INFLUENCE OF BUDDHISM UPON EVOLVEMENT OF ECO FRIENDLY ANCIENT IRRIGATION CIVILIZATION PREVAILED IN SRI LANKA

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Introduction

The Buddhist environmental philosophy pays attention on whole environment as well as the protection of the environment including the flora and fauna in the world. With the arrival of Arahat Mahinda Buddhism affected to whole cultural, social and other activities in Sri Lanka. At the same time, the Sri Lankans could realize the inseparable connection between the man and the environment. With the Buddhist way of living style all the agriculture, irrigation technology and other secular and day to day activities of Sri Lankans were ecofriendly. It caused to name Rajaraṭa as "*wæw bændi rājya*". With this alias it clearly reveals the influence of Buddhism to the irrigation development. The surroundings of the tank and ecological features of tank reveal that the eco friendship of ancient irrigation system. Therefore, it is clear to say that Buddhism has influenced to the sustainable irrigation technology in Sri Lanka.

The Buddhist environmental philosophy has deeply discussed the inseparable connection between man and environment as well as the protection of the environment for the safety of whole flora and fauna in the world. Since ancient time, environmental equilibrium was paid attention during the irrigation development of Sri Lanka. There are many evidences for the irrigation development and ancient colonization since King Vijaya's arrival to Sri Lanka. The traditional irrigation system which was built by the Kings was ecofriendly due to the influence of concept of "*Væwaei dagæbayi*

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gamayi pansalayi". The study of the influence of Buddhism way of living style upon evolvement of ecofriendly ancient irrigation civilization prevailed in Sri Lanka is important, once somebody needs to get knowledge about ancient irrigation civilization and to verify the technology of ancient irrigation civilization again.

This paper intends to find out the influence of the Buddhist way of living style to secure eco-friendly ancient irrigational techniques that existed in Sri Lanka. In this context the eco-friendly nature of ancient irrigation civilization and eco friendliness of construction technology behind irrigational constructions will be discussed.

Methodology

Initially the relationship that lies between Buddhist ways of living style, upon the environment has been verified giving reference to the *Tripiṭaka*. Secondly, details relevant to origination of such civilization and commencement of the colonization have been studied, reference to Mahāvaṃsa. The facts traceable to prove the strong inseparable relationship of the Influence of Buddhist way of living, upon realization of the ancient irrigational civilization and environment have been collected, discussed & analyzed.

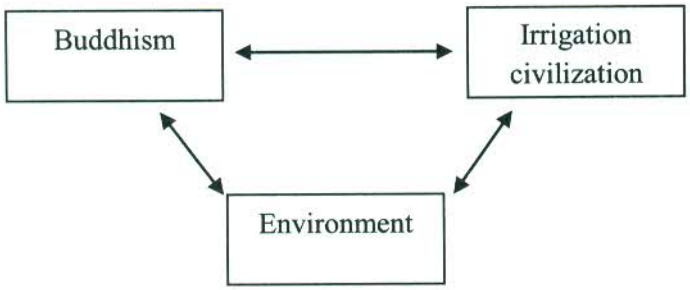

Figure 1 : Block diagram of Methodology

Results and Discussion

The man was identified by Buddhism as one constituent in the world but not as the possessor or the controller of the world. There are the same rights for both people and animals according to the Buddhism. Buddhism is not

creativism, and not believes creation of anything for human beings. It emphasizes that protection of whole environmental system including flora and fauna is essential for the well-being of the world. Because of that duties and responsibilities of a King are defined as protection of citizens, animals live in water, sky and land and forests in *Cakkavattisīhanāda sutta.* (*Dīghanikāya, Tṛtīya Bhāgaya*, 2006 pp.100-101) Moreover, it is described, citizens also responsible to utilize resources under appropriate limitations. We are motivated by "*samajivikata*" (living within one's means) in *vyagghapajjasutta* to utilize maximum benefit of required resource and utilize less number of resources. (*Aṅguttaranikāya, Aṭṭhakanipāta*, p.236) People should utilize resources as a bee collects honey without harming flowers.

Implant trees, gardening and forestation are defined as merits in Buddhism. *Vanaropasutta* is a very good example for that. (*Saṃyuttanikāya, Prathama Bhāgaya,* p.60) Indeed, the Buddhist monasteries were ecofriendly since very beginning. It reveals that once we study the surrounding environment at *Jetavanarama, Veluvanarama* and also monastic architecture in Sri Lanka after arrival of Arahat Mahinda. Ponds and gardens were used for the environmental equilibrium. According to Buddhist architectural texts in Sanskrit, it is important to select environmental system for monasteries with high bio-diversity. (Citrakarmaśāstra ascribed to Mañjuśrī, IV.01-14). In accordance with *Thera-Therīgāthā,* Buddhists have lived with environment not only for the secular needs but also tranquility of mind.

