

Visualizing the Mighty Mekong

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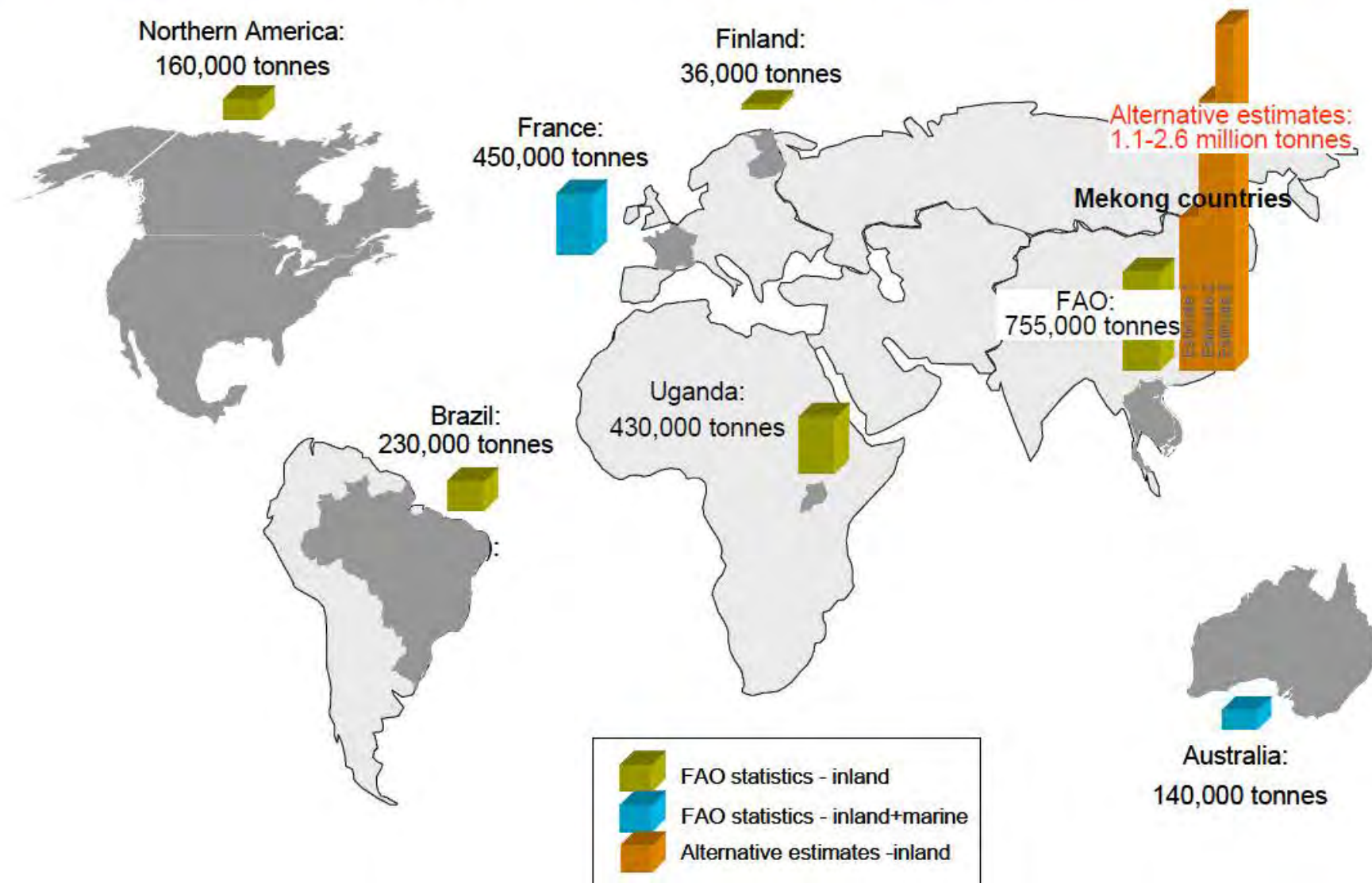
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Washington, DC

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Figure 8: Comparison of fish production in the Mekong and in other countries worldwide.



