

Culture on Water and Disasters

-Foundation of Integrated DRR Governance-

What do we need for Integrated DRR Governance?

- ✓ **We need integrated information synthesis system** to collect, identify, analyze, and freely share critical information for science-based decisions
- ✓ We need **a platform to create resilient and sustainable DRR coordination** process
- ✓ We need **a facilitator to help our science-based decisions** and concerted actions by all stakeholders in communities and countries
- ✓ **Let me add one more...**

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A must for the above actions

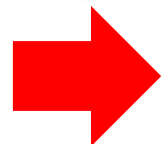
The common understanding on how we behave, how we help each other, how our society reacts, and how our value is protected

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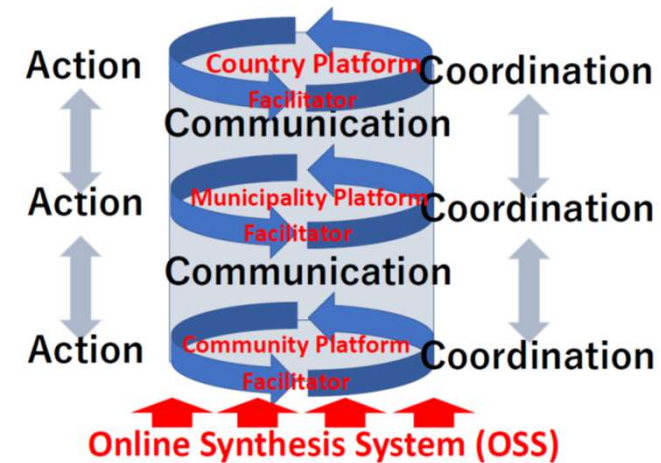
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Understanding Our Own Culture is a MUST

Actions under Integrated Governance for DRR

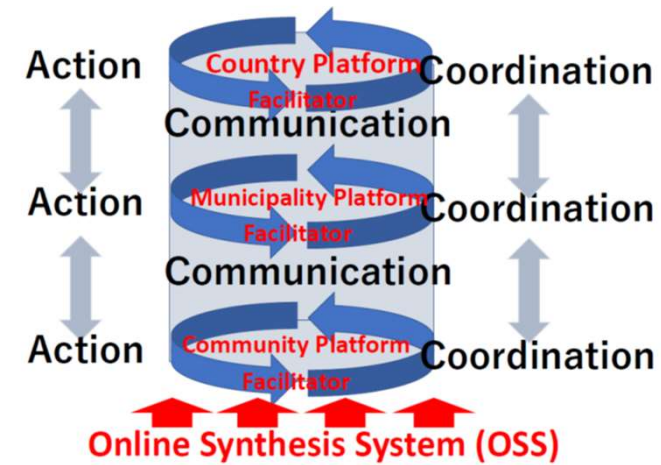
- ✓ Science-based Decisions/Actions
- ✓ Educational Actions
- ✓ Awareness-raising Actions
- ✓ Investment Actions
- ✓ Planning Actions... and



Actions under Integrated Governance for DRR

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- ✓ Planning Actions...

✓ **Culture and Society-based actions**



Culture on Water and Disasters

The foundation of our thinking and behavior

The Nile, Egypt



Source: Google Map

Pyramid nestled by the Nile (1867-1899)

