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INSTITUTIONAL MECHANISMS FOR BIOSAFETY IN NIGERIA: AN APPRAISAL OF THE LEGAL REGIME UNDER THE NATIONAL BIOSAFETY MANAGEMENT AGENCY ACT, 2015

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TABLE OF CONTENTS

1.	Introduction	31
2.	Biosafety in Nigeria: Some Background Considerations	33
3.	The Biosafety Management Agency Act, 2015	36
	3.1 Structure of the Agency and Scope of GMO Activities	36
	3.2 Public Participation in GMO Activities	37
	3.3 Liability and Redress	38
4.	Some Inadequacies of Nigeria's Biosafety Regime	40
	4.1 Limitations in Implementing Biosafety Multilateral Obligations	40
	4.2 Overlapping Institutional Mandates	42
	4.3 Inadequate Risk and Impact Assessment Mechanisms	42
	4.4 Inadequate Financial Sourcing	43
5.	Conclusion	43

1

INTRODUCTION

In view of the significance of the trade and development consequences in the use and transboundary movement of genetically modified organisms (GMOs), Nigeria and a few African countries have made some progress in recent legislative and policy considerations and are moving from being 'passive spectator[s]' to 'active player[s]'¹ in the development of domestic biosafety institutional mechanisms.² The demand for the harmonization of biosafety regimes at the international level which saw the formation of the African Regional Biosafety Focal Point in 1993 at Harare, Zimbabwe for instance, attests to this fact.³ However, because the African Biosafety Focal Point did not seem to have the much required impact in developing biosafety regulations (and institutions) in most African countries, essentially due to financial constraints and the unequal levels of socio-economic development among countries in the region,⁴ the adoption of GMOs has been quite moderate in Africa, with only four countries – South Africa,⁵

Burkina Faso, Egypt⁶ and Sudan that commercialize these crops;⁷ since the debates about biosafety and the application of modern biotechnology gained international prominence after the adoption of the Convention on Biological Diversity (CBD) in 1992.⁸

To begin with, the critics of modern biotechnology on the one hand argue that GMOs may pose various threats to human health and to biodiversity⁹ because genetic modification can 'dangerously alter the levels of allergens in foods'¹⁰ and that GMOs present specific problems because there are 'significant uncertainties concerning their potential adverse effects' on the environment in the long run.¹¹ On the other hand, the advocates of modern biotechnology believe that genetically modified seeds will not only 'allow for greater crop yield' but would also reduce pesticide requirements without posing any significant threats to human health or to the environment.¹² They

1 David Wafula and others, 'Biosafety Legislation and Biotechnology Development Gains Momentum in Africa' (2012) 3 (1) *GM Crops and Food: Biotechnology in Agriculture and the Food Chain* 72, 77.

2 Patricia Kameri-Mbote, 'The Development of Biosafety Regulation in Africa in the Context of the Cartagena Protocol: Legal and Administrative Issues' (2002) 11(1) *Review of European, Comparative and International Environmental Law* 62; Aarti Gupta and Robert Falkner, 'The Influence of the Cartagena Protocol on Biosafety: Comparing Mexico, China and South Africa' (2006) 6(4) *Global Environmental Politics* 43; see also Justin Mabeya, Peter A Singer and Obidimma C Ezezika, 'The Role of Trust Building in the Development of Biosafety Regulation in Kenya' (2010) 6(2) *Law, Environment and Development Journal* 218.

3 African Regional Biosafety Meeting (Harare, Zimbabwe, 1993).

4 BB Keizire, 'Agricultural Biotechnology and Food Security in Sub-Saharan Africa: Policy and institutional Considerations' (Conference on Global Dimensions of Food Security, University College, Cork, Ireland, 13-15 April 2000).

5 South Africa enacted the Genetically Modified Organisms Act in 1997 and the GMO Regulations No. 1420 of 26 November 1999, were made under section 20 of the Genetically Modified Organisms Act.

6 Egypt's biosafety regulations and guidelines were published in draft form in January 1994 under the Ministry of Agriculture and Land Reclamation, Ministerial Decree No. 85/1995 which established the National Biosafety Committee, while the Ministerial Decree 136/1995 adopted the Biosafety Regulations and Guidelines.

7 Odile Juliette Lim Tung, 'A Comparative Analysis of the South African and Burkinabe Experiences with Genetically Modified Crop Regulation' (2017) 50(1) *VRÜ Verfassung und Recht in Übersee* 5.

8 Convention on Biological Diversity (adopted on 5 June 1992, entered into force 29 December 1993) UNTS 1760. Biosafety means the application of measures, policies, knowledge, techniques, equipment and procedures for minimizing potential risks that modern biotechnology may pose to the environment and human health; see also Biosafety Management Agency Act, section 43.

9 Anne Marie Solberg, 'Genetically Engineered Produce Travels North America under NAFTA: An Issue Ripe for Consideration' (1995) 18 *Hamline Law Review* 55.

10 Holly Saigo, 'Agricultural Biotechnology and the Negotiation of the Biosafety Protocol' (2000) 12 *Georgetown International Environmental Law Review* 779, 792.

11 Philippe Cullet, 'Liability and GMOs: Towards a Redress Regime in Biosafety Protocol' (2004) 39(7) *Economic and Political Weekly* 616.

12 Gareth W Scheizer, 'The Negotiation of the Cartagena Protocol on Biosafety' (2000) 6 *Environmental Lawyer* 577, 594; see also Mary Lynne Kupchella, 'Agricultural Biotechnology: Why it Can Save the Environment and Developing Nations but May Never Get a Chance' (2001) 25 *William & Mary Environmental Law and Policy Review* 721.

therefore, argue that genetically modified crops could provide food products with an enhanced nutritional value and thereby alleviate the scale of poverty and human malnutrition, particularly, but not only, in developing countries such as Nigeria. Indeed, these debates on environmental and health concerns in the application of modern biotechnology¹³ and in the use (and trans-boundary movement) of GMOs,¹⁴ not only in view of its profound significance on trade and development but also considering its implications on the implementation of environmental law in developing countries, has (recently) triggered national consciousness for appropriate domestic legal, administrative and technical mechanisms for biosafety in Nigeria.¹⁵

Consequently, in the light of the emerging concerns for biosafety and effective GMO regulation, the 2014 Nigerian National Conference proposed the fast-track passage of the bill establishing the National Biotechnology Development Agency (NABDA) into law, in order to properly regulate trans-boundary movement of genetically modified agricultural products and to encourage the development of improved pest-resistant crop varieties and breeds under an ethical research environment. Perhaps the objective at the time was broadly aimed at improving environmental governance and reshaping domestic laws and policies,¹⁶ and more specifically with a view to effectively exploiting the potential benefits of

modern biotechnology while, at the same time, safeguarding against potential health and environmental risks in the country. Arguably, the general position of the National conference was in accordance with the already existing national biotechnology policy objective of '[facilitating] the development, enactment and implementation of a regulatory regime [institutional mechanism] that will ensure the safe application and use of the products of modern biotechnology' in the country.¹⁷

Moreover, as a party to the CBD, the Nigerian government is bound by international obligations to create institutional (and administrative) mechanisms for biosafety and the application of modern biotechnology and the use of its products, which may cause harm to human health or to the country's rich biodiversity, as much as possible, in an integrated manner and in accordance with extant national laws, as is provided for under the CBD¹⁸ as well as the Cartagena Protocol on biosafety.¹⁹ However, within the context of the country's multilateral biosafety obligations *vis-à-vis* the prevailing domestic discussions on the need to put in place appropriate (national) biosafety institutional measures,²⁰ the literature on the governance and regulatory regime for biosafety with particular reference to (institutional mechanisms in) Nigeria is gradually emerging and, to a limited extent has thus far focused on the establishment (or strengthening) of adequate institutional structures and mechanisms needed not only 'to protect humans and the environment from the possible adverse effects of modern biotechnology'²¹ but equally in view of the *desire* to properly harness whatever potential socio-economic that benefits it embodies.