Source: FAO statistics: 2005-2007 average. Brazil, Uganda and Finland are the countries with the biggest inland fisheries in South America, Africa and Western Europe respectively. Alternative estimates for the Mekong correspond to the 3 main assessment approaches (wetland productivity, fish consumption and catch



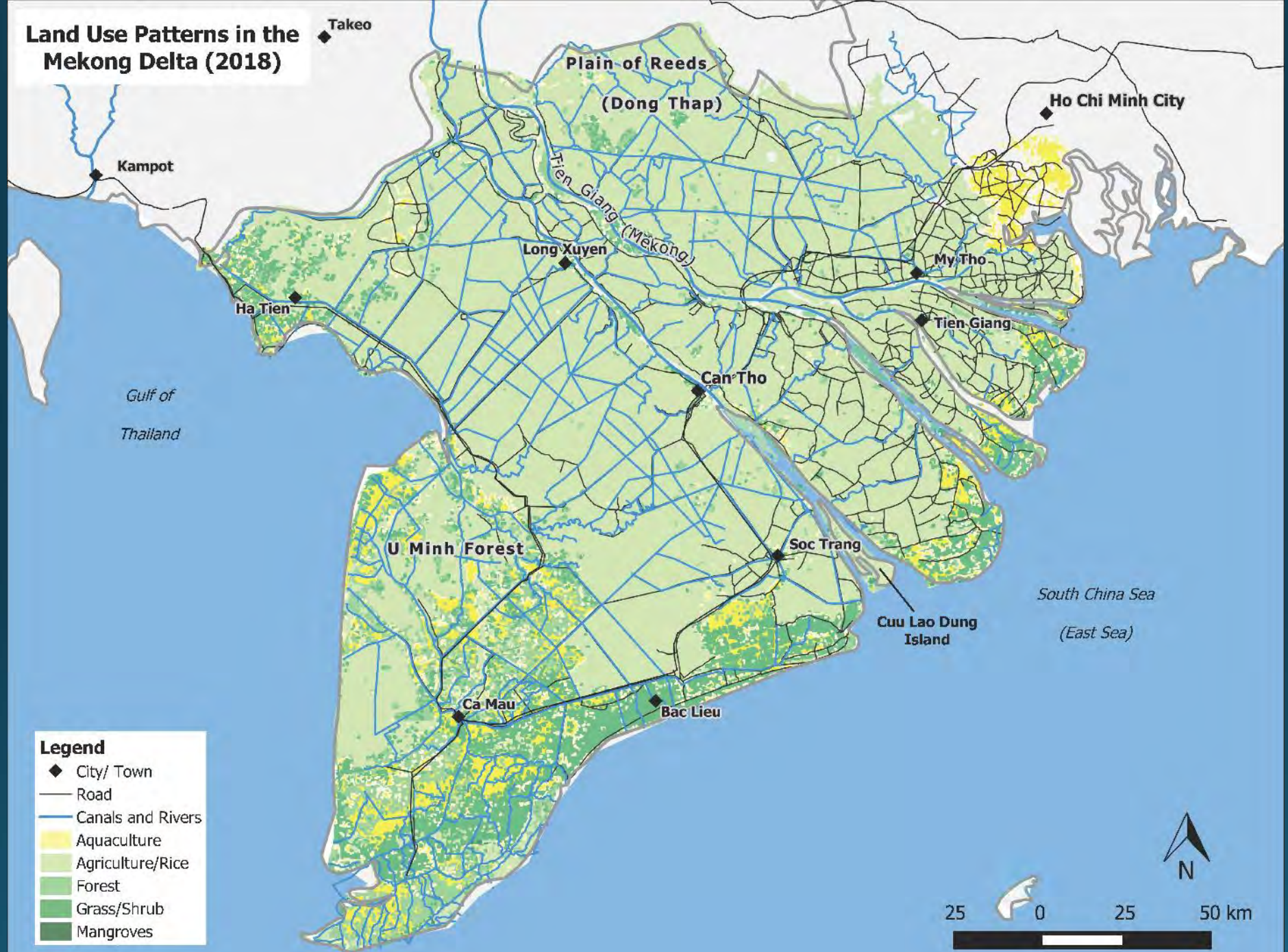


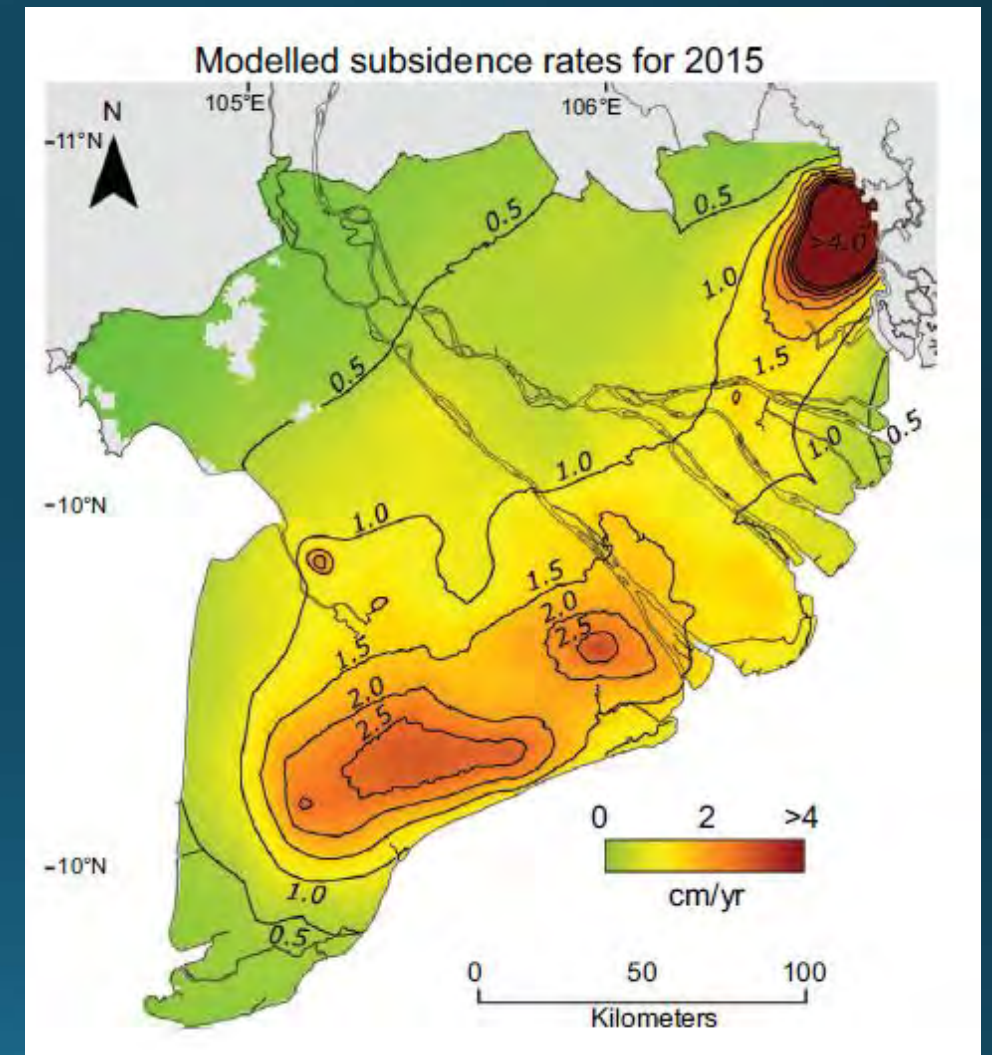
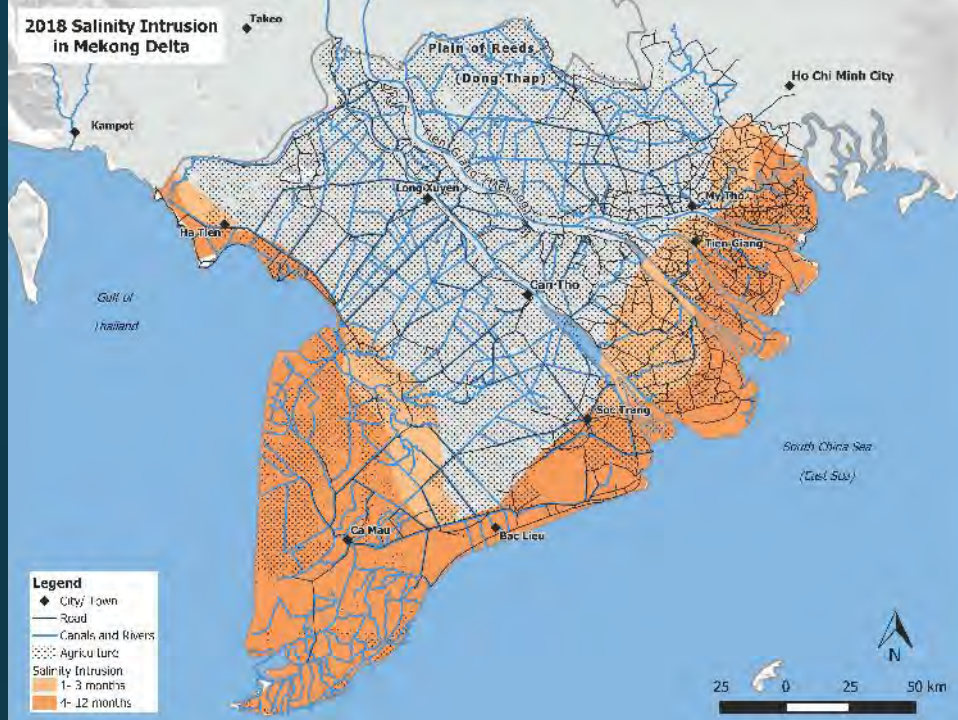
TONLE SAP EXPANSION 5X AREA 60X VOLUME