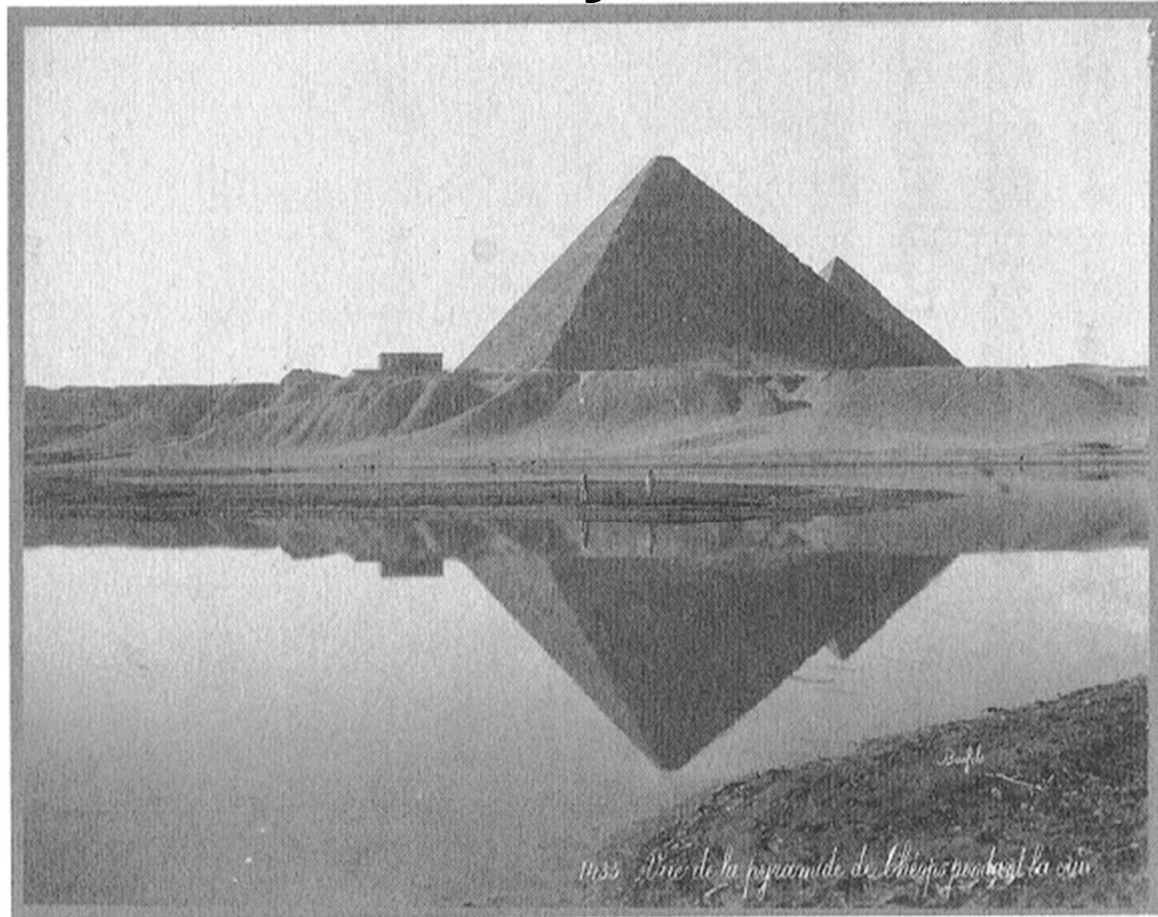


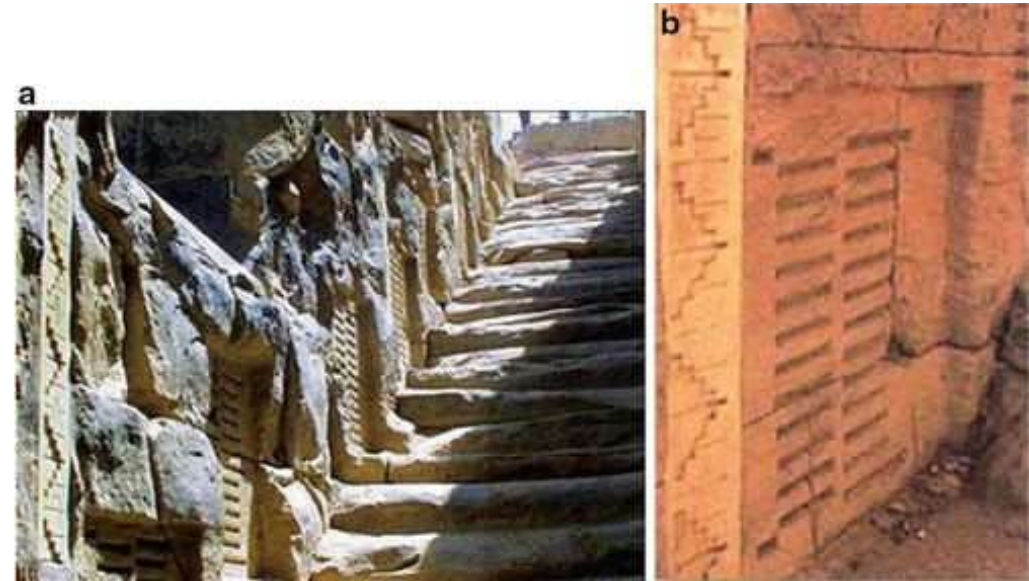
図6-2 フェリクス・ボンフィスが撮影した1867-1899年頃の大ピラミッド。アメリカ議会図書館所蔵。

出典：ピラミッド・タウンを発掘する／河江肖剩（ゆきのり）／新潮社／2015

「The Nilometer : The oldest flood observation system



FIGURE 3.2 Nilometer at Elephantine, Aswan, Egypt.

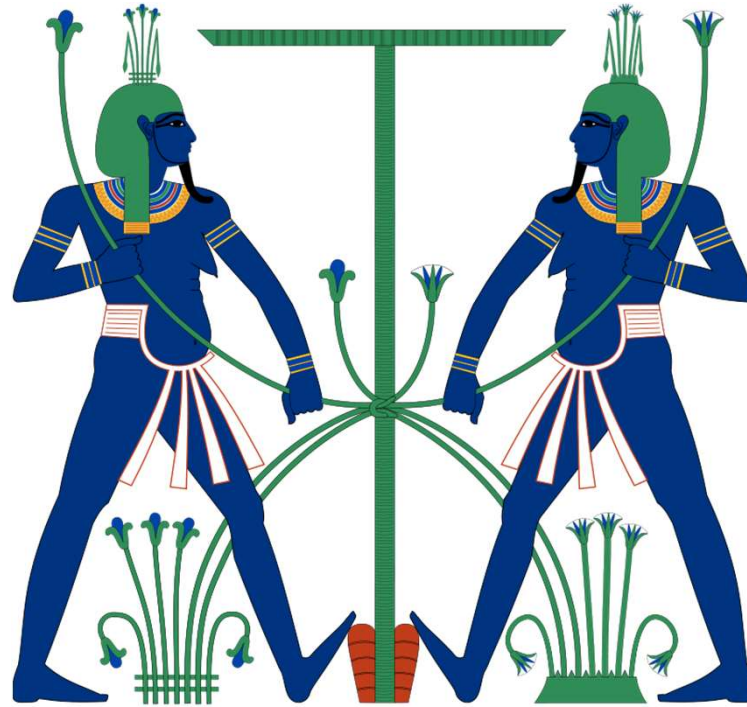


https://oestigaard.files.wordpress.com/2011/08/oestigaard_oup_ch3.pdf

The Nilometer was invented for recording the annual inundations in Egypt and to control the floodwater. As the name suggests, the device originates from the area of the Nile in Egypt. The Nilometer's function was based on the physics principle called "communication vessels." At three different levels in the Nilometer shaft, three channels were connected to the Nile River (Fig. 1). During the flood, the water would enter through the channels and fill in the shaft's bottom. If the water rose up to 16 cubits marked on the pit, that would indicate a good prosperity for the year. If the level was less than 16 cubits (e.g., 12 or 14 cubits), that meant famine, whereas a higher level of 19 cubits would indicate a catastrophe, and the soil with the sown seeds would be washed away. **The inundation levels control became the responsibility of the priests. Thus, Nilometers were mainly enclosed in temples where only the priests and the ruling pharaoh could have access to these devices.**

