8 Oil spill preparedness and environmental governance in Mauritius

Lessons to be learnt from the *MV Wakashio* oil spill at the domestic and regional levels

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Introduction

The risk of major oil spills continues to be a significant threat to fragile ecosystems and coastal areas, and a timely and coordinated response in tackling an oil spill is of utmost importance to safeguard the environment. Mauritius, like other African small island developing states (SIDS) and African coastal states, is highly vulnerable to oil spills with 30 per cent of the world's petroleum being transported in this region[1] and with prospects of oil and gas exploration activities in offshore Mauritian and Seychelles maritime territories. Whereas there have been minor spills cases, there has been no major environmental disaster from an oil spill in or close to Mauritius and its islands[2] until the *MV Wakashio* oil spill incident in 2020. Timely decisions regarding the shipwreck by the national authorities or the owner/insurer of the ship during this period would have prevented the ensuing environmental catastrophe.

While there is a regional mechanism for response to marine pollution incidents under the 1985 Convention for the Protection, Management, and Development of the Marine and Coastal Environment of the Eastern African Region (Nairobi Convention), surprisingly prompt technical and financial assistance

1 Republic of Mauritius (RoM), "Mauritius Strategy for Implementation National Assessment (MSINA) Report" (2010) 26 <https://sustainabledevelopment.un.org/content/documents/1255Mauritius-MSI-NAR2010.pdf>.

2 The Republic of Mauritius (RoM) includes the main island of Mauritius ("mainland Mauritius") and its dependencies. Until 1965, the most important dependencies of Mauritius are Rodrigues, the *Chagos* Archipelago, *Agaléga* and the *Cargados Carajos* (*Saint Brandon*). *Tromelin* has been claimed as a dependency of Mauritius by France; Prior to the independence of Mauritius, the British proposed to dismember the *Chagos* Archipelago from Mauritius against a compensation of Pound Sterling (GBP) 3 million and the British Indian Ocean Territory (BIOT) was created on 8 November 1965 by an Order in Council. Over the past few decades, Mauritian claims over the *Chagos* Archipelago have been at the heart of a territorial dispute between United Kingdom (UK) and Mauritius. Odile J Lim Tung, *Environmental Law in Mauritius* (International Encyclopedia Series, Kluwer Law International 2015) 30–35.

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to address this oil spill came from France, India, Japan, and the International Maritime Organisation (IMO) after Mauritius requested help. The weakness of the current regulatory framework relating to oil spill incidents in Mauritius needs to be examined to identify the lessons that could be learnt from this environmental disaster to improve the oil spill preparedness mechanism and better protect the environment during such disasters. Against the background of the foregoing, this chapter discusses the regulatory response for oil spill preparedness in Mauritius in light of regional cooperation. By way of context, it refers to the *MV Wakashio* oil spill incident to demonstrate the weaknesses of the oil spill preparedness regime in Mauritius to make recommendations for its improvement and the overall environmental governance sphere.

Contextual background and environmental implications of the *MV Wakashio* oil spill case

The *MV Wakashio* (a vessel registered in Panama and owned by a Japanese company) left China on July 14, 2020, for Brazil and after allegedly straying from shipping lanes, it ran aground on July 25, 2020, on the reefs on the Southeast coast off *Pointe d'Esny*. This 300 metres' long bulk carrier had no cargo, but it had 4200 metric tonnes (MT) of fuel for its use, 3894 MT of fuel oil, 207 MT of diesel, and 90 MT of lubricant oil.[3] No oil leakage was observed at this point, but the National Oil Spill Contingency Plan (NOSCP) was activated and as a measure of precaution, oil booms were placed in this area by the Ministry of Environment, Solid Waste Management and Climate Change (Ministry of Environment).[4] A command post was then set up at the National Coast Guard post of Blue Bay.[5] Smith Salvage Company was hired on July 27, 2020 to take remedial actions such as pumping of the fuel oil, salvaging the ship and antipollution measures.[6] On August 5, 2020, there was a minor oil slick surrounding the shipwreck which became overwhelming on August 7, 2020 despite the activation of the NOSCP. Approximately 3000 MT of the fuel oil used by the ship was pumped out before the ship broke in two; however, an estimated 1000 MT of fuel oil spilled into the lagoon. Overwhelmed by the situation, the prime minister declared a "national state of environmental emergency" on August 7, 2020, as well as called for international assistance through foreign diplomatic missions in Mauritius.[7] By

3 Republic of Mauritius (RoM), "Parliamentary Debates (Hansard)" Seventh National Assembly (28 July 2020) 81 <https://mauritiusassembly.govmu.org/Documents/Hansard/2020/hansard272020.pdf> accessed 10 February 2022.

4 *Ibid*.

5 *Ibid*.

6 *Ibid* 81–82.

7 Prime Minister's Office, "Environmental Emergency Declaration of 7 August 2020" Government Gazette 1103 of 2020, No. 96, Mauritius <https://environment.govmu.org/Documents/wakashio/Environmental%20Emergency%20Declaration.pdf> accessed 7 April 2022.

August 11, 2020, the spillage had spread beyond 27 square kilometres (kms) and was practically uncontrollable. Despite the lack of resources to fight the spill, hundreds of local volunteers helped contain the oil spill with improvised booms and participated in clean-up operations. France, India, Japan, and the IMO as well as non-governmental organisations (NGOs) and public institutions through crowdfunding[8] collaborated with Mauritius to address the environmental consequences of this oil spill.

