



Issue 15 | May 2020

# **Saving Africa's seas**

## **The IUU Fishing Index**

*Nina Kaysser and Laura Adal*

### **Summary**

Illegal, unregulated and unregistered fishing activities are threatening food security all over the world and Africa is no exception. Surrounded by some of the most diverse and high-yielding waters on earth, the continent is a particular target. The problem is exacerbated by the fact that many of its vulnerable coastal countries simply lack the resources or the political will to monitor the waters adequately. This policy paper examines the problem through the prism of the IUU Fishing Index, which was launched in 2019.

### **Key points**

- The prevalence of IUU fishing in Africa is higher than the global average, with weaker government responses, suggesting the need for a greater focus on improving response measures.
- Recognising IUU fishing as a transnational organised crime and its links to other crimes is a necessary step towards fighting it effectively.
- Regionally coordinated responses are required to tackle the problem of the increasing involvement of international actors and the growing sophistication of IUU fishing operations in Africa.
- Greater national political will is required to increase regional and global cooperation and coordination through information sharing, surveillance and knowledge building.

## Introduction

As the world's population continues to grow it becomes increasingly important to ensure global food security. Fish are a critical part of marine ecosystems, providing nearly 3 billion people with at least 20% of their protein intake.<sup>1</sup> In the past decade, however, Illegal, unregulated and unregistered (IUU) fishing activities around the world have threatened food security, biodiversity and national security, particularly in developing countries. About 90% of the world's fisheries are fully exploited or overexploited,<sup>2</sup> meaning that marine species are being caught at a rate that exceeds regeneration potential.<sup>3</sup> Every year between 11 and 26 million tonnes of fish (about one fish in five) are extracted illegally from the world's oceans.<sup>4</sup>

Every year between 11 and 26 million tonnes of fish (about one fish in five) are extracted illegally from the world's oceans

Beyond environmental and food security concerns, IUU fishing operations affect the formal economies of countries adversely, reduce local employment opportunities and divert potential tax revenue from states that could be invested in education, healthcare and development. Large-scale operations destroy the livelihoods of local artisanal fishermen and coastal communities, with global financial losses estimated at US\$10 to US\$23.5 billion a year.<sup>5</sup>

In view of its importance to local, national and global development, the problem of IUU fishing was included in the United Nations Sustainable Development Goals (SDGs) in 2016. SDG14 Target 4 calls on all states to 'end overfishing, illegal, unreported and unregulated fishing' by 2020,<sup>6</sup> while SDG14 Target 16 calls on states to 'eliminate subsidies that contribute to illegal, unreported and unregulated fishing'.

In an initiative to better inform countries of their exposure to illegal activities and the effectiveness of their responses in a standardised and comparable way<sup>7</sup> the Global Initiative Against Transnational Organized Crime (the Global Initiative), together with Poseidon Aquatic Resource Management Ltd, has created the IUU

Fishing Index. The index offers policy makers an insight into the drivers and dynamics of illicit fishing activities and provides them with a solid base upon which to create effective responses, in line with SDG14.

Responses to calls to combat illicit fishing activities have varied across regions for a variety of reasons, from a lack of awareness of the problem and discrepancies in laws and regulations related to the fishing industry, to insufficient alternative revenue sources and the absence of cooperation and coordination frameworks among countries. Moreover, IUU fishing has largely been excluded from discussions about organised crime (where response measures are significantly more formalised and stricter), with little attention paid to its links to other forms of crime.

Illicit fishing activities pose a significant threat to Africa, which is surrounded by some of the most diverse and high-yielding waters on earth. Marine resources in and around the continent provide an important (and often the only) source of revenue and food for millions of people. Marine fisheries in Africa provide direct employment to about 2.8 million people and indirect employment to more than 14 million.<sup>8</sup> In 2016 it was estimated that the continent's share of the global IUU catch was about 4.7 million tonnes of fish, valued at about US\$10 billion and representing about 80% of reported catches.<sup>9</sup>

The prevention and reduction of IUU fishing in Africa poses a major challenge. The continent is largely targeted by foreign vessels which carry out their operations in coastal waters that are often inadequately monitored, due to a lack of resources and/or political will. Moreover, data gathering and information sharing and cooperation frameworks in African countries vary, making unified efforts to combat the practice all the more difficult.

While information collection and cooperation are key to eliminating IUU fishing, given its clandestine nature and the range of conditions in the countries targeted, it is impossible to collect comprehensive and reliable estimates of catches to inform effective interventions.

This report gives a brief overview of IUU fishing, its definition, how it is carried out and its links to other crimes. It then presents the data contained in the IUU Fishing Index for Africa before recommending ways in which African countries can bolster their efforts to combat illicit fishing activities.

## Background

### Defining illegal, unregulated and unregistered fishing

IUU fishing encompasses a range of activities. Broadly speaking, it includes 'all fishing that breaks fisheries laws or occurs outside the reach of these laws and regulations'.<sup>10</sup> This can include any type of fishing, from small-scale subsistence to large-scale transnationally organised fishing.

- Illegal fishing – fishing in waters under the jurisdiction of a state without permission or in contravention of regulations of that state; fishing in contravention of measures and regulations adopted by a vessel's flag state; general violations of national laws or international obligations.<sup>11</sup>
- Unreported fishing – fishing activities that 'have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations'.<sup>12</sup>
- Unregulated fishing – fishing in waters under the jurisdiction of a regional fisheries management organisation (RFMO) in contravention of the regulations of the RFMO; fishing in unregulated waters.<sup>13</sup>

IUU fishing occurs both on the high seas and in areas within national jurisdictions and refers to all stages of fishing activities, from capture to use.

**Figure 1 Differences in IUU fishing activities**



Source: The Global Initiative against Transnational Organized Crime

### IUU as a form of transnational organised crime

IUU fishing has long been seen as an administrative rather than a criminal offence because it evades local and regional rules and is considered to relate to the unsystematic overstepping of regulations by small-scale local fishermen. In the past decade, however, numerous reports have pointed to its transnational nature, high levels of organisation and increased sophistication,<sup>14</sup> suggesting that much of it is not merely a crime, but a *transnational organised crime*.<sup>15</sup> For example, FISH-i Africa describes 'fisheries crime' as illegal fishing that 'goes beyond non-compliance ... [to become] transnational and organised, ... [incorporating links with] crimes such as tax evasion, human rights abuse including human trafficking, drug, wildlife, diamond and arms smuggling, fraud and pollution'.<sup>16</sup>

While legislation on or related to IUU fishing, both in Africa and in the rest of the world, revolves around practices such as overfishing,<sup>17</sup> identity fraud, failure to report catches and pollution, among other offences, it has not explicitly identified it as a form of transnational organised crime. In South Africa, for example, activities relating to IUU fishing under the country's 1998 Marine Living Resources Act constitute a criminal offence leading to hefty fines and even imprisonment, but domestic legal frameworks have not yet framed IUU fishing as a *transnational* or even an *organised* criminal offence, despite advocates urging that it be considered in that way.<sup>18</sup>

According to the United Nations Convention Against Transnational Organized Crime, a crime is transnational in nature if the act, preparation or impact (or a combination thereof) of the crime occurs in more than one state.<sup>19</sup> Foreign boats, often under a third country's flag and operated by foreign crews, carry out fishing activities within the territorial waters of other countries. Such activities are often systematically planned and carried out in contravention of the laws and regulations of all countries involved, highlighting the fact that IUU fishing extends far beyond where the fish are caught.

While some of these illicit activities are the result of ignorance about the rules and regulations, other operations may be carried out on a large scale, involving hundreds of people and a number of

countries working together to violate fishing laws and regulations, resulting in the destruction of marine ecosystems and diverting funds from local formal economies. Moreover, there have been cases of those involved using violence against other fisherman or activists in order to carry out their illicit operations.<sup>20</sup> These activities highlight the transnational criminal nature of IUU fishing in Africa and beyond.

IUU fishing is seldom carried out in isolation, often overlapping with other forms of crime, for example, illicit financial activities such as document fraud, tax crimes, money laundering and corruption.<sup>21</sup> These activities have traditionally been linked with organised crime syndicates and mafia-style actors, further underscoring that IUU fishing is a type of organised crime.<sup>22</sup>

## In Somalia, pirates often claim to have been local fishermen who were 'forced' to engage in piracy when left with no alternative source of income

The activity has also been found to facilitate drug, arms and human trafficking and flora crimes, with goods and people transported on IUU fishing vessels.<sup>23</sup> Fishing vessels may be used to conceal and transport illicit commodities such as drugs and other goods or help refuel ships that do so. Moreover, human trafficking can take place in parallel with IUU fishing when individuals are promised jobs on fishing vessels only to be trapped on board, often in unsafe conditions, unable to escape and with their wages withheld.<sup>24</sup>

Criminals involved with other trafficking activities may be drawn to IUU fishing as a 'low risk-high return' activity, due to the potential for lucrative profits and the relatively low penalties imposed on offenders. Likewise, fishermen engaged in IUU fishing activities may be drawn to the potentially higher profits of other maritime crimes, including piracy. For example, in Somalia pirates often claim to have been local fishermen who were 'forced' to engage in piracy when left with no alternative source of income<sup>25</sup> due to declining fish stocks as a result of large-scale IUU fishing.

