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THE IMPLEMENTATION OF TRI DHARMA HIGHER EDUCATION THROUGH PENTA HELIX COLLABORATION IN ACCELERATION OF POLLUTION CONTROL AND DAMAGE OF AREA CITARUM RIVER

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Abstrak

Citarum River is a national strategic river optimal for the welfare of the people at large. However, there has been pollution and environmental damage that has harmed health, social, economic, ecosystem and environmental resources, so that it is called the dirtiest river in the world. Therefore, as one of the elements of penta helix in realizing the Tri Dharma of Higher Education, Suryakancana University conducts Real Work Lecture Activities (KKN) in synergy with government programs to participate and take steps to accelerate pollution control and damage to the Citarum River watershed. The aim is to examine the role of penta helix elements. in realizing a clean Citarum, as well as community empowerment programs through the Suryakancana University Real Work Lecture (KKN) in supporting a clean Citarum. The method used in community service is based on descriptive research specifications and qualitative data analysis. The results of the study: first, elements of penta helix through the support of Presidential Decree 15/2018 have synergized the roles and authorities of various related agencies and stakeholders , including universities, to provide the right to a good and healthy environment for the communities around the Citarum River; and second, theProgram (3RReduce, Reuse, Recycling) and arrangement of floating net cages is a community empowerment program carried out by students participating in the Suryakancana University Community Service Program in realizing the acceleration of pollution control and damage to the Citarum watershed.

Kata Kunci : Citarum, Pollution, Community Service

INTRODUCTION

Indonesia is blessed with God Almighty and has at least 5,590 main rivers and 65,017 tributaries. Among these rivers, the Citarum River with a length of 297 km is a national strategic river that stretches from its upstream in Situ Cisanti at the foot of Mount Wayang to the south of Bandung City, through Bandung / West Bandung Regency, Cianjur Regency, Purwakarta Regency and Karawang / Bekasi Regency and empties into the Muara. Kingpin, Java Sea (Imansyah, Fadhil, Muhammad. 2012).

As a national strategic river, based on 2012 data from the Central Bureau of Statistics Citarum is not only used by 44.55 million people of West Java, but has a role especially important for the social, cultural and economic life of the people of West Java. Eight Fifty percent of raw water to the capital city of Jakarta is supplied from the Citarum

River. Then, through three Large reservoirs, namely Saguling, Cirata, and Jatiluhur, each of which can contain volume water amounting to 982 million m3, 2.165 million m3, and 3,000 million m3. Citarum River is used for various purposes such as: irrigation (especially agricultural land around the Pantura), raw water sources big cities such as Bandung and Jakarta, as well as a power plant of 1400 MW which supplies electricity in Java and Bali (Imansyah, Fadhil, Muhammad. 2012).

The rapid development of the demographic and socio-economic sectors is not balanced with environmental conservation efforts, both in the upstream, middle, and downstream areas, within 20 that year caused damage to the Citarum River so that it was named wrong one of the dirtiest rivers in the world: "The Dirtiest River" The Sun, 4 December 2009 (Erianti, Dissa. and Djelantik, Sukawarsini. 2019). According to Safri Burhanuddin, Deputy for Science and Technology Human Resources and Maritime Culture of the Coordinating Ministry for Maritime Affairs, the cause is in the upstream part, there are 80,000 hectares land categorized as critical and very critical due to reduced function of protected areas (forests and non- forest), development of residential areas without good planning, cultivation agriculture that is not in accordance with conservation principles, as well as the level of outside groundwater extraction controls that are largely unlicensed result in land subsidence, and sedimentation in the Upper Citarum: 7,898.59 tonnes / ha. The problems mentioned above cause floods to hit Bandung every year, especially in the rainy season. Then in the middle, the Citarum River is polluted due to the domestic waste it produces society ranging from household waste to human waste. The amount of house waste was 20,462 tons / day of stairs, 71 percent of which were not transported to the place's final disposal (TPA). A total of 35.5 tons / day of human waste and 56 tons / day of human waste animals / livestock are also dumped directly into the Citarum River. Even based on office reports The manager of the Saguling Reservoir is estimated that the amount of waste that enters the Saguling Reservoir is amounting to 3 250,000 m per year, which causes silting of the reservoir due to its sedimentation the impact affects electricity supply in Java and Bali (Burhanuddin, Safri. 2018).