The captain of the *MV Wakashio* was arrested on August 18, 2020, and was provisionally charged for endangering safe navigation under the Piracy and Maritime Violence Act 2011, ss 5(1) (b) and 5(2). The national authorities were heavily criticised for their delayed decision-making in handling the shipwreck, which subsequently led to the oil spill.[9] The Mauritian Government reportedly agreed with the Government of Japan on September 1, 2020 for US $34 million relating to the *MV Wakashio* Oil Spill clean-up, which unfortunately, did not include costs for damage to the marine environment.[10] Mauritius set up a "Wakashio solidarity grant" of Mauritian rupees (MUR) 20,000 (US $500) for 3000 victims in the local community, but there is no information regarding how the remaining money was used. A government website was created to register personal claims by victims of the oil spill and facilitate their submission to the ship owner and ship insurer liable for the damage caused by the oil spill.[11] Until now, the insurer of the *MV Wakashio* has paid MUR 83 million to 3000 victims who claimed damages.[12] The *MV Wakashio* broke into two parts, and the front part of the vessel was sunk on August 24, 2020, at more than 3000 metres deep, at a site which has not been disclosed to the public.[13] A court of investigation was set up in

8 Ighobor Kingsley, "Covid-19, Oil Spill in Mauritius Highlight the Vulnerabilities of Small Island Developing States" (*Africa Renewal*, February 24, 2021) <www.un.org/africarenewal/magazine/march-2021/covid-19-oil-spill-mauritius-highlight-vulnerabilities-small-island-developing> accessed November 10, 2022.

9 Strong environmental concerns were raised after several mammals were found dead or wounded on the shore in this area. A protest march was held with more than 100,000 citizens in the capital in August 2020. Nishan Degnarain, "Mauritius Seeks Quick Backdoor Deal with Japan for $34 Million Over Wakashio Oil Spill" *Forbes* (1 September 2020) <www.forbes.com/sites/nishandegnarain/2020/09/01/mauritius-seeks-quick-backdoor-deal-with-japan-for-34m-over-wakashio-oil-spill/> accessed 20 October 2022.

10 Mauritius proposed to use US $30 million for 100 fishing boats, $245,000 to train 475 fishermen and 60 skippers, and $3 million to renovate the Albion Fisheries Research Centre (*Ibid*).

11 Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Ministry of Blue Economy), "Claims for MV Wakashio" (2020) <https://blueconomy.govmu.org/Documents/Final%20Communiquev3.pdf?csf=1&e=NOZtZq> accessed 24 January 2022.

12 Claims for damages amounting to MUR 2 billion were made by 4000 victims of the spill.

13 Ministry of Environment, Solid Waste Management and Climate Change (Ministry of Environment), 'Statement by the Minister on the Situation Regarding the Grounding of *MV Wakashio* and the Oil Spill Which Occurred on 06.08.20 Sitting of August 18, 2020' <https://environment.govmu.org/Documents/wakashio/statement.pdf> accessed 7 April 2022.

Mauritius to examine the circumstances which led to the grounding of the *MV Wakashio*, and the cause and extent of the damage caused by the leakage of its fuel in Mauritian waters.[14] The spilled fuel oil was a new type of experimental marine fuel with very low sulphur fuel oil (VSLFO) content.[15] On November 3, 2021, while the stern of the *MV Wakashio* was being dismantled, some fuel oil leaked into the lagoon and 530 litres of fuel oil were recovered by the Greek company Polyeco at *Pointe d'Esny* and *Rivière-des-Créoles*. In December 2021, the captain and the first officer of the *MV Wakashio* were both sentenced to 20 months' imprisonment for endangering safe navigation under the Merchant Shipping Act 2007 after drinking moderately during a birthday party on the vessel.[16]

Prior to examining the regulatory framework governing an oil spill, this subsection looks into the environmental impacts of this spill. Importantly, the area where the *MV Wakashio* grounded, hosts world-renowned coral reefs and protected species biodiversity and ecosystems.[17] This area includes the Blue Bay Marine Park, the *Ile aux Aigrettes* nature reserve, and the *Pointe d'Esny* Wetland, Mauritius' third wetland of international importance.[18] However, no comprehensive assessment of the environmental impacts on marine biodiversity and ecosystems as well as socioeconomic adverse effects on the local fishermen, community, and the tourism sector has yet been conducted by local authorities or international experts at this stage. Different specialised working groups started to monitor the health of mangroves and corals communities soon after most of the spilled oil had been recovered.[19] The first survey of coral reefs and mangrove forests conducted by Japanese experts in collaboration with local institutions, observed no disturbance of corals around *Ile aux Aigrettes*, but mangrove areas have been adversely impacted by large accumulation of oil with long-term consequences on the ecosystems.[20] Filter feeders (such as corals, crustaceans, and mollusks) are of particular concern due to

14 Republic of Mauritius (RoM), "Notice for the Court of Investigation MV Wakashio" (September 18, 2020).

15 Alan G Scarlett and others, "MV Wakashio Grounding Incident in Mauritius 2020: The World's First Major Spillage of Very Low Sulfur Fuel Oil" (2021) Marine Pollution Bulletin 171, 112917, 1–11 <https://doi.org/10.1016/j.marpolbul.2021.112917> accessed November 26, 2021.

16 Yasine Mohabuth, "Mauritius Oil Spill: MV Wakashio Ship Captain Sentenced" *BBC* (Mauritius, 27 December 2021) <www.bbc.com/news/world-africa-59800519> accessed 15 February 2022.

17 Davide Seveso and others, "The Mauritius Oil Spill: What's Next?" (2021) Pollutants, 1, 18–28, <https://doi.org/10.3390/pollutants1010003> accessed 26 November 2021.

18 *Ibid* 20.

19 *Ibid* 24.

