will partake in this initiative in the coming years. Upon identifying challenges that its participating states faced in taking part in this initiative, it maps national regulations on monitoring, control, and surveillance of fishing and navigation in the ATS littoral states. Drawing on such regulatory mapping, this report provides recommendations on how these states can adjust their regulations to maximize their contribution to the GRI.

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CHAPTER 2. GLOBAL RECORD INITIATIVES

2.1 BASIC CONCEPT

While it is not novel to have a global record of fishing vessels within the international legal frameworks, there are some components in the GRI that have never been applied elsewhere. In contrast to the GRI, which is voluntary in nature, the idea of a global record was enshrined in the legally binding instruments, such as the Compliance Agreement and United Nations Fish Stocks Agreement (‘UNFSA’). Article VI of Compliance Agreement required its member states to submit information on vessels flying their flags which are authorized to fish on the high seas to the FAO. This information is recorded in its database (High Seas Vessels Authorization Record/’HSVAR’) and subsequently disseminated to its Member States.

Likewise, data exchange regarding fishing fleets at the global level is also obliged by the UNFSA, an implementing regulation of UNCLOS 1982 on the straddling fish stocks and highly migratory species. Under this scheme, FAO is assigned to collect and disseminate this data. FSA also mandates regional or sub-regional fisheries management organizations to undertake this role at the regional or sub-regional level. These data exchange provisions, however, only cover vessels fishing straddling fish and highly migratory fish stocks in the high seas.

It was in the 2005 Rome Declaration a call for the development of a comprehensive record of not only fishing vessels, but also refrigerated transport and supply vessels within FAO was raised. With the latter vessels being included, this record would contribute to the transparency of transhipment and refuelling at sea, which is seriously lacking from the existing international frameworks. Regarding the content, the initial idea of this comprehensive record is to encompass available information on beneficial ownership, subject to national laws on the confidentiality requirement. Needless to say, a lot of discussions took place about the kind of information modules that should be included within the database. Six information modules that are eventually chosen to be made available in the GRI are:

- vessel detail;
- historical information;
- authorizations;
- inspections/surveillance;
- port entry/denial; and
- IUU Fishing Vessel List

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13 FAO Compliance Agreement, Art. VI.
14 Ibid.
16 UN Fish Stock Agreement, Annex I Art. 7 (2).
17 Ibid, Annex I Art. 7 (1).
18 Ibid, Art. 5.
20 2005 Rome Declaration, Para. 4.
Flag states, however, do not have to upload all of them in order to have vessels flying their flags recorded in the GRI database. Instead, there are only five information modules required by the FAO, namely:\footnote{Committee on Fisheries of FAO, ‘The Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels’.}

- Unique Vessels Identifier (‘UVI’);
- current flag;
- length overall;
- vessel name; and
- Gross Tonnage or Gross Registered Tonnage.

There is not much difference between the kind of information provided in the GRI and existing records required by the Compliance Agreement and UNFSA, except the UVI. Nonetheless, GRI has a wider scope of application since its application is not limited to vessels fishing on the high seas nor vessels engaged in the straddling and highly migratory fish stocks fishing. Information about fishing vessels that are not operating on the high seas can also be uploaded in GRI.

Another distinction between them is regarding access to the database/record. It was agreed by consensus in the FAO meetings that information in the GRI would be publicly accessible as far as possible, whereas HSVAR and UNFSA’s data are accessible only to authorities.\footnote{FAO, Report of the Meeting of The Global Record Informal Open-Ended Technical and Advisory Working Group, FIRO/R1114 (Rome, 2015), Para. 47. Hereinafter referred to as GRWG.}

A key component of GRI is the utilization of Unique Vessels Identifiers (UVI) in each fishing vessel registered in the database. Responding to the Rome Declaration’s call, FAO undertook a feasibility study that recommended \textit{inter alia} the use of UVI in this initiative for the purpose of vessel identification. Such unique identifiers are expected to be permanent in a sense that they remain associated with the vessel in question, regardless of changes in the name, owner, and flag of that vessel.\footnote{FAO, Twenty-Seventh Session, Report on the Development of a Comprehensive Record of Fishing Vessels, COFI/2007/Inf.12 (Rome, 2007), Para. 31.} FAO has been working on such identifiers ever since, especially through close cooperation with the International Maritime Organization (‘IMO’). Eventually, the Committee of Fisheries (‘COFI’) endorsed the use of the IMO Identification Number Scheme as the UVI for the first phase of GRI.\footnote{FAO, Report of the Thirty-First Session of the Committee on Fisheries, FIFI/R1101 (Rome, 2014), Para. 40.}

In parallel with this decision, IMO has adopted Resolution A. 1117 (30), extending the voluntary application of IMO Numbering Scheme to all motorized inboard fishing vessels of 12 meters in length overall (LOA) and above that are authorized outside national jurisdiction of the flag states and vessels above 24 meters of a wooden hull. That is to say, fishing vessels falling within the above classifications can now be granted with an IMO Identification Number. This number can be requested by the owner of the vessel, manager of the vessel, shipyards, the operator of the vessel, the flag State, classification societies, solicitors, and agents.\footnote{IMO, IMO Ship Identification Number Scheme, A 30/Res.1117 (2017), Annex Para. 2.}
2.2 LEGAL STATUS AND FRAMEWORK

It has been mentioned that this initiative is carried out on a voluntary basis. Although there were discussions on whether GRI should be added to existing legal instruments and made binding, FAO apparently prefers to focus more on the development of this tool. That being said, this tool is very much expected by FAO to run in synergies with other relevant international instruments, including the Port State Measures Agreement (‘PSMA’) and Voluntary Guidelines for Catch Documentation Scheme (VGCDS). For instance, the information in the GRI can be used by port states to verify vessel information as set out in Annex A of the PSMA. The same can be said with its relation to VGCDS, in a sense that GRI information would be useful to enhance traceability and transparency.

2.3 PROGRESS

GRI is implemented in three phases, as recommended by the FAO Technical Consultation in 2010, because of the immense number of fishing fleets worldwide. In phase I, only vessels of 100 GT and above or 24 m LOA or above are covered. Phase II of the GRI would apply to vessels of between 50 GT and 100 GT or 18 m LOA and 24 m LOA. All other eligible vessels, especially those of between 10 GT and 50 GT or 12 m LOA and 18 m LOA would be covered in the third phase. At the moment, the GRI is now in Phase 2.

Furthermore, in developing and testing out this tool, the FAO worked closely with eleven pilot project partner states, such as Colombia, Comoros, Ghana, Iceland, Indonesia, Mauritius, Mozambique, Philippines, Seychelles, Spain, and Uruguay. In 2018, FAO launched the public version of the Global Record Information System. Referring to this system, there are 65 states participating in this initiative, registering 11,687 vessels in total.

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30 Port States Agreement, Annex A.
CHAPTER 3. GLOBAL RECORD INITIATIVES AND ARAFURA-TIMOR SEA BORDERING STATES

Having explained the GRI and its importance to the global fight against IUUF, this report now focuses on the possible utilization of GRI in the fisheries management of Arafura and Timor Seas which are surrounded by Australia, Indonesia, PNG, and Timor-Leste. The main goal of this report is to come up with recommendations on how these states should adjust their national regulations in maximizing their participation within the initiative. To do so, mappings and assessing relevant national regulations concerning fishing record, vessel movement, and report on IUU fishing activities applicable to these ATS states, will be carried out. Since GRI can be classified as a Monitoring, Control, and Surveillance (‘MCS’) tool, the relevant national regulations refer to MCS mechanisms in those states. Monitoring, control, and surveillance are defined by the FAO as follows:\(^\text{35}\):

- Monitoring: the continuing need to measure the characteristics of the fishing effort and resource efficiency
- Control: the regulatory conditions under which the exploitation of the resource may be conducted and
- Surveillance: the degree and types of observations required to maintain compliance with the regulatory controls imposed on fishing activities.

In particular, the MCS mechanisms that this report focuses on are methods used by those states to record fishing or other vessel movement and report IUUF incidents. Explanations are divided into three stages pre-production, production, and post-production for all the ATS littoral States. This report further looks into national challenges that they have/would face in taking part in the GRI Program. These challenges may be legal and institutional. An analysis of enabling conditions to be a part of GRI is also laid out in each section of the ATS state.