## Regulations

Despite national, regional and international agreements and legislation regulating fishing, national and transnational fisheries find ways to circumvent the regulations and enforcement mechanisms.

UNCLOS 1982, the UN Convention on the Law of the Sea, divides sea boundaries into two categories: national and international waters. Fishing in national waters falls under national legislation and the country is responsible for both monitoring and enforcement. This includes responsibilities related to the process of fishing and those related to the process of offloading fish at ports. Fishing in international waters, on the other hand, is the responsibility of the country in which a fishing vessel is registered, the so-called flag state.

Fishing in international waters is regulated by RFMOs, which determine catch levels for species and their decisions are binding on all member countries.<sup>26</sup> There are 17 RFMOs globally and countries can be members of more than one. Other regulatory bodies and instruments include the International Maritime Organization, which oversees the safety and security of fishing, and the Port State Measures Agreement (PSMA), which aims to prevent vessels engaged in IUU fishing from landing their catches.<sup>27</sup>

A number of regional frameworks have been adopted in Africa, among them the International Commission for the Conservation of Atlantic Tunas, which operates in West African waters<sup>28</sup> and the Ministerial Conference on Fisheries Cooperation among African States Bordering the Atlantic Ocean.

While there are international and regional regulations and frameworks, there are no international or regional entities responsible for enforcing the regulations.<sup>29</sup> The responsibility for enforcing regulations and legislation lies with individual countries. Although some African countries have taken measures to counter IUU fishing,<sup>30</sup> starkly varying levels of political will, capability and capacity leave a considerable amount of space for IUU fishing to flourish.

## Modus operandi

The most common forms of IUU fishing in Africa are:<sup>31</sup>

- Unauthorised fishing in closed areas/seasons;
- Illegal fishing by foreign vessels;



- Fishing with fake registration licences;
- Non-reporting/misreporting of catches;
- Fishing protected species;
- Taking fish in excess of quotas;
- Using prohibited equipment and methods;
- Illegal transshipment;
- Landing in unauthorised ports;
- Fishing without an observer on board; and
- Failing to operate a vessel monitoring system.

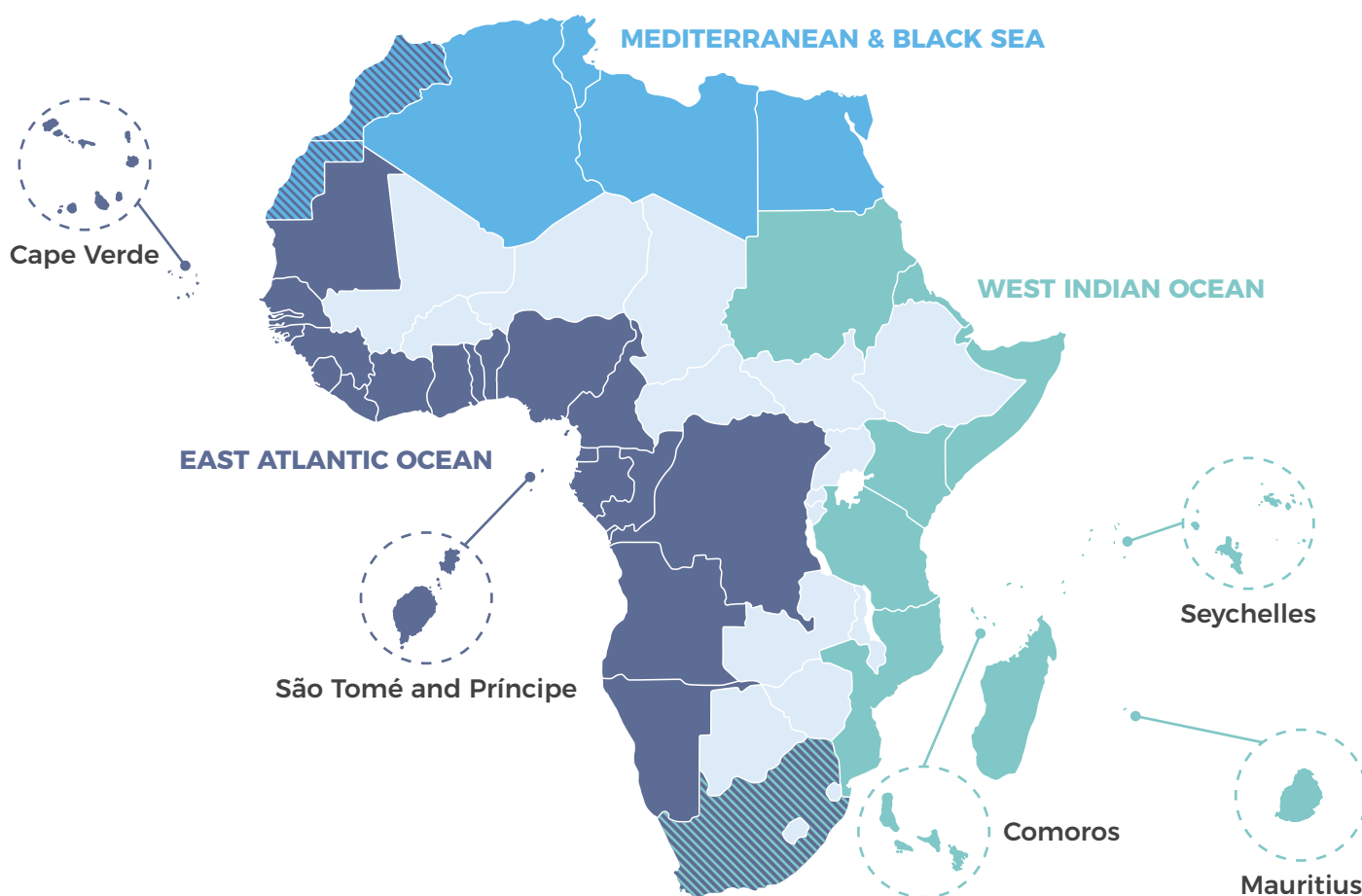
To circumvent fishing regulations some owners of fishing vessels choose to register their vessels in states that are unwilling or unable to enforce regulations. These vessels fly what is known as 'flags of convenience' (FOCs). Common FOCs come from Liberia, the Bahamas and Panama.<sup>32</sup> It is also easy to change a vessel's registration and name, allowing it to avoid being identified when it is in a port.<sup>33</sup> This makes it especially difficult to track the owners. The largest number of owners and managers of FOC vessels are members of the EU, with Spanish vessels accounting for half.<sup>34</sup>

There is no global register of high-seas fishing vessels and vessels are not required to carry a unique identification number, which makes it hard to track them.<sup>35</sup> Transshipment at sea, a largely legal practice, is often used to disguise illegally caught fish. The illegal catch is transferred to a reefer, a refrigerated cargo ship with freezer capacity while out at sea and is mixed with the legal catch and offloaded at distant ports.<sup>36</sup> Other common measures include surveillance avoidance, licensing abuses, illegal fishing in artisanal fishing zones and collusion with the artisanal sector.<sup>37</sup>

## Analysis

IUU fishing is widespread in Africa, with an estimated one in four fish caught illegally.<sup>38</sup> The continent is surrounded by three ocean basins – the East Atlantic Ocean, the West Indian Ocean, and the Mediterranean and Black Sea. Of the 54 African countries 38 have a coastline, placing much of the continent at risk of illicit fishing activities.

**Figure 2 IUU Fishing Index – Ocean basins**



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime<sup>39</sup>

IUU fishing often takes place in areas where regulations are weakly enforced, either because officials are corrupt or because they are unable to enforce them.

- West Africa, in particular, has regularly been cited as an epicentre, with studies suggesting that more than 40% of the catch is illegal.<sup>40</sup> It is estimated that the region loses about US\$1.3 billion annually to IUU fishing,<sup>41</sup> with Senegal, Guinea and Sierra Leone losing US\$300 million, US\$110 million and US\$29 million respectively.<sup>42</sup> It has also been suggested that eliminating IUU fishing could bring 300 000 new jobs to the region.
- In East Africa countries with coasts along the Indian Ocean are estimated to lose approximately US\$400 million per year in landings and nearly US\$1 billion in related processed products.<sup>43</sup>
- In the north, five countries border the Mediterranean Sea, which has been labelled the most overfished sea in the world.<sup>44</sup>

Several countries outside of Africa, including China, Taiwan, Russia, South Korea, Spain, France and Thailand, have been known to engage in illicit fishing activities along the continent's coast.<sup>45</sup> Increasing sophistication, internationalisation and convergence with other crimes make the fight more pressing than ever, but also more difficult.

## Given the transnational reach and high levels of organisation of IUU fishing, the problem cannot be solved within Africa or by African countries alone

Given the transnational reach and high levels of organisation of IUU fishing, the problem cannot be solved within Africa or by African countries alone and efforts have been made by states to cooperate to reduce these activities. For example, Sierra Leone and Guinea have successfully implemented community surveillance and exchange schemes in order to increase information gathering and data collection.

Similarly, inter-agency committees have been developed between Sierra Leone and Liberia, while Mauritania has launched the global 'Fisheries Transparency Initiative',

aimed at bolstering political will and international cooperation for the management of fisheries.<sup>46</sup>

Nevertheless, the continent still faces a number of challenges with regard to the collection and exchange of information and data related to illegal fishing activities. The IUU Fishing Index can help to identify some of the drivers and dynamics in the region and contribute to informed policy making and effective responses.

