Illegal Fishing Activities in the Gulf of Guinea: Economic, Environmental and Social Impact on Nigeria's National Development

ELEI GREEN IGBOGI
ISCEST Nigeria

ABSTRACT The Gulf of Guinea with its over three thousand (3000) miles of coastline is rich in resources. Over the decades, easy access to this resourceful body of water has attracted illegal activities from around the region and the world. Criminal activities such as human trafficking, narcotics, piracy and illegal fishing have caused Nigeria to lose a considerable amount of revenue. This paper investigates the impact of Illegal, Unreported and Unregulated (IUU) fishing activities on economic and social development in Nigeria. It draws on three main literature sources to support the discussion: (1) African Union Inter-African Bureau or Animal Resources' (AU-IBAR) (2016) Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing in Africa; (2) Rottenberger's (2012) Piracy – Criminality on the High Seas; and (3) Essien and Adongoi's (2015) Empirical Study on Sea Piracy and Security Challenges of Maritime Business Operation in Bayelsa State. Nigeria shares the Gulf of Guinea coastline so it is necessary to highlight IUU activities the in the entire region that is shared by twelve (12) nations - Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of the Congo, Democratic Republic of the Congo, Angola, and Sao Tome and Principe (an island nation 200 miles off the coast of Gabon). An examination of the literature reviewed, suggests that the catches that are lost from IUU, can realise an amount that is capable of increasing the Gross Domestic product (GDP) of the West African States, which has positive knock-on effects for environmental and social upliftment. The paper recommends sustained youth education programmes and activities with a view to creating awareness of the issues and prompting positive actions for personal and national development.

Keywords: illegal, unreported, unregulated (IUU), Gulf of Guinea, education, national development, sustainability

Introduction

The Gulf of Guinea is laden with vast aquatic resources. Its economic potential is quite astounding because of its considerable reserves of strategic minerals, natural gas/ oil and aquatic life. The purpose of this paper is to explore the impact of Illegal, Unreported and Unregulated (IUU) fishing activities on economic and social development in Nigeria. It draws on three main literature sources to support the discussion: (1) African Union Inter-African Bureau or Animal Resources' AU-IBAR's (2016) Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing in Africa; (2) Rottenberger's (2012) Piracy – Criminality on the

High Seas; and (3) Essien and Adongoi's (2015) Empirical Study on Sea Piracy and Security Challenges of Maritime Business Operation in Bayelsa State. Nigeria shares the Gulf of Guinea coastline, so it is necessary to highlight IUU activities the in the entire region. The paper also looks at the operations of IUU Fishing, highlights how trawlers used the ebola crisis to their advantage and reports on some of the challenges that Nigeria faces in tackling illegal deep-sea fishing in the Gulf of Guinea. It concludes by suggesting some of the practical methods that can be followed to help the nation to address the deep-sea issues that are impacting the country's development and progress. To provide a geographical framework for the discussion, the paper will first explain the Gulf of Guinea.

The Gulf of Guinea

The Economist describes the Gulf of Guinea as the world's worst piracy hotspot (Economist, 2019). It is located south of West Africa. The region can be defined as twelve nations sharing roughly 3,000 miles of common coastline covering countries; Sierra Leone, Liberia, Côte d'Ivoire, Ghana, Togo, Benin, Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of the Congo, Democratic Republic of the Congo, Angola, and Sao Tome and Principe. See Figure 1.

Figure 1: The Gulf of Guinea

Source: https://www.mysailing.com.au/cruising/maritime-piracy-incidents-down-in-q1-2019-but-kidnapping-risk-in-gulf-of-guinea-persists

Another expression used by the Economist is: "the world's most pirate-infested sea". The graphic word picture painted by Economist's is not out of place because of the numerous destructive activities that are carried out in the Gulf. According to this same source, in 2018, the International Maritime Bureau (IMB) reported seventy two (72) attacks on vessels at sea between Ivory Coast and Came-

roon. This is forty four (44) more attacks in a four-year period. By June 2019, Thirty (30) attacks were recorded. Based on the constant increase in attacks, it is highly likely that the attacks at the close of 2019 will exceed the June figure by a reasonably big margin. Max Williams, Fleet Operations Director at Africa Risk Compliance (ARC), which provides security services that include, Underwater, Operational Support and Agency Services notes that acts of piracy are not habitually recorded. For example, ARC estimates that there could very well be one hundred and forty four (144) in 2018, instead of the seventy two (72) that was reported by IMB.

