The government policy on the conservation of natural resources and ecosystems in Kuningan, Indonesia

S Akhmaddhian1,2, H Hartiwiningsih3, I GAKR Handayani2, E Yuhandra1, Yuhandra1 E, H Budiman1, D Rahmat1 and O Syafrudin1

1Faculty of Law, Universitas Kuningan, Jalan Cut Nyak Dhi 36A Cijoho Kuningan 45313, Indonesia
2Faculty of Law, Universitas Sebelas Maret, Jalan Ir. Sutami 36A Keningan Jebrs Surakarta 57126, Indonesia
3Faculty of Forestry, Universitas Kuningan, Jalan Cut Nyak Dhi 36A Cijoho Kuningan 45313, Indonesia

Abstract. The utilization of natural resources should consider the availability and the carrying capacity of the nature for the society’s prosperity purpose since the excessive use of natural resources can lead to any disasters. The purpose of this study is to find out and analyze the implementation of conservation policy of natural resources and ecosystems in Kuningan. The method used was mixed method and the data collection techniques were interview, observation, and literature study. The results revealed that the conservation policy of natural resources is regulated based on Law Number 5 of 1990 about The Conservation of Natural Resources and Ecosystems, and other related Regulations such as Government Regulation, Ministerial Regulation, and Regional Regulation. Further, regarding the implementation of conservation policy of natural resources and ecosystems in Kuningan, the regional government stipulated the protected forest area of Mount Ciremai to become The Mount Ciremai National Park in 2004 and created regional regulations concerning the conservation of water resources, botanical gardens, and bird’s protection. In conclusion, the implementation of conservation policy of natural resources and ecosystems in Kuningan is running well. Yet, the government’s consistency in conducting programs related to the conservation of natural resources and ecosystems becomes the future challenge.

1. Introduction

Preserving the environmental functions is a joint task between the government and the society in order to create harmonization as well as to maintain environmental sustainability. Yet, the climate change has an impact on the low lands that threaten the coastal, water, agriculture, and health sectors [1]. Besides, land use conversion caused by society activities such as settlements and forest product extraction also has an impact on environmental sustainability [2]. Specifically, there are 5 main environmental problems in Indonesia, namely; First, land degradation caused by deforestation, illegal logging, and land conversion for industry and settlements; Second, river banks abrasion due to traffic of large and fast ships; Third, river siltation caused by high erosion, abrasion, and sedimentation; Fourth, disruption of the surface water flow pattern due to land conversion and the existence of ports, docks, and log-ponds; Fifth, degradation of water quality caused by industrial liquid waste, ship ballast water, and solid waste. In 2006, Kuningan Regency has declared himself as conservation regency and,
therefore, the conservation policy arranged by the regional government must be supported by all related parties either by regional government itself or the society. The society grows into a complex and modern nation, hence, the state has an interest to regulate water resources within its jurisdiction [3].

This study is designed to find out and analyze the effectiveness of Kuningan Regency government policy on the conservation of natural resources and ecosystems. This issue can be reviewed from medical, technological, environmental, economic, and legal aspects. As stated by Siti Sundari Rangkuti that the legal aspects of environmental management and conservation of natural resources in Indonesia need to be studied intensively because environmental management is impossible without legal arrangement. It does not mean that legal experts can deal with environmental issues, regardless of other disciplines related to the environmental field [4].

Kuningan Regency is an agricultural area located at the foot of Mount Ciremai, with abundant water sources, including 620 springs of freshwater and 43 small rivers producing a total water discharge of 8,352 liters/sec. Therefore, Kuningan becomes a potential area of agribusiness and investment in water-based companies [5]. To realize Kuningan as conservation regency, the society around the Mount Ciremai national park must be involved optimally in managing and maintaining the national park since it can only be realized if it is supported by all related parties either by regional government itself or the society [6].

Based on above description, the problem raised in this study is formulated into the following question: How is the implementation of government policy on the conservation of natural resources and ecosystems in Kuningan Regency?

