Regulation, Implementation and The Potential Role of Islamic Norms in River Restoration in Indonesia

وَجَعَلْنَا مِنَ ٱلْمَآءِ كُلَّ شَىْءٍ حَىٍّ ۖ

And We created from water every living thing (QS Al-Anbiya:30)

Mohamad Mova AlAfghani

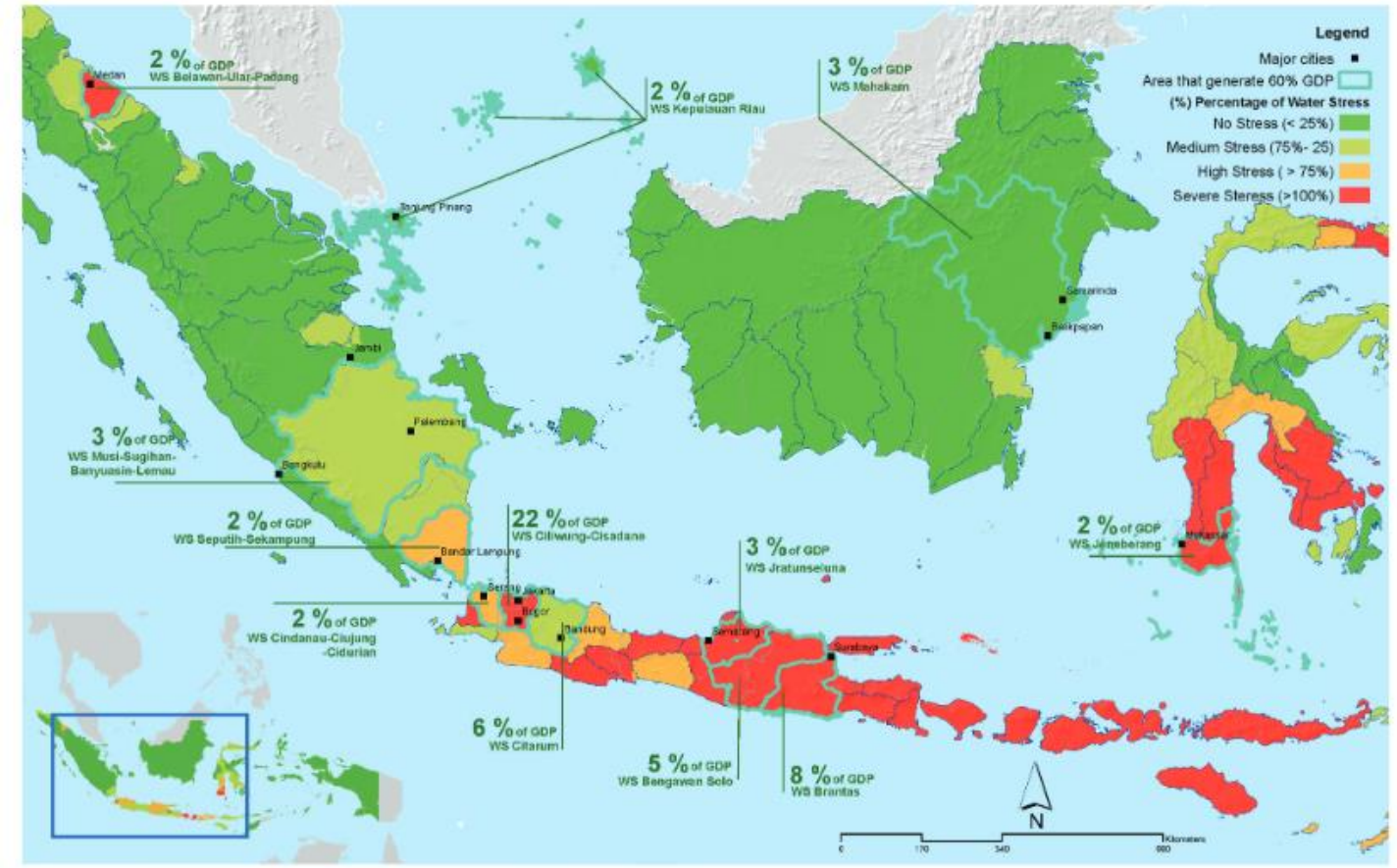
Law Faculty, Universitas Ibn Khaldun Bogor

