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Residual Liability in Tanzania's Offshore Upstream Petroleum Operations: The Legal Framework

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Abstract

Decommissioning of offshore upstream petroleum installations presents challenges related to residual liability and protection of the marine environment. This article examines the laws governing abandoned offshore upstream petroleum installations, aiming to unravel the complexities surrounding residual liability to unlock the ocean's future. It adopts the view that although decommissioning is governed by the international legal regime, residual liability is left to the national legal regime. The article appraises Tanzania's legal regime as a critical aspect to determine the extent to which residual liability is taken care of in offshore upstream petroleum operations. The article appreciates the milestone Tanzania has gone by including residual liability as a post-decommissioning aspect in upstream petroleum operations. Through a combination of desktop research and semi-structured

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interviews, the study reveals the glaring gaps and weaknesses in the existing legal framework, specifically regarding the protection of marine resources and the environmental impact of abandoned offshore infrastructure. The article further sheds light on the urgent need for robust regulations and guidelines to effectively address these critical shortcomings. It finally concludes that a comprehensive and proactive approach is crucial in addressing residual liability, including adopting clear regulations and guidelines governing decommissioning in upstream petroleum operations.

Keywords

Residual Liability; Decommissioning; Offshore; Upstream; Petroleum

1. Introduction

In the pursuit of a sustainable future, the global community has prioritised the responsible and sustainable use of our oceans. Goal 14 of the Sustainable Development Goals (SDGs) underscores the significance of preserving life below water, thus, emphasising the need for sustainable exploitation of marine resources and the maintenance of a healthy ocean ecosystem.[1] This imperative extends to economic activities conducted within the ocean, including offshore upstream petroleum operations, which must carefully consider the ocean's well-being.

While early international conventions required the complete removal of offshore installations upon project expiration, subsequent conventions have introduced options for partial removal or re-purposing the installations, such as transforming these installations into artificial reefs.[2] Tanzania, too, has embraced these alternative approaches within its Petroleum Act, providing licence holders with the discretion to choose among total removal, partial removal, or change of use for offshore installations.[3] Studies have shown that there is beneficial value in choosing partial removal or change of use, including environmental and commercial benefits.[4] However, the concept of residual liability associated with these options remains critically under-addressed, hence, potentially posing risks to the marine environment.

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[1] United Nations, The 17 Goals Sustainable Development – SDGs, available at https://sdg.un.org/ghttps://sdgs.un.org/goal.

[2] Geneva Convention on the Continental Shelf, 1958.

[3] See Petroleum Act No. 21 of 2015, ss. 3 & 187(4) provide for the definition of decommissioning.

[4] Smyth K et al 'Renewables-to-reefs? – Decommissioning Options for the Offshore Wind Power Industry' *Marine Pollution Bulletin* (Vol. 90, No. 1-2, 2015), 250; Zagonari F, 'Decommissioning vs. Reusing Offshore Gas Platforms within Ethical Decision-Making for Sustainable Development: Theoretical Framework with Application to the Adriatic Sea' *Ocean and Coastal Management* (Vol.199, 2021) 14.

This is the first study appraising Tanzania's legal regime governing residual liability of left upstream petroleum installations. Guided by the hypothesis that, the Tanzania's legal framework fails to comprehensively address this crucial aspect, this article examines the Petroleum Act to determine its effectiveness in managing upstream petroleum operations left in the ocean. While the Act mandates the transfer of left installations to the state, in the case of partial decommissioning, it remains silent on the subsequent management of these installations to mitigate potential impacts on the marine environment. The inadequate address of this critical part in the Act leaves the marine environment at risk. It also negatively affects the implementation of SDG 14, the principle of sustainable development, as well as inter-generational equity. Through a combination of desktop research and semi-structured interviews, this article demonstrates the pressing need to strengthen and address the management of abandoned petroleum upstream installations.

This article is organised into eight sections. The first section covers introduction, the second section is on the impacts of the left offshore upstream petroleum installations on marine environment, the third section unravels the concept of residual liability, the fourth section covers the approaches governing residual liability, the fifth section covers residual liability in the international legal regime, the sixth section is on residual liability in Tanzania's legal regime, the seventh section is on the challenges in Tanzania's legal regime and the last section is conclusion.

