COLLABORATIVE SURVEILLANCE BEST PRACTICES AND LESSON LEARNED AGAINST IUU FISHING

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EXECUTIVE SUMMARY

Insufficient surveillance of fisheries is detrimental to the global fight against illegal, unreported and unregulated (IUU) fishing and undermines the effective implementation of fisheries legislation. Although various international and regional instruments are available, their efficacy depends on states' commitment and capacity to fulfil their obligations. As a general rule, flag and coastal states are required to prevent, deter and eliminate IUU fishing. In practice, this involves adoption of appropriate regulations and measures, but also their effective monitoring and enforcement. That being said, surveillance presents a considerable challenge for many of these states. There are many contributing factors to ineffective fishing surveillance, most notably the scale of the task; significant vessel numbers, vast marine areas; and financial/technical constraints experienced by the authorities.

Fishing surveillance is carried out differently from one state to another. Three approaches are addressed in this report, namely centralised, community-based and collaborative surveillance. The centralised approach is employed by numerous authorities and in various different ways. However, this method has proved to be ineffective in dealing with the three contributing factors mentioned above. By contrast, the community-based approach emphasises the vital role played by local fishers in the fishing surveillance, while also conferring a very minimal role to government. The collaborative approach offers a more balanced, nuanced strategy, based on equal sharing of surveillance responsibilities between local fishers and the government. In this context, the following report aims to compile and review the practices of co-surveillance in fisheries of the Arafura Timor Seas (ATS) region. Towards that end, desk study and primary data collection have been undertaken.

Community participation in fisheries surveillance is not a common feature of Australia's national legislation. One of the reasons often cited for this is the legislative landscape, which has been designed in an institutionalised manner, particularly with regards to enforcement at sea. The law stipulates that monitoring, control and surveillance (MCS) activities should be carried out by government departments, which include the Australian Fisheries Management Authority (AFMA), the Australian Federal Police (AFP) and the Department of Defence (DoD). Their work is coupled to that of international stakeholders, namely global law enforcement agencies, intergovernmental fisheries agencies and foreign governments, among others. That is not to say that Australian domestic laws do not include communities/fishers at all in the fisheries management process – the relevant laws do allow participation by community members in the law-making process, but only through consultation. Although domestic laws don’t include communities explicitly (as is also the case in Indonesia, where communities are actively involved in activities such as surveillance), the implementation of legislation does include communities in the consultation processes. Moreover, the high skill level and optimised performance of officers means that participation from communities is not needed.

Indonesia has extensive experience in implementing co-surveillance policy. Despite having multiple governmental agencies tasked with law enforcement at sea, the Indonesian government also accommodates participation by local fishers in surveillance. For example, the Ministry of
Marine Affairs and Fisheries (MMAF) has developed and implemented the Community-based Surveillance System (SISMASWAS). Those who participate are referred to as Community-based Surveillance Groups (POKMASWAS) and comprise local fishers, coastal communities and representatives of the customary (adat) community, to whom a mandate of fishing oversight has been conferred. However, their responsibilities do not extend to enforcement; instead, such persons are expected only to report instances of IUU fishing to local authorities. Importantly, groups such as POKMASWAS should be accommodated throughout the fisheries management process, and included in the law-making process.

Similar to Indonesia, Timor-Leste applies the collaborative approach to fishing surveillance. This policy is underpinned by Tara Bandu; a customary practice, based on traditional beliefs relating to the interconnectivity between people and nature. Tara Bandu imposes temporary restrictions, such as prohibiting the harvest of a particular species or banning fishing in specific coastal areas, thereby allowing ecosystem resources to recover naturally. Supported by modern innovations such as SPOT Tracker (a satellite tracking system), Tara Bandu helps local communities regulate fishing activities in accordance with ancient customs.

Utilisation of SPOT Tracker forms part of a government policy encouraging fishers to use personal GPS locator beacons to anonymously report the time, date and position of IUU fishing. This report is then forwarded to the Maritime Police and Fisheries Inspections Department. The government of Timor-Leste faces many challenges in synergising Tara Bandu and SPOT Tracker. The former practice is yet to be formally recognised and fully integrated in fisheries management by the government of Timor-Leste. As for SPOT-Tracker, it is only effective in the fight against IUU fishing if followed up by effective law enforcement.

Despite many challenges, Papua New Guinea (PNG) applies a centralised approach. The relevant laws do not mention or provide any legal basis for inclusion of local communities alongside the government in work relating to fisheries surveillance. According to the Fisheries Management Act, the parties responsible for fisheries oversight and enforcement are fishery officers appointed by the Managing Director of the Fisheries Office. These officers include police, naval officers and civil servants. Problems associated with implementing a centralised approach include limitations in monitoring technology and the limited capacity of law enforcers.
Pengawasan perikanan yang lemah telah menghambat perjuangan global melawan penangkapan ikan ilegal, tidak dilaporkan, dan tidak diatur (IUU). Hal tersebut mengakibatkan regulasi terkait perikanan tidak diterapkan secara efektif. Terlepas dari berlakunya beberapa instrumen internasional dan regional yang relevan, implementasi regulasi perikanan bergantung pada komitmen dan kapasitas negara untuk melaksanakan kewajiban internasional yang terikat pada masing-masing negara. Sebagai aturan umum, negara bendera dan pantai berada di bawah kewajiban internasional untuk mencegah, menghalangi, dan memberantas penangkapan ikan IUU. Hal itu memerlukan penerapan peraturan dan tindakan yang tepat serta pemantauan dan penegakan yang efektif. Meskipun demikian, pengawasan penangkapan ikan mungkin terlalu sulit bagi beberapa negara. Terdapat faktor-faktor utama yang berkontribusi terhadap pengawasan penangkapan ikan yang tidak efektif yaitu jumlah kapal yang berjumlah besar, wilayah laut yang sangat luas, dan kendala keuangan/teknis dari pihak berwenang.

Pengawasan penangkapan ikan dilakukan secara berbeda di negara bagian yang berbeda. 3 (tiga) pendekatan dalam pengawasan ditemukan dalam laporan ini, yaitu pengawasan terpusat, berbasis komunitas, dan kolaboratif. Otoritas semata-mata melakukan pendekatan terpusat melalui beberapa cara. Namun, hal tersebut terbukti tidak efektif jika ketiga faktor penyebab yang disebutkan di atas tetap ada. Sebaliknya, pendekatan berbasis komunitas menunjukkan peran penting nelayan lokal dalam pengawasan penangkapan ikan. Pemerintah, sebaliknya, diberikan peran yang sangat minimal untuk tujuan tersebut. Sedangkan pendekatan yang berada di tengah yang disebut sebagai pendekatan kolaboratif menawarkan nuansa yang lebih positif dengan mengedepankan pembagian tanggung jawab yang adil. Tanggung jawab pengawasan penangkapan ikan dibagi secara adil antara nelayan lokal dan pemerintah. Dengan latar belakang tersebut, laporan ini bertujuan untuk mengumpulkan dan meninjau praktik-praktik pengawasan bersama perikanan di ATS. Untuk itu dilakukan studi pustaka dan pengumpulan data.

