Involving Local Fishing Communities in Policy Making: Addressing Illegal Fishing in Indonesia

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Abstract

Illegal, Unreported and Unregulated (IUU) fishing has been identified by the UN as one of the seven major threats to global maritime security; it causes loss of economic revenue, severe environmental damage, and far-reaching livelihood implications for coastal communities. Indonesia, by far the biggest archipelagic state, faces enormous challenges in all aspects of IUU fishing and addressing those is one of the current Indonesian Government's top priorities. This article addresses the under-researched dimension of how IUU fishing affects fishing communities. With the use of collage making focus groups with fishermen from different Indonesian fishing communities, the research highlights the interrelated environmental (depletion of resources), socio-economic (unbridled illegal activities at sea), cultural (favouritism) and political (weak marine governance) dimensions of IUU fishing as experienced at the local level. However, the research also indicates a strong will by fishermen to be seen as knowledge agents who can help solve the problem by better dissemination of information and cooperation between the local government(s) and the fishing communities. The article concludes by arguing for the involvement of local fishing communities in national and international policy making that addresses IUU fishing.

Keywords	Illegal fishing; local fishing communities; maritime security; Indonesia; collage making

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Key findings / Highlights

- The knowledge and experiences of local fishing communities is too often ignored in national and international IUU fishing policies.
- IUU fishing is a major threat to maritime security, particularly so in Indonesia as one of the largest archipelagos.
- Local Indonesian fishing communities want to be involved in addressing IUU fishing problems but there is gap in local – national governance cooperation.
- More attention needs to be paid to the enhancement of inclusive governance structures and the formulation and implementation of policies and regulations that take local fishing communities and fishers into account

Abstract

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Keywords: illegal fishing; local fishing communities; maritime security; Indonesia; collage making

TITLE PAGE

Involving Local Fishing Communities in Policy Making: Addressing Illegal Fishing in Indonesia

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the British Council [Newton Fund Institutional Links; Project Title: Decreasing the vulnerability of Indonesia's fishing communities: Countering the threats of illegal and unsustainable fishing; grant reference: 261872695

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1. Introduction

Illegal, Unreported and Unregulated (IUU) fishing has been identified by the UN as one of the seven major threats[1] to global maritime security (UN General Assembly 2008: 17-33). It is estimated that illegal fishing accounts for one third of global annual catches and substantially impacts on the marine environment and coastal communities that rely on fisheries for their livelihoods (US NIC 2016: 6).

Indonesia, by far the biggest archipelagic state, faces enormous challenges in all aspects of IUU fishing and addressing those is one of the current Indonesian Government's top priorities (Parameswaran 2017). Indonesia supplies an approximate 34% of the ASEAN region's fish products reaching the global market (Almuttaqi 2014) and IUU fishing costs the Indonesian economy an estimate USD 3 billion annually (ASEAN News n.d.). In 2015, the Indonesian Ministry for Marine Affairs and Fisheries (KKP) conducted audits on 1,132 vessels and found all of them in violation of fishing laws and regulations, such as for instance not landing catches in fishing ports, deactivation of monitoring devises (VMS), and fishing outside the designated fishing grounds (IOM, KKP, and Coventry University 2016:19).

In anti-IUU fishing policies, much emphasis has been placed on the transnational dimension of IUU fishing (Chapsos and Hamilton 2019, Liddick 2014). In particular the range of cross-border activities of distant water fishing[2] nations' (DWFNs) fleets and vessels, which are registered in 'open registries' and operate within maritime zones of different coastal states (Telesetsky 2015, Palma et al. 2014:6-9), receive attention.

This article addresses the under-researched dimension of how IUU fishing affects fishing communities of coastal states. Using Indonesia as case study, the article will address the kind of problems local communities face and the kind of solutions they can offer. First, the article provides a general overview of the international policy developments with respect to IUU fishing. It then discusses Indonesia's understanding of IUU fishing and its most recent government responses to the phenomenon. Finally, the article brings the perspective of the Indonesian fishing communities into the analysis.

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[1] The other six specific threats to maritime security, are: piracy and armed robbery at sea; terrorist acts involving shipping; offshore installations and other maritime interests; illicit trafficking in arms and weapons of mass destruction; illicit traffic in narcotic drugs and psychotropic substances; smuggling and trafficking of persons by sea; and intentional and unlawful damage to the marine environment.

[2] The UN Food and Agriculture Organisation (FAO 1996) defines as 'distant waters fisheries' the quantities taken by vessels in all FAO major fishing areas other than those adjacent to the flag State.

The authors utilise policy documents and media reports, as well as qualitative primary data collected in a collage-making focus group conducted in 2017 with five Indonesian fishing community leaders, to explore how these communities are affected, and how they understand and respond to the challenges posed by IUU fishing. The article's main argument is that in order to better understand IUU fishing the focus needs to be redirected to the local level; currently the main focus is on national and transnational dimensions. The research shows that, at the level of local fishing communities, IUU fishing is part and parcel of an intricate web of cultural, socio-economic, and environmental factors, and as such, is more than a 'fishing' problem.

2. IUU Fishing as a global security challenge

The increasing acknowledgement of the severe implications and extent of IUU fishing at the global level, is reflected on the United Nations' Sustainable Development Goals (SDGs), and SDG14 'Life Below Water' in particular. The latter highlights that over three billion people depend on marine and coastal biodiversity for their livelihoods, while 30 per cent of the world's fish stocks are overexploited (UNDP 2018). Sander et al. (2014:114-6) argue that IUU fishing poses a significant socio-economic threat –both direct and indirect- to coastal communities' livelihoods.

