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HYDRO-SOCIAL RELATION OF INDIGENOUS RELIGION: BALI AGA

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Abstrak

Pengelolaan air sangat dipengaruhi pariwisata dan ekonomi, yang bertujuan untuk memperoleh keuntungan. Kekeringan, polusi dan konflik yang terjadi menunjukkan manusia hari ini tidak tahu cara mengelola air dengan bijak. Di sisi lain, masyarakat adat punya cara untuk memelihara air yang berkualitas. Salah satunya dijabarkan oleh Ghorbani et al. Dia menjelaskan bagaimana pengetahuan adat diaplikasikan untuk menciptakan distribusi air yang lebih baik, serta pencegahan kekeringan di wilayah Jiroft, Iran. Artikel kualitatif ini bertujuan untuk menjelaskan hidro-sosial dari masyarakat adat lain yaitu Bali Aga. Didukung studi literatur, penulis berargumen bahwa penerapan hidro-sosial berbasis religiusitas pada masyarakat Bali Aga, efektif dalam pengelolaan air. Artikel ini diharapkan berkontribusi serta berimplikasi untuk pengelolaan air di tempat lain.

Keywords:
Water
Indigenous People
Management

Abstract

Water management is very influenced by economy or tourism and determined by profit gain. Drought, pollution, and poaching conflict occur which show how people today do not know how to maintain water wisely. On the other hand, people in indigenous villages have ways to maintain quality water. One of it is explored by Ghorbani et al. He explores how indigenous science is applied to create a better water distribution and drought postponement in Jiroft County, Iran. This qualitative paper aims to explain the hydro-social relation of another indigenous religion, it is known as Bali Aga. Supported by literature study, this paper argues that Bali Aga's religion-based hydro-social relation is effective in water management. This paper contributes to and has implication for water management in other places around the planet.

INTRODUCTION

Water is essential for religious or even non-religious people. Without water, human races and other living beings would not be able to survive until now. Since 1972, world leaders agree to put ecology as the central study, the agreement was taken on United Nations meeting in Stockholm (Gupta, 2001). It is to sustain every prime need of each entity on Earth, including water. Finding the proper management of forest, water and air, became the focus that promised by highest stake holder.

Unfortunately, nature or water management never had taken really serious. For example in Indonesia, until 2015, Indonesia sends 1.29 million metric tons of plastic in the water wiring that connected to the ocean. It puts Indonesia as the second largest contributor of plastics to the ocean in the world (Jambeck, 2015). That condition is a case of water pollution.

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Water pollution in Indonesia is also caused by household waste from the laundry soap. In *Jabodetabek* (area of Jakarta, Bogor, Depok, Tangerang, Bekasi), 1.3 million meter cubes liquid waste flow on the river from 22 million inhabitants (Nasution, 2012). Another cause is industry. Output of Industry consisting poisonous material creates the severe hydro pollution. It comes from toxic chemicals production which is always increasing for decades lately (Dwipedi, 2017).

Those lines describe how bad human hydro-relation so far. Indonesian society might think that Indonesia is a country of water, most of its area even full of water. But, what most Indonesian people do not realize is the water dominated by ocean, which means the natural water is truly limited. Human may not use ocean water as the substitution of drinking water.

Under the huge decreasing condition of fresh water, human continuously exploit and commercialize water. Several well known brands in Indonesia for example *Aqua*, *Vit*, *Le Minerale*, *Cleo*, etc, have been producing the water inside the plastic and selling it to the society. It is in national level, the exploitation also divided in provinces. Each regency creates their own brand, produces plastic mineral water. Limitedness of fresh water could be in the worst condition. Pollution and exploitation everywhere of it would turn the condition to crisis.

In 2000, World Water Forum II was held in Denhaag to talk about world water condition. The forum announced that in 2025, several countries might face water crisis. Indonesia could include as the one if its government and company did not manage their own asset properly (Rizani, 2010). Rizani argues that Indonesian water company faces a lot of conflict, for example: difficulty on paying debt, governments battle for fresh water resources which exists between two or more regencies, and deforestation on the water track or spring.