Furthermore, based on data from the West Java Province Environmental Service, there are 1,900 industries along the Citarum watershed, where 90 percent of the companies do not have installations Adequate Wastewater Treatment (IPAL) so that the liquid waste generated is around 340,000 tons / day discharged into the river. The impact is the community's right to get proper water not fulfilled (Burhanuddin, Safri. 2018).

Given the magnitude of the impact caused by the Citarum River pollution, then as an effort to save the Citarum River on March 14, 2018 the President Jokowi passed Presidential Regulation Number 15 of 2018 concerning the Acceleration of Control Pollution and Damage to the Citarum Watershed. The passing of this Presidential Regulation is expected to have coordination and better synergy among ministries / agencies, provincial and governments district / city along the Citarum watershed, with the support of the TNI and involving universities, community leaders, religious leaders, and also the private sector.

Suryakancana University (UNSUR) as a tertiary institution which has the function of implementing the Tri Dharma of Higher Education with the support of 200 (two hundred) students from all study programs in the UNSUR environment, namely the Faculty of Law, the Faculty of Teacher Training and Education, the Faculty of Engineering, the Faculty of Applied Science and The Faculty of Economics and Islamic Business plays a role in realizing the objectives of Presidential Decree No. 15 of 2018 in accelerating control Pollution and Damage to the Citarum Watershed Through Real Work Lectures (KKN) which are held in 2 (two) districts and spread to 20 (twenty) villages in Cianjur Regency with the guidance of 20 (twenty) Field Supervisors (DPL) with their program programs namely 3 R (Reduce, Reuse, Recycling) and community empowerment due to the arrangement of floating net cages.

METHODS

The research specifications used in this community service are descriptive analysis to provide a systematic, factual and accurate description of the data obtained in the field for later

analysis and interpretation of the data according to the purpose of community service. Data collection techniques include: documentation study, interviews, discussion or exchange of ideas, observation, and limited participation in meeting activities, discussions with the community, as well as workshops at both the village and sub-district levels conducted by students in villages where KKN activities are carried out. . The steps for implementing community service through KKN begin with the following stages: First, the preparation stage of activities starting with an exploratory study of areas that are the objects of KKN, data collection of KKN participants, licensing, as well as student training and field supervisors. Second, the KKN implementation stage, and the third stage is the KKN implementation reporting. Finally, data analysis is carried out qualitatively, as a technique that describes and interprets the collected data that has previously been selected and organized in order to obtain a comprehensive general picture of the actual situation without using formulas or numerical figures (Meleong, J, Lexy. 2010).

RESULTS AND DISCUSSION

1. Collaboration of Penta Helix Elements in Realizing Presidential Regulation No. 15 of 2018 concerning the Acceleration of Pollution Control and Damage to the Citarum River Basin

The Coordinating Ministry for Maritime Affairs notes that 73.24% of rivers in Indonesia is in a polluted status, one of which is the Citarum River. Facing this problem, since 1989, there have been 7 (seven) programs initiated by the government to handle and improve the Citarum River. 2003-2008 carried out the Citarum Vibrate (Clean, Beautiful and Sustainable) program, 2008-2023 with the ICWRMIP program, namely the Long Term Program or known as the Integrated Citarum, which was followed by the Citarum Bestari (Clean, Healthy, Beautiful and Sustainable) in 2013 - 2017. The funds used to support these programs have spent tens of trillions of budgets both from the funds sourced from the APBN and APBD Provinces and Regencies / Cities, but the results have not been maximally felt by the community, one of the reasons is because the implementation is done partially and fragmentary neither holistic nor integrated. In connection with this matter, given the problems in the CRB is very complex, since 2008, its handling is done Integrated Citarum Water Resources Management Investment Program (ICWRMIP) or investment program Integrated Citarum Water Resources Management carried out by the Development Planning Agency National Development Planning Agency (Bappenas) by adopting the provisions in Law no. 7 of 2004 concerning Water Resources, which on its way was strengthened by the passing of Presidential Regulation No. 15 of 2018 concerning the Acceleration of Pollution Control and Damage to the Citarum River Watershed as a new paradigm that is directly directed by the central government through the Coordinating Ministry for Maritime Affairs by promoting cross-sector integration, management, environment and integration between individuals known as the Pentahelix approach (Rahayu, Haeru, Tb . 2018).

