Session 3: 13:25-14:50

Actor-network theory approach for forest coverage management in the upper Citarum watershed

Kosuke Mizuno[1]*, Satou Okubo[2], Kirstie Imelda Majesty[1], Farha Widya Asrofan[1], Syafrina Tijjani[1], Maria Octorayanti[1], Caecilia Meyta Rahayuningtyas[1], Dinni Septianingrumi[1], Defi Darylianty Debora[1]

[1]School of Environmental Science, Universitas Indonesia, Jakarta, Indonesia
[2]National Agriculture and Food Research Organisation, Ibaraki, Japan
*Correspondence E-mail: kosuke.mizuno@ui.ac.id

Abstract

Background and Objectives: Citarum watershed, the longest and largest river in West Java Province, is vital in providing raw water for drinking purposes, irrigation for rice fields, and electricity supply. However, it faces various challenges and degradation due to population growth, leading to increased spatial and water resource demands. During its previous management, the Citarum watershed had met challenges due to conflicts of authority and interests between institutions. The need for coordination between sectors in environmental management in Indonesia is reflected in the Citarum watershed management case. The purpose of this research is to analyse the pattern of interaction between the parties (central government, local government, state-owned enterprises, private sector, and community groups) in the management of forest cover in the upstream Citarum watershed and to recommend a pattern of interaction between the parties in managing sustainable forest cover in the upper Citarum watershed.

Methods: The research method used to analyze the interaction patterns of the parties in managing forest cover is an institutional analysis using the Actor-Network Theory (ANT) from the results of interviews with informants. The network pattern was described using the UCINET Version 6.722 for Windows software.

Findings: The results showed that the pattern of stakeholders formed a weak actor network with a value of 7.02% Betweenness Centrality. Another research finding is that the budget planning and realisation are not yet optimal and the forest coverage in 2019 was 24.51%. This indicates that the sustainability of the watershed has not been achieved.

Conclusion: The Governor, Ministry of Environment and Forestry, and Perum Perhutani as key actors need to provide a platform for bringing together ideas and budgets from all stakeholders to increase the relationship between actors so that centrality in the network becomes strong and funding needs can be fulfilled. The sustainable pattern of stakeholder interaction in forest coverage supports increasing forest coverage that increases the carrying capacity of the watershed, protects biodiversity, and supports the sustainability of the upper Citarum Watershed.

Keywords: Actor-network theory, forest coverage management, pattern of interaction, Upper Citarum Watershed, West Java