



POLICY BRIEF

Effective maritime domain awareness in the Western Indian Ocean

Christian Bueger

Accurate knowledge of maritime activities is vital for maritime security and the development of the blue economy. Although international donors have provided significant assistance, there are still no reliable regional maritime domain awareness structures in the Western Indian Ocean. This policy brief reviews current activities to identify opportunities through low-tech solutions, human resources and collaboration for improvement of maritime domain awareness in the region.

Key points

- ▶ Maritime domain awareness (MDA), the effective understanding of maritime activities, is vital for maritime security. Despite the efforts of regional projects, such as the Djibouti Code of Conduct and the Programme to Promote Regional Maritime Security (MASE), the Western Indian Ocean remains dependent on international navies for reliable MDA.
- ▶ New priorities for regional MDA centres are required to ensure trust and reliability. Emphasis should be placed on low-tech solutions including the systematic collection of publicly available information and the gathering of human intelligence. National MDA structures must also be enhanced.
- ▶ It remains unclear how regional initiatives relate to each other and can form a regional system. Also, areas of collaboration between maritime security and the blue economy need to be realised.

Accurate and consistent knowledge of maritime activities is vital for maritime security. Knowledge of what happens at sea, whether it is criminal activity or not, and an understanding of maritime patterns of life are essential to identify and prevent threats and to inform operations and policies. This collective knowledge is known as Maritime Domain Awareness (MDA) and is one of the pre-conditions for effective maritime governance.¹

High-quality intelligence is the backbone of law enforcement at sea, given the vast amount of space that must be covered through limited capacities. Efficient flow of information allows for more rapid responses to incidents, such as piracy or marine emergencies. A solid knowledge of the maritime sphere is also important for the coordination of activities among different governmental agencies and regional and international actors, as well as between governments and the marine industry.

The importance of MDA has been widely acknowledged. The African Union's 2050 Africa's Integrated Maritime Strategy emphasises the need to develop shared structures and argues that MDA is 'a critical enabler in building Africa's maritime domain security and safety.'² Consequently, the development of MDA capabilities is one of the top priorities of African capacity building projects in the maritime domain.

Regional focus: Western Indian Ocean

In the Western Indian Ocean region, maritime security has become a particularly pressing concern. The majority of MDA functions in this region are not provided by African or regional actors, but rather by international actors like the European Union's Naval Force Atalanta (EUNAVFOR Atalanta). Multi-lateral naval missions sent to the region respond to Somali-based piracy, conduct surveillance of regional waters, handle communications between law enforcement agencies and shipping traffic and coordinate responses to incidents or threats. For the region to become independent from international navies, significant efforts are underway to develop regionally owned and operated structures.

High-quality intelligence is the backbone of law enforcement at sea, given the vast amount of space that must be covered through limited capacities

The majority of this capacity-building work is organised in the framework of two internationally-funded regional projects. The first is the Djibouti Code of Conduct process – a regional agreement for training and information sharing initiated and supported by the International Maritime Organisation (IMO) and the EU's Critical Maritime Routes Indian Ocean (CRIMARIO) project. This process began in 2009 and has led to the establishment of three information-sharing centres. The second is the Programme to Promote Regional Maritime Security (MASE), which was established in 2013. Funded by the EU, MASE will soon launch two centres for information-sharing and operational coordination under the leadership of the Indian Ocean Commission.

Figure 1: Map of the Western Indian Ocean



Source: <https://freevectormaps.com>

The main objective of both projects is the development of an effective MDA structure for the region, one that can operate independently from international navies and perform core information-sharing functions and coordinate maritime security operations. Unfortunately, the achievements of these two projects so far have remained limited. In 2017, the region is far away from having its own independent MDA structure. The existing centres should enable the sharing of information, conduct research and analysis of maritime developments, provide a shared maritime situational picture and coordinate operations. Thus far, however, they have not provided any of these functions. Indeed, the centres have not been very active nor have they promoted a clear idea of how they will provide MDA. They are hampered by a lack of trust and confidence and there is no willingness to share information with the centres.³

This notable lack of progress begs the question: what can be done to improve developments in regional MDA in the Western Indian Ocean? This policy brief begins with an evaluation of the situation of MDA in the