With so many acts of piracy reported by reputable sources, it is understandable why World Atlas (2019) describes the Gulf of Guinea as one of the most dangerous gulfs in the world. Moreover, the negative effects of piracy are not confined to a single location, but have spread to most, if not all the countries in West Africa. Also, the larger international community has not escaped the dire consequences of piracy in the Gulf. This is how Brower-Berkhoven explains the situation:

> …the impact of IUU fishing is difficult to gauge. However, the estimated global economic loss from illegal fishing is likely as high as USD $23.5 billion annually.1 This figure represents 26 million tonnes of fish or roughly one-quarter of the world catch. With large profits to be made and minimal threat of legal repercussions – due to the lack of state capacities – the incentive to fish illegally in West African waters is high (2014, p.36).

Brower-Berkhoven's explanation as noted above poses some serious threats to the stability and safety of the West African Region. This is especially because the legal repercussions are so insignificant, and the profits made are so huge. This question that arises here is: why do IUU fishing activities seem to go unchecked?

Illegal, Unregulated, Unreported Fishing

Poor governance and insufficient law enforcement affords a situation where crime seems to pay. In fact, life in the maritime region has become synonymous with lawlessness. Governments have suffered from two contributing factors: (1) A lack of genuine motivation and vigilance towards the mission seems pervasive in leadership circles; and (2) Even when legitimate effort is applied to fighting criminal activity, a shortfall of funds, resources, and experience generates meagre results. Local economies, unable to compete, find illegal activity to be much more profitable resulting in an almost insurmountable challenge to security. This is how United Nations Food and Agricultural Organisation (FAO) describe IUU:

> Illegal, unreported, and unregulated (IUU) fishing remains one of the greatest threats to marine ecosystems due to its potent ability to undermine national and regional efforts to manage fisheries sustainably as well as endeavours to conserve marine biodiversity. IUU fishing takes advantage of corrupt administrations and exploits weak management regimes, in particular those of developing countries lacking the capacity and resources for effective monitoring, control, and surveillance (MCS) (FAO, 2019).

What seems to make the above situation quite complicated is the IUU fishing links to the various types and aspects of fisheries. One such aspect is the influences of those in charge of community and national affairs. Another aspect is where IUU fishing occurs – on the high seas. FAO also points out that associated with this level of complexity are organised crime, the stages of capture and how the fish is used. IUU fishing has the potential to destroy the livelihood of the genuine fishers because of the way those involved in IUU monopolise available marine activity resources.

Such a situation affects countries in the Gulf in ways that extend beyond the obvious. There are far reaching social implications, not least because poverty is on the increase. FAO (2019) makes reference to the possibility that the produce that comes from IUU fishing "can find their way into overseas trade markets…" Beres' (2019) *Sea of Shadows* documentary can be viewed as a reflection of that observation. Here are some details:

- *Sea of Shadows* tells the story of an illegal fish trade between the Mexican cartel and Chinese mafia.
- The fish bladders, bought for $5,000 from local fisherman, are sold in China for over $100,000 to make an unproven medicine.

With regard to the above details, Beres (2019) concludes: "An entire ecosystem is on the verge of collapse thanks to the illegal bladder trade between the Mexican cartel and Chinese businessmen". This statement tells of the range of social, economic and environmental impacts that are derived from IUU. The next section will take a brief look at AU-IBAR's (2016) research work, which looks at the economic, social and environmental impact of IUU fishing in Africa. The investigations were carried out against the background of the Monitoring, Control and Surveillance (MCS) systems that operate in the regions. This has to do with how fisheries resources are conserved and sustained.

Weaknesses and Vulnerabilities

AU-IBAR (2016) identified several factors that contribute to the increase of IUU fishing activities, which make the African continent very vulnerable. The quality of governance has been seen to be a very significant factor. The legacy of civil wars, social turmoil and other crises are also noted factors which have created fertile ground for IUU fishing to prosper. AU-IBAR (2016) cites this example: Distant Water Fisheries (DWFs) "took advantage of the Ebola crisis in West Africa to escalate IUU fishing activity, when scarce resources to combat IUU fishing were being directed elsewhere".