## The IUU Fishing Index

The index serves as a multi-dimensional tool, offering users, including policymakers and stakeholders, an indication of the degree of exposure of 152 coastal countries and the extent to which states are able to combat IUU fishing. It is divided into three categories: *prevalence*, which measures the degree of IUU fishing, including indicators related to known or suspected incidents; *vulnerability*, which measures the risk that IUU fishing may occur; and *response*, which measures the extent of state responses to IUU fishing, primarily government action designed to reduce it. The three categories are measured by 40 indicators, with each grouping subdivided into four further categories:

- **coastal state** responsibilities relating to the obligations of states to manage their exclusive economic zone;<sup>47</sup>
- **flag-state** responsibilities, relating to the specific obligations of states to the vessels they flag (ie, vessels listed on their vessel register);
- **port state** responsibilities, addressing the legal obligations of states to manage their ports; and
- **general state** responsibilities – obligations not specific to coastal, flag and port responsibilities, including market-related indicators and indicators applicable to the sector as a whole.

Individual indicators are measured on a scale of 1 to 5, where 1 is very strong (good) and 5 is very weak (bad).

Given its categorisations and granularity, the index can help identify the countries that are most at risk and measures that are most effective in countering IUU fishing, thus helping researchers and policy makers to identify appropriate policies to reduce the scale of the crime and mitigate its impact.<sup>48</sup>

Table 1 summarises the 40 indicators in the different categories:

**Table 1 IUU Fishing Index – Indicator groups and names**

INDICATOR GROUP	INDICATOR NAME
<b>Coastal state/ Vulnerability</b>	<ul style="list-style-type: none"> <li>• Size of EEZ</li> <li>• Agreement over all maritime boundaries</li> <li>• Authorized foreign vessels to operate in EEZ</li> <li>• Dependency on fish for protein</li> </ul>
<b>Coastal state/ Prevalence</b>	<ul style="list-style-type: none"> <li>• Has MSC-certified fisheries</li> <li>• Views of MCS practitioners on coastal compliance incidents</li> </ul>
<b>Coastal state/ Response</b>	<ul style="list-style-type: none"> <li>• Coastal state is contracting party or cooperating non-contracting party to all relevant RFMOs</li> <li>• Operate a national VMS or FMC</li> </ul>
<b>Flag state/ Vulnerability</b>	<ul style="list-style-type: none"> <li>• Distant-water vessels on RFMO RAVs</li> <li>• Distant-water vessels under several RFMOs</li> </ul>
<b>Flag state/ Prevalence</b>	<ul style="list-style-type: none"> <li>• Vessels on IUU lists</li> <li>• View of fisheries observers on flag state compliance incidents</li> <li>• Views of MCS practitioners on flag state compliance incidents</li> </ul>
<b>Flag state/ Response</b>	<ul style="list-style-type: none"> <li>• Accepted FAO Compliance Agreement</li> <li>• Authorized vessel data provided to FAO HSVAR</li> <li>• Provision of vessel data for inclusion in Global Record</li> <li>• Compliance with RFMO flag state obligations</li> <li>• Flag state is contracting party or cooperating non-contracting party to all relevant RFMOs</li> </ul>
<b>Port state/ Vulnerability</b>	<ul style="list-style-type: none"> <li>• Number of fishing ports</li> <li>• Port visits by foreign fishing or carrier vessels</li> </ul>
<b>Port state/ Prevalence</b>	<ul style="list-style-type: none"> <li>• Views of MCS practitioners on port compliance incidents</li> <li>• View of fisheries observers on port compliance incidents</li> </ul>
<b>Port state/ Response</b>	<ul style="list-style-type: none"> <li>• Party to the Port State Measures Agreement</li> <li>• Designated ports specified for entry by foreign vessels</li> <li>• Compliance with RFMO port state obligations</li> </ul>
<b>General/ Vulnerability</b>	<ul style="list-style-type: none"> <li>• Perception of levels of corruption</li> <li>• Gross national income per capita</li> <li>• Volume of catches</li> <li>• Trade balance for fisheries products</li> <li>• Share of global imports</li> </ul>
<b>General/ Prevalence</b>	<ul style="list-style-type: none"> <li>• ‘Carded’ under the EU IUU Regulation</li> <li>• Identified by the National Oceanic and Atmospheric Administration for IUU fishing</li> <li>• Mentions of IUU fishing in media reports</li> </ul>
<b>General/ Response</b>	<ul style="list-style-type: none"> <li>• Mandatory vessel tracking for commercial seagoing fleet</li> <li>• Ratification/accession of UNCLOS Convention</li> <li>• Ratification of UN Fish Stocks Agreement</li> <li>• Mentions in media reports of combating IUU fishing</li> <li>• Have a national plan of action to prevent, deter and eliminate IUU (NPOA-IUU) fishing</li> <li>• Demand for MSC products</li> <li>• Market state is contracting party or cooperating non-contracting party to relevant RFMOs</li> </ul>

Source: *The Illegal, Unreported and Unregulated Fishing Index 2018 report*, <http://iuufishingindex.net/report>

## Data for Africa

The data reveal that the continent's score is marginally higher than the global average in all three categories:

- Prevalence: 1.57 compared to a global score of 1.54;
- Vulnerability: 3.05 (global score of 2.92); and
- Government response: 2.60 (global score of 2.48).

While the continent has the second-highest IUU fishing prevalence score in the world, after Asia, it ranks only fourth on vulnerability, with North America, Asia and Oceania recording the highest rates. In other words, while Africa does not appear to be as vulnerable as other parts of the world, IUU fishing is widespread and pervasive.

## In Africa IUU fishing is largely perpetrated by foreign vessels undertaking coordinated and systematic efforts to violate African fishing laws and regulations

The high prevalence is driven by the relatively poor ability of coastal states to take responsibility. There are few Marine Stewardship Council (MSC)-certified fisheries and poor coastal compliance by MSC practitioners. The presence of large exclusive economic zones (EEZ), a lack of agreement over maritime boundaries, high dependence on fish for protein, a large proportion of countries authorising foreign vessels to operate in their EEZs and high levels of corruption make the continent particularly vulnerable.

These risk factors are not mitigated by adequate responses – many countries fail to provide vessel data to the Food and Agriculture Organization (FAO) and data for the Global Record, and they have neither signed nor ratified the United Nations Fish Stocks Agreement, which aims to reduce IUU fishing, nor are they party to the PSMA.

Just as IUU fishing takes many forms, perpetrators of illegal fishing activities range from local fishermen either intentionally or unintentionally violating regulations to

large-scale fishing fleets carrying out illicit fishing on a wide scale. In Africa IUU fishing as a *transnational* and *organised* crime is largely perpetrated by foreign vessels undertaking coordinated and systematic efforts to violate African fishing laws and regulations.

For example, in 2017, during a four-day joint surveillance operation, Greenpeace and Sierra Leonean authorities inspected seven vessels, including some from China, the EU and South Korea, and found that more than half were suspected of illegal fishing activity.<sup>49</sup> Likewise, in 2016 a surveillance patrol by maritime authorities of São Tomé and Príncipe and Sea Shepherd, an international marine conservation non-governmental organisation, intercepted a Spanish vessel that had been fishing sharks in local waters.<sup>50</sup> In December 2019 the *Fish and Fisheries* journal published research showing that nearly 6% of largely foreign industrial fishing in the waters around 33 African countries and territories takes place in areas reserved for small-scale fishing communities. In some places, including Somalia, figures were much higher, with foreign fleets spending approximately 90% of their time in the country's prohibited zone.<sup>51</sup>

## Regional variations

While the IUU Fishing Index provides a continental overview of prevalence, vulnerability and response trends in Africa, the tool also allows for geographic disaggregation, offering users a more nuanced perspective of regions and countries for comparison and analysis.

The index offers some interesting insights into the situation in the three ocean basins surrounding Africa.

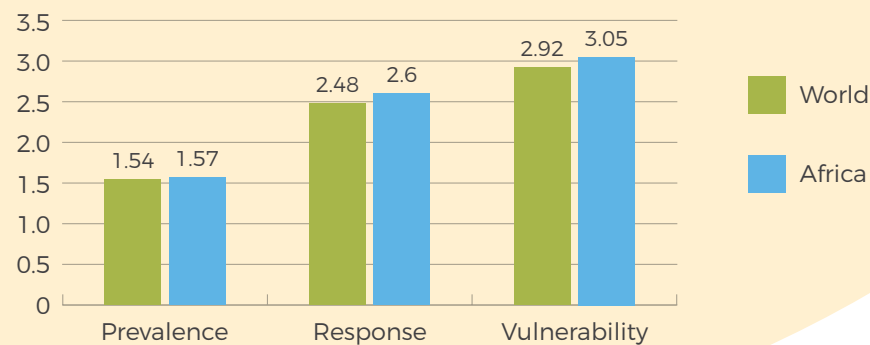
- Countries on the West Indian Ocean, on average, had the worst overall prevalence score (1.64), followed by those on the East Atlantic (1.57) and the Mediterranean and Black Sea (1.39);
- The most vulnerable states are those on the Mediterranean and Black Sea (3.36), followed by the East Atlantic (3.06), with those on the West Indian Ocean being the least vulnerable (2.99).
- Government responses were weakest in the Mediterranean and Black Sea (2.66), followed by the East Atlantic (2.65) and the West Indian Ocean (2.62).