Source: https://link.springer.com/content/pdf/10.1007%2F978-94-007-3934-5_2011_2_16

Hapi : The God of Nile



ハピ (Hapy, あるいはHapi) は、エジプト神話に登場するナイル川の神。古代エジプトにおいて信仰された。

エジプトにおいて毎年発生するナイル川の氾濫は、大地に水と肥沃な土壌をもたらすものであった。エジプト人は、氾濫の期間にハピに食物や装飾品、宝石を供物として捧げた^[1]。ハピは、ナイルの氾濫による恵みをもたらす神として大地・豊穡・創造を司る神々を養うものであり、また神々へ捧げられる供物をもたらすものでもあった。さらに「神々の父」と呼ばれ、原初の水の神であるヌン**あるいは、**豊穡の神としてオシリスと同一視され**、オシリスの化身と見做されることもあった。他にも**クヌム**、**セベク**などと同一視された。**

その姿は、顎に髭を生やし、垂れた乳房を持つ緑か青色の太った男の姿で表される。女性の胸は、豊饒性を表すと考えられている^[1]。また**ナイル川の北と南を表す2人の神と考えられ**、2人で上下エジプトの統一のシンボルに植物を結びつけるサムタウイの儀式を行う姿で表されることもあった^[1]。頭上には、**パピルス**あるいは、**睡蓮**の葉が描かれる。手には、**供物が高く積み上げられた盆**もしくは、**水が流れ出る壺**を持っている。上下ナイルを表す2本の植物または2個の壺を持つ姿で表されることもある。

Source: <https://ja.wikipedia.org/wiki/ハピ>

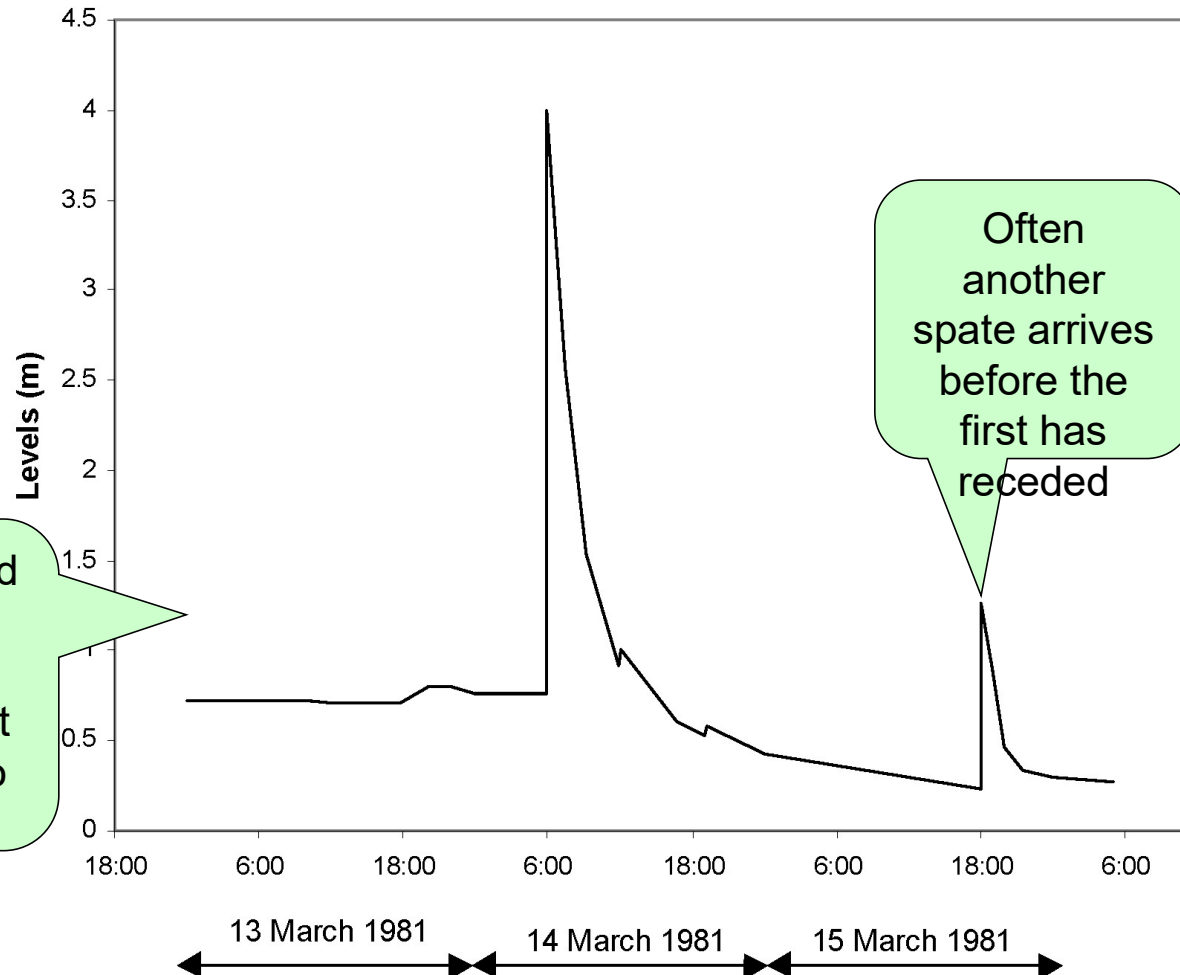
Water as a Heritage- Spate Irrigation in Arid Regions – The case of Pakistan