Although, IUU fishing is not a new phenomenon, the FAO only introduced the IUU concept in the 2000s in an effort to address severe fishing management concerns at a global level (FAO 2001). IUU fishing encapsulates activities conducted by either national or foreign vessels within Regional Fisheries Management Organisation's (RFMO) zones or maritime zones where coastal states exercise jurisdictional rights, which contravene either the RFMO or the coastal state's laws and regulations respectively. Examples of such activities include (but are not limited to) unlicensed cross-border hopping, unlicensed fishing in RFMO and/or coastal states' Exclusive Economic Zone (EEZ), fishing in marine protected areas, fishing with dual or false flag, catching non-permitted species, use of illegal gear, transferring fish at sea without authorisation, misreporting / underreporting catches, fishing out of season, and so on (US NIC 2016: 6). In order to curb those IUU activities, the FAO (2018) has recently called upon states to enhance fisheries governance and management, to utilise international tools such as the Port State Measures Agreement (PSMA) and to advance the technology of information sharing.

At a global scale, it has been established that between 1998 to 2003 illegal catches constantly account for more than one third of the total fish catches in the Eastern Central Atlantic and Western Central Pacific regions (Agnew et al. 2009). According to Agnew et al (2009: 4) this constant pattern is closely related to poor fisheries management and lack of control and governance, and developing countries in particular, are vulnerable to such illegal activities conducted by both local fishermen and DWFN fleets. Of relevance to our argument, Southeast Asia is considered to be among the areas with the highest degree of illegal fishing (Petrossian 2015: 43). The key drivers that enable IUU fishing to flourish in this region are limited surveillance capacity, poor governance, corruption, the abundance of highly valuable commercial species and access to ports of convenience that act as gateways for smuggling illegally caught fish (Petrossian 2015: 45-46). More studies support these findings and identify weak governance and poor fisheries management, especially in developing countries, as drivers that sustain and even expand IUU fishing and other fishing crimes (Sander et al. 2014; US NIC 2016). In 2012, Interpol established the Environmental Compliance and Enforcement Committee[3] (ECEC) to assist in identifying emerging patterns and trends in the field of environmental crime enforcement, with a dedicated 'Fisheries Crime Working Group' which specifically focuses on fisheries issues.

Where most of the international IUU fishing policies focus on the state, the main question raised in this article is: where does the local enter international policy debates? Local fishermen and fishing communities are routinely mentioned in international policy documents and agreements. The FAO Code of Conduct for Responsible Fisheries, for example, refers to the 'traditional practices, needs and interests of …. local fishing communities' and the Stradling Stocks Agreement requires state parties to 'take into account the interest of artisanal subsistence fishermen' (FAO 1995). In the UN Report of the World Summit on Sustainable Development a difference is made between fisheries and artisanal fisheries. Whereas fisheries are referred to as objects of 'poverty eradication' (UN, 2002: 10), 'artisanal fisheries' are referred to as 'programs' that can enhance food production in a sustainable manner (UN 2002: 30). More recently, in the UN 2030 Agenda for Sustainable Development, states declared that they 'will devote resources to developing … fisheries … supporting …

[3] See Interpol, Environmental Compliance and Enforcement Committee (ECEC) and Working Groups [online] available from https://www.interpol.int/Crime-areas/Environmental-crime/Committee-and-Working-Groups [accessed 3 Jul 2018].

especially ….fishers in developing countries' (UN 2015: 7) and 'provide access for small-scale artisanal fishers to marine resources and markets' (UN 2015: 24).

The FAO IUU-International Plan of Action is rather silent with respect to local communities and small-scale fishermen (FAO 2001), however, the 2007 Report on IUU Fishing, mentions that 'poverty-driven local communities with subsistence and small-scale IUU fisheries' are subjected to 'a range of [devastating] IUU situations' (FAO/IMO 2015: 2). The 2015 Report uses similar language and refers to 'the global costs of IUU fishing … reducing the productivity of legitimate fisheries, including subsistence and artisanal fisheries in coastal areas' (FAO/IMO 2016: 3).

The UNODC has raised another concern with respect to local fishing communities, namely that the 'range of illegal activities in the fisheries sector … [including] illegal fishing … are also carried out by artisanal and small-scale fishers that revert to illegal fishing to supplement a meagre income' (UNODC 2011: 110). This is also broadly shared by the WTO, which concluded in its 2013 Trade Policy Review that 'illegal fishing, by foreign and domestic operators, also remains a serious problem …' (WTO 2013: 77).

To the extent that local fishing communities and fishermen are portrayed in such international policy documents, it is as vulnerable victims and/or perpetrators, who are in need of development support or to be subjected to legal countermeasures. There is nothing much in these international policy documents and agreements that suggests that local fishing communities and fishermen could also be considered as knowledgeable and as part of the problem solving. This is where our article will make its contribution. The next section will discuss illegal fishing in Indonesia after which the focus will be on the local communities.

3. Illegal fishing in Indonesia

Shortly after his inauguration in 2014, Indonesian President Joko Widodo introduced his anti-IUU fishing strategy (Widhiarto 2014), which included a no-tolerance policy and the sinking of illegal fishing vessel and the establishment of a Task Force (Satgas 115) with the mandate to combat IUU fishing in Indonesia (Salim 2015). Much of the problem was presented as violation of Indonesia's national sovereignty, which appeals very much to the domestic audience (Almuttaqi 2014).