20 National Crisis Committee, "Update on Wakashio Vessel as at Noon on Sunday August 23, 2020" Press Release <https://environment.govmu.org/Documents/wakashio/Press%20Release%20FINAL%20Wakashio%20as%20at%20noon%20on%20Sunday%20August%2023,%202020.pdf> accessed 7 April 2022; Seveso and others (n 17) 19.

exposure to oil toxicity.[21] Coastal water quality is being monitored at twenty-seven sites on a daily basis by the National Environment Laboratory and the Mauritius Oceanography Institute. A systematic survey of the shoreline has been carried out around mangrove areas and other sensitive sites.[22] The Ministry of Environment prepared an integrated environmental monitoring strategy to collect data for the assessment of the impacts of the oil spill and restoration measures for the affected sites;[23] however, this strategy has not been made public yet. The joint assessment of the Blue Bay Marine Park and *Pointe d'Esny* Ramsar site that was conducted by local and Japanese experts found that these sites were not affected by the spill.[24] Thousands of sea creatures were nevertheless found dead less than 7 kms from the *MV Wakashio* wreck.[25] More than 50 melon-head dolphins were washed up on the shore in the region where the oil spill occurred; however, no direct link with this spill was found during their necrosis.[26] Further toxicological analysis nonetheless revealed the presence of hydrocarbon in 11 of the dead dolphins.[27] Fishing and recreational activities were banned along 36 kms of shoreline affected by the spill, but recreational activities resumed in November 2020.[28] No report has been made publicly available yet on the above surveys and monitoring activities. The following section presents the regulatory framework regarding an oil spill in Mauritius in light of regional cooperation before drawing lessons from its weaknesses.

The regulatory framework governing an oil spill in Mauritius

As a state party to the 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC Convention), Mauritius has a national oil spill response mechanism. It includes the NOSCP and a specific plan for the harbour (the Port-Louis Harbour Contingency Plan), providing the policy framework for oil spill response for the main island of Mauritius (mainland Mauritius). Apart from the national oil spill contingency plans,

21 Seveso and others (n 17) 21.

22 National Crisis Committee, "Update on Wakashio Vessel as at 4 pm on Thursday August 20 2020," Press Release <https://environment.govmu.org/Documents/wakashio/Press%20Release%20FINAL%20Wakashio%20at%206pm%20on%20Thursday%20August%2020%202020.pdf> accessed 7 April 2022.

23 Ministry of Environment, Solid Waste Management and Climate Change (Ministry of Environment), "Statement of Minister Ramano on 28 August 2020" (2020) <https://environment.govmu.org/Documents/wakashio/Statement%20of%20Minister%20Ramano%20on%2028%20August%202020.pdf> accessed 7 April 2022.

24 *Ibid*.

25 Degnarain (n 9).

26 Seveso and others (n 17) 21–22.

27 *Ibid*.

28 Ministry of Blue Economy, Marine Resources, Fisheries and Shipping (Ministry of Blue Economy), "Fish Analysis-MV Wakashio" (*Communique*, 8 September 2020) <https://govmu.org/EN/Communique1/communique-fisheries.pdf> accessed 15 October 2020.

there are laws and institutions which are applicable in the case of any spill (an oil spill is not specified) causing an environmental emergency.

The oil spill contingency plans

After Mauritius requested assistance from the United Nations Environment Programme (UNEP) and the IMO to develop a national oil spill contingency plan, a mission was organised in 1987 by these international organisations to collect data and information to prepare the NOSCP with the local authorities.[29] Following this mission, the NOSCP and the Port-Louis Harbour Oil Spill Contingency Plan were finalised with an alert procedure and emergency responses in 1990 contributing to the Eastern African Action Plan.[30] The NOSCP was updated in 2003 and applies to an oil spill that may occur inland, on adjoining shorelines, and within the maritime zones. It includes a response strategy, actions, and a coastal sensitivity atlas for adequate spill response as well as a spill drill for simulations. Shoreline sensitivities for geomorphic coastal segments, sensitive biological coastal resources, and socioeconomic coastal resources are indicated in the NOSCP, including mitigation measures for birds in the case of an oil spill. The NOSCP caters for a minor spill and in the case of a major spill in the territorial waters or a transboundary spill affecting several countries of the region, Mauritius will have to request regional or international assistance.[31] The Port-Louis Harbour Oil Spill Contingency Plan applies exclusively to the port area (in mainland Mauritius) while basic response equipment is available in Port Mathurin in Rodrigues. Clean-up methods and techniques for oily waste disposal were identified as well as essential equipment for oil spill clean-up operations.[32] The 2013 Oil Spill Dispersant Policy prohibits the use of dispersants close to coral reefs within lagoons and shallow water.[33] With the help of the United Nations Development Programme (UNDP) and the *Agence Française de Développement*, the NOSCP was reviewed in 2021 to enhance oil spill preparedness and working sessions on the proper use of dissolvents, the Port Louis Harbour Oil Spill Response Plan and a Rodrigues Oil Spill Contingency Plan. However, there is no oil spill contingency plan for the rest of the Mauritian territories.

29 M Murday and ER Grundlach, "Oil Spill Contingency Plan for Mauritius" (1990) UNEP Regional Seas Reports and Studies No. 125.

30 *Ibid*.

31 Republic of Mauritius (RoM), "Mauritius Environment Outlook Report (MEO)" (2011) 96 <https://wedocs.unep.org/bitstream/handle/20.500.11822/8593/-Mauritius%20Environment%20Outlook%20Report%20-2011Mauritius-Environment-Outlook-2011.PDF?sequence=3&%3BisAllowed>.

32 Murday and Grundlach (n 29) 4.

33 International Tanker Owners Pollution Federation Limited (ITOPF), "Mauritius Country Profile" (2022) <www.itopf.org/knowledge-resources/countries-territories-regions/mauritius/> accessed 19 April 2022.

The legal framework governing an oil spill

Existing legislation caters for measures to be taken in the case of any spill (an oil spill is not specified) and environmental emergency. If the oil spill occurs on land, the main laws applicable for the protection of the environment will be the Environment Protection Act (EPA) 2002 and for the national disaster response mechanism (the National Disaster Risk Reduction and Management (NDRRM) Act 2016). If the oil spill occurs in the maritime zones, the EPA, the NDRRM, the Maritime Zones Act 2005, the National Coast Guard Act 1988, the Merchant Shipping Act, and the Tourism Authority Act 2006 are applicable.

