

A GLIMPSE OF THE WATER MANAGEMENT POLICY IN THE CHOSUN DYNASTY (1392-1910) IN KOREA THROUGH THE ASPECT OF EMBANKMENTS

HYOSEOP WOO

Gwangju Institute of Science and Technology, Gwangju, Korea(ROK), hswoo0603@gmail.com

BYUNGMAN YOON

Myongji University, Yongin, Korea(ROK), bmyoon@mju.ac.kr

YOUNG-UK KIM

Myongji University, Yongin, Korea(ROK), yukim@mju.ac.kr

HA-YOUNG JANG

Gwangju Institute of Science and Technology, Gwangju, Korea(ROK), jjangha0@gist.ac.kr

ABSTRACT

Water management policy during the 500-year period of Chosun dynasty in Korea is reviewed briefly through investigating the history of construction and management of embankments. Examining “The Chosun Wangjo Sillok,” both of the words Jebang and Jeun were used equivalently for embankment, which are originated from Chinese words. The Chosun dynasty had administrative offices, such as Gwonnonggwan and Jeunsa, to manage reservoirs in the country, and the guidelines for embankment management (e.g. Jeunjeolmok). Water management policy of the Chosun dynasty seems to have been focused mainly on the irrigation for agriculture.

Keywords: Jebang, Jeun, embankment, water management policy, Chosun dynasty, Gwonnonggwan, Jeunsa

1. HISTORY OF EMBANKMENT CONSTRUCTION IN KOREA

History of embankment construction in the Korean peninsula, whether for the purpose of water use or flood control, goes back to the Three Kingdoms era (2nd to 7th century). An example is the historic site of embankment at Yaksa-dong, Ulsan, southeastern region of the Korean peninsula (Figure 1). This embankment is a 155 m long and 4.5 to 8 m high bank built on the Yaksa river for the purpose of building a reservoir in the era of the Silla dynasty (Cultural Heritage Administration homepage, 2018).



Figure 1. Yaksa-dong embankment photo taken from above (Look at the drainage-inducing technique using twigs and leaves) (provided by Yonhap news)

During the Chosun dynasty, many embankments were constructed and maintained. In earlier 1700s, the number of embankments reached at 3,695. However, the embankment number reduced to 2,680 in 1900s since the embankments were not properly maintained associated with political instability.

2. JEBANG AND JEUN; TERMINOLOGIES MEANING EMBANKMENT

In the Chosun Dynasty, which lasted for 1392-1910, the written records of embankment were getting increased rapidly. “The Chosun Wangjo Sillok (朝鮮王朝實錄)” or simply “Sillok” is the official, veritable, chronological records of the Chosun dynasty including 28 different sets of each ruler's reign. The total volume of the Sillok is 1,187 books, which was registered as UNESCO's Memory of the World Program in 1997 (National Institute of Korean History homepage, 2018). According to the Sillok, both of Jebang (堤坊) and Jeun (堤堰) had been used equivalently for water embankment. In Sillok, a total of 1,265 words of Jebang, 816 words of Jeun, and 55 cases using simultaneously both the two words were found.

In the Sillok (15th Volume of King Taejo, the 1st king), the first appearance of the words is in the following phrase “... in early winter, a Jebang should be built to prevent fire...” This alone makes it difficult to judge whether Jebang is a water-blocking or water-reserving embankment. However, in April of the 7th year (1407) of King Taejong (the 2nd King), a few years later, “Let each householder living by stream build Jebang on the both sides of the stream and plant trees”. In this sentence, it is clear that Jebang means a levee against flood control. Then, in November of the 12th year (1412) of King Taejong, there is the phrase, “... building up Jebang along the high and low terrain, and confining water so that in each a small boat can float...” In this record, it is clear that Jebang was used as a dam for irrigational reservoir. In August the 15th years (1415) of King Taejong, Sillok goes as “The Jebang saves the water and makes it through irrigation, so it is a good method to prepare for the tribulation and relieve drought.” Here, Jebang was clearly used as an embankment for reservoir construction.

As mentioned before, throughout the ‘Sillok’, Jebang and Jeun were used both for the purpose of building reservoirs to impound water and for the purpose of preventing from river floods and tidal surges. Jebang, in general, seems to have been used to refer to the embankment itself, while Jeun to refer to both the embankment and reservoir as a whole.

3. WATER MANAGEMENT IN THE CHOSUN DYNASTY

The Chosun dynasty installed and operated several administrative offices for water management, such as Gwonnonggwwan (勸農官) and Jeunsa (堤堰司). Gwonnonggwwan was installed in 1395 right after the foundation of the dynasty (1392) in order to maintain the Jeun and eventually to manage agricultural water, and Jeunsa was responsible solely for the management of all the reservoirs in the country. In 1662 (Hyunjong 3rd year), Jeunsamok (堤堰事目) was established, which was the first guideline of embankment management in Korea. In 1778 (Jeongjo 2nd year), Jeunjeolmok (堤堰節目), an advanced version of Jeunsamok was proclaimed. As investigated above, water management policy during the Chosun dynasty seems to have focused mainly on agricultural water use.

Traditionally in Korea, it was not recommended to live in the flood-prone areas, as is written in the book of Taekriji (擇里志) in the 18th century commenting “it is not worth while living by the large river” (Woo, 2019). Nevertheless, some dike constructions had been carried out for controlling floods such as Gwanbangjerim (官防堤林) in Damyang (Woo and Kim, 2017). It is a 2-km long tree-planted levee constructed along the Damyang-cheon stream (Figure 2). About 420 trees are still alive as shown in Figure 3, which were planted twice, some hundred years ago in the 17th and 19th century respectively, to protect the village and the embankment itself against floods and strong winds. This may be a good example of embankment construction using an ecological technology.



Figure 2. The aerial photo of Gwanbangjerim constructed along the southern levee of Damyang-cheon stream.



Figure 3. The trees planted on Gwanbangjerim.

4. CONCLUDING REMARKS

During the Chosun dynasty, lots of embankments, called Jebang and Jeun, were constructed and maintained by the administrative offices systematically, mainly focused on the management of water for agricultural use. The main policy of the Chosun dynasty on river floods seems to be rather passive, “not to live by the rivers”. Nevertheless, some flood-protection dikes such as Gwanbangjerim in Damyang were also constructed and protected with trees against river flow erosion.

ACKNOWLEDGMENTS

This research was supported by grant the Water Management Research Program funded by the Ministry of Land, Infrastructure and Transport of the Korean Government (20AWMP-B114119-05).

REFERENCES

- Cultural Heritage Administration[Website]. (2018. 11. 30). <http://www.cha.go.kr/main.html>
- Woo, H. and Kim, C. (2017). Technographical Reviews of Levee Planting for Flood Prevention-Focused on Gwanbangjerim in Damyang Country. *Proc. KSCE 2017 Convention*, pp. 1884– 1885. (in Korean)
- Woo, H (2019). A Historical Review of Levees. *The Magazine of the Korean Society of Civil Engineers*, 67:56-59.