Proceedings of International Conference : Problem, Solution and Development of Coastal and Delta Areas
Semarang, Indonesia – September 26th, 2017
Paper No. C-59

Inventory Of Environmental Issues Related To The Utilization Of Natural Resources In Coastal Areas Case Study : Wedung Sub-districts, Demak Regency

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Abstract - Wedung Sub-districts, is one of the locations in the southwestern coastal estuary of Demak Regency. Potential natural resources, mainly salt encryption pond, agriculture, characters livestock. The harmful socio-economic life of the community is dominated the United States farmers' and market traders. many environmental problems faced by the local community. The purpose of this research is to conduct an inventory of environmental issues related to the utilization of natural resources. The methodology employed is a qualitative deductive rationalist approach, with descriptive analysis techniques. Research variables include natural resource types and environmental issues. the conclusion of the research is the natural resources of the coastal area of Wedung Sub-districts covering marine resources producing fishfinder catch and people's salt encryption . Agriculture with the main production of rice. Environmental issues encountered include abrasion, flooding, rob, beach abrasion, drought.

Keywords*: environmental issues, coastal areas.*

1. Introduction

The development process is conducted by the Sub-districts Government of Demak showed positive results in various aspects of the life of the community, although in some it is still found environmental issues that always become the attention to be resolved optimally. Through the Law Number 32 Year 2009 concerning protection and Management of Environment, environmental policy formulated and implemented. With the imposition of some policy space planning, then there are no longer regional exterior that is not planned. Landscapes become product and a series of exterior planning process space utilization and control of the utilization of space. Therefore, the assertion sanctions on exterior violations as regulated in the ACT ON 26/2007 demanding exterior planning process must be held with the good so that the deviation of the utilization of space is not due to low quality of Regional Exterior Plan.

The environment is a complex system that lies outside the affected individual. the environment is different from habitat, habitat is the place where the living community, such as at sea, river, desert, forest, settlement and so on. Factors in the competing community interact, making it difficult to change them. the environment is a three-dimensional suensi, where the organism is a part. the environment is dynamic, which means changing at any time. changes and differences that occur both in absolute and relative terms of environmental factors differ according to time, place and circumstances (Zoer'aini,1992).

Natural resources are the basic capital of human life, especially in developing countries like Indonesia. Natural resources owned must be managed properly and carefully. To be able to find the right direction of natural resource management, it is necessary to know the circumstances and environmental problems in a region. Environmental conditions and problems faced from natural resources include:

1. Situation and problem of natural resources of land (land of land)
2. Situation and problems of Forest
3. Circumstances and problems of freshwater waters (rivers, lakes, reservoirs and so on)
4. The condition and problem of marine waters.
5. Circumstances and air space problems

(Kaslan A.Tohir,1991)

There are ways in which modern agricultur comprpmises the intersts of future generation : loss of vital topsoil which can b only be built up slowly and paintfully; polutin of soil; water and atmosphere ; deforestation; irrigation renderering soil unsustable or unproduvtive due to salinity; massive tampering with the eco system such that gross imbalances and vulnarabilities are created; loss of genetic deversity in plant and livestock wich reduces the ability of future generations to explore genetic options to their problems. These environmental consequesences are due to both the incresasing intensity and the increasing extent of agricultutre in modern word (Andrew Shepherd, 1998).

Resources are result of human culture; the materials of the physical environmental become resources ony when they fulfill a human want or need. Natural resources , therefore, exist only in conjunction with the human cuture. Because resources are creation of human culture, they can be destroyed by human culture. We know that cultural system and environmental perception have much to do with the definition of resource. The level technology of a given people is the primary factor in the determination of importance of various resources. (Robert P; Gary L; Cristopher. 1981)

Wedung Sub-districts is one of the areas in Demak Regency located on the coastal line. The construction program has been running in region refers to the RPJMD Wedung Sub-districts. The implementation of the program that could potentially have and/or the risk of the environment functions and carrying capacity and the capacity of the environment in the Sub-districts. For the benefit of the need to study inventory and potential issues such as which related to the utilization of natural resources in the coastal areas Wedung Sub-districts.

The purpose of this research is to find issues such as the environment which is located on the coastal regions Wedung Sub-districts, Regency of Demak. Now the benefits, to understand issues such as the environment is expected to development that is done to avoid adverse impacts to the community and avoid environmental degradation.