The EPA provides an administrative and institutional framework to protect and monitor the environment and its resources, including the management of the coastal and maritime zones. However, it does not have comprehensive provisions in the case of an oil spill. It merely empowers institutions in the case of any spill (it does not specify an oil spill) and environmental emergency and lays down notification duties and emergency measures to be taken (ss 29 to 35). The owner of the pollutant which is spilled is required to notify the director of the Department of Environment regarding the spill and to take any necessary action to address it. A public officer or any person who is informed or made aware of a spill, is required to notify the director of the Department of Environment. The EPA empowers the director of the Department of Environment to initiate any action in the case of a spill and take any measure necessary in the public interest to prevent, eliminate, or reduce the adverse effects on the environment, and to restore it to its previous state. The environment minister may prescribe procedures for clean-up and removal operations in the case of a spill. The EPA also gives powers of entry without a warrant to any person engaged in an action or measure taken by the director of the Department of Environment in the case of a spill or by the prime minister in the case of an emergency. The Integrated Coastal Zone Management Committee has duties and powers to protect and monitor the coastal zone and its resources. As for Rodrigues, the island chief executive has the powers of the director of the Department of Environment to provide assistance with respect to any spill. In consultation with the environment minister, the prime minister may declare an environmental emergency if there is a major environmental emergency. The environment minister may set up a technical committee to advise on scientific or technical aspects of environmental protection or make subsidiary regulations if there are potential threats to the environment caused by any spill. The EPA provides the right to claim damages from the owner/s of a pollutant for any person affected by a spill.[34] The EPA does not provide for an environmental right or principles of environmental law, although this legislation is inspired by the prevention principle and polluter pays principle.[35]

34 See s32.

35 Only "environmental stewardship" is mentioned in the EPA, s 2; For the prevention principle (the environment impact assessment requirements (EPA, ss 15–28A) and environmental

There is currently no constitutional provision regarding the protection of the environment or its resources.

A response mechanism for widespread economic and environmental damage in Mauritius and its territories is also provided for by the NDRRM Act, although both this legislation and the National Disaster Scheme do not specifically mention an oil spill. The National Crisis Committee is responsible for disaster risk reduction and emergencies and supervises the organisation of disaster response operations in collaboration with the National Emergency Operations Command and Disaster Response Unit and the Special Mobile Force (SMF).

The Maritime Zones Act, the National Coast Guard Act, the Merchant Shipping Act, and the Tourism Authority Act may apply to an oil spill in the maritime territories and inland waters of Mauritius. The National Coast Guards are a specialised unit of the police force, authorised to board a vessel to execute their duties or prevent any activity likely to constitute a threat to Mauritian maritime zones and any form of marine pollution. The Merchant Shipping Act administers navigation and safety rules and controls any vessel which has been sunk, wrecked, or stranded within the territorial waters of Mauritius. As the Receiver of Wrecks, the shipping director oversees wreck and salvage at any place on or near the Mauritian coast.[36] The Tourism Authority may take possession of pleasure crafts' wrecks in a navigational area.[37] Outside the limits of any port, if a wrecked vessel is likely to be an obstruction or danger to navigation, the master, owner, or agent may raise, remove, or destroy the vessel within 15 days of the occurrence of the event. While the director of shipping may carry out a preliminary enquiry regarding a shipping casualty, the minister responsible for shipping matters may cause a formal investigation to be made by a "court of investigation."[38]

With prospects of oil and gas exploration activities in Mauritian offshore territories, the Offshore Petroleum Act was voted in 2021 to set up a regulatory regime for oil and gas exploration and production in the Exclusive Economic Zone (EEZ) of Mauritius.[39] Surprisingly, this act was voted urgently not too long after the *MV Wakashio* oil spill.[40] Petroleum exploration companies must apply for a permit after a preliminary assessment of the likely impact of the

standards (EPA, ss 37–48); For the polluter pays principle (the Environment Protection Fee (EPA, s 66). National environmental policies and strategies have adopted approaches that are based on the precautionary principle, the prevention principle and the polluter pays principle.

36 Merchant Shipping Act, ss 132–133.

37 Tourism Authority Act, s 108.

38 RoM (n 14).

39 An area of over 2.3 million kilometres square (km2); This law repeals the Petroleum Act 1970.

40 Shaama Sandooyea, "Reading the 'Offshore Petroleum Bill' a Week Before the COP26: Out of Sight, Out of Mind Out of Hands?" *Le Mauricien* (Port-Louis, October 29, 2021) <www.lemauricien.com/le-mauricien/reading-the-offshore-petroleum-bill-a-week-before-the-cop26-out-of-sight-out-of-mindout-of-hands/454098/> accessed November 19, 2021.

proposed activities on the marine environment within the proposed prospecting area.[41] This permit may be approved by the recently created regulator[42] for petroleum-related activities subject to particular conditions. Although the Offshore Petroleum Act requires an environment impact assessment (EIA) for oil and gas exploration and production activities,[43] the permit holder will have to apply for an EIA licence only before the start of the petroleum activities. While the permit holder must use best environmental practices in accordance with prevailing international standards, there is no environmental plan or monitoring plan on marine ecosystems required.