Against this backdrop, the article therefore provides a timely and critical examination of the recently enacted National Biosafety Management Agency Act of 2015 by highlighting some of its generic strengths and weaknesses in the light of, and as a necessary legislative complement towards the domestic implementation of Nigeria's international obligations as regards the

13 Modern biotechnology means the application of in vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles, or fusion of cells beyond the taxonomic family that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection. See Cartagena Protocol on Biosafety to the Convention on Biological Diversity (adopted on 29 January 2000, entered into force on 11 September 2003) UNTS 2226 art 3(i).

14 Daniel M Krainin, 'Biotech Crops, Biosafety Protocol: Genetically Modified Sustainability?' (2004) 19 *Natural Resources and Environment* 63; see also Jonathan A Glass, 'The Merits of Ratifying and Implementing the Cartagena Protocol on Biosafety' (2001) 21 *Northwestern Journal of International Law and Business* 491.

15 Uzuazo Etemire, 'Country Report: Nigeria – The Cart before the Horse?: Biosafety Regulations and Modern Biotechnology Activities in Nigeria' (2015) 5 *IUCN Academy of Environmental Law e-Journal* 312.

16 *ibid* 314.

17 *ibid* 315.

18 Convention on Biological Diversity (n 8) art 8(g).

19 Cartagena Protocol (n 13) art 2(1).

20 Kameri-Mbote (n 2) 62; see also Mabeya, Singer and Ezezika (n 2) 216.

21 Etemire (n 15) 320.

establishment of domestic biosafety institutions. The aim of the article is to critically appraise the potency of the legal regime (i.e. the administrative structures and technical mechanisms) under the Biosafety Management Act as a prerequisite for effectively exploiting the potential benefits of modern biotechnology in Nigeria by first providing a general understanding of the biosafety regime in Nigeria and further providing possible insights that could lead towards improving the effectiveness and implementation of environmental law²² in developing countries more generally. On this note, the next subsection presents a background discussion on the significance and the broader socio-economic considerations in biosafety and GMO regulation as a possible avenue towards fostering sustainable development in Nigeria.

2

BIOSAFETY IN NIGERIA: SOME BACKGROUND CONSIDERATIONS

Biosafety constitutes a serious environmental challenge of global common concern,²³ and much like in the case of other countries of the global South, it is also a critical environmental problem in Nigeria. It therefore goes without saying that while the environmental challenges confronting Nigeria would require different approaches and strategies to tackle, especially considering its position (as a developing nation), they

more importantly will require the development of substantive environmental standards as well as the establishment (or strengthening) of institutional mechanisms, as much as desirable, through the instrumentality of adequate legislative enactments at the federal level. It is for this reason that the Cartagena Protocol on biosafety provides that competent national authorities, national focal points and advisory groups must be established to facilitate the implementation of the Protocol's obligations at national levels.²⁴

In view of the advantages and disadvantages of GMOs, the need for regulation immediately becomes apparent so as to optimize the potential benefits in the application of modern biotechnology.²⁵ To this end, it has been rightly argued that a notable weakness of the current regulatory frameworks in African countries (in Nigeria for instance under the *National Environmental Standards and Regulations Enforcement Agency Act*)²⁶ is the inadequate legal mandate given to environmental institutions to effectively deal with biosafety in an integrated approach.²⁷ As a possible remedy, Kameri-Mbote therefore suggests that while the legal and administrative regimes for biosafety may be built upon the existing mechanisms or based on new frameworks, as is the case in Nigeria – in order to address biosafety concerns adequately and in an integrated manner – such laws should be revised and harmonized because of the need to develop harmonized approaches to risk assessment of products derived from the use of modern biotechnology.²⁸

According to UN-Environment (formerly UNEP), 2011 report on the environmental assessment of petroleum hydrocarbon contamination in Ogoniland, 'the overall legislation and institutional set-up related to environmental management in Nigeria are very complex'²⁹

22 See Principle 3, Rio Declaration on Environment and Development, 1992.

23 For an analysis of the common concern principle see generally: Jutta Brunee, 'Common Areas, Common Heritage and Common Concern' in Daniel Bodansky, Jutta Brunee and Ellen Hey (eds), *The Oxford Handbook of International Environmental Law* (OUP 2007) 550-573; Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law and the Environment* (3rd edn, OUP 2009) 128-131, 657-659; Michael Bowman, Peter Davies and Catherine Redgwell (eds), *Lyster's International Wildlife Law* (CUP 2010) 51-52; see also Stephen Stec, 'Humanitarian Limits to Sovereignty: Common Concern and Common Heritage Approaches to Natural Resources and Environment' (2010) 12(3) *International Community Law Review* 361.

24 Cartagena Protocol (n 13) art 19; see also: J Richter and others, *Biotechnology for Crop Protection: It's Potential for Developing Countries* (German Foundation for International Development (DSE 1998).

25 Etemire (n 15) 313.

26 Act No. 57 of 2007, Laws of the Federation of Nigeria (hereinafter 'NESREA Act').

27 Kameri-Mbote (n 2) 72.

28 *ibid* 65, 68.

29 United Nations Environment Programme, 'Environmental Assessment of Ogoniland' (UNEP: Nairobi 2011) 36 (hereinafter "UNEP Report").

and in making recommendations for changes to the overall regulatory framework for environmental protection in order to strengthen possible legal inadequacies and institutional weaknesses, UN-Environment recommended significant changes to the overall institutional arrangements in Nigeria;³⁰ although the proposed changes were focused on revising the institutional weaknesses and legal pitfalls for addressing oil spills in Ogoniland and in the Niger Delta as a whole, it is sadly the existing position of the broader environmental protection regime in Nigeria.³¹ In view of this, UN-Environment recommended that:

where specific mandates are given to newly formed agencies, either all existing mandates held by older [or other] institutions [i.e. NESREA] and covering the same subject area should be revoked or similar mandates of two or more institutions should be revised to clearly delineate the roles and responsibilities of each of the institutions in order to avoid cases of overlapping institutional mandates.