Partisipasi masyarakat dalam pengawasan perikanan seperti itu tidak diakomodasi dalam peraturan perundang-undangan nasional Australia. Argumen yang berkontribusi terhadap hal ini adalah lanskap undang-undang yang dirancang untuk pendekatan pengawasan secara institusi, khususnya untuk penegakan hukum di laut. Undang-undang telah mengamanatkan kegiatan MCS dilakukan oleh pemangku kepentingan pemerintah, seperti antara lain AFMA, AFP, DoDD. Pekerjaan mereka digabungkan dengan pemangku kepentingan internasional, yaitu lembaga penegak hukum global, lembaga perikanan antar pemerintah, pemerintah asing, dan lain-lain. Ini tidak berarti bahwa hukum domestik Australia sama sekali tidak mengikutsertakan masyarakat/nelayan dalam proses pengelolaan perikanan. Undang-undang yang relevan memungkinkan partisipasi masyarakat dalam proses pembuatan hukum melalui konsultasi. Dengan adanya undang-undang yang berlaku, lembaga yang kuat, dan petugas pihak berwenang dengan keterampilan tinggi menghasilkan pengawasan bersama antara masyarakat dan pemerintah belum menjadi pilihan untuk menjadi alat tambahan untuk memantau aktivitas perikanan di perairannya.

Indonesia memiliki banyak pengalaman dalam menerapkan kebijakan pengawasan bersama. Meski memiliki banyak lembaga pemerintah untuk menegakkan hukum di laut, Pemerintah...


Meski menghadapi banyak tantangan dalam pengawasan penangkapan ikan, Papua Nugini (PNG) menerapkan pendekatan terpusat. Undang-undang terkait tidak menyebutkan atau memberikan dasar hukum untuk mengikutsertakan masyarakat lokal untuk bekerja bahu membahu dengan Pemerintah dalam pengawasan perikanan. Menurut undang-undang Pengelolaan Perikanan, penanggung jawab pengawasan dan penegakan hukum perikanan adalah petugas perikanan yang ditunjuk oleh Direktur Pelaksana Pelanggaran Perikanan. Para petugas ini bervariasi seperti polisi, perwira angkatan laut, atau pegawai negeri. Masalah yang terkait dengan penerapan pendekatan terpusat adalah terbatasnya teknologi pemantauan dan kapasitas penegak hukum yang dimiliki oleh PNG.
SUMÁRIU EZEKUTIVU

Falta vigilância ba peska maka perigu tebes ba kombine globál hasoru haka’er-ikan IRR. Ida ne’e halo lezislasaun peska seí la implementa ho efetivu. Mezmu ho instrumentu rejionál no internasionál relevante balun ne’e’be hola vigór, nia implementasaun sira depende ba komitmentu no kapasidade estadu atu hala’o sira nia obrigasaun internasionál. Nu’udár regra jerál ida, bandeira no estadu kosteira sira maka tuir obrigasaun internasionál nian atu prevene, satan, no elimina haka’er-ikan IRR. Ida ne’e presiza adopta regulamentu no sosukut apropiadu nomós monitoriamentu no haforsa lei ne’e’be efetivu. Hatete tiha nune’e, vigilância ba peska bele sai difísil tebes ba estadu lubun wa’in. Iha móx fatór kontribuinte xave ba iha vigilância ba peska ida inefetivu, hirak ne’e’be notável liu maka número ró ne’e’be wa’inliu, área marina ne’e’be luanliu, no difikuldade finanseira/tékniku hosi autoridade sira.

Vigilância ba peska hala’o ho maneira diferente hosí estadu oioin. Abordázen vigilância tolu (3) maka hetan iha relatóriu ida ne’e, hanesan vigilância ida sentralizadu, baze komunidade, no kolaborativu. Autoridade mesak de’it maka hala’o abordázen ida sentralizadu liuhos mania balun. Ida ne’e, mezmu nune’e, prova hatudu katak inefetivu basá fatór kontribuinte tolu ne’e’be hatete iha leten persiste. Sorin seluk, abordázen baze komunidade sujere kna’ar vitál hosí peskadór lokál iha vigilância ba peska. Governu, vice versa, konfere iha kna’ar mínimu tebtebes ba objetivu ne’e. Iha klaran, abordázen kolaborativu oferese nuánsa ida pozitivu tebtebes ne’e’be fó énfaze ba hafhe-uya responsabilidade ne’e’be justo. Responsabilidade iha vigilância ba peska hafhe-uya ida justo entre peskadór lokál no governu. Hasoru situasaun ne’e, relatóriu ida ne’e’ho objetivu atu kompla no hala’o revizaun ba prátiqa peska ko-vigilância iha ATT. Ba objetivu ida ne’e maka hodi hala’o estudu dokumentáriu no halibur data primáriu.

Partisipasaun komunidade iha vigilância ba peska la akomoda iha lezislasaun nasionál Australia nian. Argumentu asosiadu kontribuíba ida ne’e, hahuu hosí panorama lezislasaun, ne’e’be dezena ho maneira institusionalizadu, espesifikamente ba haforsa lei iha tasi. Lei fó mandatu ba atividade MCS atu realiza liuhos parte-interesada governamental nian, hanesan, entre buat sireseluk, AFMA, AFP, DoDD. Sira nia serbisu hakaben ho parte-interesada internasionál, liuliu ajénsia globál ba haforsa lei, ajénsia peska intergovernamental, governu rai-l’il’ur no sireseluk tan. Ida ne’e’be’ños atu hatete katak lei doméstiku Australia la inkluí liu komunidade/peskadór liuhos iha prosesu jestaun ba peska. Lei relevante sira permite partisipasaun komunidade iha prosesu halo lei liuhos konsulta. Lezislasaun aplikável, instituisaun vitál, no ofisial ho abilidade-a’as bele rezulta iha paíx nia ko-vigilância no seidauk sai hanesan opsaun ba instrumentu adisionál hodi monitoriza atividade peska iha sira nia tasi laran.

Indonézia iha esperiência lubun wa’in ba implementaun politika ko-vigilância. Mezmu iha ajénsia governamental mútiplu ba haforsa lei iha tasi, Governu Indonézia signifikativamente akomoda partisipasaun peskadór lokál iha vigilância ba peska. Ministériu ba Asuntu Marina no Peska aplika no dezenvolve Sistema Vijilância Baze Komunidade (“SISMASWAS”). Sira ne’e’be’ partisipa iha laran maka hanaran Grupu Vijilância Baze Komunidade (“POKMASWAS”). Membru POKMASWAS nian nakloke ba, entre sireseluk, peskadór lokál, komunidade kosteira, no komunidade adat. POKMASWAS konfere mandatu ba supervizaun peska nian. Mezmu nune’e, mandatu ida ne’e la konsege ba hakbiit nian. Maibé iha espetativa ba sira atu relata ba Haka’er-ikan IRR ba autoridade
lokál. Ida ne’e iha pontu kritiku tolú ba SISMASWAS nia implementasaun. Importante liu maka, POKMASWAS presiza akomoda iha jestaun ba peska tomak, inklui prosesu halo lei.