To prevent the crisis that was predicted occur three years after this paper written, Indonesian government should do more inclusive collaboration not only with corporation, but also indigenous community to produce a proper hydro-social circulation. Uncertainty of future is a reason to put hydro-social paradigm as the prime concern. It is a paradigm that supports communities from urban area to countryside to work together. It stresses the unity of idea and work between profit organization, policy-maker, and villager to create synergetic steps to arrange water circulation Schmidt (2014). Schmidt added that good circulation will create good result.

Government monopoly on circulation water should stop. Inclusivity should be foundation to manage core need of society. Action to connect local understanding and government-company consensus had been rising lately. World scientist had considered indigenous people hydro-relation as the source of research to learn strategies for sustaining water. I give two examples on the further paragraph.

First, a study was conducted by Ayre & Mackenzie (2013: 759) in Western Australia. This study focused on Ord River which is owned by Miriuwung Gajerrong people. The study found that indigenous knowledge was ignored in maintaining the water at the beginning. Policy maker puts Western science as the “better” reference to be applied. Country even claims owning the area of Ord River. The condition changed since the development of research interest to re-consider indigenous knowledge. Western science standardization on water management was going worse in Ord river. Western science was not privileged anymore, Western science and indigenous knowledge are equivalent on the eye of government. In the end of the day, Miriuwung Gajerong people got allocation to contribute their value on water planning in Ord River, Western Australia.

Ghorbani et al (2018) did other research on harnessing indigenous knowledge to maintain water in Jiroft County province, Iran. The result of it research shows that top-down water management often does not connect stake-holders and detract community participation. Water cycle is broken under such system. In contrast, inclusivity of water management creates fair distribution and improved financial.

Security of fresh-water resource at indigenous village is extremely preserved. Tree as the contributor of fresh water is placed as a sacred thing. Ghorbani et al (2018) gives an example from *Roozkin* village. In *Roozkin*, tree counted for a child. Whoever chops one tree means chopping one baby. Furthermore, society believes that planting trees is similar as praying.

Unstoppable Increasing number of human race could bother fresh-water security that has been built as like two previous examples. Awume (2018) suggests that indigenous people should stay as the main stake-holder in maintaining water. They have to be involved to set all procedures up, from the production field (forest) to the distribution. To strengthen the echo, its post-doctoral research even put the core argument as the title. Basically, the study echoing strongly that world has to *“indigenizing”* water security.

METHOD

Through literature study, this paper aims to explore another indigenous water security procedure. There is an indigenous community in Bali, Indonesia. It is called Bali Aga. By using hydro-social paradigm, the existence of Bali Aga as indigenous people should have the space to work with government to sustain fresh water. This paper argues that Bali Aga’s religion based hydro-social relation is effective in water management.

There are two main questions in this paper: (1) *how does Bali Aga management work effectively to protect water availability?* and (2) *what values of Bali Aga are applicable in water governance?* To answer those questions, this paper uses literature study. Some Bali Aga villages such as Cempaga, Trunyan, Bayung Gede, Pengringsingan, are taken as sample.

RESULT AND DISCUSSION

Utilization of Water in Bali

Hooykas (1964) noted, old indigenous Balinese dominantly used water as their ritual part. There was an ancient era in Bali where *"Agama Thirta"* existed (Hooykas, 1964). *Thirta* is the term of Hinduism which means holly water. Philosophically, for old Hindu-Bali, water is a symbol of life cycle where every human birth began from water. It is also the symbol of self sanctification (Martha et al, 2015). In this case, water is very essential tool for human to come closer to God.\

The most outstanding ritual, *Ngaben* in Bali utilizes water as its main part. At the end of the ritual, ash is flown to the river that headed to sea. Furthermore, Gangga River as prominent place for ancient and today Balinese, according to Martha et al (2015) is not because the Gangga river itself. It is because the water that flows as the gift from God for human necessity. It dampens the garden, forest and well. An adage of Bali said that *thirta amrta sanjiwani*, means water is a resource of prosperity.

After some decades, the entrance of Majapahit Kingdom in Bali divided local society into two groups: *Bali Aga* as the indigenous Bali whose village is around the mountain area and *Majapahit Bali* as the syncretism Bali whose resident is usually at the lower area. Bali Aga can be found in Sembiran, Sidatapa, Cempaga, Tigawasa, Pedawa, and Pengrisingan village (Utama, 2015).

