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Control of River Water Pollution Based on Environmental Legislation and Its Implementation Against Pollution Deli River in Medan Connected With Management System Integrated River

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ABSTRACT

The water pollution control is an integral part of river management, the effort to tackle the problem is not separated from the integrated approach of river management systems. The control of river water pollution has to be carried out in multi sectors, thorough upstream-downstream, quantity-quality and sustainable, environmentally sound (ecosystem conservation) with the river Basin (hydrological Territorial unit) as a management unit. The pattern of the water resource management approach is integrated into one river area, one river, one plan, one river, one plan, one management. This pattern of approach should be done consistently and sustainably. The Deli River in the city of Medan has a high pollution rate in the Deli River can be reduced and can be addressed through a pattern of river management in one unit of river basin, according to maintaining the legal norm contained in the prevailing environmental legislation. Water is a natural resource for the life of many people so it needs to be protected in order to benefit life and human life and other living creatures. This utilization by humans affects the physical and chemical state. As a result, the water ecosystem as a habitat of different types of body water underwent a very sharp change. Damage to the river basin that is utilized for various human interests such as to irrigate agricultural land, industry and settlements will be increasingly severe and uncontrollable water ecosystem. Some river water pollution occurs when the waste is stuck and moved into the body of water, but some more waste is deliberately disposed to the body of water as an easy place to dispose of municipal waste, household waste and industrial waste. Turn the water directly into the river until the river is defiled.

Keywords: River Water Pollution, Environment

INTRODUCTION

Water is a natural resource of the gift of the almighty God that is needed by human beings of all time and becomes part of human basic needs that are very important. All activities of human life from food needs to the growth of the industry requires adequate amount of water and with quality according to its needs. Thus water is not only needed as a staple material for life but also as an economic commodity.

Water is a natural resource for the life of many people so it needs to be protected in order to benefit life and human life and other living creatures. With the rapid increase of population, the process of industrialization is very rapid, resulting in various negative impacts on the quality and existence of natural resources and environment. Water ecosystems as part of natural resources also do not escape any negative facets arising. This utilization by humans affects the physical and chemical state. As a result, the water ecosystem as a habitat of different types of body water underwent a very sharp change. Damage to

the river basin that is utilized for various human interests such as to irrigate agricultural land, industry and settlements will be increasingly severe and uncontrollable water ecosystems (Paulus Surbakti, Pindi Patana, Riri Ezraneti, 2014).

That water is a strategic resource, but it is not enough if the water is only rated as merely resources. The meaning of water is more than that. Water is a source of basic human needs because almost all aspects of life require water. However, water tendencies wasted when abundant and sought after when rare. That tendency is due to water as Public Good, which can not be owned by anyone, no alienation, and has a weak Property Right, so it is not uncommon for water to be treated as a resource with shared ownership (Global Commons), namely collectively managed resources, not for sale or trading for profit (Samin, 2011).

That water is a collective resource, because there is not one living creature that can continue his life without water. If in the approach of thinking system then water as a sign of life sustainability that is the identity of the living system. At this point the collective life sustainability is the highest value and meta norm that directs the various laws of law that are derivatives. Following such views, all legal norms, even legal purposes (certainty, benefit, fairness), should be devoted to maintaining and maintaining the sustainability of collective resources (Husnan Wadi, 2014).

Water is an essential fundamental element for ecosystem stability. Water is also a natural resource that is absolutely necessary for life and life, not only human beings but also other living creatures and their environment. The availability of water resources (SDA) varies both the number and quality. Water function and benefits require various efforts to improve and protect water to be effective and successful (Mas Ahmad Santosa, 1999).

In terms of water resources, the main problem faced today is water pollution, resulting in an impact on water quantity that has not been able to meet the increasing needs, as well as the quality of water for domestic needs are increasingly declining. Industrial, domestic, and other activities also have a negative impact on water resources, such as causing a decrease in water quality. This condition can cause interference, damage, and danger to all living creatures that depend on water resources. Therefore, it is necessary to carefully manage and protect the water resources (Hefni Effendi, 2003).

Similarly, the impact of the water resources management system that is unsystemic and immutable will affect the environment of unhealthy living, environmental pollution, factory waste is not controlled. With the contamination of water resources will give many adverse impacts to the environment, human health, and the various living creatures on earth.

According to M. Daud Silalahi, the concept of water resources management and utilization based on traditional economic law (diseconomies) must be corrected. In other words, that aspect of utilization must be accompanied by an attack on the aspects of Protection (conservation) and development. So the concept of water resource management must fulfill the elements of the protection (conservation), development and utilization in an integrated (Samsul Wahidin, 2016).

One important aspect of the amendment to the Constitution Act 1945 (UUD 1945) is the birth of an idea of the importance of a healthy environment (ecocracy) as part of human rights, which is then dinorate in the Constitution 1945. Clearly, the article 28 H verse (1) mentions that "every person has the right to live prosperous lives, reside, and have a good and healthy living environment and the right to obtain health care". The human rights provisions of article 28 H paragraph (1) require the state to ensure that the rights are fulfilled (Jimly Asshiddiqie, 2010).