Hanesan ho Indonézia, Timor-Leste aplika ko-vijilánsia ba peska. Politika ida ne’e fasilita liuhosi Tara Bandu, práktika haka’er-ikan habituál ida, no uza rastreadór SPOT. Tara Bandu ukun oinsá komunidade lokál hala’o atividade haka’er-ikan ne’ebé moris hosi emar fiar iha relasaun entidade umanu no la’ós umanu nian. Tara Bandu refere ba proibisaun, purejémpku, bandu koilleta ba espésie partikulár ka iha área kosteira espesifiku ba haka’er-ikan. Iha sorin seluk, rastreadór SPOT hanesan politika governu nian ida ne’ebé enkoraza peskadór sira atu hanehan butaun iha lokalizadór faról pesoa hol GPS (rastreadór SPOT) hodi relata óras, data no pozisaun haka’er-ikan IRR anonimamente. Relatório ida ne’e hatutan ba Polísia Marina no Departamentu Inspesaun ba Peska. Governu Timor-Leste hasoru dezadi o’iin hodi realiza implementasaun efetivu ba Tara Bandu no Rastreadór SPOT. Ida-uluk seidauk institusionaliza hosi governu no integra ho Timor-Leste nia jestaun ba peska. Kona-ba Rastreadór SPOT, relatório presiza iha atualizasaun ho haforsa lei ne’ebé efetivu.

Mezmu hasoru dezadi o’iin ba vijilánsia haka’er-ikan nian, Papua Nova Guiné aplika abordázen sentraladu. Lei relevante la hatete ka fornese baze legál ruma atu inklui komunidade lokál hosi serbisu hamutuk ho governu iha vijilánsia ba peska. Bazea ba Lei Jestau ba Peska, parte responsável ba supervižuun no haforsa peska nian maka ofisiál peska sira ne’ebé nomea hosi Diretor Jerente ba Ofensa Hasoru Peska. Sira ne’e bele mós polísia, ofisiál navál, ka serbidór públiku. Problema sira asosiadu ho implementasaun ba abordázen sentraladu maka limitasaun iha teknologia ba monitoriamentu no kapasidade hosi haforsa lei na’in sira.
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List of Abbreviation

AFMA  Australian Fisheries Management Authority
AFZ   Australian Fishing Zone
AIS   Automatic Identification System
BAKAMLA  Badan Keamanan Laut/Indonesian Coast Guard
CBFM  Community-based fisheries management
CDS   Catch Documentation Scheme
DFW   Destructive Fishing Watch
EEZ   Exclusive Economic Zone
EU    European Union
FAO   Food and Agriculture Organization
GDP   Gross Domestic Product
GT    Gross Tonnage
IUU   Illegal, Unreported, Unregulated
MAF   Ministry of Agriculture and Fisheries, Timor-Leste
MCS   Monitoring, Controlling and Surveillance
MMAF  Ministry of Marine Affairs and Fisheries, Indonesia
MT    Metric Tonnes
NDFA  National Directorate of Fisheries and Aquaculture, Timor-Leste
NPOA  National Plan of Action
PeskAAS Automated Analytics System for Small Scale Fisheries in Timor-Leste
PLB   Personal Locator Beacon
PokMASWAS Kelompok Pengawas Masyarakat/Community Surveillance Group
PPN   Pelabuhan Perikanan Nusantara/Archipelago Fishing Port
RFLP  Regional Fisheries Livelihoods Programme for South and Southeast Asia
RPOA  Regional Plan of Action
SISMASWAS Sistem Masyarakat Pengawas/Community Surveillance System
SPOT  Personal Tracker
UN    United Nations
USAID United States Agency for International Development
VMS   Vessel Monitoring System
CHAPTER 1. INTRODUCTION

Lack of fisheries surveillance remains one of the key obstacles in the global fight against IUUF. While numerous international and regional instruments are already in place to combat such practices, insufficient monitoring at sea prevents states’ authorities from identifying IUUF and further, enforcing fisheries legislation effectively therein. Together with an immense number of fishing vessels and vast coverage of fishing grounds, financial and/or technical constraints of states contribute substantially to this problem. Technology like Vessel Monitoring System (VMS) and Automatic Identification System (AIS) would enhance states’ capacity in monitoring vessels movement at sea, yet again, human and financial capital are prerequisites to its effective and sustainable utilization. What is more, the use of those technologies may be too expensive and impractical for small-scale or artisanal fishers, which account for over 90% of fishers worldwide as well as in developing states.

Under international law, flag and coastal states bear primary responsibility to address this surveillance problem. Flag states are obligated to take all measures to prevent fishing vessels flying their flags from engaging in IUUF wherever these vessels traverse, whereas coastal states are under an obligation to prevent, deter, and eliminate IUUF in their waters, including the Exclusive Economic Zone (EEZ). Both obligations entail not only adopting appropriate rules and measures, but also taking steps in enforcing those rules. Obviously, the steps include monitoring fishing activities of vessels under its jurisdiction. For coastal states, foreign fishing vessels operating in their waters are also subject to their jurisdiction. Flag and coastal states, thus, need to look at the way fishing surveillance was conducted under their jurisdiction and further evaluate them as part of their international obligations.

There are three approaches in carrying out at-sea surveillance. The most common one is the centralized approach, which assigns only state authorities or representatives to perform surveillance. Such surveillance is mainly carried out through boat/aerial patrols, on-board observers, and technology, especially AIS and VMS. Surveillance problems laid out in the

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8 See note 6 (2015), para. 131.
preceding paragraphs often take place where the centralized approach is implemented. Second, community-based surveillance. Based on this approach, the government has a minimal role in regards to surveillance activities. More responsibilities are rather conferred on local fishers to carry out such tasks. This interpretation is derived from the concept of community-based fisheries management (CBFM), which entails strong management and control of local resource users over fisheries in a given area.

In the middle, collaborative surveillance (called co-surveillance) facilitates the sharing of responsibilities between stakeholders in the fisheries surveillance. That is, the government, both at state and local level, and local fishers join in hand in carrying out fisheries surveillance. Whilst the extent of responsibility may vary between countries depending on their political-social contexts, the emphasis of co-surveillance is on the ‘fair’ collaboration between those actors. Similar to CBFM, the co-surveillance referred to here is understood within the context of fisheries co-management because the former is a function of management.

The aim of this report is to compile and review the practices of fisheries co-surveillance in Arafura-Timor Seas. To that end, this report firstly explains the meaning and benefit of fisheries co-surveillance as it is not often discussed in existing literature. Then, it looks at national regulations of Arafura-Timor Seas (ATS) littoral states, namely Australia, Indonesia, Papua New Guinea, and Timor-Leste, regarding marine fisheries surveillance and to what extent local fisheries users are being involved. This way, this report is able to identify the kind of approach those states used in performing surveillance. The last chapter of this report presents challenges and enabling conditions of the successful implementation of co-surveillance in all of the ATS littoral states.

