The Relative Strength of Water Tenure Security for Oil Palm and Hydropower: A Preliminary Study

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Conceptual Frameworks

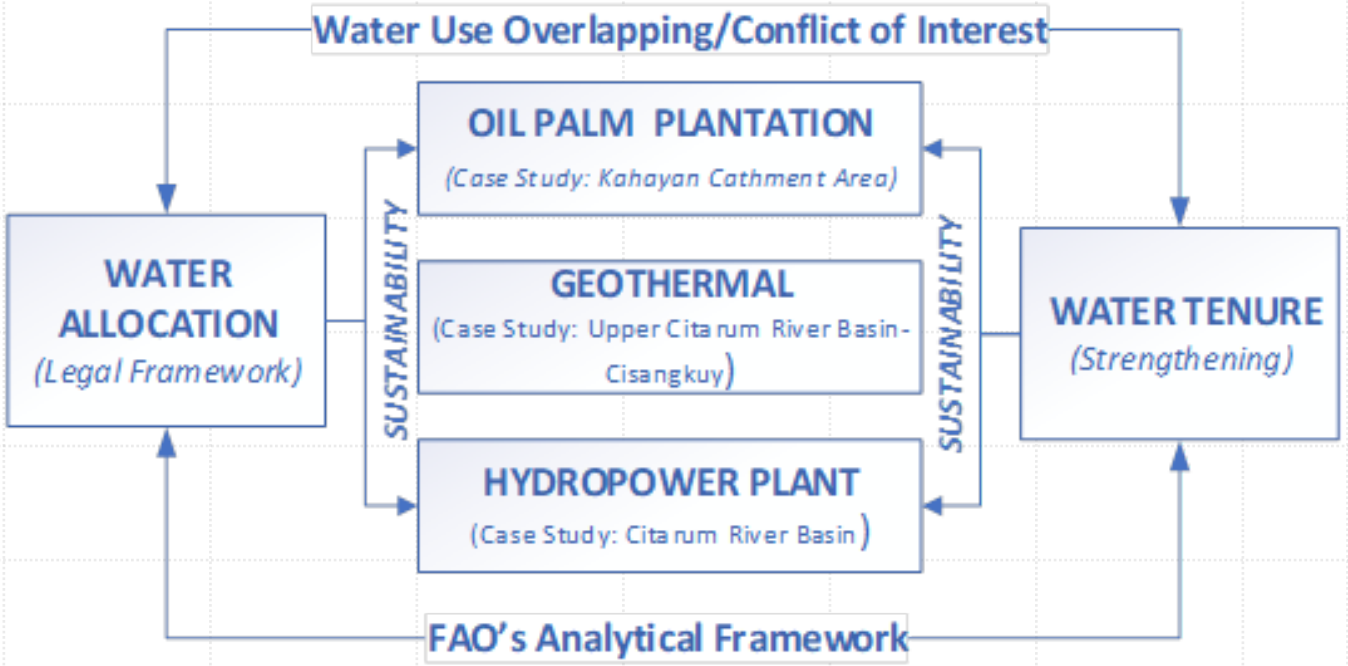
Water Tenure: "*...the relationship, whether legally or customarily defined, between people, as individuals or groups, with respect to water resources*" (Hodgson, 2016);