On the other hand, as citizens have the obligation to respect the human rights of others in a good and healthy environment. Beside stipulated in article 28 H paragraph

(1), environmental management that suitable also governed by article 33 paragraph (3) Constitution 1945, which mention that "Earth and water and natural wealth contained therein is controlled by state and used for the maximum prosperity of people". The environmental settings that were originally contained in the Act were then "lifted up" in the Constitution 1945, a serious effort undertaken by the Government to ensure the continuity of the functioning of the environment in order to be enjoyed by generations to be dating (Nita Triana, 2014). Thus, the environment is a joint home, an environment consisting of natural resources, artificial resources, and human resources (Agus Maryono, 2017).

Law No. 32 year 2009 on Environmental Protection and Management (hereinafter referred to as UUPPLH) is made to accommodate the right to good and healthy living environment. It is a human rights of every Indonesian citizen as mandated in article 28 H Constitution 1945. These provisions are as a constitutional foundation of the protection of citizens in terms of the environment (Samsul Wahidin, 2014).

To acknowledge the right environment of good and healthy, is an individual (subjective) right of every person who is of absolute nature, as well as the obligation of everyone to maintain the environment to prevent and mitigate environmental damage and pollution, acknowledged the right environment and healthy living (Alvi Syahrin, 2009).

Based on the understanding of the environment, human beings are part of the environment or human elements are the sub-systems of the environment in which each component in the living environment interacts with each other forming regularity. Regularity can occur because there is a flow of material and energy controlled by the flow of information between environmental elements in an ecosystem. Thus in the ecosystem, all the elements of the environment is a whole complete and mutually affecting each other in forming balance or homeostation, stability and environmental productivity (Mella Ismelina FR, 2011).

That according to the opinion of Otto Soemarwoto, these anthroposentrism views are a human view of the living environment that puts human interest at the center. It can be modeled, that economic activity affects the environment due to the use of resources, waste production and environmental modifications. If the impact of the activity goes beyond the environmental ability to recover from the impact of the activity, then the change often reduces the environmental ability to meet human needs or even disappear. It came to pass what we call harm to the environment. So the term environmental damage is an anthropocentric concept, which is looking at the environment from the perspective of human interest. Good quality living environment, while able to fulfill human needs well (Otto Soemarwoto, 2001).

In environmental studies, exploitation of natural resources only concerned with economic aspects without considering ecological interests has caused the condition of various natural resources present in the critical state (Helmi, 2003).

As the main source of life for humanity, the river has a role in providing water resources and means of transportation to improve mobility and communication among human beings. In adults, the river has a very close relationship with everyday life (Suyono Sosrodarsono and Masateru Tominaga, 2008).

River water Pollution control is an issue that is cross-sectoral/regional, especially with the flow of rivers that cross several kapupaten/cities. In the implementation there is not infrequently found the authority that overlapped (overlapping) either due to the nature of the arrangement of its settings or the lack of functionalized coordination mechanisms between agencies. Therefore, the way to control is also a multi-and interdisciplinary way, where coordination and cooperation between agencies are carried out in an

integrated manner, as mandated in article 3 paragraph (2) government regulation number 38 year 2011 about the river.

In addition, with increasing population growth accompanied by various activities and/or businesses along the river basin, has also affected the quality of river water. Sources that have been indicated as the cause of the deterioration of the quality of the river water is the disposal of domestic wastewater from various sectors of activities and or business and waste solid or garbage causing pollution. The disposal of waste water to rivers carried out various types of business sectors and or activities have caused serious river water pollution problems that have affected the water quality of the river significantly (Mohammad Taufik Makarao, 2006).

Government Regulation No. 38 year 2011 about the river, also mentioned that the management of rivers include conservation of rivers, in addition to the development of rivers and the control of damaged power streams. River Conservation is carried out through the prevention activities of river water pollution aimed at the effort to safeguard and protect the water quality of the river.

Based on the provisions, the efforts made in the control of river water pollution are essentially an integral part and are part of the river management activities themselves.

Water pollution is caused by the inclusion of contaminants (pollutants) that can be gas, dissolved and particulate materials. Polluters entering the body of water can be through the atmosphere, soil, runoff of agriculture, industrial waste, and others (Hefni Effendi, 2003).

Initially water pollution will cause a negative impact on the water environment. Finally, the impact will be felt by organisms using water including humans (Maulida Khiatuddin, 2010).

Some river water pollution occurs when the waste is stuck and moved into the body of water, but some more waste is deliberately disposed to the body of water as an easy place to dispose of municipal waste, household waste and industrial waste. In many riverbanks in both developed and developing countries including Indonesia there are many industrial or household exhaust pipes that deliver the flood directly into the river until the river water becomes defiled (M. Suparmoko and Maria R. Suparmoko, 2000).

The disposal of waste into rivers and land derived from industrial waste, mining, agricultural waste, household and other wastes can cause the quality of water to become down quality (Djauhari Noor, 2006).