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13 Most scholarly articles and reports focus more on the discussion of fisheries co-management, rather than co-surveillance, perhaps since surveillance is treated as a part of fisheries management.
CHAPTER 2. COLLABORATIVE SURVEILLANCE OF FISHERIES

Surveillance is an integral – and inseparable – element of fisheries management. This chapter briefly addresses fisheries co-management as a broader framework and deals with how it contributes to the successful implementation of regulatory measures. We then reflect on that contribution to assess the possible benefits of fisheries co-surveillance.

Fisheries co-management is defined by scholars as “the sharing of responsibilities and authority between government and local fishers in the management [of] fisheries.” This is a relatively new concept in fisheries management, which has long been the sole responsibility of the state (centralised management). Due to the limited capacity of states to enforce fisheries laws at sea, centralised management has been largely unsuccessful. In response, co-management practices have increasingly been applied to fisheries over the last few decades, the idea being to involve local fishers more in the management process, to improve the compliance of fisheries’ users with adopted rules and measures.

Community-Based Fisheries Management (CBFM) supports and extends the active involvement of local fishers. Indeed, such participation goes beyond fisheries co-management, to establish dynamic partnership between local fishers and governments, as stakeholders of equal importance and responsibility. Given their legislative authority and practical function, governments are too important to be discounted from the management process. However, the implementation of government regulations cannot be achieved with any degree of success unless the fishers themselves are directly involved. Therefore, the ideal co-management situation occurs where local fishers and government cooperate as equal partners for all management functions and throughout the management process. Trust between parties is developed, which in turn supports the effectiveness of fisheries management measures. Co-management also gives local fishers a sense of ownership over the co-managed resources. Both parties are then better placed to encourage other local fishers to respect, or even help to oversee, the implementation of fisheries measures.

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18 Pomeroy, ‘A Process for Community-Based Fisheries Co-Management’, p. 73.
That being said, such an ideal situation is rarely the norm in practice. It has been noted that the balance of shared responsibility varies from one state to the next, depending on the specific conditions of each location, particularly the socio-cultural, economic and political context.\(^{23}\)

Likewise, Pomeroy has argued that co-management may not be manifested in a one-size-fits-all model. Rather, it must be perceived as a flexible strategy, which provides and maintains “a forum or structure for action on participation, rulemaking, conflict management, power-sharing, leadership, dialogue, decision making, knowledge generation and sharing, and development among stakeholders”\(^{24}\). Jentoft et al. share a similar opinion, regarding co-management as “the communicative and collaborative process through which rules are formed: who participates, how debates are structured, how knowledge is employed, how conflicts of interest are addressed, and how agreements are reached”\(^{25}\).

Based on his research on fisheries policies in Asian countries, Pomeroy noted 28 conditions and principles for the successful implementation of co-management arrangements, which are as follows\(^{26}\):

- Individual incentive structure
- Recognition of resource management problems
- Leadership
- Stakeholder involvement
- Empowerment
- Trust between partners
- Property rights over resources
- Local political support
- Capacity building
- Legitimate organizations
- Conflict management
- External agents
- Clear objectives from a well-defined set of issues
- Effective communication
- Political and social stability
- Networking and advocacy
- Enabling policies and legislation
- Provision of financial budget
- Government agency support
- Compatibility with existing traditional, social and cultural institutions and community structures

All of these enabling conditions are interconnected. That is to say, whilst cooperation may not occur for all management functions, local fishers and the community have to be involved in more than one stage/phase of the process if co-management is to work. Furthermore, empowerment, a sense of partnership, communication and political support need to be present to enable local

\(^{23}\) Ibid, p. 7.


communities/fishers to participate effectively in such management. Otherwise, they would have fewer socio-cultural and financial incentives to respect fisheries measures and laws and would therefore be less inclined to participate in the monitoring of fishing activities. In a proper co-management arrangement, local fishers and communities’ responsibilities include daily management activities, consultation, design of fisheries management measures, assistance in law enforcement and oversight of fishing activities.27

There are two salient points to be taken from the success of fisheries co-management, in terms of realising the successful implementation of fisheries co-surveillance. First, involving local fishers in surveillance activities helps to increase the number of people involved in the oversight of fisheries measures. Second, when they are empowered and included throughout the management process, local fishers not only respect fisheries measures, but also help governments in performing surveillance against non-local fishers. For governments contending with technical and/or financial constraints with regards to surveillance, this cooperation is certainly useful. We propose that further in-depth study should be carried out, in order to better understand local fishers’ perspectives in relation to this approach, as well as its overall effectiveness in practice.

CHAPTER 3. COLLABORATIVE SURVEILLANCE PRACTICES IN ARAFURA-TIMOR SEAS BORDERING STATES

3.1 AUSTRALIA

Australian regulations outline the strategy to pursue voluntary compliance and create effective deterrence through the Australian Fisheries National Compliance Strategy than providing direct access for local communities to be involved in the surveillance. The approach used always stressed on careful planning, assessment, enforcement and then re-evaluation. It can be implied through several existing policies, such as in the fisheries management regime mentioned that it should be developed through a consultative process with the general public and affected parties to take into consideration the community interests. However, the community participation on fisheries surveillance at sea as such is not accommodated in Australia’s national legislations. There are associated arguments contributed to this, starting with the legislation landscape which has been designed in an institutionalized manner specifically for enforcement at sea. It has mandated MCS activities to be carried out by governmental stakeholders, as explained in the 3rd report of this series, such as inter alia AFMA, AFP, DoDD. Their works are coupled with the international stakeholders namely global law enforcement agencies, intergovernmental fisheries agencies, foreign governments, and others. That is not to say that the Australian domestic laws do not include community/fishers at all in the fisheries management process. In fact, the relevant law allows participation of community in the law-making process through consultation.

Optimum use of both aerial and sea patrol fleets have slowly eradicated the illegal component from the IUU fishing, while fisheries yield traceability deemed influencing the decrease percentage of the unreported and unregulated that was always left behind to be encountered. The advanced law revolving fisheries crime, systematic mechanism, strong institution, and high-skilled officers compared to the other 10 RPOA-IUU participating countries may result in the country’s co-surveillance not yet being an option to be an additional tools to monitor fisheries activities within its waters. Furthermore, the numbers of vessels detained due to IUU Fishing in the Australian waters showed drastic cutback from 13 to 5 in the last 5 years, which may indicate the effectiveness of the present surveillance mechanism.