This chapter provides a list of challenges that GRI participants states faced in contributing and implementing this tool. It would be particularly useful to PNG and Timor-Leste, which are yet to participate, in gaining familiarity with GRI. The identified challenges below varied from the input from experts or complaints filed by the members, presented on the last three the Global Record Informal Open-Ended technical and Advisory Working Group (‘GRWG’) meetings. GRWG objective is to gather experts in a view of identifying the development of the next steps of the GRI through various issues discussed during each meeting which mainly review the progress report and state affairs of the GRI program. The first and second GRWG mostly talks about the technical issues prior to the preparation for the public version of the GRI and these issues have been solved within the past few years through the re-establishment of the system.\(^\text{36}\)

The table below will only list some challenges from the third meetings onward. The third meeting was held in Rome from 26 to 28 June 2017 whereas the discussion focused on the progress and

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state of affairs of the GRI, user experiences of the first version of the GRI information system, and capacity development.\textsuperscript{37} While the fourth meeting focused on the states’ experience in data upload utilizing the Fisheries Language for Universal Exchange (FLUX) or Electronic Interchange of Fisheries Catch Data, an UN/CEFACT developed standardized message since its establishment in 2016 which provides guidance for data exchange domains as follows:

- vessel domain
- fishing activities domain
- vessel position domain
- fishing licenses, authorizations and permits
- aggregated catch data reporting
- electronic inspection reports
- master data management

This harmonized message allows any RFMOs to access the electronic data needed for fish stock management. The recent meeting discussed more on the standardization of the data exchange mechanism and the role of RFMO.\textsuperscript{38} Both meetings were held in London, from 11 to 13 April 2018 and Seoul from 13 to 14 May 2019 respectively. The output of these meetings elaborated on some suggestions and ongoing solutions endorsed by the FAO and all stakeholders to solve the problems.

Table 1. Compilation of identified challenges from GRWG meetings

<table>
<thead>
<tr>
<th>Meetings</th>
<th>Challenges/Complaints</th>
<th>Suggestion or Ongoing Response by FAO</th>
<th>Recommendations by Authors</th>
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</thead>
</table>
| 3rd Meeting      | After the amendment to the IMO Resolution A.1078(28) on the IMO ship identification numbering scheme, fishing vessels 12 m in length that are authorized to operate in waters beyond national jurisdiction of the flag state may be granted with IMO numbers. | States to register fishing vessels 12m in length that are authorized to operate in waters beyond national jurisdiction of the flag state to the IMO for the issuance of IMO Number. They need to assist vessel’s owners/operators for this purpose. | • Improving coordination amongst relevant national authorities  
• If it is not possible to assign a single operator, developing an integrated database for |
|                  | Some States face difficulties in providing data as it is scattered throughout several national administrations. |                                                                                                         |                                                                                           |

<table>
<thead>
<tr>
<th>Meetings</th>
<th>Challenges/Complaints</th>
<th>Suggestion or Ongoing Response by FAO</th>
<th>Recommendations by Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th Meeting</td>
<td>Involvement of RFMO in the GRI system</td>
<td>Encouraging RFMO to share relevant data to GRI</td>
<td>Recommendation on amend their national legislation to mandate the use of such number and RFMOs on the measures</td>
</tr>
<tr>
<td></td>
<td>National laws and regulations may not be aligned with the requirements, e.g., the difficulties of obtaining IMO number.</td>
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<tr>
<td></td>
<td>The need to sort out which national Authorities were responsible for providing information.</td>
<td>Each country designates the National Focal Points (NFP) and FAO provides a compiled list and update at each meeting, so that it can be tracked who holds the national account for uploading the data. The expectation is that the designated NFP does not change very often/permanently.</td>
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<td></td>
<td>The challenges of managing data originating from multiple systems and sources.</td>
<td>The NFP holds the key to collect the scattered data and provide technical guidance for relevant stakeholders to submit such data almost real-time to the NFP. Migration to electronic data collection mechanisms will advance the process.</td>
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<tr>
<td></td>
<td>The need to enhance data collection of historical and authorization details not only provide general vessel details information.</td>
<td>The extraction of single country vessels’ information (limited to the provider) for verification in particular prior to the public launch, the possibility to include vessel photos, summary information on search criteria, management of non-Latin characters.</td>
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<tr>
<td>Meetings</td>
<td>Challenges/Complaints</td>
<td>Suggestion or Ongoing Response by FAO</td>
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<tr>
<td></td>
<td>Difficulties on Data Submission/Upload</td>
<td>GRI shall establish a user-friendly guidance on data submission which is made available to all NFPs. Document with validation rules and detailed instructions other guidance materials such as web tutorials on data upload and search functionalities could facilitate participation and support communication/publicity.</td>
<td></td>
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<tr>
<td></td>
<td>Fisheries information exchange</td>
<td>Comply with the standardizing of UN/CEFACT-FLUX</td>
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<tr>
<td></td>
<td>Capacity constraints capacity building</td>
<td>FAO Global Capacity Development Program and Suggest Seeking Support</td>
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<tr>
<td>5th Meeting</td>
<td>Data upload constraints into the GRI system Technical low internet connectivity Capacity System performance introduce wider editing capabilities, provide additional search facilities, be compatible with mobile platforms, and improve current upload mechanisms while introducing additional ones.</td>
<td>Preference for automated data exchange mechanisms New version of the Global Record Information System within the second semester of 2019 (system migration to the Cloud to increase server stability and offer better system performance, improvement of existing and establishment of new data upload mechanisms, a new system interface with improved data visualisations, and increased accessibility through compatibility with mobile devices).</td>
<td></td>
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</tbody>
</table>
3.1 AUSTRALIA

Monitoring, Control, and Surveillance

As the third-largest marine jurisdiction globally, the coastline area stretches over 25,760 km and vast EEZ, covering 8.2 million km² which produces 173,430 tonnes accounting for 64% of total fisheries and aquaculture production volume in 2017.\(^{39}\) To date, the biggest threat to fish stocks in Australia is IUU fishing, in which the government takes MCS very seriously. Australian Fisheries Management Authority (AFMA), on behalf of the central (Commonwealth) government and Australian (State) jurisdictions, oversaw this matter.

Currently, the country is participating in the voluntary initiatives of the GRI, although only 2 (two) information modules out of 7 (seven) by submitting vessel details and list of ports.\(^{40}\) There are many regulation developments concerning MCS which favor the entry of data to the GRI system. The amendment of the two principal instruments, Fisheries Management Act 1991 (latest amendment on 2017) hereinafter ‘the Act’ and Fisheries Management Regulations 2019 hereinafter ‘the Regulation’. Below are the changes in fisheries management by legislating to:

- implement e-monitoring
- require mandatory use of VMS in Commonwealth-managed fisheries
- make corporations more responsible for conduct by their employees, agents, or directors
- require compulsory catch monitoring and management practices
- implement mandatory catch landing and fish receiver arrangements, and
- introduce more robust measures to sanction Australian nationals conducting IUU fishing on the high seas.

On the other hand, the second NPOA-IUU provides the elaboration of 10 years of development, which consisted of Australia’s vital domestic measures, regional and international initiatives, and


future actions. In domestic measures, the plan updated the current MCS system by setting the minimum requirements set in reporting with the electronic monitoring (e-monitoring), observer program, and vessel monitoring system.

Nevertheless, to better understand Australia’s MCS mechanism and identify the drawback of the current process with the aim to enhance the country’s effort to the GRI system, the mechanism is divided into three stages:

- **Pre-Production Stage**

  This stage involved MCS mechanisms ensued before the primary fishing activities took place such as vessel registration, fishing rights and permits, designation of a fishing ground area and total allowable catch. The advanced fishing vessel license procedure in Australia has resulted in most of the required details for GRI systems already available in a systematic database.

  The licensing procedure for fishing vessels consisted of two steps. First, domestic owners/operators shall obtain a vessel license from AMSA and obtain fishing rights and permits according to the targeted species and location. Besides, the current owners or operators’ details to obtain vessel license AMSA required all domestic commercial vessels to display a UVI unless exempt. Registering a fishing boat also includes submitting the history of ownership since registration if the owners chose to register their ships to the Australia general shipping register. In addition, if any of the licensed fishing vessels had an IMO number, it will be listed on the vessel list publication. Nevertheless, the Australian vessel registration is updated ranging between annually and 5 years’ time for both domestic vessels operating beyond AFZ. According to the Act, there are four categories namely:

  - **Statutory Fishing Rights (Section 31)**
    This right is granted for the Australian boat for certain fisheries, allowing the holder to gain quota, boat, and gear statutory fishing rights. The process to obtain the rights manifested in Division 4 of the Act, where there should be a public notice of intention to grant the rights from AFMA upon applications from the owners or operators.\(^{41}\) Other ways are through auction or tender as prescribed on Section 28 where the highest bidder or ranking will be granted the right.