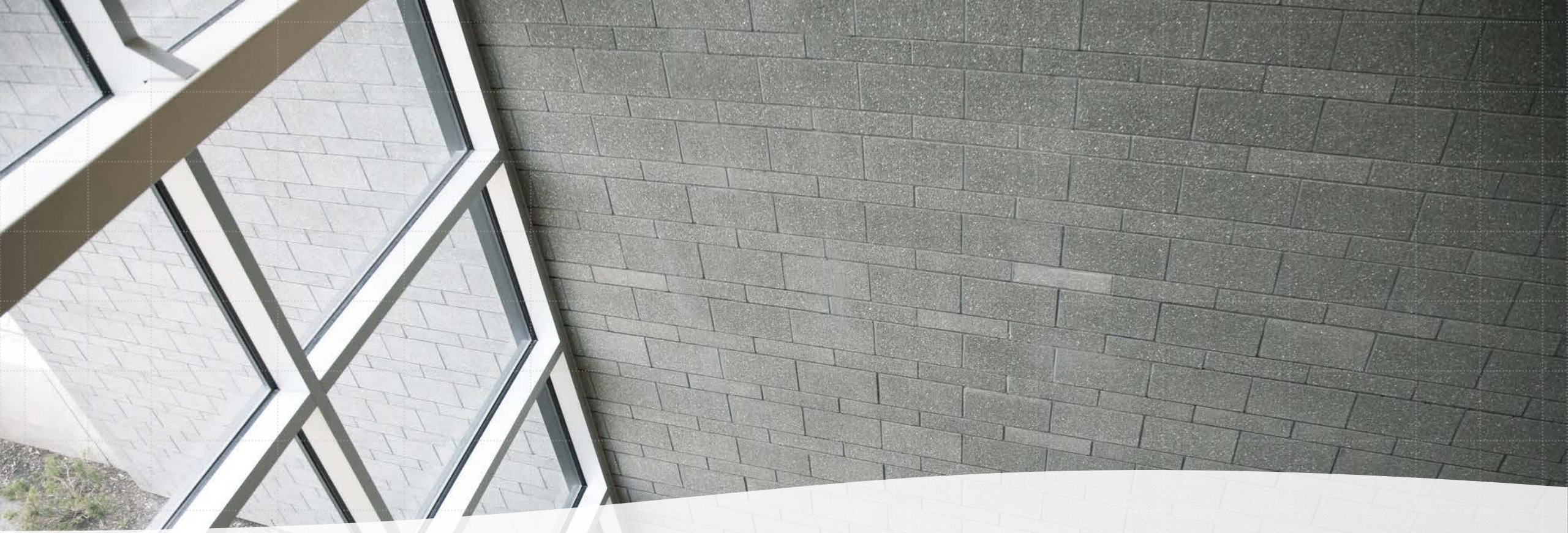
Tenure Security (proposed definition): Defeasibility and defensibility of a particular tenure, both sociologically (*de facto)* and legally (*de jure*)

Methodology

FAO's Analytical Framework (Adjusted)

- Water Tenure fiches
- Mapping Tenure Against Uses
- Legal Analysis of the Allocation Framework Against Tenure
- Analysis of Tenure Security