2. The Concept of Residual Liability

The term residual liability is an emerging concept in the petroleum industry. Anchustegui defines residual liability to mean obligations tied to the licence holder or operator or owners of the offshore petroleum installations after conducting the decommissioning process.[5] It is a liability evolving once the decommissioning operation ends and all or part of the installations and pipelines remain *in situ* or are used as artificial reefs.[6] According to Martin, residual liability is a potential obligation remaining after the successful decommissioning and disposal of petroleum infrastructure.[7] It is a responsibility associated with petroleum infrastructure left in place after decommissioning.[8]

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[5]Anchustegui H., et al, 'Understanding Decommissioning of Offshore Infrastructures: A Legal and Economic Appetiser' (2021)32. Available at SSRN: https://ssrn.com/abstract=3882821 or http://dx.doi.org/10.2139/ssrn.3882821.

[6] Torabi F. & Nejad S., 'Legal Regime of Residual Liability in Decommissioning: The Importance of Role of States' *Marine Policy* (Volume 133, 2021) 2.

[7] Martin T, 'Decommissioning of International Petroleum Facilities: Evolving Standards and Key Issues' *Oil, Gas & Energy Law Journal (OGEL)* (Vol. 1, No. 5, 2003)10.

[8] Pereira E, et al, 'Addressing Residual Liability and Insolvency in Disused Oil and Gas Infrastructure Left in Place: The Cases of Brazil, Nigeria, and Trinidad and Tobago' *The Journal of Sustainable Development Law and Policy*, (Vol. 11 No. 2, 2020) 329. https://dx.doi.org/10.4314/jsdlp.v11i2.

Torabi and Nejad categorise liabilities related to decommissioning of upstream petroleum facilities into three: pre-decommissioning liability, decommissioning liability and post-decommissioning liability.[9] Residual liabilities fall in the third category, which is the post-decommissioning liability. Although it has been shown that both partial and complete decommissioned facilities may give rise to residual liabilities, the level of liability in a complete decommissioned facility is likely to be low compared to that of the left *in situ* decommissioned facilities.[10] Residual liability applies when the petroleum installations have been left in place wholly or partly.

In addressing residual liability, two key aspects are important to be considered. These are ownership and liability. In ownership, the question should be who will be the owner of the left offshore facility. In liability, the question should be who will bear: first, the financial liability to fund maintenance, repair, as well as ongoing monitoring and clean-ups when leaks happen and second, who will be responsible to act in maintaining, repairing and conducting ongoing monitoring to ensure that the left infrastructure does not cause harm to third parties, such as in case of collision with ships or boats used for fishing or marine environment. This also includes acting on clean-up in case of leaks of contaminants from the left facilities. Torabi, citing Martin, mentions the areas to be covered in residual liability to include 'responsibility for repair and maintenance, ongoing monitoring, contingent liability or third-party liability, marine environmental damages, potential damages to fisheries and compliance with future legal and regulatory requirements.'[11]

Residual liability comprises two responsibilities: pecuniary responsibility and obligation to act.[12] Pecuniary responsibility is one which has everything to do with financial responsibility of taking care of the partially left or abandoned offshore infrastructure. On the other hand, obligation to act includes taking a physical or administrative action to maintain by repairing the damage, closing the leaking wells, cleaning the seabed and the like obligations arising from the partially left or abandoned offshore petroleum infrastructure.[13] This article adopts a broad context of residual liability to include both financial liabilities and responsibilities arising from the left offshore petroleum installations.