  - **Fishing Permits (Section 32)**
    Australia boats may obtain a permit to commence commercial fishing in general and for Commonwealth managed species and high seas. As regulated on Division 5, the applications are directed to AFMA specifically for certain fisheries on the high seas are only applicable for Australian-flagged boats. The permit itself may be transferred as to date; no additional permits being granted. Authorization details such as an area of operation, types of boats, fishing method, and species taken shall be specified to obtain this permit.\(^{42}\) Despite being transferable, the permits usually last 1 to 5 years.

\(^{41}\) Australia, *Fisheries Management Regulations 2019* (Australia, 2019).

\(^{42}\) Ibid, Section 32 (7).
Foreign Fishing Licenses (Section 34)
Foreign fishing fleets that intend to fish on a certain specified area of the AFZ or a specified fishery may submit an application to AFMA.\(^{43}\) Besides independent applications, AFMA also may issue licenses for those under agreements to grant foreign fishing licenses and fisheries agreements. E.g., Treaty on fisheries between the Governments of certain the Pacific Island States and the United States of America

Fish Receiver Permit (Section 91)
Permit intended for vessels receiving a managed fishery for transport and storage facilities.

Controlling through licensing may not be sufficient, determine operation area, and set allowable catch for these fishers are necessary. Designation of the fishing area within the AFZ also has been regulated on the Schedule 2 of the Regulations which allocated based on the fisheries made up of 8 areas namely the Coral Sea, Eastern Skipjack, Norfolk Island Inshore, Norfolk Island Offshore Demersal Finfish, North West Slope Trawl, South Tasman Rise, Western Deepwater Trawl, and Western Skipjack.\(^{44}\) Followed by the catch limits of the different species in Northern Waters (Schedule 3) and Victorian, South Australian and Tasmanian Waters (Schedule 4) including special catch limits for prawn fishery waters (Schedule 5).\(^{45}\)

Production Stage
As a federation country, Australia has several divisions linked to jurisdictions that depend on which region of Australia the problem arises.\(^{46}\) In order to address the complexity of the Australian federal system, the Governments of Australia, the States and the Northern Territory in November 2000 agreed to cooperate to provide clarity over overlapping jurisdictions at different levels of government. The result of this cooperation is the establishment of the Crimes at Sea Act 2000. Although the treaty provides for the authority to investigate and prosecute crimes within the relevant jurisdictions, the applicable international legal obligations, in particular, UNCLOS 1982, should also be taken into account.\(^{47}\) The responsibility for securing Australia's maritime territory is widespread in several institutions from both the Commonwealth and State departments. In the fisheries-related case, there are the Australian Fisheries Management Authority (AFMA), the Royal Australian Navy (RAN), The Australian Department of Defense (ADoD), the Australian Federal Police (AFP), and Australian Border Force (ABF). Such agencies may seek mutual ad hoc assistance, and state governments may seek assistance from the Commonwealth government.\(^{48}\)

While AFMA focused on the fisheries and its management, other institutions like RAN focused on the NAP to implement effective oversight of Australia's maritime law and

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44 Australia, *Fisheries Management Regulations 2019*.
45 Ibid.
enforcement, without shifting its primary function to defend Australia from armed attacks.\textsuperscript{49} ADoD role in law enforcement of the sea is about 70 - 80% of the existing system to safeguard Australia’s national interests and sovereign rights and provides the latest navigation, hydrographic, oceanographic information in waters with Australian jurisdiction.\textsuperscript{50} Other enormous marine law enforcement functions are within each State and the Northern Territory police forces which are often assigned to Australian waters. AFP also has duties at overseas embassies, consulates and other Australian diplomatic facilities, and provides assistance to overseas law enforcement agencies abroad.\textsuperscript{51} From an activity point of view, AFP’s function is witness protection, cooperation with other police units, intelligence agencies and security agencies in other countries. Lastly, ABF though the jurisdiction more to facilitating the entry of legitimate persons and goods, Investigation and law enforcement related to banned and immigration malpractice, and Detention above sea level.

Besides routine patrol by these agencies, Australia also has to conduct surveillance as a flag state responsibility for those vessels operating beyond AFZ, monitoring these vessels shall be conducted by coordinating with foreign country’s port authorities including from the VMS. Certain VMS units as required and approved by the AFMA to nominate Commonwealth fishing vessels hold a crucial role to monitor vessel position.\textsuperscript{52} In 2018, there are 7 (seven) types of devices approved.\textsuperscript{53} Besides relying on reporting provided by telex to the administrator, e-monitoring allows the authority to trace the vessels when harvesting to identify whether the location of the harvest is according to what has been granted through the permit. Controlling measures that can be taken during the voyage is by making a direction either to comply with the prescribed direction or restriction to those who hold the permit.\textsuperscript{54}

If a IUU fishing is committed within a border area (inside or outside), then the applicable criminal law shall be a criminal law of a State which has jurisdiction over such border areas.\textsuperscript{55} If a criminal offense is committed within the inner border area, then as already mentioned the criminal law imposed is a criminal law of the State, so the authority to carry out prosecutions generally depends on the state prosecutor’s office, but it is possible that the prosecution is conducted by the Commonwealth Director of Public Prosecutions (CDPP) / Prosecutor General of the Commonwealth.\textsuperscript{56} Similarly, criminal acts committed in the outer border areas, but technically the criminal acts committed in the outer border area are criminal acts against the Commonwealth, so there is often a struggle for authority.

\textsuperscript{50} Australia, \textit{Australian Ocean Policy}, p.42  
\textsuperscript{51} Michael W. D. White, \textit{Australian Offshore Laws} (Sydney: The Federation Press, 2009), p. 95.  
\textsuperscript{52} \textit{Ibid}, Section 9, 36, & 37.  
\textsuperscript{54} Australia, \textit{Fisheries Management Act 1991}, Section 40A.  
\textsuperscript{55} Governments Department, \textit{Intergovernmental Agreement – Crimes at Sea}, Part 6.  
• **Post-Production Stage**

The Australian Border Force provided a list of ports of entry from each state as designated ports for foreign vessels to access. The country has ratified PSMA on 20th July 2015 which regulates access to ports, inspections, and information sharing.\(^{57}\) For vessels wishing to land their catch, ahead of their arrival they have to request permission for port access (port permits) and inform the port authority on the activities and catch onboard.

Inspections were conducted by appointing officers to examine any premises with reasonable grounds. The guidelines of the inspections referred to the PSMA where inspectors check for the evidence by review of ship papers, the survey of fishing gear, examine catches, and check a ship’s records.

The standard requirement for the collection and sharing of data also available and sufficient to fill the GRI information modules. For example, the existing vessel details comprehend the standard enlisted in article 4 (Annex I of the Act) namely: 1) vessel identification, flag, and port registry, 2) vessel type, 3) vessel specification (e.g., the material of construction, date built, registered length, gross registered tonnage, power of main engines, hold capacity and catch storage methods), and 4) fishing gear description (e.g., types, gear specifications, and quantity).\(^{58}\)

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<table>
<thead>
<tr>
<th>Category</th>
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</tr>
</thead>
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</table>

\(^{57}\) Department of Agriculture and Water Resources of Australia, RPOA IUU CC Meeting Country Report Australia 2019 (Siem Reap Province, November 2019).