MARITIME DOMAIN
AWARENESS IS ONE OF
THE PRE-CONDITIONS
FOR EFFECTIVE MARITIME
GOVERNANCE

region and the two major regional projects. Based on this discussion, four guiding principles for strategic direction are outlined: 1) Capacity building should focus on low-tech, not high-tech solutions, and there should be greater emphasis on collating public sources and working with coastal populations; 2) National and regional capacities need to be developed together; 3) Community-building efforts should be intensified; and 4) Relationships between regional organisations and projects require political clarification, in particular, there must be greater collaboration between maritime security-oriented projects and those that are development- or environment-oriented.

The state of affairs

From 2008, piracy activities in the Western Indian Ocean were on the rise. The improvement of information gathering and sharing of data on piracy incidents, therefore, has become essential for a coordinated response.⁴ To complement the work done by the IMO and the International Maritime Bureau on piracy since the 1970s,⁵ international actors have developed dedicated MDA capacities in the region. For example the multilateral mission EUNAVFOR Atalanta, its Maritime Security Centre Horn of Africa (MSCHoA), and the US-led Combined Maritime Forces conduct vital surveillance of the Western Indian Ocean.⁶ They collect intelligence for law enforcement operations, in particular to trigger rapid responses to piracy incidents and to inform policymakers on threats and trends in the region. As of 2017 these were still the core systems in the region.

With the decline in reported piracy incidents, the need for a transition strategy became increasingly pertinent

MSCHoA is the backbone of the MDA system in the region. Following the Best Management Practices for Protection against Somalia Based Piracy – the core international guidance document for the shipping industry – shipping vessels transiting the region must register with the centre.⁷ The picture of maritime merchant traffic in the area gathered by MSCHoA informs naval operations and is particularly important to ensure rapid responses to incidents. MSCHoA's information sharing tool, Mercury, provides a technical mechanism for the region to share incident data rapidly

as well as to coordinate operations between the different actors in the region. The work of the centre is widely hailed as one of the key factors in successfully containing piracy since 2012.⁸

With the decline in reported piracy incidents, the need for a transition strategy became increasingly pertinent.⁹ The absence of an immediate piracy threat led to the declining interest of international actors in maintaining their levels of engagement, instead considering long-term objectives in the region. As a result, the new objective was to empower regional actors through capacity-building to take over MDA functions. Regionalising counter-piracy responses became a top political priority in forums such as the Contact Group on Piracy off the Coast of Somalia (CGPCS).¹⁰ Significant efforts are also underway to develop regionally owned MDA structures.

The Djibouti Code of Conduct

The Djibouti Code of Conduct (DCoC) process, initiated and supported by the IMO and the EU's CRIMARIO project, was established to develop just such a maritime security arrangement. There are three Information Sharing Centres (ISCs) in Sana'a (Yemen), Mombasa (Kenya) and Dar es Salaam (Tanzania), with the Sana'a centre as the overarching regional centre. By 2012, 21 coastal countries from Southern and Eastern Africa, the Red Sea and the Arab Peninsula had signed the code. In January 2017, an amendment broadened its focus to maritime crimes beyond piracy.¹¹

Under the DCoC, each participating state has identified an institution and individual as a focal point.¹² The vision is that, through such a system of national focal points, information on piracy incidents or suspicious activities can be quickly disseminated. This information can then be analysed on national and regional levels to enhance transnational responses and further strategic development. The first phase of DCoC was supported by a dedicated project implementation unit at the IMO and by the Enhancing Maritime Security and Safety through Information Sharing and Capacity Building (MARSIC) project funded by the EU's Critical Maritime Routes programme. MARSIC was replaced in 2015 by the project CRIMARIO, which is today the core international capacity building project supporting the DCoC.¹³

The three ISCs are operative mainly in principle and have not achieved much visibility or produced outcomes.

The centres mainly maintain the focal point network through routine calls and the Yemeni centre sends out a weekly report to stakeholders, which draws on data provided by EUNAVFOR. The primary function of DCoC is as a framework for training in the Djibouti Regional Training Centre, provided by the IMO, CRIMARIO and other states and organisations.

