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Abstract. Global Blue New Deal aims to create climate stability and ocean climate nexus, also to elaborate COP26 works remains. The most important agenda is to tackle the disinclination of ocean health action. Even though the awareness of essential meaning of healthy ocean to sustainable blue economy and human well-being. The first pillar is to preserve ocean health due to its impact on the rise of sea level and welfare of local communities by reducing land-based marine pollution. Halt and curb use of plastic nurdles, plastic bags, and micro plastics through use of bans, taxes and other disincentives. The second pillar, conduct naturally friendly solution to promote sustainable environment and resilience for climate risk by supporting global movement to secure 30% of the ocean all over the world by 2030, also leveraging the existence of Marine Protected Areas (MPAs).

Keywords: Climate change, marine pollution, blue new deal.

1. Introduction

Indonesian ocean, in 2020, has been polluted with 1.772,7 g/m^2 of waste in total which it causes marine pollution[1]. In term of producing plastic waste, Indonesia has been the second largest country. Sludge oil also becomes one of the threats for Indonesian ocean that can cause the extinction of the sustainability of marine ecosystems[2]. Sludge oil problem has become one of the main problems in marine pollution [3] especially for Indonesia that is surrounded by waters. Kepulauan Riau deal with the marine pollution annually and over a decade, such as transboundary oil spill[3], land-based and marine-based marine debris, microplastics [1], etc. Territorial of Kepulauan Riau is strategic with the entry and exit point of the Malacca Straits and connecting several industrial countries [4]. This make Kepulauan Riau' waters are often polluted with high risk of marine ecosystem damage in Marine Management Zone (WPP) of Republic of Indonesia of 711. One of the most contaminated coast in the year-end is Malang Rapat Village[5], Bintan. According to Indonesia Ocean Justice Initiative (IOJI), the sludge oil is categorized as a substance that causes siginificant damage, not just to the marine itself but also to the marine environment in the Malaka Straits[5].

In the southern part of Indonesia, such as West Nusa Tenggara, Bali, and East Nusa Tenggara have been polluted by mineral mining, oil and gas industries. It causes the death of fish and poisoned victims after consuming the contaminated fish. The biodiversity is also threatened by this marine pollution. At 27th of April 2022, the marine pollution happened at Lawata Beach, Bima, which many dying and death fish are found. The other impact of marine pollution is the existence of mud crab that can be threatened by the marine pollution which if the mud crab can't continue its life, it can also impact to the existence of mangrove, since the mud crab always fertilizes the soil[6]. The existence of mangrove becomes important since the mangrove is one of the biggest carbon absorbing [7].

Table 1. The weight of trash in the ocean

No	Kind of Trash	Total (g/m^2)
1	Plastic	627,8
2	Glass and ceramic	226,29
3	Metal	224,76
4	Wood	202,36
5	Other substances	173,73
6	Fabric	128,58
7	Rubber	110,64
8	Plastic foam	56,68
9	Paper and cardboard	21,86

Global Blue New Deal aims to create climate stability and ocean climate nexus, also to elaborate COP26 works remains. The most important agenda is to tackle the disinclination of ocean health action. Even though the awareness of essential meaning of healthy ocean to sustainable blue economy and human well-being. COP of 2022 have to identify the method to leverage the maritime potential by tackling the climate crisis. The crucial role of ocean needed to be concerned, our ocean provides almost all of the basic needs; oxygen, food-chain, and livelihood [8]. In 2017-2018, found that Sustainable Development Goals of 14, Life Below Water, was a primary ocean issue, and according to the global leaders, it was important to reach other goals; hunger and climate[9]. A short-and sharp decision have been made in COP26 with the growth of implications to whole aspects, including prosperity and well-being of living for today and next generations [10]. Due to pandemic of Covid 19, the challenges of realizing the mitigation of climate risk became much more difficult. Intergeneration-youth action on climate spread the voice of voiceless, especially in Global South that need to be heard and bridged into empiric implementation.