While these figures might seem counterintuitive, particularly in view of the dynamics between vulnerability and prevalence, an examination of the individual sub-regions homes in on priority areas.

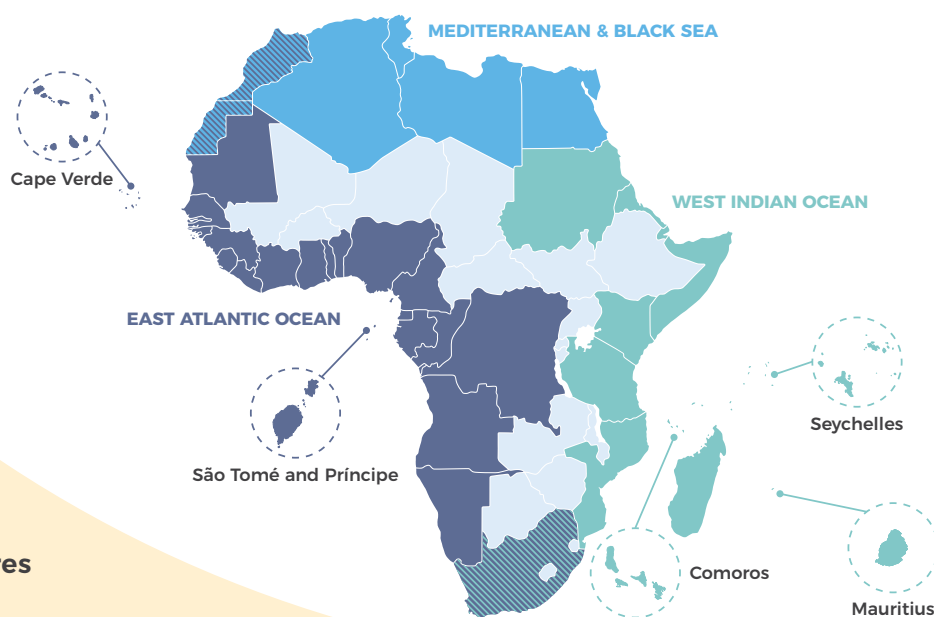


**Figure 3 IUU Fishing Scores**

**IUU Fishing Scores:  
Global vs. Africa**



**Ocean Basins**

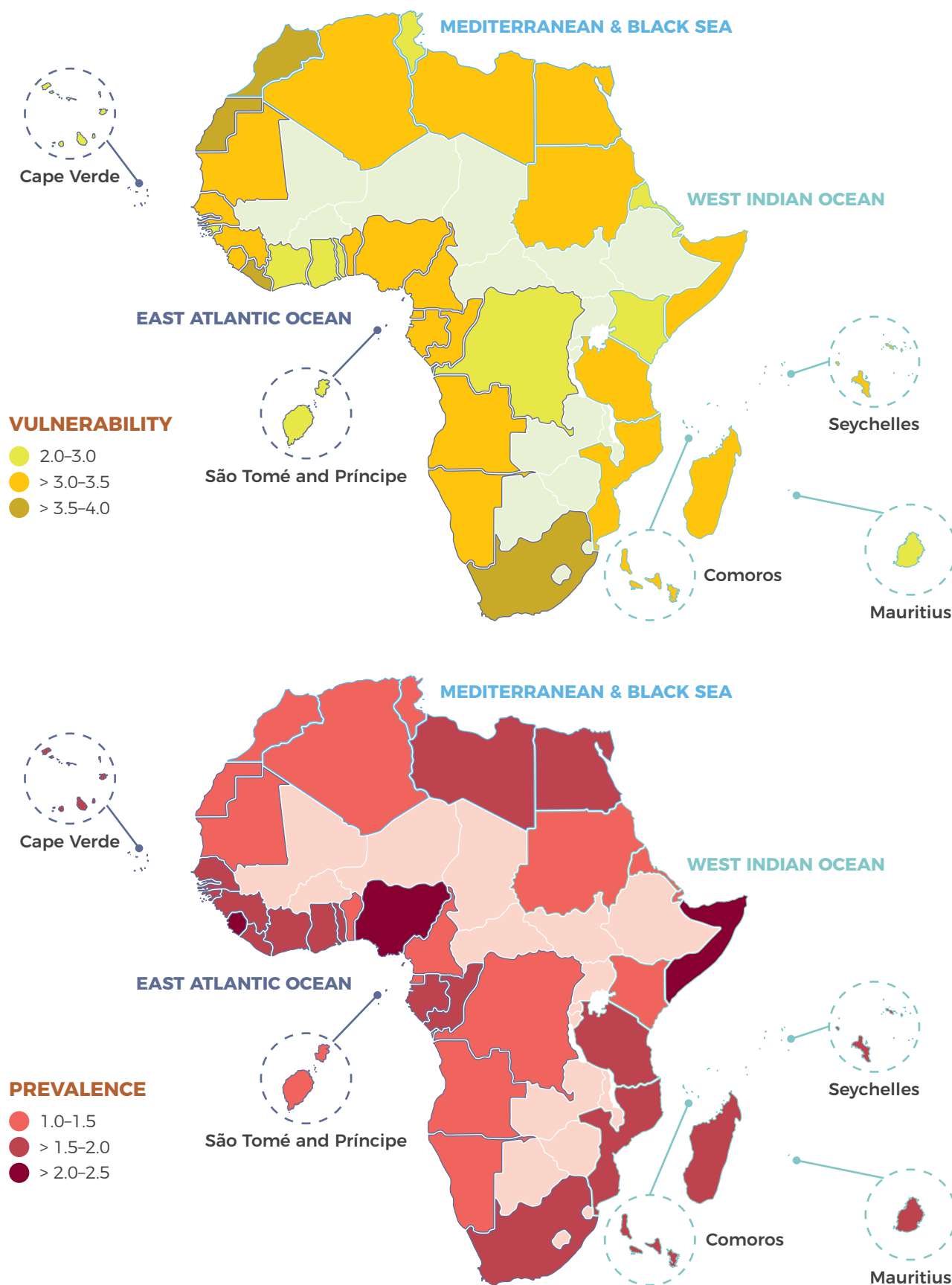


**IUU Fishing Scores  
by ocean basin**



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime

**Figure 4** IUU Fishing Index – Vulnerability and prevalence comparisons by country



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime

## West Indian Ocean

The West Indian Ocean basin covers about 30 million km<sup>2</sup> (equivalent to about 8% of the world's ocean surface)<sup>52</sup> and its diverse ecosystem means the region provides both an essential resource for the livelihoods of those living in coastal countries and a breeding ground for a number of illicit activities, including IUU fishing.

It is estimated that up to one-third of fishing in the region is either illegal, unreported or unregulated, causing habitat degradation for native species and, in turn, economic uncertainty for populations on the coast.<sup>53</sup> Secure Fisheries estimates that about 35% of fish stocks are fully exploited and 28% are over-exploited in the West Indian Ocean. In 2017 it was estimated that IUU fishing activities resulted in a loss of approximately US\$400 million in landings (the amount of fish brought to land in foreign or domestic ports).<sup>54</sup>

Tuna, in particular, is a major commodity in the region – the Indian Ocean is home to the world's second-largest tuna fishery, with 70-80 % of tuna caught in the Western Indian Ocean – about 850 000 tonnes, valued at more than US\$1.3 billion.<sup>55</sup> Since most illegally caught fish is not brought to shore in the country in whose waters it was caught, in most Indian Ocean countries the most direct and immediate revenue comes from licensing fishing vessels. Thus, indirectly, the loss of revenue prevents reinvestment in the sector that could develop domestic processing and expand both domestic markets and foreign trade.<sup>56</sup>

Twelve countries – Somalia, the Seychelles, Comoros, South Africa, Mauritius, Tanzania, Madagascar, Mozambique, Kenya, Eritrea, Djibouti and Sudan – lie on the West Indian Ocean, the region most affected.<sup>57</sup> IUU fishing is less prevalent in Madagascar, Mozambique, Kenya, Eritrea, Djibouti and Sudan than in the other six, with Somalia, a country that has long suffered from civil war and an inability to patrol its waters, having the highest rate (2.19) and Sudan the lowest (1.30). The widespread differences along the East African coastline, and particularly in countries that are close to one another, suggests that vulnerability may play a significant role in the extent of illicit fishing activities here.

Only four countries have vulnerability scores lower than the regional average, with eight scoring higher than average. South Africa is the most vulnerable (with a score of 3.52, possibly, in part because it has coastlines

on two ocean basins). Djibouti has the lowest (2.41). While a high vulnerability score does not, in itself, mean the country is subject to high levels of IUU fishing, the score measures the extent to which it might be at risk. These risk factors include the size of the EEZ, the lack of agreements about maritime boundaries and a high number of fishing ports and port visits by foreign fishing or carrier vessels. While some of these risk factors can be mitigated with adequate responses (eg, greater monitoring efforts), others are inherent and cannot be influenced by states.