2. Materials and Methods
This study employed a mixed method, namely qualitative and quantitative method. This study was conducted in Kuningan Regency, Indonesia. There were two types of data in this study; primary data which were collected through interview and observation, and secondary data which were collected through literature study in the form of primary and secondary legal materials. The primary data were collected by conducting interview sessions with the society around the foot of Mount Ciremai, with the related institutions, and with some stakeholders. In addition, observation was also done directly to the local society. Meanwhile, secondary data were obtained by conducting literature study towards the collection of the related primary and secondary legal materials. Here, the primary legal materials are the 1945 Constitution of the Republic of Indonesia, Law Number 5 of 1990 concerning the Conservation of Natural Resources and Ecosystems as well as other relevant regulations. Whereas, the secondary legal materials are in the form of books, magazines, scientific papers, and articles as well as experts’ opinions related to the government policy on the conservation of natural resources and ecosystems. The data collected from field study and literature study were then analyzed by using descriptive analysis method. This method was used in order to provide comprehensive and deep understanding concerning the issue which can then be used as a basis for providing input or suggestions.

3. Results and Discussion
National park is a conservation area for tropical forest ecosystems [7]. The history of conservation begins from the region of East Asia. Whereas, the Conservation of Natural Resources begins from the reign of King Asoka (252 BC) in which, at the time, King Asoka declared that there is a need to protect wild animals, fish and forests. In the same vein, in England, King William I (1804) ordered his aides to prepare a book entitled Doomsday Book containing the inventory of the kingdom’s natural resources. The policies of the two kings can then be summed up as a form of conservation of natural resources at that period in which King Asoka focused on conservation for preservation activities, while King William I did natural resources management based on the accurate data. Based on the history, the concept of conservation has existed and introduced since the ancient times although the concept was still conservative and exclusive (kingdom). This concept is the forerunner of the modern
concept of conservation which emphasizes on efforts to maintain and utilize natural resources wisely [8].

Conservation is also defined as the preservation of cultural heritage. Here, conservation not only concerns with maintaining, preserving, and protecting natural environment, but also preserving cultural heritage and human civilization. Further, conservation can also be viewed economically and ecologically. From economic perspective, conservation is defined as an attempt to utilize natural resources for the present time. In contrast, ecology defines conservation as the utilization of natural resources for the present and the future. In a broader context, conservation is not only defined as an effort to maintain and preserve natural environment (the notion of physical conservation), but also how the cultural values are nurtured, upheld, and developed for the prosperity of the society [9].

Conservation areas in Indonesia are designated and assigned by the government based on certain criteria. The regulations on conservation areas are based on Law Number 5 of 1990 regarding the Conservation of Natural Resources and Ecosystems. Conservation Areas in the Law covers the nature reserve area (Kawasan Suaka Alam/KSA) and nature conservation area (Kawasan Pelestarian Alam/KPA). The difference between nature reserve area and nature conservation area lies in its function. Nature conservation area has one additional function, which is utilization, while nature reserve area only covers the function of protection of life support system and preservation of biodiversity. The nature reserve area includes nature reserves and wildlife sanctuaries. These two types of nature reserve area have four similar functions, namely research and development activities, science, education, and other activities that support cultivation. Yet, the wildlife sanctuary has one additional function, namely natural attractions. Conversely, conservation area consisting of national parks, botanical gardens, and nature parks has the function of protection and preservation as well as sustainable utilization [10]. Natural resources are everything that can be used to fulfill human needs. It includes biotic components, such as animals, plants, and microorganisms, and non-biotic components, such as petroleum, natural gas, various metals, water, and soil. In general, natural resources are divided into two types, namely renewable and non-renewable natural resources. Renewable natural resources are natural resources which continue to exist as long as they are not over-exploited. Meanwhile, non-renewable natural resources are subject to formation and will be exhausted when they are used continuously [11].

Natural resources have an important role in human life since they not only have economic value but also social, cultural and political meaning. Hence, natural resources play an important role in the formation of human civilization so that every culture and ethnic has its own conception and view of natural resources control and management. Cosmological conception and worldview of natural resources, especially in some ethnicities in Indonesia, have an equation; that is land as an integral entity or as an ecosystem. In general, natural resource governance undertaken by an indigenous society recognizes the varying status of tenure and utilization.