The MASE project

The second major MDA project is the Programme to Promote Regional Maritime Security (MASE). MASE is a EU-funded project that launched in 2013. The project is implemented by four regional organisations¹⁴ with support from international agencies¹⁵ on the basis of a strategy agreed on in 2010.¹⁶ MASE also has a network of national focal points, which meets regularly.

MASE has five pillars, two of which are relevant for the provision of MDA: pillar four focuses on enhancing national and regional capacity for maritime tasks and pillar five on the development of a regional mechanism for coordination and exchange of information. As part of this work two centres will be developed; a centre for regional information exchange will be based in Madagascar and a centre for the coordination of operations will be based in the Seychelles.¹⁷ Although the centres are expected to launch in 2017, it will take time for them to become fully operational.¹⁸

Given this situation, the region is clearly not yet ready to provide MDA or to take over major functions from international actors and it will take time to develop the structures necessary for these shifts to occur. Though the DCoC process has been running since 2009 and MASE was initiated in 2010 and has been active since 2013, there has been little progress in developing reliable regional MDA. The next step is to review opportunities for improved work focus and priorities.

Favour low-tech over high-tech solutions

The purpose of MDA is gaining an understanding of what happens at sea and gathering a shared picture of maritime activity within and among countries. Most MDA discussions have focussed on technological solutions, in particular, advanced surveillance technology and big data analysis.¹⁹ Developing shared understandings of maritime activity does not necessarily imply using advanced technology; even resource-rich Western countries struggle with how to surveil maritime space in real-time.²⁰ Thus the starting point for a regionally owned MDA structure cannot be to rely on the same high-tech systems developed elsewhere. Systems that have been tested in the region, such as the web-based fusing and visualisation system Piracy, Maritime Awareness and Risk (PMAR) developed by the EU²¹, are highly expensive and overly complex. While a basic understanding of MDA technology is important and training is required, a productive starting point lies in low-tech systems. The work of the two Southeast Asian MDA centers ReCAAP and IFC provides important lessons here.²²

ReCAAP has gained visibility through its analytical reports and guidelines, not through its ability to provide a real time picture of the maritime domain. While

THE DJIBOUTI CODE OF
CONDUCT HAS THREE
INFORMATION SHARING
CENTRES IN

Yemen, Kenya
and Tanzania

the IFC relies on sophisticated technology (thanks to the resources of the Singapore government), it has also gained recognition as a valuable source of information through its weekly summary of events and incidents. These reports rely entirely on open sources. The five regional centres in the Western Indian Ocean, created under the DCoC and MASE programmes, should adopt similar approaches used by ReCAAP and IFC.

By providing regular (ideally weekly) reports on activities in regional waters, the centres can build their reputation as added-value institutions. Through their network of national focal points, they can verify media reports and quickly become reliable sources of information. Over time, they will become recognised as knowledge providers and can inform risk evaluations for the shipping industry. Building this reputation will increase trustworthiness and the centres will become recognised as reliable partners.

Through their network of national focal points, centres can verify media reports and quickly become reliable sources of information

Installing sophisticated and complicated technology is not the best route to gain trust. Simple measures, rather, should be taken. For example, collating public incident data and running simple statistics provides information that could be turned into quarterly research reports on trends in the region. The low-tech practice of collecting media reports, verifying them through focal points, publishing them in a weekly newsletter, recording data and offering commented statistics in quarterly reports would make a major difference for the region and would provide valuable information for policy development in coastal countries and for the work of international actors.

Work with human sources

Another low-tech solution for MDA is to better consider the importance of people as a source of intelligence for MDA. The observations and experiences of coastal populations are invaluable sources of information that can be gathered at relatively low costs. The approach taken by the Joint Maritime Information Coordination Centre (JMICC), operated by Pakistan's navy, provides valuable lessons learned from this experience.²³ In contrast to other technology-oriented centres, JMICC is based on human information. It works with a wide range of stakeholders – both state and non-state organisations – that provide the JMICC with information; it also runs a coastal engagement programme. Staff of JMICC regularly visit coastal regions and engage in dialogue with village elders and fisher folk.