At the regional level, the 1985 Convention on the Protection, Management and Development of the Coastal and Marine Environment of the Eastern African Region (the Nairobi Convention) to which Mauritius is a signatory, provides a mechanism for regional cooperation to combat marine pollution in emergencies. The Nairobi Convention provides the regional ocean governance framework to ensure the sustainable transboundary management of the marine and coastal environment by Eastern African coastal countries. The Nairobi Convention is the Eastern African regional treaty for the management of the marine and coastal environment under the UNEP Regional Seas Programme. This regional seas programme (18 regional seas initiatives) is the most important regional mechanism providing intergovernmental frameworks for the conservation of the marine and coastal environment with region-specific actions, implementing Part XII of the United Nations Convention on the Law of the Sea (UNCLOS). The Secretariat of the Nairobi Convention works with the Consortium for Conservation of Coastal and Marine Ecosystems of the Western Indian Ocean, national research institutions, and NGOs working on coastal and marine environment issues in the region. The Nairobi Convention encourages its members to have their NOSCPs[44] as well as bilateral or multilateral agreements on oil spill preparedness and response with other countries.[45] The protocol to

41 See the legal battle that environmentalists and local communities in South Africa undertook to stop Shell's five-month seismic survey for oil and gas exploration off the Eastern Cape coast. Esther Rose, "South Africa: No Go for Shell as Court Upholds Interdict on Wild Coast Seismic Survey" *AllAfrica.com* (17 February 2022) <https://allafrica.com/stories/202202170271.html> accessed 10 November 2022.

42 Department for Continental Shelf, Maritime Zones Administration and Exploration; Offshore Petroleum Act, s 17.

43 Offshore Petroleum Act, ss 85(2)(b) and 20(2)(c).

44 Comoros (2010), France (Reunion Island), Kenya (2014, being revised), Madagascar (2009, revised in 2017), Mauritius (2003, being revised), Mozambique (original date unknown, being revised), Seychelles (draft), Somalia (draft), South Africa (pending imminent signature) and Tanzania (2016, being revised).

45 Ernesta Swanepoel, "Oil Spills in the Western Indian Ocean, National Contingency Plan Fall Short" (Institute for Security Studies (ISS), Africa Report 31) 4 <https://issafrica.org/research/africa-report/oil-spills-in-the-western-indian-ocean-national-contingency-plans-fall-short> accessed 28 October 2021.

the Nairobi Convention Concerning Co-operation in Combatting Marine Pollution in Cases of Emergency in the Eastern African Region (Emergency Protocol) provides for the setting up of contingency plans and notification procedures to respond to emergency cases within the region. The Agreement on the Regional Contingency Plan for Preparedness and Response to Major Marine Pollution Incidents in the Western Indian Ocean was subsequently concluded with a draft Regional Contingency Plan for Preparedness for and Response to Major Marine Pollution Incidents in the Western Indian Ocean (draft Regional Contingency Plan) to enhance regional cooperation in the case of an oil spill.[46] In accordance with this agreement, Western Indian Ocean countries must make all efforts to develop and align the draft Regional Contingency Plan with the OPRC Convention, the Nairobi Convention, and its Emergency Protocol.

Mauritius has domesticated the main international instruments regarding oil pollution, liability, and damage to which it is a signatory (CLC; CLC PROT 1976; FUND Convention; FUND PROT 1976; OPRC Convention) by subsidiary regulations under the Merchant Shipping Act.[47] The shipping director ensures compliance with international standards with respect to oil pollution damage. The Merchant Shipping Act does not provide for the limitation of liability for maritime claims relating to oil pollution damage in respect of any liability incurred (art 195(d)). A civil liability action for oil pollution damage can be brought before the Supreme Court of Mauritius if the pollution damage resulting from the incident has been sustained in Mauritius, including its territorial seas or where measures have been taken to prevent or minimise such damage in that area.[48] The Maritime Zones Act has been enacted for UNCLOS to be applicable in Mauritius, and it sets the legal regime for Mauritian maritime zones. UNCLOS targets the equitable and efficient conservation and utilisation of marine resources in the ocean, including continental shelves and the deep seabed and coastal states of the same sub-region or region. States parties to the UNCLOS have an obligation to prevent and control marine pollution (art 192) and are liable for damage caused by violation of their international obligations to combat such pollution. In the case of damage as a result of marine pollution, the country where the vessel is registered/the private company owning or affiliated to the vessel, is responsible for the damage and has to ensure prompt and adequate compensation (UNCLOS, art 235).

46 *Ibid* 5.

47 International conventions that have been ratified by Mauritius, need to be domesticated by means of primary or subsidiary legislation to be applicable in Mauritian territories (Lim Tung (n 2) 69); See the Merchant Shipping (Civil Liability for Oil Pollution Damage and International Fund for Compensation for Oil Pollution Damage) Regulations 1996.

48 *Ibid* reg 11 (2).

The institutional framework governing an oil spill

In the case of an oil spill, different institutions may be responsible depending on whether the spill occurred on land or in maritime territories.

Regarding a terrestrial oil spill, the director of the Department of Environment is competent to initiate any necessary action or measure in the public interest to prevent, eliminate, or reduce its adverse effects on the respective environment and ecosystems. Officers of the *Police de l'environnement*[49] are members of the police force who provide the director of the Department of Environment and the island chief executive for Rodrigues, assistance to enforce environmental law. Since an oil spill may also bring widespread economic and environmental disaster, the national disaster response mechanism will also be triggered with the National Crisis Committee, the National Emergency Operations Command and Disaster Response Unit, and the Special Mobile Force (SMF).

Regarding an oil spill occurring in Mauritian maritime territories, institutions under the aegis of different ministries are responsible to monitor the maritime zones and to respond to disaster. The main institutions responsible to monitor and control an oil spill in the maritime zones are the director of the Department of Environment (as the director of the NOSCP), the National Coast Guards, the Mauritius Marine Authority, and the port authorities (the Port Master, the Mauritius Port Authority). The director of the Department of Environment convenes a National Oil Spill Contingency Committee to take necessary actions, and the National Coast Guards and the SMF mobilise on-site with oil spill combat equipment. The director of the Department of Environment, in consultation with the Ministry of Blue Economy and the National Coast Guards, advises on the deployment of booms around environmentally sensitive areas while the shipping director looks into salvage matters for the wreck.