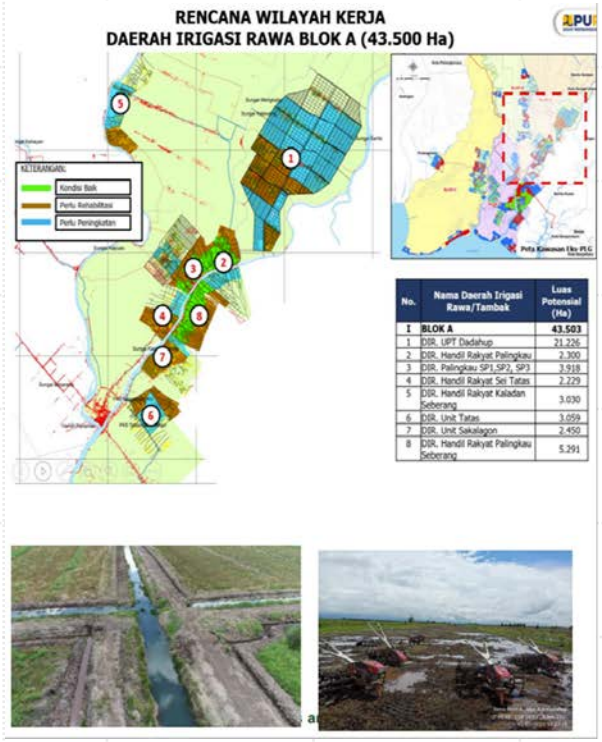


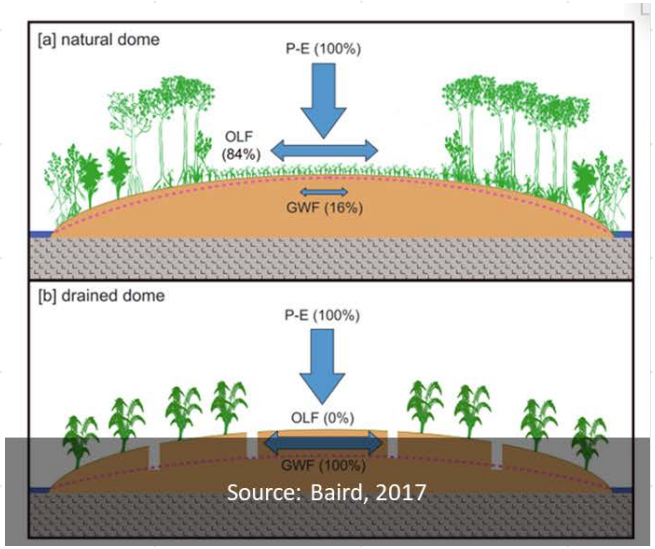


Findings

Kahayan Catchment 1: Food Estate and Conservation

Presentation by Coordinating Minister for Maritime and Investment on Integrated Food, May 24, 2022





Source: Baird, 2017


Picture: Ridzky R Sigit


Land clearing for cassava plantation in the Gunung Mas Regency (Source: Bisnis.com)

Damaged peatland has to be restored (per regulation). Definition of "Damaged": Conservation peatland : artificial drainage has been constructed Cultivation peatland: water table depth > 40 cm --> Produce Competition

Kahayan Catchment 2: Customary Water Use

(Source: Lubis, et.al; Satia et.al; Subahani; Octora, et.al)

Lexicon	Explanation
Handil	According to Lubis, it is used to denote three things : "a) a manmade navigable canal connecting a river to farmland; b) fields around the canal under collective management; c) the system of collective management of the fields and canals".
Tatas	*manmade channels (approximately 1 × 1 m), dug to give access to forest resources* (Lubis, et.al). Anyone can build a new tatas, extending on existing ones. Owners of the tatas are entitled to levy some percentage of the value of the forest product that is carried through their tatas. *tatas* are controlled by either individuals or families. Owners of the tatas and their family is allowed to extract resources around the tatas, usually up to 500 meters on both sides of the tatas.
Beje	Manmade small pond in the swamp area. *Beje*, 25-250 meter square artificial pond were often dug by farmers oftentimes inside the peatland; fish will naturally seek for location with plenty of water during dry season, and thus they gather in *Beje*, which is then harvested by Farmers.
Tabat	Overflow dam, usually made of clay or wood
Baruh	Small pond in Peatland which is filled with water all year long, usually formed due to large trees which are uprooted. Fishing in the *Baruh* (Ngebaruhi) is also considered a free access.
Saka	Third order tributaries, usually a short and narrow creek. Satia et.al. notes that the owner of *saka* and *Sungei* can manage and supervise anyone conducting activities in their area. Other people can fish in the *sungai* only when they are connected by marriage to the owner of the sungai/saka.
Pukung Pahewan	Protected area, could be on land or peatland or water bodies. According to Satia,et.al, the area is considered to be controlled by mythological creatures which guards the area from destruction. According to custom, not only the forest or the trees are protected, but also all animals, plants and other being within the protected zone.