Through this direct engagement, the JMICC receives first-hand observations on coastal developments and has become recognised as the first point of contact for reporting maritime incidents and suspicious activities. This has shown that working directly with coastal populations is a valuable starting point for MDA centres and that human-sourced information can provide a solid basis for delivering analysis and reports.



BY PROVIDING REGULAR REPORTS ON ACTIVITIES IN REGIONAL WATERS, CENTRES CAN BUILD THEIR REPUTATION AS ADDED-VALUE INSTITUTIONS

Develop national capacities along with regional ones

A major challenge of regional information sharing in the Western Indian Ocean is that national capacities are equally weak. At its core, regional information sharing does not work without information to disseminate. While relying on public sources and information collected from coastal populations provides an initial remedy, regional MDA will only work if national structures are improved.

Both DCoC and MASE address MDA on a regional level. The underlying idea is that regional structures can be more cost-effective and mutually beneficial for coastal countries without harming anyone's particularistic interests. Regional cooperation is also essential when addressing the wide range of trans-border maritime crimes, which is often why international donors prefer regional over national investments. National structures, nonetheless, are equally important especially for law enforcement capacities. Capacity building projects must find the right balance between national and regional requirements.

With the January 2017 amendments, the DCoC countries have already made a step in this direction.²⁴ One of the priority areas in the agreement is building national capacities that feed into regional projects. The MASE project would also benefit from more attention to national needs. In the long term countries will need to determine when and how to pool resources and work on a regional level and when to work on a national, bilateral or trilateral level.

Continue to build professional regional networks

If there is one area where international capacity building projects succeed, it is the emphasis they put on building networks and communities of regional maritime security professionals. These have the potential to develop strong inter-personal relationships in the region. Although the impact of such communities is often long-term and difficult to measure, they are crucial for the success of regional institutional structures.

Studies on regional integration have shown the value of inter-personal relationships between people and officials on different professional levels.²⁵ The trainings delivered by CRIMARIO, the IMO and others provide skills and create intra-regional communities of maritime security professionals. These communities can further integration and establish environments where information is shared and maritime security agencies can collaborate.

Clarify the relations between initiatives

Although the EU supports the MDA centres of MASE and DCoC, the relationship between the projects remains unclear. While MASE and CRIMARIO agreed on a strategic partnership in 2015, there is still a lack of clarity on how the five centres will work together. There is even overlap in membership; Kenya, the Seychelles and Mauritius, for instance, are participants in both structures. To avoid duplication and to ensure efficient investments, memoranda of understanding must be negotiated on opportunities for collaboration and clarification of activities between the centres.

There are other organisations involved in developing regional MDA, especially the Indian Ocean Naval Symposium (IONS), the Indian Ocean Rim Association (IORA) and the Indian Ocean Forum on Maritime Crime (IOFMC). The IONS is a collaboration of navies from the Indian Ocean region.²⁶ The majority of the MASE and DCoC countries are members of IONS. One of its working groups explicitly deals with establishing effective information sharing through developing standard operating procedures and a *Maritime Information Exchange Directory*.²⁷

A major challenge of regional information sharing in the Western Indian Ocean is that national capacities are equally weak

The IORA is a regional integration mechanism that in the past has primarily focused on economic integration.²⁸ IORA is a cross-regional organisation and one of the focal areas of IORA is maritime security and safety. Within this area, IORA focuses on the 'exchange of information, capacity building and the provision of technical assistance' and intends to establish 'a regular forum for dialogue between stakeholders on security and safety'.²⁹

While IONS and IORA are organisations driven and led by regional countries, the IOFMC is an informal technical collaboration mechanism organised and implemented by the Global Maritime Crime Programme of the UN Office on Drugs and Crime (UNODC).³⁰ The objective of IOFMC is to enhance the collaboration between law enforcement officials in the region and to 'promote a shared understanding of the maritime crimes' in the region.³¹

These three organisations are important because they include regional countries that are neither part

of DCoC nor MASE. This includes India, Iran and Pakistan, countries with significant naval capabilities and operational experiences. Clarifying relationships will strengthen the regional MDA environment and reduce competition and complexity.