3. Approaches Governing Residual Liability

Residual liability needs to be addressed, especially when partial decommissioning abandonment or re-use is opted for in decommissioning of offshore upstream petroleum operations. For offshore decommissioned facilities, defining the obligations and liabilities clearly prevents the presence of hazards in the marine environment and its resources after decommissioning of the offshore

[9] For detailed discussion about the three categories see Torabi and Nejad (n 15) 2.
[10] Ibid.
[11] Ibid, 3. See also Martin (n 16) 11.
[12] Anchustegui (n 8)32.
[13] Ibid.

petroleum facility.[14] The rationale behind this is to ensure that the infrastructures left *in situ* are monitored and managed to ensure that the marine environment is not polluted.[15] Research shows that, no matter how depleted petroleum rigs may be, they always contain residuals which may be toxic.[16] Abandoned wells may cause leaks. This necessitates the need for provision of monitoring of wells sites left after decommissioning.[17] The decommissioning of an oilfield does not end with removal of installations and other associated activities; there must be a robust system in place that will provide subsequent monitoring of the wells' sites for some years after decommissioning has been carried out.[18]

A notable incident reported by Reuters in 2020 justifies the need to have a clear address on who bears residual liability of the partially decommissioned or abandoned upstream petroleum facility.[19] In this incident, a great challenge which arose was the failure of the regulators to find the owner of the leaking abandoned wells. The reason behind that failure was that the company which drilled the wells denied the liability as it had sold the assets of the company to another company. At the same time, the buying company denied the liability on the ground that it never operated the wells and hence it claimed to have no responsibility to maintain or plug them.[20]

Residual liability can take three different approaches including; owner-centred liability, state centred liability and mediate liability.[21] Owner-centred liability is also known as owner-based liability, state-centred liability also known as state-based liability and mediate liability is also known as the liability of the transferee.[22]

3.1 Owner-centred liabilities approach

In the owner-centred liability approach, the obligation of the owner will not end up with decommissioning only but will perpetually extend to the future liabilities which might arise from the decommissioned facility. This entails that the responsibility to repair, maintain, monitor, third-party liability and environmental damages which may result from the remains of the facility will be borne by the

[14] Ibid, 2.
[15] Ibid.
[16] Agbaitoro G & Kejeh N, 'Moving Towards Robust Governance Regime of Decommissioning of Offshore Energy Installations in Nigeria Petroleum Industry' *MQLR* (Vol. 2, No. 3, 2017) 4.
[17] Ibid.
[18] Ibid, 16. See also Groom N, 'Special Report: Millennium of Abandoned Oil Wells are Leaking Methane, A Climate Menace' online available at https://news.trust.org/item/20200616101731-evexk 232.
[19] Groom, Ibid.
[20] Ibid.
[21] Torabi and Nejad (n 15)4.
[22] Lund L, 'Residual Liabilities are Imposed to an Owner of Offshore Oil and Gas Installation regardless of its Decommissioning Obligations Expanding the Concept of Residual Liability' (Thesis, Orebro University, 2021) 27.

owner of the facility perpetually.[23] 'Any residual liability remains with the owners in perpetuity'.[24]

Among the advantages of this approach are that it reduces the burden to the government and public to bear the cost resulting from the activity of another person. Hence, it embraces one of the key international environmental principles that the one who pollutes must bear the cost of rehabilitating the polluted environment. However, the challenges with this approach are that the environment is put at risk because the owner, at that time when the liability arises, is no longer gaining anything from the facility. Consequently, the level of commitment to repair, maintain and monitor the facility to avoid environmental damages is likely to be low compared to where the activity would be done by the state. Therefore, although the approach is beneficial economically, it may risk protection of marine resources and safety of the environment in general.

3.2 State Centred Liability Approach

The state-centred liability approach entails that all future liabilities and responsibilities with regard to maintenance, ongoing monitoring, third-party damages, environmental protection and management will be borne by the state. It is the international obligation of the state under the Convention on the Law of the Sea to ensure that marine environment within its jurisdiction is conserved.[25] Coastal states are required to adopt laws and regulations as well as to take other measures to protect the marine environment from pollution by dumping.[26] Therefore, states are responsible to take care of the marine environment from all the sources of pollution that are likely to result from any activity, including the left installations. Hence, the 'state-centric' approach (State centred liability) to residual liability is the stand of the international law of the sea.[27] The advantage of this approach is that there is confidence on environmental protection when it is the state that is responsible for maintaining, repairing and monitoring the left infrastructure.