- Most biodiverse after only the Amazon, with an estimated 900 fish species
 - 200 of these nurse in the Tonle Sap
 - At least 103 species are long-distance migrants
- Tonle Sap Lake floods to approximately 5 times its size during the monsoon season
- Provides world's largest fish catch (20%):
 - Fun fact: > million tons annually
 - Less fun fact: North America lakes and rivers (160,000 tons)
 - Migratory species represent about 40% of total fish yield (800,000 tons per year)
- Major source of protein throughout the basin
 - Provides 60-80% of animal protein in Cambodia

Land Use Patterns in the Mekong Delta (2018)





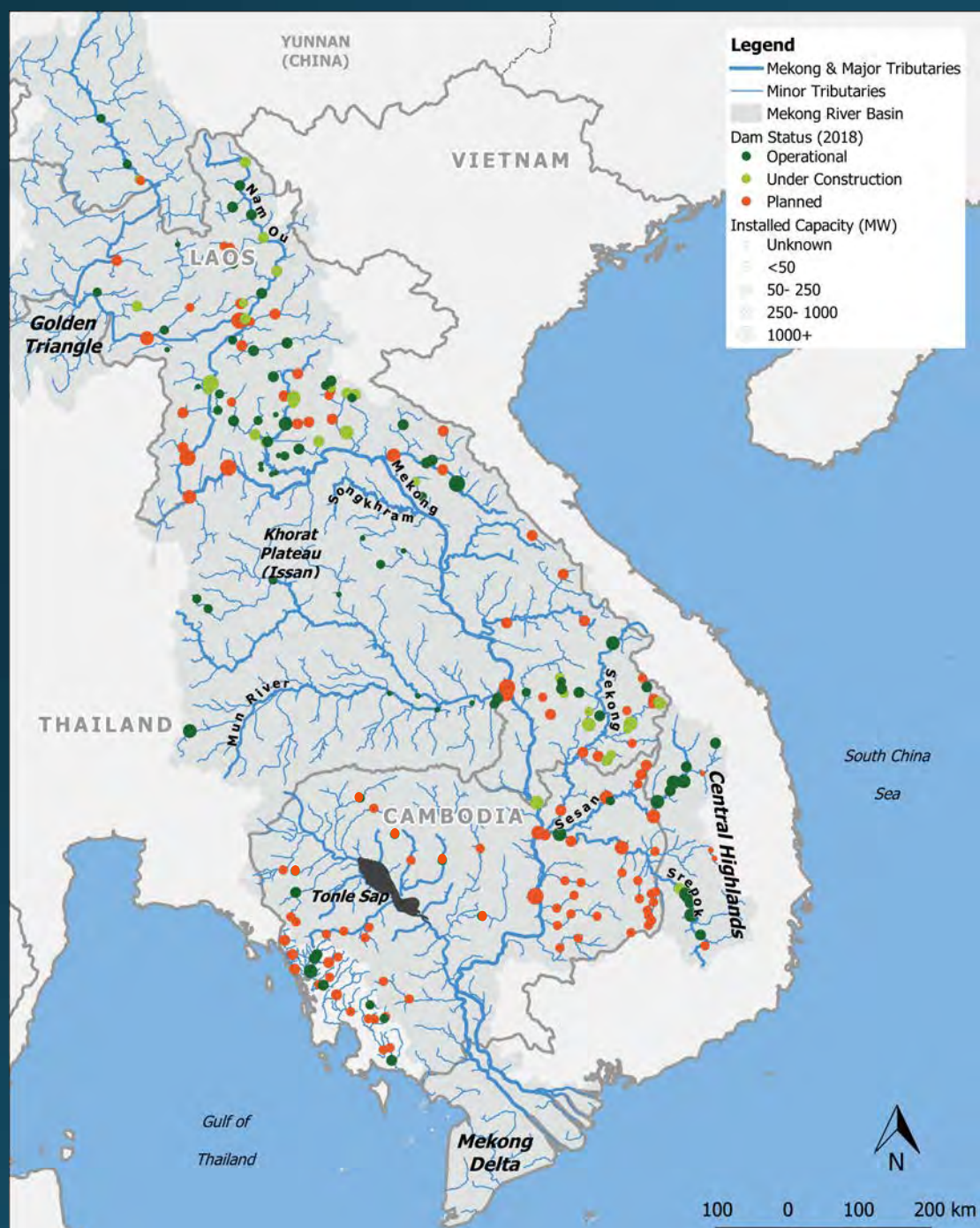


Xiaowan Dam

4200 MW

3rd highest dam in world

Storage = $\frac{1}{4}$ Chesapeake Bay

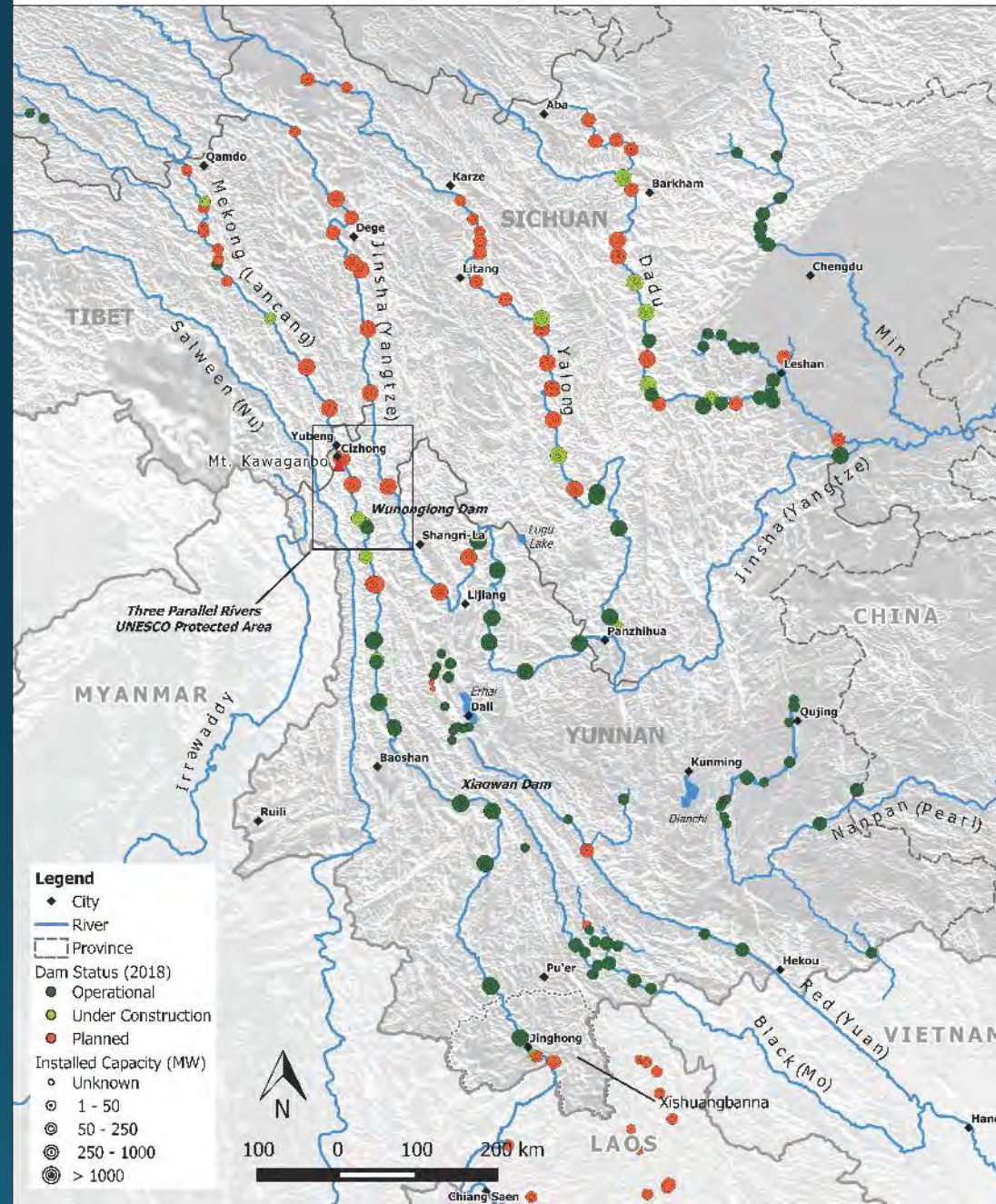


B Eyler, *Last Days of the Mighty Mekong*, Zed Books, 2019



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Dams in Yunnan and Western Sichuan Province (2018)