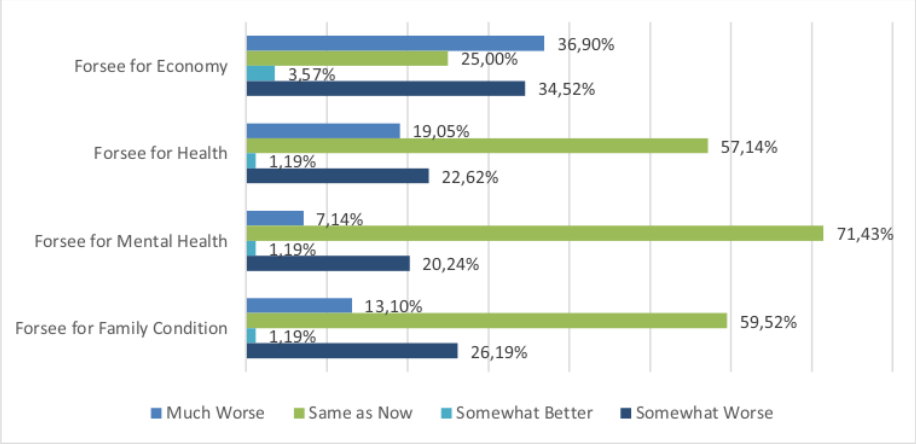

Figure 1. Forsee aspect of marine pollution[3].

Marine pollution implication in has become a serious threat for life below waters in Kepulauan Riau. The implication can also threat for local community welfare, especially for fishermen due to marine ecosystems degradation. Though the fisheries sector is one of the leading economic sectors in the Kepulauan Riau province. Besides fishermen, marine pollution has been becoming a threat for tourism, the primary potential of blue economy in Kepulauan Riau. On the other hand, the emerging marine pollution impact to the whole aspect of economy, social and environment in Kepulauan Riau.

2. Research Objectives and Methodology

This study aims to find the enforcement of regulation to protect marine ecosystem in accordance to the agreement of Global Blue New Deal, initiative action by Youth Policy Advisory Council of Sustainable Ocean Alliance (SOA) in COP26. The locus of this study is in Bintan Regency, Kepulauan Riau Province, and specific location of observation and interview is in four priority location of Bintan, such as Gunung Kijang, Bintan Pesisir, Bintan Utara, and Telok Sebong. The informants of this study are local government of Bintan, group of people surveillance (POKMASWAS), Group of tourism awareness (Pokdarwis), and local community. This study uses a qualitative research methodology where the research procedures are derived from descriptive data sourced from written, spoken words and the results of observations and research [11]. Analytical descriptive that the author did is the result ofthe data obtained by writing in conducting observations, interviews, documentation,analysis, and field notes.

3. Results and Discussion

3.1 Global Blue New Deal

Concerning the climate risk interconnection and the basic needs of youth role for empiric action for sustainable ocean, Sustainable Ocean Alliance (SOA) Youth Policy Advisory Council (YPAC) voice of young generations that concern about the environmental health. The voice of local communities from originally from Latin America, Asia and Africa, whom impacted a lot. SOA-YPAC offered youth voices as a reminder of implementation of UNFCCC to act more in maritime and climate-change issues.

There is Global Blue New Deal, a public policy agenda that is who according to youth demand for ocean climate resilience. Policy contains four main pillar or priorities focus for ocean policy. If we previously looked at how bad the pollution levels in the country are, here are the mitigations of climate change carried out by Indonesia. we see how it fits into the 4 policy pillars carried out by the Global blue new deal. Four Pillars of Global Blue New Deal Policy:

- Net zero carbon future: address the climate emergency
- Restore marine biodiversity: promote environmentally friendly solutions
- Sustainable seafood: strengthening long-term supply of seafood to fulfil global demand; and
- Stakeholder engagement: inclusive young generation and communities in natural management of marine resource.

