

CHAPTER IV

FINDING AND ANALYSIS

A. The Development of Karst Management Regulation

The management of a karst zone has been main concern of authorities starting from local Governments up to the central Government. In order to harmonize between economic and conservation interests, they have issued several regulations as follows;

1. Law No. 26 of 2007 on The Spatial
2. The Decree of the Minister of Energy and Mineral Resources No. 1456 of 2000 On Guidelines for the Management of the Karst
3. Government Regulation No. 26 of 2008 on the National Spatial Plan
4. The Regulation of Ministry Energy and Mineral Resources of the Republic of Indonesia Number 17 of 2012 concerning on The Determination of Karst Landform Area
5. The Decree of the Minister of Energy and Mineral Resources Number 3045 k/40/MEM/2014 on The Determination Gunungsewu Landform Area

1. Law No. 26 Year 2007 on the Spatial

The Law Number 26 of 2007 on Spatial is juridical of spatial planning and determination of the region, including protected areas in Indonesia.¹

Referring to Article 4 of the Act, the classification of spatial planning is

¹ Rahayu Repindowati, "Perlindungan Hukum terhadap Geopark Merangin Jambi yang Berpotensi menjadi Anggota Global Geoparks Network (GGN) UNESCO, *Jurnal Inovatif*, Volume VII, Nomor III September 2014

divided based on the system of main function area, administrative area, region activities and the strategic value of the regions. The spatial planning which is based on the main function of the region is differentiated into protected area and cultivation area.

The first one is protected area (*kawasanlindung*). This is to protect the environmental sustainability including natural resources and artificial resources. Whereas, the cultivation area (*kawasan budidaya*) is an area categorized by its function as the primary site for cultivation and the potential of natural resources, human resources, and artificial resources.

According to Article 5 paragraph (3) the administrative region consists of the arrangement of the national territory, the provincial spatial planning and managing of district/ city. Such divisions are in line with the paradigm adopted by this law i.e. decentralization in the arrangement of space, namely the granting the authority to define and design a system of spatial planning based on the situation and conditions of each region.²

One of the interested provisions in this law is Article 73 regarding the imposing of criminal sanctions against officials who issued permit which is not in accordance with the spatial plan. Although on the one hand these provision has positive impact, but on the other side the imposing of this punishment is precisely handcuff officials in performing their liberty

²Imam Koeswahyono. (2012). *Hukum Penatagunaan Tanah dan Penataan Ruang di Indonesia: Problematika Antara Teks dan Konteks*. Malang: UB Press. p.95

in the form of "*Freisermessen* or discretionary deed which became one of the legal instruments of government in executing its tasks and duties.³

2. The Decison of the Minister of Energy and Mineral Resources No. 1456 K/20/ MBM/2000 on Guidelines for the Management of Karts Area

Karst region has a huge potential, namely the potential of the unique biodiversity, distinctive and endemic. The karst zone has a strategic value, namely economic, ecological, humanitarian and scientific value. However, utilization of the karst zone in an uncontrolled manner may threaten the sustainability of the karst zone⁴ Because of karst zone has some strategic value, the regulation stated that in Article 2, that the management of karst zone has objectives to improve the protection of karst zone and improve the lives of people in the karst zone. The livelihood of the community in the karst zone depends on two main sectors, namely mining and tourism. In some locations where there is tourism potential, people choose to modify it as a tourist destination. Whereas for the areas that do not have tourism potential, the people prefer to utilize it as mining site. Therefore in Article 3 point a, it was written

³Juniarso Ridwan & Achmad Sodik. (2013). *Hukum Tata Ruang dalam Konsep Kebijakan Otonomi Daerah*, Bandung, Penerbit Nuansa. p.160

⁴ Kementerian Lingkungan Hidup, "Pengelolaan Kawasan Karst", 4-Agust-2004, <http://www.menlh.go.id/workshop-nasional-pengelolaan-kawasan-karst/> accessed on on November-11-2015 at 1.53

that the karst zone has economic value, which is related to the agriculture, forestry, mining, water management and tourism.⁵

In Article 11 it is stated that the classification division of karst zone is based on the function and its constituent elements. It is precisely categorized into zone I, II, III.⁶

In Article 12, Paragraph 1 mentions that the first class karst zone is an area that contained one or more of the following criteria:

- a. Functioning as an aquifer, underground rivers, lake or underground lakes that to existence sufficient hydrologic function;
- b. Having the caves and underground rivers that set to active form either horizontal or vertical network that his system is adequate hydrologic function and science;
- c. Having active speleothem or historical relics, thus potentially to be developed into a tourist attraction and cultural;
- d. Home of typical flora and fauna forsocal, economic, cultural as well as scientific functions.⁷

The utilisations mentioned in article 14 Paragraph 1 and 2 are;

- a. No mining activity in the first class karst zone,

⁵ Article 3, The Karst Region Value, The Decison of the Minister of Energy and Mineral Resources No. 1456 K/20/ MBM/2000 on Guidelines for the Management of Karts Area

⁶ Article 11, The Decison of the Minister of Energy and Mineral Resources No. 1456 K/20/ MBM/2000 on Guidelines for the Management of Karts Area

⁷ Article 12, The Decison of the Minister of Energy and Mineral Resources No. 1456 K/20/ MBM/2000 on Guidelines for the Management of Karts Area

- b. Other activities done in the first zone should not potentially interfere the karstification process or damage the karst forms under and above the surface.

It is meant that in the first class karst zone all potentially endangered activities are prohibited, without any exception the mining activities. The second class karst zone according to article 11 paragraph 2 is an area that possesses one or all of the following criteria;

- a. Has function as a supplier of the underground water, rain water catchment areas which affect his ride down the face of the underground water in the region of kars, so still support general functions of hydrology:
- b. Has network of alleys formed by underground streams and caverns results that are already dry, have a speleothem that has been inactive or damaged, as well as a place of residence remains the fauna they give value and economic benefits.⁸

For the utilization of the land, the people should refer to article 14 paragraph 3 regarding karst zone of class II. When the people want to use zone II, they should fulfill environmental analysis or AMDAL or UKL and UPL in accordance with the legislation guidelines. It means that in the karst zone class II mining activities are allowed after conducting several plausibility analysis to guarantee that the activities do not endanger the environment.

⁸ Article 11, Paragraph 2, The Decision of the Minister of Energy and Mineral Resources No. 1456 K/20/ MBM/2000 on Guidelines for the Management of Karts Area

The third zone is the areas which do not belong to the first and the second categories. Its utilization is regulated under article 14 paragraph 4. In this region, the people can do activities with the provisions of the rules and regulations.

3. Regulation of The Government of The Republic of Indonesia Number 26 of 2008 on National Spatial Plan

The National Protected Area based on The Regulation of The Government of Republic Indonesia Number 26 of 2008 on National Spatial Plan covers the area:

- a. local protection area;
- b. the area of the sanctuary of nature, conservation, and cultural heritage;
- c. the region prone to natural disasters;
- d. protected areas of geology;
- e. other protected areas.

The karst zone is the area which has the karstification process. Karstification is a series of processes ranging from lifted up limestone into surface earth due to endogenous processes as well as dissolving occurs in geological time and space to finally produce a karst land.⁹ Therefore, based on the Article 53 The Regulation of The Government of Republic Indonesia Number 26 of 2008, karst zone is defined as an area of the

⁹Soerono, "Kawasan Karst di Gunung Kidul dan Kearifan Lokal", http://penataanruang.pu.go.id/bulletin/index.asp?mod=_fullart&idart=153

uniqueness of the area and geological processes¹⁰ because it has a unique type of geology and has traces of past geological structure.¹¹ Therefore the area of karst zone is protected as national conservation area. This regulation comes into effect and changes the first, second, and third classification of zone. This rule affirms that the whole karst zones fall into national protection zones and mining activities are strictly prohibited.

To support this regulation, the local authority of Gunungkidul issued a circular to ban the entire mining in its 11 Sub-Districts. In compensation for the lost of mining work, District Government then gave fresh water fish farming to the people.¹² According to Executive Director of *Wahana Lingkungan Hidup Indonesia* (WALHI) DIY, Mr. Suparlan, the Regency Circular No 540/0196 dated February 7, 2011 was about the termination of mining activities in the Gunungkidul karst area and this has already been in accordance with government regulation No. 26 in 2008 on National Territory Spatial Plans¹³.

¹⁰ Article 53, The Regulation of The Government Of Republic Indonesia Number 26 of 2008 of National Spatial Plan, the criteria of geological natural reserve Area.

¹¹ Article 60, The Regulation of The Government Of Republic Indonesia Number 26 of 2008 of National Spatial Plan, the criteria of uniqueness of the rocks and fossils.