\(^{58}\) Australia, Fisheries Management Act 1991 (Amended).
<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
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</thead>
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<td>Port Entry/Use Denials</td>
<td>Place and Date</td>
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</tr>
<tr>
<td>IUU Fishing Vessel Lists</td>
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</tr>
</tbody>
</table>

Data exchanges come naturally as part of the duty of coastal state and port state measures. Any vessels presumed to be an IUU vessel sighted by Australia's authority would be informed through the IUU vessel list in the RFMO. Australia has participated in the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Catch Documentation Scheme (CDS) and is interested in contributing to the ASEAN Regional Record of Fishing Vessels and the Global Record of Vessels.\(^{59}\)

Additionally, Australia has shared the findings of suspected IUU fishing vessels via the RPOA network and RFMOs engagement in Commission for the Conservation of Southern Bluefin Tuna (CCSBT), Indian Ocean Tuna Commission (IOTC), Southern Indian Ocean Fisheries Agreement (SIOFA), the South Pacific Regional Fisheries Management Organisation (SPRFMO), and the Western and Central Pacific Fisheries Commission (WCPFC). In 2019, under routine aerial surveillance, AFMA has identified three Sri Lankan fishing vessels fishing in the Indonesian and Timor-Leste’s waters.\(^{60}\)

**Challenges**

Australia has uploaded two kinds of information modules of vessels flying their flags in the GRI database, which is the vessel details and list of ports.\(^{61}\) To enhance its participation, Australia shall deal with the following challenges to fulfil the rest of the modules:

- In the AMSA registration, history of ownership since registration from fishing vessels only available for those who chose to register it to the Australian Shipping Office (not mandatory as it is made as an exemption).\(^{62}\) Although previous flags and names of a vessel were asked to the applicants when applying for the fishing rights and permits, the lack of information concerning the previous owner or operator still persists. Besides, there are also additional history-specific particulars included on the registers based on Section 102 of the Regulations

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\(^{60}\) Ibid.


namely the history of the vessel built (when and where it was built) and a code representing
any previous flag state.63
• IMO number is not mandatory for submission, thus the number of the licensed vessels with
such UVI is limited over the past 70 years, only 23 fishing vessels owned an IMO number.
However, such information is displayed at the moment.
• There is no compiled list devoted to licensed fishing vessels with all-in-one detail. Currently,
the published list is only from AMSA’s website regarding registered vessels with details on
IMO number, LOA, year of completion, type of vessels, homeport, and status.64

Recommendation
• Vessel registration for commercial fishing vessels above 12m in length shall be mandatory.
• Amend the conditions to obtain fishing vessels permit by including the history of ownership
(particularly previous owner/operator). The current registration form mostly provided the
data required to upload the vessel details to the GRI system, such as structural
characteristics, ownership, and fish permit (type, period, area, species, and gears). However,
to fulfil the historical information modules, identifying previous owners/operators will be
advantageous so that traceability of the fleet will support the enhancement of the data in
GRI.
• Clear designation of national focal point to gather and manage the data collected from
multiple stakeholders

3.2 INDONESIA

Monitoring, Control, and Surveillance

Basically, all fishing and fishing-associated vessel movement, except for artisanal or small fleets65,
in the Indonesian fisheries management area and high seas are fully recorded and monitored by
the Indonesia Government. Every person who owns and/or operates Indonesian-flagged fishing
vessels within the Indonesia fisheries management area and high seas must possess a fisheries
business (Surat Ijin Usaha Perikanan/‘SIUP’)66 and catch license (Surat Ijin Penangkapan
Ikan/‘SIPI’).67 Together, these licenses contain information about inter alia the vessel, owner(s),
fishing gears, fishing ground, designated port, and VMS/transmitter activation certificate (Surat
Keterangan Aktivasi Transmitter/‘SKAT’).68 Similar rule applies to transport/carrier vessels which
need to be accompanied by SIUP and fish carrier vessel license (Surat Ijin Kapal Pengangkutan
Ikan/‘SIKPI’).69
Furthermore, SIPI or SIKPI for fishing vessels of above 30 GT are recorded in a system administered by MMAF called Sistem Informasi Pendaftaran Kapal Perikanan/SIPALKA. Meanwhile, the respective local governments input information on SIPI or SIKPI for fishing vessels of 30 GT and below in a system provided by MMAF called Sistem Informasi Kapal Ijin Daerah/SIMKADA. Prior to obtaining SIPI or SIKPI, one must possess a vessel registration certificate (Buku Kapal Perikanan/BKP), which contains inter alia information about the owner(s) and vessel, including its photo. There is no explicit obligation of having an IMO number in this registration. Nevertheless, IMO number is listed within BKP. Thus, it is unclear as to whether IMO number is a prerequisite to BKP.

Regarding small fishers, they have to obtain Certificate of Fishing Vessel Registration (‘Tanda Daftar Kapal Perikanan/TDKP’). TDKP is applicable during fishing. Fishers are then obligated to report their catches to the respective Harbor Master every one month. Had fishers not carried out this obligation, they would be charged with administrative violations, including the revocation of TDKP. That means small fishers activities in Indonesia are also recorded and controlled by the government through licensing.

At the moment of this report writing, a new law, Law No 11 of 2020 on Job Creation, has just been promulgated, in which some provisions of the Fisheries Law are amended. The terms SIUP, SIPI, and SIKPI are all changed into business licenses (‘Perizinan Berusaha’). Provided that the implementing regulation of this Law is yet to be promulgated, it is still unclear as to what kind of documents that are required for their issuance.

All the above documents are prerequisites for obtaining other licenses. To fully grasp how the MCS works, this report provides an overview of the fisheries MCS scheme in Indonesia, particularly on the control and surveillance parts. This is because we want to focus on the fishing vessels licensing and monitoring. The control and surveillance mechanism are divided into three main stages, namely pre-production, production, and post-production stages. The complete process of MCS mechanism is illustrated in the figure below.

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70 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 58 of 2020 on Capture Fisheries Business, 2020, Art. 46 (1), 54 (3), 89(1), Annex VII.
71 Ibid, Art. 10 (2).
72 Ibid, Art. 11 (3).
73 Ibid, Art. 94 (4).
74 Ibid, Art. 95 (1).
75 Indonesia, Law No. 11 of 2020 on Job Creation (Indonesia, 2020), Art. 27 Para. (5), (6), and (8).
**Pre-Production Stage**

Two main documents that are used by the government of Indonesia at this stage are legal operation letter (Surat Laik Operasi/"SLO") and Minutes of Vessel Inspection Results (Hasil Pemeriksaan Kapal/"HPK") of the Departing Vessels ("HPK"). In addition to SIPI and port clearance, it is compulsory to bring SLO on board while traversing at Indonesian fisheries management area and high seas.\(^7^8\) SLO is obtained after meeting administration requirements and technical feasibility. During these processes, the fishery inspector inspects the physical condition and verifies the documents of fishing vessels and fish carrier vessels, including licensing documents (SIPI/SIKPI, etc), vessel size, vessel crew, fishing ground, fishing gears, designated ports, and VMS transmitter activation.\(^7^9\) The verification results will be set out in the HPK.\(^8^0\) Should the results meet the administrative and technical requirements, the fishery inspector issues the SLO.\(^8^1\) Upon the issuance of SLO and HPK, the Harbor Master will issue the Port Clearance (Surat Persetujuan Berlayar/"SPB").\(^8^2\)

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78 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 58 of 2020 on Capture Fisheries Business, Art. 136 (1).
79 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 10 of 2019 on Legal Operational Letter of Fishing Vessel (Indonesia, 2019), Art. 5 & 6.
80 Ibid, Art. 11.
81 Ibid, Art. 12.
82 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 58 of 2020 on Capture Fisheries Business, Art. 136 (1); Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 3 of 2013 on Regulating Harbour Master Activities at Fishery Port (Indonesia, 2013), Art. 11.
• **Production Stage**

• **Vessel Monitoring System**
As implicitly stated above, carrying a transmitter unit onboard is obligated to Indonesian-flagged fishing and fish carrier vessels (i) above 30 GT authorized to operate in Indonesia fisheries management area or (ii) above 30 GT or 15 metres in length authorized to operate in high seas. Also, transmitters need to be continuously activated. Users who fail to carry out such obligation will be charged with administrative sanctions, except the transmitter is broken, vessel is docking or not operating, or at the time of force majeure.

In regard to the transmitter, it needs to (i) be compatible and able to integrate with the system in the Control Center, (ii) has global satellite coverage, (iii) has an identity transmitter number, (iv) provide vessel position data at least every one-hour continuously, (v) be equipped with security in the form of a seal, and (vi) has a transmitter unit tools certificate. This way, the provider can regularly monitor the vessel movements. Information about the location of vessels will be put forwarded continuously to the administrator, in this regards the Directorate General of Surveillance of the MMAF. Worth mentioning is the data exchange or sharing of the VMS. VMS data is strictly confidential and owned by the administrator, except at the time of criminal cases trial. VMS data was publicly accessed on the website of Global Fishing Watch because the administrator had an agreement with the Global Fishing Watch.