Each form of natural resources control has its own characteristics. On shared natural resources, the ownership status is floated meaning that everyone is free and open to utilize the natural resources. Different from shared natural resources, the privately-owned natural resources are resources that are explicitly owned by individuals so that other people cannot control and manage them. Meanwhile, the natural resources belonging to the group/community are controlled by a group/community so that other people or groups cannot utilize the resources without the group’s permission. On the other hand, the state-owned natural resources are firmly controlled and managed by the state [12].

The National Park is a natural conservation area of both land and water utilized for research, science, education, cultivation, culture, tourism, and recreation purposes. The National park as a conservation area managed by zoning system has a high biodiversity potential so that its management needs more attention in order to run its functions and to achieve its purposes [13].

In 1889, the idea of natural protection in the form of allowance for the area was done by the Director of Bogor Botanical Garden who authorized the first nature reserve area in Cibodas, West Java. This nature reserve area was built to protect the mountain forests. Several years later, the idea of preserving nature was strengthened by the establishment of Nederlandsch Indische Vereeniging Tot
Natural bescherming or The Netherlands Indies Association of Natural Protection in 1912. Moreover, in 1974-1983, the conservation areas were rapidly growing. With the support of the Food and Organization (FAO), the government conducted a National Park Development Program to establish a system of land and water conservation area throughout Indonesia. The National Park was officially established on March 6, 1980 when the Minister of Agriculture announced the birth of five National Parks. In 1982, coinciding with the 3rd International Park Congress in Bali, the number of national parks increased to 10 regions. Moreover, up to 2007, Indonesia has 50 national parks [14].

The Mount Ciremai National Park, which was designated under the Decree of the Minister of Forestry of the Republic of Indonesia Number 424/Menhut-II/2004 on October 19, 2004, has an area of 15,500 ha. The Mount Ciremai National Park is located in Kuningan and Majalengka Regencies, West Java. The Mount Ciremai National Park becomes one of the centres of biodiversity in Java Island with the dominant characteristic of mountain rainforest ecosystem. Before designated as a national park, the forest area of Mount Ciremai is a production and protected forest that has been deforested and degraded by encroachment, illegal logging, and fire. Deforestation and degradation result in declining ecosystem functions, such as animal habitat, hydrological system protection function, and socio-economic function for the society [15].

The Mount Ciremai National Park is the 50th national park in Indonesia and is the youngest national park. The protected forest area in Mount Ciremai was designated as national park on October 19, 2004 based on the Decree of the Minister of Forestry Number 424/Menhut-II/2004 concerning the shifting function of protected forest area in Mount Ciremai which is located in Kuningan and Majalengka Regencies, West Java becoming the Mount Ciremai National Park [16]. In terms of human relationships with forests, indigenous and traditional communities already have their own conservation systems. They have their own rules in utilizing natural resources as they have their own organizations governing communities in managing forests. Yet, as the communities were worried about the lack of land for farming, the social and economic conditions of the communities were disturbed [17].

Based on the village potential data in 2003/2004, agricultural sector became the main society’s livelihood around the Mount Ciremai, whether as farmers or agricultural labourers, with various types of commodity planted on fields, gardens, or moor. The interaction between the society and the Mount Ciremai National Park area has been going on before the designation of the area into a National Park. The community is still dependent on the area of Mount Ciremai National Park both economically and ecologically as it can be seen from the interdependence relationship between the society and the ecological benefits of Mount Ciremai National Park. Economic interaction can be seen from the society’s dependence on the area of Mount Ciremai National Park in terms of utilizing natural resources. Law Number 5 of 1990 concerning the Conservation of Natural Resources and ecosystems has explicitly regulated the protection of biodiversity for species and their ecosystems. Yet, the destruction of ecosystems in the Mount Ciremai area is still occurring causing the raids of wild boars, monkeys, and foxes to the agricultural sector of the society.

