Biodiversity Protection from the Impact of Illegal Gold Mining for Sustainability

Fenty U. Puluhulawa1*, Amanda Adelina Harun2

1 Faculty of Law, State University of Gorontalo, Indonesia.
2 Student in Faculty of Law, Islamic University of Indonesia, Indonesia.

Abstract. Biodiversity protection as the ecosystem formation component that supports the process of life is highly needed to take into account. Several previous studies show that biodiversity in Gorontalo is decreased that it will endanger other biodiversities in this region if this urgent issue is not immediately resolved. One of the solutions is through cross science. The objective of this study is to describe biodiversity and Artisanal and Small-Scale Gold Mining (ASGM) along with the needs to optimize the functions of law in protecting biodiversity. This study was conducted by referring to previous studies, so that secondary data were used. It also employed an interview section in order to support the secondary data mentioned previously. Further, the data were analyzed using a qualitative descriptive analysis based on several relevant statutory norms.

1. Introduction

Biodiversity is natural wealth that should be protected and preserved due to its benefits for human life. One of the global issues regarding biodiversity is the decrease in number and quality, even the extinction of particular species due to different factors. These factors include the failure of human behavior in righteously and wisely treating the nature and the environment as well as the ineffective law as one of the control instruments towards the excessive use of collective resources. Short-term economic interests also sometimes overthrow ecological interests. The exploitation of natural resources cannot be legally tolerated.

Gorontalo Province that was a part of North Sulawesi Province is one of the regions that has biodiversity as natural wealth that should be protected and preserved. This province has five regencies, i.e., Gorontalo, Pohuwato, Boalemo, North Gorontalo, and Bone Bolango; and one city of Gorontalo. Taman Nasional Bogani Nani Wartabone (TNBNW) as the national park in this region has unique, endemic, and rare flora and fauna. This is because of the geographical location on the Wallace line. Based on the previous study [1], TNBNW had 400 types of trees, 24 types of orchids, 120 types of epiphytes, 49 types of ferns, 90 types of medicinal plants, 24 species of mammals, 11 species of reptiles, two species of amphibians, 64 species of aves, 36 species of butterflies, 200 species of beetles, 19 species of freshwater fish, and 64 species of birds (45 species are endemic).

In addition to biodiversity, Gorontalo has mineral resources, e.g., gold. In several regency locations, there is a gold mine managed by the business entity or small-scale mining or also widely known as
Artisanal Small-Scale Gold Mining (ASGM) which its mining is done by the society or called as Public Mining. Generally, small-scale mining is carried out illegally; thus, unauthorized public mining is against the law. Illegal ASGM can potentially endanger the existence of biodiversity in Gorontalo due to the absence of a control stage, including the use of chemical compounds that extremely threaten human beings and biodiversity. Biodiversity and mineral resources (gold) in Gorontalo serve as the potential for a better life if its management is performed according to the law in which law should be a guideline in doing activities. This study will describe the urgency to functions the law in terms of biodiversity protection from the impact of ASGM.

2. Methodology
This study was a combination of normative juridical and empirical juridical approaches. The normative juridical approach used primary law material, namely statutory regulation related to the results of previous studies. In supporting the primary law material, an interview section was done to six miners and two apparatus. Further, the collected data were analyzed descriptively.

3. Result and Discussion
3.1 Biodiversity Potentials and ASGM
Economics and development have always become an interesting issue to discuss. However, the impact of advanced economics and development on environmental damage becomes an infrequently-discussed topic. A discussion about the process of long-term conservation plays a vital role in having special attention to minimize various impacts on biodiversity.

On the one hand, the mining sector is one of the businesses to improve the economy of the society; on the other hand, this sector is susceptible to environmental damage or endangers the existence of biodiversity due to the poor management that does not follow the applicable rule. Gorontalo Province has an area of 1,221,544.00 ha; the forest is 1,187,552.4 ha in size or around 97.22% of the total area of Gorontalo Province. Meanwhile, the conservation area is 193,908.70 ha or approximately 16.33% of the total forest area [2]. Besides the conservation area, Gorontalo also has mineral resources, such as gold. The exploration results of mine potentials conducted before the 1991 national park decree and the exploration results in 1982 were stipulated, the data from the Ministry of Energy and Mineral Resources of the Republic of Indonesia show that this conservation area is included in the national reserve list category. In 2006, this area was utilized without lessening the ecological functions around the area [3]. This condition is impactful on Gorontalo as a region that is prone to environmental problems.