Again, in line with the already existing national biosafety frameworks, the Nigerian government is required to establish the requisite legal and regulatory regime, with emphasis on biosafety, but without prejudice to the potential benefits of modern biotechnology.³² Such legislation shall conform to Nigeria's obligations under international law without undermining local and national development objectives and opportunities. It must be noted however, that despite already existing national efforts to maintain an appropriate balance between the use of modern biotechnology as a tool for socio-economic development and its regulation in a sustainable manner in order to enhance meaningful growth of its economy and for the welfare of its people.³³ There has

nonetheless been a considerable degree of anti-GMO activism in Nigeria, especially from farmers, community groups and other civil society organizations who have, at various times, expressed resentment against the possible introduction of genetically modified crops into the country; apparently, based on the fear that these crops may lead to a massive introduction of toxic chemicals into the environment, possibly erode the country's enormous biodiversity and entrap hapless Nigerian farmers in the grip of the biotech industry.³⁴

An important socio-economic dimension of the local context with regard to biosafety and GMO regulation is the erroneous information owing to inappropriate media reporting (which results from difficulties in obtaining reliable biotechnology data as well as accurate science-based information from local scientists) in the Nigerian media.³⁵ Therefore, in view of the fact that the Cartagena Protocol on biosafety makes provision for socio-economic considerations³⁶ and given that socio-economic concerns may arise locally in situations where GMOs may contribute to displace existing plants such as food crops – their disappearance may have negative consequences for the fulfillment of basic food needs³⁷ – it is imperative to also consider the question of whether or not the pre-existing (environmental) institutional mechanisms in Nigeria do actually take into consideration the socio-economic concerns as it relates specifically to biosafety.³⁸

Lastly, with the apparent increase in environmental awareness, participatory democratic norms and principles are gradually being engendered in national

30 *ibid* 219.

31 Uzoazo Etemire and Menes Abinami Muzan, 'Governance and Regulatory Strategies beyond the State: Stakeholder Participation and the Ecological Restoration of Ogoniland' (2017) 26(2) *Griffith Law Review* 275, 282.

32 United Nations Environment Programme, 'Nigerian National Biosafety Frameworks', 2005 <unep.ch/biosafety/old_site/development/Countryreports/NGNBFrep.pdf> 23; accessed on 20 February 2017.

33 *ibid* 13.

34 Nnimmo Bassey, 'What the Nigerian National Confab agreed to on Biosafety and GMOs' *Daily Post* (1 July 2016) <<http://dailypost.ng/2016/07/01/nnimmo-bassey-what-the-nigerian-national-confab-agreed-to-on-biosafety-and-gmos/>> accessed 20 February 2017.

35 WS Alhassan, 'Agro-biotechnology Application in West and Central African – Survey Outcome' (Ibadan, Nigeria: International Institute of Tropical and Agriculture (IITA) 2003) <<http://www.iita.org/cms/details/Agriculture.pdf>> accessed 20 February 2017; see also T Sengooa and others, 'Biosafety Education Relevant to Genetically Engineered Crops for Academic and Non-academic Stakeholders in East Africa' (2009) 12(1) *Electronic Journal of Biotechnology*.

36 Cartagena Protocol (n 13) article 26.

37 Cullet (n 11) 616.

38 Biosafety Management Act (n 8) section 2(f).

issues and the need to ensure wider public participation in environmental matters is becoming more and more evident.³⁹ Thus, in the light of the crucial role played by non-state actors in negotiating and implementing multilateral environmental treaties and taking into cognizance the resentments expressed by local NGOs and civil society groups over the introduction of GMOs into the country, prior to the enactment of the Biosafety Act, it has been argued that the relevant legal and administrative regimes should provide for effective participation of NGOs.⁴⁰ In this light, the fact that one of the fundamental objectives of the Agency is to provide measures for effective public participation and awareness,⁴¹ the above observations – with respect to public participation [and decision making] in biosafety issues – provides one of the important considerations for a critical analysis (as will be discussed in the next sub-section) of the institutional arrangements for biosafety regulation in Nigeria under the biosafety Act.

In a bid to effectively exploit the potential benefits of modern biotechnology and efficiently guard against potential health and environmental risks, most African countries, including Nigeria, have ratified the Cartagena Protocol on biosafety.⁴² However, given the inadequate scope and nature of Nigeria's national policy on biotechnology as a non-binding (policy) instrument, the overall legal regime has become largely inadequate to adequately regulate issues relating to biosafety in Nigeria in an integrated manner that effectively implements the country's multilateral obligations,⁴³ especially considering the fact that the national biotechnology policy had been in existence long before the country entered into multilateral environmental agreements such as the Cartagena Protocol. Consequently, the 2015 Biosafety Management Act

essentially 'reinforces' the institutional structure with the aim of ensuring 'the effective management of all components of the Nation's biosafety'⁴⁴ and to be 'the national authority on biosafety in Nigeria'⁴⁵ to effectively exploit the potential benefits of modern biotechnology and efficiently guard against associated risks.

It is important to note that Nigeria, like several other African countries, chose the path of promulgating a new legislation, as opposed to strengthening (or amending) already existing legislation in the implementation of standards for biosafety,⁴⁶ taking into consideration the fact that environmental laws 'should be properly integrated, not piecemeal, and be supported by adequate institutional machinery'.⁴⁷ The national biosafety bill, which was sponsored by a parastatal of the federal government,⁴⁸ NABDA, was initially passed by the 6th National Assembly in 2011 but was not signed into law and it became time barred. However, the National Biosafety Management Agency Act eventually came into force in April 2015,⁴⁹ several years after it was re-debated and passed by both Houses of the National Assembly⁵⁰ but did not receive the required presidential assent to become a law. Nigeria's former President, Goodluck Jonathan finally signed

39 Nigerian National Biosafety Frameworks (n 32) 40.

40 Kameri-Mbote (n 2) 68. For an analysis on public awareness and public participation in biosafety decision-making see: Birnie, Boyle and Redgwell (n 23) 642.

41 Biosafety Management Act (n 8) section 2(e).

42 On 12 March 2015 Cote d'Ivoire became the latest African country to ratify the protocol and on 1 June 2015 Kuwait ratified the Protocol, bringing the number of member-countries to 171. See Cartagena protocol on Biosafety <<https://bch.cbd.int/protocol>> (accessed 5 April 2018); see also: Francis Nang'ayo, 'The Status of Regulations for Genetically modified Crops in Sub-Saharan Africa' (African Agricultural Technology Foundation, 2006) 4.

43 Etemire (n 15) 315.

44 Biosafety Management Act (n 8) section 1(1).

45 *ibid* section 1(2).

46 Francis Nang'ayo, Stella Simiyu-Wafukho and Sylvester O Oikeh, 'Regulatory Challenges for GM Crops in Developing Economies: the African Experience' (2014) *Transgenic Research* 1049.

47 Adebola Ogunba, 'An Appraisal of the Evolution of Environmental Legislation in Nigeria' (2016) 40 *Vermont Law Review* 675-685

48 Nigeria operates a federal system of government which provides for three levels of legislative competences and powers under its current constitutional structure: the exclusive legislative list is vested in the federal government; the concurrent legislative list (where matters of environment protection is contained) is shared between the federal government and the state governments; and lastly the residual list is falls under the legislative competences of the various state governments. See: Constitution of the Federal Republic of Nigeria (CFRN 1999), CAP C4, Laws of the Federation of Nigeria (2010), section 4 (1) and (2)

49 *The Vanguard*, 'Nigeria Gets Biosafety Law, Joins League of Biosafety Countries' (26 April 2015) <<http://www.vanguardngr.com/2015/04/nigeria-gets-biosafety-law-joins-league-of-biotech-countries/>> accessed 11 January 2017.