In relation to water or river pollution, not separated from activities undertaken by a business entity or corporation in conducting its business by acting negatively, resulting in pollution. It is undeniable that corporate presence in the era of globalization and today's free economy on the one hand can be beneficial for economic growth, on the other hand can be "threatening" in the sense of committing environmental crimes to gain as much profit as possible. Along with this fact, IS Susanto suggested that: (IS Susanto, 2011)

"Almost all our needs can be served by corporations. On the one hand the corporation's impact is very positive in economic growth (opening jobs, generating foreign exchange, tax revenues, and more). But on the other hand we also witnessed the negative behaviors demonstrated by corporations such as the draining of natural resources, pollution and others ".

Given that water is a component of the living environment then the water pollution of the river is part of environmental pollution. Therefore, with the increasing number of pollution burden that the impact is felt by the wider community, it is necessary to have a focused activity that aims to reduce the amount of contaminants that go into the environment (Mohammad Taufik Makarao, 2006). So does the pollution that occurs in the Deli River Medan City.

General conditions in Indonesia based on the empirical data of the Directorate General of Pollution Control and environmental destruction in the Ministry of Environment and Forestry, stating that the quality of river water in Indonesia is in a condition of concern. It can be known based on monitoring at 918 (nine hundred eighteen) sampling points at 122 (one hundred and twenty two) rivers in Indonesia. Based on the results of the monitoring, it is known that 68% (sixty eight percent) of river water condition in the category of "heavily polluted", including the Deli River in the city of Medan which is based on empirical data of water quality monitoring during the period of the last 5 (five) years since year 2013 up to year 2017 in contaminated condition according to the results of water quality test (North Sumatra Provincial Environment office, 2017).

With the many sources of pollutants that enter the body of the river water, whether from agricultural activities, domestic (household waste water and garbage), industrial (industrial waste), hospitality, hospitals and others, will cause the increasing pollution and declining burden of river water quality. In general, these activities are carried out in the context of running an economic endeavor and often also an attitude of rulers and businessmen who do not run or neglect obligations in environmental management (Wahono Baoed, 1996).

The provincial Environment office of North Sumatera based on the results of the report has also stated that the pollution reduction in the Deli River in Medan is still partial. The effort is not comparable with the rapid development in the urban sector of the industry by not taking into account the environmental capacity, so that many have a negative impact on the environment such as pollution. The threat of pollution is felt for the government of Medan city in the form of water pollution, limited availability of clean water for drinking, flooding in the rainy season, sedimentation, narrowing and winding the river (provincial environment office of North Sumatra, 2016).

With the increasing pollution burden over time has resulted in the declining water quality of the Deli River. The challenges faced today are so many sources of pollution that enter the river water body directly or indirectly sourced from several sectors, namely agriculture, waste water and garbage, industrial, hospitals, hospitality, hospitals and other business activities so that necessary strategies and solutions are more directed and integrated in the effort to reduce the burden of existing polluters , accompanied by budget, personnel and other supporting equipment that is adequate considering the scope of work is quite extensive (the Environment Office of North Sumatra province, 2017).

Based on the explanation above, shows how important the water pollution control efforts of the Deli River were carried out in an integrated accordance with the principles of protection and environmental management as mandated in UUPPLH, by involving all stakeholders (stakeholders), both government, business actors and community participation as an integral part of the management of the river, the authors are interested to discuss about "the control of river water pollution based on environmental legislation and its implementation against the pollution of Deli rivers in the city of Medan connected with the system Integrated River Management ".

RESULT AND DISCUSSION

A. Control of River Water Pollution in Integrated River Management System Based on Environmental Legislation

Water resources are water, water resources, and water resources contained therein. Water resources are differentiated into groundwater resources and surface water resources. Groundwater resources are a source of clean water (natural water resources) contained in the soil and rocks. Surface water resources comprise the bodies of rivers, lakes, and oceans that are all on the surface of the Earth. This surface water

is the main source of water for human life, herbs and animals, besides for other purposes such as recreation, fishing, irrigation to irrigating the tilled fields (M. Suparmoko and Maria R. Suparmoko, 2000).

Water is a resource that classifications can be classified into renewable and unrenewables resources, depending on the source and utilization (Akhmad Fauzi, 2006).

Recharge, for example, is obtained through a geological process for hundreds and even thousands of years, so although it has the ability to recover (rechargerate) through the rain, if the amount utilized exceeds the ability of recharge, recharge is often said to be an unrenewable resource. On the other hand, surface water such as river water and lake can be categorized as renewable resources due to the hydrological cycle process of the Earth.

Water resources are viewed in the geographical area of Indonesia including in wet tropical areas with high average rainfall. The annual average rain for the entire region of Indonesia is about 2,600 mm with a variation between 1,500 to 3,000 mm. From a rain of 2,600 mm, the amount of 1,370 mm is lost through evaporation and pervasive into deep ground water. While the remaining 1,250 mm becomes the flow, which equals 2,380 cubic km (Suripin, 2004).