Conservation area owns biodiversity that some of which is endemic. TNBNW is located in two regencies, i.e., Bolaang Mongondow Regency (in North Sulawesi Province) with an area of 177,155 ha and Bone Bolango Regency (in Gorontalo Province) with an area of 110 ha. TNBNW has been designated as a national park based on the Decree of the Minister of Forestry Number 1127/Kpts-II/1992 dated December 19, 1992. This area was previously established as a wildlife reserve of Bone Bolango with an area of 110 ha, a wildlife reserve of Dumoga with an area of 93,500 ha, and a nature reserve of Bulawan with an area of 75,200 ha [4]. The name of this national park has its own meaning for people of North Sulawesi and Gorontalo. The term “bogani” is a sobriquet for a strong, brave, honest, and righteous young man; “Nani Wartabone” is the name of an independence hero of Gorontalo [5]. From the aspect of history, the existence of the national park located in two provinces possesses a philosophical meaning for the people of both provinces, i.e., becoming a symbol and pride for the region and society. Moreover, flora, fauna, biodiversity, and high-valued cultural heritage sites can be found in this national park.

Alongside flora and fauna, the results of the archaeological study conducted by [6] reveal that TNBNW also has high-valued cultural heritage sites, and the study also discovers the evidence of the existence of human culture in the past through the cultural heritage sites mentioned previously.
Gorontalo, as the third Conservation Province after West Papua and East Kalimantan that owns unique biodiversity, has TNBNW in Bone Bolango Regency as well as Nantu-Boliyohuto Wildlife Reserve in Gorontalo Regency, North Gorontalo Regency, and Boalemo Regency. It also has Panua Nature Reserve, Tanjung Panjang Nature Reserve in Pohuwato Regency, Pepaya Mas Radja Nature Reserve in North Gorontalo Regency, Tangale Nature Reserve in Gorontalo Regency, and mangrove forest. A study conducted by The Indonesian Institute of Sciences in 2009 reported that 131 species of fauna, consisting of 20 species of mammals, 16 species of reptiles, and nine species of amphibians, lived in this conservation province. A survey carried out by the team of Bird Biodiversity of Indonesia in 2014 indicated that 149 species of bird lived in this area. BirdLife International has designated Gorontalo Province as the 228th Important Bird and Biodiversity Area (IBA) of Indonesia in the area of Paguat-Pohuwato Regency [7].

All of those potentials have biodiversity that supports the ecosystem of people's lives in this region. For this reason, the effort to preserve and maintain the existence of biodiversity in Gorontalo province is very significant to do for the sustainability of present and future lives. Considering the benefits of the national park for a short-term life, one of the essential aspects in managing national park is by maintaining the existence and protecting biodiversity in the park from damage and extinction due to intolerable activities.

The attempt to make conservation has been crucial as one of the alternatives to exploitation which continues to increase along with the dynamics of community development. According to [8], the management of national park is a complex issue because of the conflict of interest among regional stakeholders (local government and community) that own the interest in the region. Such a conflict of interest certainly provides negative impacts on the preservation of biodiversity in the national park. ASGM has become one of the sources of income of the local community that can potentially affect the conservation of maintaining the existence of the national park. The number of ASGM locations in Gorontalo is uncertain since it does not have a permit from the authorized government. The results of the interview with miners reveal that approximately 4000 miners perform mining activities within ASGM in Bone Bolango Regency. This problem is difficult to overcome since ASGM has become the community’s source of income, even their hereditary livelihood. The locations spread to points which are also difficult to reach; supervisory personnel are also limited. Therefore, the control stage must focus more on miners’ development. Additionally, the stipulation of Local Regulation of Bone Bolango Regency Number 11 of 2013 on Management of Sustainable and Environmentally Friendly Public Mining Areas on 30 September 2013 was one of the local government’s efforts in regulating this issue as well as ensuring the rights of miners who have long carried out mining activities. Nevertheless, this stipulation needs to be followed up by license, procedures, and governance in doing mining activities, supervision mechanisms towards mining activities, minimizing environmental problems, and obeying the rule about the prohibition to use dangerous chemicals, e.g., mercury.