From all reports, MCS has not shown to be effective. There are also reports of institutional corruption. When penalties are meted out, they are deemed to be unsuitable for "infractions in comparison to the value of the IUU catch" (ibid). Furthermore, the justice and legal systems are considered inadequate, there seem to be no longer any political will to fight IUU, the Exclusive Economic Zone (EZZ) is hardly been patrolled regularly, lack of regional cooperation and no direct policies that address conservation and sustainability, among many other factors. On account of all the factors, AU-IBAR saw it fit to present some proposals and make some recommendations. See Box 1 for some recommended forms of support.

Box 1: Recommended forms of Support

Forms of support required to strengthen capacity to enable African coastal countries to effectively curb IUU fishing

1. Strengthening MCS capacity and resourcing
   a. Strengthen capabilities, procedures and routines for MSC
   b. Extending the use of technology and innovation in support of MCS
2. Strengthening regional and international cooperation and coordination
   a. Strengthening the Role of RFMOs, RFBs and regional initiatives
   b. Enhance co-ordination across agencies leading fisheries management and development initiatives, strategies and plans
   c. Improving collection and sharing of data and information, the adoption of standards, and the promotion of transparency
   d. Improve international information sharing and co-ordination
   e. Improve national level responsibilities and coordination
   f. Promote Africa wide reconciliation of IUU catches

3. Rolling out awareness raising, training and capacity building   programmes
   a. Design and implement raising campaigns
   b. Develop and deliver training programmes and courses

4. Promoting greater civil society involvement in fighting IUU fishing
5. Developing the specialisation and professionalisation of activities and skills for combatting IUU fishing
6. Launching media and education campaigns to highlight the nature and negative impact of IUU fishing
7. Innovation around the acquisition of funding
8. AU member states to ensure coherence of their national fisheries policies on MCS with the relevant provisions of the policy framework and reform strategy for fisheries and aquaculture in Africa
9. A guide for the implementation of the policy framework and reform strategy for fisheries and aquaculture in Africa would assist member states in developing coherent policies for effective combating IUU

Source: AU-IBAR (2016, p.XIV)

The Rise in Sea Piracy and IUU

This paper makes reference to the 1982 United Nations Convention on the Law of the Sea to explain piracy. Employing the definition of the 1958 Geneva Conventions on the Law of the Sea, Joyner (2005, p.137) states:

> Piracy is understood as any ille-gal acts of violence or detention, or any act of depredation, committed for private ends by the crew or the passengers of a private ship or a private aircraft, and directed:
>
> i)   on the high seas, against another ship or aircraft, or against persons or pro-perty on board such ship or aircraft;
>
> ii)   against a ship, aircraft, persons or property in a place outside the jurisdiction of any state.

Based on the Geneva Conventions on the Law of the Sea, piracy is regarded as a criminal act rather than an act of terrorism. Rottenberger (2012, p.31) shows the difference by explaining that terrorist organisations do make use of piracy for their own interest in cases of blackmail and raising funds. However, Rottenberger points out that although piracy is not defined as a terrorist act, "experts discuss the possibility that terrorists are appropriating the methods of pirates to attack suitable targets, such as passenger ships". Rottenberger further mentions three other ways that explains the difference between piracy and terrorist acts: (1) the absence of political motive; (2) the avoidance of publicity; and (3) the purely material interests of the pirates or pirate syndicates (p.31).

The twenty first century has seen a significant increase in piracy (Pichon and Pietsch, 2019; International Chamber of Commerce (ICC), 2018); Essien and Adongoi, 2015). ICC (2018) reports:

> Piracy increased on the world's seas in 2018, with a marked rise in attacks against ships and crews around West Africa, the International Chamber of Commerce's International Maritime Bureau's (IMB) latest annual piracy report reveals.
>
> Worldwide, the IMB Piracy Reporting Centre (PRC) recorded 201 incidents of maritime piracy and armed robbery in 2018, up from 180 in 2017.