Handil


Beje

Kahayan Catchment 3
Customary Water Use


ERMP Kanal

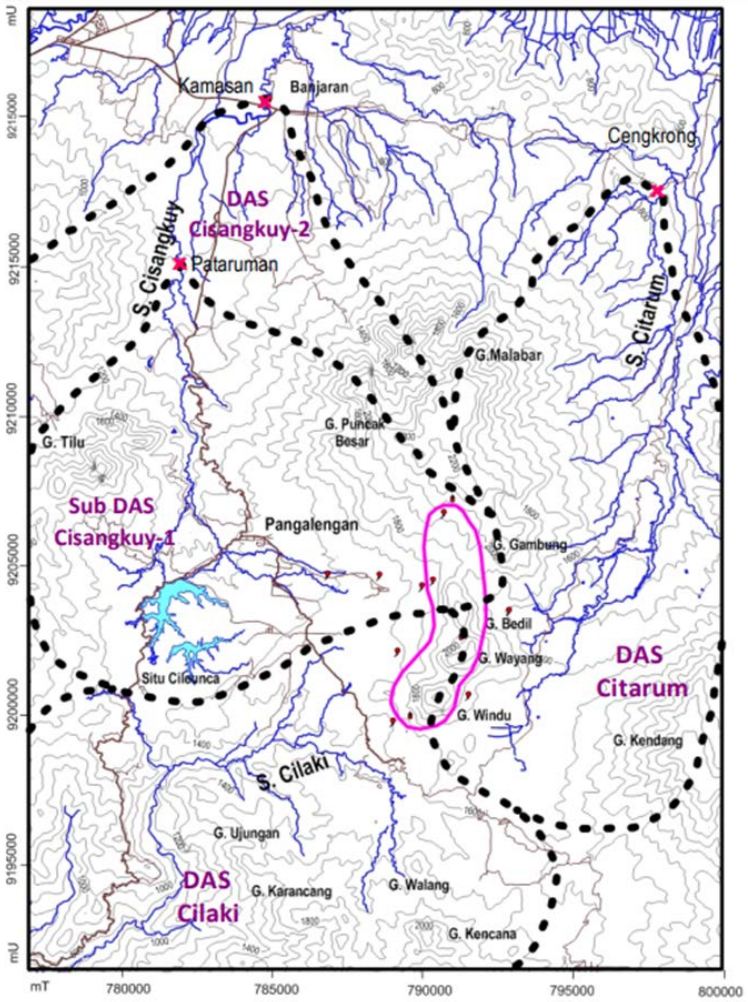
Kahayan Catchment 4: Water Tenure and Water Use

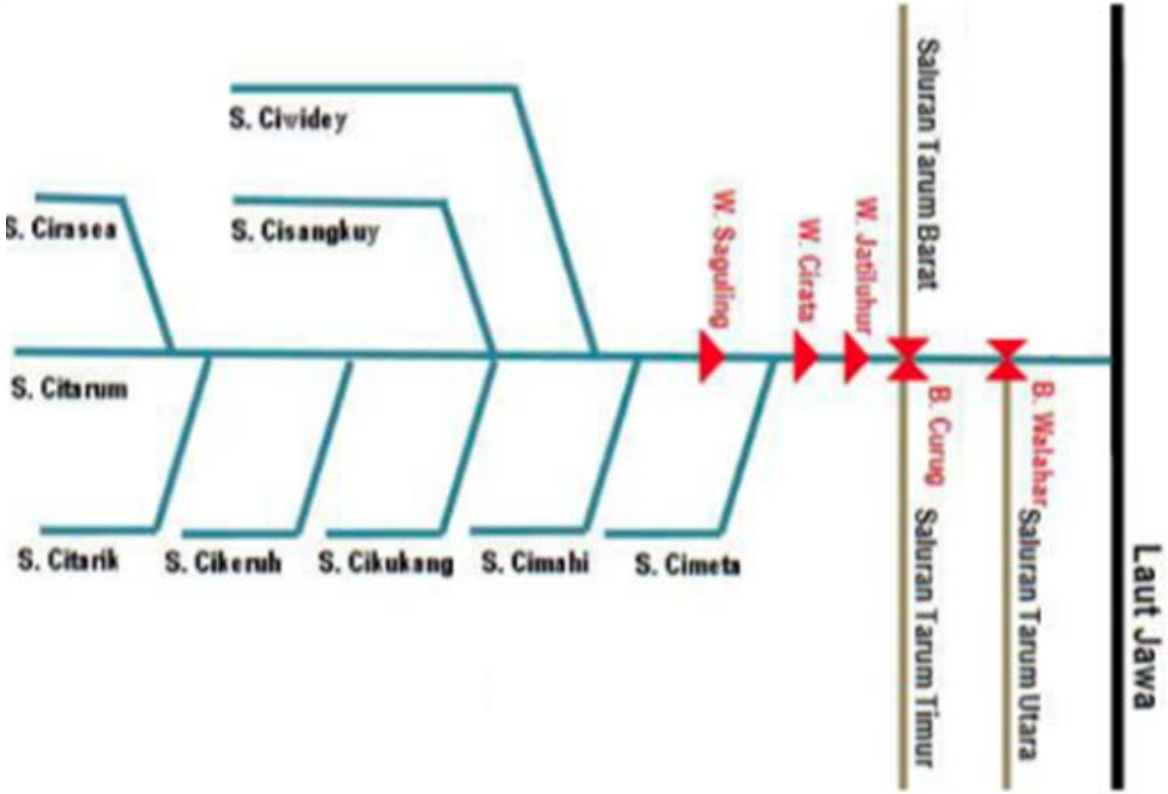
	A. Water supply			B. Agriculture						C. Industry	D. Power generation		E. Environment		F.	G. Livelihoods		H. Recreation/landscape	
	1. Urban water supply	2. Rural water supply (infrastructure)	3. Unimproved sources	1. Estate irrigation	2. Public irrigation scheme	3. Small-scale non-public irrigation	4. River bank garden/flood recession	5. Livestock watering	6. Aquaculture	Commerce/industry	1. Thermal	2. Hydropower	2. Diversion	1. Stream flow & Retention		1. Inland fishing	2. Wetlands	1 Instream use	2 Other
Traditional formal water rights																			
Modern permit	X			X	X					X			X					X	
Regulatory license																			
De minimis/small scale rights	X	X	X		X			X	X										
Exempt/declared commercial rights																			
Agency control																			
Water supply contracts																			
Commonhold																			
Investment contracts																			
Reserves minimum flow														X					
Customary tenure						X	X		X					X	X	X			X
Religious law																			
Informal	X	X							X									X	
Assumed				X									X						
Impossible																			
Unrecognized tenure																			