Transferring the liabilities to the state provides flexibility and practical solutions when damage occurs.[28] It reduces the danger of uncertainty and holds people accountable for the benefits they will receive.[29] On the other hand, the main disadvantage of this approach is that the state and its citizens bear the financial costs resulting from the facility, whose profit was enjoyed by the third party, the oil company. Hence, in the absence of any financial arrangement between the state and the owner of the facility, bearing residual liability by the state is a

[23] Thomas A, cited in Torabi & Nejad (n 15).
[24] Hammerson M, *Upstream Oil and Gas, Cases, Materials and Commentary* Globe Law and Business, 2011, 569.
[25] UNCLOS art 210.
[26] Art 210.
[27] United Nations Convention on the Law of the Sea (UNCLOS), 1982 puts obligation to manage marine environment to the state not private companies see art 120.
[28] Torabi and Nejad (n 15)7.
[29] Ibid.

burden to the state and its citizens. The approach shifts the burden from the polluter to the state.

3.3 Mediate Liability Approach

The third approach which is mediate liability entails that, where there is partial decommissioning and part of the installations are left *in situ*, upon a special financial agreement between the state and owner of the facility, residual liability is transferred from the owner to the state.[30] A 'transferred liability is held with a lump sum payment for potential damage'.[31] This approach is commendable as it ensures that the financial burden of maintaining the left infrastructure is borne by the polluter through the special financial agreement and at the same time, the environment is left under the safe hands of the state. However, the challenge associated with the approach is that it is not a mandatory approach in most jurisdictions, including Tanzania, but an option upon the agreement between the state and the owner of the facility. Being an option, it is upon the choice of the owner to accept having such an agreement or not. It is important to also note that the mediate liability is not only limited to transfer to the state. Research shows that, there can be a circumstance where transfer of liability can be done to another entity including limited liability companies, non-profit trusts or private conservation entities.[32]

4. Impacts of the Left Offshore Upstream Petroleum Infrastructure on Marine Environment

Leaving offshore upstream petroleum installations after undertaking a partial decommissioning has both positive and negative impacts on the marine environment and its resources. The main advantage is saving marine living resources and communities that have established themselves around the petroleum production rigs.33 It also helps in increased ecological connectivity, thus leading to genetic homogeneity.34 The rigs also may serve as a barrier in sensitive areas like nursery grounds.35 The removal of thousands of tons of unused installations from the onshore would have significantly less of an environmental impact than employing left installations for direct maritime environmental protection.36 It may also increase the dispersal of contaminants by disturbance of drill cuttings, which would not have dispersed if the installations

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[30] Ibid.
[31] Ibid, 5.
[32] Jagerroos and Krause (n 5)2.
[33] Jagerroos S and Krause P, 'Rigs-To-Reef; Impact or Enhancement on Marine Biodiversity' *Journal of Ecosystem & Ecography* (Vol. 6 No. 2, 2016)2. DOI: 10.4172/2157-7625.1000.
[34] Ibid.
[35] White A et al, *Artificial Reefs for Marine Habitat Enhancement in Southeast Asia* United States' Coastal Resources Management Project, Education Series 7 (1990) 6.
[36] Ekins P, et al, 'Decommissioning of Offshore Oil and Gas Facilities: A Comparative Assessment of Different Scenarios' *Journal of Environmental Management* (Vol. 79, No. 4, 2006) 437.

were left *in situ*.[37] However, the approach can result into several disadvantages, if it lacks a comprehensive address of the future risks associated with the left infrastructure. For example, the left infrastructure can lead to the decreases of marine pollution due to the release of contamination from the installations, fire which can kill living marine resources in case of fire incidents, financial liabilities to conduct clean-ups in case of leaks of contaminants, ongoing monitoring, repair and maintenance, contingent liabilities or third-party liabilities resulting from collision, pollution or other.[38]

