**POLICY IMPLEMENTATION EVALUATION TOWARD UNDERGROUND**

**WATER MANAGEMENT BASED ON *LOCAL GOVERNMENT REGULATION NO. 10 OF 2002\*)***

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*Abstract*

*The objective of this research in aim at finding out the information related to the implementation of Local Government Regulation No.10 2002 obout underground water management.*

*The research finding reveal that this regulation has been well implemented based on data which collected by applying interview. Most of Bekasi people stuted that information about this regulation formal from other people and well socialized by local goverment in change of.*

*Key Words: Implementation, Policy, Underground water*

**INTRODUCTION**

(Howlett & Rames, 1995, 7) Public policy is a complex phenomenon consisting of numerous decision made by numerous individual and organization. It is often shaped by earlier policies and frequently linked closely with other seemingly unrelated decisions. (James Anderson, 2000, 4), Public Policy is a relative stable, purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern.

(Patton & Savicky, 1986, 3), Policy analysist are often required to give advice to policy maker in incredible short periods of time, in contrast to university researcher and think tank consultant who are hired specifically to type of work policy studies or policy research.

conduct intensive research on public policy issues. Some have called this later (Odum, Eugene, 1983, 257), One important source of water is underground water, so it must be maintained in order to provide access to many areas in order to meet the needs of more water irrigated, agricultural areas of the city and site of frequent drought will need to be aware of water resources.

McLenan, 1980, 342), The process by which public policy is formulated, thereforce, reflect government dicussion about how to maximize administrative efficiency and to enchance the legitimacy of established regime.

Dunn, 2004, 80), Policy analysis is the intellectual and practical activity aimed at creating critically assess and communicate knowledge and the policy process.

The Indonesian government report to World Water Form III in Kyoto Jepang, stated that 80 percent of the population do not have access to running water, it indicates that the government still has a duty actually great to be able to meet those obligations, required massive resources for irrigation infrastructure development, restoration and maintenance of water resources.

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(Daniel Thaib, 2012, 89), In Study entitled evaluation northern coastal management policy in Bekasi District welfare communities that planning is done through integrated management of coastal areas and small island that integrated unified plan that is prepared by a variety of sectors and region resulting in harmony strengthening mutual utilization, in addition to planning my research is seen as an effort in the decision making process also part of an effort to encourage a social change often involves intecration between organization, between institutions in order to generate consensus in managing activities.

Water has a very large role in supporting agricultural activities, urban and rural water supply, industry, fisheries, aquaculture, tourism, power and household consumption. To support activities in various fields, has built considerable infrastructure on a large scale, medium and small, so in order to maintain the infrastructure necessary to maintenance early. In order to implement an integrated development, thorough and continuous need to realize optimal utilization of water resources by improving the quality of public services, equitable and sustainable self reliance and self help community to achieve the realization of expected sustainability of water resources between sectors, between regions and the awareness of the public as well as the ability of water managers who are in the field.

Increasing number of demand for water, both in quality and quantity is a shared responsibility. this responsibility will be greater because it is associated with other areas that effect the sustainability of water resources among others: 1). reduction in water catchment areas of land as a result of the industry, 2) Declining water quality as a result of the disposal of various wastes into rivers or water sources, 3) Reduced carrying capacity of the environment to the preservation of the functions and benefits of water resources due to behavior of land use in upland water less restrained, 4) disruption of the sustainability of water resources and conservation of threatened building function as a result of lack of controlled irrigation decision minerals for building.

Be the problems facing in Bekasi City as one of the cities that are actively build the Badan Pengelola Lingkungan Hidup Bekasi (BPLHD) showed damage to the quality and quantity of underground water conditions in the three districts has even entered the critical zones, such as in the field and Medan Satria and Bekasi Utara. Region with the critical zones have experiend a reduction in the amount of underground water the conditions indicated by land subsidence Bekasi Utara condition worse, the underground water is not fit for consumption because it feels brackish.

Bekasi City as one of the center of trade and services due to the heavy population growth and increasing urbanization the increasing population led to the increasing public demand for clean water. Generally underground water use in the Bekasi number of points can be identified from underground water extraction permit from the well created by companies for commercial purposes.