2. Research Methodology

Research approach

The Approach method used is descriptive qualitative research with the approach of rationalistic Unitarians. According To Sujarweni (2014) that qualitative research in general can be used for research on issues such as the environment. Parameter that is used includes the region, environmental issues.

The technique of Data Collection

The technique of Data Collection by interviewing the device and community leaders and field observation. (Husaini Usman, 2008)

3. General Description Wedung Sub-Districts

Basic physical conditions

Geography and Administration Limit

Wedung Sub-districts is one of the Sub-districts in Demak owning the local area 98,76 km ^{2} . Based on the Map 3.1, Wedung Sub-districts administratively consists of 20 villages, 26 hamlets and 107 RW and 434 RT with b over the region as follows :

- The North : Jepara Regency
- The East : Mijen Sub-districts
- The South : Bonang Sub-districts
- The West Side : the Java Sea

From 20 villages in Sub-districts Wedung area which most widely is Wedung Village, namely 98 ,76 km ^{2} while the village that has the most extensive is the small village of Mandung, namely 0.99 km ^{2} .

Physical character

Wedung Sub-districts have steepness of 0 - 2 % that including flat land topography, is very suitable to be developed to become the area of settlement and agriculture. It can potentially against cartilage floods lakes caused by the condition of the worse drainage.

The soil type of Wedung Sub-districts consists of the type of land and gray grumosol aluvial hidromof elders . The type of land is hidromorf aluvial and be gray, brown and black. Productivity of the type of this land from low to high and used for areas, rice and crops, and settlement. While the type of land gray gromosol elders have the texture of clay, be gray to black and suitable for agriculture and ponds areas .

Normal climate characteristics associated with the vegetation or the factors that affect the vegetation. From all the climatology factors, there are three factors that are important for the life of the vegetation, namely; temperature, rainfall, and the dry. The three factors are used as the criteria to determine the *bioclimate* (climate change biodiversity). Based on climate change biodiversity, Wedung Sub-districts has average rainfall of 0 - 13.6 mm/ year and pitch go on dry category.

The geological structure and investment of the Wedung Sub-districts consists of Aluvium structure that there is in all the continent. Water resources in the region in the form of Wedung Sub-districts-water source on the surface of the ground and ground water. The source of water on the surface of the ground from the rivers and the sea and the beach. Main rivers located in the area of incoming Wedung Sub-districts on Bakalan Pecangaan Sub watershed, Jajar Hilir Sub watershed, Jajar Hulu Sub Watershed.

4. Analysis Of The Potential And Problems

A. Agriculture and Horticulture Sector

As the leading sector in the Wedung Sub-districts, agriculture, plantations and shrimp contribute large enough in the economy of the Wedung Sub-districts. The following is the third picture of the sector.

Table 1. Explanation Evaluation result of the suitability of the land Wedung Sub-districts Based on existing Land Use

The Class	The Village	The use of existing network	The use of based on the ability of Land	Resistance Factors	An evaluation of the suitability of the Land
II	Wedung	• The Rice Fields • Tegalan • Empang • Settlement • Trade and Services	Agriculture - Arable crops - Grass Plants - Nature Reserve	Bad land drainage	Suitable for farming food crops and shrimp
I	Are Ngawen	• The Rice Fields • Tegalan	Agriculture - Arable Crops	Bad land drainage	Suitable for food plant agriculture

The Class	The Village	The use of existing network	The use of based on the ability of Land	Resistance Factors	An evaluation of the suitability of the Land
		• Settlement	- Grass Plants - The Forest and Nature Reserve		
I	Ruwit	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants - The Forest and Nature Reserve	Bad land drainage	Suitable for food plant agriculture
I	Kenduren	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants - The Forest and Nature Reserve	Bad land drainage	Suitable for food plant agriculture
I	Buko	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants - The Forest and Nature Reserve	Bad land drainage	Suitable for food plant agriculture
I	Mandung	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants - The Forest and Nature Reserve	Bad land drainage	Suitable for food plant agriculture
II	Berahan Kulon	• The Rice Fields • Tegalan • Empang • Settlement • Swamp forests	Agriculture - Arable crops - Grass Plants - The Suburbs	Bad land drainage	Suitable for farming food crops and shrimp
II	Berahan Wetan	• The Rice Fields • Tegalan • Empang • Settlement • Swamp forests	Agriculture - Arable crops - Grass Plants - The Suburbs	Bad land drainage	Suitable for farming food crops and shrimp
I	Bungo	• The Rice Fields • Tegalan • Empang • Settlement	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Paste	• The Rice Fields • Tegalan • Empang • Settlement	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Jetak	• The Rice	Agriculture	Bad land	Suitable for food