50 Nang'ayo, Simiyu-Wafukho and Oikeh (n 46).

the National Biosafety Agency bill into law, barely one month to the end of his administration, a 'milestone' in the domestic implementation of treaty obligations for the regulation of modern biotechnology in Nigeria.

Nigeria has thus put into place institutional mechanisms with the objective of ensuring adequate safety in the use of GMOs as one of the ways to conserve and sustainably use her abundant biodiversity in addition to ensuring that the benefits derived from the use of modern biotechnology would boost economic development. According to the Food and Agriculture Organization (FAO), the establishment of the National Biosafety Agency will engender the safe application of modern biotechnology to enhance economic development in Nigeria, and thus 'allows the country to join the league of countries advanced in the use of this cutting edge technology as another window to boost socio-economic development of her population'.⁵¹ To be sure, this can lead to increased yield productivity and ensure food security as well as industrial growth especially in the ailing textile Industries.⁵² It is worthy to note that within one year of its enactment, two permits were issued to Monsanto Agriculture (Nigeria) Ltd, a multinational GMO company,⁵³ for the commercial release of Bt Cotton and for confined field trials of GMO maize.⁵⁴ Flowing from the foregoing background discussions, the next section will then analyze the main aspects of the Biosafety Management Act..

3 THE BIOSAFETY MANAGEMENT AGENCY ACT, 2015

There are a number of contexts within which the biosafety regime in Nigeria can be analyzed. However,

51 Food and Agriculture Organization, 'FAO GM Foods Platform' <<http://www.fao.org/food/food-safety-quality/gm-foods-platform/browse-information-by-country/country-page/en/?cty=NGA>> accessed 7 February 2017.

52 *ibid.*

53 Lim Tung (n 7) 7.

54 Bassey (n 34).

to properly appreciate the scope of the discussion, this section proceeds by analyzing the Biosafety Management Act in the light of the conceptual background in part II above; (1) the domestic agitations for the inclusion of environmental civil society organizations and the organized private sector on the governing board of the Biosafety Management Agency as well as (2) the desire to ensure (adequate) public participation when GMO applications are being considered.⁵⁵ On this basis, the focus here will be on relevant provisions of the Biosafety Management Act within the context of: (a) the structure of the Biosafety Management Agency and the scope of GMO-permitted activities covered; (b) public participation and awareness in (environmental) decision-making under the Act;⁵⁶ and (c) liability and redress in view of the 'potential negative consequences of the illegal introduction of GMOs' into the environment.⁵⁷

3.1 Structure of the Agency and Scope of GMO Activities

The overall objective of the Biosafety Management Act is to strengthen the institutional arrangements on biosafety and provide effective management of biosafety under a legal regulatory regime; ensure safety in the use of modern biotechnology and provide holistic approach to the regulation of genetically modified organisms in addition to ensuring that the use of the GMOs does not adversely impact socio-economic and cultural interests while harnessing the benefits associated with the practice of modern biotechnology in Nigeria.⁵⁸ To this end, the Biosafety Management Act establishes a governing board for the Agency⁵⁹ in order to effectively actualize its statutory mandate as the institutional and administrative mechanism (as well as to adequately address concerns) in the application of modern biotechnology in Nigeria.

The Agency is tasked with issuing policies, regulations and guidance that set out regulatory parameters for future purposes such as public participation processes

55 *ibid.*

56 For deeper analysis of public awareness and public participation in biosafety decision-making see: Birnie, Boyle and Redgwell (n 23) 642.

57 Cullet (n 11) 615

58 Biosafety Management Act (n 8) section 2 para (a)-(f).

59 *ibid* section 10(1).

and procedures,⁶⁰ risk assessment and liability and redress issues.⁶¹ An arguably innovative feature of Nigeria's Biosafety Act has to do with the power to make regulations for modern biotechnology and for GMOs as well as for carrying out the functions of the Biosafety Management Agency. And unlike under the NESREA Act, where the Minister of Environment is empowered to make regulations for the general purposes of carrying out or giving full effect to the functions of NESREA,⁶² the Biosafety Management Act is structured in such a way that essentially removes the power to make regulations from the Minister and vests such powers in the governing board of the Biosafety Management Agency to make regulations for the handling, transporting, packaging, fault-based liability and redress for damages from activities of modern biotechnology and GMOs.⁶³

Biosafety institutions, in addition to carrying out administrative functions are essentially scientific bodies with the capacity to conduct risk assessment⁶⁴ and therefore should be comprised of experts from government,⁶⁵ private agencies and other institutions, which must work (harmoniously) together in close association with the national authorities.⁶⁶ The Agency in Nigeria, being a scientific body, has a GMO detection/biosafety laboratory domiciled at the NABDA and is in the process of developing regulatory instruments, including a biosafety policy, guidelines and regulations, containment facilities guidelines, a confined field trial monitoring and inspection manual, a national biosafety risk assessment framework, biosafety socio-economic consideration guidelines, national guidelines on biosafety emergency response, biosafety regulation on GMO's import and export, and commercialization, labelling, packaging and transport.⁶⁷

3.2 Public Participation in GMO Activities

In addition to several other proposed reforms, Nigeria's 2014 National Conference, further recommended that environmental NGOs and the organized private sector (such as farmer's organizations and consumers) should be represented on the governing board of the relevant regulatory institutions as well as ensuring adequate public participation when GMO applications are being considered,⁶⁸ so as to provide for improvements in terms of civil society participation and coordination in GMO-related activities. Consequently, one of the objectives behind establishing a competent national authority *inter alia* is to provide measures for effective public participation, public awareness and access to information in the use and application of modern biotechnology and GMOs.⁶⁹ Thus, with regards to public participation and public interest representation in environmental matters, quite unlike the NESREA Act, which does not make clear and express provisions for NGO representation in the composition of NESREA's governing council, the Biosafety Management Act 'acknowledges the increasingly dominant role' of non-state actors⁷⁰ by including representatives of NGOs on the governing board of the Agency.⁷¹

For instance, in considering applications for permits to import, export, transit or otherwise carryout contained field trials, multi-locational trial or commercial release of GMOs pursuant to section 23 of the Act, the Agency is mandated to display copies of such an application to enable the general public and relevant government ministries and agencies make

60 *ibid* section 41(3).

61 Kameri-Mbote (n 2) 66.

62 Biosafety Management Act (n 8) section 34; see also Margaret Okorodudu-Fubara, 'Country Report: Nigeria Legal Developments 2009-2011' (2012) 1 *IUCN Academy of Environmental Law (e-Journal)* 171 <www.iucnael.org/en/documents/913-ej2012-1-21-country-nigeria2/file> last accessed 18 April 2016 172.

63 Biosafety Management Act (n 8) section 41(1).

64 *ibid* section 31(2).

65 *ibid* section 10 (1)(c).