Laws as rules or norms do not necessarily mean official; they emphasize the custom basis in law, that is actual patterns of behaviour. According to Lawrence Meir Friedman, the success of law enforcement always requires the functioning of all components of the legal system. In his view, the legal system consists of three components, namely the legal structure, the legal substance, and the legal culture [18]. First, legal structure refers to some institutional structures related to the conservation of natural resources and ecosystems, such as the Ministry of Environment and Forestry, the Natural Resources Conservation Agency, The Mount Ciremai National Park Agency, and the Regional Environmental Management Agency of Kuningan Regency; Second, the legal substance consists of the 1945 Constitution of the Republic of Indonesia, Law Number 5 of 1990 concerning the Conservation of Natural Resources and Ecosystems, Law Number 32 of 2009 about Environmental Management and Protection, Government Regulation Number 108 of 2015 on Management of Nature Reserve Area and Nature Conservation Area, Decree of Minister of Forestry Number 424/Menhut- II/2004, Decree of Directorate General of Forest Protection and Nature Conservation Number 140/IV/Set-3/2004 on the appointment of Center of Natural Resources Conservation, West Java as the
Manager of Mount Ciremai National park, and Regional Regulation of Kuningan Regency Number 11 year 2013 concerning City Forest; Third, the legal culture is in the form of society’s participation through the activities of Environmental Care Society, Environmental Care Apparatus, and Environmental Care Students by planting trees and spreading fish seeds in the lakes [19]. Yet, in the concept of legal culture, national park management has taken the rights of the traditional society and their living spaces as well as has changed the social value of the society in which there is a profession shift from a farmer into a tourism manager.

According to Setiono, the legal protection is an act to protect the society from the arbitrariness of the authorities that are not in accordance with the prevailing regulations to realize public peace and order [20]. In the same vein, Philip M. Hadjon states that legal protection is the government’s preventive and repressive actions to protect the society [21]. Preventive means that the government should be fully considerate in decision making because it is still in the form of preventive action. Meanwhile, repressive means that the government should be more assertive in decision making towards any violations occurred.

4. Conclusion
Based on the analysis, it can be concluded that the conservation policy of Natural Resources and Ecosystems is based on Law Number 5 of 1990 concerning the Conservation of Natural Resources and Ecosystems. Here, the terms Nature Reserve Area and Nature Conservation Area are used to refer to conservation area. The implementation of conservation policy of natural resources and ecosystems in Kuningan Regency is based on legal system theory, namely legal structure, legal substance, and legal culture. The institutional structures involved in the conservation of natural resources and ecosystems are the Ministry of Environment and Forestry, the Natural Resources Conservation Agency, the Mount Ciremai National Park Agency, and the Regional Environmental Management Agency of Kuningan Regency. Meanwhile, the legal substance consists of the 1945 Constitution of the Republic of Indonesia, Law Number 5 of 1990 concerning the Conservation of Natural Resources and Ecosystems, Law Number 32 of 2009 about Environmental Management and Protection, Government Regulation Number 108 of 2015 on Management of Nature Reserve Area and Nature Conservation Area, Decree of Minister of Forestry Number 424/Minhut-II/2004, and Regional Regulation of Kuningan Regency Number 11 year 2013 concerning City Forest. Further, the legal culture is in the form of society’s participation through the activities of Environmental Care Society, Environmental Care Apparatus, and Environmental Care Students by planting trees and spreading fish seeds in the lakes. Therefore, it can be concluded that the implementation of conservation policy of natural resources and ecosystems in Kuningan is running well.

5. Suggestion
The implementation of conservation policy of natural resources and ecosystems, which is based on the prevailing Law Number 5 of 1990 about Conservation of Natural Resources and Ecosystems and Regional Regulation of Kuningan Regency Number 11 year 2013 about City Forest, needs to consider the society’s knowledge in order to make them understand the existence of such regulations. Moreover, since the implementation of conservation policy of natural resources and ecosystems requires support of all parties, conservation policy should prioritize justice in the society.