¹² Markus Yuwono, "Gunungkidul Tertutup Untuk Pertambangan Karst", Okezone.news.com. Home, News, Nusantara, Minggu-13-Februari-2011, <http://news.okezone.com/read/2011/02/13/340/424342/gunungkidul-tertutup-untuk-pertambangan-karst>

¹³ Suryanto, "WALHI: Pertambangan Karst Rusak Pradaban Manusia" Antaranews.com, warta bumi, Selasa- 5-Juli-2011, <http://www.antaranews.com/berita/266060/walhi-penambangan-karst-rusak-peradaban-manusia>

4. The Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012 on The determination karst landform area

The conservation effort of karst zone is reconfirmed by this regulation. Article 3, Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012 stated the karst zone as geological protected area and became part of national protected area.¹⁴ This regulation clarifies the classification which karst can be cultivated or must be protected. Then Article 4 states that the karst protected area should have eksokarst (Karst on the surface) and endokarst (karst on the subsurface). This area has functions as the research site to develop the science, and also has the hydrological and ecological function to support the life around karst zone.¹⁵ This regulation provides guidelines for the determination of the which karst can be cultivated and must be protected¹⁶.

This regulation puts the authority to the Governor, Regent/Mayor to determine the karst zone. The area is divided into two ways, i.e. the

¹⁴ Article 3, The Regulation of the Minister of energy and Mineral Resources of the Republic of Indonesia No. 17 year 2012.

¹⁵ Article 6, The Regulation of the Minister of energy and Mineral Resources of the Republic of Indonesia No. 17 year 2012, The criteria karst protected area.

¹⁶ Rudy Suhendar, Kepala Pusat Sumber Daya Air Tanah dan Geologi Lingkungan (PAG), Badan Geologi, Kementerian Energi dan Sumber Daya Mineral (KESDM), "Kebijakan Pengelolaan karst di Indonesia", Geomagz, April-13-2015, <http://geomagz.geologi.esdm.go.id/kebijakan-pengelolaan-kars-di-indonesia/>

investigation and determination of the area of karst zone.¹⁷ The investigation process can be carried out in several ways, namely:

- a. Inventory the form of eksokarst and endokarst
- b. Mapping the form of eksokarst and endokarst

It is found in Article 7 that the Governor with his authority is responsible for investigating the eksokarst and endokarst.¹⁸ In doing his authority, the Governor can cooperate with:

- a. Government Research Agencies or local governments
- b. Colleges or universities
- c. Business entity¹⁹

Based on the investigations by Public Works Housing and Energy and Mineral Resources Province, Governor submitted the proposal of determination of karst zone to the Minister of Energy and Mineral Resources.²⁰ Determination of karst landform zones were carried out by the appropriate Minister which is based on the proposal of the Governor of Yogyakarta Special Province.²¹

¹⁷ Article 5 Regulation of the Minister of energy and Mineral Resources of the Republic of Indonesia No. 17 year 2012

¹⁸ Article 7, The Procedure for Determination Karst Landform, The Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012

¹⁹ Article 8, The Procedure for Determination Karst Landform, The Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012

²⁰ Article 10, The Procedure for Determination Karst Landform, The Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012

²¹ Article 11, The Procedure for Determination Karst Landform, The Regulation of the Minister of Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012

5. The Decision of the Minister of Energy and Mineral Resources of The Republic of Indonesia No. 3045 K/40/MEM/2014 on The Determination of The Gunungsewu Karst Landform Area.

To response Regulations of the Minister of Energy and Mineral resources No. 17 of 2012 on the Determination of the Karst zone, then the Government of the Special Region of Yogyakarta through Public Works Housing and Energy Mineral Resources made a map of the area of karst zone.

According to Puja Krismanto, The Head Division of General Mining, Energy and Mineral Resources field, Department Public Works, Housing, Energy and Mineral Resources Yogyakarta, in proposing the establishment of Karst zone Regions of Gunungkidul and Bantul Districts to the Minister, the Governor of Yogyakarta has eliminated the existing karst mining from the map of the Karst Region of Gunungsewu. The reason is that, the mining activities have been practiced since a long time ago and in a large scale it has changed the topography and disrupted the process of karstification and the subsurface water system of karst zone. The exception of the existing mining with some requirements make the mining area possible to be cultivated in limited time but the area should not be expanded.²² Some of his considerations, among others;

²² Interview with Mr. Puja Krismanto, April-17-2015, on the office of Departement Public Works, Housing, Energy and Mineral Resources Yogyakarta

- a. Area Giripanggung just has uniqueness criteria eksokarst, endokarst the uniqueness category include the existence of watery cave or underground rivers are not found in the area.
- b. Area Saptosari does not contain eksokarst or endokarst. Some caves are discovered by fossil or dry cave. In addition the caves do not have scientific value for the development of science in the future.

