The 4th Environment and Natural Resource International Conference (ENRIC 2021)

Challenges, Innovations and Transformations for Environmental Sustainability Virtual Conference, December 16th, 2021, Thailand

The Evolution of Hybrid Modes in Water and Agriculture: Case Study of Vietnamese Mekong Delta

Linh Nguyen^{a*}, Keichiro Iguchi^a, Hironori Hamasaki^a, and Dang Kieu Nhan^b

^aNagasaki University, 1-14 Bunkyomachi, Nagasaki, 852-8521, Japan ^bCan Tho University, 3/2 Street, Xuan Khanh Ward, Ninh Kieu, Can Tho, 94000, Vietnam

ABSTRACT

The Mekong Delta plays an important role in water and food security of Vietnam and the world. With diverse water zones and complex hydrological system, balancing economic prosperity, water conservation and sustainable agriculture in this region is challenging. Extensive literature has focused on analyzing the dominant control approach in irrigation and rice policy. However, little is understood about the evolution of hybrid modes in the transformation towards sustainable water and agriculture in this region. This paper reviews evolution of hybrid mode in legal framework of Mekong Delta's water governance from 1970s to present and analyze the interaction of different modes in case study of integrated rice-shrimp model. The paper uses coding scheme, desk review and in-depth interviews with farmers, government officers, researchers, and international organization. Results from coding highlight a significant increase of market mode from 2010s and more balanced hybrid modes in period 2010s to present. Case study analysis of integrated rice-shrimp shows the importance of combined three modes for sustainability of the model. Specifically, there are changes to hierarchy and emergence of market and network mode. Furthermore, conflict between hierarchy and network during 1990s and conflict among market, network and hierarchy during 2000s have been transformed to synergies among three modes since 2010s. Still, stability and scale of hybrid mode needs to be further improved. The findings help increase our understanding on empirical knowledge of hybrid mode and inform other farmers and policy makers about sustainable rice-aquaculture policy and practices.

Keyword: Hybrid mode/ Water/ Agriculture/ Rice-Shrimp/ Mekong Delta

*Corresponding Author: Linh Nguyen, Tel: +81-080-3971-4441

E-mail address: dieulinh1186@gmail.com