The government policy in the field of mining that was regulated in Act Number 11 of 1967 on Basic Provisions of Mining has changed into Act Number 4 of 2009 on Mineral and Coal Mining (henceforth will be referred to as UUPMB) on 12 June 2009. This change has given authority to the local government to issue a mining license that is previously not regulated in Act Number 11 of 1967. Government Regulation Number 22 of 2010 on Mining Area and Government Regulation Number 23 of 2010 on Mineral and Coal Mining Business Activities have strengthened the government’s authority in regulating mining activities, including ASGM. UUPMB reinforces the government’s role in regulating through the authority written in the act. The policy changes after the enactment of Act Number 23 of 2014 on Regional Government which subsequently becomes Act Number 9 of 2015 on the Second Amendment to Act Number 23 of 2014 on Regional Government, have changed the authority of mining license issuance that was previously under the city and regency, turning into provincial authority. Hence, it is fidgeted to have an impact on the supervision aspect.

3.2 The Function of Law in Protecting Biodiversity

TNBNW owns a variety of biodiversity assets, including flora and fauna; this becomes the basis of reasons for TNBNW has been designated as a conservation area. On the one hand, TNBNW is a
conservation area with natural resources and biodiversity potentials; on the other hand, such potentials have an economic value that the natural resources potential is directly proportional to economic potential. The potential of natural resources in TNBNW encourages the local community to gain profit by utilizing this economic-valued potential, e.g., the existence of public mining area as elaborated above. TNBNW is the object of two interests, which are environmental management and the community’s economy.

Law is an instrument to regulate people’s lives that it is a part of various aspects of the lives to ensure that each aspect becomes well-organized to minimize a chaotic condition. Law is functioned as a tool of social control, a tool of social engineering, a symbol, a political instrument, and an integrator [9]. Law as a tool of social control is to set appropriate behavior and set sanctions for some actions that are against the law [9]. Law as a tool of social engineering plays a role if there is a desired or planned social change in a community; it is always under the control and supervision of the pioneer of the change [10]. Law as a symbol is in line with the process of translating, depicting, or interpreting a term that is related to social relationships or other phenomena arising from an interaction [11]. Law as a political instrument is strongly related to the close relationship between law and politics. Law as an integrator refers to the mechanisms of doing integration towards the public interest [9].

People live with different interests that these interests can contradict with each other. Law as an integrator is functioned to prevent conflicts as a result of interest differences. In the case of TNBNW, there is a conflict of interest between ecological needs to protect the environment as well as biodiversity and the economic interest of the surrounding community.

The surrounding community’s activities that can potentially damage the TNBNW environment can disrupt the achievement of the above objectives. Problems that can hinder the attempt to achieve the objectives of the TNBNW development include illegal logging, illegal hunting [11], and illegal gold mining around TNBNW. The management of TNBNW is based on three initial objectives, including the protection of main reservoirs for irrigation and rice products, drinking water, and hydropower; protection of plant and animal species and their germplasm sources by paying special attention to endemic species; development and utilization of TNBNW resources by preparing facilities of protection, research, recreation and tourism, education, and public relations [12]. The existence of reservoirs, protection area for endemic species, and facilities of protection, research, recreation and tourism, education, and public relations hugely influence the lives of Gorontalo and North Sulawesi people. Those objectives are part of the protection of public interests.