Fresh water supply in the world is almost entirely obtained in the form of rain as a result of seawater evaporation. The processes included in the vapor shift from the sea to the mainland and back to the sea again form the so-called hydrological cycle. The first phase of hydrological recycling is the evaporation of water from the ocean. These vapors are brought on land by moving air masses. When cooled down to its melting point, the vapor will freeze into visible water grains that form clouds or fog. In the appropriate meteorological conditions, the small grains of water will be berembang large enough to be able to fall to the surface of the Earth as Rain (Ray K. Linsley and Joseph B. Franzini, 1991).

Broadly, the process of cycle flow (recycling) of the above hydrology, including: (M. Suparmoko, 1997)

a. Water from the sea level evaporates called "evaporation".
b. Water and vegetation also evaporated so-called "transpiration"
c. Horizontal switching from moisture/air.
d. Run-off, water flows directly into the sea.

In accordance with the natural process of water sources is a natural wealth that can be renewed and that has regeneration power is always in circulation and born again follow a cycle called hydrological recycling. Thus, the water from its source flows into the sea. Water has always been in the hydrological cycle so that the relative number remains. The rain water drops to Earth, partly sewed to the ground, some are smoked with root herbs and some are through the soil and rocks merge into one with groundwater from the heat of the sun. The surface water and water in the living creatures evaporate into the clouds, which when exposed to cold will condense and descend as rain. The rain that directly falls into the sea is called a Short cycle, and that falls to the mainland there is being restrained by vegetation, some are up to the ground through the stem roots (Moh. Soerjani, Rofiq Ahmad and Rozy Munir, 1987).

Water resources Management is an effort to plan, implement, monitor and evaluate the conservation of water resources, water resource utilization, and water damage control.

Management is a part of management activities. Therefore it is natural if first need to recognize the substance that will be managed both the form, the nature and the philosophy contained therein. In terms of its substantiation that water resources are part of natural resources that have very different properties with other natural resources. Water is a renewable resource that

dynamically follows the hydrological cycle that naturally shifts and changes in form and nature. Depending on the time, and the location, water can be a solid substance as ice and snow, can be a liquid that flows as surface water, is in the soil as groundwater, is in the air as a rain water, is in the sea as sea water, and even in the form of water vapor that is defined as air water (water seedlings). The cycle of existence of water is a series of historical and unbroken. Therefore, both water data and its occurrence will be sustainable and influence the importance of intergenerational generation so that it needs to be kept in its sustainability. In the capitalistic Western countries, water is seen as economic goods even as commercial commodity traded. However, it should not be forgotten that water has a very important social function because the water is about life. Looking at the water as a commercial commodity will bring major disasters in the religious community where social function becomes the main pillar of life. It is therefore necessary to maintain the right of every person to obtain water fairly and at an affordable cost (Robert J. Kodoatie, et. al, 2002).

The concept of water management and water resources basically includes efforts and development activities for the utilization and preservation of water resources in the form of channeling (redistributing) water available in the context of space and time, as well as components of quality and components of volume (number) in a region to meet the basic needs of human life.

In order to achieve these missions, water resources management is implemented based on the principles of harmony, equality, general welfare, integrity, fairness, autonomy, transparency and accountability. These principles are the joint guarantees and responsibilities of the Government including the access of each person to the source of water to obtain water.

Generally, water resource management departs only from one side, namely how to utilize the advantages of water, but not to be forgotten also loss. Three aspects of water management are aspects of utilization, aspects of preservation and control aspect, as follows:

a. Aspects of utilization;

It usually comes into the minds of humans when it comes to water and newly realized if there is an imbalance between the need and water available.

b. Aspects of preservation;

For the utilization to be sustainable, the water should be maintained in both the number and quality of its sustainability. Keeping the rain catchment area in the upstream as well as the pickup area is a part of management, so the difference in water discharge of dry season and rainy season is not big. Similarly safeguard water from waste pollution.

c. Control aspect;

It should be realized in addition to giving benefits, water also has physical and chemical damaged power due to human behavior. Therefore in water management should not be forgotten is the control of damaged power in the form of water pollution (Samsul Wahidin, 2016).

That in environmental studies, exploitation of natural resources that merely concerned the economic aspects alone without considering the importance of ecology has caused the condition of various natural resources present in the critical state, which is shown increasingly widespread extraordinary circumstances (KLB) such as flood floods in various regions (Helmi, 2003).

Currently, the main problem faced by water resources includes water quantity that has not been able to meet the increasing needs and water quality for domestic needs are increasingly declining. Industrial, domestic, and other activities have a negative impact on water resources, such as causing a decrease in water quality. This condition can cause interference, damage, and danger to all living creatures that

depend on water resources. Therefore, it is necessary to carefully manage and protect the water resources (Hefni Effendi, 2003).

In the future, water resources management cannot be viewed only from the quality and quantity aspects. Nevertheless it should be handled in an integrated, comprehensive and interdependency. For that it is necessary to reform natural resources management is a natural resource management approach that is environmentally sound, accommodating changes. Most importantly, administratively, the role of government should be fully addressed as a facilitator, not a provider, a decentralized management and development Authority, recognizing human rights for the accessibility of water. Moreover, the human rights factor in the environment and utilization of good natural resources, healthy and sustainable to be the obligation of the State guarantees the fulfillment of such rights (Bambang Sugiri, 2012).