• **Observer**
Certain types of Indonesian flagged fishing vessels need to carry an observer on board. They are (i) purse seiners and long liners fishing in the high seas, (ii) fish transport vessels operating in the Indonesian Fisheries Management Area and high seas, and (iii) fishing vessels with hook, purse seine, lift net, gill net, seine net, and trawl operating in the Indonesian Fisheries Management Area. In addition, the existence of observers on board is obliged whenever a fishing vessel or transport vessel engages in the transshipment activity in the high seas or the port of destination country.

• **Patrol Vessel Operation**

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87 *Ibid*, Art. 7 (2).


91 Ministry of Marine Affairs and Fisheries Republic of Indonesia, *Ministerial Regulation No. 1 of 2013 on Instrument for Monitoring Fish Catching Boat and Fish Transporting Boat* (Indonesia, 2013), Art. 7.

Patrol operations in Indonesia Fisheries Management Area are carried out by multiple
government agencies, such as Indonesian Navy (TNI AL), Ministry of Marine Affairs and
Fisheries, Minister of Transportation, Minister of Finance, Indonesian Coast Guard
(‘BAKAMLA’), and Indonesian Police.93 To that end, they all have their own task forces, which
are facilities, systems, and personnel.94 In the high seas, however, only TNI AL is authorized to
conduct patrol and law enforcement operations.95 With this multi-agencies approach, the
overlapping of jurisdiction has been a widely known problem for law enforcement at sea.96
For instance, when a ship engages in illegal fishing in 10 NM waters from baselines, TNI AL,
MMAF, Indonesian Police all have the power to investigate this.97
Additionally, the Ministry of Marine Affairs and Fisheries also involves local communities and
fishers as their partners in the oversight of fisheries. They however do not have enforcement
jurisdictions. Their role is mainly limited to patrol and report every violation of fisheries rules
and measures to the authorized agencies. This will be explained in detail in the following
report (Scope of Work 4).

• Post-Production Stage
The Government of Indonesia also monitors and inspects the unloading process of Indonesian-
flagged fishing vessels. The captain of a fishing vessel operating in the Indonesian EEZ and high
seas is required to fill out a logbook, which contains daily reports on fishing and operational
matters, for every fishing trip. This logbook is subsequently reported to the respective
harbourmaster.98 Upon calling at port, a verification will be carried out toward fishing gears,
catches, landing port, logbook, and other documents by fish inspectors. Its result will be set
out in HPK arrival for Fishing Vessels and Fish Carrier Vessel, and Fishing Base Report Book
(Buku Lapor Pangkalan). Both documents will be used as the basis for the issuance of the next
SLO.

Challenges
So far, Indonesia has only uploaded one information module of vessels flying their flags in the
GRI database, which is the vessel information.99 To enhance its participation, Indonesia first and
foremost need to deal with the following challenges:

• Lack of coordination between multiple government agencies, especially in terms of
  exchanging information about fishing vessels. Often, these agencies did not work in
  synergies with each other. Consequently, patrols and law enforcement operations at sea are
  not effective.

(2014).
94 Ibid.
95 Indonesia, Law No. 34 of 2004 on Indonesia National Army (Indonesia, 2004).
97 Indonesia, Law No. 45 of 2009 on Fisheries, Art. 73 para (2); Indonesia, Presidential Regulation Number 63 of 2015 on
  Ministry of Marine Affairs and Fisheries (Indonesia, 2015), Art.22.
98 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 58 of 2020 on Capture
  Fisheries Business, Art. 123 (1).
99 FAO, “Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels,”
- Massive numbers of small fishing boats/vessels that are not covered under regular licensing and monitoring provisions, most importantly those relating to transmitters/VMS. The Ministry of Marine Affairs and Fisheries of the Republic Indonesia stated that vessels below 30 GT account for around 90% of total fishing fleets in Indonesia. Even though they have the obligation to report their catches monthly to respective harbour master, this report might be difficult to verify. Also, it is difficult to ensure small fishing vessels are recorded, especially if they do not export the products/catches.
- Technicalities regarding VMS in a sense that many transmitters are deactivated during operations due to technical reasons. Stronger sanction needs to be implemented for effective use of the transmitters by vessels.
- No clear provisions regarding the use of IMO Number in fishing vessels in the existing laws. If the BKP format is interpreted as requiring all vessels to obtain IMO number, such obligations may become a heavy burden to vessels of 10-30 GT. The Indonesian government, be they the Ministry of Transportation or Ministry of Marine Affairs and Fisheries, needs to proactively assist vessel owners in obtaining IMO numbers for their vessels.

**Recommendation**

- Assigning one government agency as the coordinator for law enforcement or patrol operations at sea. Its first role should be to establish a database that can be accessed by all government agencies. Drawing on Article 63 (1) of the Law No. 32 of 2014, BAKAMLA has already been assigned to carry out such a role. Besides, the absence of IMO number, Indonesia has the capability to fulfil all the information modules required by the GRI. BAKAMLA may play a crucial role to gather and maintain from multi-stakeholder involved in the data required namely historical information (MMAF), Authorization (MMAF), Authorization (Directorate General of Sea Transportation, Ministry of Transportation and MMAF), Inspection and Surveillance (MMAF, Ministry of Transportation, Navy, and Marine Police), Port Entry/Use Denials (Port Master, MMAF, Ministry of Transportation), and IUU Fishing Vessel List (All stakeholders).

**Table 3. Availability of Indonesia’s Data compared to GRI Information Modules**

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<thead>
<tr>
<th>Category</th>
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<th>Availability</th>
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<td>IUU Fishing Vessel Lists</td>
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</tr>
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</table>

- Progressing the implementation of the TDKP to Small-Scale Fishing Vessels.
- Providing incentives for registering and carrying active transmitters onboard to fishing vessels below 30 GT.
- Stricter law enforcement and setting the VMS compliance as one of the considerations for obtaining the next fishing licenses.
- Amend Ministerial Regulations No. 58 of 2020 to include provisions regarding the use of IMO Number in fishing vessels. In particular, the amended Regulation obliging vessels of equivalent to 12 LoA and above to obtain IMO Number. What is more, such provisions may also grant vessel owners a right of administrative assistance from the Ministry of Marine Affairs and Fisheries for this purpose.

### 3.3 PAPUA NEW GUINEA

**Monitoring, Control, and Surveillance**

Papua New Guinea (PNG) is an archipelagic nation made up of the eastern half of the island of New Guinea, with around 600 smaller islands spanning more than 1,300 km with a coastline of around 17,000 km and the EEZ expand 2.5 million km².\(^{101}\) PNG has produced 236,823 tonnes from

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\(^{101}\) National Fisheries Authority, ‘PNG and the Fight Against IUU Fishing’ (2019).
the wild-catch in which the number decreased from the previous year with 310,979 tonnes.\textsuperscript{102} PNG’s fishing license is categorized into 7 (seven) types of license required for a fishing vessel, fish buyers, fish storage facility, fish factory, fish export, aquaculture, and trial fishing from all GT levels. The licensing primarily governed in part IV of the Fisheries Management Act 1998 (amended in 2015) hereinafter the Act and parts II, III, IV, and V of the Fisheries Management Regulation 2000 hereinafter the Regulation.

- **Pre-Production Stage**
  GRI modules such as the details of the vessel and authorization were part of the general criteria enlisted in article 43 of the Regulation and annex 2 of the National Fisheries Authority Licensing Policy. It can currently be done through the offline procedure, but registration can be applied online by visiting \url{https://nfa.fimsportal.com/sub/index.php}. The NFA vessel datasheet required the type of vessels, length of vessels, and flag flying the vessel. Overall, the process consisted of six steps and many stakeholders involved with different roles namely Licensing Advisory Committee (LAC) consisted of a representative of technical units in NFA which considers a summary of license applications and technical matters concerning licensing. The Managing Director’s role is to provide license applications to the board for consideration while the Licensing Unit receives and manages the process of all licenses, and NFA Authority Board is entitled to consider and grant each application and make any changes to the licenses.\textsuperscript{103}

Applicants appealed to self-assess the application before submitting them to the licensing unit. The application was then received and added to the database, followed by disseminating the summary of the applications to the LAC. LAC shall make recommendations to be submitted to the fisheries board, which will be passed to the Managing Director for approval. Rejection will be issued if the applicants fulfilled one of the circumstances listed as follows:\textsuperscript{104}

- Where the license fee has not been paid.
- Where the applicant is in breach of the Act or any other relevant legislation.
- Where activities are prohibited under Section 30 of the Act
- Where in the case of license renewal there have been more than two failures to report previously
- Where in the case of a fishing vessel license the catch of the vessel has been misreported
- Where a foreign fishing vessel does not have a good standing on applicable registers
- Where a foreign shipping vessel has failed to provide the required port call or transhipment certificates.
- Where a foreign shipping vessel has no applicable access agreement (noting that access agreements provide for freelance tankers and carriers).
- Where a vessel has authorized use of a driftnet or driftnet fishing activities
- Where the fishing vessel is listed as an IUU vessel


\textsuperscript{103} National Fisheries Authority, *Papua New Guinea National Fisheries Authority Licensing Policy*, 2015.