Critics of this policy have expressed concerns, especially in terms of damaging Indonesia's relations with neighbouring countries, including China, and urged President

Jokowi and Minister of Marine Affairs and Fisheries Susi Pudjiastuti to reconsider and revoke this practice (Munthe and Kapoor 2018; Parameswaran 2015). Since the implementation of this policy, more than 380 vessels have been sunk. Blowing up vessels caught fishing illegally in Indonesian waters (such as those from Vietnam, the Philippines, Malaysia and China), is headline news. This publicity is particularly used as deterrence for future perpetrators (The Jakarta Post 2017; Parameswaran 2017a).

In late 2015, a Training Needs Analysis (TNA) was conducted among key Indonesian maritime security stakeholders, aiming -among others- to examine how the relevant state actors understand and utilise the maritime security concept. Findings of this analysis confirmed that IUU fishing and intentional damage to the marine environment was identified as the predominant threat to Indonesia's maritime security, while the Indonesian Navy (ITN) was flagged up as the state agency with the most important maritime security function (Chapsos and Malcolm 2017: 181-2). IUU fishing's top position among the Indonesian Government's priorities list has been reconfirmed in more reports, where additional governance and regulatory initiatives have been introduced to combat the phenomenon. These initiatives include for example the ban on transhipments and unsustainable fishing gears, prohibition of ex-foreign and foreign vessels to fish in Indonesian waters, etc. (Morris and Paoli 2018: 33; IOM, KKP and CU 2016: 12-22). But, IUU fishing in Indonesia is also often associated with other forms of transnational organised crime within the fishing industry, such as tax evasion, human trafficking and smuggling, forced labour, document forgery, etc., to name just a few (Chapsos and Hamilton 2019; IOM, KKP and CU 2016).

All the above illegal and criminal transgressions were included in the much-anticipated Presidential Regulation No. 16 on the Indonesian Ocean Policy (2017). This inclusive and holistic approach differentiates the Indonesian approach from existing conceptualisations of IUU fishing, which is identified and understood internationally as one of the seven major maritime security challenges and consequently an integral part of the maritime security concept. Interestingly though, the Presidential regulation identifies IUU fishing as a separate activity from maritime security, as the following diagram shows (see Figure 1).

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This distinction between the concepts of Maritime Security and IUU fishing results in conflicting mandates and enforcement practices that may have consequences for local fishing communities. In this array of overlapping and conflicting mandates, the Navy (ITN), the National Marine Police (POLAIR), the District Attorney and the Indonesian Coast Guard are responsible for maritime security *and* IUU fishing, but the Ministry for Marine Affairs and Fisheries (KKP), which is responsible for addressing IUU fishing and fisheries crimes, is excluded from upholding maritime security. As such, significant complications emerge with respect to the question as to which ministry is responsible to coordinate local responses to violent and criminal conduct at sea and transnational crimes.

This question is pertinent as the Presidential policy makes a clear reference to the role of provincial and local governments in managing the marine resources in their areas of responsibility, as well as the importance of their relationship with the central Government and their engagement with their communities in monitoring their maritime zones (Presidential Regulation 2017: 15). The fundamental reform in Indonesia's local and regional governance which was implemented between 1995 and 2009 (Booth 2011: 32) adds an additional layer of complication in jurisdiction and administrative overlap in the maritime domain (Firman 2009: 153; Fox, Adhuri and Resosudarmo 2005).

Furthermore, many studies identify inadequate regional regulations as one of the causes of fish depletion (Heazle and Butcher 2006: 285); lack of cooperation between provinces and local governments significantly impacting coastal zone management (Siry 2011: 476); and ineffective governance failing to sustainably exploit the available marine resources (Dutton 2005: 177). Yet, in this problematic context and challenging maritime governance environment, no action plan or strategic guidance has been introduced in the document to either utilise this potential in order to enhance any of the key priorities identified in the Indonesian Ocean Policy. This potential involvement of regional administrations and local communities in the governance structure -as will be discussed in the following section- could be essential for the Indonesian fishing communities, especially in combating IUU fishing.

This community level is highly relevant since Indonesian coastal communities 'contribute more than 80 per cent of fish production, provide employment for over 7.3 million people and yield significant government revenue' (Adhuri et al. 2016: 198). Indonesia is the world's second largest producer of wild-capture fish, accounting for 9.9 million tons in 2016, 60% of which was from small-scale fishermen (Muawanah et al. 2018). The livelihoods of

these populations are under threat as ‘Indonesian fishers and foreign fleets continue to overexploit the Indonesian fisheries’ and there is far-reaching ‘destruction of critical coastal habitats, particularly mangroves and coral reefs’ (Muawanah et al. 2018: 150). In general, research on coastal and/or fishing communities is dominated by debates about their vulnerability and resilience (Johnson et al. 2014), marine resource conflicts (either intra-community or between communities) (Yamazaki et al. 2015), and access to resources and insecurity (Koning 2006). To understand these local dynamics in more detail, it is important to include the often-overlooked voice of fishing communities themselves.