IICASS-2022

Dry Season Water Stress

"If nothing changes, by 2045 two-thirds (67 percent) of GDP is predicted to be generated in highly or severely stressed basins"

(World Bank, 2021)



Climate Change & Flooding

Tempo, 2021


BPBD Bogor Catat 20 Bencana Longsor-Pohon Tumbang Terjadi dalam Sehari

Solihin - detikNews

Rabu, 12 Okt 2022 02:28 WIB

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Foto: Pohon tumbang di Bogor (dok. BPBD Bogor)


Banjir Bandang di Malang: Lokasi, Jumlah Korban dan Kondisi Kini

Tim detikcom - detikNews

Selasa, 18 Okt 2022 15:44 WIB

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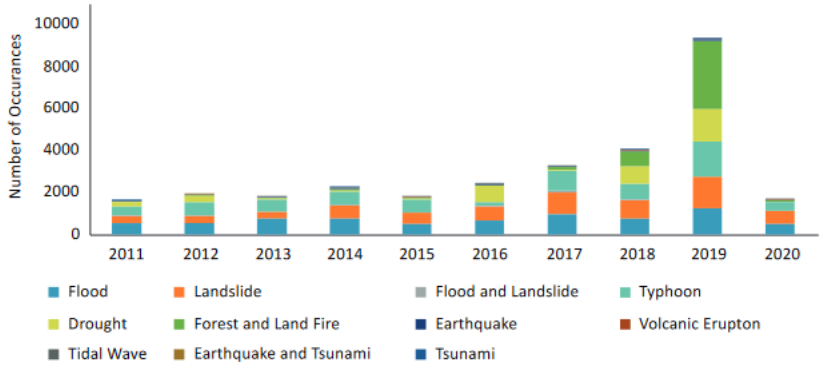
Banjir Bandang di Malang: Lokasi, Jumlah Korban dan Kondisi Kini I Foto: Istimewa (dok. tangkapan layar)

Figure 20: Trend of disaster occurrence in the last 10 years



Source: BNPB 2020c.

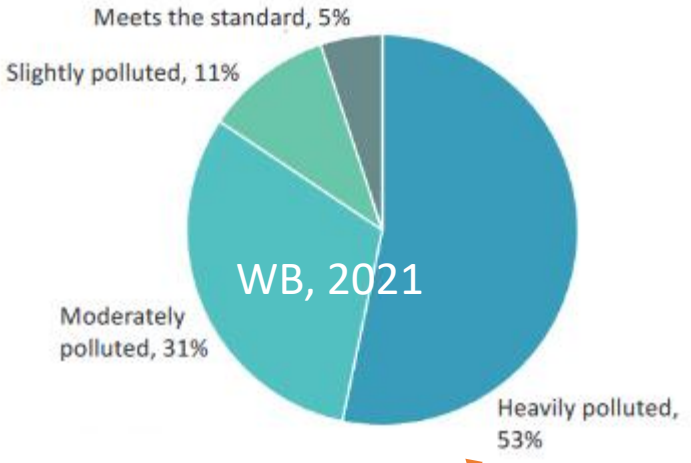
"More than three-quarters of Indonesia's disasters are meteorological or hydrological" (World Bank, 2021)

According to World Bank 2021, DIBI 2018:

- *More than 100 million Indonesians are exposed to flood risks*
- *325 cities and districts are classified as high risk*
- *From 2002 to 2015, Indonesia suffered an average reported damage of US$367 million annually due to flooding with a total cost of an estimated US$5.2 billion (discounting socioeconomic losses).*
- *Analysis of 92 cities across Indonesia indicates that the number of reported floods in these cities almost tripled from 50 in 2006 to 146 in 2017*

Riset Buktikan, Sungai Ciliwung Termasuk Sungai Terkotor di Dunia, Kompas, 2020

Figure ES.8: River water quality status across Indonesia (2019)



Indonesia: Nearly 70 per cent of household drinking water sources contaminated by faecal waste

UNICEF launches #DihantuiTai campaign to increase awareness of the impact of unsafe sanitation on public health while calling on homeowners to take action to protect the environment