Identify areas for collaboration between maritime security and the blue economy

Although many projects are informed by maritime security concerns, significant work in maritime governance is also conducted in the frame of sustainable development, with economic and environmental concerns. Work under the header of blue economy, such as projects for the protection of the marine environment, or with artisanal fishing communities, often tends not to be seen as linked to maritime security and the MDA discussion.³² Although a range of commentators, especially the African Union, has persistently emphasised the connection between maritime security and the blue economy, these tend to be treated as separate agendas.³³

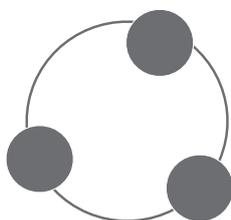
Tackling maritime insecurities, protecting the marine environment, and sustainably harvesting ocean resources are all dependent on effective understandings of what happens in the maritime domain.³⁴ For example, surveys on marine life and fishing patterns conducted by environmental agencies can inform a shared picture of the maritime domain and assist in the detection of anomalies.

The promotion of MDA can be built into development projects. Coastal communities and environmental agencies can thus be informed about the benefits of collaborating with MDA centres. In the field of fishery regulation, for example, there is overlap and common interest in maritime activity, especially given that fishery crime is a security, environmental and economic issue.³⁵ Strengthening the collaboration between security, development and environmental professionals has a high potential for improving MDA in the region.

Conclusion: take pragmatic steps and continue to invest

Building efficient and sustainable MDA structures, creating institutions and centres that are trusted and enhance coordination, and continuing training and other capacity building measures will decrease the dependency of the region on international actors. This in turn is key to ensure that maritime security and development of the blue economy is locally driven and owned. These are not short-term goals. Long-term efforts and conversations about next steps are necessary. Not high-tech solutions, but pragmatic steps and creative solutions, are required.

The international community will have to continue to invest in regional structures, but, as this policy brief has argued, should carefully plan the priorities that are pursued. This will require greater investment in people and analytical capacities, as well as a re-think about which technologies are required and are appropriate in local contexts. Given overall resource constraints, as well as the declining strategic interest of some international partners, more attention needs to be paid to orchestrating the various initiatives and programmes in order to develop a coherent integrated structure for all users of the regional waters.



STRENGTHENING
COLLABORATION
BETWEEN SECURITY,
DEVELOPMENT AND
ENVIRONMENTAL
PROFESSIONALS HAS
A HIGH POTENTIAL FOR
IMPROVING MARITIME
DOMAIN AWARENESS