4. Methodology

The research on which this article draws uses an explicit participatory approach, in which the research participants become co-producers of knowledge, through a visualization method, called collage making (Knowles and Sweetman 2004). Collage making is a technique used in academic and applied research to express thinking in alternative ways and to facilitate dialogue, through the using of ‘fragments of found images or materials and gluing them to a flat surface to portray phenomena’ (Butler-Kisber and Poldma 2011: 2). In this research the phenomenon under investigation related to the experiences of the participants with regards to maritime (in)security. The collages ‘have the capacity for evoking meaning and feeling not available in written transcripts’ (Gerstenblatt 2013: 302) which we considered quite suitable in the Indonesian cultural setting. Collage making thus allows a focus on issues the research participants select (not pre-set by the researchers), it increases voices, and offers a way to make tacit knowledge and ideas more explicit (see Vacchelli 2018; Plakoyiannaki and Stavraski 2018).

Community leaders from five Indonesian fishing communities were invited (and accepted) to join the research. These fishing locations were selected on the basis of their exposure to maritime security threats and share a history of engagement with transnational, national and local ‘illegal’ fishing. The communities are located in (1) North Sumatra; (2) South Java; (3) Flores; (4) Southeast Sulawesi; and (5) East Nusa Tenggara. Each community was represented by what we refer to as a ‘community leader’. This is not an official function in the Indonesian bureaucracy but a more informal position as someone who can represent the community. All community leaders have been or still are fisher and/or are active in the fishing sector (fish trade for instance). The project also included further research in the fishing

locations with additional focus groups, informal interviews, and observations. This article is based on the data collected from the initial collage making and focus group with these five representatives.

The collage making took place in Jakarta and the participants were invited to express, with images, the experiences and practices related to misconduct at sea and their ideas on how such offences are addressed (by law enforcement) and with what success. Each participant made an individual collage with the use of clippings from a variety of magazines so as to allow them to express the specifics of their location. The magazines were bought in Indonesia and offered a wide variety of colourful periodicals with lots of images, such as news, sports, and cooking magazines. The idea behind offering a wide variety of magazines is that collage making is about leafing through the magazine to see what associations and ideas develop from seeing images (so it is not necessarily about finding the 'right' image). Each participant made his own selection from the magazines on offer (each used about 5 to 6 magazines, sometimes we circulated them if that was a request). Next to the magazines, we brought poster-paper, scissors, clue and markers. We allowed participants to draw (which some did) and use arrows etc if they felt like it.

The collage making was facilitated by the authors of this article and supported by simultaneous translation as only one team member spoke Indonesian. All community leaders, who had never met before, were in the same room for the collage making but each made their own collage without interactions with the others (they were seated across a large U-shaped table). The choice for individual collage making was aimed at discovering similarities and differences in the experience of maritime threats. The collages were subsequently shown and presented (explained) to each other. These presentations and the following focus group discussion among the five community leaders on core threats and priorities were tape-recorded, transcribed and translated. The quotes in the article are taken from these transcriptions. At this stage, the collages were mainly used as a 'tool' to uncover the main maritime security concerns and how these were addressed by maritime authorities.

The focus group element was chosen so that the participants could respond to each other on issues that are relevant to all (Morgan 1996). Participants questioned and discussed the points made by others from which shared and/or new understandings emerged. For our analysis, we used a thematic analysis (of the transcribed recordings) which consisted of the identification and interpretation of themes, or 'recurrent and distinctive features of

participants' accounts, characterising particular perceptions and/or experiences, which the researcher sees as relevant…' (King and Horrocks in King and Brooks 2018: 220). Following the thematic analysis practice, the researchers all read and re-read the transcripts and followed an open coding approach to identify the themes that were discussed most. This resulted in 4 core themes (see below). In this article we have focused on the main concerns that all locations shared. There are of course regional differences but nothing that stood out substantially in terms of IUU fishing and other maritime threats. As we address later in the article, there is some concern among the locations farther away from the central government (Jakarta, on the island of Java) that, because of their remoteness, they receive less attention and support.

5. Findings: The Indonesian fishing communities' perspective

In this section we will discuss the four core themes that emerged from the collage making and the discussions[4]:

1) Marine governance: shortcomings of local governments or authorities, turning a blind eye, corruption, lack of support, favouritism;

2) Illegality: a range of illegal activities being witnessed at sea; use of illegal means to fish, crossing boundaries, selling fish mid-sea, trafficking of people;

3) Economic hardship and the future of the marine environment: concerns for next generations; nothing left to fish, marine degradation, lack of alternative economic activities;

4) Education: restricted educational opportunities, no skills training, particularly for women, lack of knowledge on regulations).

In the final section (5.5) we will discuss solutions that the community leaders brought to the fore in addressing IUU fishing.

5.1 Marine governance

[4] The appendix shows an example of a collage in which some of these issues are expressed through images.

> *The tenth picture [on my collage] is a question mark. Representing the questions: Do we have a weak intelligence system? Or do the law enforcers purposefully close their eyes* (Fishing Community Leader D, 2017).

This quote questions a core problem encountered by the fishing communities in Indonesia related to the vastness of the Indonesian maritime space. Minister Pudjiastuti acknowledged in an interview with the BBC in 2017 (Henschke 2017) that the policing and monitoring of illegal activities at sea is almost a 'mission impossible'. The remoteness and limited connectivity of Indonesian islands and communities pose significant challenges to the central government, hence most governance functions rely on local governments and authorities of which all participants are quite critical.

> *…the [national] government [should] respond immediately to our problems in the regions. … in the regions, the local authorities seem to be closing their eyes* .. (Fishing Community Leader B, 2017).