53% of Indonesia's River is Heavily Polluted

River Pollution and Water Quality Problems

River Restoration: Conceptual Framework

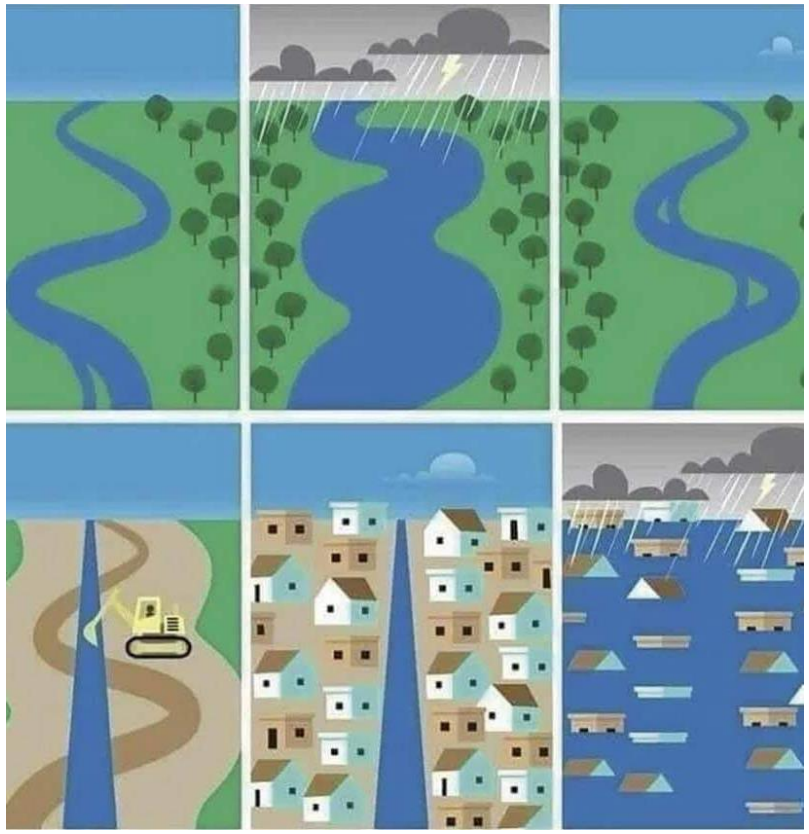
"*Ecological, physical, spatial and management measures and practices...aimed at restoring the natural state and functioning of the river system…"* (ECRR)

Policy Driver in the EU:

- "Good Water Quality" of the Water Framework Directive 2000/60/EC whose purpose is to "enhance the status of aquatic ecosystem, "maintaining and improving the aquatic environment"; "Good Ecological Status" (Annex V) by looking at for example the composition of aquatic flora, benthic invertebrate fauna (for rivers)
- EU Groundwater Directive; EU Floods Directive, EU Bird and Habitat Directive

Hence, the purpose is not anthropocentric (for drinking water or using chemical parameters) but ecocentric -> natural ecosystem

on the Allan Water, Stirlingshire in 2006: Large areas of the floodplain were flooded d
ting homes and businesses.



River meander serves many functions, for example, it decreases water velocity. Re-meandering channelized river will improve biological quality, physico-chemical qualityreduce flood risk and protect habitat and many others (NWRM).