## East Atlantic Ocean

While 23 African countries – Sierra Leone, Nigeria, Liberia, South Africa, Gabon, Guinea, Senegal, Ghana, Togo, Cape Verde, the Republic of Congo, Côte d'Ivoire, Guinea-Bissau, Angola, Gambia, Mauritania, Benin, Cameroon, DRC, Equatorial Guinea, Morocco, Namibia and São Tomé and Príncipe border on the East Atlantic Ocean basin, the vast majority of literature focuses primarily on the North-West Africa region, comprising Mauritania, Senegal, The Gambia, Guinea Bissau, Guinea and Sierra Leone.

More than 37% of all fish in North-West African waters are caught illegally by ships coming largely from Asian and European countries

According to the FAO, illicit fishing in these countries alone is estimated to be worth approximately US\$2.3 billion, accounting for up to 20% of the global loss from illegal fishing.<sup>58</sup> With nearly 7 million people directly dependent on fishing as a source of livelihood, it is estimated that nearly 40% of all fish caught in the sub-region originate from IUU fishing activities.<sup>59</sup> Due to underdevelopment and poor governance of the coastal sector, foreign vessels fishing in North-West African waters are of particular concern, with more than 37% of all fish in the region caught illegally by ships coming largely from Asian and European countries.

Along the Gulf of Guinea (Nigeria, Benin, Ghana, Togo, Cameroon, Equatorial Guinea, Gabon, São Tomé and

Principe, Angola, and Congo) it is estimated that more than US\$2 billion is lost annually to IUU fishing. Illicit fishing activities target a wide range of species including tuna, and even sharks, a species highly sensitive to overfishing.<sup>60</sup>

The East Atlantic Ocean basin scores show that prevalence of IUU fishing activities is lowest in São Tomé and Príncipe (1.30), while the highest prevalence is in Sierra Leone (2.33), which has been identified as having some of the richest fisheries in Africa. However, the country earns a mere US\$18 million a year, compared to an estimated potential of US\$50 million – a clear sign of illicit fishing activities.<sup>61</sup> Of the 23 countries in this region, nine have prevalence scores higher than the regional average of 1.57 and 14 have scores lower than the regional average. Similarly, nine countries are above the regional average for vulnerability, with 14 below it. Morocco is the most vulnerable (3.84) and the DRC the least vulnerable (2.5).

## Mediterranean and Black Sea

Fishing has long been a staple occupation in countries on the Mediterranean. However, with a rise in the demand for seafood, marine life resources have been placed at significant risk of over exploitation. Although it covers less than 1% of the world's ocean surface, because it is geographically enclosed, the Mediterranean is home to about 17 000 marine species, of which one-fifth are considered endemic.<sup>62</sup> Unlike fishing areas in other ocean basins the Mediterranean does not have large mono-specific stocks, instead containing high levels of biodiversity.

The region is unique in Africa in that, generally, littoral states have refrained from claiming exclusive economic zones beyond their territorial waters, allowing fish stocks to be shared by several countries.<sup>63</sup> According to the FAO, it is estimated that approximately 85% of the region's stocks are fished at biologically unsustainable levels.<sup>64</sup>

The IUU index shows that prevalence scores in this region are more homogenous, with all five African countries<sup>65</sup> performing equally poorly with regard to coastal responsibility (2.60). While Algeria, Morocco and Tunisia had lower prevalence scores (1.3), Egypt and Libya (1.52) topped the list, due to a wide range of factors from weak coastguard capacity to insufficient awareness among fishermen of the regulations and absence of training of personnel.

According to the index, while the African coastline of the Mediterranean is more vulnerable than that in other parts of Africa, it has the lowest prevalence of IUU fishing on the continent, with a score of 1.39 compared to the continental average of 1.57 and the broader Mediterranean and Black Sea ocean basin average of 1.42. Indeed, unlike those in other basins, the fishing sector plays a relatively minor role in economies in the region, which count among their revenue sources oil and gas exploration. Nevertheless, the sector's annual production of roughly 1.22 million tonnes offers employment opportunities to several hundreds of thousands of people, underscoring the importance of the fisheries sector.<sup>66</sup>

## Failure to respond effectively

### Government responses

While some countries and regions may be more vulnerable to IUU fishing than others, adequate government responses might mitigate some of the risks. However, the relationship between prevalence and government response is not necessarily linear. To understand it, it is necessary to delve into the details of the interactions between the two. The IUU Fishing Index allows users to identify the countries most at risk and identify which measures have worked and which have not, and areas for improvement.

Data suggest that most African countries fare poorly<sup>67</sup> with regard to government response, with 58% scoring higher than the global average. On the other hand, 61% record a lower prevalence of IUU fishing than the global average. Most prevalence scores are between 1.30 and 1.89, with the exception of Sierra Leone (2.33), Nigeria (2.19) and Somalia (2.19).

Dividing the 38 countries into four quadrants – high prevalence-poor response; high prevalence-good response; low prevalence-poor response; low prevalence-good response – suggests that the highest number (15) are in the low prevalence-poor response category.

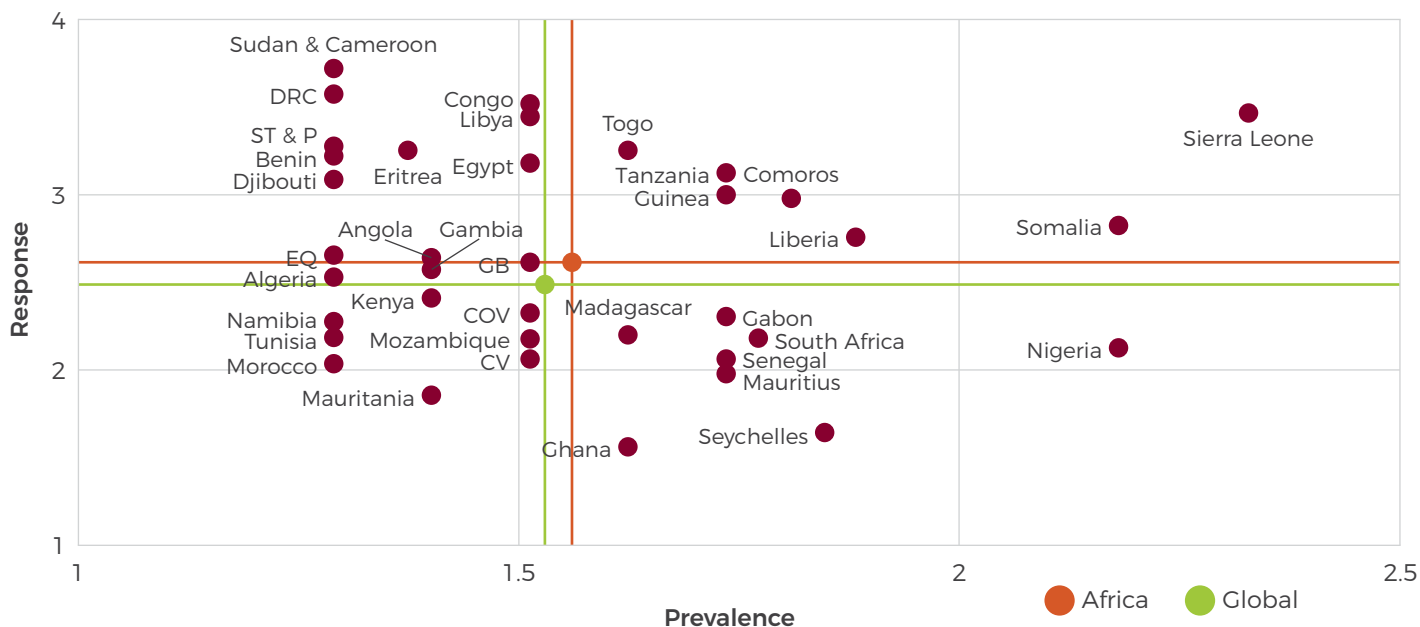
This may not be surprising – countries with low levels of IUU fishing, or low levels of residual fish stocks, may not require strong response measures to keep the issue at bay. However, organised crime evolves over time; a country with low prevalence today may become attractive to IUU fishers in the future. Thus, it is important to consider preventive response measures