\textsuperscript{104} Ibid.
- Where the corporate body is listed on any IUU list.
- Where there is reason to believe that a vessel has engaged in trafficking of people or drugs; or that fish workers on board have been treated in a cruel or inhumane fashion.
- Where there is reason to believe that PNG will not be able to effectively exercise its responsibilities under applicable international conservation and management measures.
- Where there is reliable information that a Foreign State has withdrawn or suspended authorization for a vessel to fish on the high seas for undermining international conservation and management measures unless the beneficial owner of the vessel has changed.

After approval, the licensing unit will arrange an inspection to check the pre-conditions that must be satisfied such as boat marking and vessel monitoring system equipment is installed, maintained, and fully operational. Suspension and Cancellation also can be made under sections 19 and 21 of the Regulation.\(^{105}\)

![Figure 2. Licensing procedure in Papua New Guinea](image)

Besides fulfilling the general criteria either for domestics and foreign, owners or operators must also comply with the designated fisheries’ management measures. Different measures either national or region-specific that need to be fulfilled varied for each, for ATS region, the one closely related are Torres Strait Management Plan. Below are the table of comparison:\(^{106}\)

**Table 4. Comparison of document required to obtain a license between general and Torres Strait Management Plan**

<table>
<thead>
<tr>
<th>Vessel License (Domestic)</th>
<th>Vessel License (Foreign Bilateral or Freelance)</th>
<th>Vessel License (Torres Strait Fishery)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed NFA Vessel Datosheet</td>
<td>Signed Access Agreement</td>
<td>Completed Torres Strait Licence Application Form</td>
</tr>
<tr>
<td>Photographs taken from Port, Starboard and Aerial view</td>
<td>Completed NFA Vessel Datosheet</td>
<td>Photographs taken from Port, Starboard and Aerial view</td>
</tr>
<tr>
<td>Declaration of Ownership/Ownership Certificate</td>
<td>Photographs taken from Port, Starboard and Aerial view</td>
<td>Declaration of Ownership/Ownership Certificate</td>
</tr>
</tbody>
</table>


\(^{106}\) National Fisheries Authority, *Papua New Guinea National Fisheries Authority Licensing Policy*.
<table>
<thead>
<tr>
<th>Vessel License (Domestic)</th>
<th>Vessel License (Foreign Bilateral or Freelance)</th>
<th>Vessel License (Torres Strait Fishery)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate of Registration</td>
<td>Declaration of Ownership/Ownership Certificate</td>
<td>Certificate of Registration</td>
</tr>
<tr>
<td>Crew list</td>
<td>Cargo Ship Safety Certificate</td>
<td>Crew list</td>
</tr>
<tr>
<td>Photo of Fishing Master</td>
<td>Crew list</td>
<td>Photo of Fishing Master</td>
</tr>
<tr>
<td>Plan/Specification</td>
<td>Photo of Fishing Master</td>
<td>Mobile Transmission Unit (MTU) Certificate</td>
</tr>
<tr>
<td>Proof of local ownership</td>
<td>Mobile Transmission Unit (MTU) Certificate</td>
<td>Proof of local ownership</td>
</tr>
<tr>
<td>Contract or Deed of Sale/Purchase – if not imported</td>
<td>International oil pollution prevention certificate</td>
<td>Contract or Deed of Sale/Purchase – if not imported</td>
</tr>
<tr>
<td>Bill of Sale – Imported</td>
<td>WCPFC endorsement</td>
<td>Bill of Sale – Imported</td>
</tr>
<tr>
<td>Certificate of Deletion from overseas registry – Imported</td>
<td>FFA Good Standing Certificate</td>
<td>Certificate of Deletion from overseas registry – Imported</td>
</tr>
</tbody>
</table>

Besides licensing, NFA is also responsible for monitoring mechanisms to ensure the national fisheries resources are sustainable. Preventive measures, such as requiring additional documents and imposing fisheries limits on fishing effort or catch according to the respective management plan, are in place. However, the Licensing Unit as the manager of national licenses has to control and monitor the number of vessels by notifying the advisory board whenever there is an increase of 10% of the new license application.\(^\text{107}\) Supplemented by a study on the implications of the increase concerning stocks’ status, implications on the MCS, the impacts on national development, and other relevant factors. Later, the Managing Director may approve, reject, or defer the applications. The list of licensed vessels is available on the NFA’s website (latest updated in 2017) consisting of 84 domestic vessels and 299 foreign vessels.\(^\text{108}\)

\(^{107}\) Ibid.

• **Production Stage**
The existence of VMS in every licensed vessel facilitates the authority for controlling and surveillance mechanisms under the responsibilities of the VMS operations unit of NFA. While communicating in the distress situation utilizing the Global Maritime Distress and Safety System (GMDSS) provided by National Maritime Safety Authority (NMSA). Further for maritime surveillance there is a patrol fleets conducted by PNG Defence Force. These agencies then coordinated by the National Surveillance Coordination Centre (NSCC).

• **Post-Production Stage**
Port entry measures were regulated in PNG’s primary fisheries regulation, as the country was still yet to ratify the PSMA. Managing Director plays an important role in deciding incoming vessels were allowed or denied docking on the port designated by the country that should be published on the NFA website. Inspection for licensing commenced at a designated port at the beginning of any license period and a minimum of one port call per year. To date, PNG is yet to submit any list of IUU vessels to relevant RFMOs although already engaged with several organizations among others Parties of the Nauru Agreement, and WCPFC. Based on the country report of annual RFMO’s meetings, the country however admits its willingness to share such data.

**Challenges**

- History of ownership of a vessel is not a prerequisite condition to apply for the license. Besides the five-essential field, the history details would be valuable to enhance the vessels traceability in order to assist the Managing Director to identify the level of compliance of the incoming vessels effectively.
- Staff unfamiliarity with the GRI systems
- Licensed vessels dominated by foreign vessels under bilateral arrangement operated beyond 12 NM of any PNG’s land (archipelagic waters and EEZ). Whereas GRI systems drive flag state to have the duty to submit the vessels record, meaning that even if the country participates in the initiatives, not all operated vessels will be available to be traced if the other party under the access agreement of the foreign fishing vessel does not agree of data sharing of the vessel details to the system. Further, there is a limited monitoring capability and port inspection.
- The data listed does not provide several types of data required to be entered. The current data categorization did not include many fields. Thus, updating the data entry to GRI may not be as frequent as expected as now the published data from 2007.

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110 Ibid.
**Table 5. Availability of Papua New Guinea’s Data on Vessel List compared to GRI Information Modules**

<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
<th>Availability</th>
<th>Shared to GRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel details</td>
<td>Identification (IMO Number, Current Flag, LOA or GT, Names, and etc)</td>
<td>✔️ (Only vessel names and flag code)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Registration</td>
<td>✔️ (License number and IRCS)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Structural characteristics</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Ownership</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Historical information</td>
<td>Previous flags</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Names</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Owners/operators</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Authorizations</td>
<td>Type</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Period of fishing</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Operation area</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Species target</td>
<td>✔️</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Gears</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Inspection and Surveillance</td>
<td>Type</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>Location</td>
<td>-</td>
<td>-</td>
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<tr>
<td></td>
<td>Possible infringement</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Outcome</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Port Entry/Use Denials</td>
<td>Place and Date</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IUU Fishing Vessel Lists</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Recommendation**

- Amend the conditions to obtain a commercial fishing license by including the history of ownership and flag state. The current registration form mostly provided the data required to upload the vessel details to the GRI system, such as structural characteristics, ownership, and fish permit (type, period, area, species, and gears). However, to fulfil the historical information modules, identifying previous flags, names, and owners/operators will be advantageous so that traceability of the fleet will support the enhancement of the data in GRI.
- Capacity building for NAF staff by seeking support on technical and capacity development to the FAO Global Capacity Development Programme.
- Gradually require all fishing vessels to obtain IMO numbers starting with foreign vessels that plan to operate in PNG’s EEZ an IMO number to obtain the fishing permit. Acknowledging the domestic fishing industry was arduous, NFA shall be the authorized representatives to list the domestic licensed vessel to obtain the IMO number.