In 2007 the number of companies the conduct underground water extraction as much as 120 firms with 256 wells and the number of point water use as much as 13.271 m3/day. impact underground water quality degradation that is permanen is thought to occur around the settlement site directy adject to the TPA/TPST. the permanent effect is accumulation and fluctuated, and the last for the disposal of waste in TPST activity decaying organic waste causes organic matter. Nitrate (NO3), Nitrite (NO2) and Ammonium (NH4) and litter decomposition results coli bacteria that accumulate in the leachate and soil into the stream so it is likely to impact on well water quality and the health of residents in the community to consume clean water.

Bekasi most of the city is still using underground water as a source of clean water and dringking water, this is due to the limited supply of clean water are served by PDAM Bekasi, so that the underground water is great alternative to meet human needs in addition to river water and lakes.

Based on a survey conducted by the Environmental Health Risk Assessment (EHRA) 2010, 2.240 homes in the city of Bekasi water wells drilled by the 36 percents high population density will lead to the location of the wells adjacent septic tank population whose condition does not quality.

Number of residents who use well water contaminated shallow, adverse impact on public health due to contamination and poor sanitation.

Such condition is certainly not in line with Law of Health number 23 of 1992, paragraph 3 which states that the drinking water consumed by the public must comply with the requirements of quality and quantity, where the requirement is stated in the regulation of the minister of health (PERMENKES) number 416 of 1990 on the terms and monitoring water quality.

In 2010, underground water extraction in Bekasi has been 672 SIPA and published many 395 types of businesses which includes supporting utilization, mck, clean water, trade and services, production support and operations, swimming pools, garages, hospitals and so on (Harian Kompas: 2010, h.6).

Based on the problems mentioned above, the purpose of the study was to evaluated the implementation of regulation polices Bekasi City area number 10 of 2002 concerning the management of underground water to meet the water needs of the community Bekasi City that is expected to optimize the task of implementation agencies and community participation in managing and using resources water, resources according to their needs as well as maintain, conserve water resources in a sustainable and environmentally sound.

The results of this study are expected to obtain usefull indicators and recommendation for revisions or policy making in the future so as to overcome the problems of managements and utilization of underground water.

**METHODOLOGY**

**Place and Time of the Study**

Research conducted in the City of Bekasi government, in term of local environmental management agency Bekasi and company/business users of underground water. The time reguired for the conduct of research for three mounths is September 2011 to December 2011 beginning with the field survey in order to find a detailed factual information through interviews with informants.

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| Table 1. Numbers of Firms in the Study Area |
| No | Study Area | Numbers of Firms |
| 1 | Bekasi Barat | 1 |
| 2 | Bekasi Timur | 1 |
| 3 | Bekasi Selatan | 1 |
| 4 | Pondok Gede | 1 |
| 5 | Medan Satria | 1 |
| 6 | Jati Sampurna | 1 |
| 7 | Jati Asih | 1 |
| 8 | Bantar Gebang | 1 |
| 9 | Rawa Lumbu | 1 |
| 10 | Bekasi Utara | 1 |
| Total | 10 |
|  *Source : Processing Results, (2012)* |

**Approach, Methods and Research Design**.

To obtain valid information, accurate and reliable research is to evaluated the implementation of the policy of local regulation number 10 of 2002 from direct observation feedback and policy processes.

However the difference is that a formal evaluation using the laws, regulations, program documents, interviews with informants this case is within the city of Bekasi government stakeholders who carry out the ptogram by identifying, definity as specifying objectives and policy targets.

Several methods can be used to collect data and information for policy evaluation as follows :

1. Documentation. Documentation is the principal remedy procedure to collect data and information on policies, ranging from formulation stage through monitoring. Documentation should be done periodically, either short, medium or long. This method constitute the most staple is getting the data and information which can trusted to perform assessment top of policy outcomes.
2. Survey. Data and policy information can also gashered by conducting a survey, for example, the target group to those policies or programs directed.
3. Interview. This method can collect the data and information more freely and deeply about policy, especially for information that is limited or the number is not too large.
4. Observation. Direct observation is a method that can support the assessment of policy outcomes this method can provide data and additional information.
5. FGD (Focus Group Discussion). The latter method is mostly done by various groups to explore the data information from diverse stakeholders, to obtain information and viewpoints is order to conduct a relatively complete assessment of a program or public policy.