However, according to (Rottenberger, 2012), piracy has been on the rise since 1990s, "in South East Asia, the China Sea, the Indian Ocean, the waters off the coasts of West Africa and the Caribbean". Rottenberger based his assertion on the International Maritime Bureau's (IMB) 2009 report that notes that there were 406 pirate attacks worldwide in 2009. The number of cases reported does not give a full picture of the situation because Rottenberger relates that a number of the cases are not reported.

There is an intricate and interesting link between IUU, piracy and economic concerns (Denton and Harris, 2019). It seems ironical that piracy started "as an armed response to illegal fishing" and was later stolen by criminal gangs whose sole aim was to make a profit (Ocean Beyond Piracy, 2019). As more and more vessels are attacked, piracy has become more popular and so does IUU. Based on interviews conducted with selected Somalians, Ocean Beyond Piracy provides a summary of the responses:

- Lack of economic opportunity was identified as the principal driver of pirate recruitment.

- Illegal fishing by foreign vessels was characterized as the fundamental grievance that sparked piracy and provides on-going justification for it.
- Locals resent the international navies, believing they are in Somali waters specifically to protect illegal foreign fishing.
- Attitudes towards naval forces are much more positive in areas where they have established direct, cooperative relationships with coastal communities.
- There is widespread agreement that without changes to the underlying conditions, piracy will return (Ocean Beyond Piracy, 2018).

Causes, Challenges and Security

It is clear that the rise in piracy and IUU has greatly affected the environmental, social and economic development of Nigeria. The country faces many challenges such as the abuse of fishing practices that undermine the local fishing industry. It is therefore reasonable to argue that it is a Nigerian problem. While this may have some truth in it, it seems more sensible to look at the IUU and piracy issues with a much wider context, that is, in light of regional and global situations. Rottenburger (2012, 31-32) highlight the causes as seen in the global context. Rottenburger opines:

> In the global context, the increase in piracy is related to changes brought about by the end of the Cold War, when the military presence of the superpowers and their allies in international waters declined. As the global economy became increasingly interconnected and trade barriers were lowered, the size of merchant fleets increased, yet coastal inhabitants of impoverished regions did not benefit from their commercial success. The effects of the global economic crisis, such as rising unemployment and low public spending, exacerbate the imbalance.

With respect to the regional context, Rottenberger identifies a major cause as "the decline or elimination of state systems of law and order, such as in Somalia, Nigeria or some territories in the South China Sea". This situation has created many opportunities for the smuggling of people, drugs and weapons. There is also a security issue because of the decrease and/or closure of coastguard services. Obviously, this has resulted in a bigger increase and spread of IUU activities. The problems are further compounded by overfishing by international fishing fleets. This circumstance has been conducive to the spread of piracy. The same is true of overfishing by interna-tional fishing fleets. A related issue is that of contamination of coastal waters whey international companies unlawfully dump their waste in the sea. This has obviously affected local fishermen, and by extension, the livelihood of the entire community (Asare, 2015; Brower-Berkhoven, 2014; Anderson, 2010).

Essien and Adongoi (2015), in their study entitled *Sea Piracy and Security Challenges of Maritime Business Operation in Bayelsa State, Nigeria*, looked at issues of security. Interestingly, Bayelsa State, an oil-rich state that is teeming with fishes of all sorts such as crayfish, shrimps and snails, borders the Atlantic Ocean. The Gulf of Guinea shares part of the Atlantic Ocean, so the security issues are likely to affect any country that shares the same water borders. Neethling (2010), Onuoha (2010), Vreÿ (2009) and Zabadi and Onuoha (2009), among others have addressed security issues in waterways that are connected to Nigeria. An analysis of their findings have shown the seriousness of the security issue and the great negative effects that this is having on livelihoods, businesses and hence the Nigerian economy. This implies that the security is an acute challenge for the Nigerian maritime authorities. As noted earlier, the increased frequency of IUU and pirate attacks in the

Gulf are compounding the issues. Essien and Adongoi (2015, p.220) reports: "… the activities of sea pirates do affect fishing business, particular fishermen's fear of being robbed, vandalized maimed or even shot by pirates". In support of this conclusion, the research work mentioned earlier in this paragraph has reported similar deductions. Evidently, the increase in pirate attacks is adversely affecting not only the Nigerian economy, but also the physical and social environments (Molina and McDonald, 2019; Essien and Adongoi, 2015).