- Several data entries needed to complete the information modules of GRI were available. However, it is still not available on the licensed fishing vessel list owned by PNG authority. Thus, adding and compiling the list of the output of the inspection and surveillance, port entry, and denials, as well as IUU fishing vessels, would be beneficial.

- Regulations and monitoring against foreign vessels, including transhipment at sea, needs to be enhanced and stringent as the current vessels allowed to operate are higher than required to harvest estimated sustainable catch.

### 3.4 TIMOR-LESTE

**Monitoring, Control, and Surveillance**

Timor-Leste water areas filled with rich marine biodiversity and located within the Coral-Triangle. Due to the high price and low availability of fish in the market, annual per capita fish consumption of Timorese was low estimated at 6.1kg compared to the meat consumption at 13.3kg.\(^{112}\) Despite potential annual catches projected to 116,000 tons, the total production of the capture fisheries sector for 2018 was only 3,200 tons.\(^{113}\)

Subsistence and the artisanal fishing fleet made up more than 90% of all licenses the country has granted.\(^{114}\) Despite being dominated by small-scale fishing vessels, the country method of MCS is unlike other countries which are mostly dominated by a top-down approach. Due to the limited budgetary and human resources limitations the government recognized such an approach had failed miserably to manage and protect its natural resources. Socializing new fisheries regulations and getting fishers to comply are difficult to achieve because of a lack of awareness and understanding and tendencies to adhere to the customary law.

Recognizing that small-scale fisheries license dominated the country, and the Timorese’s government granted no industrial-scale fishing vessel license while phase 1 of GRI only required the ≥24 m fishing vessels to be registered, thus Timor-Leste still does not have the urgent push to participate in this voluntary initiative. However, the government stated that they are willing to join the initiatives with a priority to ratify other existing international instruments that have yet to accede or ratify.\(^{115}\)

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\(^{115}\) Interview with Mr. Pedro Rodrigues on the Topic of “National Actions Development in Combating IUU Fishing in Arafura and Timor Sea Region: Data, Regulations, and Community-Based Surveillance” on 9th November 2020.
• **Pre-Production Stage**

It is important to note that the country has consistently developed its MCS mechanism by collecting more accurate data for fishing vessel licensing. Before 2011, the country faced a major challenge in encouraging all artisanal fishers to obtain fishing vessel licenses due to the complicated, time-consuming, and costly process. The attributed factors are poor infrastructure, means of transportations, long-distance to submit the registration form all the way to Dili—the capital of Timor-Leste and risk their income by taking days off not sailing. The importance of the permit itself incumbent in the section III of Decree-Law No.6 of 2004 which mandated all artisanal motorized fishing activities constitutes commercial fishing, therefore, these fishers must obtain fishing permits.\(^\text{116}\) Timor-Leste licensing includes the small-scale vessels (<10 m).

![Figure 3. Licensing procedure before 2011 in Timor-Leste](image)

A considerable leap was achieved through the first national census in October 2011 on fishing vessels conducted through the launch of mobile licensing service, a one-stop service, to screen and facilitate fishers in the country to be registered. After touring for over a year, the deployed team issued 1,330 licenses and listed 3,113 boats operated in 11 districts.\(^\text{117}\)

![Figure 4. Licensing procedure through mobile licensing team after 2011](image)

The deficiency of such an application process, the country still has not required the conditions to obtain IMO numbers for any of the vessels. Although article 61 regulates the licensed vessels to fish in high seas shall be subject to marking specifications set by the FAO, other vessels operating within the national jurisdiction remain to put only registration numbers.\(^\text{118}\)

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\(^\text{116}\) Timor-Leste, Decree Law No. 6 of 2004 on General Bases of the Legal Regime for the Management and Regulation of Fisheries and Aquaculture (Timor-Leste, 2004).

\(^\text{117}\) Needham et al., Community-Based Data Gathering and Co-Management of Marine Resources in Timor-Leste. Field Project Document No 2013/1.

\(^\text{118}\) Timor-Leste, Decree Law No. 6 of 2004 on General Bases of the Legal Regime for the Management and Regulation of Fisheries and Aquaculture, Art. 61.
• **Production Stage**

Surveillance at this stage identical with patrol at sea which usually conducted by various government agencies. According to article 49 of the Fisheries Management Regulation, the licensed vessel inspection shall be conducted on a periodical basis and the procedure enumerated in the further regulations. However, applicable regulations to this matter are still yet to be known. To date, the country still lacks the capacity to perform surveillance as no patrol boat was available, although, in the latest Sub-group MCS meeting of RPOA-IUU, Australia declared to give patrol vessels for Timor-Leste. Additionally, port entry procedures have not yet been identified, and the country did not yet ratify the PSMA. Acknowledging Timorese challenges in terms of monitoring and surveillance, the country launched a community based IUU reporting system which developed trustable relationships between the government and the small-scale fishers. The fishers were asked to press the buttons on the personal GPS locator beacons (PLB) to anonymously report the time, date and position of IUU fishing activities to the Maritime Police and Fisheries Inspection departments. This mechanism relied on the artisanal fishers’ devices, either loaned or purchased in the local electronic shops, which transmit the position every 15 minutes via satellites.

![Figure 5. Personal GPS Locator Beacons in Timor-Leste](image)

Since 2012, more than 50 reports have been recorded from the community presumed to conduct IUU fishing activities. Subsequently, collaborative surveillance becomes the critical element of the national MCS policy of Timor-Leste.

The gathered data is safely stored and accessible to the public through a website for the National Fisheries Statistical System called [www.peskador.org](http://www.peskador.org), which then later replaced by the program initiated by the World Fish, Pelagic Data System and the NDFA of Timor-Leste.

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119 Ibid.
120 RPOA-IUU Secretariat, Summary Report of the 12th Coordination Committee Meeting of RPOA-IUU (Siam Reap Province, 2020).
called, PeskAAS (Automated Analytics System for Small Scale Fisheries in Timor-Leste). Previously, the country also experienced using VMS Argos (Themis Cloud 5) supported by the Japanese company.

Since its implementation, there are several challenges identified one of the key contributors for the discontinuation of such implementation due to the lack of follow up response from the related agencies. As the collaborative surveillance method has not been used since the last implementation in 2016. Further elaboration regarding to this can be seen on the fourth report of this series titled “Collaborative Surveillance Best Practices and Lesson Learned Against IUU Fishing.”

- Post-Production Stage

The PeskAAS is a digital application that enables the collation, classification, analysis and visualization of small-scale fisheries catch and effort data which collaborated with WorldFish.\textsuperscript{122} After 4 (four) years being implemented in Timor-Leste, in 2019 the Timorese Government announced the PeskAAS as their official national fisheries monitoring system.\textsuperscript{123} Breakthrough approach of this mechanism recognized as the world-first monitoring system for small-scale fisheries on the Inspire Challenge by the CGIAR.\textsuperscript{124} Data generated by PeskAAS were used to show how fishing technology could improve fisher incomes and fish availability in Timor-Leste and at the same time posed as a point of reference.\textsuperscript{125}

This interactive web-hosted application consisted of several process as portrays below on the figure with its elaboration derived from journal written by Tilley, et al in 2020.\textsuperscript{126} The accessibility of the mechanism still limited thus the information provided here only utilized mixed method with an interview with Alexander Tilley.

\textsuperscript{123} López Angarita et al., Fisheries and Aquaculture of Timor-Leste in 2019: Current Knowledge and Opportunities.
Catch Documentation at Landing Sites
The data collection relies on enumerators, one enumerator responsible to supervise 25 landing sites in 11 coastal districts and three were deployed on the Atauro Island, where most small-scale fishers working. They collect data from fishers after landing in each landing site/center and enter these data collected into the online system.

PeskaPARSE.R Script
R script were made to provide landing records easier by filtering, manipulating, and submitting the clean record from KoBo toolbox to the peskaDAT database by scheduling a daily cron job on a Google Cloud Platform virtual machine. For example, by providing filter according to the thresholds such as species or group-specific length.