The oldest spate irrigation structure made 1750 BC in
Yemen – Also called Queen Sheeba Structure

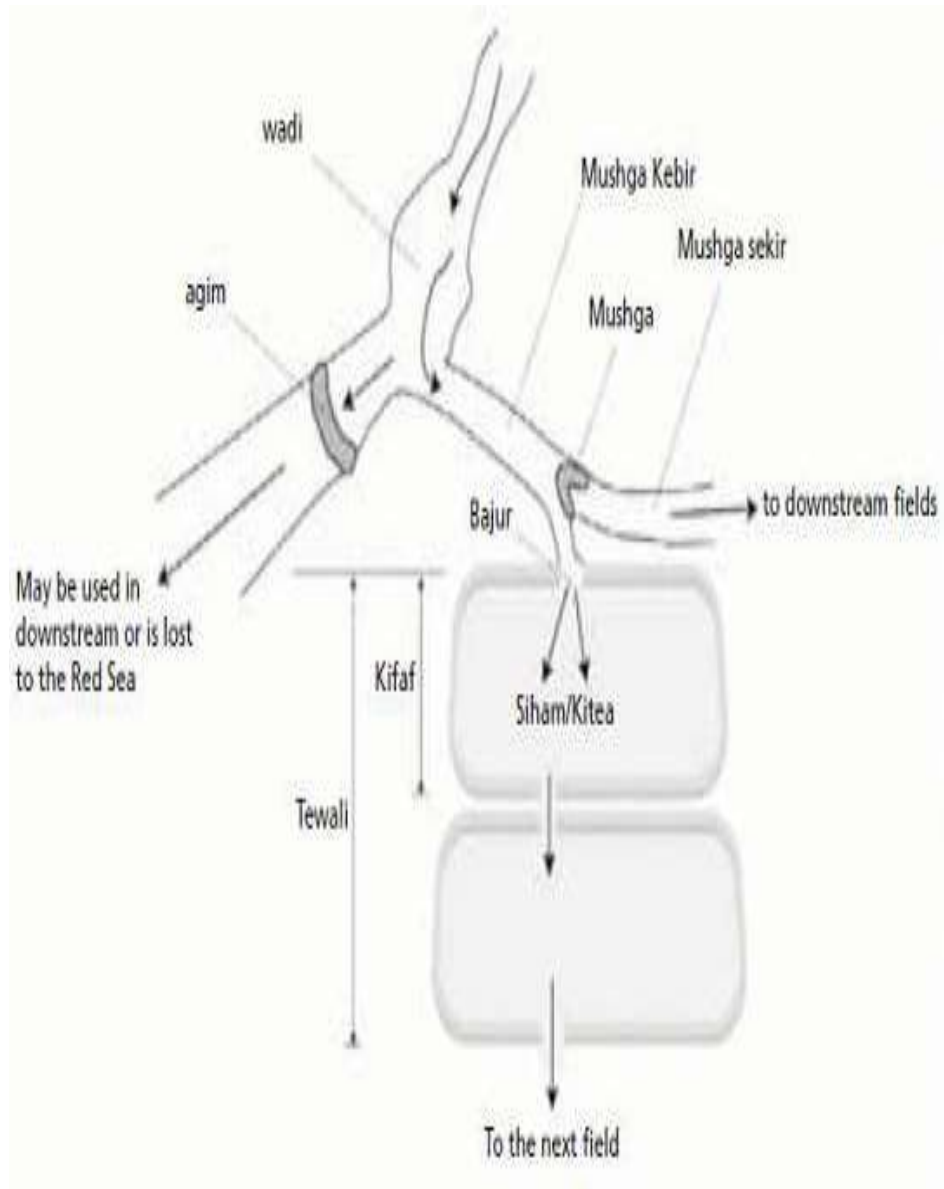


A Wadi Rima Spate

Water level record - Mishrafah March 1981



Hydrological statistics based on upstream gauging stations (peak flow, base flow, flow volumes) may not be completely applicable to the diversion sites





From Presentation by H.E. Ms. Phoeurng Sackona, Minister of Culture and Fine Arts, Cambodia at International Symposium on Water and Culture, GRIPS in February, 2020