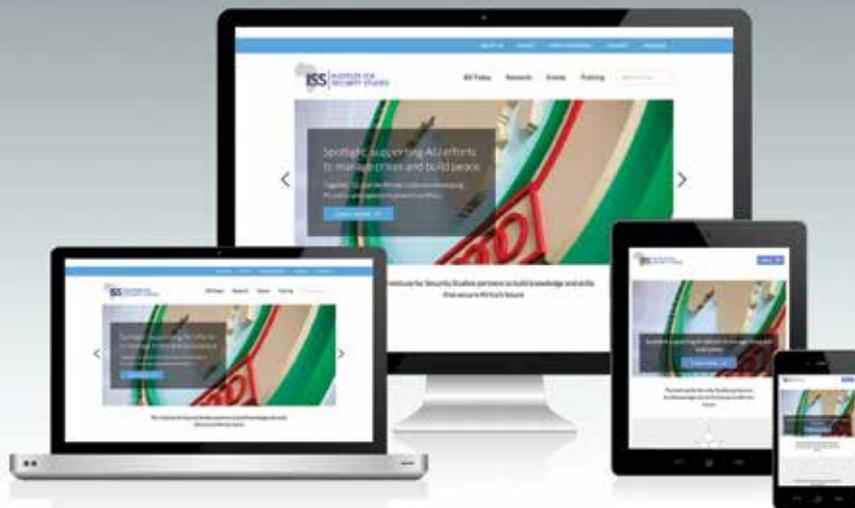
NOTES

- 1 For discussions of the role and functions of maritime domain awareness, see T Doorey, Maritime Domain Awareness, in P Shemella (ed.), *In Global Responses to Maritime Violence. Cooperation and Collective Action*, Stanford, CA: Stanford University Press, 2016, 124–41; S Boraz, Maritime Domain Awareness. Myths and Realities, *Naval War College Review*, 62:3, 2009, 137–46, ; C Bueger, From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia, *Contemporary Southeast Asia*, 17:2, 2015, 157–182; K Peters, Tracking (Im)mobilities at Sea: Ships, Boats and Surveillance Strategies, *Mobilities*, 9:3, 2014, 414–31; and M Chintoan-uta and J Silva, Global Maritime Domain Awareness: A Sustainable Development Perspective, *WMU Journal of Maritime Affairs*, 16, 2017, 37–52.
- 2 African Union, *African Integrated Maritime Strategy 2050*, Addis Ababa: African Union, 2014, 31.
- 3 For an overview of past African attempts to enhance maritime domain awareness see T Walker, Enhancing Africa's Maritime Domain Awareness, *Institute for Security Studies Policy Brief*, 79, 2015.
- 4 For an overview and discussion of maritime piracy off the coast of Somali from 2008 onwards, see F Onuoha, Piracy and Maritime Security off the Horn of Africa: Connections, Causes, and Concerns, *African Security*, 3:4, 2010, 191–215 and F Vreÿ, Bad Order at Sea: From the Gulf of Aden to the Gulf of Guinea, *African Security Review*, 18:3, 2009, 17–30.
- 5 C Bueger, Making things known: Epistemic Practice, the United Nations and the Translation of Piracy *International Political Sociology*, 9:1, 2015, 1–19.
- 6 C Bueger, Christian, Responses to Contemporary Piracy: Disentangling the Organisational Field, in D Guilfoyle (ed.), E Elgar, *Modern Piracy: Legal Challenges and Responses*, 2013, 91–114.
- 7 *Best Management Practices for Protection against Somalia Based Piracy*, Livingston: Witherby Publishing, 2011 and for a discussion C Bueger, Zones of Exception at Sea: Lessons from the debate on the High Risk Area, Working Paper of the Lessons Learned Consortium of the Contact Group on Piracy off the Coast of Somalia, Cardiff: Cardiff University, November 2015 www.lessonsfrompiracy.net/files/2015/10/Bueger-Lessons-from-the-HRA-debate.pdf
- 8 T Thierry (ed.), *The Contact Group on Piracy off the Coast of Somalia (CGPCS). A Lessons Learnt Compendium*, Paris: EU Institute for Security Studies, 2015.
- 9 T Walker, Fighting Somali piracy: don't get the next steps wrong, *ISS Today*, 2017, <https://issafrica.org/iss-today/fighting-somali-piracy-dont-get-the-next-steps-wrong/>; and C Bueger, Christian, Learning from Piracy: Future Challenges of Maritime Security Governance, *Global Affairs*, 1:1, 2015, 33–42.
- 10 Capacity building was one of the priority areas of the CGPCS from 2012. See the discussion M Houben, Operational coordination of naval operations and capacity building, in T Thierry (ed.), *The Contact Group on Piracy off the Coast of Somalia (CGPCS) A Lessons Learnt Compendium*, Paris: EU Institute for Security Studies, 2015; for the regionalisation agenda see in particular the 18th and 19th Communique of the Contact Group on Piracy off the Coast of Somalia.
- 11 International Maritime Organisation, Regional maritime piracy agreement broadened to cover other illicit maritime activity, *IMO Briefing*, 13 January 2017, www.imo.org/en/mediacentre/pressbriefings/pages/4-dcoc-widened.aspx.
- 12 For more information on the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), and the reason for focal points, see J Ho, Combating Piracy and Armed Robbery in Asia: The ReCAAP Information Sharing Centre (ISC), *Marine Policy*, 33:2, 2009, 432–34; T Lee and K McGahan, Norm subsidiarity and institutional cooperation: explaining the straits of Malacca anti-piracy regime, *The Pacific Review*, 28:4, 2015, 529–552; and C Bueger, From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia, *Contemporary Southeast Asia*, 17:2, 2015, 157–182.
- 13 see the website of CRIMARIO at, www.crimario.eu.
- 14 The Intergovernmental Authority on Development (IGAD), the Eastern African Community (EAC), the Common Market with Eastern and Southern Africa (COMESA) and the Indian Ocean Commission (IOC).
- 15 Including the Food and Agricultural Organisation, the UN Office and Drugs and Crime and Interpol.
- 16 For information on the governance of the MASE, see: Maritime Security in Eastern & Southern Africa & Indian Ocean A Strong Partnership Towards a Safe and Secure Maritime Domain, MASE, 2016, http://commissionoceanindien.org/fileadmin/resources/MASE/Brochure_MASE_LR_V5.pdf
- 17 Both will be modelled on the regional Information Fusion Centre (IFC) for Southeast Asia based in Singapore and operated by the Singapore Navy, for more information see Information Fusion Centre, Maritime Information Sharing in Southeast Asia, *Australian Journal of Maritime & Ocean Affairs* 2:4, 2010, 106–9; and C Bueger, From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia, *Contemporary Southeast Asia*, 17:2, 2015, 157–182.
- 18 The Madagascar centre, in particular, must be created from scratch. Given the country's recent instability, doubts have been expressed that it will be able to deliver within reasonable time. The centre in the Seychelles, on the other hand, will open in existing offices with basic infrastructure and can draw on experience from the previous centre there that focused on sharing evidence of criminal activity. The MASE centres will work with liaison officers from each participating state, who will be based in the centres to enable efficient information exchange and shared interpretation of incidents. For more information see The Regional Fusion and Law Enforcement Centre for Safety and Security at Sea (known as REFLECS3) was launched in the Seychelles in 2013. See the summary in Oceans Beyond Piracy, *Regional Fusion and Law Enforcement Centre for Safety and Security at Sea*, 2017, <http://oceansbeyondpiracy.org/matrix/regional-fusion-and-law-enforcement-centre-safety-and-security-sea-reflect3>
- 19 E Shahbazian and G Rogova (eds.), *Meeting Security Challenges Through Data Analytics and Decision Support*, Amsterdam: IOS Press, 2016, and T Doorey, Maritime Domain Awareness, in P Shemella (ed.), *Global Responses to Maritime Violence. Cooperation and Collective Action*, Stanford, CA: Stanford University Press, 2016, 124–41.