Geospatial Vessel Tracking
A tamperproof solar-powered GPS unit installed on voluntary basis and with no costs on 5-15 boats per landing site developed by the Pelagic Data Systems. The tools update location data automatically every 5 seconds in which the data will be updated during the range of a cellular network. It provides the system with vessel track which can be linked by trip’s catch data.

PeskaDAT Database
Cleaned and checked fisheries landings data, geo-located boat tracks and ancillary tables were combined and stored on the MySQL database hosted by Heliohost. Monthly data recorded were automatically saved on the Dropbox.

Fisheries Analytics
Regional and national catch and the CPUE (catch per unit efforts) estimates per month, per gear, by each site required estimation of the frequency and duration of fishing trips (Vessel Activity Coefficient). Therefore, vessel tracks were needed to provide this data query.

Supervised Prediction of Missing Trip Attributes
Enumerator data combined with geo-located vessel fishing tracks posed as references for predicting gear and habitat types. However, there are possibility of unobserved trips therefore prediction is needed by calculating ten GPS vectors from each trip used to
generate training and query data matrices to be input into the \texttt{nn2} function in the \texttt{RANN} R package.\textsuperscript{127}

![Figure 7. Main Page of PeskAAS, a near-real time small-scale fisheries catch documentation from Timor-Leste](image)

All these data combination provided near real-time information are accessible through the https://worldfish.shinyapps.io/peskAAS/

**Challenges**

- There is a lack of surveillance on the production stage due to no patrol vessel available to monitor at sea.
- Lack of MCS experts within the MAF staff, as well as limited financial capacity for the mobile licensing systems (latest update is in 2012). Besides, the port state measures within the country are still lacking. Overwhelmed by the existing problems, another challenge posed when providing IUU vessel list to the system. Whereas the data collection system relied on the community, not all the vessels sighted may belong to the Timor-Leste vessel statistics system. As a result, there is a high possibility that the reported IUU vessel list is only limited to the local fleet, unless the whistle-blower can identify the boat mark which may be reported to the FAO or RFMO in order to be identified. Thus, updating the data entry to GRI may not be as frequent as expected.
- There are no elaborative terms on a specific length of vessel or gross tonnage to be categorized as Small-Scale Fisheries which proliferate the number of semi-industrial vessels in various of length fishing within the nearshore area—eventually destructing the subsistence and artisanal fishing grounds where the capacity from the fishers has reached its limit.

• The department in charge finds it difficult to independently gather and manage the data due to the absence of monitoring facilities. Thus, to date, the facilities are still working with the third party’s assistance, such as World Fish.

• Let alone obtaining a vessel license from the Timorese fishers within the country is already a complex and challenging thing to do. Even less to acquire IMO numbers, especially in the country dominated by small-scale fisheries.

**Recommendation**

Prior to participation to the GRI, Timor-Leste needs to improve their internal fisheries management at least in the following issues:

• Capacity building for MAF staff by seeking support on technical and capacity development to the FAO Global Capacity Development Programme

• Amend the definition of Small-Scale Fisheries into a detailed LOA/GT in number. The available data of the total number of fishing vessels and their details, such as the distribution analysis, has helped the distribution analysis by FAO. However, the absence of the rigid categorization will be disadvantageous for the country to input the data later within the system.

• Amend the conditions to obtain a commercial fishing license by including the history of ownership and flag state. The current registration form mostly provided the data required to upload the vessel details to the GRI system, such as structural characteristics, ownership, and fish permit (type, period, area, species, and gears). However, in order to fulfil the historical information modules, identifying previous flags, names, and owners/operators will be advantageous so that traceability of the fleet will support the enhancement of the data in GRI. Despite the fact that such conditions are more relevant and feasible for the semi-industrial and above vessels level. Timorese authority may gradually implement the conditions starting with the local semi-industrial vessels operating in areas beyond national jurisdiction.

• Register the licensed vessels of equivalent to 12 LoA and above to obtain IMO Number to the IMO’s authority through [https://imonumbers.lrfairplay.com/](https://imonumbers.lrfairplay.com/). Even if the number is free of charge and accessible for any owner to request. It will be favourable for the national authority to submit such a request to facilitate these fishers who may be unfamiliar to use computers or be illiterate. Besides, having the UVI for each vessel other benefits of having IMO number for Timorese’s vessels is the traceability of the vessels so that even when such vessels sighted in port states or international waters Timor-Leste authority may be alerted of such activities and will stimulate the effort as the flag state.

• Ratify PSMA and further implement the agreement by appointing designated ports, enacting implementation measures of PSMA, and applying a standardized system of port codes identification.

• Reactivate and rectify the deficiencies arises from the SPOT-Tracker mechanism to fill the gaps of surveillance at sea along with the procurement of the patrol vessels to support the follow up responses.
<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
<th>Availability</th>
<th>Shared to GRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vessel details</td>
<td>Identification (IMO Number, Current Flag, LOA or GT, Names, and etc)</td>
<td>✓ (excl. IMO Number)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Registration</td>
<td>✓</td>
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<td>Structural characteristics</td>
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<td>Historical information</td>
<td>Previous flags</td>
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<td>Names</td>
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<td>Owners/operators</td>
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<td>Operation area</td>
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<tr>
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<td>Species target</td>
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<td>Gears</td>
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<td>-</td>
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<td>Inspection and Surveillance</td>
<td>Type</td>
<td>-</td>
<td>-</td>
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<td>Location</td>
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<td>Possible infringement</td>
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<td>Outcome</td>
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<td>-</td>
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<tr>
<td>Port Entry/Use Denials</td>
<td>Place and Date</td>
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<td>-</td>
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<tr>
<td>IUU Fishing Vessel Lists</td>
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</tbody>
</table>
CHAPTER 4. CONCLUSION

Attaining transparency at sea to eradicate IUU fishing requires effective participation from a large number of countries. Now in its fifth year, the GRI still has many drawbacks; from a lack of participation among the most prominent players in the fisheries industry, to problematic technicalities within the system itself. To better implement PSMA, GRI needs to be user-friendly but also accessible to any country, so they can access and contribute effectively. This is especially relevant for countries with limited resources and capacity. The GRI, as an embodiment of cost-effective information sharing that is intended to support transparency in monitoring and surveillance by its members, needs to be further developed to address the aforementioned difficulties. Faced by these challenges, there are a number of recommendations for ATS countries to follow, whether they are initiating or maintaining their participation in the GRI initiative. These are as follows:

● FAO has not yet carried out the third phase, in which small-scale fisheries are included in the GRI platform. Therefore, GRI lacks relevance in the governance of ATS for two reasons: first, the majority of fishing fleets operating within the area are small scale (i.e., below 30 GT); second, the ATS region is a semi-enclosed sea.

● Capacity constraints, such as the limited capacity to collect and manage data originating from multiple systems and sources, no designation of national authorities and limited availability of experts. These constraints present participating countries with difficulties when attempting to fulfil the requirements of the initiative. Therefore, improvements to the fisheries management systems infrastructure should be prioritised.

● Unsupportive national laws and regulations in relation to GRI system requirements, such as making IMO numbers a prerequisite of licenses. Even if they are compatible, synergising laws and regulations with the government agencies responsible for their implementation remains a major challenge. What is more, many fishing vessels in the ATS region are small scale (below 30 GT), indicating their incompatibility with IMO numbers, which may only be granted to vessels of 12 metres (LOA) to 100 GT.

● Technical hindrance, such as complicated upload methods and system performance, have been experienced by existing members.

A major benefit of the GRI is its ability to facilitate the cross-checking of information and risk analysis prior to vessels being granted entry into port. If PNG and Timor-Leste are willing to participate in GRI in the future, thereby following the path taken by Australia and Indonesia, then there are several preparatory measures (detailed above) that will require careful consideration. That being said, PNG and Timor-Leste must focus on developing and strengthening their MCS tools to govern the ATS region in a more sustainable manner. Most importantly, this is because they have a massive number of small-scale fishers in the area. Furthermore, in the case of PNG, foreign fishing vessels fishing within its jurisdiction must be regulated more stringently, especially with regards to licenses.

Participation in the GRI depends on flag and coastal states’ capacity to collect fisheries data domestically. It is important to note that GRI functions as an additional or supplementary tool to
enhance transparency of fishing and its participatory vessels. Although valuable, the GRI is not a panacea for the issue of IUU Fishing in the ATS region.
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