The Class	The Village	The use of existing network	The use of based on the ability of Land	Resistance Factors	An evaluation of the suitability of the Land
		Fields • Tegalan • Settlement	- Arable Crops - Grass Plants	drainage	plant agriculture
I	Jungsemi	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Jungpasir	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Mutih Wetan	• The Rice Fields • Tegalan • Settlement	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Mutih Kulon	• Settlement • The Rice Fields	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I	Tedunan	• Settlement • The Rice Fields	Agriculture - Arable Crops - Grass Plants - The Forest and Nature Reserve	Bad land drainage	Suitable for food plant agriculture
I	Kendalasem	• Settlement • The Rice Fields	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for food plant agriculture
I, II	Kedungkarang	• Settlement • The Rice Fields • Empang	Agriculture - Arable Crops - Grass Plants	Bad land drainage	Suitable for farming crops, suitable for farming food crops and shrimp
II	Kedungmutih	• Settlement • The Rice Fields • Empang	Agriculture - Arable crops - Grass Plants	Bad land drainage	Suitable for farming food crops and shrimp
II	Babalan	• Settlement • The Rice Fields • Empang	Agriculture - Arable crops - Grass Plants	Bad land drainage	Suitable for farming food crops and shrimp

Source : The Results Of The Analysis. 2015

Based on the results of the analysis of the evaluation of the suitability of the land and produced by the condition of the evaluation of the suitability of the land in the form of Wedung Sub-districts 2 (two) conditions, namely a) suitable to agricultural crops and b) suitable to agricultural crops and shrimp. The characteristics of the two conditions are related to the fulfillment of some parameters among others:

- According to the existing land use conditions or approach with the criteria of land capability
- There are resistance factors in the suitability of the land tenure, but can be resolved (does not give negative influence)

Spatially evaluation result of the suitability of the land in the Wedung Sub-districts can be seen on the following map. Land Use Evaluation Map