Public interests have deep meaning. In a simple term, public interests are a set of personal interests that do not conflict with community norms and applicable rules [13]. Public interests can be constitutionally viewed by country goals [14]. Indonesia’s goals are to protect the whole people of Indonesia and the entire homeland of Indonesia; to advance general prosperity; to contribute to the implementation of a world order based on freedom, lasting peace, and social justice. Public interests can be philosophically examined from experts’ opinions on the principles of rights and obligations balance and justice [14].

Law in carrying out its functions as an integrator regulates the public interests. In TNBNW, economic interests of miners and the surrounding community are negatively impactful on TNBNW environmental interests. The activities of mining, illegal logging, and illegal hunting threaten the TNBNW environmental balance. The damage of TNBNW will give further effects on the unrealized TNBNW development goals, i.e., for reservoirs, protection of flora and fauna, tourism and research. A good environment is the right of society, even part of fulfilling human rights. The environment is a part in Article 28H section (1) of the 1945 Constitution of the Republic of Indonesia “each person has a right to a life of well-being in body and mind, to a place to dwell, to enjoy a good and healthy environment, and to receive medical care”. Human rights can only be enjoyed in good environmental conditions, so that it can be simply stated that a good environment is one of the conditions for fulfilling human rights [15].
The environment is a condition for fulfilling human rights that are owned by every person. Therefore, a damaged environment has an impact on the disrupting fulfillment of human rights. TNBNW was built with the aim of environmental preservation. Illegal gold mining, illegal logging, and illegal hunting around TNBNW are potentially able to damage the TNBNW environmental balance. Environmental protection and management is the obligation of the country, government, and all stakeholders in its implementation.

Law as an integrator is required to do an integration towards public interests. Economic-oriented activities performed by the community around TNBNW have an effect on environmental damage; such damage is also impactful on the disrupting public interests. In any situations where there is a conflict between the interests of a group of people and public interests, the law should prioritize public interests since it involves the lives of many people. The protection of the TNBNW environment is part of the protection of public interests. Environmental protection is also in line with sustainable development so that Indonesia's environment can remain a source and support for Indonesian people and other living beings [16] [17].

4. Conclusion

Biodiversity in Gorontalo is varied and endemic that its sustainability should be protected from the impact of public mining which can damage the environment. One of the factors that feared might damage the biodiversity in Taman Nasional Bogani Nani Wartabone is the existence of ASGM (Artisanal Small-Scale Gold Mining). ASGM might damage the environment, but it also helps the local community to improve their economic. Between these contradicting interests, the function of law as an integrator needs to be optimized in order to protect biodiversity. Law as an integrator is also used to integrate and coordinate all interests in the community that have the potential to clash with each other. Law must be able to protect the interest or right to enjoy a good and healthy environment because the right to a good environment is part of human rights.

References

[1] F. R. Kawuwung, “Potensi Taman Nasional Bogani Nani Wartabone permasalahan dan konservasi pada tingkat pengembangan dan pengawasan [Potentials of Taman Nasional Bogani Nani Wartabone, problems, and conservation in the level of development and supervision],” El Hayah Jurnal Biologi., vol. 1, no. 12, 2010.

[2] H. Gunawan, Sugarti, “Perlunya penunjukan kawasan konservasi baru untuk mengantisipasi degradasi keanekaragaman hayati akibat perubahan RTRW di kawasan Wallacea (lesson learn) inisiasi pengusulan Taman Nasional Mekongga Sulawesi Tenggara [The needs for appointment of new conservation area to anticipate biodiversity degradation due to the changes in revision of the regional spatial plan in Wallace area (lesson learnt); Initiation of proposing Taman Nasional Mekongga Sulawesi Tenggara],” Bio Wallacea Jurnal Ilmiah Ilmu Biologi., vol. 1, no. 3, pp. 123, 2015.

[3] A. Halid, A. Fauzi, S. Hadi, B. Barus, “Model kelembagaan pemanfaatan sumber daya tambang dan kaitannya terhadap pembangunan wilayah di kabupaten Bone Bolango Provinsi Gorontalo (Studi kasus arah pengelolaan kebijakan ekonomi di sektor pertambangan pasca perubahan sebagian status kawasan Taman Nasional BNW melalui RTRWP Gorontalo) [Institutional model of utilizing mine resources and its relation to the area development in Bone Bolango Regency of Gorontalo Province (A case study on the management of economic policy in mining sector after the changes in some status of BNW national park area through the revision of the regional spatial plan of Gorontalo Province)],” Scientific Repository., http://repository.ipb.ac.id/handle/123456789/58333, 2012.