As people who live around mountain area, Bali Aga society utilizes water very carefully. Utama gives an example from Cempaga village. As the highlander, most of societes are farmer and gardener. Rice field in Cempaga only planted once in a year. It is because villagers only maintain rain as the water source. On the rainy season, water flew on the dry river which is planted cocoa at both sides. At rice field, corn, rice and tuber are planted. Fruits as like mangosteen and durian are found in Cempaga (p. 10-13). That reality forces society at Cempaga to utilize water in frugal way.

Modernization of the world eventually touches and affects Bali Aga daily live on using water. Let us see in Trunyan village. Previously, people poop carelessly everywhere and drink Batur lake water without boiled process. Nowadays, they build water closed for pooping activity and well that contained pump as the spring of fresh water (Aridiantari, 2020).

Water presence in the latest era of Bali gets the shift of sense. Water as the holy-sacred or *tirtha* has been commodified. This condition turned water into the profane good. Its existence seems as profit only. *Melukat* is the example. *Melukat* is an activity to dampen our body in the specific bathing place that believed having special spirit, the goal is for healing inner energy of human (Anandhi, 2016).

Melukat can be found in Guliang Kangin village. There is *Pancoran Solas* spring from west strip. This spring is believed to heal long-term illness, evil spirit of shaman and recurring bad dream. Guliang Kangin has tourism organizer. It has structure, working shift, social media, marketing team and salary based on agreement (ibid).

Economy became prime concern of every entity in this modern era. This concentration makes people ignore their relation to nature. What people care is how money comes to them. Most people rarely care about the effect of "finding money" activity. Most industrialization program in the name of "opening vacancy" forgets to maintain the quality basic need such as water.

Silk-screening industry in Denpasar for example, these industries pouring the residue of industrial activity to the river. It changes the color of water. Too, society, hotel and restaurant throw their rubbish to the river. Besides, the three chopping near the river and ravine breaks catchment area of water. Those are the cause of water quality in Bali's lake and river decreased (Sundra, 2017).

Moreover, tourism industry in Bali never stops growing. It undeniably affects water consumption. *Bali Hotel Association* states that, a visitor in hotel could spend 3.000-5.000 liters per day. It is as much as 10-15 times someone needs in a normal house (Cole, 2012). It is only one visitor. You could imagine that in a day, a hotel possibly visited by 15 or 20 visitors. It means, the number of water need in a hotel per day approximately 60.000 to 100.000 liters per day. Cole (2012) did survey to 110 tourists in hotel on water utilization. The result showed, 50% of them explained that hotel staffs change the towel of guest everyday. It means, the towels are washed and it spends water.

Those research results that show high water consumption in Bali brings anxiety to Cole. He has similar projection with experts in World Water Forum, he voices that Bali might face water crisis in 2025. Suamba (2017) supported the statement by explaining condition of farming land. He states that many of farming lands get difficulty to have water, some even dry because of the tourism and water industry.

As an observer of water, Cole proposed 3C: consciousness, conservation, coordination to avoid water crisis in Bali. Consciousness basically comes from an agreement to sounding the same sense of nature crisis from the lowest to the highest part of country. Such sense would push people to do conservation of what is scarce. In this case, water quality is based on the preservation of its resource (forest, tree and river). Before doing a broad movement, there should be a good coordination to find a good model that is going to be implemented.

Previous studies (Ayre & Mackenzie, 2013; Ghorbani et al, 2018) were the good example to always put indigenous people on the discussion of water management. Indigenous people do not need pamphlet to have

consciousness on the importance of preserving ecology. They continuously conserve the nature and always have good coordination with the nature, physically and cosmologically. On the water problem of Bali, there is an indigenous group which maintains its hydro-social very carefully, it is called Bali Aga. Government should bring this community to every discussion of water management for the inclusivity.

Hydro-Social Relation of Bali Aga

Human and water have been passing long-decades relation. This relation touches the line of economy, technology and politic. The goal is to provide human needs of water. On the other hand, human should think about the way to maintain the quality and sustainability of water. Such relation is called *hydro social cycle* Linton & Budds, 2014: 57). In other words, hydro-social cycle enables economic and technological based relation, political network, built by the necessity of water.