3.2 Indonesia Climate Change Mitigation

The Previous Climate change programs had been not strong enough to fulfill the commitment of Indonesia to tackle the climate crisis, for instance, there was no clear hierarchy of authority, even though there was REDD+ funding, and similar circumstances with MEMR and efficiency of energy use. Meanwhile, serious doubts remain Indonesia control of its CO^2 emissions in line with its broader act and agreements.[12] Indonesian Climate Change Mitigation Policy nowadays related to the Global Blue New Deal divided into 4 actions. The first, Net Zero Carbon Future, Presidential regulation no. 98 of 2021 article 2 paragraph 3 on the Implementation of Carbon Economic Value to Achieve Nationally Set Contribution Targets and Control of Greenhouse Gas Emissions in National Development:

a) Establish policies and steps and implementation of activities in accordance with government commitments in the form of 29oh GHG Emission Reduction (twenty nine percent) up to 4lo/o (forty one percent) in 2O3O compared to GHG Emission Baseline; and building national, territorial, and regional resilience society from various risks to the condition climate change or Climate Resilience[13].
b) PM no. 29 of 2014 concerning the preventive action for marine pollution and surround environment. To control the pollution at Indonesia ocean [14].

c) The application of Carbon Tax (Carbon Tax) [15] is in accordance with the mandate of Law Number 7 of 2021 concerning Harmonization of Tax Regulations.

The second program is Restore Marine Biodiversity: promote environmentally friendly solutions with the seascapes management and initiatives, as follows:

a) Application of the "Principle of Resilience" in the development of ecosystems and networks in fisheries management marine reserves, disaster prevention, coastal restoration, protection of endangered species rare species. All components of the work plan help ensure availability Protect marine living resources and reduce the damaging effects of global climate change.
b) The use of biofuels in Indonesia began in 2006 following Presidential Instruction No.1 of 2006. The government has set a target of using alternative energy by 23% by 2025[16]

The third program is Sustainable Seafood: strengthening long-term supply of seafood to fulfil global demand, as follows:

a) Maintain coral reefs separately from stress mitigation strategies, measuring the effectiveness of the MPA and attention to the fisheries and tourism sectors, developing climate-resistant coral research.
b) MPA establishes quota-based measured fishing policy [17].
implementation of marine resource systems with sustainability, such as:
   - Regulation of fisheries business permits;
   - Application of fishing quota management;
   - Protection of certain species (napoleon fish and sea turtles);

   Prohibition of catching certain species (crabs and lobsters laying eggs) and protection of spawning ground.

The last, but not least, program related to the Stakeholder Engagement: inclusive young generation and communities in natural management of marine resource in Presidential Regulation No. 61 of 2011 Article 1, as follows:

a) Establishment of RAN-GRK. Reducing Greenhouse Gas Emissions action plan, well-known as RAN-GRK. It is a masterplan to conduct several related activities whether directly or indirectly to, according to national development targets, reduce greenhouse gas emissions [18].
b) conducting training and socialization activities on climate change mitigation actions in the marine sector to the community

4. Conclusion

The conclusion is that the initiative steps of the Global Blue New Deal which are contained in the four pillars have been carried out in advance by several countries including Indonesia. it can be seen that from several main points of the GBND policy, it turns out that it has been set by the government or the indonesian people. It's just that the Global Blue New Deal is a step or follow-up policy of pre-existing policies and becomes a perfection for them.

References

[1] A. D. Syakti *et al.*, "Daily apportionment of stranded plastic debris in the Bintan Coastal area, Indonesia," *Mar. Pollut. Bull.*, vol. 149, p. 110609, 2019, doi: 10.1016/j.marpolbul.2019.110609.
[2] W. E. Yudiatmaja, Yudithia, T. Samnuzulsari, and Suyito, "An institutional analysis of the trans-national marine waste: A case study of sludge oil in Bintan seawater, Kepulauan Riau, Indonesia," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 423, no. 1, 2020, doi: 10.1088/1755-1315/423/1/012058.
[3] D. Akbar, A. Setiawan, R. Prayuda, A. Putra, A. Aznor, and W. E. Yudiatmaja, "Community Preparedness on Transboundary Oil Spill Governance in Bintan Island," *J. Phys. Conf. Ser.*, vol. 1655, no. 1, 2020, doi: 10.1088/1742-6596/1655/1/012144.
[4] Z. Sun, "Regulation of Shipping in the Straits of Malacca and Singapore," *Cent. Int. Law*, no. September, 2017.
[5] A. Zacky, D. Akbar, and A. D. Syakti, "Marine Pollution 73/ 78 IMO convention: a tool for sustainable marine resources in Kepulauan Riau Province," *E3S Web Conf.*, vol. 324, p. 03004, 2021, doi: 10.1051/e3sconf/202132403004.