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30 USAID, Data Requirements for Catch Documentation and Traceability in Southeast Asia, December 2017, p. 20.
31 Department of Agriculture and Water Resources of Australia, RPOA IUU CC Meeting Country Report Australia 2019 (Siam Reap Province, November 2019).
3.2 INDONESIA

Fisheries Surveillance Mechanism

Fisheries surveillance in Indonesia is carried out by various stakeholders. They are mostly government authorities, such as the Ministry of Marine Affairs and Fisheries (MMAF), Indonesian Navy, Indonesian Coast Guard (BAKAMLA), Indonesian Police, and Ministry of Transportation. As explained in the SOW 3 report, there are overlapping jurisdictions between them over illegal fishing, which may complicate but also benefit fisheries surveillance and law enforcement at the same time. To add, MMAF involves local fisheries users and communities in the fisheries oversight by developing a Community-based Surveillance System (‘SISMASWAS’). Those participating in this system are called Community-based Surveillance Groups (‘POKMASWAS’). Despite the term used here, this surveillance system actually resembles collaborative surveillance.32

Indeed, Fisheries Law opens the possibility of the coastal community to participate in surveillance activity.33 This is arguably derived from the solidarity principle, which underlies the Indonesian fisheries management.34 Such provision reinforces the existing MMAF policy on community based/collaborative surveillance, which was established three years before the Fisheries Law. It was established through MMAF Decree 58/2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management. In addition, the participation of coastal communities in fisheries surveillance is also provided in the MMAF Regulation 40 of 2014 on Role and Empowerment of Community in Coastal Areas and Small Islands Management.35 Further, at the time this report is written, a MMAF Regulation is being drafted to regulate SISMASWAS comprehensively.

SISMASWAS and POKMASWAS

Some rules of SISMASWAS are provided in MMAF Decree 58/2001, namely the scope of SISWASMAS works, networking and operational mechanism, and training.36 Regarding the scope, a wide range of people may be involved in POKMASWAS, starting from local leaders, religious leaders, adat leaders, NGOs, and local fishermen.37 POKMASWAS needs to be institutionalized. It is established by the community voluntarily, facilitated by the respective local government, and coordinated by one of its members.38 To assist POKMASWAS, the government may provide them means of surveillance. Also, both central and local governments are under an obligation to

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32 See Chapter I and II on the definition and concept of fisheries co-surveillance.
33 Indonesia, Law No. 31 of 2004 on Fisheries (Indonesia, 2004), Art. 67.
34 Indonesia, Law No. 45 of 2009 on Fisheries (Indonesia, 2009), Art. 2c.
35 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 40 of 2014 on Role and Community Empowerment in the Management of Coastal Areas and Small Islands (Indonesia, 2014), Art. 9.
36 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Decree No. 58 of 2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management (Indonesia, 2001), Annex.
37 Ibid, Annex, Chapter II, Part A.
38 Ibid.
facilitate their empowerment through capacity building, supervision, and training. Adat communities were also recognized and encouraged to participate within SISWASMAS. The procedures for POKMASWAS establishment are not provided in the MMAF Decree 54/2001. The Decree arguably delegates this matter to local governments. Likewise, in the Handbook of POKMASWAS written by USAID and MMAF, POKMASWAS is established by the Head of Provincial Fisheries Agency, upon the recommendation of the Village Head. Adat communities, however, do not have to establish a new POKMASWAS if they already have their own group. They may ask for recognition from the Head of Provincial Fisheries Agency. For that purpose, the head of the village has to send an application letter to the latter. A few of provincial governments have enacted provincial regulation concerning POKMASWAS, but the provincial governments of Papua and Maluku, both of which are within the ATS, are yet to enact this regulation.

The role of POKMASWAS is to report any infringement of fisheries and coastal resources rules, and particularly, illegal fishing activities. The former includes environmental danger, pollution, and destruction in the coastal areas and small islands. Another role is to help the government raise public awareness of fisheries rules and measures. Regarding the surveillance role, they are not conferred enforcement power. Rather, the key word is ‘to report’. The report is sent to the nearby authorized agencies, for instance:

- Coordinator of Fisheries Civil Servant Investigators;
- Head of Fisheries Harbor Master;
- Head of Marine and Fisheries Agency;
- Water Police Directorate;
- Indonesian Navy;
- Quarantine Officer at Port; and
- Fisheries Civil Servant Investigator.

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39 Ibid, Part B.
40 Ibid.
41 Ibid, Part A. This is inferred from the wording ‘facilitated by local government’.
43 Ibid, p. 5.
44 Provincial Government of South Kalimantan, Governor Regulation No. 79 of 2018 on Control of Marine Resources and Fisheries Based on Empowerment of Community Groups Supervision of South Kalimantan Province (Indonesia, 2018);
Provincial Government of Bangka Belitung, Governor Regulation No. 70 of 2017 on Control of Marine and Fisheries Resources up to 12 Miles and Community Participation (Indonesia, 2017).
45 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 18 of 2014 on Fisheries Management Area of the Republic of Indonesia (Indonesia, 2014), Art. 2.
46 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Decree No. 58 of 2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management, Annex Chapter III; Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 40 of 2014 on Role and Community Empowerment in the Management of Coastal Areas and Small Islands, Art 9 (1).
48 Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Decree No. 58 of 2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management, Annex Chapter III.
POKMASWAS may also report the information to officers of the village/regency/provincial governments.\textsuperscript{49} Should the report be received by officers who do not have enforcement jurisdiction over the issue concerned, such report is later forwarded to POLAIR, TNI AL, and fishery inspector for the interdiction and investigation purposes.\textsuperscript{50} POKMASWAS members who file the report will be protected in accordance with the existing law on witnesses and victim protection.\textsuperscript{51} To our best understanding, there is no unified oversight and control operational policy set by the PSDKP yet. But there is already a well-functioned oversight and reporting procedure that may be replicated in other coastal areas.\textsuperscript{52}

There are three available means of reporting that POKMASWAS may use. First, reporting through the gateway system. The Ministry of Marine Affairs and Fisheries has set up a hotline for this. In addition, POKMASWAS may report the information directly to a few governmental agencies through their telephone numbers. These agencies are PSDKP Ambon, PSDKP North Maluku, Provincial Fisheries Agency of Maluku, Northern Maluku Police, and Provincial Fisheries Agency of Western Papua.\textsuperscript{53} Second, they can come to the Surveillance unit/fishing inspectors by filling out the surveillance form. Third, the reporting may be done verbally by using radio and mobile phone.\textsuperscript{54}

Lastly, the MMAF Decree 54/2001 also provides rules on the capacity building of POKMASWAS. Specific working units, both at the national and regional levels, are established to facilitate the capacity building. Their responsibilities are to set out the oversight and control operational policies, coordinate and harmonize activities and programs from different agencies, and take measures to follow up the POKMASWAS and other agencies report on the alleged infringement of fisheries rules.\textsuperscript{55} The working units, through Provincial/Regency Fishery Agency, will provide capacity building and training on the technical skills and legal understanding.\textsuperscript{56} The operational policies for the POKMASWAS capacity building and assistance are set out in the Directorate General of PSDKP Regulation No. 7/2017.