Pentahelix is a 5 (Five Elements) collaboration between Academicians, Business, Community, Government and Media, abbreviated (ABCGM) to build a Citarum that is fragrant, clean, healthy, also sustainable (Bestari), each of which has a function and role (Yuniningsih, Tri. Darmi, Titi. and Sulandari, Susi. 2019), (Kamil, Ridwan. 2019).

First, the Government has three important roles in realizing the acceleration control of pollution and damage to the Citarum River watershed, namely as a regulator, dynamist and facilitator. As a regulator the government prepares regulations as follows: basic reference to all elements of the nation in accelerating control and damage to the Citarum. Furthermore, with its function as a dynamic government mobilizing community participation through providing guidance and direction intensively and effectively to society. Then as a facilitator, the government utilizes various potentials and existing resources in the community (Bottom up Planning) around the Citarum River through training, education and

skills improvement (Soares, Armando. Nurpratiwi, Ratih. and Makmur, M. 2015).

Second, the private role as enabler,delivering the technological infrastructure and capital one through the contribution of CSR (CorporateSocial Responsibility /CSR) in order to harmonize and synergize with government programs to accelerate the control of pollution and damage to the area Citarum River as a tangible manifestation of sustainable business practices of the company.

Third, community which comes from the Latin communitas which means "equality", which is derived from communis, as "people the live within a geographically bound are who are involved in social interaction and have one or more psychological ties with each other and with the place. in which they live ", namely people who live in a geographically limited area, who are involved in social interactions and have one or more psychological ties with one another and with the area where they live. The community has an important role as an accelerator / intermediary / liaison to inform government programs related to the Citarum River by involving the participation of the community so that it is more responsible for the realization of Citarum Harum.

Fourth, academics, through the implementation of the Tri Dharma of Higher Education (Education, Research, and Community Service) function as a drafter, through their knowledge they identify the factors causing the Citarum River pollution, its impact, and what steps can be taken to resolve this problem. with the concept, the latest theories relevant to the conditions at hand.

Fifth, the media (both conventional and social media) act as an extender that plays a significant role in communicating government policies related to accelerating pollution control and damage to the Citarum River watershed, activating the participation of agents of change, especially from penta helix elements, presenting various information on movements fragrant citarum, and invites the participation of all elements of society in the development of the citarum (Suri, Dharlinda. 2019).

The involvement of academics as part of the penta helix element is based on Article 12 letters c which states that the implementation of pollution control and damage to the Citarum watershed conducted by a Task Force one of which is the Minister of Research, Technology and Higher Education. Response Kemenristekdikti which has been changed to the Ministry of Education and Culture manifested by coordinating all PTN and PTS Chancellors in Java West and DKI Jakarta to synergize with government programs in revitalizing the river Citarum.

Suryakancana University as a university in West Java, implementing the Tri Dharma of Higher Education through its Real Work Lecture program implemented for 1 (one) month starting November 10, 2018 until the 5th December 2018, involved 200 students who were held in 2 (two) districts, namely Cikalongkulon District and Mande District and spread to 5 (five) villages, namely the Village Warudoyong, Cinangsi Village, Bobojong Village, Cikidangbayabang Village, and Murnisari Village.

The implementation of KKN has three main objectives. First, apart from giving students learning experience in the community, as well as a vehicle for learning for students to apply the various theories he got during lectures in accordance with the discipline of their respective knowledge. Second, KKN can provide added value in order to increase the quality of people's lives. Third, KKN is a medium for building partnerships between relevant higher education institutions and the community, including synergizing with government programs, especially in accelerating pollution control and damage to the watershed of the Citarum River (Syardiansah. 2017).

2. The Suryakancana University Real Work Lecture Program (KKN) in Support of Clean Citarum.

As a follow-up to Presidential Regulation No. 15 of 2018 an acceleration program (Quick Wins) was established to control pollution and damage that are considered important by the community around the Citarum watershed. First, the industrial waste handling and

prevention program, the second critical land restoration program, third, the livestock waste prevention and handling program, the fourth program, namely the prevention and handling of domestic liquid waste and the fifth the prevention and management program for domestic waste.