Addressing the Issues

From the literature reviewed for this paper, it is very clear that dealing with the challenges of IUU and piracy is not an easy task. However, there is still a need to address the issues. This paper therefore makes these suggestions to the Nigeria maritime authorities:

- Have a values-education programme that is emphasised in the school curriculum, in youth organisations and in community project activities. The need to focus on the youths is very critical.
- Nigerians, by and large, have an entrepreneurial spirit. Utilise this strength in a way that it provides meaningful sustained employment for the youths.
- Encourage community and youth leaders to get involved in security matters. Listen to their suggestions and work with them on projects that will help to capacity in needed security areas.
- All bodies involved in national security, together with appropriate government officials should create education activities that will encourage participants to get involved in projects that will improve livelihood and encourage social cohesion, which in turn should help to address the environmental and economic concerns.

It should be noted that the above suggestions are not definitive. There is so much more that can be done. Governmental and maritime authorities should still focus on the technology that can accommodate all the up-to-date surveillance devices and all other means that are necessary to curb IUU and sea piracy. Naturally, there is also the need to keep in step with international organisations who are dealing with these very same and similar issues (See Box 2).

Box 2: Summary Plan for action to Tackle IUU Fishing in Africa

1. Strengthen the MCS working group established under the African Fisheries Reform Mechanism to galvanise and facilitate co-ordination between regional bodies in the fight against IUU fishing.
2. Establish "IUU Regional Network" comprising RFMO, REC and LME bodies, with IUU regional working groups in each of these.
3. Convene a high-level policy dialogue on IUU fishing with key actors (IMO, FAO, the International MCS Network, INTERPOL, IOC-UNESCO, UNEP, UNDOC etc.) to raise awareness at political level on the impacts and economic losses associated with IUU and the options to curb IUU fishing including the implementation of relevant international instruments.
4. Design, and implement targeted training and capacity development programmes (including on use of new and appropriate MCS technology) based on country specific needs assessments.
5. Enhance regional co-operation, and the adoption and implementation of regional and intraregional minimum terms and conditions for fisheries access for FFAs.
6. Strengthen the capacity of regional institutions for combating IUU.
7. Fast-track the adoption of a Global UVI to vessels smaller than 100 GT, and explore the cost effectiveness of using regionalised vessel detection systems.
8. Include issues of IUU in the African position at WTO negotiations.
9. Develop a detailed IUU Strategy and Action Plan ("IUU SAAP") for Africa, and mobilize resources for its implementation.
10. Support member states for implementation of relevant provisions of Pan African fisheries policy framework and reform strategy as well as international instruments in combating IUU

Source: AU-IBAR (2016, p.XV)

Conclusion

IUU fishing activities on economic and social development in Nigeria was the main focus of the paper. There are many research investigations that have addressed this big issue, so in the interest of space, the paper relies on three main sources to build and support the discussion: (1) AU-IBAR's (2016) Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing in Africa; (2) Rottenberger's (2012) Piracy – Criminality on the High Seas; and (3) Essien and Adongoi's (2015) Empirical Study on Sea Piracy and Security Challenges of Maritime Business Operation in Bayelsa State.

IUU and sea piracy have created numerous issues for nations in the Gulf of Guinea. The social impact is affecting the livelihood of the communities; environmental impacts are a worry for Nigeria and its states that border the Atlantic Ocean. The economic impact is crippling the day-to-day operations of the nation. Although the problems seem insurmountable because of the increase in IUU, the paper still offers some suggestions that can help to address the problems.

37

Nigeria remains committed to the building of stakeholder consensus in maintaining the Nations maritime domain.There is a therefore continuous need for the collaboration of the relevant national authorities and maritime official of the Gulf of Guinea region to build technical and operational cooperation in ensuring improvements in safety and security in the region's ports, seas and maritime domain in general. There is also the need for ongoing educational programmes that involve youths and the community in general. These can play a vital role in promoting and sustaining personal and national development.

Correspondence
Dr Elei Green Igbogi
ISCEST, Nigeria
Email: eleigreen1@gmail.com

References

Anderson, D. (2010). The New Piracy: The Local Context. *Survival*, 52(1), 44-49.