Under the riot of modernization, economy and politics, Bali Aga still keeps stable hydro social relation. These indigenous people still practice their ancestor values to build harmony with the nature. Village arrangements and daily activities are based on noble values of ancestor. Those values consider equilibrium of the cosmos.

The persistence of Bali Aga society to balance water consumption and production invites scientists to research this community. In 2016, three doctoral students and one lecture from Gadjah Mada University did research located at Bayung Gede, Kintamani. The research showed, Bayung Gede society has a concept that puts *Hulu/Kaja* is a sacred place which may not be bothered. This area usually located on highland near the mountain peak (Adiputra et al, 2016).

On the very first place, keeping forest as the production house of water is the prime rule of Bali Aga. At Pengringsingan village, the myth lives to strengthen the rule. Society believes that there is a keeper of Kangin hill, a toxic snake, namely *lelipi selan bukit* (Nurjaya, 2001). According to the myth, the snakes would attack those who broke the forest or burn the bush without any permit. This myth affects the way of life of villager.

Prohibition is applied to conserve the specific tree which saves water (durian, jackfruit, *enau*, frangipani and candlenut) a lot. Those threes only chopped for those who are inaugurated as new member of Bali Aga in Pengringsingan, the three is used to build the house of the new member. But, the permit to chop is only given once for long term period. When there are two requests, one request should wait. It means, only one house is built.

Those who broke the rule would get punishments: 400 *kepeng* or ancient Chinese coin for those who chop the fruitful *enau*; 2000 kepeng for those who conceal the sale of forest wood to person out of internal community; 10 *catu* or 25 kilograms rice for those who slice the branch of wood as big as a thigh and makes the tree dies. These specific rules that managed everyday life of Bali Aga villager is called *Awig-Awig*.

There are five levels of punishing the *Awig-awig* offender. First, *Dosen*, it is a beg of pardon from offender by doing physical activity such as gathering the river stone for village necessity. Second level is *sikang*. It is an excommunication. Offender may not visit his or her neighbor at all. The next is *pengingang* which is part of the higher level of *sikang*. Fourth level is *sapa sumaba*, a higher level of *pengingang*. In this level, nobody may talk to the offender. Those who talks with the offender should pay the fine. The highest level is *kesah*, which means the offender should be fired as the member of Bali Aga community in Pengringsingan. The executor for this punishment is *pesangkepan* or villagers' meeting wich is held at *bale agung* as the place of court (Nurjaya, 2001).

Second of all, distribution of water and other needs under Bali Aga governance based on *religio-magical* relation (Sumunar, 2017). Such relation puts society into stronger attention of fair distribution. Bali Aga in Pengringsingan implements *Ulayat* rights. It is the strong relation between the things and community. Land, fruits, tree, wild animal and water are included as *Ulayat* objects.

Every society in Pengringsingan live among the box partition as wide as others, with the same model of building. Villagers may not expand, lessen, sell or pawn the land. On another hand, forest and rice field are property of community. Nobody may claim it as personal asset (ibid). The rules are made to avoid selfish person who wants to only get profit and breaks the equilibrium balance.

Water governance under selfish and profit oriented is very complicated. For example, tourism water based and *Subak*, an organization which takes levy for water irrigation in Bali. Subak Teges in Ubud ever faced with tourism industry. The problem comes from tourism pollution such as food waste, oil and building residue that stain the irrigation. Discussion of both sides had done. Unfortunately, the pollution never stops staining the irrigation (Komang et al, 2018).

Tirta Empul spring in Gianyar also becomes a quarrel of Gianyar *PDAM* and local Subak, Pulagan. Gianyar *PDAM* as a semi-private and profit oriented institution was accused taking "too much" water volume. After investigation, *PDAM* Gianyar staffs proved as the wrong side. They took 17,5 liters per second from *Tirta Empul*. It was out of agreement where they should only take 5,5 liters per second. On April, 2015, more than ten days dryness happened on the rice field. The irrigation stopped working. Conflict became more complicated when the higher officer of Gianyar *PDAM* proved doing corruption (Permana, 2016).

In contrast, Bali Aga people manage rice field based on community prosperity, not profit of certain family or any institution. Water is flown to some areas which need water. Utilization of water based on the need of society to do rituals and their daily life. *Religio-magical* relation builds continuous consciousness, coordination and action to conserve water in Bali Aga society.