- 20 S Boraz, Maritime Domain Awareness. Myths and Realities, *Naval War College Review* 62:3, 2009, 137–46.
- 21 European Commission, PMAR: Piracy, Maritime Awareness & Risks, Trial Implementation under MASE, *European Commission, Joint Research Centre, Institute for the Protection and Security of the Citizen*, 2015, <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/pmar-piracy-maritime-awareness-risks-trial-implementation-under-mase>
- 22 C Bueger, From Dusk to Dawn? Maritime Domain Awareness in Southeast Asia, *Contemporary Southeast Asia*, 17:2, 2015, 157-182.
- 23 C Bueger, People first: Pakistan's approach to Maritime Domain Awareness, 2017, <http://bueger.info/people-first-pakistans-approach-to-maritime-domain-awareness/> for a discussion of Pakistan's approach as well as the website for a general background on the centre at <http://www.jmicc.gov.pk/>.
- 24 International Maritime Organisation. Regional maritime piracy agreement broadened to cover other illicit maritime activity, *IMO Briefing*, 13 January 2017, www.imo.org/en/mediacentre/pressbriefings/pages/4-dcoc-widened.aspx.
- 25 C Bueger, Communities of Security Practice at Work? The Emerging African Maritime Security Regime, *African Security* 6:3-4, 2013 297-316.
- 26 Y V Athawale, The IONS Initiative and Its Prospects for Security Cooperation within the IOR, *Maritime Affairs: Journal of the National Maritime Foundation of India*, 6:1, 2010, 98–115; and P K Ghosh, Indian Ocean Naval Symposium: Uniting the Maritime Indian Ocean Region. *Strategic Analysis*, 3657:3: 2012, 352–53.
- 27 IONS, IONS Working Groups (IWGs) Concept Papers, 06 June 2016, www.ions.navy.mil.bd/pdf/IWG-Concept-Paper.pdf.
- 28 T Doyle and G Seal, Indian Ocean Futures: New Partnerships, New Alliances and Academic Diplomacy, *Journal of the Indian Ocean Region*, 11:1, 2015. 2–7; and D Rumley, The Emerging Indian Ocean Landscape: Security Challenges and Evolving Architecture of Cooperation – an Australian Perspective, *Journal of the Indian Ocean Region*, 11:2, 2015, 184–204.
- 29 IORA, Maritime Safety & Security, 2017, www.iora.net/about-us/priority-areas/maritime-safety-security.aspx.
- 30 UNODC, Global Maritime Crime Forum, *Annual Report 2016*, Nairobi: United Nations, 2016, www.unodc.org/documents/Reports/GlobalMaritimeCrimeProgramme_AnnualReport2016.pdf.
- 31 UNODC, *Indian Ocean Maritime Crime Forum*, 2016, https://cites.org/sites/default/files/eng/prog/iccwc/WENs/IOFMC-info_sheet_Sept16.pdf
- 32 United Nations Environmental Program (UNEP) Blue Economy, Sharing Success Stories to Inspire Change, *UNEP Regional Seas Report and Studies*, 195, 2015.
- 33 African Union, Charter of Lome, 2016; and C Bueger, Maritime Security and the Blue Economy: Understanding the Link, *West Africa Peace and Security Network Blog*, March 2016, www.westafricasecuritynetwork.org/maritime-security-and-the-blue-economy-understanding-the-link/
- 34 J Bergen and A Knight, Secure Oceans, Collaborative Policy and Technology Recommendations for the World's Largest Crime Scene, Washington, DC: Stimson centre, 2016.
- 35 J Lindley and E J Techera, Overcoming Complexity in Illegal, Unregulated and Unreported Fishing to Achieve Effective Regulatory Pluralism, *Marine Policy*, 81, 2017, 71–79.