After this overview of the oil spill regulatory framework in Mauritius, its weaknesses are discussed so that lessons can be drawn and recommendations made to better deal with an oil spill in the future.

Lessons to be learnt and recommendations regarding oil spill preparedness and environmental governance

In order to effectively address an oil spill and its consequences, oil spill preparedness and environmental governance is required before, during, and after the oil spill. Oil spill preparedness enables a country or region "to respond to an incident with suitable equipment, sufficient logistics and competent, trained responders supported by proven and exercised plans."[50] Good environmental governance implies adequate protection of flora and fauna with necessary

49 Environmental Police Unit.
50 Swanepoel (n 45) 3.

preventive and conservation measures. National and regional responses against an oil spill are of prime importance since a major oil spill might transcend national borders, and thereby cause transboundary environmental pollution as was the situation in the *Trail Smelter* case. Lessons to be learnt and recommendations for an adequate response at the national level are dealt first, followed by adequate response at the regional level.

At the domestic level

Stricter surveillance of maritime zones

One of the main lessons to be learnt from the *MV Wakashio* bunker oil spill is that stricter surveillance of the maritime zones is necessary. The *MV Wakashio* entered Mauritian waters within 12 nautical miles without being stopped, and it ran aground on the reefs, although the national coast guards are empowered to monitor the security of Mauritius. While foreign ships have the right of innocent passage in internal waters, there can be temporary suspension of the innocent passage of such ships in archipelagic waters, internal waters or the territorial sea for security purposes under the Maritime Zones Act. If bulk carriers like the *MV Wakashio* entered the Mauritian maritime zones without being stopped, other vessels may currently be entering such zones without interception. Terrorists or vessels carrying hazardous substances would not be deterred from entering Mauritian maritime zones. The unauthorised entry of the *MV Wakashio* in Mauritian internal waters is a wake-up call for Mauritius to tighten its maritime zones' security. A stricter accountability mechanism for the national coast guards to monitor the maritime zones is highly recommended.

Better handling of wrecks in maritime zones

The *MV Wakashio* oil spill could have been prevented if timely decisions had been taken by the national authorities/the ship's owner/the insurer regarding the shipwreck since it lay on the reefs for twelve days. Correct and timely handling of a shipwreck and salvage operation of the wreck is necessary with adequate equipment, especially if the wreck occurred in environmentally sensitive areas. There should be no procrastination to empty fuel tanks on board in the case of a shipwreck since the oil spill was caused by the rupture of one of the ship's tanks. With respect to the salvage operation of the wreck, dismantling should be a preferred option than breaking it and sinking it to avoid further contamination of the marine water with heavy metal toxins.

Although adequate measures concerning the shipwreck may have depended on decisions made by the insurer of the ship and other experts in the *MV Wakashio* case, swifter response measures to empty a ship's fuel tanks as well as the environmentally friendly disposal of the wreck should be future priority considerations. Since the Shipping Ministry was responsible for the wreck

of the *MV Wakashio*, capacity training to handle a shipwreck efficiently while respecting best environmental practices in collaboration with the Ministry of Environment is necessary.

Adequacy of the oil spill contingency plan in the MV Wakashio oil spill case

Although the NOSCP was activated, only essential combat equipment to deal with oil spills of less than 10 MT was available, whereas more than 1000 MT of oil leaked from one of the bunker fuel tanks of the *MV Wakashio*.[51] The take-home message is that a NOSCP is inadequate if it falls short of the preparation, capacity, and resources required to effectively address a spill. A NOSCP should be regularly updated and cater for different oil spill scenarios with identification of logistics and oil spill combat equipment from neighbouring countries if the scale of an oil spill is beyond existing technical capacity and resources. There should be no underestimation of any future oil leakage. Despite the lack of resources, hundreds of local volunteers from different parts of Mauritius were key stakeholders in addressing the oil spill through rudimentary methods. Involving local stakeholders in addressing an oil spill is of utmost importance.

Regular updates of the NOSCP, adequate planning and resources, planned scenario-based drills, and staff capacity to fight different oil spill scenarios are highly recommended. Not only mainland Mauritius needs an adequate NOSCP, but also all Mauritian territories urgently need an oil spill contingency plan with logistics and oil spill combat equipment identified from neighbouring countries or through international assistance. There should be an accountability mechanism concerning the effective use of funds received from international or regional sponsors to update the NOSCP or upgrade oil spill response in terms of staff capacity and resources.

Coordinated and swift response to fight an oil spill

Since several institutions under different ministries as indicated earlier are responsible for marine pollution and disaster response, a coordinated and swift response to an oil spill among such institutions is necessary. However, there were coordination challenges for the National Crisis Committee to supervise the operations to address the oil spill with the director of the Department of Environment, the shipping director, and multiple foreign assistance teams amidst Covid-19 restrictions. The review of the oil spill contingency strategy and response capacity is recommended with regular training for interagency coordination.[52] Regular simulations of risks, protocols for communication,

51 RoM (n 3).

52 The NOSCP was updated in 2021 with On-Scene Coordinators and three advisory teams; however, regular training and simulations are necessary (ITOPF (n 33)).

necessary equipment, drills, and technical capacity are recommended with all stakeholders in view of better coordination and harmonised response amongst first responders and second responders. Specific institutions to fight an oil spill must be set up for all Mauritian territories.

Better planning and implementation for the protection of fauna and flora

Although the NOSCP included mitigation measures for birds in the case of an oil spill, no information is available on whether these were activated.[53] The main lesson here is that a NOSCP must have emergency protective strategies for fauna and flora (especially for environmentally sensitive areas) that can be easily implemented. If there is no adequate protection of flora and fauna with necessary preventive and conservation measure, more effort and equipment will be required to clean and restore the affected flora and fauna in the case of an oil spill. Transparency about the containment, salvage and clean-up operations of the *MV Wakashio* oil spill by the national authorities is also necessary.

