Utilization of Green Belts to Woodland Tourism in Support the Development of the Ecotourism at Serbaguna Wonogiri Dams

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Abstract. This research aims to identified: (1) the potential location for developed to woodland tourism, (2) obstacles development woodland tourism, (3) direction development of green belts to woodland tourism in support the development of the ecotourism at Serbaguna Wonogiri Dams. The data were collected by field observation and analysis laboratory then matching between the land's quality on the condition growing plants in accordance with their condition land to determine plant will cultivated and benefits for conservation reservoir. Data analysis are using descriptive qualitative. The results of the research shows that: (1) there are 6 classes of potential location which are able to be developed as woodland tourism, (2) obstacles found is the lack of public participation in change agricultural land rent to woodland, the majority of green belt in western many have become settlement, accessibility is bad, (3) directions development are educate the community about the importance of sustainability green belts against reservoirs and increase accessibility.

1. The first section in your paper
Serbaguna Wonogiri Dams or known as Gajah Mungkur Dams is a very famous icon in Wonogiri Regency. It is located in UTM 49S zone, exactly lied at 488984mE, 9127610mS. The main function of the dams is Bengawan Solo flood controller. Gajah Mungkur Dams was built from 1976 to 1981 and located in 7 Km to the south of Wonogiri City at the downstream part of Keduang river confluence. The building process of Gajah Mungkur Dams was established autonomously with the help of a consultant from Nippon Koei Co, Ltd Japan.

Gajah Mungkur Dams has 1.653 hectares green belt width. A green belt around the reservoir periphery, road side and office complex area will be created to avoid erosion of soil, prevention of land slips, minimize the air pollution and noise pollution in the project area [6]. Green belt is a vegetational buffer zone surrounding the reservoir, developed to prevent slope erosion and to border the reservoir from surrounding lands which formed by giving limitation to the building activity towards certain area [1]. The eternity of green belt area will influence towards the dams function eternity too [3]. The green belt breakage will shorten the dams’ age. The rain water from the capturing water area which has barren wood condition will bring soil material enter to the dams so the shallowness cannot be avoided. Once designated Green Belts can contribute to the following objectives: 1) to provide opportunities for access to the open countryside for the urban population; 2) to provide opportunities for outdoor sport and outdoor recreation near urban areas; 3) to retain attractive landscapes, and enhance landscapes, near to
where people live; 4) to improve damaged and derelict land around towns; 5) to secure nature conservation interest; and 6) to retain land in agriculture, forestry and related uses [5].

The green belt is stated based on the policy and soil utilization which used in the land utilization plan. The policy is intended to maintain the majority of the area which is not developed yet, illegal or the land around the city area [4].

The function change of the green belt become the agricultural land has been happened since a long time ago, and start to erode the green belt majority in the west of dams. Because of the land functions change, the sedimentation level increases continuously and make the situation of dam shallowness. Finally, the dams function as the water accommodator and flood controller becomes less optimal.

Many efforts have been done by the government to face and overcome this shallowness problem, such as by dredging the sediment in the dam ground which results not-so-proportional with the upcoming sediment. Besides, the government also emphasizes about reforestation in the green belt area. However, the lack of people awareness and the government monitoring, cause the efforts become useless seeing the less care and the death of the planted tree.

The principles of ecotourism is to minimize the impact, to grow awareness of the environment and culture, providing a positive experience on tourists (visitors) and recipients (host), provide benefits and empowerment of local communities [7]. Ecotourism is an alternative tourism development mission that does not cause much negative impact, either against environment and socio-cultural conditions [8].

To overcome the more serious green belt breakage, there should be a definite step in the land function change handling which done by the people. The alteration of people’s thinking pattern should also be done from the agricultural sector oriented to eco-friendly tourism sector.

2. Methods
The kind of this research is qualitative research. The research location is in the green belt of Serbaguna Wonogiri Dams Area. The sample is taken according to the direct field observation by tracing the green belt area through the land and the water. The purposes of the observation are to survey directly the existing condition of green belt, the nature potential, and the obstacles inside. After the nature potential inventing, the investigation of the image and the earth map appearance Indonesia is established in that area. This aims to know further the potential area to be developed as the woodland tourism by considering the road access, settlement, and the body of serbaguna Wonogiri dams. According to the image investigation, it can be delineated the woodland utilization and the agriculture to be developed as woodland tourism. The agriculture land becomes the main priority with the consideration to return the green belt area’s function. From the whole investigation, it is analyzed to be the direction of woodland tourism development in the green belt area of Serbaguna Wonogiri Dams with descriptive quantitative analysis method.