The Lord Buddha was very sensitive about the environment. Therefore, there are some precepts on environmental protection for monks. "*mātugāma, bījagāma* and *sekhiyā* are some of precepts on environmental protection.

Ancient irrigation civilization: Mahāvaṃsa describes Vijaya's and his retinue's arrival and their settlements close to the rivers. With the population growth they have started agriculture and created tanks to store unpredictable river water. The first mention about the tank in the Mahāvaṃsa is minister's Anuradha's tank in 4th Cent. BC. After that King Pṇḍukābhaya constructed

three tanks named Abhaya (Basavakkulama), Jaya and Gāminī (Mahāvaṃsa, 2008).

Arahat Mahinda's arrival, during the King Devānampiyatissa's period is affected to whole cultural, social and other activities in Sri Lanka. With the concepts of agriculture, irrigation technology and Buddhism Rajaraṭa became "*wæw bændi rājya*". With this alias, it clearly reveals the influence of Buddhism to the irrigation development. The concept of "*Væwayi dāgæbayi gamayi pansalayi*" was started with the relation of the Buddhist philosophy in ancient Sri Lanka. Pagodas were constructed using excavated materials of the tank bed. Temples are located closed to tanks and following maps give some examples.

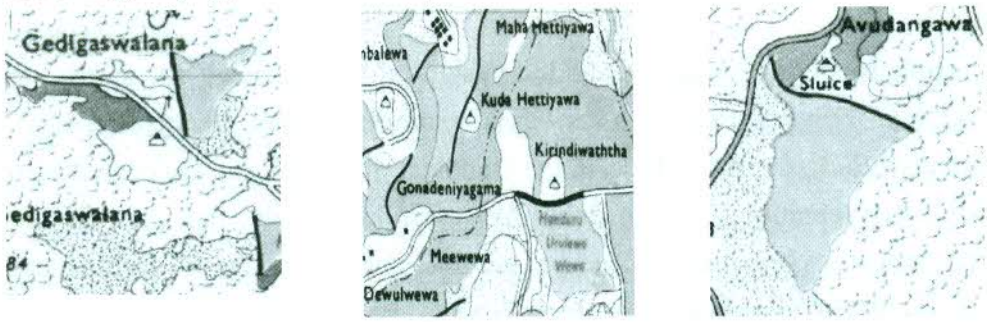

Figure 2 : Maps showing the concept of "Væwayi dāgæbayi gamayi pansalayi"

Environmental System related to Ancient tanks: Ancient designers respect to the environment when they were doing designing. As examples some ecological features which ancient respect are, (Panapitiya M., 2010)

- Villages (Settlement area)
- Chena (Upland cultivation area)
- *Goḍawala* (Upstream sediment trap)
- *Iswæṭiya* (Upstream conservation bund)
- *Gasgommana* (Upstream wind barrier)
- *Perahana* (Upstream grass strip to filter the sediments)

- *Kaṭṭakaḍuwa* (Downstream wind barrier)
- *Tisbambe* (Land strip around the hamlet for protection)
- *Kiwul Ela* (Common drain of the irrigated law land)

It is revealed that the strong interrelationship between surrounding environment and features of the tank using above facts. These are essential parts of the ancient tanks.

They constructed the tanks by giving priority for environmental facts. They paid attention on forests, wetlands, trees, animals and all other natural resources. Construction site was selected according to the geographical distribution of the earth and dam was constructed across the stream. They used excavated earth from the site as major material for dam construction. Canal system was constructed according to the natural slope of the ground. Therefore, Water flew naturally due to the gravity without any controlled structures.

The forest located above the tank was the catchment to that particular tank. Due to bushes and grasses in the ground surface of the forest, rainfall runoff entered to the small tank with less erosion. Therefore, sedimentation of the tanks occurred very slowly. Paddy fields were located below the tank and sufficient amount of water was released to paddy fields. In some places surplus water was transferred to tanks located in downstream through paddy fields. Collecting drainage water of one tank to several other tanks located downstream in naturally under gravity is known as cascade system. Therefore water circulation happened over the area. Therefore, water resource was used at a maximum efficiency. Due to this reason ground water level was at a higher value (Sampath et al, 2014). To save rainfall and monitor groundwater level ancient designers built different kind of tank called Kulu Wewas inside the forests within the catchments.

Conclusion

The Buddhist environmental philosophy has deeply discussed the inseparable connection between man and environment. Further, Arahat

Mahinda's arrival is affected to whole cultural, social and other activities in Sri Lanka. Interconnection between environment and Buddhism was discussed. With the concepts of agriculture, irrigation technology and Buddhism Rajarata became "*wæw bændi rājya*". With this alias it clearly reveals the influence of Buddhism to the irrigation development. According to surrounding environment related to tank and ecological features of tank, it is reveal that eco friendship of ancient irrigation system. Moreover, it can be believed that Buddhism has influenced to the sustainable irrigation technology.

Keywords: Buddhist Philosophy, Irrigation, Environmental Equilibrium

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