Re-meandering channelized rivers, preserving undisturbed meander

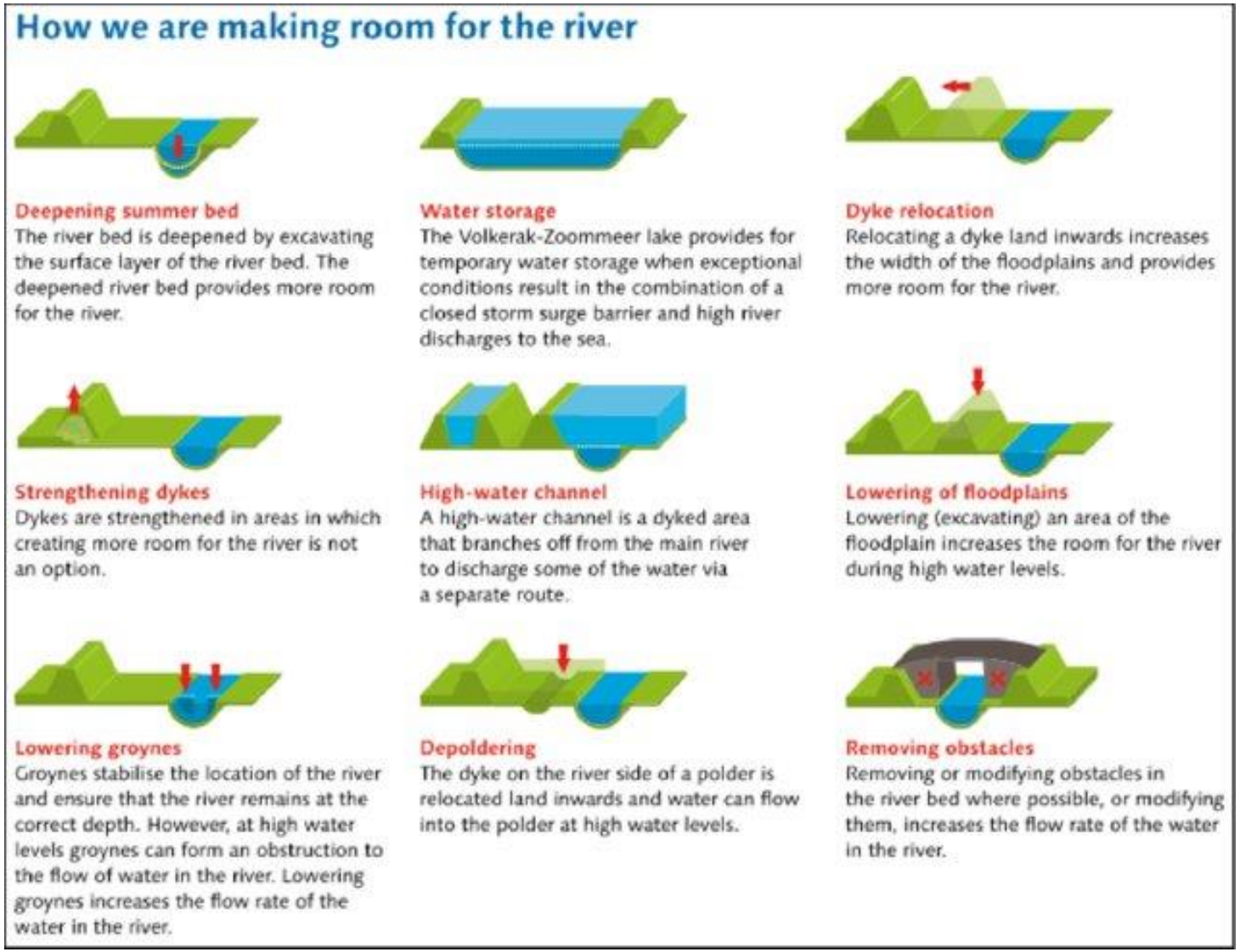
Singapore: From Embankment to Naturalisation

Picture Source: Kuei-Hsien, L; Socio-Ecological Practice Research, 2019

Left: Typical channelized river; Right: Bishan-Ang Mo Kio Park where Kallang River is Naturalized (Kuei-Hsien, 2019)

Dutch: Room for the River Projects

(Source: Ruimte voor de Rivier, 2016)



clear felling forestry

Clear felling of forestry exposes old drains and can speed run-off while brashing can block manmade culverts

floodplain is disconnected from the river

Flood banks designed to protect fields and properties simply pass the problem downstream because they prevent floodplains acting as natural storage areas during a flood

erosion

Riverbank erosion is increased with livestock grazing. Large deposits of sediment build up in the channel reducing the river's ability to carry floodwaters and the river floods more easily

natural sponges drained

Draining floodplain wetlands for livestock grazing and crops removes essential water storage areas for the river

Picture Source: WWF Scotland, 2016

Scotland: Slowing the flow

Normative Framework for Indonesia

1. Constitutional: The 6 Basic Principles require water commercialization by the private sector to fulfill environmental needs (AlAfghani, ICCIS, 2022)
2. Water Law 17/2019: There are no explicit environmental flow regime but require allocation to calculate water for the maintenance of water sources and environment (Art 8 para 6); Conservation and Ecosystem must "be considered" (Art 22); Water resources is *acknowledged* as a part of ecosystem and the living space for flora and fauna (Elucidation of Art 21 (1)
3. Government Regulation 22/2021 on the Management and Protection of Environment: water pollution control is largely based on ambient and effluent standards (thus, not aquatic ecosystem)
4. To conclude: Unlike the EU, there are **no** legal obligation (both *of conduct* or *of result*) to restore river to its natural state under existing legal framework. The legal framework in Indonesia is anthropocentric, not ecocentric.