3. Results and Discussion
The woodland tourism development prioritizes the green belt land which change into people’s agricultural land and the land which still in the form of wood in the green belt of Serbaguna Wonogiri Dams. The kind of the land use can be known from IKONOS satellite image available in Google earth application that overlaid with Indonesian Earth Map Appearance as the formal reference to get the supporting data in analyzing the land potency of woodland tourism development (Figure 1).
Figure 1. Potential Location for Developing Woodland Tourism at Serbaguna Wonogiri Dams

The existing Land use map from IKONOS imagery on 2016 consist of data about road, settlement, and the body of Serbaguna Wonogiri Dams, etc. Those data are needed to be considered as potential tourism object, such as accessibility (road), accommodation (inn), and the distance from the location’s tourism interest that is Serbaguna Wonogiri Dams.

The scoring of potential woodland tourism development is held by buffered between the agricultural land with the road links and settlement about 200 meters. It is assumed that 200 meters distance still can be got very easily by the tourists on foot than the distance from the water body is 100 meters with the consideration that the tourists are still able to enjoy the edge dam atmosphere.

Table 1. Potential land area

| Potential   | Area (ha)   |
|-------------|------------|
| Potential agricultural land 1 | 7.047789705 |
| Potential agricultural land 2 | 7.792705897 |
| Potential agricultural land 3 | 63.99239778  |
| Potential forest land 1 | 22.91474865  |
| Potential forest land 2 | 7.239441918  |
| Potential forest land 3 | 17.95246209  |
| **TOTAL** | **126.939546** |

From the parameters, there are 6 potential classes with 2 utilization of land (Table 1). From the buffering result using the determination above, the data of each class’ width are got; those are 7.048 ha potency 1 in agricultural land, 7.793 ha potency 2 in agricultural land, 63.992 ha potency 3 in agricultural land, and 22.915 ha potency 1 in woodland, 7.240 ha potency 2 in woodland, 17.952 ha potency 3 in woodland. The total of potential land to be developed as woodland tourism is 126.940 ha.

The potential tourism object area from agricultural land can be identified higher than forest land area. Those are priority 1, 2, 3 in the agricultural land utilization (Table 2), and priority 1, 2, 3 in the woodland utilization (Table 3).
Table 2. Determination of potential class of land
Priority 1 (Agricultural land becomes tourism woodland)

| Potential                      | 1 | 2 | 3 |
|-------------------------------|---|---|---|
| 100m from the reservoirs      |   |   |   |
| 200m from the road            |   |   |   |
| 200m from the settlement      |   |   |   |

Table 3. Determination of potential class of land
Priority 2 (Forest becomes tourism woodland)

| Potential                      | 1 | 2 | 3 |
|-------------------------------|---|---|---|
| 100m from the reservoirs      |   |   |   |
| 200m from the road            |   |   |   |
| 200m from the settlement      |   |   |   |

The obstacle of woodland tourism development in the green belt of Serbaguna Wonogiri Dams area is the lack of road access in the research location. This is an inhibitor factor because the less tourist access to enter an area the more difficult the area can develop.

Besides the lack of accessibility, the people’s think pattern about the unimportance of nature eternity and most of them prefer their job as a farmer. So, it is so difficult to ask them change their jobs to another sector. The development of woodland tourism in this area is very sensitive with conflict.

4. Conclusions

Based on the research which has been established to identify the potential location to develop woodland tourism in the green belt of Serbaguna Wonogiri Dams as the revitalization effort and the dam protection towards the erosion level which causes the shallowness and obstacles which faced in the woodland tourism development, there are some development direction, they are:

1) **Step one**: focused towards priority zone, the green belt area, which has the function change as agricultural land. This zone becomes the priority because of the erosion danger. In this zone, the plants which can grow fast like flowers, red sprout plant, the making of green open room, flower garden, labyrinth garden, and so on. Therefore, the result of the tourism object can be fast felt.

2) **The second**: potential zone 3 start to be developed with the choosing of hard wood plant like trembesi and etc. This step is intended to exploit the waiting time because the growth of this kind of plant will take a long time.

3) **The third step**: the start of zone 2 development. Better to develop fruit plant like hair fruit, guava, rose-apple, and so on in this zone. It is intended to give job and people interest to change occupation from agriculture which is not friendly towards green belt eternity to the agriculture both results and gives protection towards green belt and protects the Serbaguna Wonogiri Dams.

4) **The last step**: development of potential zone 1, 2, 3 towards woodland. This zone is developed after the agricultural land because there is no erosion.

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