The unused petroleum installations can pose a significant risk to both the environment and other users of the sea.[39] In support of this argument, Kho and others point out that, mercury is one of the well-known components of oil and gas reservoirs and it has adverse ecological effects including bioaccumulation and bio magnification in the food web and toxicity to marine organisms.[40]

5. Residual Liability in the International Legal Regime

The fundamental law governing the use of the ocean at the international level is the United Nations Convention on the Law of the Sea (UNCLOS). This Convention was adopted in 1982 to replace its predecessor, the London Convention of 1954 which came into force in 1958. In the latter Convention, the requirement of the law was that any disused infrastructure in the seabed should be totally removed (complete removal from the sea). The rule in this law was absolute and had no option for partial removal. As noted in some literature, it was found that the unqualified requirement to conduct total removal of the petroleum infrastructure could not cope with the development of technology which led to offshore drillings. It was noted that the complete removal of offshore drillings was highly expensive. With these developments, the complete removal requirement became a bad law.

Therefore, with the adoption of the UNCLOS, the rule was qualified. UNCLOS allowed partial decommissioning. As a general rule, article 60 (3) requires installations or structures which are abandoned or disused to be removed. It requires such removal to have due regard to fishing, the protection of the marine environment, as well as the rights and duties of other states. However, the subsequent part of the provision gives room for partial removal with a requirement to publicise the depth, position and dimensions of such installations

[37] Sommer B, et al, 'Decommissioning of Offshore Oil and Gas Structures – Environmental Opportunities and Challenges' *Science of The Total Environment* (Vol. 658, No. 10, 2018) doi: 10.1016/j.scitotenv.2018.12.193

[38] Ole NC., et al, 'Decommissioning Oil and Gas Installations: The Challenge of Residual Liability' in Pereira E et al, *The Regulation of Decommissioning, Abandonment and Reuse Initiatives in the Oil and Gas Industry from Obligation to Opportunities* (Kluwer Law International BV, The Netherlands 2021)153.

[39] Ibid.

[40] Kho F et al, 'Current Understanding of the Ecological Risk of Mercury from Subsea Oil and Gas Infrastructure to Marine Ecosystems' *Journal of Hazardous Materials,* (Vol. 438, 2022) 10.

or structures which are not entirely removed.[41] It is to be noted, however, that the UNCLOS has no comprehensive coverage on post-decommissioning obligations.

The International Maritime Organisation (IMO) Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Zone[42] have a brief address on post-decommissioning obligations, that is, residual liability. The Guidelines require that the disused infrastructure be left offshore with adequate maintenance of disused installations above the surface.[43] Moreover, partial removal should not cause impacts to navigation and the remains should be marked. [44] Remarkably, the person responsible for monitoring the condition of any remaining material should be identified, and the liability for meeting any claims for damages which may arise in the future should be clear. According to the Guidelines, the coastal states are required to ensure that the responsibility for maintenance and financial liability for future damages with regard to offshore infrastructures left, are clearly established.[45] The Guidelines emphasises on three key issues: unambiguous owner of the left installations, clearly established responsibility for maintenance, and clearly established financial ability to assume liability for future damages. However, the Guidelines do cover every aspect of residual liability in a detailed manner. Therefore, the regulation of residual liability is left upon the state to regulate.[46] In emphasising this, Lund clearly elucidates that although decommissioning is well addressed in the international legal regime, the concept of residual liability as a concept is fully left to be governed by the national laws.[47] On this ground, the national laws and regulations need to be comprehensive in addressing residual liability, as international law has left the matter to the hands of the state.

6. Residual liability in Tanzania's Legal Regime

The key legislation governing petroleum operations in Tanzania is the Petroleum Act.[48] The Act governs the whole process of petroleum operations from exploration to decommissioning. It further addresses post-decommissioning issues including residual liability. The Act puts the liability of decommissioning the facility which has expired on the licence holder and the owner of the facility. It allows complete removal, partial removal or abandonment of the facility.[49] Section 193 covers post-decommissioning liabilities.[50] It places the liability of damage or inconvenience caused in connection with the disposal of the facility or