**POKMASWAS at Present**

20 years after the enactment of MMAF Decree 54/2001, the SISWASMAS or fisheries co-surveillance policy has been widely implemented across Indonesia. As of 2019, 982 POKMASWAS groups are functioning in Indonesia. In total, there are more than 1000 groups that have been

\textsuperscript{49} Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 40 of 2014 on Role and Community Empowerment in the Management of Coastal Areas and Small Islands, Art. 9 (2).
\textsuperscript{50} Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Decree No. 58 of 2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management, Annex Chapter III.
\textsuperscript{51} Indonesia, Law No. 13 of 2006 on Protection of Witness and Victim (Indonesia, 2006).
\textsuperscript{54} Didik Agus Suwarsono, ‘The Role of Community-Based Surveillance (POKMASWAS) in Combating Illegal Fishing in Indonesia’ (Flinders University, 2018), p. 36.
\textsuperscript{55} Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Decree No. 58 of 2001 on Community Based Surveillance System (SISWASMAS) on Marine and Fisheries Resources Management, Annex Chapter IV.
\textsuperscript{56} Ibid.
established by provincial or regency governments in 34 provinces of Indonesia.\(^57\) The former Minister of Marine Affairs and Fisheries even claimed that the total number of POKWASMAS groups reached 2,581 as of 2020.\(^58\) The main problem of SISWASMAS policy lies in the number of de-functioned POKMASWAS groups. In Northern Maluku, for instance, only 20 out of 146 groups are still active.\(^59\)

With the massive number of POKMASWAS, the Indonesian government arguably has worked well in encouraging local communities and fishers to participate in SISWASMAS. On the other hand, many POKWASMAS seem to encounter difficulties in maintaining their organizational works and eventually stopped functioning. While the government has facilitated training and required surveillance equipment to POKWASMAS\(^60\), we argue that both PSDKP from the Ministry of Marine Affairs and Fisheries and local governments also need to facilitate and maintain regular communication with them as equal partners, even involving them in the law-making process of fisheries rules. Accordingly, they would have a sense of entitlement to the fisheries rules. This idea has been accommodated in Fisheries Law\(^61\) and MMAF Regulation No 40/2014\(^62\), but not laid out clearly.

\(^{60}\) In 2019 alone, the Ministry of Marine Affairs and Fisheries facilitated capacity building and provided operational equipment to 1010 POKMASWAS groups. Daftar Isian Pelaksanaan Anggaran (DIPA) (Ministerial Budget in 2019), Ministry of Marine Affairs and Fisheries.
\(^{61}\) Indonesia, Law No. 45 of 2009 on Fisheries, Art. 2; Indonesia, Law No. 31 of 2004 on Fisheries, Art. 6 (2).
\(^{62}\) Ministry of Marine Affairs and Fisheries Republic of Indonesia, Ministerial Regulation No. 40 of 2014 on Role and Community Empowerment in the Management of Coastal Areas and Small Islands, Art. 4 & 5.
In the Merauke regency, POKMASWAS are no longer active. A group was formed in 2010, but it was functioning only for a year. While this group did not have any legal existence, the representative admitted that they received some equipment for the POKMASWAS role, such as life jackets, handy talky, and typewriters. According to the Destructive Fishing Watch (DFW), there are nine additional POKMASWAS that were established in the regency and no longer functioning.

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63 Interview with Mahyudin, the representative of the non-active POKMASWAS in Merauke, November 2020.
64 Interview with Moh Abdi, 22 February 2021.
Upon the promulgation of Law No. 23 of 2014, the Fisheries Agency of Merauke does not have the mandate to facilitate training and provide assistance to POKMASWAS. This falls within the scope of fisheries and marine resources surveillance, which is now mandated to the Provincial Government, in this case, the Provincial Fisheries Agency of Papua. Meanwhile, the distance from the Provincial Agency office to Merauke is too far. Together with limited officers and financial capacity, the distance prevents the Provincial Agency from supervising and maintaining relationships with POKMASWAS. More research is required to assess the implementation of POKMASWAS establishment and supervision in other coastal regions of ATS, or in this case, the Indonesian Fisheries Management Area 718.

Enabling Conditions

- The existence of a unified control and oversight operational policies of SISWASMAS, which is well understood and properly implemented by all relevant provincial agencies. Most importantly, this would make the Ministry of Marine Affairs and Fisheries easier to assess and improve the implementation of SISWASMAS throughout the country.

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65 Indonesia, Law No. 23 of 2014 on Local Government (Indonesia, 2014), Art. 27 (3).
66 Interview with Florentius Suhono Suryo, the Head of Regency Fisheries Agency of Merauke, November 2020.
• The durable and sustainable partnerships between governments and POKMASWAS in the form of communication and training.
• The greater involvement of local fishers, and particularly POKMASWAS in the fisheries management.

Challenges
• The absence of oversight and control operational policy of SISWASMAS at the national level. While we understand that the authority of establishing and supervising POKMASWAS lies in the provincial government, PSDKP shall enact this operational policy as the guidance for provincial governments. At a minimum, the guidance covers the procedure and criteria of POKMASWAS establishment and capacity building.

![Diagram](image)

*Figure 3. Possible recommendations for Ministry, Provincial, and City/Regency/Hamlet Coordination*

• The mandate of supervising POKMASWAS is given to provincial agencies. Where the provincial office is far from the coastal regions, their officers may not have the capacity from carrying out their role in maintaining communication with, let alone supervising POKMASWAS.
• The existing approach of the Indonesian government in partnering with POKMASWAS focuses on providing assistance and capacity building, including legal awareness, to them. This approach works well in some occasions, but requires a lot of money. Had the assistance no longer provided, POKMASWAS groups would be reluctant to carry out their role.

Recommendations
• PSDKP is to issue the control and oversight operational policy of SISWASMAS. The currently drafted regulation should also lay out more specific rules on SISWASMAS, such as *inter alia* the criteria of POKMASWAS establishment, designation of responsible agencies for forming and supervising POKMASWAS, coordination between Provincial/District Fisheries Agency and PSDKP on this matter.
• Provincial agencies that are located far from coastal regions and lacking in financial and human capital, should either delegate the mandate of supervising local fishers to the Regency/District Agency or set up a representative office in each coastal district falling within their jurisdiction.
• Whilst the MMAF has consulted various stakeholders before enacting new fisheries rules, the Minister may enact specific regulation on the involvement of coastal communities and fishers throughout fisheries management. MMAF Regulation No 40/2014 may be a departure point for the rules on the involvement of the coastal community in the early stages of fisheries management.

3.3 PAPUA NEW GUINEA

Fisheries Surveillance Mechanism

Papua New Guinea (PNG)’s fishing industry is dominated by locally-based foreign fishing vessels while small-scale fishing is still attached to the indigenous or inshore fishing. Regulations regarding the enrichment of MCS mechanisms were rather focused on the catch traceability, especially after obtaining the yellow flag from the EU. Following this event, Papua New Guinea took prevention measures as well as improved its MCS mechanisms, namely by closing the controversial dogleg fishery, establishing a 12 nautical mile no-fishing surveillance buffer zone along the maritime boundary between PNG and Indonesia and improving traceability through increased monitoring of mothership operations in archipelagic waters.67

Responding to the warning from the EU Commission, National Fisheries Authority (NFA) as the government agency responsible for fisheries-related has declared its plan for the upcoming years. PNG’s response was fruitful and resulted in the issuance of green card, which means that they cooperate in the fight against IUU Fishing.68 Afterwards, PNG followed up with more anti-IUU Fishing policies.