**Data Analysis Techniques**

 Analysis data in this study is done using a simple statistic, the first step was to identify the data, tabulation of data for this purpose, futher suspended or percentage of data to determine the average assessment scores corresponding aspects are observed.

**Research Instrument**

Instrument ferers to the process of preparing a conceptual definition and operational definition of each translated into a number of indicators , of yhe indicator is arranged items include question or statements with answer choices. This study specifically using rating scale to measure aspects and indicators, and the indicators are used as a starting point to develop instruments which items can be a statement. *Rating Scale* is more flexible instrument to measure each item. Therefore the research must be able to interpret any given number of alternative answers to each item on the instrument.

**Criteria of Evaluation**

Evaluation of public policies, in the development stages of its implementation using multiple indicators in order to avoid bis a well as guidelines or directines for evaluators. Criteria set a benchmark in determining the success or failure of a public police.

Policy recommendation with the same criteria of evaluation criteria of the policy, the policy criteria consisted of: effectiveness, efficiency, adequacy, equity, responsiveness.

**RESULTS AND DISCUSSION**

**Results**

Based evaluation of policy implementation Local Regulation number 10 of 2002 concerning the management of underground water. Underground water management implemented based on the principle of public benefit, balance and preservation of the environment, in addition to the underground water rights is the right to obtain and use water to obtain and use the water for certain purpose, based on observation in other research areas, while the highest value is based on observation 3.44 means that there is a high understanding of the aspects of monitoring in this case the team conduct inspection and collection of the which evaluated the value aspect can be seen in the following table :

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| Table 2. Evaluation of the Implementation of the Value Aspects of Underground Water Management Policies Based on the Characteristic of the Region |
| Characteristicof the Observation Point | Evaluation of Implementation Policy |
| Planning | License | Supervision | Demolition | Conservation of Underground Water |
| Bekasi Barat | 3,2 | 3,8 | 4.0 | 3,4 | 2,4 |
| Bekasi Timur | 3,5 | 3,2 | 3,2 | 3,0 | 3,1 |
| Bekasi Utara | 2,9 | 3,3 | 3,8 | 3,5 | 3,8 |
| Pondok Gede | 3,1 | 3,1 | 2,6 | 3,8 | 3,2 |
| Bekasi Selatan | 2,5 | 2,8 | 2,8 | 3,2 | 2,7 |
| Rawa Lumbu | 3,2 | 3,6 | 3,2 | 3,0 | 3,0 |
| Jati Asih | 2,4 | 2,6 | 3,8 | 2,8 | 2,1 |
| Bantar Gebang | 3,3 | 3,2 | 4,0 | 3,6 | 2,0 |
| Jati Sampurna | 3,5 | 4,0 | 3,8 | 3,2 | 2,7 |
| Medan Satria | 3,2 | 3,7 | 3,2 | 2,9 | 3,0 |
| Total | 30,8 | 33,3 | 34,4 | 32,4 | 28,0 |
| Mean | 3,08 | 3,3 | 3,44 | 3,24 | 2,80 |
| Percentage of Informants to Obtain Clean Water |  |  |  |  | 84,14 % |
| *Source : Processing Results, (2012)* |

Observation 3.44 means that there is a high understanding of the aspects of monitoring in this case the team established by decision of the mayor conduct inspection and collection of the necessary information on a regular basis every (3) three months to the point where as underground water, in addition to collect data on the volume of underground water extraction, structuring technical and construction drilling and test pumping wells. Monitoring was also conducted at each monthly reporting to be done for each permit holder, the industry as users of underground water shall report any activity to the officer regarding the volume of water used debit / month.

**DISCUSSION**

Policy evaluation is an important part in the implementation , however recent developments prove that the success and failure of policy is no longer determined by the reliability of the policy and its implementation, but support environment, environmental context is promoted because the changes occurring today and in the future is a big change is volume and fast.