**Figure 5 IUU Fishing Index – Response comparisons by country**



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime

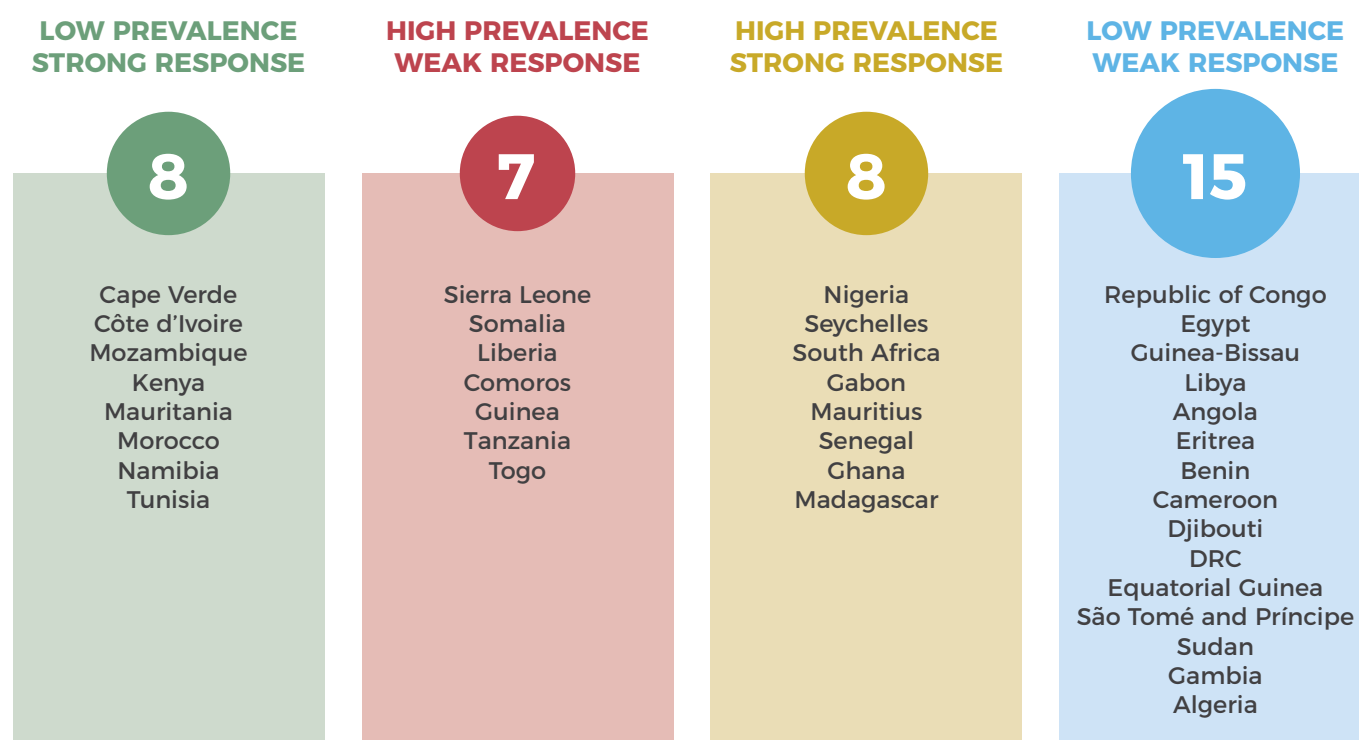
**Figure 6 Relationship between prevalence and response: Global vs Africa**



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime



**Figure 7 Relationship between prevalence and response by country**



Source: IUU Fishing Index. Graphic created by the Global Initiative against Transnational Organized Crime

to ensure the prevalence remains low. The IUU Fishing Index can help to identify weaknesses in response measures, enabling them to be strengthened in the future.

Only seven countries fall into the high prevalence-poor response category. In Somalia, for example, the weak central government has not been able to give data about its vessels to the FAO Global Record of Fishing Vessels, a repository of government-certified information intended to combat IUU fishing, nor has it ratified the UN Fish Stocks Agreement.<sup>68</sup> Likewise, while Tanzania has made efforts to tackle IUU fishing<sup>69</sup> its responses have been fragmented because the political division between mainland Tanzania and Zanzibar creates unique challenges for licensing and regulation.<sup>70</sup> In such circumstances policy makers should identify the areas where IUU fishing has the most impact in order to tackle any underlying conditions and circumstances and to develop targeted response measures.

What is particularly interesting is the relatively large number of countries (eight) that fall into the high prevalence-good response category. For example, while the Seychelles performs well on most response indicators, largely due to its ratification of a number

of international fisheries agreements and the establishment of a strategy to combat IUU fishing, the country has particularly high (poor) scores in prevalence and vulnerability, suggesting inadequacies in implementing responses and/or prioritising key problem areas.<sup>71</sup> In fact, the correlation between prevalence and response in African countries suggests that higher levels of prevalence are, in fact, related to better responses and lower levels of prevalence are related to poorer responses.<sup>72</sup>

While the results seem at first to be counterintuitive, the correlation analysis does not take into consideration various factors that could explain them.

The IUU fishing index data are cross-sectional only, they do not consider changes within countries over time. There could be a time lag between the measures taken by governments and their effectiveness. Future iterations of the index will enable users to observe changes within countries over time, which will allow analysts in the future to consider possible time lags in the effectiveness of government responses.

Another explanation could be that while relevant measures are in place, they are simply not effective, either because they are inadequate or not targeted

appropriately or because of constraints within countries that inhibit their proper implementation. For example, despite South Africa having a relatively advanced ability to patrol the seas, the government has struggled to keep patrolling vessels operational due to budget constraints and pervasive corruption.<sup>73</sup> Indices that draw on quantitative data alone are limited in terms of measuring the effectiveness of policies, but this can be circumvented by supplementing the results with qualitative case studies.

Other factors might explain why a higher prevalence correlates with better government responses. For example, where levels of prevalence are relatively high despite good government responses, they might have been even higher had the responses not been so effective. Alternatively, vulnerability factors specific to each country may also explain any unexpected relationships between prevalence and government response.

Given that this is the first IUU Fishing Index, future iterations will improve and refine indicators wherever possible. In addition to laying the foundation for longitudinal analyses, the index will provide a more comprehensive foundation upon which to base informed policies.

## Conclusion

The widespread reach of IUU fishing along Africa's shorelines has had an economic, social and environmental impact on the continent. While the effects vary from country to country, the IUU Fishing Index serves as a useful tool for consolidating and standardising information about responsibilities, vulnerabilities and responses, giving stakeholders a solid base from which to carry out further research to inform effective policies and interventions to combat the scourge.

A reduction in IUU fishing would secure employment for millions of people, increase revenue streams to local economies and ensure food security for dependent communities, while contributing to the preservation of marine ecosystems. The fisheries sector not only employs fishers but also generates related secondary jobs, from processing and distribution to research and the maintenance of equipment.

The conservation of marine habitats by combatting illicit fishing activities would ensure that fish stocks are

a renewable natural resource for generations. In Africa, proper management of the national fisheries sectors would not only bolster economies but would contribute to maritime security and strengthen port integrity on the continent.

The index highlights some key areas on which countries should focus in order to improve their responses to IUU fishing. These include:

- Providing the FAO with data about their fishing vessels;
- Improving the sharing of vessel data for global records;
- Signing and ratifying agreements that aim to reduce IUU fishing, including becoming parties to agreements on Port State Measures and the United Nations Fish Stocks Agreement;
- Raising awareness of the importance of sustainable fishing;
- Reaching agreements on maritime boundaries to determine and allocate responsibilities; and
- Ensuring compliance with all RFMO obligations in relation to vessel and port management.

The conservation of marine habitats by combatting illicit fishing activities would ensure that fish stocks are a renewable natural resource for generations

One of the biggest constraints to reducing IUU fishing activities has been a lack of recognition of the seriousness of the problem and its widespread impact. As a primary step towards tackling IUU fishing activities effectively, states must reinforce their recognition of its negative impact with the political will to implement countermeasures. In some cases, policymakers and officials may find it too costly to engage seriously in fisheries reform. African countries should assert ownership of their role in combatting illicit fishing operations, recognising that eliminating illegal operations has wide-reaching benefits for all.

Enhancing the role of local experts in regional dialogues and strategies to highlight the links between reducing IUU fishing activities and economic, environmental

and social development would boost local buy in and reinforce the idea that IUU fishing is a shared problem. This awareness may extend to local communities, reinforcing the importance of sustainable fishing practices.

An understanding of local circumstances and resources could help build responses that are tailored to addressing countries' specific needs and vulnerabilities. At the same time, shared fish stocks and the transnational nature of IUU fishing means that these illicit activities inherently link states to one another. Thus, while there is no 'one-size-fits-all' approach to tackling IUU fishing activities, states must balance their national priorities with collaborative regional and international efforts to develop effective responses.

## States must balance national priorities with collaborative regional and international efforts to develop effective responses to tackling IUU fishing activities

The fisheries sector is characterised by a lack of coherence in management systems, as illustrated by the range of response scores in the index. Therefore, regional cooperation and collaboration are of paramount importance, not only to avoid duplication but to encourage information sharing, new knowledge and examples of best practice.

Measures such as harmonising regulatory frameworks, reaching a consensus on maritime boundaries, implementing flag and port state control agreements, developing joint regional patrols and creating a public list of licensed vessels would assist in solidifying collaborative relationships among coast guards and immigration and other officials and in expanding regional approaches and partnerships. In recognising illicit fishing activities as a collective problem and in furthering collaborative efforts it is important to share information about vessels in order to align regional and international responses.