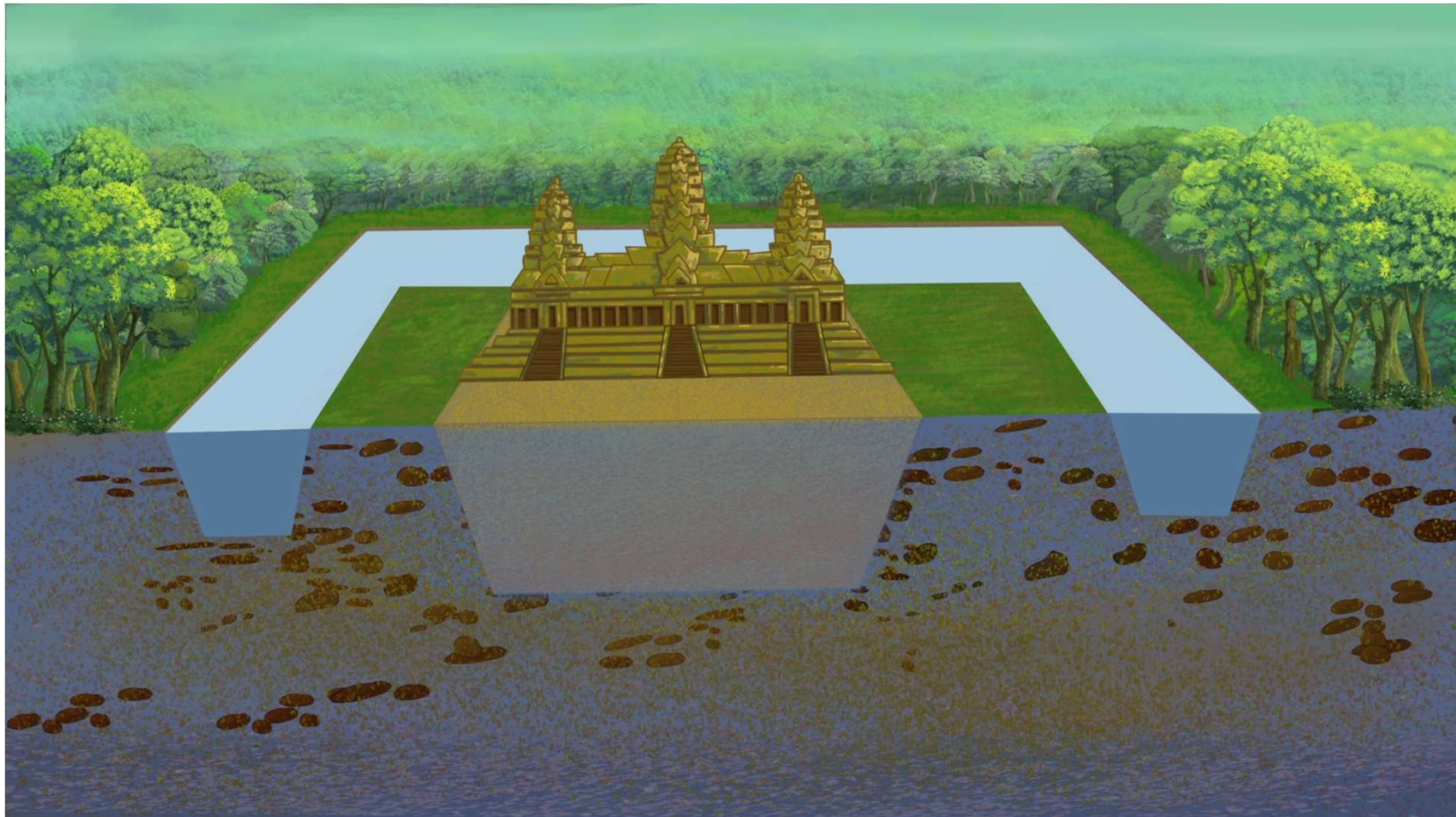
Monuments, Water & Forest in Angkor Park



Selection and Order of slides by Kenzo Hiroki

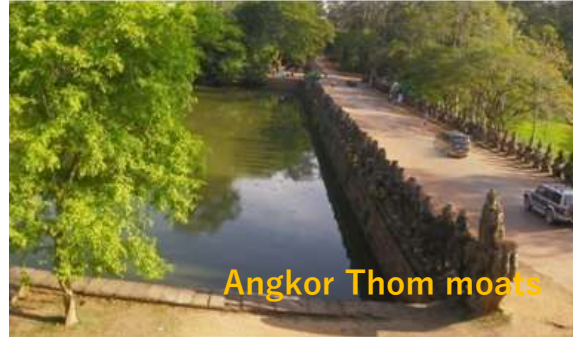
From Presentation by Minister H.E. Ms. Phoeurng Sackona,
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The Architectural Concept of Angkor Park



Angkor in Water

The Temple moats and the Baray



- West Baray (11th century)
- North Baray (12th century)



The North Baray project has four main objectives:

- ❖ Research on the Ancient Hydraulic System that was built in the 12th century and dry up in 16th century.
- ❖ Restore historical cultural landscape and improve access for visiting.
- ❖ Bring more water for the Angkor park community and shows them a model of cohabitation with nature and temples.