66 Kameri-Mbote (n 2) 65, 66.

67 National Biosafety Management Agency, 'Introduction' <http://www.nbma.gov.ng/?page_id=18> accessed 2 March 2017.

68 Uzuazo Etemire, 'The 2014 Nigerian National Conference and the Development of Environmental Law and Governance' (2014) 4 *VRÜ Verfassung und Recht in Übersee* 484.

69 Biosafety Management Act (n 8) section 2(e).

70 For further analysis on the involvements and roles of NGOs in environmental matters see: Peter J. Spiro, 'Non-Governmental Organizations and Civil Society' in Daniel Bodansky, Jutta Brunee and Ellen Hey (n 23) 771-789; see also Farhana Yamin, 'NGOs and International Environmental Law: A Critical Evaluation of Their Roles and Responsibilities' (2001) 10 *Review of European, Comparative and International Environmental Law* 149.

71 Biosafety Management Act (n 8) section 10(1) (d).

comments for a specified period.⁷² While section 25 does not explicitly spell out the ‘relevant’ government agencies referred to, one can nonetheless assume that the relevant agencies will include: the Federal ministries of environment, agriculture, science and technology, trade and investment, health, Nigeria Customs Service, NBDA; and National Agency for Food Drug Administration and Control.⁷³ In addition to this, the Agency is empowered under the Act to hold public hearings and consultations in considering applications in order to obtain further public inputs that will assist in the processing of the application.⁷⁴

Stakeholder engagement is also sustained after the public hearing. Thus, with respect to any decision taken under section 23 of the Act, the Agency ‘shall’ notify the public of any GMO for which approval or permits has been granted for import, contained use, confined field trials, multi-locational trials or commercial release and provide the information, facts and analysis supporting the decision for the benefit of the public.⁷⁵ This interaction with the public, to a large extent is an important demonstration of transparency in regulatory oversight and goes a long way in enhancing public awareness of and confidence in environmental regulatory institutions in Nigeria.

3.3 Liability and Redress

There is no doubt that the use of modern biotechnology raises concerns about the legal consequences of potential negative effects arising from the introduction of GMOs into the environment. Therefore, liability is a ‘mechanism’ through which environmental harm caused from an illegal activity can be compensated.⁷⁶ Liability and redress for GMO-

related damage was one of the issues that were addressed during the negotiations for the Cartagena protocol but with no consensus regarding details of a liability regime,⁷⁷ although specific liability regimes have been adopted at the international level to cater for certain environmentally unfriendly activities such as the transboundary movement of hazardous wastes.⁷⁸ It is for this reason that the Conference of Parties to the Convention on Biological Diversity, serving as Meeting of Parties to the Cartagena Protocol on Biosafety, in 2010, deemed it necessary to adopt a new protocol on liability and redress,⁷⁹ to provide specific rules for environmental liability which take into account the special nature of GMOs.

Generally, a civil liability regime may either have fault-based liability, strict liability or a combination of both.⁸⁰ Where fault-based liability is applicable, as is the case under the Biosafety Act, a person conducting GMO-related activity is liable for damage when such a person is at fault or acted negligently, as against strict liability wherein a person conducting GMO-related activity becomes liable, irrespective of any fault or negligence.⁸¹ In addition, under the Biosafety Management Act, where GMO-related activities are carried out without prior approval,⁸² or where an individual (or entity) supplies false information relating to GMO activities,⁸³ or contravenes any provision of the Act⁸⁴ liability arises for any damage that may occur as a result of such activity. So due to the possible interactions of GMOs with wild species of existing

⁷² *ibid* section 25(1); ‘confined field trial’ is defined under section 43 as a small scale experimental release into the environment of a genetically modified organism under physical and biological confinement conditions that limit the genetically modified organism’s persistence in the environment after the experiment is completed, whereas ‘commercial release’ means the release of genetically modified organisms into the market as a product that can be purchased and used by any individual, such as genetically engineered seed or animal.

⁷³ See Biosafety Management Act (n 8) section 10(1) (c).

⁷⁴ *ibid* section 26(1).

⁷⁵ *ibid* section 28(c).

⁷⁶ P Cullet (n 11) 615.

⁷⁷ Odile Juliette Lim Tung, ‘Genetically Modified Organisms and Transboundary Damage: A Two-Pronged Compromise for Redress in the Liability and Redress Protocol to the Cartagena Protocol’ (2013) 3 *South African Yearbook of International Law* 69.

⁷⁸ See for instance: Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and their Disposal, Basel, 10 December 1999.

⁷⁹ Nagoya-Kuala Lumpur Supplementary Protocol on Liability and redress to the Cartagena Protocol on Biosafety (adopted 15 October 2010) 50 *ILM* 105.

⁸⁰ Odile Juliette Lim Tung, ‘Liability and Redress Issues with regard to Genetically Modified Organisms-Related Activities in South Africa, (2011) 18 *South African Journal of Environmental Law and Policy* 111.

⁸¹ *ibid* 114.

⁸² Biosafety Management Act (n 8) section 35 (1) and (2).

⁸³ *ibid* section 36.

⁸⁴ *ibid* section 38 (1) and (2).

plants that might have been released illegally, it is important to have a civil liability regime for GMO damage⁸⁵ and this is covered, arguably to a limited extent, under Part IX of the Biosafety Act which deals with 'offences and penalties' as well as enforcement powers of the Biosafety Management Agency.

However, an effective liability regime for holding multinational corporations and enterprises (like Monsanto for instance) to account for their operations on the environment could easily affect the possible economic gains which the Nigerian government expects or is likely to make from the biotech industry. And therefore, given the relevance of these (multinational) corporations to socio-economic development and the economic power they invariably wield in developing countries like Nigeria, government regulatory agencies have become susceptible to the phenomenon of 'agency capture' – a form of failure in governance where a regulatory agency is influenced and controlled by the company it was setup to regulate, against its original public interest agenda⁸⁶ just as it has been the experience in the country's oil industry.⁸⁷ Attesting to this fact, Amnesty International has reported on how 'powerful business actors whose word appears to be law in some cases'⁸⁸ have seemingly grown above effective regulation by their regulators in Nigeria.

Liability and redress in biosafety and GMO in Nigeria cannot be adequately covered without taking into consideration fundamental procedural issues such as powers of enforcement (and jurisdiction), which the Biosafety Management Act makes clear provisions for; much like the NESREAC Act⁸⁹ (and the repealed FEPA Act), the Act, in addition to providing that the Biosafety Management Agency 'may sue and be sued in its

corporate name',⁹⁰ also vests the Agency with powers to '[...] take action necessary to determine compliance with the Act'.⁹¹ Furthermore, the Act clearly provides that the Federal High Court shall have jurisdiction to try established offences⁹² and shall have powers to make judicial orders, including orders for forfeiture 'of anything in connection with commission of an offence' under the Act and also for 'remediation measures to be undertaken by the offender',⁹³ in accordance with the 'polluter pays' principle that the polluter should bear the cost of the harm. Moving forward, in view of the implications on the implementation of biosafety principles (and standards) in developing countries, it is important that Nigeria's biosafety Agency adopts international best practice standards from countries already advanced in the use of modern biotechnology like the Swiss model legislation,⁹⁴ which provides interesting insights for improving the country's overall biosafety management but more specifically in terms of developing future liability and redress subsidiary regulations under the Act.⁹⁵

Again, an important consideration on redress claims against government agencies in Nigeria is that before filing any such legal action, an aggrieved party (claimant) is required to serve a *pre-action notice* on the prospective defendant, the rationale being to give opportunity for out-of-court settlement of disputes.⁹⁶ In Nigeria, pre-action notice of one month or more is a prevalent practice of government agencies, including those with environmental responsibilities.⁹⁷ If the litigant fails to give the notice, the trial court will be deprived of its

85 Lim Tung (n 7) 24.

86 Michael E Levine and Jennifer L Forrence, 'Regulatory Capture, Public Interest, and the Public Agenda: Towards a Synthesis' (1990) 6 *Journal of Law, Economics, and Organization* 167-197.