Acknowledgement
The researchers express their gratitude to the Directorate General Research and Development, The Ministry of Research, Technology and Higher Education of Republic of Indonesia, University of Sebelas Maret, Universitas Kuningan, and Government of Kuningan Regency for giving us permission and encouragement to conduct this study.
References

[1] Hamdani Y. et al. 2014 Mainstreaming adaptation climate change into strategic environmental assessment case study Banyuasin Regency, South Sumatra Province. J. of Sust. Dev. 7 pp 8-17

[2] Rahawarin YY 2010 Changing in the land use caused by society activities in land utilizes such settlements: Forest product extraction and shifting cultivation. Biodiversitas 11 pp 222-227

[3] Sudiana N and Soewandita H 2007 Pola konservasi sumber daya air di daerah aliran sungai siak J. Alam 12 pp 44-51

[4] Saptomo A 2017 The enactment and legal implication of tourism tax through the water resource management for increasing the local revenue: A comparison between Indonesia and advanced countries. Int. J. of Civ. Engineering and Tech. 8 pp 844–851

[5] Kotijah S 2010 Implementasi prinsip-prinsip kehutanan dalam rangka konservasi kehutanan: Studi kasus di Jawa Timur. J. Magister Hukum 1 354-386

[6] Akhmaddhian S and Hartiwiningsih H 2018 The public participation in water conservation to embody food security in Kuningan, Indonesia. Int. J. of Civ. Engineering and Tech. 9 pp 254–264

[7] Lestariningsih N and Setyaningsih D 2017 J. Phys.: Conf. Ser. 795 012062

[8] Rohmaningsih N I 2010 Pengelolaan Kawasan Konservasi Di Kawasan Taman Nasional Gunung Ciremai (Kuningan: Universitas Kuningan)

[9] Hussein Z et al. 2013 Climate change mitigation policies and poverty in developing countries. Environ. Res. Lett. 8 035009

[10] Handoyo E and Tijan T 2010 Model Pendidikan Karakter Berbasis Konservasi: Pengalaman Universitas Negeri Semarang (Semarang: Widya Karya Press)

[11] Gunawan H and Subaiandono E 2013 Kondisi biofisik dan sosial ekonomi dalam konteks restorasi ekosistem taman nasional gunung Cermai Jawa Barat. Forest Rehabilitation J. 1 pp 17-37

[12] Hermawan T T et al. 2014 Pengelolaan Kawasan Konservasi (Yogyakarta: Gadjah Mada University Press)

[13] Hidayat H 2011 Pengelolaan sumber daya alam berbasis kelembagaan lokal. J. Sejarah CITRA LEXHA XV pp 19-32

[14] Rohmaningsih N I 2010 Pengelolaan Kawasan Konservasi di Kawasan Taman Nasional Gunung Ciremai (Kuningan: Universitas Kuningan)

[15] Syamsudin T 2010 Penentuan Zonasi Kawasan Taman Nasional Gunung Ciremai dengan Mengunakan Sistem Informasi Geografis (Kuningan: Universitas Kuningan)

[16] Gunawan H and Subaiandono E 2013 Kondisi biofisik dan sosial ekonomi dalam konteks restorasi ekosistem taman nasional gunung Cermai Jawa Barat. Forest Rehabilitation J. 1 pp 17-37

[17] Syamsudin T 2010 Penentuan Zonasi Kawasan Taman Nasional Gunung Ciremai dengan Menggunakan Sistem Informasi Geografis (Kuningan: Universitas Kuningan)

[18] Akhmaddhian S 2016 Penegakan hukum lingkungan dan pengaruhnya terhadap pertumbuhan ekonomi di Indonesia: Studi kebakaran hutan tahun 2015. UNIFIKASI: J. Ilmu Hukum 3 pp 1-35

[19] Akhmaddhian S 2017 The effectiveness of Kuningan government policy in water conservation. J. Dinamika Hukum 17 pp 274-280

[20] Akhmaddhian S Hartiwiningsih H and Handayani IGAKR 2017 The government policy of water resources conservation to embodying sustainable development goals: study in Kuningan, Indonesia. Int. J. of Civ. Engineering and Tech. 8(12) 2017 pp 419-428

[21] Sutedjo S 2007 Keterpaduan kebijakan lingkungan dan tata ruang J. Yustisia 72 pp 15-26