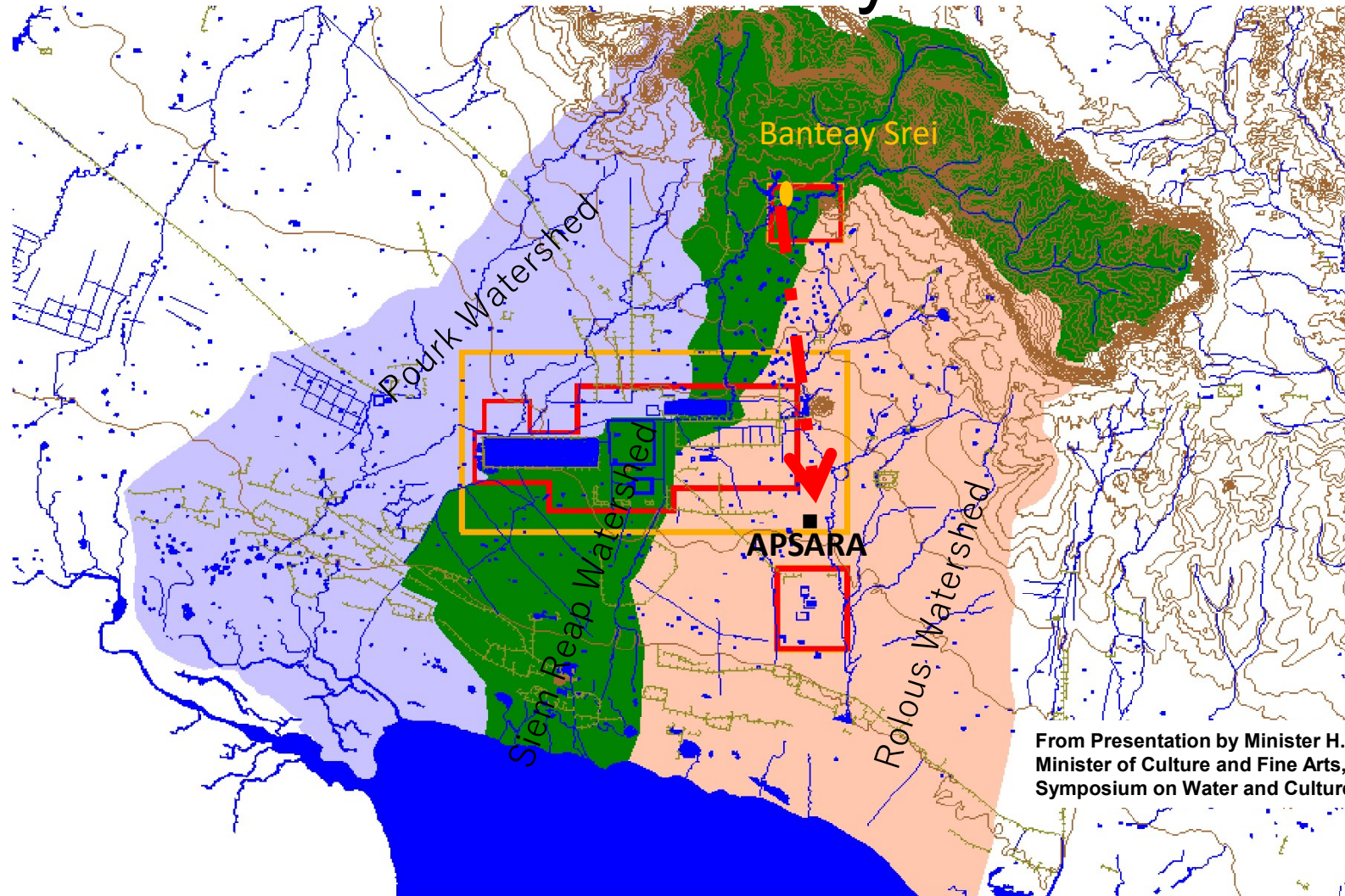


Flood in 2011

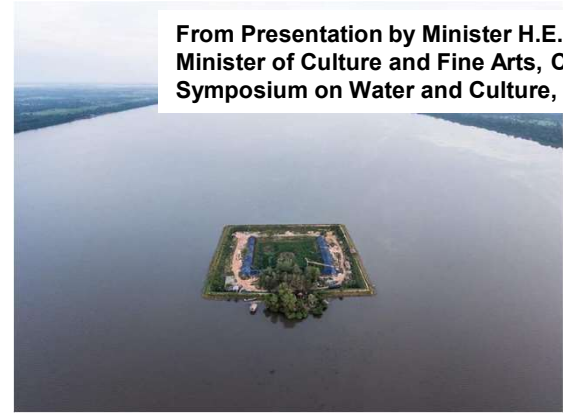


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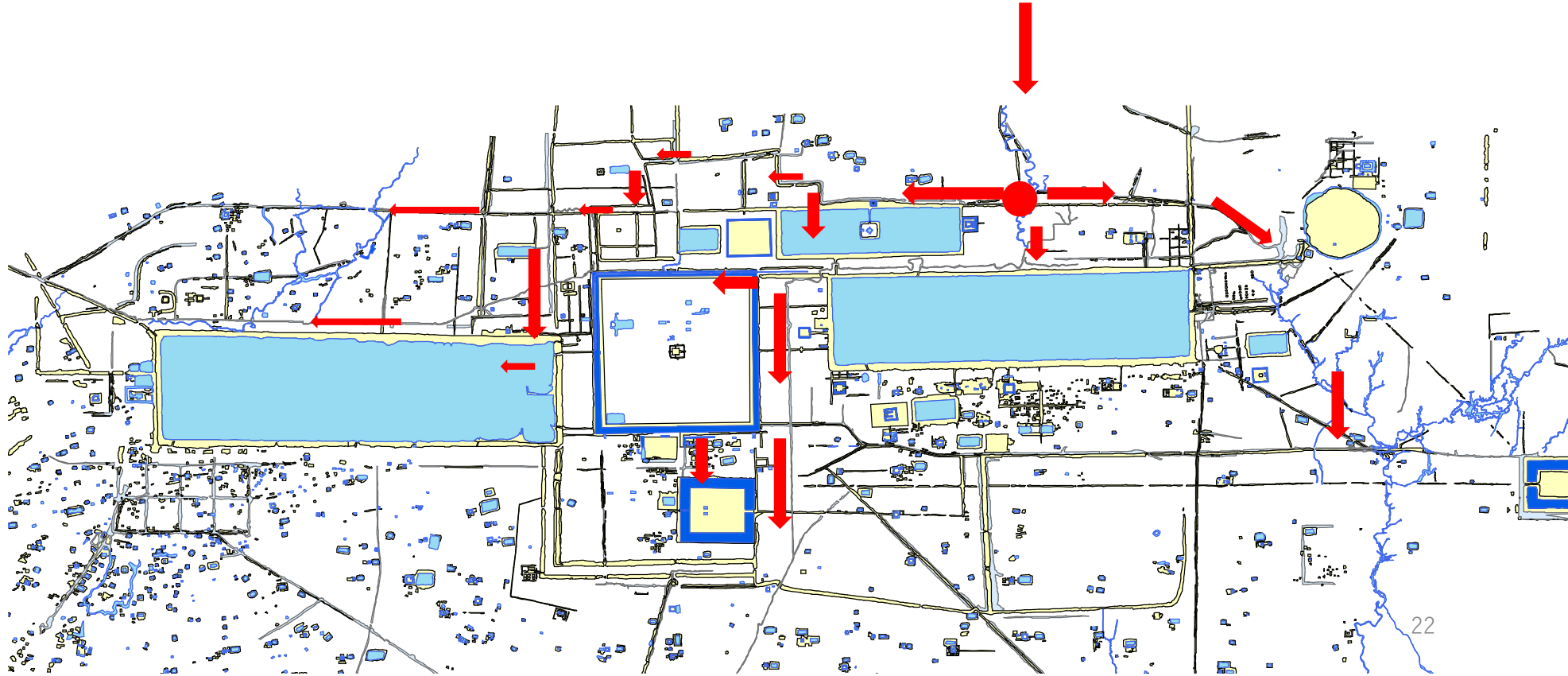
Flood Control and Management with understanding of ancient water system