Asare, C. (2015) Addressing Illegal Fishing through Education and Sensitization for Sustainable Fisheries Management. Available from https://www.researchgate.net/publication/316042519_Addressing_Illegal_Fishing_through_Education _and_ Sensitization_for_Sustainable_Fisheries_Management (Accessed 10th October 2015).

AU-IBAR (2016) *Economic, Social and Environmental impact of Illegal, Unreported and Unregulated Fishing in Africa*. Nairobi: African Union – Interafrican Bureau for Animal Resources (AU-IBAR).

Beres, D. (2019) *"Cocaine of the Sea" — the Illegal Fish Trade of the Mexican Cartel and Chinese Mafia.* Available from https://bigthink.com/politics-current-affairs/vaquita. (Accessed 10th October 2019).

Brower-Berkhoven, J. (2014) A View from the West: Illegal Fishing in West Africa: A Symptom of a Wider Problem. *Canadian Naval Review*, 10(1), 36-37.

Denton, G. and Harris, J. (2019) *The Impact of Illegal Fishing on Maritime Piracy: Evidence from West Africa, Studies in Conflict Terrorism,* DOI: 10.1080/1057610X.2019.1594660. (Accessed 10th October 2019).

Essien, B. and Adongoi, T. (2015) Sea Piracy and Security Challenges of Maritime Business Operation in Bayelsa State, Nigeria: An Empirical Study. *International Journal of Humanities and Social Science*, 5(2), 213-221.

FAO (2109) *Illegal, Unreported and Unregulated (IUU) Fishing.* Available from http://www.fao.org/iuu-fishing/en/. (Accessed 10th October 2019).

ICC (2018) *IMB Piracy Report 2018: Attacks Multiply in the Gulf of Guinea*. Available from https://www.icc-ccs.org/index.php/1259-imb-piracy-report-2018-attacks-multiply-in-the-gulf-of-guinea. (Accessed 10th October 2019).

Joyner, C. (2005) *International Law in the 21st Century: Rules for Global Governance Responsibility,* Lanham, MD: Rowman & Littlefield.

Molina, R. and McDonald, G. (2019) *The Economic and Environmental Impact of Modern Piracy on Global Shipping*. Available from https://renatomolinah.com/assets/docs/piracy.pdf (Accessed 10th October 2019).

Neethling, T. (2010) Piracy around Africa's West and East Coast: A Comparative Political Perspective. *South African Journal of Military Studies*, 38(2), 89-108.

Ocean Beyond Piracy (2018) *Somali Perspectives on Piracy and Illegal Fishing.* Available from http://oceansbeyondpiracy.org/publications/somali-perspectives-piracy-and-illegal-fishing. (Accessed 10th October 2019).

Onuoha, F. (2010) Piracy and Maritime Security off the Horn of Africa: Connections, Causes, and Concerns, *African Security*, 3(4), 191-215, DOI: 10.1080/19392206.2010.533067.

Pichon, E. and Pietsch, M. (2019) *Piracy and Armed Robbery off the Coast of Africa - EU and Global Impact. Available from* http://www.europarl.europa.eu/RegData/etudes/IDAN/2019/635590/EPRS_IDA(2019)635590_EN.pdf. (Accessed 10th October 2019).

Rottenberger, N. (2012) Piracy – Criminality on the High Seas, *SIAK-Journal − Journal for Police Science and Practice*, 2, 30-40, Online: http://dx.doi.org/10.7396/IE_2012_C. (Accessed 10th October 2019).

The Economist (2019) *The Gulf of Guinea is Now the World's Worst Piracy Hotspot.* Available from https://www.economist.com/international/2019/06/29/the-gulf-of-guinea-is-now-the-worlds-worst-piracy-hotspot (Accessed 10th October 2019).

Vreÿ, F. (2009) Bad Order at Sea: From the Gulf of Aden to the Gulf of Guinea, *African Security Review* 18(3), 17–30.

World Atlas (2019) *Where is the Gulf of Guinea?* Available from https://www.worldatlas.com/articles/where-is-the-gulf-of-guinea.html (Accessed 10th October 2019).

Zabadi, I. and Onuoha, F. (2009) State of West Africa: A Survey of Security Landscape. *The Nigerian Army Quarterly Journal*, 5(3), 304-324.