It is highly recommended that the NOSCP includes a wildlife, fauna, and flora response plan with emergency protective measures and staff training to monitor and restore the impacted ecosystems (particularly the mangrove forests sheltering crustaceans, mollusks, fish, etc.) based on recent research advancements. Guidelines to clean and restore mangrove forests are necessary. A sample of the ship's VLSFO fuel oil was sent to Australia and France,[54] but no information is available regarding how the results have been used. It is recommended that these results are examined to understand the risks and effects of this fuel on marine fauna and flora and to better assist the oil spill modelling for Mauritius. Another recommendation is that the EPA should require the operator of every potential spill source (e.g., a tanker ship, oil refinery) to have an emergency oil spill response plan with adequate technical capacity and resources in line with the polluter pays principle. Further, the setting up of a national multidisciplinary committee is necessary to evaluate the economic and environmental damage caused by the oil spill and determine compensation for the clean-up costs, environment restoration measures, and economic recovery for such damage. An update of the latest status of coastal and marine biodiversity in the area affected by the *MV Wakashio* oil spill is necessary.[55] It is also recommended that a claim for damages be made by the Attorney General against the owner of the pollutant concerning the damage caused to the

53 Murday and Grundlach (n 29) 43.

54 Ministry of Environment, Solid Waste Management and Climate Change (Ministry of Environment), 'Statement of Minister Ramano on 28 August 2020' 1 <https://environment.govmu.org/Documents/wakashio/Statement%20of%20Minister%20Ramano%20on%2028%20August%202020.pdf> accessed 7 April 2022.

55 Agulhas and Somali Current Large Marine Ecosystems Project (ASCLME), *National Marine Ecosystem Diagnostic Analysis: Mauritius* (UNDP and GEF 2012).

environment that is not subject to private ownership as per s 32(5) of the EPA. It is high time to introduce an environmental right and principles of environmental law (e.g., precautionary principle, polluter pays principle) in the EPA in line with art 24 of the African Charter on Humans and Peoples' Rights[56] to which Mauritius is a state party.

Strict environmental governance for offshore oil and gas exploitation activities

With oil and gas exploration activities in the EEZ of Mauritius and Seychelles in the near future, better oil spill preparedness and strict environmental governance is a must. Offshore oil and gas exploration occur on continental shelves with shallow areas compared to the high seas, and these continental shelves are rich in biodiversity.[57] Although the Offshore Petroleum Act has some provisions for environmental protection,[58] it is recommended that an EIA (and not only a preliminary assessment of the likely environmental impacts) is made compulsory before the approval of any permit for oil and gas activities. It is highly recommended that this act includes strict environmental monitoring with an oil pollution emergency plan[59] for oil and gas explorations (during and after (decommissioning) the activities) in accordance with article 6 of the OPRC Convention. An open bidding process is recommended to award an exploration and production licence with strict environmental governance and approve a petroleum agreement in view of better transparency. Mauritius needs to limit the number of companies wishing to engage in such activities subject to their technical and financial capacity to manage oil leakage or an oil spill. It is important to test potential offshore spill incident scenarios for better oil spill preparedness in the EEZ close to the *Cargados Carajos* and Nazareth Banks, which are important for the fisheries industry. The development of a regional petroleum hub could, unfortunately, be at the expense of a sustainable blue economy for Mauritius. With the risk of an oil spill in other islands and offshore maritime territories under Mauritian and Seychelles jurisdiction, oil spill preparedness and environmental governance are also imperative for the region.

56 Introducing an environmental right in the Mauritian Constitution (e.g., chap II) may prove more difficult since a constitutional amendment needs to be voted by three-quarters of the National Assembly (Mauritius Constitution, s 47(2c)).

57 Sandooyea (n 40).

58 E.g. ss 6(f) (the regulator may draft strategies to minimise impacts on the marine environment), 9 (c) (mandatory insurance covering any damage to the environment), 9(k) (measures to be taken in case of environmental damage), 9(l) (environmental code of practice), 13 (declaration of reserved areas).

59 A contingency plan is required during the conduct of activities (s 17(2)(o)) but not after the decommissioning of activities.

At the regional level

Since the East African coast is a major route for transporting crude oil supplies, and with oil and gas exploration activities in the region in the coming years, the countries in this region individually but also collectively need to have an efficient oil spill response that would protect the environmental integrity of coastal and marine resources. The following subsections present the main lessons and recommendations for an adequate oil spill response and environmental governance at the regional level.

Finalisation of draft regional contingency plans

Although significant work for oil spill contingency planning has been completed, there should be no procrastination to finalise a regional contingency plan to identify funds, technical resources, and capacity building. Oil spill preparedness ensures that oil spill response planning is finalised and is ready to be implemented when necessary, and not merely assumes that assistance for oil spill response is available in the case of a spill.

Whereas the Mauritius Environment Outlook Report[60] indicated that a Western Indian Ocean Sub Regional Oil Spill Contingency Plan is available in the case of an oil spill, no information is publicly available on this contingency plan. The Western Indian Ocean Islands Oil Spill Contingency Planning (OSCP) project (1999–2004)) was completed for Comoros, Madagascar, Mauritius, and Seychelles to plan oil spill response in such countries.[61] The 2012 Regional Cooperation Agreement for Oil Spill Monitoring in the Western Indian Ocean Region[62] did not materialise due to insufficient resources. It is not clear if the draft Regional Contingency Plan referred to earlier, in terms of response to Major Marine Pollution Incidents in the Western Indian Ocean, has been adopted to be implemented[63] or if it is still a theoretical plan. Implementing the Emergency Protocol under the Nairobi Convention on cooperation and the establishment of contingency plans for an effective response within the region is also incomplete.[64] Although states parties to the Nairobi Convention are required to set up a national mechanism to counter marine pollution, they still have different human, technical, and financial capacities to respond to marine pollution incidents.[65] It

60 RoM (n 31) 96.

61 *Ibid*; Swanepoel (n 45) 5.