The Institute for Security Studies partners to build knowledge
and skills that secure Africa's future

Visit our website for the latest analysis, insight and news
www.issafrica.org



Step 1 Go to www.issafrica.org

Step 2 Go to bottom right of the ISS home page
and provide your subscription details

About ISS Policy Briefs

Policy Briefs provide concise analysis to inform current debates and decision making. Key findings or recommendations are listed on the cover pages, along with a summary. Infographics allow busy readers to quickly grasp the main points.

About the author

Christian Bueger is Professor of International Relations at Cardiff University and Honorary Fellow at the University of Seychelles. He is the principal investigator of SAFE SEAS, funded by the British Academy (www.safeseas.net). He is also the lead investigator of the Lessons Learned Project of the Contact Group on Piracy off the Coast of Somalia (www.lessonsfrompiracy.net).

About the ISS

The Institute for Security Studies (ISS) partners to build knowledge and skills that secure Africa's future. Our goal is to enhance human security as a means to achieve sustainable peace and prosperity.

The ISS is an African non-profit organisation with offices in South Africa, Kenya, Ethiopia and Senegal. Our work covers transnational crimes, migration, maritime security and development, peace operations, crime prevention and criminal justice, peacebuilding, and the analysis of conflict and governance.

Using our networks and influence, we provide timely and credible analysis, practical training and technical assistance to governments and civil society. This promotes better policy and practice, because senior officials can make informed decisions about how to deal with Africa's human security challenges.

Acknowledgements

Research for this policy brief was supported by an Economic and Social Research Council's Global Challenges Research Fund Impact Acceleration Award and a grant by the British Academy [GF16007]. The author also used part of a personal grant to undertake some of the research. The ISS is grateful for support from the members of the ISS Partnership Forum: the Hanns Seidel Foundation and the governments of Australia, Canada, Denmark, Finland, Ireland, Japan, Netherlands, Norway, Sweden and the USA.

© 2017, Institute for Security Studies

Copyright in the volume as a whole is vested in the Institute for Security Studies and the authors, and no part may be reproduced in whole or in part without the express permission, in writing, of both the authors and the publishers.

The opinions expressed do not necessarily reflect those of the ISS, its trustees, members of the Advisory Council or donors. Authors contribute to ISS publications in their personal capacity.

Cover image: © U.S. Navy photo by Mass Communication Specialist 3rd Class Billy Ho

ISSN 1026-0404