Because the eksokarts, endokarst and uniqueness karstification, as well as the potential of the watery cave or underground rivers were not found, then this blocks is not considered as significant for hydrogeological function. Hydro geological function referred to the regulation of the Minister of Energy and Mineral resources No. 17 of 2012 is as numerical groundwater.²³

B. Karst Management in Local Regulation of Gunungkidul Regency and Yogyakarta Special Province.

1. Karst Management in Gunungkidul Spatial Plan Regulation

The local regulation of Gunungkidul district divides karst zone into protected area and cultivation area.

a. Government regulation of Gunungkidul Regency on protected area

Based on local regulations of Gunungkidul Regency No. 6 of 2011 on Spatial Plan Gunungkidul 2010-2030, the protected areas mentioned in Article 27 Paragraph (2) are as follows;

- 1) Spatial pattern plan areas including;

²³ Dinas Pekerjaan Umum Perumahan dan Energi Sumberdaya Mineral DIY, "Laporan Revisi, Penyusunan Peta kawasan Bentang alam Karst Kabupaten Gunungkidul dan Bantul", 2014.

- a) The designation of protected areas
 - b) The determination of the area of cultivation
- 2) The protected area as referred to paragraph (1) consists of;
- a) The area of protected forest
 - b) The area which provides protection to the subsurface area.
 - c) Local Protection Area
 - d) The area of the sanctuary of nature, conservation and cultural heritage
 - e) The disaster-prone area
 - f) Protected areas of geology
 - g) Other protected areas

Article 29 explains that geological protected area refers to the explanation given in the Article 27 Paragraph (2) letter (b). The area covers;

- 1) Water reservoir area covers 6 subdistricts; Ponjong, Semin, Ngawen, Gedangsari, Nglipar, Patuk.
- 2) Hydro geological and ecological area lie in the karst hills of Gunungsewu covering an area of approximately 80.704 (eighty-four thousand seven hundred four) hectares. These zone are located in:
 - a) Ponjong
 - b) Semanu
 - c) Girisubo

- d) Rongkop
- e) Tepus
- f) Tanjungsari
- g) Saptosari
- h) Paliyan
- i) Panggang
- j) Purwosari
- k) Wonosari

The protection of karst zone as described in article 31 point (e) (1) is about the determination of natural conservation, nature sanctuary, and cultural heritage. The archaeological caves conservation zone in Gunungsewu cover the areas of Goa Seropan, Goa Bentar, Goa Braholo, Goa Tritis, Song Gupuh, Song Geplek, Goa Tabuhan.

The karst zone as a part of the geological protected area, in article 33 (b) is established by considering its geological unique processes such as;

- a. Karst zone as water reservoir for Ponjong subdistrict and surrounding areas;
- b. The area of Lake Girisubo doline in district and Purwosari subdistrict
- c. The area of the ancient volcano of Mount Nglanggeran in Patuk subdistrict

- d. Beach which is formed by lava flow located in the Girisubo Sub-district in Wediombo Beach and lava flows in the river Ngalangin Gedangsari Subdistrict
- e. Gunung Gambar mountain in Ngawen subdistrict
- f. Kali Suci river of Pacarejo, Semanu subdistrict
- g. The ancient Bengawan Solo River Area in Girisubo subdistrict

b. The Mining Allotment Areas In Spatial Plan on Gunungkidul

District

The mining allotment area (*Kawasan Peruntukan Pertambangan/KPP*) Gunungkidul district has been regulated in Local Regulation of Gunungkidul Regency No. 6 of 2011 concerning Spatial Plans (*Rencana Tata Ruang Wilayah/RTRW*) Gunungkidul 2010-2030. Article 39 paragraph (1) states that the mining allotment area plan (*Kawasan Peruntukan Pertambangan/KPP*) is referring to in article 27 paragraph (4) subparagraph (e) covering 2180 Ha (two thousand one hundred eighty-acre) mining area of which covers the limestone, among others;

- 1) KPP Karangmojo-Nglipar-Wonosari and its surroundings are one of the commodities kalsium karbonat sandstone and limestone in the village of Bejiharjo, Karangmojo, Ngawis, Jatiayu, Ngipak, Nglipar, Kelor, Kedung Keris, Gari, Karangtengah.