[41] United Nations Convention on the Law of the Sea, 1982, art 60 (3).
[42] Adopted on 19th of October, 1989, Resolution A. 672 (16) International Maritime Organisation (1989) see art 3.11
[43] See Guidelines 3(3).
[44] Ibid.
[45] See Guideline 3 (11).
[46] Ibid.
[47] Lund (n 32) 5.
[48] Petroleum Act No. 21 of 2015
[49] Ibid, s 187 (4).
[50] Petroleum Act (n 3).

other implementation of the decision on a person who decommissioned the facilities.[51]

Since the Act recognises abandonment as an option of decommissioning, it places the liability of damages in connection with the abandoned facility, that is, residual liability to the holder of the licence or owner of the facility.[52] It also provides for both joint and several liabilities for all financial obligations where there is more than one party liable for damages caused in connection with the disposal or abandonment of the facility.[53] The Act further requires the future maintenance, responsibility and liability of the abandoned facility to be borne by the government upon existence of agreement of financial compensation.[54]

The Environmental Management Act which is the principal legislation on environmental Issues in Tanzania also provides for the requirement of decommissioning and restoration of the environment after expiry of petroleum operations.[55] The Act however, does not expressly provide for the future liabilities for the partially decommissioned facilities. However, it recognises the Polluter Pays Principle in addressing environmental liabilities.[56] It defines the Polluter Pays Principle to mean:

> … a mechanism whereby the cost of cleaning up any element of the environment damaged by pollution, compensating victims of pollution and beneficial uses lost as a result of an act, of pollution and other costs that are connected with or incidental to the foregoing, is to be paid or borne by the person convicted of pollution under this Act or any other applicable law.[57]

Moreover, the Environmental Management Act, under section 109, prohibits water pollution and discharge of hazardous wastes. The Act also requires the polluter to pay the cost for removal and compensate third parties (reparation, restoration, restitution or compensation).[58] Thus the Environmental Management Act indirectly addresses future liabilities, which is at the heart of residua liability.

7. Legal Challenges of Regulating Residual Liability of Left Offshore Installations in Tanzania

The legal regime in Tanzania encounters several challenges related to residual liability on left offshore petroleum infrastructure. The challenges, in turn, may affect the wellbeing of marine environment. These challenges include:

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[51] Ibid, s 193(1).
[52] Ibid, s 193(2).
[53] Ibid, s 193(3).
[54] Ibid, s 193(4).
[55] Environmental Management Act, No. 20 of 2004, s 102.
[56] Ibid, ss 5(3) (b) &7(d).
[57] Ibid, s 3.
[58] Environmental Management Act, (n 58) ss 109 & 110(3)..

7.1 Lack of clarity regarding liability for partial decommissioning

Section 193 (2) of the law places liability on the licence holder or owner when a facility is abandoned; however, it fails to clarify whether this liability extends to cases of partial decommissioning. Section 187 (4) allows for partial decommissioning which involves the removal of only a portion of the infrastructure and leaving the rest in place. However, the law does not clarify whether partially decommissioned facilities fall under the liability of abandonment. This ambiguity creates confusion when partly decommissioned facilities cause damage in the future, such as marine pollution that can adversely impact fish and other marine resources.[59]

7.2 Absence of a designated institution for maintenance responsibility

The law stipulates that future maintenance responsibility and liability will be assumed by the government upon financial agreement. However, it does not specify which government institution will be responsible for this maintenance. Tanzania does not have a single government agency or institution solely dedicated to managing marine environment.[60] Multiple entities, including Marine Parks and Reserves Unit (MPRU), Tanzania Shipping Agencies Corporation (TASAC), Tanzania Ports Authority (TPA), National Environment Management Council (NEMC), Ministry of Fisheries, Ministry of Energy, and Ministry of Tourism, are involved in various aspects of marine management. The absence of a designated institution raises questions about who will assume responsibility for ongoing monitoring programmes required to prevent potential hazards associated with leaving installations behind for extended periods.[61] This lack of clarity in the legal framework poses risks to the future of the ocean and its resources.