In addition, water resources management should be understood as a systemic management effort. The meaning is that any efforts made on water resources must be systemic planned, involving all related elements and ensuring that all elements can play an active role according to their respective functions. Can jointly share functions to solve problems in a multisector, able to solve problems on an ongoing basis, and does not pose other problems as well as the completion of problems in the short, intermediate, and long-term (Agus Maryono, 2017).

The policy approach to rational water resources management is ecosystem-based. This approach puts the linkage between components in the overall water resource management system. The ecosystem approach includes three sub-systems that should be of concern in sustainable water resource management, namely production sub-systems, distribution sub-systems, and consumption sub-systems. All its power and efforts are aimed at achieving a balance between sub-systems or proportionately balanced in the sub-systems itself (Chay Asdak, 2012).

In line with the ecosystem's approach, according to Bruce Mitchell, a comprehensive, thorough and integrated ecosystem approach is believed by many to be a system concept, including the parts of it and the relationships between those parts (Bruce Mitchell, 1997).

From the sub-systems, production sub-systems is a natural system in the form of river basin (DAS) or groundwater basins. Sub-systems is also commonly known as the water system. The amount of water production, in addition to depending on the magnitude of rainfall, is also determined by the characteristics and conditions of the water basin and the soil. In many cases, water production has been subjected to anthropogenic disorder, mainly related to the change of land function from which is pervurizing the water into the soil to be less/non-permeated water. Sub-systems distribution, the position of water distribution factors is closely related to: (1) The guarantee of the access of people who are less capable in obtaining water resources, and (2) determination of priorities of water distribution for various purposes, among others for household, agriculture, industry, and other sectoral needs. To be able to realize sustainable water resources management, the consumption pattern (sub-systems consumption) of water must be related to water resources production system (Chay Asdak, 2012).

The river has a huge role for human civilization around the world, namely by providing fertile areas that are generally located in river valleys and water resources as the most important source of life for humanity. Similarly, the river provides itself as a means of transportation to improve mobility and communication between people. In adults, the river has a very close relationship with our daily lives. In mountainous areas, water is used for power generation and also plays a major role as a source of water for the need for irrigation, drinking water supply, industrial needs and

others (Suyono Sosrodarsono and Masateru Tominaga, 2008).

The people are collectively constructed by the Constitution 1945 to provide a mandate to the State to hold policies (Beleid) and management actions (Bestuursdaad), arrangements (Regelendaad), Management (Beheersdaad) and supervision (Toesichthoudensdaad) for the maximum purpose of people's prosperity (Ahmad Redi, 2014).

In this context, Bagir Manan said that article 33 Constitution 1945 is one of the characteristics of the constitutional system and the state that wants to be realized in Indonesia. The welfare state concept in practice has not been as expected. This is because the government's policy in national development has always focused on economic growth followed by economic and security stability, but more oriented towards growth and more liberalist, not the welfare that can be enjoyed for all Indonesians as mandated in Constitution 1945. The results of development in the economic field is more enjoyed by those who have the opportunity and access to the policy taker/executor, even the family economic system mandated the 1945 Constitution turn into the family economic system (AL. Sentot Sudarwanto, 2004).

The river should be viewed as a living ecosystem so that every river enlisting should include all components of the river ecosystem, including communities directly or indirectly related to the river. The river should also be seen as a continuous system from upstream to downstream, even related to the dynamics of the beach and sea so that all the planning of river management also rests on the open system of the river.

Utilization and control of river water as water resources is part of water resources maintenance. The utilization of water resources requires coherent means or technology with a maintenance philosophy, which is environmentally friendly technology. So, on every part of the water resources (e.g. rivers and borders, lakes, swamps, seas, etc.) it takes a strong desire to nurture, then can utilize and control the water resources so far in order to maintain the water resources. Maintaining in this case means nurturing to be utilized continuously and continuously.

B. Implementation of Integrated River Management System Based on Environmental Legislation Against Pollution Control of Deli River in Medan City

At the time of Deli kingdom, the Deli River was a trading vein to other regions. Currently, the forest area in the upper river Deli only lived 3,655 hectares, or lived 7.59% of 48,162 hectares of the area of the river basin (DAS) Deli. In fact, with an area of 48,162 hectares, length 71.9 Km, and a width of 5.58 Km, DAS Deli should have a natural forest for a water catchment area approximately 140 hectares, or 30% of the area of watershed. Deli River is a river flowing in the middle of Medan which is loaded with various loads because of its important role for people's lives in fulfilling basic needs, both as a source of drinking water, irrigation, drainage functions, flushing and others. The Deli River is also one of the river's parents in the River Area unit (SWS) Belawan/Blumai Ular with 5 (five) tributaries. The Deli River and its subsidiaries and branches flowed from Karo Regency, Deli Serdang Regency and crossed the city of Medan before it ran to the Straits of Malacca. The upper part of the river is generally in Karo Regency and Deli Serdang Regency, while the central and the sand is in Medan city. The landscape of the Deli River basin which reaches the area of 45,523 hectares, the largest part is located in the Medan city government area with a river length of ± 50 Km. With the ramps, the river Verval has suffered from both environmental damage and pollution (Environment Office (DLH) North Sumatera Province, Medan, 2016).