- 2) KPP Panggang and surroundings with commodities limestone, Phospat, and Chalcedon in the village of Girijati, Giriasih, Giritirto, Giriharjo, Giripurwo, Giricahyo, Giriwungu, Girikarto, Girisekar, and Girisuko.
- 3) KPP Tepus and surrounding areas with limestone in the village of Sumberwungu
- 4) KPP Semanu and surroundings with commodities limestone in the village of Semanu and the village of Ngeposari
- 5) KPP Ponjong – South Semanu – Paliyan and surroundings with commodity limestone, chalcedony, and manganese located in di Jetis, Ngloro, Krambil Sawit, Krangduwet, Karangasem, Mulusan, Duwet, Mulo, Wunung, Pacarejo, Candirejo, Dadapayu, Sidorejo, Gombang, Bedoyo, Karangasem, Kenteng, Ponjong, Sumbergiri, Umbulrejo, Sawahan, Tambakromo.²⁴

2. The impact of Law No. 23 of 2014 on Regional Government

Law No. 23 of 2014 concerning Regional Government revoked the authority of District Government for issuing the mining permits. The Government authority is related to the energy and mineral resources, point A and D. Point (A) mentions that the authority of Provincial government

²⁴ Local Regulation of Gunungkidul District No. 6 in 2011 concerning Spatial Plans (*Rencana Tata Ruang Wilayah/RTRW*) Gunungkidul district 2010-2030. On Article 39 paragraph (1), Mining Allotment Area.

are, to determine the licenses for mineral only instead of metal and rocks in (1) provincial and territorial sea area up to 12 miles. Point (D) Determination of mineral licenses region, non-metal and rocks in one (1) provincial and territorial sea Area up to 12 miles.²⁵

The Head of Department of Industry, Trade and Cooperatives Energy and Mineral Resources Mr. Hidayat SH. MSi, said that with the discharge of Act No. 23 of 2014 concerning Regional Government, the authority for giving the mining permit is given to Governor of Special Region of Yogyakarta.²⁶ Then the local government of Gunungkidul district no longer has authority to issue the mining permit in Gunungkidul.

The genesis of Law Number 23 of 2014 regarding Regional Government on 2nd October 2014 has legal uncertainty and overlapping between the statutory provisions regarding the authority of district/ city affairs related to the energy and mineral resources management. Article 409 of Law No. 23 of 2014 clearly states the abolishment of the Law No. 32 of 2004 on Regional Government, which means to withdraw the regency and city's affairs in the field of energy and mineral resources especially in issuance of mining permits and zoning the mining areas which were originally became the authority of the regent/ mayor²⁷ (Billy

²⁵Law No 23 of 2014 on Local Government, The Division of Government Authority in the field of energy and mineral resources. The authority Provincial government

²⁶ Awa, Kedaulatan Rakyat, "HPMP Desak izin segera terbit", Jum'at-28-November-2014 http://www.krjogja.com/web/news/read/239099/hpmp_desak_izin_segera_terbit

²⁷Gatot Supramono, *Hukum Pertambangan Mineral dan Batubara di Indonesia*, Penerbit Rineka Cipta, Jakarta, 2002, p 13

Supramono, 2002: 13) based on Law Number 32 of 2004 and diverting it become the authority of the governor.

Meanwhile, Article 409 of Law No. 23 of 2014 did not revoke the application of Article 8 paragraph (1) of Law No. 4 Year 2009 on Mineral and Coal Mining²⁸ in conjunction with Article 20 paragraph (1), Article 28, Article 35 paragraph (1), Government Regulation Number 23 Year 2010 on the Implementation of Business Activities of Mineral and Coal.²⁹ It authorizes the regent/ mayor to establish the Regional Mining Business License (WIUP) and Mining Business License (IUP) on Exploration and Production Operation IUP of non-metal or rock, coaching, community conflict resolution, and supervision of mining business located in the district/ city or sea area of up to 4 miles of shoreline.

In the other words, there have been legal uncertainty and overlapping of legislations where the regent/ mayor has no longer authority to issue mining area permit under the provisions of Act No. 23 of 2014. They remain possible to issue the permit under the provisions of Article 8 (1) of Law No. 4 of 2009 on Mineral and Coal Mining which is conjunction with Article 11 paragraph (1) letter c of the Government Regulation No. 23 of 2010.