From the Quick Wins , Suryakancana University Community Service Program focuses on domestic waste prevention and management programs, as well as the arrangement of floating net cages as one of the factors causing silting of Cirata Reservoir and preparation for the transfer of the floating karamba UKM profession.

The World Health Organization (WHO), defines waste as material that is not used, unused, disliked, or something that is discarded from human activities. Furthermore, according to Article 1 paragraph (1) Law Number 18 Year 2008 concerning Waste Management, it is stated that waste is the residue of human daily activities and / or natural processes in solid form, which consists of: First, household waste, namely waste originating from daily activities in the household, but excluding feces and specific waste, Second, household-like waste, namely waste originating from commercial areas, industrial areas, special areas, social facilities, public facilities, and / or other facilities, and the three specific waste, namely consisting of waste containing hazardous and toxic materials, waste containing hazardous and toxic waste, waste arising from disasters, debris from building demolitions, waste that cannot be processed technologically, and / or garbage which arise periodically (Candrakirana, Rosita. 2015)

Based on preliminary data collection conducted by Suryakancana University KKN students, first The population, consumption patterns and lifestyle of people who have a tendency to use rivers as garbage dumps have increased the volume of waste in the river and exacerbated river pollution (Sucipto, Dani, Cecep. 2012). The implementation of the education program for the management / handling of waste or domestic waste in 5 (five) villages where the Suryakancana University Community Service Program is based on the idea that problems caused by waste have a broad impact, especially in relation to environmental pollution, disruption of aesthetics, disruption of health and the comfort of the community around the waste disposal site, even garbage can have an impact on environmental and social harmony which can lead to vertical conflicts (S.P. Hadi, 2005).

Community empowerment programs in an effort to handle waste in the KKN village are carried out through theProgram (3RReduce, Reuse, Recycling). Reduce is an activity to reduce usage or behavior patterns that can reduce waste production and avoid excessive consumption patterns. Reuse according to the Elucidation of Article 11 paragraph (1) letter c of Government Regulation Number 81 of 2012 concerning Management of Household Waste and Waste Similar to Household Waste is an attempt to reuse waste according to the same function or a different function and / or reuse parts of waste that is still useful without going through a processing process first. Recycling according to the Elucidation of Article 11 paragraph (1) letter b of Government Regulation Number 81 of 2012 concerning Management of Household Waste and Waste Similar to Household Waste is an effort to utilize waste into useful goods after going through a processing process first. The socialization of the(3RReduce, Reuse, Recycling) program is carried out by KKN students not only in the community family environment, but is carried out in schools ranging from early childhood, elementary, junior high and high school levels.

Other programs related to waste processing, namely composting, construction of a waste bank, construction of a recycling center, construction of regional scale TPSTs, construction of regional waste processing facilities, and procurement and installation of waste collection equipment. In addition, which is no less important in carrying out waste management education, namely encouraging and instilling a change in the mindset or mindset of the community on the importance of maintaining a clean and healthy

environment with models behavior, culture, and attitude that include selecting organic and inorganic waste, as well as processing it. organic and inorganic waste, and self-managed waste management by changing the “throwing” waste into “managing” waste (Puspitawati, Yuni. and Rahdriawan, Mardwi. 2012).

Second, is the arrangement of floating net cages and preparation for professional transfer of floating cages, especially in Cirata Reservoir. Cirata Reservoir, which was built in 1987, is located between the Saguling Reservoir (upstream) and Ir. H. Reservoir. Djuanda (downstream) which was built in the Citarum River Basin (DAS) with an area of 7,111 hectares, an inundation area of 6,200 hectares and a capacity of 2,165 million m3 with inundation areas covering three districts, namely Cianjur, West Bandung and Purwakarta Regencies. the purpose of being a hydroelectric power