Naturalisation in Jakarta (Gov Reg 31/2019)

1. Definition: "….*way of managing water resources through open green spaces by still paying attention to storage capacity, flood control functions and conservation…*";
2. The environmental ecology function conserves flora and fauna living in water resources through the provision of seeds in order to revitalize the ecosystem (Art 5 para 5)
3. Considerations to be made: (i) availability of land, (ii) optimum storage for flood control and (iii) the purpose is to return the ecosystem in water resources

Despite **deficit** in its legal formulation, this is closer to the EU's approach of good ecological status and is a departure from the national legal framework.

Normalisasi (“Normalization”)

The term “*normalisasi*” is not a standard legal terminology and is usually found in policy documents. However, it is mentioned in Jakarta’s Regional By Law on Spatial Plan 1/2014, as a part of spatial plan but is not defined.

The term is usually used for river infrastructure maintenance through dredging, providing more space in the buffer zone or channelization. The approach is therefore is more in line with the grey infrastructure development and maintenance rather than nature-based solutions.

Islamic Norms (1): Basic Principles

According to Ahmad (1999):

1. Water (including river) is considered as Huquq Allah (rights of God) as opposed to huquq al'ibad (rights of humankind); *the rights of Allah cannot be remitted, pardoned, relaxed, or compromised;*
2. "*The laws for maintaining water quality are not premised on property law or even on tort law. They are ecocentric, based solely on the character of water*";
3. "*…the law requires that water be kept free from pollution so that it may continue to perform its social and religious functions, as well as serve as habitat for a great number of creatures*";

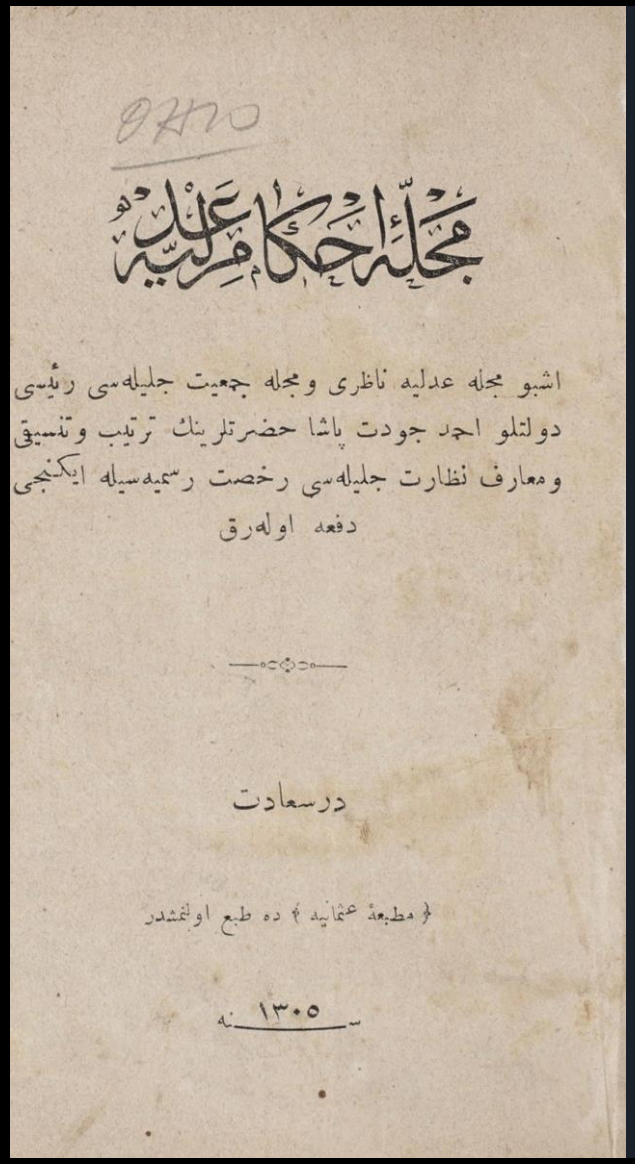
According to Caponera and Nanni (2007):