> *The second picture is a picture of sleeping people. They are the local authorities that are sleeping, because if there is support in [location C], people who receive this are always the same people…We don't want the local authorities to close their eyes* (Fishing Community Leader, C, 2017).

When law enforcement is either not around, not taking action or becoming part of the problem, at times the fishermen take the 'law' into their own hands:

> *In 2011 we reported to the government … illegal activities of catching fish, but they did not respond to our issues; as a result, the boat conducting such activity got burned. … And then it happened again in November last year, if I'm not mistaken. Another boat was also burned by the fishermen of [location]. … the local authorities did not follow up on the issue. As a result, the fishermen took action by themselves by burning the boats* (Fishing Community Leader B, 2017).

5.2 Illegality

Weak local governance and practices such as turning a blind eye are conducive to illegal activities, such as taking part in transhipments, fishing for protected species and people trafficking. Transhipments, which are illegal in Indonesia (Global Indonesian Voices 2017), enable fishermen to sell their catch to foreign vessels at sea with potentially a better price than attained at a local fish auction. At the same time, foreign fleets poaching the Indonesian seas are provided with the option to simply buy the fish at sea already caught by locals. One of the research participants argues that:

> *there's a possibility that those funding the local fishermen are foreign entrepreneurs (vessels). Because it is very curious that they would share the fish that they catch to foreign vessels. I believe that it is because they are funded by foreign businessmen. So, they fund the local fishermen and the fish products are then sold to the foreign entities* (Fishing Community Leader B, 2017).

Yet, illegal activities are not confined to the seas. Protected species are sold on shore:

> *at every unloading activity you can see the sharks there. The law enforcers would just glance... If it is a small fisherman who catches a shark they reprimand us, but if it is the big boss who catches the shark, the local authorities don't do anything. Why? Perhaps there is a hidden agenda. I don't know* (Fishing Community Leader C, 2017).

Except for the issue of protected species, research participant C also alludes to the possibility of class justice; the unequal treatment of those perceived to have less power or being lower ranked in terms of socio-economic status ('small fishermen' versus 'big bosses').

In a recent study, Jaiteh et al. (2017) examined the impact of shark finning on coastal community livelihoods and found extensive, cross-boundary shark fishing in Australian waters. This is in violation of the MoU Box[5] established in agreement between Australia and Indonesia. The fishermen believe they can catch larger, more valuable shark species in

[5] The MOU Box (Australia-Indonesia Memorandum of Understanding regarding the Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf) is an area of Australian water in the Timor Sea where Indonesian traditional fishermen, using traditional fishing methods only, are permitted to operate (http://www.agriculture.gov.au/fisheries/international/cooperation/indonesia [accessed 03 Jul 2018])

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653 Australian waters (Jaiteh et al. 2017: 226). Indonesian fishermen have been arrested on numerous occasions fishing illegally in Australian waters (Amnifu 2017), despite the risks involved:

> *If we, the traditional fishermen, violate the MOU Box borders, the risk is that our boats would be caught and burned in the middle of the sea. That's the risk* (Fishing Community Leader D, 2017).

Finally, the smuggling of migrants by fishermen came up as a common theme, often linked to the hardship and the insufficient income of fishermen to sustain their families from just fishing. As the community leaders below put it, fishermen are tempted despite the involved risks of being arrested, since in one single trip they can potentially earn more than by fishing a whole year:

> *The syndicates, whose business is smuggling illegal immigrants to Australia, would [...] try to convince the fishermen and the fishermen would be influenced because rather than fighting to make a living everyday … it would be better to work as illegal immigrant smuggler. The captain would be promised to get salary of Rp.40 million*[6] *and ship crew Rp.30 million*[7] (Fishing Community Leader D, 2017).

5.3 Economic hardship and the future of the marine environment

A bottom-line argument in all the stories is the economic hardship of living in a coastal area; being pushed into 'illegal' practices is considered unavoidable:

> *why do fishermen communities seem to have cooperation with certain parties to carry out these kinds of illegal activities? Such as helping illegal immigrants or taking part in illegal marine activities? Because the welfare of the fishermen is lacking. … this happens because the government does not empower the fishermen so that they can increase their income, by disseminating information regarding profitable activities.* (Fishing Community Leader B, 2017).

[6] Approximately £2,000
[7] Approximately £1,500

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> *In our region, we are far from the city, and we don't have good sailing equipment. And even if we catch many fish or other marine products, where shall we sell them? We need support to empower ourselves to build a place to store our fish, or to start a business, or to market our product, in order to achieve welfare for the people in my village* (Fishing Community Leader A, 2017).

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The above shows that local 'needs' (welfare via local economic investments) stands in stark contrast with some of the core national policies that have been implemented by Indonesian President Widodo, such as the sinking of vessels (The Jakarta Post 2015). Whereas local fishermen seem to be supportive of the policy (Gunawan 2018), as the punishment of foreigners poaching their marine resources offers economic benefits to their own business (Llewellyn 2018), it does not 'solve' the expressed economic vulnerability of fishing communities.

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But there is also an environmental vulnerability. All the fishing community leaders expressed in their collages the endangered future of the marine environment. Nobody can experience and assess the environmental degradation and the damage inflicted to the oceans due to IUU fishing practices in a more direct and personal way than the local fishing communities themselves. They have been making their living in these same marine areas for as long as they exist, and their narrative is revealing a major concern for the generations to come:

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> *... we think that after our generation – if we don't maintain this – then we'll only leave a story for our grandchildren; a big empty story, because the coral reefs and everything else will be damaged* (Fishing Community Leader D, 2017).