Citarum 1: Geothermal and Hydropower Locations

Source: Hendrasto, 2018

Star Geothermal, 2021

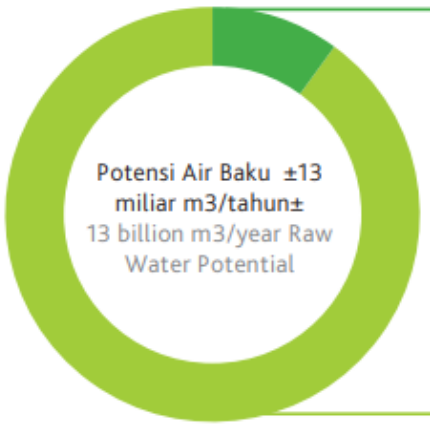




Source: BBWS, 2016

Citarum 2: Upstream Irrigation and PJT 2 Water Use

Significant Upstream Irrigation Area (both under Bandung Province). Leuwi Kuya Irrigation Area = 2357 ha; Cirasea = 2471 ha



Annual Report, 2020

10%

±1,2 miliar m^3/tahun
Alokasi untuk pengusahaan PJT II
±1.2 billion m^3/year
Allocation for PJT II concessions

±6,8 miliar m^3/tahun
Dialokasikan untuk ±300 ribu Ha lahan pertanian (Jawa Barat bagian Utara) tanpa dipungut biaya apapun
±6.8 billion m^3/year
Allocated to ± 300 thousand hectares of agricultural land (Northern West Java) for free