## Recommendations

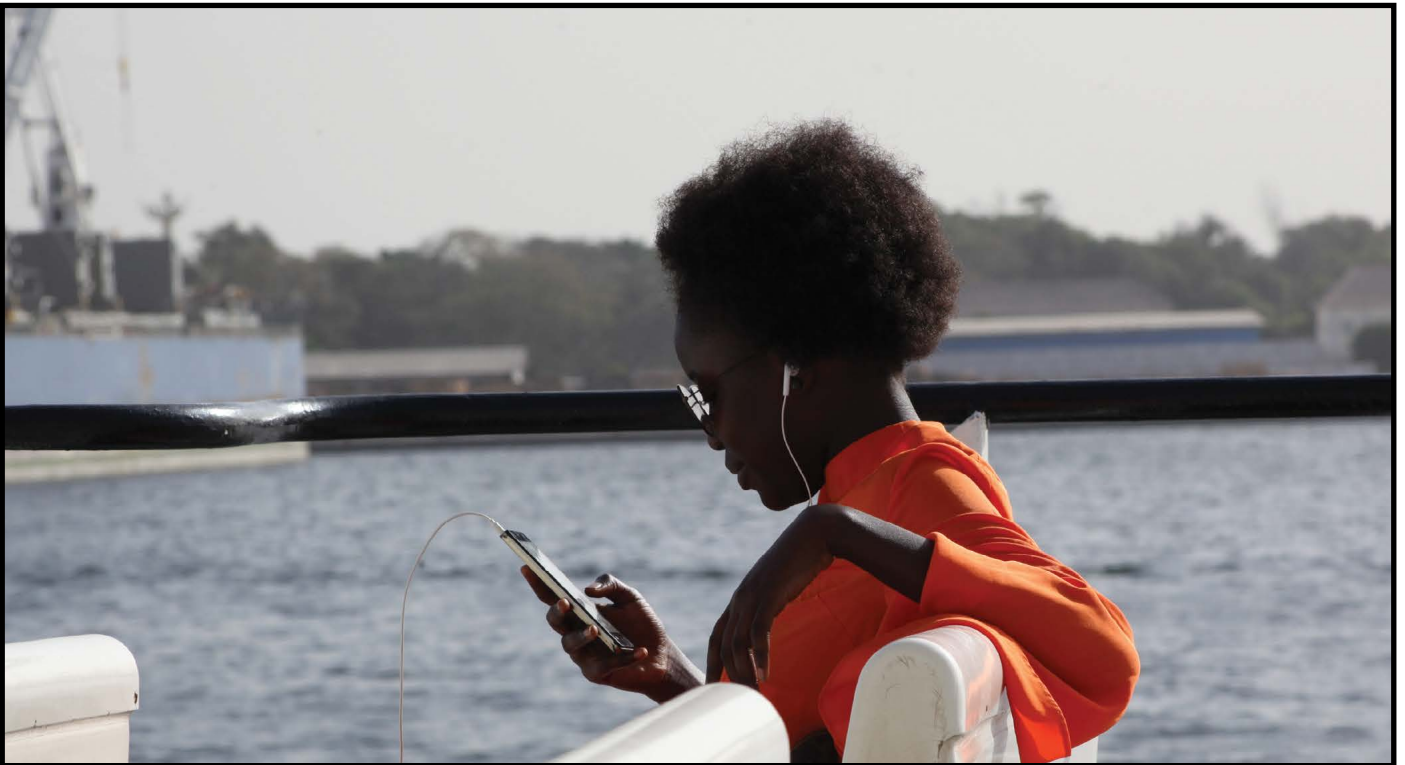
- **Bolster African fisheries:** It is estimated that non-African countries are responsible for about 25% of all marine catches around Africa.<sup>74</sup> Bolstering the visibility of African fisheries would not only support local fishers but would increase the value of the legal fisheries sector and, in turn, contribute to national economies.
- **Improve information sharing:** Key areas are strengthening regulations in EEZs, working to develop and enhance information and sharing systems flagging illegal vessels operating in African waters, not only with neighbouring countries but with the flag states<sup>75</sup> that are responsible for ensuring that vessels operate in accordance with the law when fishing in foreign waters.
- **Recognise IUU fishing as a transnational organised crime:** If IUU fishing is viewed as a form of organised crime the obligations on states, regional and multi-lateral enforcement agencies will increase. Tackling IUU fishing as an organised crime, co-located with other OC types will draw attention to the issue and may yield more sophisticated and coordinated efforts, along with harsher penalties.
- **Develop comprehensive policies to counter IUU fishing:** Comprehensive policy making should include strategies that address aspects including prevention and monitoring measures, the protection of marine ecosystems and efforts to hold accountable criminals engaged in IUU fishing.
- **Enhance operational capacity:** Training coastguards, immigration officers and others in the regulations and in investigative techniques and ways of using monitoring technologies such as drones would be invaluable in combatting IUU fishing.
- **Address underlying imbalances:** In Africa, IUU fishing activities largely take place in areas where governance is weak and illegal fishing is more profitable than legal fishing. States should try to address these imbalances in order to make illicit activities less attractive. Corrupt practices such as paying bribes to obtain fishing licences or allowing fishing in the absence of a licence undermine legitimate fishing activities and increase incentives to fish illegally.
- **Provide alternatives:** The fishing sector is the sole source of income for millions of people in Africa. As a long-term objective states should work to offer alternative employment to local coastal communities to reduce dependence on fishing and thereby lessen the incentives to engage in it.

## Notes

- 1 [www.fishforward.eu/wp-content/uploads/2017/01/FISHING-FOR-PROTEINS-FINAL-REPORT.pdf](http://www.fishforward.eu/wp-content/uploads/2017/01/FISHING-FOR-PROTEINS-FINAL-REPORT.pdf).
- 2 PEW, How to End Illegal Fishing: From Coastal Waters to the High Seas, Criminals are Robbing the Oceans and Hurting Economies, 2017, 1.
- 3 ODI, Western Africa's Missing Fish: The impacts of illegal, unreported and unregulated fishing and under-reporting catches by foreign fleets, 2016, 10.
- 4 Ibid, 7.
- 5 Agnew et al, Estimating the Worldwide Extent of Illegal Fishing, *PLoS ONE* 4(2): e4570, 2009.
- 6 SDG 14.6 calls for an end to subsidies that contribute to overcapacity and hence to IUU fishing.
- 7 For more information about the IUU fishing index, see <http://iuufishingindex.net/>.
- 8 African Union, InterAfrican Bureau for Animal Resources Economic, social and environmental impacts of IUU fishing in Africa, action plan advocacy paper, 2016.
- 9 Ibid.
- 10 Bondaroff, Teale et al, *The Illegal Fishing and Organised Crime Nexus: Illegal Fishing as Transnational Organised Crime*, Global Initiative Against Transnational Organized Crime and The Black Fish, 2015, 9. For a more detailed definition, see FAO, *International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, 2001.
- 11 Ibid.
- 12 Ibid.
- 13 Ibid.
- 14 UNODC, Transnational Organized Crime in the Fishing Industry, Focus on: Trafficking in Persons, Smuggling of Migrants, Illicit Drugs Trafficking, Vienna 2011, 138; Bondaroff 2015, 13; FAS, Global Implications of Illegal, Unreported, and Unregulated (IUU) Fishing, 2016, 15, <https://fas.org/irp/nic/fishing.pdf>; Aqorau, Transform, Illegal, Unreported and Unregulated Fishing: Considerations for Developing Countries, 2000, <http://www.fao.org/3/Y3274E/y3274e0k.htm>.
- 15 The United Nations Convention Against Transnational Organized Crime (UNTOC) Article 3(2) defines a crime as transnational if: '(a) it is committed in more than one State; (b) it is committed in one State but a substantial part of its preparation, planning, direction or control takes place in another State; (c) it is committed in one State but involves an organised criminal group that engages in criminal activities in more than one State; (d) or it is committed in one State but has substantial effects in another State.' An organised criminal group is a 'structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences'.
- 16 Haenlein, C, Below the Surface: How Illegal, Unreported and Unregulated Fishing Threatens our Security, RUSI, July 2017, [https://rusi.org/sites/default/files/201707\\_rusi\\_below\\_the\\_surface\\_haenlein.pdf](https://rusi.org/sites/default/files/201707_rusi_below_the_surface_haenlein.pdf).
- 17 As seen in Kenya, Uganda and Tanzania, <https://enactafrica.org/enact-observer/illegal-fishing-in-lake-victoria-endangers-livelihoods-and-species>. Somalia and other countries, <https://stopillegalfishing.com/?s=law>.
- 18 Van As, H, Fishing for a solution to catch marine life smugglers, October 2019, <https://mg.co.za/article/2019-10-02-00-fishing-for-a-solution-to-catch-marine-life-smugglers/>.
- 19 Convention Against Transnational Organized Crime, Article 3 (2) a-d, [www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf](http://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf).
- 20 The Global Initiative Against Transnational Organized Crime, The illegal fishing and organized crime nexus, April 2015, <https://globalinitiative.net/wp-content/uploads/2015/04/the-illegal-fishing-and-organised-crime-nexus-1.pdf>.
- 21 UNODC, Fisheries Crime: Transnational organized criminal activities in the context of the fisheries sector, [www.unodc.org/documents/about-unodc/Campaigns/Fisheries/focus\\_sheet\\_PRINT.pdf](http://www.unodc.org/documents/about-unodc/Campaigns/Fisheries/focus_sheet_PRINT.pdf); Interpol, Study on Fisheries Crime in the West African Coastal Region, 2014, 33.
- 22 Global Initiative, April 2015.
- 23 Interpol, 2014, 38; UNODC.
- 24 [www.globallslaveryindex.org/2018/findings/importing-risk/fishing/](http://www.globallslaveryindex.org/2018/findings/importing-risk/fishing/); <https://stopillegalfishing.com/issues/human-trafficking/>.
- 25 <http://oceansbeyondpiracy.org/publications/piracy-illegal-fishing-nexus-western-indian-ocean> and Bondaroff 2015, 22.
- 26 [www.pewtrusts.org/en/research-and-analysis/fact-sheets/2012/02/23/faq-what-is-a-regional-fishery-management-organization](http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2012/02/23/faq-what-is-a-regional-fishery-management-organization).
- 27 [www.fao.org/port-state-measures/en/](http://www.fao.org/port-state-measures/en/).
- 28 ODI 2016, 13-14.
- 29 PEW 2017, 2.
- 30 For example, Senegal & Côte d'Ivoire banned transshipments at sea altogether (ODI 2016, 13).
- 31 [www.u4.no/publications/illegal-unreported-and-unregulated-fishing-and-corruption.pdf](http://www.u4.no/publications/illegal-unreported-and-unregulated-fishing-and-corruption.pdf).
- 32 ODI 2016, 12.
- 33 Ibid.
- 34 Ibid.
- 35 GOC, Illegal and unregulated fishing, 20ad; Oxford: Global Ocean Commission (cited in ODI 2016, 13).
- 36 Interpol 2014, 8; ODI 2016, 13.
- 37 Interpol 2014, 8.