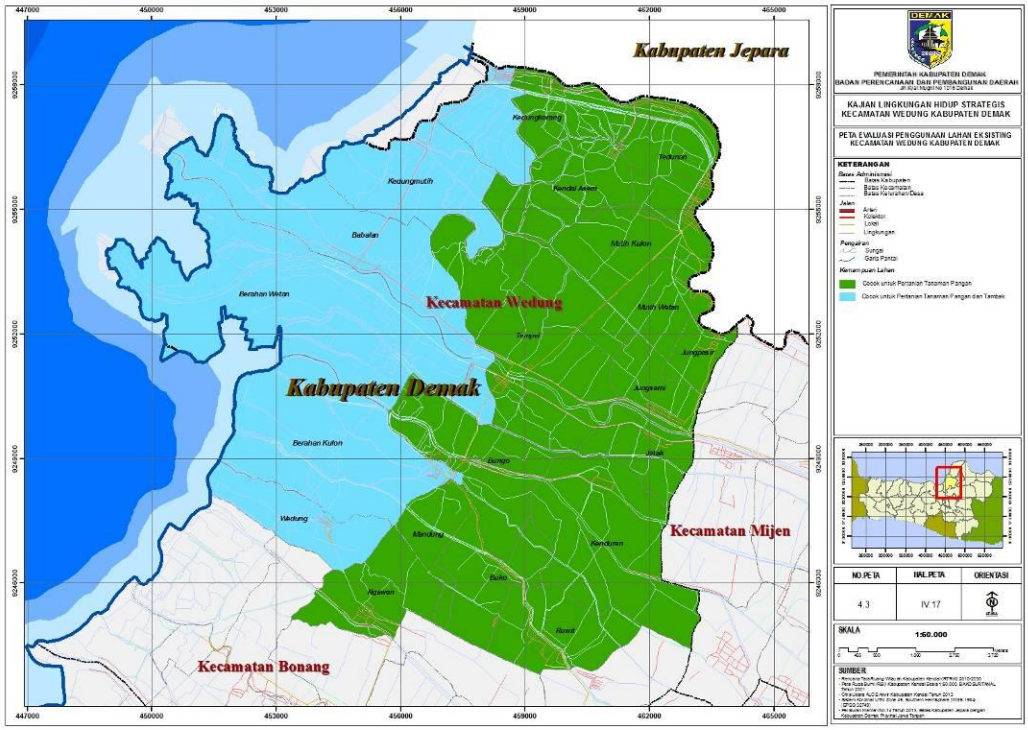

Figure 1. Land Use Evaluation Map

While producted agricultural commodities in the Wedung Sub-districts , as follows:

Table 2. Wide and agricultural production in the Wedung Sub-districts

The type of plants	Add CROPS (Ha)	Gross harvest (Ha)	Clean harvest (Kw/Ha)	Clean production (Tons)
Padi (Rice)	11084	11114	10805	58475
Corn (A)	0	2	2	12
Cassava	0	0	0	0
Sweet Potato	7	7	7	58
Peanut	11	6	6	9
Green beans	8	8	8	8
Soy beans	0	2	2	4
Sorgum	0	0	0	0

Source: Wedung Sub-Districts In Number 2015

Based on the table above, rice is a type of plant that many in the production in the Sub-districts with clean production reached 58.475 tons or 99.8 percent of total agricultural production in the Wedung Sub-districts.

According to its usage, most fields that used *tadah hujan* irrigated area of 5304,5 ha, rice field technical area of 70.0 ½ ha, rice fields simple area of 260.0, rice fields simple non PU area of 1364.7 ha. In the dry season, farmers have difficulties in getting water to irrigate rice fields.

The harvest

fields that planted Watermelon

Rice ½ Technical Support

Source : A Team Of Researchers , 2015

Figure 2. The Potential Of Agriculture In The Wedung Sub-Districts

Source : a team of researchers, 201 5

Figure 3. Agricultural Land In The Wedung Sub-Districts

While for Wedung Sub-districts plantation produces two types of plantation crops namely *kapuk randu* with clean production in 2013 reached 1.04 tons, and coconut hybrid with clean production reached 16.100 details.

B. The Salt ponds and fishery sector

In addition to agriculture and plantations in the region of Wedung Sub-districts there are exploiting for ponds that consists of fishponds and salt ponds spread in some of the Wedung Sub-districts. The villages which have land use shrimp are Wedung Village, Buko, Mandung, Berahan Kulon, Berahan Wetan, Kendalasem, Kedungkarang, Kedungmutih, Babalan, Mutih Kulon and Mutih Wetan.

Source : A Team Of Researchers, 201 5

Figure 4. The Salt Ponds In The Wedung Sub-Districts

Wedung Sub-districts is central to the making of salt in the Regency of Demak. Salt producing villages in the Wedung Sub-districts are Tedunan, Kendalasem, Kedungkarang, Kedungmutih, Babalan, Berahan Wetan, Berahan Kulon, Mutih Kulon, and Mutih Wetan.

The Farmers of salt have been empowered through the Program Salt Business People (PUGAR) which is a program of the Ministry of Maritime Affairs. Through this program, farmers expected more helpless and can achieve self-sufficiency in salt consumption both national and industry. In addition, it hoped could be fueling the production of salt in the land. Follows the results of the production of the salt in Wedung Sub-districts:

Table 3. The Results Of The Production Of Salt In The Wedung Sub-Districts Year 2014

No	The Village	Salt Land (Ha)	
		The potential	The production of
1	Tedunan	52,05	41,86
2	Kendalasem	266,1	195,65
3	Kedungkarang	137,2	104.6
4	Kedungmutih	343,3	267,17
5	Babalan	263	269,03
6	Berahan Wetan	203,77	115,24
7	Berahan Kulon	103	7.1
8	Muth Kulon	288,75	66,47
9	Mutih Wetan	1 62.5	25,76
	The total	1819,67	1092,88

Source : Maritime and Fishery, 2015

While for the fishery's sector of Wedung Sub-districts, because it is convenient on the coastline, there is a fish auction that is still active, that is Wedung fish auction. In addition, Wedung has great fishery's sector, seafish and freshwater fish cultivation also abound in Wedung, like tawes fish, catfish, karper, munjair fish, shrimp of bago, shrimp, benur, milkfish, crabs, eel and others. Following the results of the production of Wedung Sub-districts fishery in year 2014 .