It is going to be continued because the *Ulayat* right prohibits any privatization of land. In Pengringsingan Bali Aga, right to manage all resources, including water spring, may not given to person out of community. When

someone dies, the right is only able to be inherited for the genetic generation of Bali Aga (Sumunar, 2017). This is the reason why Bali Aga's religion based hydro-social relation is effective in water management. The noble ethics are given from generation to generation continuously. There is no political or profit oriented water governance which creates the complicated changes on the uncertain period.

Applicable Values of Bali Aga for Water Governance

Policy practices in Indonesia often claims water resource where indigenous society live, as the property of country. Political power condemns those who keep the resource goodly and commodify the resource to get profit. The hydro-social cycle challenges such practices. Swyngedouw (2004) emphasizes, hydro-social cycle paradigm omit the existence of suffer and happy party. Both parties should listen each other. Government has to open the flexibility to use the applicable ethics of indigenous people in utilizing water (Swyngedouw, 2009: 142). Community participation is a must in a democratic country. Living useful values from indigenous people in daily activity of society through policy should be done. There are several applicable values for Indonesian government in making policy of water management:

The first is by changing the paradigm in government mindset. Government should have the same mindset as like Bali Aga in managing water. Higher management of Indonesia should see water resource or forest not as the "unproductive land", but as the source of water, which is live. Government should re-consider hydro-social relation by applying paradigm of *hydro-social cycle*. Water is not only about profit, but also continuation of farmer's life specifically, and human's life generally. Seeing an underbrush area which full of huge tree as "unproductive land" would push government to build hotels and other concrete based which may not be planted fresh-water bank. It is the beginning of prolonged drought.

Awig-awig of Pengringsingan village that give the right to maintain water spring for only Bali Aga generation, is the second applicable policy. When government may pay rain tamer on Mandalika MotoGP expensively (5 million per day for 21 days or 105 million)[1], government should also keep water tamer prosperity. Which means, water tamer generation would continuously preserve the resource of water. The uncertain policy and finished period could change utilization of water. By having the bail of spring tamer policy, surveillance of spring would never stop and never influenced by any changing policy or changing leadership period.

On that way, there would be no struggle to do water monopoly. Bali Aga practices the justice to utilize every single natural resource. All members are given part based on what they need, not what they want. Even a member might work very hard to get more financial for paying or expanding his area, he would not get it because it is prohibited. This system would keep the parity of human hydro-social relation.

Punishment method toward spring destroyer from Bali Aga is also applicable for government policy. It is the excommunication of offender. Even Indonesia already has punishment for extraordinary crime such as prison, fine and asset coagulation, the destruction does not stop. From the jail, prisoner that has the "wide network" is able to do communication through smart phone or prison staff.

Smart phone is banned in prison. Unfortunately, for those "high class" prisoners, this rule may be *modified*. Najwa Shihab, a journalist, in her Youtube content: *Pura-Pura Penjara* (fake prison) showed the truth. Her investigation to the prisoner Otto Cornelis Kaligis, found speaker, PC and gadget inside the jail[2]. It is the reason why drug network still runs even the offender is in jail[3]. The same thing may happen when the prisoner of spring destructor is jailed. The destructor is in the jail, but the heavy equipment continues to flatten the forest and spring.

By excommunicating totally offender like what Bali Aga does, the communication would stop. Exommunicating totally means that offender may not talk to anyone at all. He or she may not talk to the jailer, staff, society and whoever. Those who talk or communicate with him or her would be punished. This is a midst track to secure the spring when death penalty seem too extreme and complicated with human right.

CONCLUSION

Awig-awig is a binder of Bali Aga to practice water governance. Those binding rules organize every detail process of activity, started from guarding the resource of water to the distribution. Among Bali Aga people, there is no monopoly of water as like what happen under profit oriented water governance. Punishments are worked very tight. Those who strongly rejected *awig-awig* would be fired as member. It makes water governance under Bali Aga hydro-social religion based works effectively.

Indigenous society truly opens to contribute knowledge of water governance. Government may do adoption of Bali Aga spring security system and distribution. However, Stevenson (2006: 170) suggests that there should be a cross discussion which put both nation authority and local knowledge on the equal position.

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