90%

PJT II 90% water use = irrigation = free

Citarum 3: Mapping Water Use

	A. Water supply			B. Agriculture						C. Industry	D. Power generation		E. Environment		F. Navigation	G. Livelihoods		H. Recreation /landscape	
	1. Urban water supply	2. Rural water supply infra	3. Unimproved sources	1. Estate irrigation	2. Public irrigation scheme	3. Small-scale non-public irrigation	4. River bank garden/flood recession	5. Livestock watering	6. Aquaculture	Commerce/industry	1. Thermal	2. Hydropower	1. Stream flow & Retention	2. Diversion		1. Inland fishing	2. Wetlands	1 Instream use	2 Other
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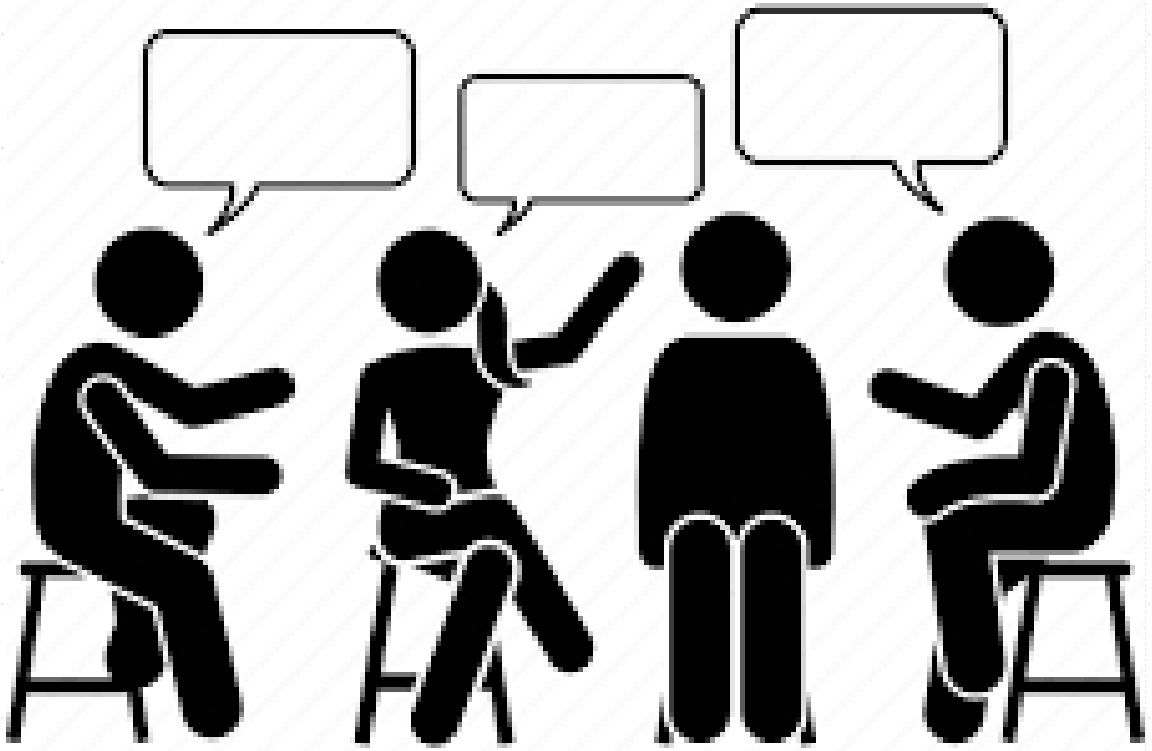
Discussion



Law 17			Kahayan	Citarum
Art 8	**Rank**	**Art 49**		
Minimal Daily Basic Needs	1.	*General Daily Basic Need (no permit)*	✓	✓
	2.	Daily basic need for large group	✓	✓
	3.	Daily basic need which alters the natural condition of the water source	Pamsimas Program	Pamsimas, etc
People's Farming	4.	*People's Farming Within Existing System (no permit)*	**Farming on alluvial land and handil**	**Various Irrigation Areas including Leuwi Kuya and Cirasea (Upstream)**
	5.	People's farming outside of existing irrigation system	✓	✓
Daily basic needs *through* drinking water provision system	6.	Daily basic need through drinking water provision system	**3 Drinking Water Utilities (PDAMs)**	**Jakarta Water Utilities and surrounding Regency/City Water Utilities**
	7.	Non-commercial activities for public needs	Not Yet Identified	Not Yet Identified
	8.	Water utilization for state, region and village-owned enterprises	Food Estate	**Hydropower**, Tourism
	9.	Water utilization for the private sector (individual or enterprises)	**Oil Palm**, other plantations, industries	**Geothermal in Wayang Windu***, various industries