Table 4. The Number Of Fisheries Production In The Wedung Sub-Districts Years 2014

Commodities	Production (Kg)	% Of Production	Wide
Nila	17121,09	0,44	0.43
Lele	412635,63	10,62	1.72
Vannamae	120236,00	3.09	193,24
Windu	24706,00	0.64	41,18
Farmers	2482002,40	63,85	3217,41
Rucah	830372,51	21,36	518,98

Source: Maritime and Fishery Demak Regency 2015

C. Analysis of Natural Disasters and Environmental Problems

Aspects of the disaster that often occurs in the Wedung Sub-districts is abrasion occurs in coastal areas of Regency of Demak. Abrasion occurred in coastal areas caused by human activity (illegal mangrove forest for their timber, and mangrove forest conversion to shrimp) and natural process (seasickness sea wave that happens continuously and changes the current pattern along the coast). The configuration of the mainland coast of the ridge (tanjung) have contribution as a main causes of the current deflection along the coast(AMP) and the waves defraction toward the beach, so that the result of abrasion (erosion) in certain beach. As the balance of the phenomenon of abrasion will also occur acretion phenomenon (sedimentation), which cause the land arising in other places. From the observation result seen some places that have abrasion among others: some coastal areas north of the villages, Ujung Kulon Berahan Wedung Village, the Village Berahan Wetan, Babalan Village, Kedung Mutih Village and villages Kedung coral reefs. This is caused by the buffer system that have not yet been organized beach with good, mainly caused by the structure of the land that fragile. Besides abrasion existing environmental problems in the Wedung Sub-districts namely the lack of clean water, garbage problem that has not been managed well and drainage problem that less good, where this happens almost in all the villages, more details can be seen on table 5.

Table 5. The Identification Of Development Issues Related To Natural Resources In The Wedung Sub-Districts

No	The classification of the issue of sustainable development in the aspects or specific Theme	A short explanation/logical (explanation causes, The intensity and the spread of the impact)
	Environmental Aspects	
	a) The damage to the environment and Natural Resources	
	1) Environmental pollution	environmental pollution caused by the waste is not managed well so that pollute the environment
	2) The acretion, abrasion and rob	another environment problem is a problem akresi, abrasion and rob that generally occurred in the villages along the coastal area of the sea.
	3) The pollution of the waters of the river	Water pollution of the river caused by household waste disposal or waste inorganic waste by the community impact of the river in the Wedung Sub-districts overgrown by plants

No	The classification of the issue of sustainable development in the aspects or specific Theme	A short explanation/logical (explanation causes, The intensity and the spread of the impact)
		water hyacinth almost on the whole surface of the river
	b) Food Security	
	1) Still the existence of farming activities, animal husbandry, fishery is still done with a simple technology with minimal equipment so that the result is less a maximum of	necessary for the development of agricultural technology to be able to improve the quality and quantity of agriculture in the area of planning. The development of agriculture in its widest definition must be synergizes with the use of land available nearby, so that mutual support between one another
	c) Environmental degradation	
	1) Decrease the quality and the availability of clean water	the availability of clean water is a rare thing in the Sub-districts, not all villages clean water distributed evenly so that people using the water that comes from the sink the shelters with a bad water quality
	2) Degradation of the quality of the environment as a result of garbage	It is caused by the waste is disposed of in a vain and there has been no proper waste management in the Sub-districts

Source : The Results Of The Analysis, 2015

5. Conclusion

From the observation result, the research and analysis show that Wedung Sub-districts, Demak Region, is a coastal region that have the potential for economic growth in the agricultural sector, fishponds and salt.

In implementing development regions, Wedung Sub-districts on issues such as the problems associated with the utilization of natural resources, including :

a) The damage to the environment and natural resources, include environmental pollution caused by waste, acretion, abrasion rob and river pollution.
b) Natural resources, agriculture, and fisheries are still conventional so that not to produce an optimal productivity.
c) Environmental degradation, decrease quality, and lack of availability of clean water and a decrease in the quality of the cleanliness of the environment.

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