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Without exception, the research participants were conscious of the implications of IUU fishing to their marine environment and its impact on the decline of fish stocks. They noted that IUU fishing practices are not limited to those by DWFNs, but that local fishermen are also involved in illegal practices such as using explosives and other chemicals in their efforts to maximise their catches, so they realise the delicate balance between making ends meet and preservation.

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... fishermen now have to go far away to find fish because the coral reefs are now damaged due to the explosives and potassium. That is why they have to travel far away to catch fish (Fishing Community Leader E, 2017).

And the thing that damages the environment, especially in my area, is the use of fishing nets and explosives ... how to maintain or preserve the sea environment (Fishing Community Leader B, 2017).

They recognise that these are unsustainable practices but local governments are again virtually absent as noted by this research participant:

... the damage to the coral reef is because of the use of explosives, potassium, and poison, as well as the use of compressors as diving equipment. We have filed our objection to the local government long time ago. We have reported this to the police, to the navy, and they came back with an excuse, "We don't have the operational budget." We (fishermen) cannot arrest the perpetrators [...] (Fishing Community Leader D, 2017).

5.4 Education

A core theme that ran through many of the stories of the research participants was education. The lack of education (and information) at the local level and of those living in fishing communities was linked, for example, with the concern for future generations who are still entering the fishing profession without enough training and education or who are not offered alternatives from fishing through educational opportunities; and for women who lack job prospects in fishing communities. In addition, lack of education was also linked to illegality, as with better information and education illegal behaviour might be circumvented (for instance better knowledge on rules and regulations at sea). Better education may also improve people's access to alternative employment.

I hope … we can start giving more education because most people who become fishermen only graduated from elementary and primary school (Fishing Community Leader E, 2017).

There is a lack of dissemination by the government to the community, especially to the women in fishing villages regarding creative activities that may provide additional income (Fishing Community Leader B, 2017).

Another issue is that we don't understand about the international regulations, since we have little education and experience. (Fishing Community Leader A, 2017).

The importance of education and awareness raising (hinted at in the quotes when referring to regulations) is an acknowledged central requirement in order to accomplish sustainable coastal management as well as to improve economic returns and livelihood (White et al. 2005). There is however, an ongoing educational challenging in Indonesia. Whereas the net enrolment rate for primary education is around 90% (UNESCO, 2018) this remains low (below 60%) in poor districts (World Bank, 2014) which, seriously impedes future employment opportunities. Furthermore, those that actually graduate primary education, around 80% in 2007/08, is an area of concern and implies that quite some children enter the "workforce as functional illiterates" (Suryadarma and Jones, 2013: 2).

5.5 Solutions

The problems in the maritime domain in general and the fishing sector in particular are well understood by the research participants. However, they do not only talk about existing problems but they also offer solutions which range from '*the education of ship masters and the ship crews by disseminating information regarding the prohibited zones*' (Fishing Community Leader E, 2017); '*saving the marine and coastal environment [through] customary law*' (Fishing Community Leader D, 2017); and overseeing and implementing '*the law at the district level and at the sub-district level*' (Fishing Community Leader B, 2017). The most far reaching and comprehensive suggestion however, concerns:

> *the dissemination of information and cooperation between the local government and the fishermen. The government needs to engage the fishermen, need to interact with the people related to maritime issues … If we only rely on law enforcement agencies to enforce the law without interacting with the coastal people it would be useless, because it is the fishermen who spend most time at the sea. Just like when they are fishing in the sea they will spend days, even weeks, to catch fish before they return to land. So, they know what activities are happening at the sea. So, if the government … would like to identify the problems occurring at the sea or maritime security without directly involving the fishermen communities as the source of concrete information, then these inputs would be useless. …If the government properly disseminates good information to the people, empowers the people and pays attention to the fishermen's welfare, and also provides support, maybe the fishermen might help the government by becoming the eyes and ears, spying on illegal activities, and identifying misconducts happening at the sea* (Fishing Community Leader B, 2017).

It is quite relevant to note at this point that from the Training Needs Analysis (mentioned above), it can be concluded that governmental actors and national enforcement agencies consider the 'need to look beyond the state' (Chapsos & Malcolm, 2017: 182). The related survey indicated that they see 'the most important actors in coastal communities [were] tribal leaders in the fishing communities [and] fishers (Ibid.).

6. Discussion: Involve local actors in the eradication of IUU fishing!

In our research, we set out to examine how Indonesian fishing communities understand, respond to, and are affected by IUU fishing. There is clearly a lack of including the knowledge and experiences of local fishing communities in national and international policies and in efforts to solve IUU fishing; in the Indonesian case this is exacerbated by a gap in local – national governance cooperation.

Existing literature indicates that one of the key enabling factors of IUU fishing is a weak governance structure and our analysis of the local fishing community leaders' statements highlight in the most emphatic way that this applies to Indonesia as well. The existing gap in the Indonesian governance structure, and in particular the inability, ineffectiveness and inefficiency of the local government(s) to act as the extension of the central government's

policy and law enforcement in their regions, generates a series of problems related to IUU fishing and severe conditions in the more remote areas of the Indonesian archipelago. Indonesia's decentralisation and regional autonomy did not bring the necessary answer (Firman 2009; Siry 2011). Fishing communities feel that they are not supported enough and that they cannot rely on the local government to offer solutions to their security problems, when on the other hand the central government is too far for them to reach and vice versa. They even occasionally have to take the law in their own hands, and destroy other fishing boats fishing illegally in the absence or inaction of local enforcement authorities. The Presidential Regulation issued in 2017 to determine the Indonesian Ocean Policy sadly confirms this notion, by including no action plan in relation to its implementation in a way that local governments and coastal communities will be the main beneficiaries, but equally importantly, on their potential roles to support the national efforts to combat IUU fishing.