Discussion 1: Applying Water Law's Allocation Framework to Tenure

Low priority for allocation

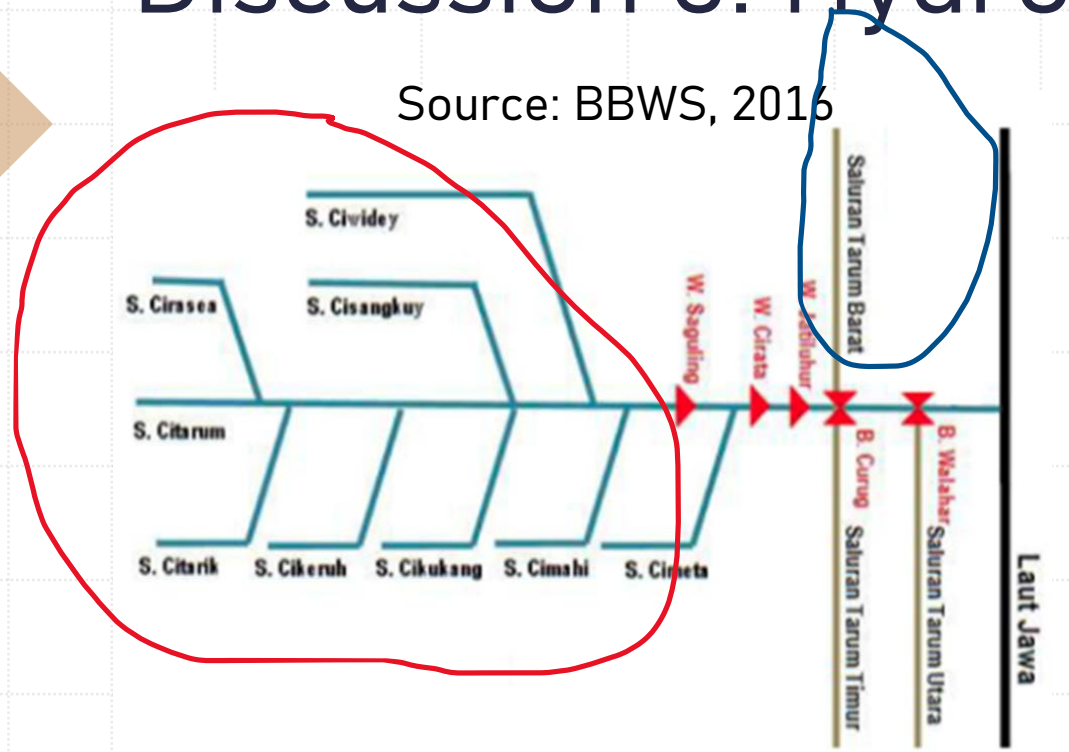
* Prohibited by the Water Law (Art 33) and violations can be criminally prossecuted (Art 69)

Discussion 2: Oil Palm

Prevention of forest fires through tabat regulation will prevail. The 40 cm regulation have been defended by Court. However, oil palm will only require 0-8% blue water, except for 9-years old oil palm in ultisol which require 25% blue water (Safitri et.al, 2018)

Discussion 3: Hydropower

Source: BBWS, 2016



During drought, one hydropower in Eastern Java reduce operation from 24 hours/day to 8 hours per day