"*…the gift of water entails a religious obligation deriving from the very nature of water, out of which 'every living creature was created'*" (This is referring to QS Al-Anbiya:30 "*And We created from water every living thing*)

Islamic Norms (2): *Harim*

The term “Harim” means **inviolable**. This could include sources of water such as seas and lakes, rivers, springs, wells, watercourses, which should have inviolable zones to preclude nuisances and hazards (IUCN, 1994).

“*Harim is mainly associated with watercourses and rivers, but is also applicable to lands. It is the land that immediately adjoins all the corners of a well or the bank of a river. It is the buffer zone surrounding a water body* ***within which human activities****, apart from the lawful use of water, are* ***prohibited****. The cardinal rule of harims adjoining waters is that they must remain undeveloped*” (Ahmad, 1999)



Islamic Norms (3): *Harim* in the Ottoman's Mecelle

Mecelle is the Civil Code of the Ottoman Empire, based on the codification of the Sharia. Ahmed Cevdet Pasha (1822-1895) headed the Mecelle Commission.

Section VI. Ownership of Land Surrounding Wells Sunk, Water Brought and Trees Planted with Imperial Permission in Dead Land

1283. The land attaching to the two sides of a big river which does not require continually to be cleaned amounts to one half the breadth of the river. The amount of land attaching to both sides of the river is equal to the breadth of the whole river.

1284. The land attaching to small rivers which continually require to be cleaned, that is to say water courses, canals and underground channels, consists of an amount large enough for the stones and mud to be thrown upon when being cleaned.

Conclusions

1. In the EU, The Water Framework Directive requirement to attain good ecological status, as measured for example by flora and fauna, prompted the movement to "restore" rivers to its natural ecosystem;
2. This requirement is absent in Indonesia's legal framework such as the Water Law and the Environmental Law which is anthropocentric in its approach (for example, looking at ambient water quality for drinking water purpose = class 1) and managing water quality solely based on parameters;
3. Under Islamic Law, Water is considered Huquq Allah (Rights of God) in which officials have little discretion; "*The laws for maintaining water quality are not premised on property law or even on tort law. They are ecocentric, based solely on the character of water*" (Ahmad, 1999);
4. The concept of Harim means that certain area (for example along the river) must remain undeveloped (Caponera and Nanni, 2007);
5. The requirements in the EU Water Framework Directive (2000) is *concordant* with Islamic Law approaches towards ecocentric water management; whereas the Indonesian legal framework is not;
6. Approaches to river restoration such as in Jakarta have tried to go beyond the national requirement but faces obstacles, especially related to land acquisition

Recommendations

1. In order to achieve SDG Target 6.6 (*protect and "restore" water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes*) the regulatory and institutional framework must be in place;
2. This would require the Water Law and the Environmental Law **to be reformed** so that it contains an obligation of conduct to **protect** rivers and floodplains that are still in natural conditions and **gradually restore** developed floodplains to its ecological functions;
3. Islamic Water Law principles could have three potential roles: (i) to provide insight for water and environmental law reform, (ii) to motivate behavioral change and (iii) to increase demand-side for government responsiveness towards healthy and clean water

Something to ponder…. and further Research Question

- We are the world's largest Muslim population in a country;
- We have been taught about *najis* since childhood;
- Islamic injunctions regarding water conservation is very strong;

Press release

Indonesia: Nearly 70 per cent of household drinking water sources contaminated by faecal waste

UNICEF launches #DihantuiTai campaign to increase awareness of the impact of unsafe sanitation on public health while calling on homeowners to take action to protect the environment

***But why is our river dirty and our water sources contaminated with faeces*?**

Hypothesis: Aside from the governance and management of wastewater and solid waste, there are behavioral aspects: (i) lack of emphasis on public or environmental ethics at Da'wa, (ii) separation between private and public ethics at the individual level *(e.g. wudhu* using contaminated water*);* (iii) lack of contextualization of Islamic principles to contemporary challenges such as climate change and pollution

Thank You.
Wallahu a'lam bishawab