7.3 Uncertainty regarding mandatory or optional transfer of residual liability

The law does not clearly specify whether the transfer of residual liability to the government upon financial agreement is mandatory or optional. In the Norwegian law, which the Tanzania's Petroleum Act is benchmarked from, the provision uses the term "may," thus indicating that the transfer process is optional. The Tanzanian Petroleum Act on the other hand uses the word "shall ensure" the transfer of liability.[62] On the other hand, the existence of subsection 2 in section 193 suggests that the transfer is not mandatory. This creates confusion as to whether the transfer is mandatory or not. This lack of clarity raises challenges, particularly in cases of company insolvency or dissolution, where the issue of liability transfer becomes complex if there were no transfer to the government. Studies indicate that stronger environmental protection would be provided if the

[59] See Lund (n 3) 43 & Anchustegui et al (n 8)32.
[60] Interview by author (31 March 2022, MPRU, Dar es Salaam).
[61] Torabi & Nejad (n 15) 1.
[62] See Petroleum Act (n 3) s193(4)

state assumed liability for the left installations with a financial agreement.[63] However, the current legal provisions leave room for various interpretations and potential challenges.

7.4 Absence of regulations governing decommissioning and post decommissioning

The absence of regulations governing post-decommissioning process in the petroleum activities hampers the implementation of the transfer process from licence holders to the government. Without clear guidance, determining the appropriate compensation amount becomes problematic. The legal regime fails to address what should be included in calculating the payment from the company to the government; for example, should the amount cover future damage, leakage, spill clean-ups, and other incidental accidents? Or should it only fund repair, maintenance, and monitoring? These crucial aspects are not addressed, hence, leaving the matter unregulated. Additionally, the law lacks an institutional framework to regulate the frequency of monitoring. The aspects would effectively be addressed in the regulations which, according to data from the field, do not exist yet.[64]

7.5 Inadequate integration of biodiversity conservation

The legal regime in Tanzania lacks comprehensive integration of biodiversity conservation in upstream petroleum operations. The decision-making process regarding decommissioning options (complete or partial) does not mandatorily require evaluating the impact on marine biodiversity. Furthermore, the law does not establish mechanisms to ensure that the financial agreement for transferring residual liability to the government covers conservation aspects in the area where there is infrastructure left. Notably, integrating biodiversity conservation in upstream petroleum developments is crucial for effective planning and decision-making processes.[65] The absence of such mechanisms in the legal regime hinders the consideration of this vital aspect, thus potentially leading to adverse effects on the marine environment.

In summary, the Petroleum Act primarily focuses on perpetual liability (owner-centred liability approach).[66] This approach poses risks to the protection of the marine environment, as companies may lack commitment due to the absence of primary international obligations to protect the marine environment.[67] Furthermore, the issue of insolvency or dissolution of a company raises challenges associated with perpetual liability. The absence of a designated institution to monitor the left infrastructure, regulations and guidelines, uncertainty regarding the mandatory or optional nature of liability transfer, and inadequate

[63] Torabi and Nejad (n 15)7.
[64] Interview by Author, (10 June 2022, PURA, Dar es Salaam).
[65] Jagerroos and Krause (n 5)2.
[66] See section 193(1), (2), and (3).
[67] Torabi and Nejad (n 15)7.

integration of biodiversity conservation, further hinder the effective governance of residual liability in Tanzania's legal regime.

8. Conclusion

In conclusion, the legal regime governing the residual liability of left offshore installations in Tanzania faces significant challenges. The issues identified in this article shed light on the matter. These challenges demonstrate the complexities and uncertainties surrounding liability, responsibility, and the future maintenance of decommissioned petroleum infrastructure. It is essential to make sure that these challenges are addressed to guarantee the protection of the marine environment, safeguard marine resources, and promote sustainable development in Tanzania's offshore petroleum sector. Thus, policymakers and stakeholders in the Tanzania's petroleum sector, in particular, should take proactive measures to address the aforementioned challenges including by clarifying liability for partially decommissioned facilities, designating a specific institution responsible for ongoing maintenance and monitoring, clearly defining the mandatory nature of liability transfer, developing regulations and guidelines for the transfer process, and integrating biodiversity conservation considerations into decision-making and financial agreements. That can be achieved, among other things, by having in place decommissioning regulations.