²⁸ Law No. 4 Year 2009 on Mineral and Coal Mining, Article 8, The Authority of District/City Government on Mineral and Coal Mining.

²⁹ Government Regulation Number 23 Year 2010 on the Implementation of Business Activities of Mineral and Coal, Article 28 and 35, The Business Mining Permit.

3. Spatial Plan Regulation of Yogyakarta Special Province.

Local government regulations do not manage the allotment areas that mining has been removed from the area of karst zone. The determination of the mining allotment was stated on Provincial Regulation of Yogyakarta Special Region No. 2 of 2012 on Spatial and Regional Province Planing on 2009-2029, Section (60) point (a). It is stated that Gunungkidul is special zone for limestone mining especially at Ponjong Subdistrict, Panggang Subdistrict, and Semin Subdistrict.³⁰ So the adjustments with the latest legislation is necessary to provide guidelines in issuing permits for mining activities.

To arrange the new Spatial Land Plan, a forum group discussion was held on Monday, June 15 2015 at the office of Planning Development Agency in Gunungkidul. This forum group discussion was held in order to discuss the draft of Karst ekogeowisata area plan.

The discussion was attended by participants from the Regional Development Planning Board Department of Gunungkidul Regency, Public Works Departement of Gunungkidul Regency, The Departement of Industry, Trade and Cooperative & Energy and Mineral Resources of Gunungkidul Regency, Culture & Tourism Departement of Gunungkidul Regency, and some people residing in the conservation area.

There are some agreements on the focus group discussion, among others:

- a. Restricting the opening of new mining activities, and direct mining only in the area of the enclave outside the area of karst zone.

³⁰ Provincial Regulation of Yogyakarta Special Region No. 2 of 2012 on Spatial and Regional Province Planing on 2009-2029, Section 60 Paragraph 2, Determination of Mining Allotment.

- 1) Karang asem village, Karang duwet village Paliyan Subdistrict;
 - 2) Giriwungu village, Girikarto village, Girisekar village, Girimulyo village Panggang Subdistrict;
 - 3) Giripurwo village, Purwosari Subdistrict
 - 4) Jetis village, Nglora village, Krambilsawit village, Kepek village, Saptosari Subdistrict;
 - 5) Dadapayu village, Candirejo village Semanu Subdistrict;
 - 6) Tepus village, Purwodadi village, Sumber wungu village, Giripanggung village, Tepus Subdistrict.
- b. Prohibit new mining activities at the inner area;
 - c. Stop the existence of the operation of the mining activity in the inner area;
 - d. Requires the permission of the environment for any kind of exploitation of karst activity; and
 - e. Restrict activity the natural and cultural heritage is protected.³¹

C. Legal Basis of Karts Mining In Gunungkidul Regency

The basis of karst mining activities at Gunungkidul is the Governor Special Region of Yogyakarta Regulation No. 31 of 2015 on the Procedures for Giving Mining Permit either Metal, Non-metals or Rocks Minings. It was issued on May 2015 as a respond to the Act No. 23 of 2014 on Regional Government. The authority for issueing the mining permit is no longer in the

³¹ Dinas Pekerjaan Umum Perumahan Energi dan Sumber Daya Mineral Pemerintah Daerah Istimewa Yogyakarta, “*Focus Group Discussion 2, rancangan peraturan daerah kawasan ekogeowisata karst*” <http://www.dpupesdm.jogjaprov.go.id/berita/423-tr-fgd-kws-karst.html> Accessed on April-04-06-2016

hand of the city major or district reGENCY but full authority of the Provincial Government.³²

The general provisions of point 5 state that the mining area is the area that has the potential mineral which is not bound by the limits of government administration.³³ It means the mining areas are allowed to be mined in Gunungkidul. Karst zone is removed from the area of karst protection that has been set through the map in the Decision of the Ministry of Energy and Mineral Resources of the Republic of Indonesia No. 3045 K/40/MEM/2014 on Determination of Karst Gunungsewu. This is because those areas do not consider as significant hydrogeological function for the surrounding area, where the function of hydrogeological become important criteria in determination the area of karst protection. Hydrogeological functions refer to Minister of Energy and Mineral Resources regulation No. 17 of 2012. It functions as groundwater reservoir. By having so, it will not damage the ecosystem of karst.