First by providing catch data available through NFA’s Fisheries Information Management (FIM) System to enable effective and efficient catch certification in which can contribute to the IUU traceability and Catch Documentation Scheme (CDS). Fish Aggregating Device (FAD) were installed, and the development of e-forms are ongoing to transmit data from vessels to NFA database.69

Second by establishing a joint agency working group to promote effective co-operation and collaboration.70 There will be command centre that will house NFA and other line of enforcement agencies Royal Papua New Guinea Constabulary (RPNGC), Papua New Guinea Defence Force (PNGDF), Customs and Immigration. This collaboration also supported with the establishment of National Surveillance project in which patrol fleets are needed.

Last fisheries observer, authorized by regulatory authority to collect data, also remain as a choice regulated by the PNG’s fisheries regulations to elevate surveillance capabilities within the country by developing database, e-forms and recruit 400 personnel.  

Challenges

Within the regulatory framework, it does not mention or provide any legal basis to include the local community to work hand-in-hand with the government in the fisheries surveillance because the latter is deemed as the role of the institutionalized agency mandated within the central government. According to the Fisheries Management Act, the only law enforcement officer mandated are fishery officers appointed by the Managing Director for fisheries offence. They can be police, naval officers, or civil servants.

There are several contributing factors such as the current monitoring technologies and enforcement agencies still have limited resources to carry out the expected MCS mechanism. According to the management act and related fisheries policies, co-surveillance practices were not found on the PNG’s. Instead, another alternative by using fisheries observer faced with miserable incidents such as harassment, abuse, and even murder. Even if a co-surveillance program initiated, there are several challenges involved among others lack support facilities and lack of availability of trained personnel.

Recommendations

Several articles suggested that PNG decentralizing its fisheries management, especially in surveillance. This way, PNG would be able to monitor fishing activities within its water, most importantly those done by foreign fishing vessels. This effort also shall be supported by capacity building such as empowering more local fishers to utilize their own fishery resources and providing training for such surveillance. Additionally, the current MCS Mechanism were predominantly in collaboration with the Parties to the Nauru Agreement (PNA). Although such cooperation is helpful, similar proximity shall be established to the RPOA-IUU member states especially to the ATS littoral nations, considering the high number of IUU fishing are located within the dogleg area. By participating on the RPOA-IUU CCM for coordination and associating RPOA-IUU workplan to the domestic regulations and strategies will accelerate the development of PNG in the fight against IUU fishing.

3.4 TIMOR-LESTE

Timor-Leste captures fisheries mostly consisted of subsistence and artisanal fisheries. Limited budget, human resources, and facilities are the root cause of the failed top-down approach to protect the Timorese sea from the IUU fishing activities. Additionally, the understanding of the existing fisheries regulations also posed a challenge for the policymakers to implement effective rules. Thus, most of the local communities still firmly hold onto customary law including surveillance at sea practices.

![Figure 4. Maps of Arafura and Timor Sea on Timor-Leste](image)

Consequently, the Government of Timor-Leste under the Regional Fisheries Livelihoods Programme for South and Southeast Asia (RFLP) funded by the Kingdom of Spain and implemented by the FAO established a collaborative surveillance between the government and local fishermen. Thus, this sub-chapter will be focused on the implementation, challenges, and enabling conditions over the collaborative surveillance on IUU reporting in Timor-Leste.

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Recommendations provided based on the analysis and interview with Pedro Rodrigues (MAF, Timor-Leste) and Alexander Tilley (WorldFish).

Fisheries Surveillance Mechanism

Historically, there have been 2 (two) co-surveillance practices in Timor-Leste there are known as Tara Bandu and SPOT Tracker (2013).

Tara Bandu

Basic concept of the Tara Bandu in Timor-Leste inspired by Panglima Laot—a local custom implemented in Aceh, Indonesia, which refined and adjusted to the country landscape and situation. It was first adopted during February – July 2012 where village leaders were involved. This practice is community-specific customary institutions, different with the SPOT Tracker, which is government initiated, it governs the way local communities conduct fishing activities derived from people’s belief on the relationship between human and non-human entities. The word refers to prohibition, for example, banning the harvest of certain species or in specified coastal fishing areas.

However, the details of the prohibition may vary depending on the agreement and mostly only spoken without being codified. If a similar approach applied to the community large-scale, it may strain the number of fishing with unsustainable gears and methods as well as managing who is allowed to fish in the area. It has the tendency to refrain local fishers from becoming the perpetrators of the fisheries crime which is considered as IUU fishing.

Despite Tara Bandu is categorized as co-management, a wider definition from co-surveillance, it has an important lesson that the community engagement plays an important role to enhance the Small-Scale Fishers (SSF) compliance. WorldFish studies found there are two significant practices of Tara Bandu to be reviewed there are in Biacou and Adara.

For example, in Biacou combined the principles of environmental protection, in this case not only limited to coastal and marine resources even regulate the prohibition of fights among youth groups, and the impact of its dissemination in the local community. Various authorities assemble to sign the agreement document for the new Tara Bandu, in the case of illegal fishing related, the ban on utilizing bomb and poison were in place. The presence of ritual, government, and locals’ authorities brings the harmonization of such effort. The supervision was performed by the so called kableha, a group of guardians responsible for surveillance and monitoring the law of Tara Bandu, who will inform the authorities in case of any violation. Unlike the common MCS mechanism where it will be enforced by other humans, Timorese believed the spirit of the ancestors will bring misfortune, sudden death or sickness to the perpetrators. Therefore, the sanctions, ceremony of reconciliation, agreed posed as mediators between the human and non-

81 D.A de Carvalho, Local Knowledge of Timor-Leste! (Dili, 2011).
Despite the initiative succeeded on establishing an effective resource protection, it also pioneers the codification of such practice as well as set alight to the government recognition.

**SPOT Tracker**

Acknowledging Timorese challenges in terms of monitoring and surveillance, with the initiative between the National Directorate of Fisheries and Aquaculture (NDFA), in partnership with the Spanish-funded Regional Fisheries Livelihoods Programme for South and Southeast Asia (RFLP), launched a community-based IUU reporting system which developed trustable relationship between the government and the small-scale fishers. Instead of seeing the artisanal fishers as the target of control, these fishers became the one in control of the resources by only pressing the buttons on the personal GPS locator beacons (SPOT Tracker) 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. Since 2012, more than 50 reports have been recorded from the community presumed to conduct IUU fishing activities.

Besides collecting data entry for the statistical system, it also plays a vital role in rescue operations in Timor-Leste. As the emergency vessels are minimal, the button provided to call for an emergency will transmit a signal to the monitoring centre and distress notifications to the head of the Maritime Police, Fisheries Inspection Department, and Civil Aviation Authority simultaneously. However, this method has not been used since its last practice in 2016. Previously, the country also experienced using VMS Argos (Themis Cloud 5) supported by the Japanese company.