References

Agbaitoro G & Kejeh N, 'Moving Towards Robust Governance Regime of Decommissioning of Offshore Energy Installations in Nigeria Petroleum Industry' *Miyetti Quarterly Law Review* (Vol. 2, No. 3, 2017) 99-127.

Anchustegui H et al, 'Understanding Decommissioning of Offshore Infrastructures: A Legal and Economic Appetizer' (2021) <http://dx.doi.org/10.2139/ssrn.3882821>.

Ekins P, Vanner R & Firebrace J, 'Decommissioning of Offshore Oil and Gas Facilities: A Comparative Assessment of Different Scenarios' *Journal of Environmental Management* (Vol. 79, 2006) 420–438.

Groom N, 'Special Report: Millennium of Abandoned Oil Wells are Leaking Methane, A Climate Menace,' <https://news.trust.org/item/20200616101731-evexk>.

Hammerson M, *Upstream Oil and Gas, Cases, Materials and Commentary* (Globe Law and Business, 2011).

Jagerroos S and Krause P, 'Rigs-To-Reef; Impact or Enhancement on Marine Biodiversity,' *Journal of Ecosystem & Ecography* (Vol. 6 No. 2, 2016) <https://www.omicsonline.org/open-access/rigstoreef-impact-or-enhancement-on-marine-biodiversity-2157-7625-1000187.pdf>.

Kho F, et al 'Current Understanding of the Ecological Risk of Mercury from Subsea Oil and Gas Infrastructure to Marine Ecosystems' *Journal of Hazardous Materials,* (Vol. 438, 2022) <https://doi.org/10.1016/j.jhazmat.2022.129348>.

Lund L, 'Residual Liabilities Are Imposed to an Owner of Offshore Oil and Gas Installation regardless of its Decommissioning Obligations: Expanding the Concept of Residual Liability' (Thesis, Orebro University, 2021).

Martin T, 'Decommissioning of International Petroleum Facilities: Evolving Standards and Key Issues' *Oil, Gas & Energy Law Journal* (*OGEL*) (Vol. 1, No. 5, 2003), <https://www.ogel.org/article.asp?key=765>.

Ole NC et al, 'Decommissioning Oil and Gas Installations: The Challenge of Residual Liability', in Pereira E et al, *The Regulation of Decommissioning, Abandonment and Reuse Initiatives in the Oil and Gas Industry from Obligation to Opportunities* (Kluwer Law International BV, The Netherlands 2021)153.

Pereira E et al, 'Addressing Residual Liability and Insolvency in Disused Oil and Gas Infrastructure Left in Place: The Cases of Brazil, Nigeria, and Trinidad and Tobago' *The Journal of Sustainable Development Law and Policy* (Vol. 11 No. 2, 2020) 326-361.

Smyth K, 'Renewables-to-reefs? – Decommissioning Options for the Offshore Wind Power Industry,' *Marine Pollution Bulletin* (Vol. 90, 2015) 368-371.

Sommer B et al, 'Decommissioning of Offshore Oil and Gas Structures – Environmental Opportunities and Challenges' *Science of the Total Environment* (Vol. 658, 2018) 973-981.

Torabi F & Nejad S, 'Legal Regime of Residual Liability in Decommissioning: The Importance of Role of States,' *Marine Policy* (Vol. 133, 2021), <https://colab.ws/articles/10.1016%2Fj.marpol.2021.104727>.

United Nations, The 17 Goals Sustainable Development – SDGs, <https://sdg.un.org/ghttps://sdgs.un.org/goal>.

Zagonari F, 'Decommissioning vs. Reusing Offshore Gas Platforms within Ethical Decision-Making for Sustainable Development: Theoretical Framework with Application to the Adriatic Sea,' *Ocean and Coastal Management* 199 (2021), <https://www.sciencedirect.com/science/article/pii/S0964569120303161?via%3Dihub>.