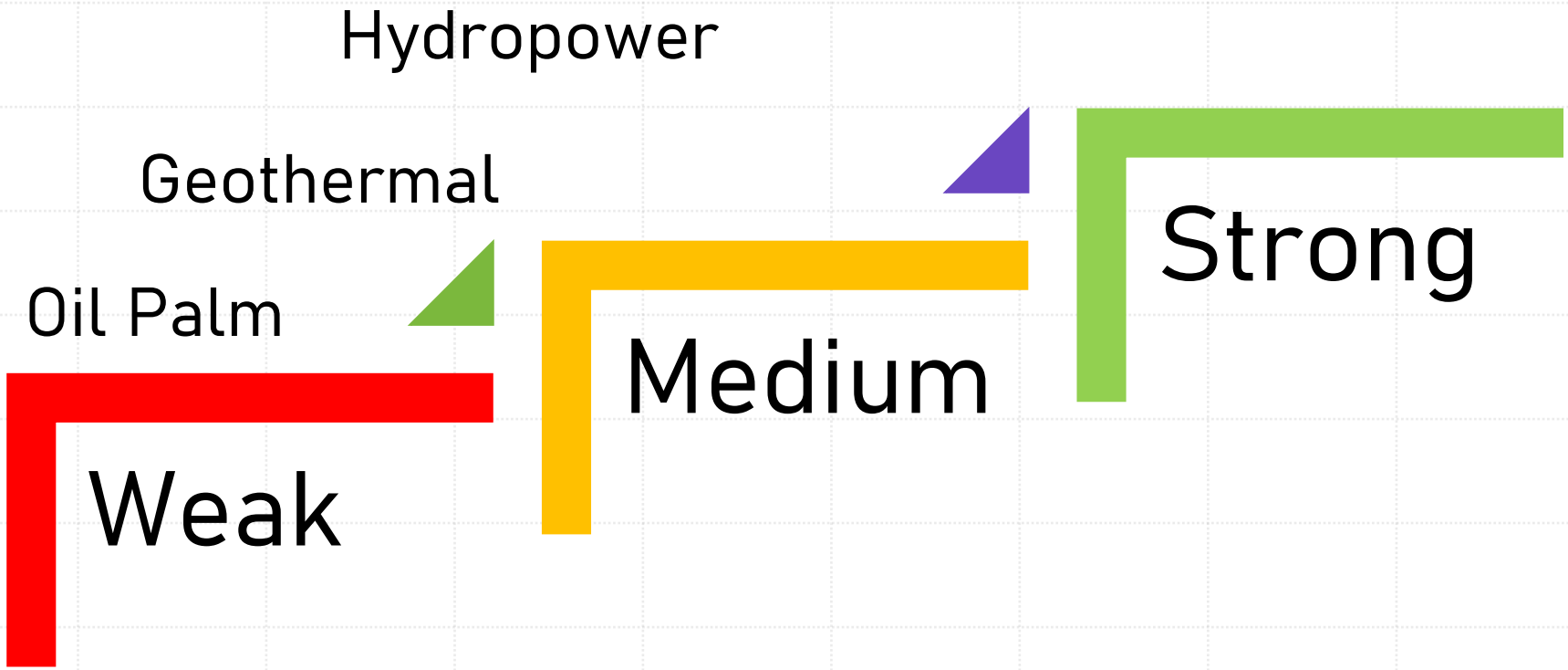
1. Upstream irrigation area will have stronger powers both in terms of *de jure* (higher priority in the allocation framework) and *de facto* (the ability to control water flow downstream)
2. Downstream bulkwater supply for Jakarta Drinking Water utility have stronger *de jure* claims, but this only matters when *diversion* is required
3. Downstream irrigation area have strong *de jure* claims – especially since they are a part of national rice estate. They may require water volume to be release during drought

Discussion 4: Geothermal

Incoherent Regulatory Regimes

Illegal	Legal
Utilization of water in Conservation Area is prohibited, except for daily basic needs (Water Law, Article 33)	Still allowed under Forestry Regulation P.18/Menlhk/Setjen/Kum.1/4/2019. However the level of the regulation is low and thus cannot derogate the Water Law's prohibition
Violators can be sentenced to imprisonment up to 6 years and IDR 10 billion fines	

Conclusion: Tenure Strength



Recommendations

Each hydropower, geothermal and oil palm companies should develop detailed analysis on their water tenure security and identify, adapt and/or mitigate their water risks

The Government of Indonesia should develop reallocation framework from water uses with lower economic productivity to water uses with higher economic productivity while incorporating equity and welfare considerations

Regulation needs to be coherent; either commercial utilization in conservation areas such as geothermal are prohibited or permitted with restrictions. This will require revision of the Water Law (could be done using omnibus method)

Acknowledgement

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About the presenter

Dr. Mohamad Mova Al'Afghani's primary expertise is water law. He earned his PhD in 2013 from the University of Dundee (UNESCO Center for Water Law, Policy and Science) with a thesis titled "The Role of Legal Frameworks in Enabling Transparency in Water Utilities Regulation". He obtained his master's degree (LL.M.Eur) from the University of Bremen in 2008 (with distinction) and his Sarjana Hukum (LL.B) from Universitas Indonesia in 2003. Mova had been working as expert consultant with United Nations Industrial Development Organization (UNIDO) on the phasing out of persistent organic pollutants, World Health Organisation (WHO) on drinking water quality and water safety plan, United Nations Development Programme (UNDP) on a project to phase-out mercury, the World Bank for a study on water security in Indonesia, IUWASH-USAID on the provision of drinking water to urban poor population and the Food and Agricultural Organization (FAO) on a study on water tenure. Mova is a lecturer at Universitas Ibn Khaldun Bogor and Director of Center for Regulation, Policy and Governance. He can be reached at mova@alafghani.info and https://www.linkedin.com/in/movanet/