The upper area of Deli river flows through hilly areas with diverse topography, between ramps, rugged and steep so that there are some waterfall. This condition

gives a good effect on the self purification process (natural purification) because the flow tends to be turbulent so that the aeration process can take place well. Land utilization in river basin in the upstream, among others, as agricultural areas, fisheries and settlements and forests. In the middle area, the flow of the Deli river tends to sloping with a 0.31% slope that causes the river water rate to be slower than upstream so that the aeration process is also reduced and the self purification also decreases. Land utilization around this area for settlements, offices and industries. This middle area is the center of the city, the central services and trade. There are many activities that led to the degradation of rivers such as slum settlements on the riverbank, domestic and industrial waste disposal, changing river flows, hardening River forts. While the topography of the downstream area is increasingly sloping with 0.2% slope so that the water rate is slower especially towards the estuary. Downstream areas are the central industries that have wasted much of its waste to the Deli river without processing. Economic development, urbanization, industrialization, modernization and lifestyle change have also influenced the condition of the Deli River, especially in relation to river pollution (the Environmental Service (DLH) of North Sumatera Province, Medan, 2016).

In addition to the means of solid waste disposal and liquid waste, the Deli River is also used for industrial water supply, bathing and washing and fishing in the downstream such as Labuhan Deli area. People also utilize green lines and river borders as a residential place by building a residential house, industrial development reaches the riverbank line so that when the volume of the river water grows then the residence has a puddle (Environment Office (DLH) North Sumatera Province, Medan, 2016).

Handling pollution and environmental damage the Deli River is still partial. Efforts are not proportional to the rapid pace of development of industrial sectors in urban areas of Medan and Deli Serdang District with less to take into account the support power of the environment so that many have a negative impact on the threat of pollution and environmental damage. Threat of pollution is especially felt for the government of Medan city in the form of water pollution, threats to the availability of clean water for drinking water, flood in musin rain, sedimentation and narrowing of the river. Environmental degradation in upstream to downstream rivers caused by deforestation, humus intake, erosion from cultivation, sand quarry activity, garbage disposal to waste sewage, household waste that makes the pollution of the Deli River. Although it has been a few years before monitoring the quality of its water, but in its development still shows the management of the not Maximal (environmental office (DLH) of North Sumatera Province, Medan, 2016).

The pollution of the Deli River flows through the middle of Medan city where there are various community activities so it is potentially sufficient to produce a source of pollutants along the river basin. Domestic and industrial waste liquid waste in the water catchment area of the Deli River flows into the body of the river without going through processing. In addition, the water discharge of the Deli River from year to year also decreased. This is mainly because of the conversion of forests that occur in the upstream area of the river that is not able to absorb water with maximum. Land utilization in the upstream area, the area designated as a forest area is not entirely covered in vegetation. The rise of illegal logging increasingly damaged the forest so that its function as catchment area changed. The critical land was caused by illegal logging resulting in an increase in the watershed of DAS Deli of 4,690 hectares. DAS Deli is included in one of the first priority I in North Sumatera with 7 (seven) Watershed, namely DAS Besitang, Lepan, Wampu, Snake, Asahan, Batang Gadis, and

DAS Nias (Environment Office (DLH), North Sumatera Province, Medan, 2016).

The forest in the upper Deli River is not able to absorb water with maximum. Unabsorbed rainwater makes the river water discharge exceed the normal limit. The water is supposed to sink into the soil so that the water reserve continues to be available, but that happens is the flood in the main river and the children of the Deli River. Similarly, the use of land around the basin of the Deli River in Deli Serdang district is generally dominated by agriculture, while in Medan city in the form of settlements and industry. The growing number of settlements and industries is in line with the increasing number and welfare of the population as well as increasing economic development that leads to increasing pressure on land needs. Land needs for settlements and industry will eventually change the function of water catchment area that does not have time to soak into the soil so that the river water discharge will be greatly reduced in the dry season, and become a flood in the rainy season (Environment Office (DLH) North Sumatera Province, Medan, 2016).

On the other hand, with the diversity of community activities in the river basin also followed the variety of river utilization, for example as a place for sand mining, bathing facilities wash toilets, landfills, domestic waste disposal and industrial waste and as a source of water for the activities of the industry. This whole activity has contributed to the pollution of the Deli river, so it is a river with the highest pollution load in the province of North Sumatra. Based on a survey of the Medan City Environment Office for nine sub-districts in Medan, there are 33 (thirty three) domestic waste channels flowing into the Deli River. This channel is generally a large trench that was built by the government in the MUDP project (Medan Urban Development Project) (Environment Office (DLH) of North Sumatera Province, Medan, 2016).