What also implicitly and explicitly appears as a crosscutting theme in all areas examined in this article and closely related to the point made above, is corruption. Whether the fishing community leaders referred to governance and infrastructure, law enforcement or illegal fishing practices such as fishing and landing protected species, use of explosives, and so on, there is always an element of questionable involvement of local government authorities underpinning their narratives. With corruption being so eminently present in Indonesia (see Mietzner 2018) an important question is whether IUU fishing policies that do not acknowledge this 'culture of corruption' at the local level stand a change in the first place.

The extent of IUU fishing activities have multidimensional and multifaceted livelihood implications in Indonesian fishing communities, the most obvious being the depletion of fish stocks in their coastal fishing grounds. This very depletion causes economic hardship and a consequential chain of different reactions: some would travel further away in search of richer fishing grounds and risk the dangers posed by their small fishing boats, others turn to IUU fishing and other maritime crimes (catching protected, but more lucrative species such as sharks, using bombs and poison, or trafficking migrants). In addition, DWFNs' presence in their waters is not only seen by some as a challenge, but also as a business opportunity, such as for example to barter information for other goods, or sell their catch to foreign fishing vessels for a better price. As a result, these Indonesian fishing communities are not seeing themselves as completely distant from IUU fishing practices and other illicit activities; they admit to being both victims and perpetrators of the same crimes (Fox 2009; Williams 2013).

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The impoverishment and disenfranchisement of local fishing communities is considered by many investigations as a causal factor than enables IUU fishing and other associated crimes (Chapsos and Hamilton 2019, Kisiangani 2010). Solutions are often suggested along the lines of a socio-economic betterment of the local fishing communities, which is connected to the regulated availability of fish stocks. While it is understood and accepted in (inter)national debates that coastal communities have a stake and role in the sustainable management of (their) coastal zones (FAO 1992), such insights have not yet led to the acceptance of a more participatory role of coastal communities. Our research has shown that the inclusion of the experiences of local fishing communities with witnessing IUU fishing practices and their suggested solutions for tackling these, could be an important way forward in both national and international policy making. Small-scale artisan fishermen are still mainly seen as objects rather than the owners of interventions (UN 2015). This neglect of the specific knowledge and potential capacity of local fishing communities to support the countering of illegal fishing, is reflective of the gap between local experiences and (inter)national policy making practices.

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7. Conclusion

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Indonesia cannot but fight IUU fishing and many of their policies and measures are much welcomed by the international community, notwithstanding the controversial nature of occasionally publicly sinking fishing vessels. The local dimensions of IUU fishing are often overlooked and/or ignored. Local fishermen and fishing communities are part of the problem but should also be part of the problem solving as this article has shown. More attention needs to be paid to the enhancement of inclusive governance structures, the formulation and implementation of policies and regulations that take local fishing communities and fishermen into account, and accountable cooperation between local and national governmental authorities.