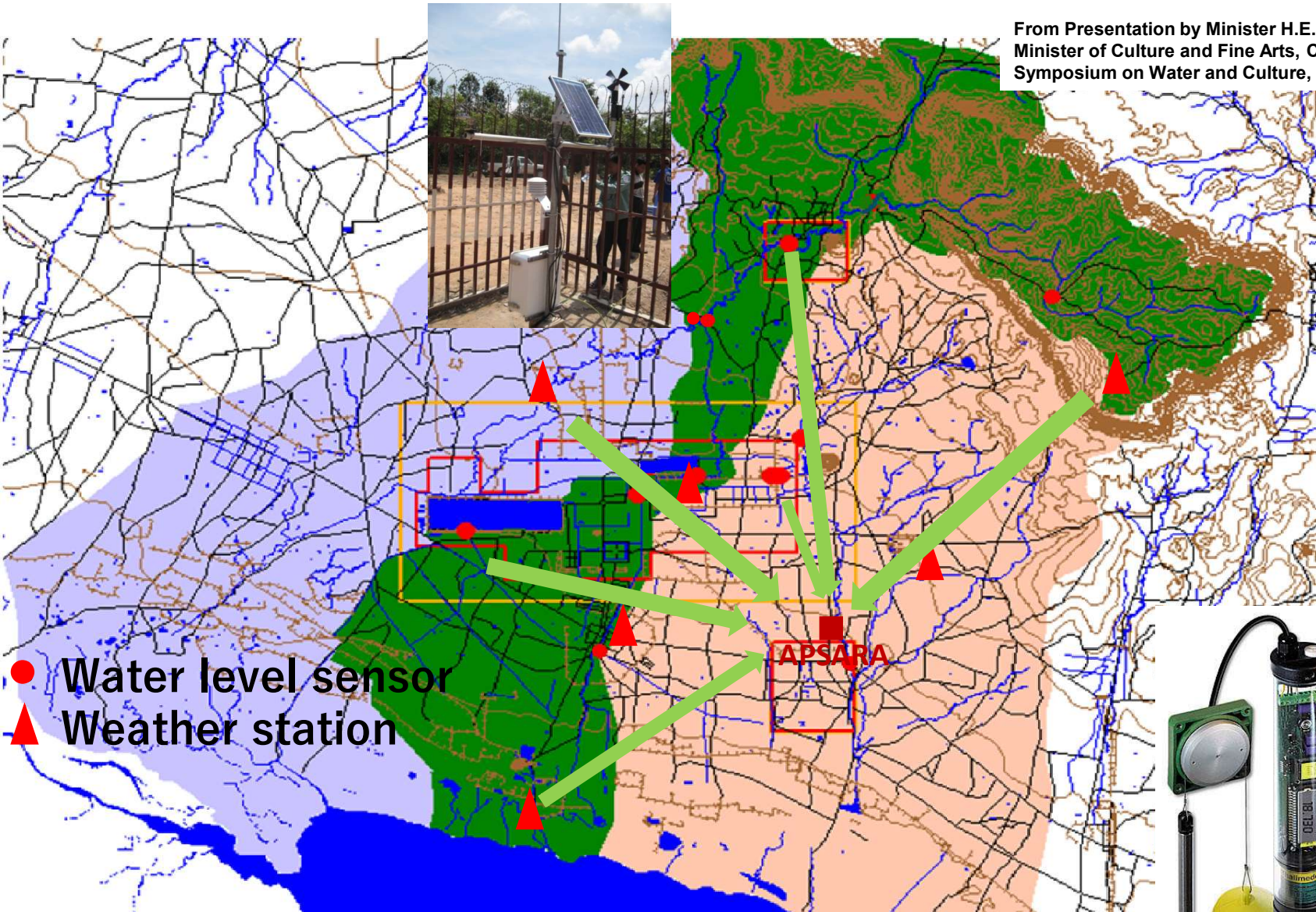
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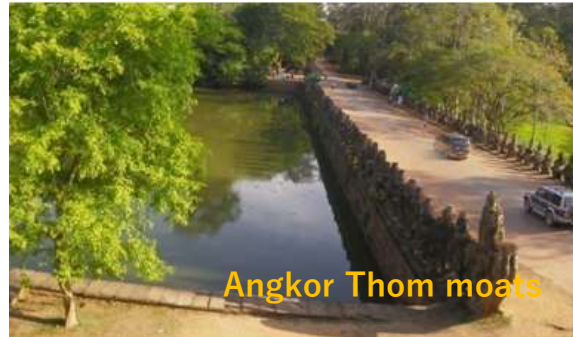