[4] N. Djafri, “Managemen kepemimpinan dalam pengelolaan budaya pelestarian keanekaragaman hayati di kawasan Taman nasional Bogani Nani Wartabone, Kabupaten Bone Bolango, Gorontalo [Leadership management in managing the culture of biodiversity preservation in Taman Nasional Bogani Nani Wartabone, Bone Bolango Regency, Gorontalo],” Pros Sem Nas
Masy Biodiv Indonesia., vol. 1, no. 7, pp. 1633–1638, 2015.

[5] A. Sugiharto, “Explorasi dan koleksi jamur (mushroom) pada kawasan Taman Nasional Bogani Nani Wartabone Kabupaten Bone Bolango Gorontalo [Exploration and collection of mushroom in Taman Nasional Bogani Nani Wartabone, Bone Bolango Regency, Gorontalo],” Berk, Penelitian Hayati., vol. 15, pp. 127–130, 2010.

[6] I. W. Marzuki, “Situs-situs arkeologi di kawasan Taman Nasional Bogani Nani Wartabone: Analisis kerusakan dan upaya penanggulangannya [Archeological sites in Taman Nasional Bogani Nani Wartabone; An analysis of damage and its prevention efforts],” Jurnal Purbawidya., vol. 5, no. 1, pp. 67–78, 2016.

[7] Burung Indonesia, “Profil Gorontalo,” Retrieved from www.burung.org/profil-gorontalo on 19 December 2018.

[8] Halidah, L. Nurrani, Saprudin, S. Tabba, “Ancaman kelestarian Taman Nasional Bigani Nani Wartabone [Preservation threat of Taman Nasional Bogani Nani Wartabone],” Info BPK Manado., vol. 2, no. 2, pp. 82, 2012.

[9] A. Ali, “Menguak tabir hukum [Revealing the veil of law],” Bogor: Ghalia Indonesia., pp. 71–83, 2008.

[10] E. Rosana, “Hukum dan perkembangan masyarakat [Law and community development],” Jurnal Tapis., vol. 9, no. 1, 2013.

[11] I. Dunggio, H. Gunawan, “Telaah sejarah kebijakan pengelolaan taman nasional di Indonesia [An overview on the history of national park management policy in Indonesia],” Jurnal Analisis Kebijakan Kehutanan., vol. 6, no. 1, 2009.

[12] F. R. Kawuwung, “Potensi Taman Nasional Nani Wartabone, permasalahan dan konservasi pada tingkat pengembangan dan pengawasan [Potentials of Taman Nasional Nani Wartabone, problems, and conservation in the level of development and supervision],” El-Hayah., vol. 20, no. 2, 2010.

[13] A. Batinggi, B. Ahmad, “Manajemen pelayanan umum [Public services management],” Universitas Terbuka., pp. 1–32, 2014.

[14] W. Sitorus, “Kepentingan umum dalam perlindungan paten [Public interests and patent protection],” Yuridika., vol. 29, no. 1, 2014.

[15] B. Lewis, “Environmental rights or a right to environment? Exploring the nexus between human rights and environmental protection,” Macquarie Journal of International and Comparative Environmental Law., vol. 8, issue 1, 2012.

[16] R. Mina, “Desentralisasi perlindungan dan pengelolaan lingkungan hidup sebagai alternatif menyelesaikan permasalahan lingkungan hidup [Decentralization of environmental protection and management as an alternative to resolve environmental problems],” Arena Hukum., vol. 9, no. 2, 2016.

[17] T Sudrajat, A. Raharjo, R.W. Bintoro, Y. Saefudin, Harmonization of regulation in water territorial management becoming a fair economic benefit distribution towards regional autonomy, E3S Web of Conferences 47, 06004, 2018