87 World Bank, *Defining an Environmental Development Strategy for the Niger Delta* (Vol II, Industry and Energy Operations Division West Central Africa Department) (Washington DC 1995) <<http://documents.worldbank.org/curated/en/506921468098056629/pdf/multi-page.pdf>> 55 accessed 11 April 2018.

88 Amnesty International, *Bad Information: Oil Spill Investigations in the Niger Delta*, Amnesty International Publications, 2013

89 NESREA Act (n 26) section 1 (1) (c).

90 Biosafety Management Act (n 8) section 1 (1) (c).

91 *ibid* section 39 (a) – (d).

92 *ibid* section 40 (1).

93 *ibid* section 40 (3) (b).

94 Federal Law relating to Non-human Gene Technology (Gene Technology Law, GTL) of 21 March 2013, Chapter 5, articles 30 and 31.

95 Biosafety Management Act (n 8) section 41(1) provides that: 'The Board may [...] make regulations generally for carrying into effect the provisions of this Act, and in particular, [...] fault-based liability and redress for damages from the activities of modern biotechnology and genetically modified organisms.'

96 Niki Tobi, 'Environmental Litigation' in S Simpson and Olarenwaju Fagbohun (eds), *Environmental Law and Policy* (Faculty of Law, Lagos State University 1998) 177

97 For instance, section 32 (1) of the NESREA Act provides for a one-month pre-action notice before any action can be commenced against the respective bodies.

competence to hear the matter at all, except in the unlikely event that the defendant fails to raise it, in which case, it would be considered a mere procedural irregularity.⁹⁸ Yet, environmental risk resulting from the application of modern biotechnology is of such a nature that a timely injunction, even given *ex parte*, is what may be required to avert possibly irreversible environmental damage, a goal which can easily be frustrated by a law requiring pre-action notice in a blanket and mandatory manner.⁹⁹ However, as noted by Fagbohun,¹⁰⁰ there are better approaches adopted in some other jurisdictions, which include: (1) the court staying proceedings until the notice is given, instead of dismissing or striking out the suit,¹⁰¹ (2) approving that some public interest suits can be brought without the notice,¹⁰² or (3) not requiring the notice where the environment is under threat of severe or irreversible damage.¹⁰³

On the strength of the preceding discussion of these aspects of the Biosafety Management Act, the next section, in a nutshell, will now provide an analysis of possible institutional pitfalls and foreseeable legal challenges in the overall biosafety regime, especially against the backdrop of the domestication of Nigeria's international biosafety obligations.

4 SOME INADEQUACIES OF NIGERIA'S BIOSAFETY REGIME

Considering that all environmental governance mechanisms (and approaches) would at one point or

⁹⁸ See *Aro v Lagos Island Local Government Council* (2000) FWLR (Part. 13) 2132, and the more recent Nigerian Supreme Court decision in *Mobil Producing (Nigeria) Unlimited v LASEPA, FEPA & Others* ((2002) 18 NWLR (Part. 789) 1.

⁹⁹ Olarenwaju Fagbohun, *Mournful Remedies, Endless Conflicts and Inconsistencies in Nigeria's Quest for Environmental Governance: Rethinking the Legal Possibilities for Sustainability* (2012) Nigerian Institute of Advance Legal Studies 66-67. 100 *ibid* 68

¹⁰¹ See *Pymatuning Water Shed Citizens for a Hygienic Environment v Eaton*, 644 F. 2d 995 (3rd Cir. 1981) (USA).

¹⁰² See *Natural Resources Defence Council Inc. v Train*, 510 F. 2d 692 (D.C. Cir. 1974) (USA)

¹⁰³ See for instance, section 505 (e) of the Clean Water Act, 1948 (as amended) (USA).

the other be faced with some challenges, interested stakeholders in Nigeria's biotech industry would thus need to envisage the possible challenges and conceive likely solutions. In this light, the evaluation of the biosafety regime in Nigeria will be incomplete without addressing some foreseeable legal challenges that may be encountered in the course of its implementation, and broadly suggest counter-measures to ensure its overall effectiveness. As alluded to in Part II, biosafety is one of the critical environmental problems in Nigeria, and the biosafety regime is characterized by the general problems of environmental protection in most developing countries, including: the lack of enforcement of environmental laws and regulations,¹⁰⁴ inadequate institutional mandates for environmental governance,¹⁰⁵ poor data management, as well as poor funding.¹⁰⁶ On this basis, this section highlights some inadequacies in the biosafety legal framework in the following sequence, namely: (a) the statutory limitations in the implementation of multilateral obligations for biosafety in Nigeria; (b) the overlapping institutional mandates and structures; (c) inadequate risk and impact assessment mechanisms and (d) the inadequacy of viable alternative financial sourcing.

4.1 Limitations in Implementing Biosafety Multilateral Obligations

The impact of global regimes on domestic policy has long been the subject of scholarly study and in contemporary international environmental law, this is an established area of inquiry via analyses of regime implementation, compliance and effectiveness.¹⁰⁷ International environmental law may very well have an important catalytic effect and may establish norms of conduct, but, without mechanisms for the implementation of such norms at domestic level, it will be ineffective in achieving the goals of environmental protection.¹⁰⁸ Moreover, one of the

¹⁰⁴ Okorodudu-Fubara (n 62) 171.

¹⁰⁵ Etemire and Muzan (n 31) 275-298.

¹⁰⁶ Amos Adeoye Idowu, 'Human Rights, Environmental Degradation and Oil Multi-National Companies in Nigeria: The Ogoniland Episode' (1999) 17(2) *Netherlands Quarterly of Human Rights* 176; see also Etemire and Muzan (n 31) 275-298.

¹⁰⁷ Gupta and Falkner (n 2) 24.