This fact was so worried because we saw a lot of policies that suddenly made absolete when completed because of the change. As well as underground water management policy adopted in 2002 with the goal of providing a clear legal basis in regulating the management of underground water in the area, in addition to the implementation of this policy in order to underground water management is done in a controlled, efficiend and environmentally sound.

 Bekasi City is one of the cities in Indonesia are experiencing repid development, the higher the number of people who need clean water to the higher consumption, industry and services sector is growing in the City of Bekasi. Industrial and services sector is a sector that desperately need clean water for their production activities.

Local Regulation number 10 of 2002 is regulating the use and underground water extraction in particular to enterprises, either state owned companies enterprises, coorporatives, institutions, foundations, hospitals and other organizations.

 The Local Regulation provide flexibility for license holders without violating the laws in force, the obligation for license holders include underground water extraction with discharge over 50 liters / second derived from 5 (five) areas. In addition on the location and contruction of monitoring wells or infiltration is determined by stakeholders.

Though this policy needs clean water used every company or business entity for the activities of the production process can be met, but there are still many activities taking excessive underground water does not go through the procedures or regulation, in other words that of undergr,und water, for example the proliferation of car wash business / motorcycle without prior consent application, it is very worrying for the existence of ground water aquifers.

State of water including underground water in Bekasi City has been degraded by poor water balance. It is necessary for business that emphasize it’s efforts on prevention because it is better than response after the impact. Underground water extraction by overpumping or excessive underground water extraction that safe yield deviverables have been proven to have a negative impact on the condition of underground water and the environment.

Negative impact due to underground water extraction that excesds safe deliverables starting with the decline of underground water quantity indicated by the decrease in ground water level. Continued to exceed safe limits ground water other advanced effects that may occur is the underground water quality degradation due to seawater instruction and ground water pollution, and land subsidence.

Efforts to prevent the negative impact due to underground water extraction can be done with the use of underground water in amount less than or equal to the safe limit underground water extraction, to achieve the targets utilization of underground water in a sustainable manner in accordance with their distribution, underground water should be reviewed as a non renewable resource. To minimize the negative impact of the use of underground water. Underground water development need to risk assessment, risk management. Risk analysis include underground water quantity while managing risk management include technical aspects and policy aspects.

Givent the presence of underground water is increasingly worrying, Bekasi City Government began directing industry and local services to not rely on the use of underground water through the issuance of tax local regulation of ground water (Perda Pajak Air Tanah). This is more due to the condition of underground water Bekasi City is now entering the alarming level, following the high usage by the industries / services and households.

According to the head of the Bekasi City BPLHD local regulations on ground water tax that was passed December 2010 and is a form of control the use of underground water order to preserve environment ecosystem,.

Plan to gradual reduction of the industry in taking the free of underground water for commercial purpose. Each industry are determined quota of ground water that may be used.

Each year upon renewal of underground water use permit, quota will continue to be reduced until eventually exhausted and the industry can no longer use the underground water. When yhe use of underground water has excceded the specified quota, the excess water will be taxed. Goal for employers to think more wisely in financial expenses.

Than the cost of the employer to pay the tax is high enough, the government purposely led induatrial / services to switch to the Local Water Company (PDAM).

**CONCLUSIONS AND RECOMMENDATIONS**

**Conclusions**

Based on the evaluation and discussion, it is concluded as follows : Local Regulation number 10 of 2002 has been implemented by the regions and communities, to futher improve people’s understanding of the policy should begin socialization deeper in order to understand every aspect and provide a good value.

 **Recommendations**

1. The industry can maintain the ecological balance of water resources so that the quality and quantity of ground water to stay awake.
2. Which aim to preserve the environment, need to involve the public would know better the imprortance of conservation of water resource.
3. Policies can communicate between the organizer and the executive, so that existing policies can be implemented academic study properly.
4. Necessary institutional organization helped arrange the order management and utilization of underground water.
5. There needs to be an academic study to revise and refine the Local Regulation No 10 of 2002 concerning the management of underground water.

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