plant (PLTA) to meet the electricity needs of Java-Bali. The use of Cirata Reservoir is increasingly developing, including tourism, transportation, capture fisheries, and fish farming with the floating net cage system (KJA). Based on the Decree of the Governor of West Java No. 41 of 2002, the inundation area of Cirata Reservoir that can be used for floating net business activities is 1% of the inundation area of the reservoir or an area of 48 hectares, a total of 12,000 plots, with Bandung Zone I as many as 1,896 plots, Zone II Purwakarta 4,644 plots, and Zone III Cianjur, totaling 5,460 plots. However, based on the 2018 census, the number of existing populations from the three zones is 98,397 plots. The total number of KJA in West Bandung is 31,527, Purwakarta Regency is 20,222, and Cianjur Regency is 46,648, so it has far exceeded the carrying capacity of the reservoir.as stipulated in the Governor's Decree West Java No. 41 of 2002 (Citarum Harum. 2018). The impact pollute water quality Cirata due to the influx of sewage domestic, industrial activities and runoff(runoff) of farmland, even waste feed KJA whose numbers have exceeded the carrying capacity of a predetermined a negative impact as a mass mortality of farmed fish KJA and Corrosivity in hydropower turbine equipment (WA, Wardhana, 2004).

The Minister of National Development Planning (PPN) with Pangdam III / Siliwangi on March 21 2018 made an agreement to arrange five priority activity points related to pollution and damage to the Citarum watershed in the work area of each sector, one of the points is revitalizing the upstream area through reducing net cages. floating gradually by conducting socialization, especially to KJA entrepreneurs, the Census of Floating Net Cages, and changing professions and business changes, with the hope that by 2023 there will be no more KJA. As for the method of controlling KJA, namely Phase I, control of KJA is carried out from July to December 2018, in which KJA control is adjusted to the percentage of ownership. Ownership of 1-20 plots is not controlled, ownership of more than 20 to 100 plots of land will be controlled by 20%, ownership of more than 100 to 200 plots of control is carried out by 25%, and ownership of KJA in excess of 200 plots will be controlled by 30%. For inactive and badly damaged KJA, and the owner can no longer be known (not there), control is immediately carried out in the first stage. Furthermore, the target of controlling active KJA is carried out based on the percentage of ownership of the largest KJA. Phase II, control of KJA is carried out from January to December 2019 with a total control of 21,892 KJA. Phase III in 2020, control will be carried out on 21,892 KJA plots, Stage IV in 2021 control for 21,892 KJA, and Stage V in 2022 it is planned to control over 19,098 KJA plots, assuming there will be no more KJA in 2023. The economic life of the business community also carries social risks, because the economic behavior of the people in them is inherent in social phenomena (Kurniasari, Nenden Apriliani, Tenny. Koeshendrajana, Sony. and Wijaya, Rizki, Aprilian. 2020).

Responding to these conditions, the programs prepared by students participating in KKN for the community and managers of floating net cages (KJA) are affected by the KJA control program, namely increasing the capacity of the community in creating new jobs through

learning to start up a floating restaurant barista coffee / chocolate which is carried out by inviting barista as someone who has competence in making coffee / chocolate, making handicrafts and souvenirs, for example: chocolate chips (cocoa), rambutan bean chips, pickled rambutan, ranggining with various flavors such as spinach and carrots; as well as making toys from plastic waste such as water rockets, children's savings, other handicraft items (bags, table mats, carpets, mineral water containers, etc.). Then, the development of the Jagabaya Agro Tourism around the Cirata Reservoir by arranging the stalls around the reservoir, completing and fixing its supporting facilities so that it becomes an attraction for the Cianjur community's destination by making a gate, making spots for Asean countries, arranging umbrellas, and the construction of a bridge skybridge.

CONCLUSION

Collaboration of penta helix elements that provide open space for all elements of participation society as well as universities through their Tri Dharma of Higher Education function have provided positive results in realizing the objectives of Presidential Regulation No. 15 of 2018 to jointly accelerate pollution control and damage to the Citarum watershed through its programs such as community empowerment programs in an effort to handle waste through the program (3RReduce, Reuse, Recycling), as well as arrangement of floating net cages and preparation for the transfer of profession of floating cage UKM.

The penta helix collaboration has had major implications for starting to deal with and improving the condition of the Citarum River, as well as reviving the concern of many parties to the importance of caring for rivers and the environment.

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