¹⁰⁸ Menes Abinami Muzan, 'Some Insights on the legal Measures for Access and Benefit Sharing of Genetic Resources in Nigeria' (2017) 50 (1) *VRÜ Verfassung und Recht in Übersee* 49.

fundamental concerns in contemporary international environmental law has been on ways to effectively foster the integration of developing countries, with vastly different economic, social and environmental priorities, into international environmental regimes.¹⁰⁹ Another issue is the challenge of strengthening environmental law in countries of the global South through international cooperation, collaboration and assistance.¹¹⁰ However, international law alone cannot solve global environmental problems just as domestic legislations will be ineffective in addressing trans-boundary environmental impacts without established international norms.¹¹¹

Flowing from the above, it is important to understand what is required of parties to the CBD and the Cartagena Protocol for establishing institutional mechanisms at the national level for the purposes of implementation. The Act mandates the Agency to implement the provisions of the Conventions and Protocols on matters related to genetically modified organisms.¹¹² This is important because the effective national implementation of treaty obligations is necessary to achieve the goals and objectives originally set out by the negotiating parties rather than the mere adoption of a treaty by a country.¹¹³ Section 3(b) of the Act thus confers on the Agency the authority to enforce environmental treaties such as the CBD and the Biosafety Protocol in Nigeria whether or not they have been domesticated.¹¹⁴ This is premised on the principle of *pacta sunt servanda*, that by ratifying the relevant treaty, the Nigerian government has signified its intention to be bound by its provisions and can

therefore not shy away from the performance of its treaty obligations under international law.¹¹⁵ However, there is a constitutional provision that ‘no treaty between the federation and any other country shall have the force of law except to the extent to which any such treaty has been enacted into law by the National Assembly’¹¹⁶ which creates a legal limitation in the implementation of biosafety norms domestically.

The import of this constitutional provision is that for an international obligation for which Nigeria is a party to take effect in the country, a domestic law accepting that obligation as part of Nigerian laws must first be made and passed by the Nigerian government by means of an Act of the National Assembly.¹¹⁷ Arguably, this can be interpreted in such a way as to limit the enforcement powers of the Biosafety Management Agency to those international norms that have been specifically domesticated in Nigeria by an Act of the National Assembly.¹¹⁸ It is only after this step that the elements of the obligation can be considered or incorporated into relevant policies and regulations for implementation in Nigeria.¹¹⁹ The Supreme Court emphasized the significance of this constitutional principle in the case of *General Sani Abacha and 3 others v. Chief Gani Fawehinmi*,¹²⁰ when it held that no treaty can be said to come into effect in Nigeria unless the provisions of such treaty have been enacted into law by the Nigerian government through the National Assembly. In the words of a learned Justice of the Court, Uwaifo JSC “when we have an international treaty of this nature, it only becomes binding when enacted into law by our National Assembly [...] it is only such law that breathes life into [such a treaty] in Nigeria.”¹²¹

One of the most important legal implications of the judgement is that international laws and obligations in addition to being supported at the domestic level

109 Lavanya Rajamani, ‘Review: Differential Treatment in International Environmental Law, by P Cullet’ (2004) 6 *Environmental Law Review* 288.

110 William L Adreen, ‘Environmental Law and International Assistance: The Challenge of Strengthening Environmental Law in the Developing World’ (2000) 25 *Columbia Journal of Environmental Law* 17.

111 Muzan (n 108) 49.

112 Biosafety Management Act (n 8) section 3(b).

113 Michael Bowman, Peter Davies and Catherine Redgwell, *Lyster’s International Wildlife Law* (Cambridge University Press 2010) 45.

114 Muhammed Tawfiq Ladan ‘Review of the NESREA Act 2007 and Regulations 2009-2011: A New Dawn in Environmental Compliance and Enforcement in Nigeria’ (2012) 8(1) *Law, Environment and Development Journal* 122.

115 Vienna Convention on the Law of Treaties (adopted on 23 May 1969. entered into force on 27 January 1980) 1155 *U.N.T.S.* 331 art 26.

116 CFRN 1999 (n 48) section 12(1).

117 *ibid* section 12(3).

118 Ladan (n 114) 123.

119 Damilola S Olawuyi, *The Principles of Nigerian Environmental Law* (Revised edn, Afe Babalola University Press: Ado-Ekiti 2015) 80.

120 (2000) 77 *Law Report of Courts of Nigeria*, 1254-1401. 121 *ibid*.

by adequate institutional mechanisms for transforming environmental and development policies into action,¹²² they must additionally be suited to (and must take into consideration) Nigeria's overriding constitutional principles as well as the country's 'weak and porous' domestic legal state of affairs¹²³ in order to achieve their much desired environmental protection agenda.

4.2 Overlapping Institutional Mandates

With regard to institutional mandates, it is argued that the extant national legislation should authorize the established biosafety institutions to perform prescribed administrative functions required by the Cartagena Protocol and that such institutions should have legal authority as well as clear mandates in all aspects of biosafety, including authority for institutional collaboration.¹²⁴ In this regard for instance, a very significant development to emerge from the Cartagena Protocol is the Biosafety Clearing House (BCH).¹²⁵ Under the Biosafety Act the Agency is mandated to liaise with the Secretariat of the Convention and the BCH with respect to the administrative functions required under the Protocol¹²⁶ in addition to collaborating with other relevant international agencies for the speedy realization of the Agency's mandate.¹²⁷ Similarly, under the Biosafety Management Act, the BCH is a pool of information mechanism under article 20 of the Protocol for exchange of scientific, technical, environment and legal information on experience with genetically modified organisms, as part of the clearing house mechanism under article 18 of the Convention.¹²⁸

However, some of the numerous identified characteristics of the 'weak and porous' domestic legal state of affairs are related to the overlapping

institutional mandates and the general lack of effective legal provisions for institutional collaboration. Moving forward, because the effectiveness of environmental regulations in Nigeria are doubtful,¹²⁹ a number of actions such as awareness and capacity-building, are required to be adequately addressed in order to ensure that institutional mechanisms on biosafety could be rightfully regarded as effective. In this light, the Nigerian government should look at case studies of the South African and Burkinabe regulatory experiences with biosafety which could 'provide useful insights regarding the impact of GM crop technology and the adoption of GM technology' as well as in the near future, join the league of African countries which have signed and ratified the 2010 Nagoya-Kuala-Lumpur supplementary Protocol on liability and redress to the biosafety protocol.¹³⁰

4.3 Inadequate Risk and Impact Assessment Mechanisms

The assessment of risk is required by the Cartagena Protocol to evaluate the probability that particular hazards may occur to prevent harm and enable better risk management.¹³¹ The Biosafety Management Act provides for 'risk assessment and management'¹³² under Part VIII and generally requires that a risk assessment of the potential adverse effects on the environment and to human health is required before a GMO-related activity can be undertaken. Under the Act, there is a provision for mandatory risk assessment of 'potential risk the GMO poses to human health, animal, plant or the environment' in Nigeria,¹³³ and persons (or institutions) that carry out GMO-related activities in Nigeria 'shall develop and maintain a risk management plan and strategy' in accordance with the Act.¹³⁴ In addition, the National Biosafety Management Act makes provision for risk assessment for applicants seeking approval for GMOs and such assessment shall be carried out within Nigeria in accordance with the policies and guidelines set forth by the National Biosafety Management Agency.

122 Ogunba (n 47) 693.

123 Barisere Rachel Konne, 'Inadequate Monitoring and Enforcement in the Nigerian Oil Industry: The Case of Shell and Ogoniland' (2014) 47 *Cornell International Law Journal* 181.

124 Kameri-Mbote (n 2) 66.

125 Robert Falkner, 'Regulating biotech trade: the Cartagena Protocol on Biosafety' (2000) 76(2) *International Affairs* 310

126 Biosafety Management Act (n 8) section 3(j).

127 *ibid* section 3(q).