There is also a subdistrict (subdistrict Medan Deli) as the most garbage producer of 5 (five) sub-districts that are surveyed. Some of these garbage are discarded directly into rivers, especially by people residing in the riverbank. In addition, some spots still found business and or activities by utilizing the banks and borders of rivers, and the river banks as landfills. From the survey showed 70% (seventy percent) waste pollution river Deli sourced from solid and liquid waste. Solid waste in the form of garbage generated in the city of Medan ranges from 1,250 tons per day, while the waste water from the industrial sector and various sub sectors of business along the river basin in general has not been processed and directly in the river, it has an impact on the quantity and quality of river water, therefore it is necessary efforts and strategies are more directional and measurable to be able to reduce the pollution load from existing pollutant sources (Environment Office (DLH) North Sumatera Province , Medan, 2016).

Seeing people's activities in utilizing the Deli River and lack of environmental awareness can be a burden on management. Therefore, necessary management, utilization, development and protection efforts to be developed in accordance with the designation. Starting from the management of impacts to the management of activities through an ecosystem approach, by managing the sources of pollution and damage that has brought a negative impact on the environment (Ministry of Environment (DLH) North Sumatera Province, Medan, 2016).

One river in the context of the ecosystem is a hydrological area that can cover some of the administrative regions that are one unit of territory that cannot be split up. An integrated, thorough and ongoing work plan. One Management system is the alignment of policy, planning and operationalization activities from upstream to downstream. As known, the Deli River is located along the river basin (DAS) located in Karo District, Deli

Serdang Regency and Medan City. To the east, it borders DAS Percut, while the West borders DAS Belawan. DAS Deli consists of 7 (seven) Sub-DAS namely: Sub-Watershed, Simai-Mai, Deli, Babura, Bekala, Sei Sikambing and Sub-Great Hammer (Department of Environment (DLH), North Sumatera Province, Medan, 2017).

To address the problems of water resources in North Sumatra, especially those related to the decline in water quality due to pollution, environmental damage, and the weakness of law enforcement in the field of water resources, is required a policy of fair water resource management, transparent, sustainable and environmental-oriented at the provincial level.

Based on this consideration, the provincial government of North Sumatera Province has established a regulation of the governor of North Sumatera No. 8 of 2014 about the policy on water resource management of North Sumatera province, which was compiled and formulated by the Provincial Water resources management (SDA) coordination platform as a follow-up of government regulation number 42 year 2008 on water resource management.

With the many sources of polluters who enter the body of rivers and disobedience from business actors in carrying out its business activities, the effort to reduce the burden of pollutants requires a thorough and integrated pollution control strategy, accompanied by other supporting resources such as personnel, budget and other supporting tools given the scope of its work is quite extensive.

As is generally the pollution occurring in Indonesia, referring to the report DLH Medan City to the results of monitoring the environmental quality of Sungai Deli There are also some other factors that cause pollution, among others:

1) The rapid development of industry that leads to increase produced waste production. Industries, especially those near river streams, tend to throw their waste into the river, thereby polluting the water ecosystem and decreasing water quality.
2) The maximum handling of household waste control (domestic waste) that produces organic and inorganic substances removed and transmitted through the sewers and eventually flows into the river.
3) The disposal of agricultural waste into the river flow without going through the process of processing containing a variety of contaminants such as fertilizer and pesticides.
4) Still weak supervision and enforcement in the effort to prevent pollution.

Actions or efforts that have been done in the control of pollution of the Deli River is still not comprehensive, integrated and synergies between the various stakeholders both intersector and inter-region through an integrated river management system based on the prevailing laws and regulations.

Given the water quality of the Deli River shows severe polluted conditions then based on article 15 paragraph (1) government regulation number 82 year 2001 on water quality Management and water pollution control, the city government of Medan according to its authority should make efforts to prevent pollution and recovery of its water quality by setting the quality of target water. Determination of the quality of the target water includes its work program continuously, but based on the report data DLH North Sumatra province the target water quality is not fulfilled in the presence of constraints and still required further studies in establishing the capacity of pollution load.

In severe pollutants, the need to be determined the quality of the target water (water quality objective) based on the determination of the capacity of pollution load, is not intended to be able to realize the quality of water planned for a certain period through the implementation of the program in the framework of water pollution control

and water quality recovery as stated in article 15 paragraph (1) government Regulation No. 82 year 2001 on water quality The presence of the target water quality actually has an important role in water pollution control efforts.

Based on regulation of the Minister of Environment No. 01 of 2010 on the governance of water pollution control, in appendix IV part III of item B. 2. Determine the prerequisite for achieving the target water quality in accordance with the designation is: 1) There is a decrease in water pollution load which is essentially a condition that will be achieved in the control of water pollution, and 2) increased responsibility of the effort to all requirements in the control of water pollution.

By referring to article 23 paragraph (3) Letter E. Government regulation number 82 year 2001 on water quality Management and water pollution control, target water quality can be set when the capacity of pollution load has been set before. With no capacity of pollution load contamination then in the implementation of water pollution control and water quality restoration of the Deli River is not based on the quality of water planned as a work program due to the lack of quality target water that should be set.

In order to control water pollution based on article 23 paragraph (3) of government Regulation No. 82 year 2001, it needs the determination of the capacity of pollution load in addition to used for the determination of the quality of water target used also among others for the provision of waste water clearance in accordance with the requirements applicable in order not to pollute the environment.