[6] L. Ababouch and C. Carolu, "Fisheries and Aquaculture in the Context of Blue Economy," *Feed. Africa*, vol. 2, no. 21-23 October, p. 13, 2015, [Online]. Available: http://www.afdb.org/fileadmin/uploads/afdb/Documents/Events/DakAgri2015/Fisheries_and_Aquaculture_in_the_Context_of_Blue_Economy.pdf
[7] D. Akbar, Irman, W. E. Yudiatmaja, and K. Fadli, "Managing mangrove forest in Bintan Island: Socio-economic benefits of climate change mitigation and adaptation," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 724, no. 1, 2021, doi: 10.1088/1755-1315/724/1/012103.
[8] I. Irman and D. Akbar, "Tata Kelola dan Kebijakan Wilayah Konservasi Mangrove Di Kabupaten Bintan," *KEMUDI J. Ilmu Pemerintah.*, vol. 6, no. 01, pp. 75–82, 2021, doi: 10.31629/kemudi.v6i01.3671.
[9] D. Akbar, Mariani, W. E. Yudiatmaja, and Edison, "Governance of mangrove restoration and conservation to climate change resilience in Bintan Island," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 824, no. 1, p. 012048, 2021, doi: 10.1088/1755-1315/824/1/012048.
[10] D. Kristanti *et al.*, "Network governance in addressing climate change: a case study of the Asian Cities Climate Change Resilience Network (ACCCRN) in Indonesia," *IOP Conf. Ser. Earth Environ. Sci.*, vol. 724, no. 1, p. 012091, 2021, doi: 10.1088/1755-1315/724/1/012091.
[11] Prof. Dr. Sugiyono, *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*. 2016.
[12] B. P. Resosudarmo, F. Ardiansyah, and L. Napitupulu, "The Dynamics of Climate Indonesia," *Clim. Gov. Dev. World*, pp. 72–90, 2013.
[13] Kementerian Lingkungan Hidup, "Indonesia's FOLU net sink 2030," pp. i–xii, 2022.
[14] Kementerian Perhubungan, "Peraturan Menteri Perhubungan Nomor PM 29 Tahun 2014 Tentang Pencegahan Pencemaran Lingkungan Maritim," *Kemenhub Pencemaran Lingkunga Marit. Pencegah. Pencabutan*, vol. 1115, no. 879, p. 27, 2014.
[15] A. S. Suryani, "Persiapan Implementasi Pajak Karbon di Indonesia," *INFO Singk. Kaji. Singk. Terhadap Isu Aktual dan Strateg.*, vol. XIV, no. 8, pp. 19–24, 2022.
[16] A. Wijaya, H. Chrysolite, M. Ge, C. K. Wibowo, and A. Pradana, "How Can Indonesia Achieve Its Climate Change Mitigation Goal? an Analysis of Potential Emissions Reductions From Energy and Land-Use Policies," *World Resour. Inst.*, no. September, pp. 1–34, 2017, [Online]. Available: https://wri-indonesia.org/sites/default/files/WRI Layout Paper OCN v7.pdf
[17] Dinas Kelautan dan Perikanan Provinsi Kepulauan Riau, "Laporan Kinerja Instansi Pemerintah (LKjIP) Tahun 2019," 2020.
[18] P. T. Thuy, M. Moeliono, B. Locatelli, M. Brockhaus, M. Di Gregorio, and S. Mardiah, "Integration of adaptation and mitigation in climate change and forest policies in Indonesia and Vietnam," *Forests*, vol. 5, no. 8, pp. 2016–2036, 2014, doi: 10.3390/f5082016.

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