128 *ibid* section 43.

129 Ogunba (n 47) 689.

130 Lim Tung (n 7) 6.

131 Cartagena Protocol (n 13) article 15-16.

132 Biosafety Management Act (n 8) sections 31, which provides for 'mandatory risk assessment'.

133 *ibid* section 31(1).

134 *ibid* section 33.

The Act further provides that the Agency may constitute a National Biosafety Committee (NBC) to carry out risk assessment of any GMO, in line with the mission of the National Biosafety Management Agency 'to promote the basic tenets of biosafety as enunciated in the Cartagena Protocol on Biosafety and enforce Nigeria National Biosafety Management Agency Act 2015, regulations and guidelines to ensure safe application, handling and use of products of modern biotechnology'.¹³⁵ However, the Act, unfortunately, leaves the substantive aspects of the biosafety regulatory framework to subsidiary legislation as is the case with most environmental protection laws in Nigeria, similar to the NESREA Act for instance. This, in essence, vests the Biosafety Management Agency with the 'onerous responsibility' of providing the general regulatory frameworks and administrative mechanisms for safety measures in the application of modern biotechnology in Nigeria.¹³⁶ It is inadequate and arguably quite problematic to have a legislation that is more or less purely 'institutional' without adequate principles (and substantive provisions) for biosafety and the regulation of GMOs in an integrated manner.

4.4 Inadequate Financial Sourcing

In view of the fact that financial constraints and the unequal levels of socio-economic development in African countries¹³⁷ has been associated with the moderate level of modern biotechnology application in Africa, it is important to also emphasize the state of affairs as it has to do with domestic funding of institutions with environmental mandates in Nigeria. The environmental governance structure in Nigeria and many other developing countries is clearly characterized by inadequate resources and capacity 'on the part of the relevant government agencies'.¹³⁸ Besides, in terms of making (adequate) funds available to various agencies charged with the duty of environmental protection, experience has shown that, besides the challenge of dwindling revenues, the policy of the government is such that environmental costs must be weighed against the costs of other socio-economic

aspirations like education and infrastructural development.¹³⁹

Therefore, if the required political will on the part of the Nigerian government to continue to ensure adequate funding is lacking, it could constitute an obstacle to the effective actualization of the mandate of the Agency, particularly where the institution is not accorded a good level of financial autonomy. There is the need for improved government involvement by providing incentives for the private sector and other non-state actors to collaborate by creating adequately funded mechanisms. Importantly, an idea to be put to action could be to harmonize suggestive provisions in the extant environmental legislation in Nigeria which generally stipulates the establishment and maintenance of 'a fund' into which loans and grants-in-aid from national, bilateral and multilateral agencies shall be paid¹⁴⁰ as additional viable sources of funding the Biosafety Management Agency. To this end, interested NGOs and civil society organizations should remain vigilant and must continue to put pressure on the Nigerian federal government to exercise the required political will and to pull its weight to ensure the provision of adequate funding of the Agency.

5 CONCLUSION

From the above discussion, the central theme of this paper has been an appraisal of the potency of Nigeria's biosafety mechanisms as a necessary complement to the international regime for biosafety, and prerequisite for, effectively exploiting the potential benefits of modern biotechnology, with specific focus on multilateral environmental treaty obligations for national biosafety institutions, especially taking into consideration the fact that (most of) Nigeria's domestic environmental legislations were made in fulfillment of the country's obligations under multilateral

135 National Biosafety Management Agency, 'Director General's Welcome Address' <http://www.nbma.gov.ng/?page_id=425> accessed 2 March 2017.

136 National Biosafety Management Agency (n 67).

137 Keizire (n 4).

138 Etemire and Muzan (n 31) 281-285.

139 Idowu (n 106) 176.

140 See for instance NESREA Act (n 26) section 13 (1) and (2).

environmental treaties.¹⁴¹ Nigeria has not specifically domesticated the biosafety protocol in accordance with the constitutional requirements and procedures for treaty domestication. But it could be argued that the enactment of the Biosafety Management Act is indeed a positive step in implementing measures to balance concerns regarding environmental and health considerations in the application of modern biotechnology in Nigeria, against the backdrop of strong public resentment to GMOs and the need for appropriate domestic legal, administrative and technical structures for biosafety.

It therefore implies that given the potential 'for providing solutions to major agricultural problems – like low crop yields and [socio-economic] issues arising from pests, diseases, drought etc. – that could aggravate world hunger and poverty'¹⁴² the recent enactment of the National Biosafety Management Act within what has been tagged the 'contemporary period' (i.e. the post-1987 era) in the development of environmental legislation which 'has seen the start of serious legislation and is characterized by increased environmental awareness and sophistication',¹⁴³ although biosafety issues hitherto has not been of particular legislative priority to the Nigerian government.

Thus, the signing of the Biosafety bill into law should not be seen as an end in itself, rather, sustained stakeholder involvement and awareness is required beyond the enactment of the law,¹⁴⁴ especially considering that 'stakeholder participation' in environmental matters in Nigeria is gradually evolving from the hitherto 'rational elitists' conception of participation to a much more 'democratic' participatory regime that accommodates 'multi-stakeholders'.¹⁴⁵ On the whole, the institutional arrangements in the Biosafety Act are predicated on established environmental norms and principles including free prior informed consent (or advanced informed

agreement), public participation and consultation, access to justice (through liability and redress systems), enforcement procedures and penalties. In this light, since the Agency is the national authority for biosafety in Nigeria, it is endowed with enforcement powers to take action necessary to determine compliance (with provisions of the Act), including monitoring and assessing the impact of GMOs on human health, animal, plant or the environment.¹⁴⁶

It is clear therefore that Nigeria now has a competent national authority, in line with the Cartagena Protocol, comprising an administrative and consultative body as well as a national focal point which is expected to liaise with the Secretariat of the Protocol to this end. To underscore the significance of these legal (and institutional) developments, the Biosafety Management Agency is legally empowered to 'liaise with the Secretariat and the BCH with respect to the administrative functions under the Biosafety Protocol'¹⁴⁷ as well as to partner with other 'relevant local and international agencies for the speedy realization of its mandate as the national authority on biosafety in Nigeria'.¹⁴⁸ These issues are indeed critical and therefore must be further explored and in good time, if the socio-economic benefits of modern biotechnology are to be effectively harnessed to 'boost socio-economic development of her population'.¹⁴⁹

141 Kaniye Samuel A Ebeku, 'Biodiversity Conservation in Nigeria: An Appraisal of the Legal Regime in relation to the Niger Delta of the Country' (2004) 16 (3) *Journal of Environmental Law* 365-367.

142 Nang'ayo (n 42) 4.

143 Ogunba (n 47) 657.

144 Mabeya, Singer and Ezezika (n 2) 226.

145 Etemire and Muzan (n 31) 282-286.

146 Biosafety Management Act (n 8) section 39 (a) – (d).

147 Biosafety Management Act (n 8) section 3(j).

148 Biosafety Management Act (n 8) section 3(q).

149 Food and Agriculture Organization (n 51).

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