62 Signatories are Comoros, Kenya, Madagascar, Mozambique, Mauritius, Seychelles, South Africa, and Tanzania. Swanepoel, *Ibid*.

63 Peter Taylor, *Regional Oil Spill Preparedness in Eastern Africa and the Western Indian Ocean* (United Nations Environment Programme (UNEP)/Nairobi Convention and the International Maritime Organization (IMO) 2020) 15.

64 *Ibid* 10.

65 Swanepoel (n 45) 4–5.

is important for East African coastal states to identify which draft regional contingency plan at the subregional and regional levels is/are more likely to receive necessary funding and ensure its/their finalisation. It is recommended that the Western Indian Ocean Sub Regional Oil Spill Contingency Plan and the draft Regional Contingency Plan should be implemented in line with the principles and articles of the OPRC Convention, the Nairobi Convention and its Emergency Protocol. Regional oil spill contingency plans with a notification procedure will bring the adequate framework for national planning for oil spill preparedness in the East African coastal and Western Indian Ocean regions.

Setting up of a Regional Coordination and Response Centre

A regional coordination and response centre (RCRC) for the East African region is essential to facilitate technical cooperation for oil spill preparedness and marine pollution among states parties to the Nairobi Convention within a structured context. Joint multilateral exercises and drills could be regularly organised by the RCRC. Regional cooperation would then be ongoing instead of *ad hoc*, and oil spill combat equipment or technical support could be available faster from within the region. Although some resources were made available for the Regional Marine Pollution Coordination Centre (RMPCC) for response in the Western Indian Ocean Region through the Western Indian Ocean Marine Highway Development and Coastal and Marine Contamination Prevention project from 2007–2012, this centre is yet to be set up.[66] Mauritius initiated discussions with the Indian Ocean Commission for the setting up of a RCRC since the one set up by this commission in Madagascar is not currently operational.[67] Or perhaps the East African countries could negotiate with the European Union (EU) to benefit from the assistance of the Regional Coordination Operational Centre in the Seychelles funded by the EU[68] until the RCRC is set up. While there was general consensus by countries of the Western Indian Ocean region in 2020 that South Africa could host the RCRC with a host country agreement and funding mechanism, it has not been finalised with the Covid-19 pandemic and lockdown restrictions.[69] Strong political will from participating countries is undoubtedly necessary for eventual consensus on the most appropriate model of RCRC, its operational structure, and management. Importantly, the identification of a sustainable financial mechanism either at the national or international level will be a determining factor to its setting up.

66 *Ibid* 7.
67 *Ibid*.
68 Taylor (n 63) 16.
69 Swanepoel (n 45) 7.

Enhanced cooperation with international and regional institutions

While there is a need for building regional response capacity to combat major oil spills, capacity for oil spill preparedness, and environmental disaster relief could be costly and collaboration with international, regional, and private institutions, is necessary. Enhanced collaboration with international institutions is highly recommended for African coastal states to avail themselves of technical and financial assistance through the IMO and other international bodies. Enhanced cooperation is also required with regional institutions. In the context of "2050 Africa's Integrated Maritime Strategy (2050 AIM Strategy)," the African Union (AU) is called to harmonise regional training in oil spill responses and set up a long-term mechanism for the implementation of regional coordination.[70] There is also potential for better regional cooperation at the subregional level and African coastal states must target avenues offering the best resources, capacity training, and regular exercises instead of multiplying agreements which fail to materialise. Importantly, financial and technical cooperation with private institutions and NGOs should not be neglected.

Conclusion

As a prime tourist destination, Mauritius has been badly impacted by the *MV Wakashio* oil spill, although it had an oil spill contingency plan. As indicated in the above analysis, many lessons could be learnt from this oil spill and ensuing environmental catastrophe. Mauritius needs to strengthen the security of its maritime zones and improve the capacity and accountability of its national coast guards for better surveillance of its maritime zones. Having a NOSCP is not enough, if it is not adequate. Other lessons are that emptying fuel tanks are a priority for a shipwreck and dismantling a wreck is better than deliberately sinking parts of the wreck. Importantly, adequate oil spill response is required for maritime zones and for land spills that require other specific techniques and exercises.

With the future prospects of petroleum exploration activities in Mauritius and Seychelles offshore maritime territories, there will be more risks of an oil spill occurring in the Western Indian Ocean region. While it is acknowledged that country-specific preparedness and measures are salutary to avert probable environmental impacts of such spills, it is hoped that country-specific preparedness could be strengthened by collective regional preparedness to respond to oil spills as well as other hazardous substances spills with strict environmental monitoring. The finalisation of draft contingency planning at the regional and sub-regional levels, a regional coordination centre, and enhanced cooperation with international and regional institutions are necessary and important

70 African Union (AU), "2050 Africa's Integrated Maritime Strategy (2050 AIM Strategy)" (2012) <https://au.int/sites/default/files/newsevents/workingdocuments/33832-wd-african_union_3-1.pdf> accessed 18 November 2021.

to respond to major pollution that could transcend national capacity or transboundary movement of pollution.

With the national strategy to develop a blue economy, Mauritius needs a clean and healthy marine environment. Yet, allowing petroleum exploration activities in its offshore maritime territories does not seem to be compatible with this national strategy. Time will tell whether Mauritian maritime territories will be home to an offshore petroleum hub with all the risks caused to the marine environment or a sustainable blue economy as envisioned.