- Water level sensor
- ▲ Weather station



Rehabilitation of Angkor Water Network

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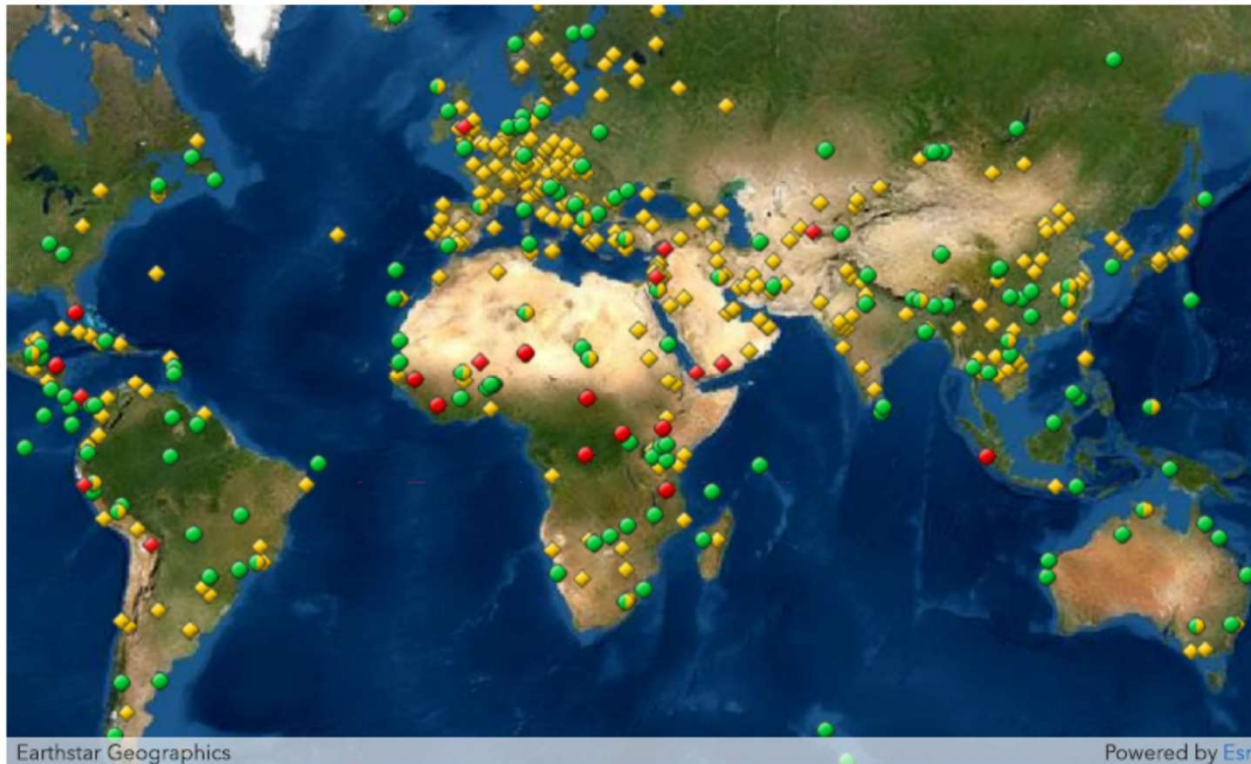
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Creating World Heritage “Water and Disaster” Database

Water, Disaster and World Heritage

- There are at least 485 water-related World Heritage sites out of 1121 sites in total
- Out of 485 sites, 303 are cultural, 156 natural, 22 trans-boundary, 24 in-danger, and 26 mixed
- There are 61 directly-disaster-related World Heritage sites. There will be much more if searched more deeply
- There should be much more water and disaster related World Heritage Sites if you look closer

Interactive Map - UNESCO World Heritage Centre



World Heritage List

The World Heritage List

Legend

World Heritage “Water and Disaster” Database

Background

- Rise and fall of civilization is deeply related to disasters, particularly water-related disasters. DRR has been always foundation of stable governance of countries and regions.
- By learning from disaster-related history and experiences on heritage, countries and people can be better prepared for disasters in the future.
- Disaster Risk which is \mathcal{F} (hazard, exposure, and vulnerability) cannot be even fathomed without knowing human relations with disasters. Despite this, disaster culture has not been systematically examined in scientific manners.
- Systematic comparison of human relations with water and disasters will help identify innovative models for better human interaction with disasters.
- Creation of fact-finding database on world heritage with focus on “water and disasters” will give us a powerful tool to analyze, compare and learn on water and culture

Cherry blossom tree line along the tsunami footprint

- Activities to plant cherry blossom trees along the border line which the 3.11 tsunami reached
- Not to forget how far tsunami came inland for generations to come



➔ People's efforts to turn historical lessons into better preparedness continue not to repeat the tragedy

Dear facilitators,

**Let us learn from history and heritage
to save the people and society from threat
of disasters in future**

Our culture is the foundation of our actions

Thank you

Jatiluwih Rice Terraces



Subak : the UNESCO World Heritage Cultural Landscapes (2012)

Picture: Imacim