Against environmental pollution that is heavy, based on the provisions of article 53 paragraph (2) and article 54 paragraph (2) UUPPLH, pollution control that should be done is through the effort to prevent and recovery of pollution. Pollution mitigation efforts are among others by conducting the contamination and termination of pollution, while the pollution recovery efforts are carried out either through discontinuation of pollutants, remediation, rehabilitation and restoration.

In the explanation of article 54 paragraph (2) UUPPLH mentioned that efforts to restore environmental pollution with remediation are intended to improve environmental quality. Efforts to restore environmental pollution with rehabilitation are intended to restore values, functions, and environmental benefits including efforts to prevent land damage, provide protection, and improve ecosystems, while environmental pollution recovery efforts with restoration are intended to make the environment or parts function again as they are.

Efforts that have been made in the control of Pollution River Deli is still not well coordinated and more intense cooperation with related agencies. Coordination and cooperation are important considering the topographical existence of the Deli River across 3 (three) districts/cities. The upstream part is in Karo district, the central part is in Deli Serdang Regency and the downstream part is in the city of Medan, so that in the management of water quality is required cooperation between sectors and interregions that are in a single unit of water ecosystem or a unit of water resources management such as DAS Deli and the river Basin (DPS) Deli. Integrated management is required between the administrative region and is based on the ecosystem character so that it can be achieved efficient and effective management, both done at the planning, implementation, supervision and evaluation stage as a management system in accordance with the prevailing legislation.

In the effort to control pollution river Deli also needed coordination and more intense cooperation with related agencies, among others law enforcement Hall of the Ministry of Environment and Forestry (KLHK) region II Sumatera and agency or the district/city level environmental service as part of Integrated river management from

the planning or preparation phase of the program, the implementation of activities, as well as monitoring and evaluation that has been assessed has not been fully implemented in accordance with the mandate legislation.

In addition, the disobedience or non-compliance of business licensing provisions indicates an indication that surveillance functions have not been implemented effectively. It required concrete and strategic measures as an effort in the enforcement of applicable law, as well as encouraging the Government of Medan to further enhance the role of surveillance.

Empowerment of all components of society, especially those in the water environment of the Deli River to care about the preservation of its environmental function has not been fully realized. The active role of the community facilitated and under the control of the Medan city government in the management of water quality and the water pollution control efforts are indispensable.

Damage to water resources of rivers and environment indicated by the contamination of water in general, the human beings in the utilization of such resources is not done in a wise by basing on the methods of conservation of water resources in accordance with prevailing laws and regulations. Management and control of water pollution must be done in an integrated and coordinated between the relevant agencies by involving the active role of business actors and sustainable community development. Alignment is done with regard to the clarity of relation between related sectors and cross District/city given the existence of Deli River crossing the boundaries of Regency/City administrative area. The alignment is done both at the planning, implementation, supervision and evaluation stage as mentioned in article 2 paragraph (2) of government Regulation No. 82 year 2001 on water quality Management and water pollution control.

Citing the opinion of Haeruman, the alignment must be created: 1) The maintainers of the organizer of a interlocking object in a system to achieve a harmony of objectives; 2) Integrate any effort to use the setup, maintenance, monitoring and control, and development based on the interconnectedness or alignment of the managed object.

Integrated water resource Management (SDA) is a process that emphasizes the development and management of other related resources in a coordinated manner in order to maximize the economic resultant and social well-being fairly without compromising on vital ecosystem sustainability (Helmi, 2003).

Water resources pollution and destruction is a serious problem faced by the Government and the community in regulating the management of water resources. Therefore, in order for the prevention of the management efforts can be more optimal then the appearance should not be fragmentary and sectoral or administrative authority.

Horizontal coordination is still not effective and optimal because it is still less concerned with cross-sectoral issues with the involvement of other related agencies, as well as vertically both the central government and the provincial government.

As part of the river management, especially the integration of water pollution control and water quality management is done at the planning, implementation, supervision to the evaluation stage as stipulated in Article 2 Government Regulation No. 82 year 2001 on water quality Management and water pollution control.

CONCLUSION

Water is a resource whose classifications can be classified into renewable and unrenewable resources, depending on the source and utilization. Water resources are differentiated into groundwater resources and surface water resources. Groundwater resources are a source of clean water (natural water resources) contained in the soil and rocks.

Surface water resources comprise the bodies of rivers, lakes, and oceans that are all on the surface of the Earth. This surface water is the main source of water for human life, herbs and animals, besides for other purposes such as recreation, fishing, irrigation to irrigating the tilled fields.

The handling of pollution and environmental damage the Deli River is still partial. Efforts are not proportional to the rapid pace of development of industrial sectors in urban areas of Medan and Deli Serdang District with less to take into account the support power of the environment so that many have a negative impact on the threat of pollution and environmental damage. Threat of pollution is especially felt for the government of Medan city in the form of water pollution, threats to the availability of clean water for drinking water, caused by deforestation, disposal of waste to sewage waste, household waste that makes the increase pollution of the Deli River. Although since a few years before has been done monitoring the quality of its water, but in its development still shows the management of the not maximal.

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