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IN THE SHADOW OF LARGE INFRASTRUCTURE DEVELOPMENT: SUSTAINABILITY OF SAWAH SURJAN SYSTEMS IN YOGYAKARTA, INDONESIA



ABSTRACT

The South Coastal Regions of Yogyakarta Province in Indonesia inherited a unique farming system called sawah surjan. It is considered as a cultural heritage, demonstrating a form of local wisdom in managing land resources with poor drainage. The system shows two different but complementing land uses, i.e.: first, the raised beds for various cash crops and second, the sunken beds for rice and fish. Geomorphologically the region comprises fluvio-marine lands, occupies the back swamp zone of the coastal zone of Kulonprogo Regency. The local dwellers of Kulonprogo Regency has succeeded in realizing the farming system as an ecologically stable and able to provide a decent living. The farming systems as a cultural heritage have been under an increasing threat of conversion for urban settlements. Presently the area is undergoing a massive infrastructure development that increases the risk of land conversion of the sawah surjan into different land use designations. The construction of new arterial road along the coastal region of the province has further encouraged large scale investments by governments and private companies (iron ore mining, international airport, sea harbors, naval base) and smaller size of investments by the locals (governments, companies and community groups; especially those related to development of community-initiated tourism destinations). The research shows that sawah surjan area in the regency is designated as production rather than conservation zone. In the context of current investment boom in the region, this may lead to an uncontrolled ownership transfer and conversion of sawah surjan as cultural heritage into non-agricultural use. To be able to control unwanted transfer and conversion of sawah surjan, a detailed spatial plan is required and implemented consistently. The lack of incentives for agricultural sector, low/negative population growth and lack of farmer regeneration may worsen the situation and lead to massive transfer and conversion of sawah surjan. The tremendous increase of land price due to high demands from neighboring villages may lead to massive transaction of speculative purchase of lands by outsiders.



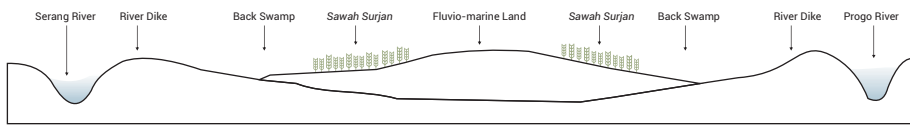
LAND USE [R]EVOLUTION FROM SAWAH SURJAN

1. Unprecedented large scale infrastructure investments along the coastal region of the province



2. Many of the affected farm households seek for lands to neighboring villages
 3. A new threat for the sustainability of the sawah surjan systems

EVOLUTION OF THE SAWAH SURJAN LANDSCAPE



Deposition of volcanic materials from Mt. Merapi along the coast creates natural divide behind the coast line (Marwasta dan Priyono, 2007)

Back swamp zone comprises fluvio-marine lands is formed along the coastal region of Kulonprogo Regency (Santosa, 2010)

The local people have established a unique agricultural landscape called sawah surjan systems in the back swamp zone through a continuous cut & fill process of the fluvio-marine sediments for centuries.

THE SAWAH SURJAN SYSTEMS

The systems show a land parcel with two different but complementing land uses, i.e.: the raised beds for various cash crops and the sunken beds for rice and fish.

The systems are considered as a local genius and cultural heritage; and has been documented among the most special landscapes in the province.

It is considered as a cultural heritage, demonstrating a form of local wisdom in managing land resources with poor drainage.

FARMING ON SAWAH SURJAN SYSTEM

- Ecologically sawah surjan systems are very stable (Aminatun, 2014)
- Producing great variety of agricultural commodities
- Minimum risk of failure in an uncertain environment
- Provide decent living condition to farm households
- Demonstrating an example of sustainable marginal land management practices using local wisdom.

LAND USE EVOLUTION FROM SAWAH SURJAN



POSSIBLE DISTURBANCE TO THE SAWAH SURJAN SYSTEM

- So far no evidence of direct use of sawah surjan as a location for large scale infrastructure development
- Conversion of sawah surjan into other land use are stimulated increasing demand of sawah surjan from the projects-affected rural dwellers who seek for substitutes of their lands
- The previously marginal lands of sawah surjan is now very expensive, but many are using the sawah surjan as a means for speculation
- Land price has been increasing tremendously in the vicinity of the infrastructure projects

CONCLUSIONS

- Sustainability of the sawah surjan systems will be depending on the readiness of the government in preparing and implementing detailed spatial plan in the fast growing coastal region, especially to control agricultural land conversion
- The sawah surjan area is still categorized as agricultural production zone rather than cultural heritage in the existing spatial plans in various levels.
- Given the lack of incentives for agricultural sector, low/negative population growth and lack of farmers regeneration, the increasing land price due to high demands from neighboring villages may lead to massive transaction of speculative purchase of lands by outsiders (Rijanta, 2017)
- Failures to control land transaction would lead to marginalization of the local dwellers and at the same time loss of sawah surjan systems as a local genius and cultural heritage.