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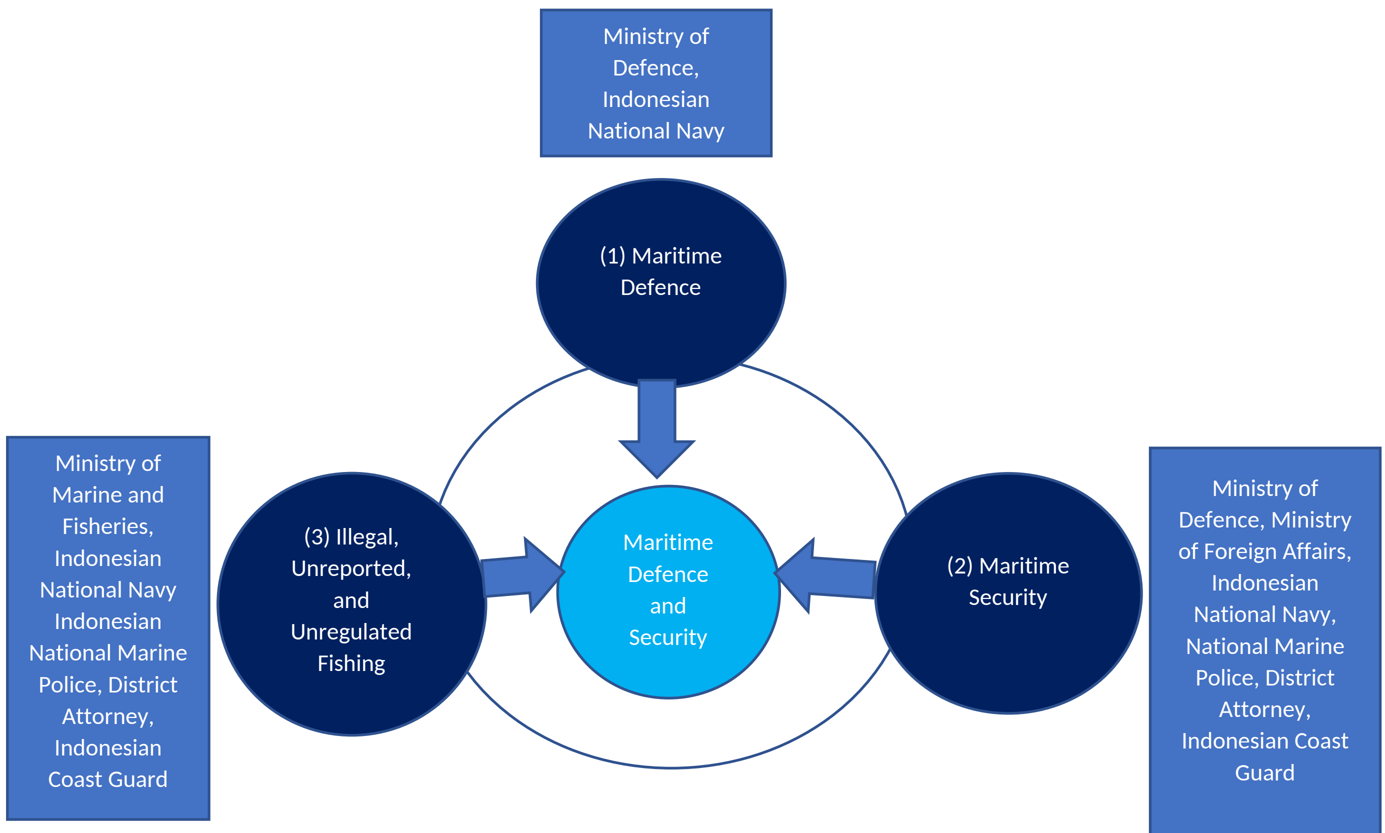
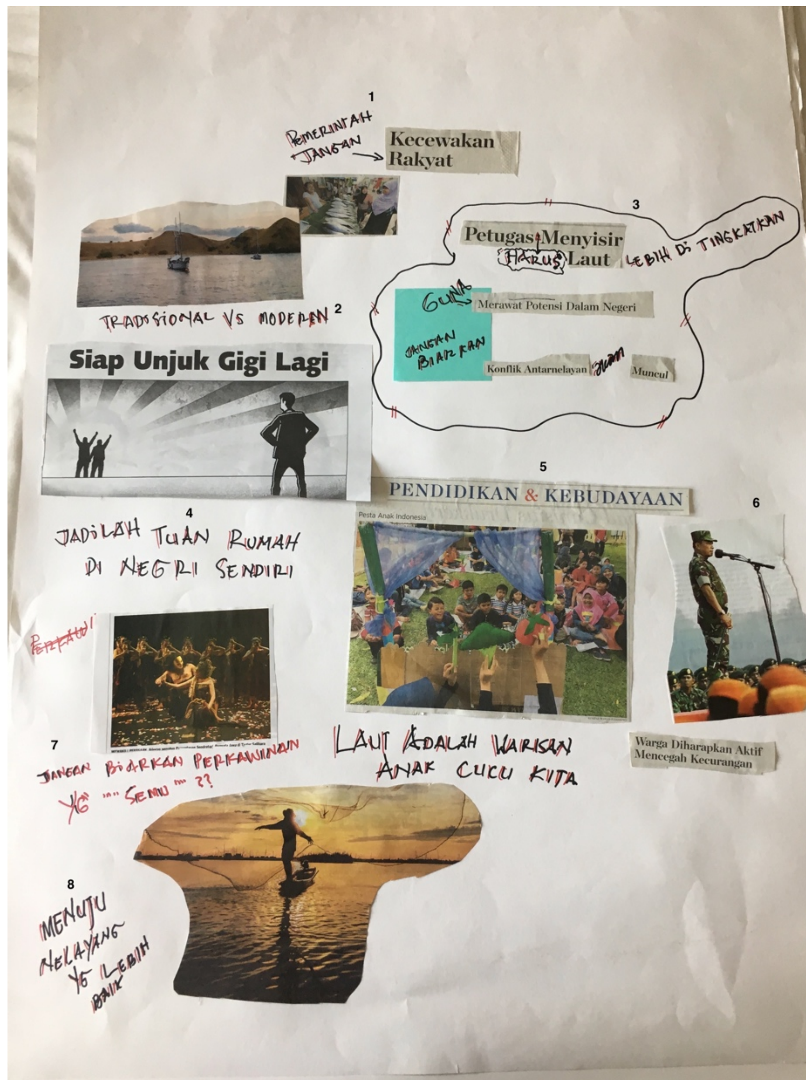


Figure 1: Indonesian maritime defence and security priority program - key priority activities and responsible/ related agencies (Source: Presidential Regulation 2017: 137)

Appendix: Collage Fishing Community Leader Indonesia (made in 2017)



1.
Government: Please do not disappoint the people (us fishermen)
2.
Traditional versus Modern: at sea the traditional fishermen are Indonesian while the modern fishermen are from abroad (with modern boats)
3.
Maritime security officers should increase the marine patrol
4.
Hopefully, we can enjoy the potential of our own natural resources
5.
Education and Culture. The sea is the heritage for our grandchildren
6.
The armed forces need to be proactive & the community needs to be involved to prevent crimes and actively attack fraud (corruption)
7.
No fake marriages (migrants marrying local women)
8.
Let's work (educate) towards becoming better fishermen; The ultimate goal is to have better future for all fishermen.