Procedures for permission area of karst Mining are regulated by Governor of Special Region of Yogyakarta Regulation No. 31 of 2015. It clarifies the Procedures for Granting Mining Permit either for Metal, Non-metal, and Rock minings as follows;

1. The Granting of Mining Business License non-metallic, minerals and rocks, carried out by the Regional Government through the regional work

³² Pribadi Wicaksono, "Semua Pabrik Pengolahan Tambang di Gunungkidul Berhenti Beroperasi" Sabtu-15-Agustus-2015, <https://m.tempo.co/read/news/2015/08/15/078692211/semua-pabrik-pengolah-tambang-gunungkidul-berhenti-beroperasi>

³³ PERATURAN GUBERNUR DIY No. 31 Tahun 2015 Tentang Tata Cara Pemberian Izin Usaha Pertambangan Mineral Logam, Non-logam dan Batuan, Ketentuan Umum, Point 5.

units Licensing based on Mining Business Area License Proposal (*Wilayah Izin Usaha Pertambangan/WIUP*).

2. The application of Mining Permit Area as referred to in paragraph (1) shall attach as follows:
 - a. The permit of mining business area shall attach the map with the border, and the geographic coordinates, and the type of mineral commodities and spacious area as requested;
 - b. Identity Card of the applicant; and
 - c. Tax ID number
3. The granting of Mining Business License nonmetallic minerals and rocks as referred to in paragraph (1) shall be done after getting a recommendation:
 - a. conformity with national integrated mining information system;
 - b. Space Utilization

D. The Obstacles of Karst Conservation in Gunungkidul.

Karst also has economic value, and most of people who live in the karst zone working as karst miners. The elimination of some karst zone from karst protected area based on some consideration. The main consideration is that karst zone does not have eksokarst and endokarst to support the hydrology function in karst zone and the area around it. Then there are some existing mining areas occurred in a long time in that area, which has changed the topography the karst zone in significantly. The Regulation of Minister of

Energy and Mineral Resources of the Republic of Indonesia No. 17 of 2012 is the guideline of determination process of karst protected area. Then the Government issued the map of karst zone in the decision of the Minister of Energy and Mineral Resources No. 3045 K/40/MEM/2014, which separated the area to karst protected area and non-protected area. That is the main reason why karst mining activity in Gunungkidul still exist legally. This is has a potential to disturb the karst protected area around the karst mining allotment areas.

In addition, there are some companies in Gunungkidul conducting karst mining activity. Based on the data obtained from the Office of Public Works Energy and Mining Mineral Resources, there are 31 mining companies at Gunungkidul, with 1884 workers. This number will be higher if those of illegal miners are registered by the Government.³⁴

Table 1 Number of karst mining Companies in Gunungkidul

No	COMPANY	LOCATION	WORKERS NUMBER
1	PT. Anindya	Bedoyo, Ponjong	66
2	UD. Mineral Persada	Bedoyo, Ponjong	93
3	CV. Merpati Jaya Mineralindo	Bedoyo, Ponjong	53
4	PT. Sugih Alamnugroho	Bedoyo, Ponjong	140
5	PB. Kembang	Karang Asem, Ponjong	16
6	PT. Panasonic Chemical Industri	Selang, Wonosari	190
7	PT. Selodwipo Nuswantoro	Baleharjo, Wonosari	40
8	PT. Dewata	Sumberwungu, Tepus	56

³⁴ Dinas Pekerjaan Umum Pertambangan Energi dan Sumberdaya Mineral Yogyakarta, "Data Pertambangan di Gunungkidul"

9	PT. First Lime Indonesia	Sumberwungu, Tepus	15
10	UD. Gunung Gede	Sumberwungu, Tepus	25
11	Ningrat Jawa	Sumberwungu, Tepus	40
12	PT. Caldomill Indonesia	Pucanganom, Rongkop	50
13	UD. Mineral Persada	Pucanganom, Rongkop	25
14	UD. Sumber Makmur	Semanu, Semanu	25
15	PB. Gunung Makmur	Semanu. Semanu	40
16	PB. Pulung Jaya	Semanu, Semanu	26
17	Kelompok Giri Alam Sari	Bedoyo, Ponjong	200
18	Kelompok Argo Peni	Karang asem, Ponjong	13
19	Kelompok Cindelas	Karang asem, Ponjong	12
20	Kelompok Makmur Abadi	Karang asem, Ponjong	9
21	Kelompok Karangasem	Karang asem, Ponjong	19
22	Kelompok Ngabean Kidul	Karang asem, Ponjong	55
23	Kelompok Sari Bumi	Karang asem, Ponjong	9
24	Kelompok Jomblang Lor	Karang asem, Ponjong	9
25	Kelompok Deas Mandiri	Karang asem, Ponjong	10
26	Kelompok Desa Gombang	Gombang, Ponjong	102
27	Kelompok Kenteng	Kenteng, Ponjong	187
28	Kelompok Argo Turi- Nongko Sepet	Sidorejo, Ponjong	156
29	Kelompok Pacarejo	Pacarejo, Semanu	115
30	Kelompok Candirejo	Candirejo, Semanu	65
31	Kelompok Ngeposari	Ngeposari, Semanu	23
	Total		1884