- 38 [www.seafoodsource.com/news/environment-sustainability/african-countries-fighting-back-against-illegal-fishing](http://www.seafoodsource.com/news/environment-sustainability/african-countries-fighting-back-against-illegal-fishing).
- 39 Of the 152 coastal states covered by the IUU Fishing Index, 38 are in Africa; 23 located on the East Atlantic Ocean, 12 on the West Indian Ocean and five on the Mediterranean and the Black Sea.
- 40 IUCN, Overfishing threatens food security off Africa's western and central coast as many fish species in the region face extinction, 2017, [www.iucn.org/news/secretariat/201701/overfishing-threatens-food-security-africa-s-western-and-central-coast-many-fish-species-region-face-extinction---iucn-report](http://www.iucn.org/news/secretariat/201701/overfishing-threatens-food-security-africa-s-western-and-central-coast-many-fish-species-region-face-extinction---iucn-report); EJF, Pirate Fishing Exposed: The fight against illegal fishing in West Africa and the EU, Environmental Justice Foundation, 2012, 4, <https://ejfoundation.org/resources/downloads/Pirate-Fishing-Exposed.pdf>.
- 41 Africa Progress Panel, Grain, fish, money: financing Africa's green and blue revolutions, *Africa Progress Report 2014*, [www.africaliberalnetwork.org/wp-content/uploads/2014/05/APP\\_AR2014\\_LR.pdf](http://www.africaliberalnetwork.org/wp-content/uploads/2014/05/APP_AR2014_LR.pdf), 16.
- 42 ODI 2016, 11.
- 43 [www.iuuwatch.eu/2017/07/east-africa-illegal-fishing-western-indian-ocean-alarming/](http://www.iuuwatch.eu/2017/07/east-africa-illegal-fishing-western-indian-ocean-alarming/)
- 44 UN Alert : Mediterranean is world's most overfished sea, July 2018, available at <https://eu.oceana.org/en/press-center/press-releases/un-alert-mediterranean-worlds-most-overfished-sea>. <http://www.iuuwatch.eu/2019/07/oceana-denounces-potential-cases-of-illegal-unreported-and-poorly-regulated-fishing-across-the-mediterranean-sea/>
- 45 <http://allafrica.com/stories/201909160142.html>.
- 46 See, <http://fisheriestransparency.org/mauritania-to-launch-new-fisheries-transparency-initiative>.
- 47 An EEZ extends (usually) 200 nautical miles from a country's coastal baseline into the sea.
- 48 For more information about the IUU fishing index, see <http://iuufishingindex.net/>.
- 49 [www.iuuwatch.eu/2017/04/four-illegal-fishing-cases-found-sierra-leone-four-days/](http://www.iuuwatch.eu/2017/04/four-illegal-fishing-cases-found-sierra-leone-four-days/).
- 50 [www.iuuwatch.eu/2017/09/fish-cash-batter-eu-rops-africa-seafood/](http://www.iuuwatch.eu/2017/09/fish-cash-batter-eu-rops-africa-seafood/).
- 51 [news.mongabay.com/2020/02/illegal-industrial-fishing-hampers-small-scale-african-fisheries/](http://news.mongabay.com/2020/02/illegal-industrial-fishing-hampers-small-scale-african-fisheries/).
- 52 <https://sustainabledevelopment.un.org/content/documents/13692WWF2.pdf>.
- 53 <https://securefisheries.org/news/building-coalitions-stop-illegal-fishing>.
- 54 [www.iuuwatch.eu/2017/07/east-africa-illegal-fishing-western-indian-ocean-alarming/](http://www.iuuwatch.eu/2017/07/east-africa-illegal-fishing-western-indian-ocean-alarming/).
- 55 <https://sustainabledevelopment.un.org/content/documents/13692WWF2.pdf>.
- 56 <https://safety4sea.com/iuu-fishing-the-most-significant-maritime-security-threat-report-says/>.
- 57 West Africa has the highest average prevalence score (1.70), followed by Southern Africa (1.66), East Africa (1.55), Central Africa (1.41) and North Africa (1.39).
- 58 [www.fao.org/family-farming/detail/en/c/1055065/](http://www.fao.org/family-farming/detail/en/c/1055065/).
- 59 [www.icsf.net/images/samudra/pdf/english/issue\\_77/4319\\_art\\_Sam77\\_e\\_art06.pdf](http://www.icsf.net/images/samudra/pdf/english/issue_77/4319_art_Sam77_e_art06.pdf).
- 60 <https://stopillegalfishing.com/press-links/gabon-sao-tome-and-principe-make-iuu-shark-fishing-arrests/>.
- 61 [www.maritime-executive.com/editorials/sierra-leone-takes-steps-to-tackle-illegal-fishing](http://www.maritime-executive.com/editorials/sierra-leone-takes-steps-to-tackle-illegal-fishing).
- 62 <https://www.frontiersin.org/articles/10.3389/fmars.2014.00032/full>.
- 63 [www.fao.org/3/ca2702en/CA2702EN.pdf](http://www.fao.org/3/ca2702en/CA2702EN.pdf).
- 64 [www.frontiersin.org/articles/10.3389/fmars.2017.00227/full](http://www.frontiersin.org/articles/10.3389/fmars.2017.00227/full).
- 65 Egypt, Libya, Algeria, Morocco and Tunisia.
- 66 [www.fao.org/3/ca2702en/CA2702EN.pdf](http://www.fao.org/3/ca2702en/CA2702EN.pdf).
- 67 Poor here is defined as a score above the global average. Good is defined as a score below the global average.
- 68 Global Initiative, Civil society observatory of illicit economies in eastern and southern Africa, *Risk Bulletin* 5, Feb-Mar 2020.
- 69 Tanzania has, for example, set up a National Multi-Agency Task Team to address blast fishing and become involved with Operation 'Jodari', a public-private venture with the NGO Sea Shepherd (and supported by FISH-i Africa), which provides personnel to patrol Tanzania's EEZ( RUSI, Turning the Tide? Learning from Responses to Large-Scale Illegal, Unreported and Unregulated Fishing in Five Countries, November 2019).
- 70 Ibid.
- 71 Global Initiative, Civil society observatory of illicit economies in eastern and southern Africa, *Risk Bulletin* 5, Feb-Mar 2020.
- 72 However, the relationship is very weak (-0.14). The results seem to contradict Agnew et al 2009 who found a significant negative relationship on a global scale between levels of IUU and indices of governance. However, firstly, the study by Agnew was on a global scale, while the analysis here considered African countries only. Secondly, Agnew analysed the relationship between IUU fishing and general indices of governance – which is quite different from the measure included here, which calculates responses to IUU fishing more directly, including coastal, port, and flag-state responsibilities.
- 73 RUSI, Turning the Tide? Learning from Responses to Large-Scale Illegal, Unreported and Unregulated Fishing in Five Countries, November 2019.
- 74 [www.au-ibar.org/rafip-about/rafip-background](http://www.au-ibar.org/rafip-about/rafip-background).
- 75 [www.greenpeace.org/international/press-release/15209/chinese-companies-see-subsidies-cancelled-and-permits-removed-for-illegal-fishing-in-west-africa/](http://www.greenpeace.org/international/press-release/15209/chinese-companies-see-subsidies-cancelled-and-permits-removed-for-illegal-fishing-in-west-africa/).





## Subscribe to ENACT

ENACT works to enhance Africa's response to transnational organised crime. **Receive the latest analysis and research, delivered directly to your inbox:**

1. Go to [www.enact.africa](http://www.enact.africa)
2. Click on 'Connect', then 'Subscribe'
3. Select the topics you're interested in, click 'Subscribe'

publications

infographics

original analysis

explainers

trend reports



## About the authors

Nina Kaysser and Laura Adal are Senior Analysts at the Global Initiative Against Transnational Organized Crime. Nina, who has a PhD in Conflict and Violence Studies, focuses on measuring organised crime. Laura, a lawyer who previously worked at the UN Office on Drugs and Crime, Terrorism Prevention Branch, analyses organised crime flows and develops responses.

## About ENACT

ENACT builds knowledge and skills to enhance Africa's response to transnational organised crime. ENACT analyses how organised crime affects stability, governance, the rule of law and development in Africa, and works to mitigate its impact. ENACT is implemented by the Institute for Security Studies and INTERPOL, in affiliation with the Global Initiative Against Transnational Organized Crime.

## Acknowledgements

ENACT is funded by the European Union (EU). This publication has been produced with the assistance of the EU.