![Figure 5. Authority linked with the data obtained from the SPOT Tracker](image)

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84 Needham et al., Community-Based Data Gathering and Co-Management of Marine Resources in Timor-Leste. Field Project Document No 2013/1.
The gathered data is safely stored and accessible to the public through a website for the National Fisheries Statistical System called www.peskador.org, which then later replaced by the program initiated by the World Fish, Pelagic Data System and the NDFA of Timor-Leste called, PeskAAS (Automated Analytics System for Small Scale Fisheries in Timor-Leste). Subsequently, co-surveillance became the critical element of the national MCS policy of Timor-Leste. Recently, the country adopted PeskAAS (Automated Analytic Systems) system when several data collection method were managed under one tool which is accessible through www.worldfish.shinyapps.io/peskAAS/. Further explanation of the existing MCS mechanism is available on the 3rd report of the series.

Enabling Conditions

Tara Bandu

- *Tara Bandu* hold legitimacy among locals compared to the existing
- There are already assistance with several non-government organizations (NGOs) which have initiated projects to re-introduce or strengthen *Tara Bandu* in various parts of Timor-Leste
- The MAF has shown support on the revival of *Tara Bandu* for both technical and political reasons as it considered benefiting both governmental authority and customary leaders. It is shown through the state-based Environmental Framework Law (Article 8). This law affirms that *Tara Bandu* may be established through local common law to conserve the environment and promote the sustainable use of natural resources, and importantly, declares that the State will ensure the regulated area is effectively protected.85

SPOT Tracker

- Affordable for small-scale fishers, approximately USD 100 per unit with USD 50 service fee per year compared to the other tracking devices such as VMS which costs more than USD 3,000.86 As it is a hand-held device and easy to transfer between local fishers, IUU fishers have no idea on which vessels have one. Further, the communication between the authority and fishers are private, unlike through radio where transmission is open IUU fishers may hear.
- Reports of IUU fishing obtained in real time and coverage of the surveillance are wide since fishers may operate in dispersed areas.87 Additionally, NDFA also able to track vessel movements appear on online maps thus will provide solid data as a basis for policies and management development.
- Direct benefits for the users and their families through the rescue button and location of the fishers, as families on the mainland hardly heard from the man of the family.

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85 Tilley et al., ‘Evaluating the Fit of Co-Management for Small-Scale Fisheries Governance in Timor-Leste’.
86 Regional Fisheries Livelihoods Programme for South and Southeast Asia, Lessons Learned Notes Ten Lessons for More Effective Co-Management in Small-Scale Fisheries Regional Fisheries Livelihoods Programme for South and Southeast Asia (RFLP).
87 Needham et al., Community-Based Data Gathering and Co-Management of Marine Resources in Timor-Leste. Field Project Document No 2013/1.
• Increases the probability for IUU fishers to be apprehended using patrol vessels which resulted in effective patrolling from financial perspectives.

**Recommendations**

**Tara Bandu**

• Initiate the same approach of Biacou case of *Tara Bandu* to other hamlets with a more tailored approach by facilitating participatory scoping, tailoring or adapting rules to fit both local customary and contemporary practices, and engaging established governance structures or decision-making processes that are already perceived as being legitimate

• Strengthen the key contributing factor to the success of the Biacou case such as engaging not only government through the fisheries officer but also both political and ritual authorities also involve church due to the dominant of Timorese as Catholic.

• Codification of the *Tara Bandu* agreement and its order as it will bring important efforts in inter-ministerial coordination

• Establish a close communication from the Government and the *Tara Bandu* authorities to control the bigger vessels in the area as it is deemed insufficient. Complementary policy development and investment in patrolling by state institutions would be helpful for sustaining the limited capabilities of the law enforcement of *Tara Bandu*.

**SPOT Tracker**

• Unit distributions need to be delivered to the right boats to maximize the usage of this tool by taking into consideration which vessels are operating in IUU hotspots. Review mechanism should be available by tracking the units where the boats are operating. If the units are not being used as agreed by fishing elsewhere in order to receive a unit, operators may reassign the unit to more appropriate vessels.

• Appointed specific government institutions/bodies to analyse the received data and response of such notifications. The response standard of operations shall be immediate and available at all time.
CHAPTER 4. CONCLUSION

Fisheries co-surveillance practices offer a solution to government authorities in cases where financial and/or human resource limitations undermine the effectiveness of fisheries management and monitoring in their waters. This approach is based on equitable sharing of responsibilities between governments and local stakeholders engaged in the oversight of fisheries. The purpose of co-surveillance is not only to enlist local fishers/coastal communities in support of government implementation activities; crucially, the aim is to establish networks of collaboration between all stakeholders, in order to synergise and scale-up fisheries management practices. As a result, local fishers gain a sense of ownership with regards to the fisheries laws and measures, and compliance with fisheries laws and cooperation in the surveillance of foreign fishers’ activities is thereby more clearly incentivised to local actors.

Among ATS member states, Indonesia (with its POKMASWAS policy) and Timor-Leste (with a blend of Tara Bandu and SPOT Tracker) deserve special mention. Meanwhile, co-surveillance practices in Australia and PNG have not yet been identified. The perceived lack of co-surveillance in Australian waters can be attributed to the comprehensive nature of existing laws pertaining to fisheries crime and the systematic mechanisms already in place for their implementation, along with strong institutions and highly skilled officers that ensure these regulations are enforced effectively. PNG still adheres to the Fisheries Management Act from 1998, which states that fisheries surveillance is the sole responsibility of fisheries officers.

Indonesia has extensive experience in implementing co-surveillance policy. In the two decades since it was first introduced, thousands of POKMASWAS groups have participated in the SISWASMAS co-surveillance system. What is more, many adat communities, who existed long before the introduction of this policy, have also been invited to participate in this system. That said, there are a few crucial points upon which the MMAF would be well advised to reflect, in future implementation of SISWASMAS. For instance, POKMASWAS should be more involved throughout the fisheries management process, so that they have a sense of ownership and agency when it comes to implementing and monitoring fisheries regulations. In this scenario, the Indonesian government would no longer need to allocate funding to incentivise compliance.

*Tara Bandu*, a co-management system derived from the traditional, sustainable practices of local communities, can serve as an important tool for reference and in the refinement of future co-surveillance practices. With small-scale fishing (SSF) prevalent nationwide, intervention is required in both management and surveillance at the municipal level to offset the logistical challenges currently being faced. By integrating modern technologies with the traditional *Tara Bandu* approach, there is a higher probability that IUU fishing activities can be eradicated. The socio-cultural aspect of this approach certainly offers great potential for securing the cooperation of local fishers. Utilisation of such methods can help to decentralise the MCS Mechanism, while also improving the capacity of the MMAF to respond to IUU reports.

Moreover, SPOT Tracker has been well received, even winning an award for its innovative new approach to combating IUU fishing. Technological advancements such as this should therefore be placed in the hands of emergency response personnel; by disseminating a number of hand-
held devices to fishers, instances of IUU fishing will be more easily and swiftly reported. However, this reporting mechanism should also be complemented by clear and effective follow-up action in response to issues raised by fishers with PLB devices. Monitoring and surveillance efforts are ultimately wasted in cases where no punitive action is taken.
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