Since the termination of the issuance of a mining permit and mining product process, however, then some other company stopped operating. Bedoyo village subdistrict of Ponjong, Gunungkidul is the one mining area which is still having activities after the termination of mining permit. In this village there are more than 528 residents as miners karst rock. They still do the mining activities and mineral processing because this is the only source of their income. Besides, their natural environment is not conducive for agricultural purposes. Their jobs as miners have been practiced since their ancestors. It takes time to train and change their jobs. Based on the interview done with Mr. Martono, the head of the village Bedoyo, subdistrict Ponjong, it is revealed that his people are not ready to change their job and the people have lack of skill in agriculture and livestock. It is also the cause of the failure of the government's efforts in converting the profession of the miners to other professions such as agriculture business and livestock because its not proper with the condition of the society.³⁵

Based on an interview with Mr. Suparjo the community leader in Nglombo, Bedoyo Village, Ponjong subdistrict, Gunungkidul, mining communities have been practiced in massive scale since 1980. At the moment, there are 13 factories belong to the people residing in the village. At each factory, there are about 10-17 workers. In Ngombro, out of 98

³⁵ Interview with Mr. Martono, The Head of Bedoyo Village, 05-22-2015, on Bedoyo Village administration office.

families only 5 persons who work as civil servants while the majority are working as miners.³⁶

Government efforts to change people's activity in karst mining have been done by giving some facilities such as giving livestock such as cow, sheep, fish and some agricultural material. However, all the government's efforts faced some problems, because their backgrounds are miners, and it took a long process to adapt to a new livelihood. In addition due to the mining activities, the government has changed the pattern of their lives become more consumptive than before. Then alternative jobs given by the government are less profitable, and many of these programs were unsuccessful due to lack of guidance and supervisions.

Social problems appeared in the karst ecosystem are:

- a) The condition of the karst region is critical and marginalized because the people are not able to utilize the existing resources so that most of their living conditions are under the poverty line.
- b) The Mobility resident and urbanization working age population led to shortages of productive labor in the countryside
- c) The natural condition is hilly led to more difficult access to the population outside this borders, thus impeding the economic development of society
- d) Low quality of human resources is characterized by low level of education.

³⁶ Interview with Mr. Suparjo, The Head of Ngombro Community, 05-22-2015, on Ngombro, Bedoyo Village

e) The level of labor productivity is low, especially in the agricultural sector which is the largest area of work for the community in the karst region, because the lack of skills, especially in agriculture for cultivating the land.³⁷

Gunungkidul Government has strong intention to terminate mining activity in karst zone. This is the effort of government to preserve karst zone as a natural geological area. The government of Gunungkidul has no law enforcement to illegal miners who are still doing mining activities in the karst zone so that damage karst zone still exists. The government programs need to be socialized and need plausible impletation steps. Those steps should be given by District Government of Gunungkidul. Then the ecotourism can be managed directly by the people in the karst region by assisting the district government of Gunungkidul.³⁸

³⁷ Hatma suryatmojo, 2006, "Strategi Pengelolaan Ekosistem Karst di Kabupaten Gunungkidul", http://www.mayong.staff.ugm.ac.id/artikel_pdf/strategi%20kawasan%20karst.pdf, Accessed on March-04-2016

³⁸ Retna Dewi Wuspada, Dkk, "Implementasi Kebijakan Pelarangan Penambangan Di Kawasan Karst Kabupaten Gunungkidul", Prosiding Seminar Nasional Pengelolaan Sumberdaya Alam dan Lingkungan, Semarang, 11 September 2012, <https://core.ac.uk/download/files/379/11735920.pdf>