China's Upper Mekong Dams

Number of Dams: 18

Already completed: 11

Under construction: 1

Final completion: 2035

Single Developer: Hydrolancang

Power generation: 31,460 MW

Total cost: \$17.3bn USD

Relocated: >150,000

Total reservoir size: >50 km³

Already at excess capacity

\$15mn losses per day in 2015

2016 Yunnan excess=300twh

Map: 130 dams, 180 GW

86 built/42 const/52 planned

China's Upper Mekong Dams as of July 2020

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Dam name	MW	Water storage capacity (m ³)	Status
Linchang	72		planned
Yuelong	129		planned
Kagong	240	81,400,000	planned
Rumei	2100		planned
Guxue	1700	7,752,000,000	planned
Gushui	2600	3,912,000,000	planned
1Wunonglong	990	284,000,000	operational
2Lidi	420	75,000,000	operational
Tuoba	1400	3,602,000,000	under construction
3Huangdeng	1900	1,613,000,000	operational
4Dahuaqiao	900	293,000,000	operational
5Miaowei	1400	660,000,000	operational
6Gongguoqiao	900	120,000,000	operational
7Xiaowan	4200	15,000,000,000	operational
8Manwan	1750	920,000,000	operational
9Dachaoshan	1250	940,000,000	operational
10Nuozhadu	5850	21, 749, 000	operational
11Jinghong	1750	249,000,000	operational
Ganlanba	155		planned
Mengsong			cancelled
total operational	21310	41,903,000, 000	
total planned	5641		



Wunonglong
27.93° N, 98.93° E



Lidi
27.83° N, 99.04° E



Huangdeng
26.56° N, 99.12° E



Dahuaqiao
26.31° N, 99.14° E



Miaowei
25.85° N, 99.17° E



Gongguoqiao
25.59° N, 99.34° E



Xiaowan
24.70° N, 100.09° E



Manwan
24.62° N, 100.45° E



Dachaoshan
24.02° N, 100.37° E



Nuozhadu
22.64° N, 100.43° E



Jinghong
22.05° N, 100.77° E



The Lower Mekong

120 dams completed
200+ dams under construction or planned

Regional/transboundary landscape

Uneven development

Laos: 18,000 MW potential

Cambodia: 10,000 MW potential

No coordination

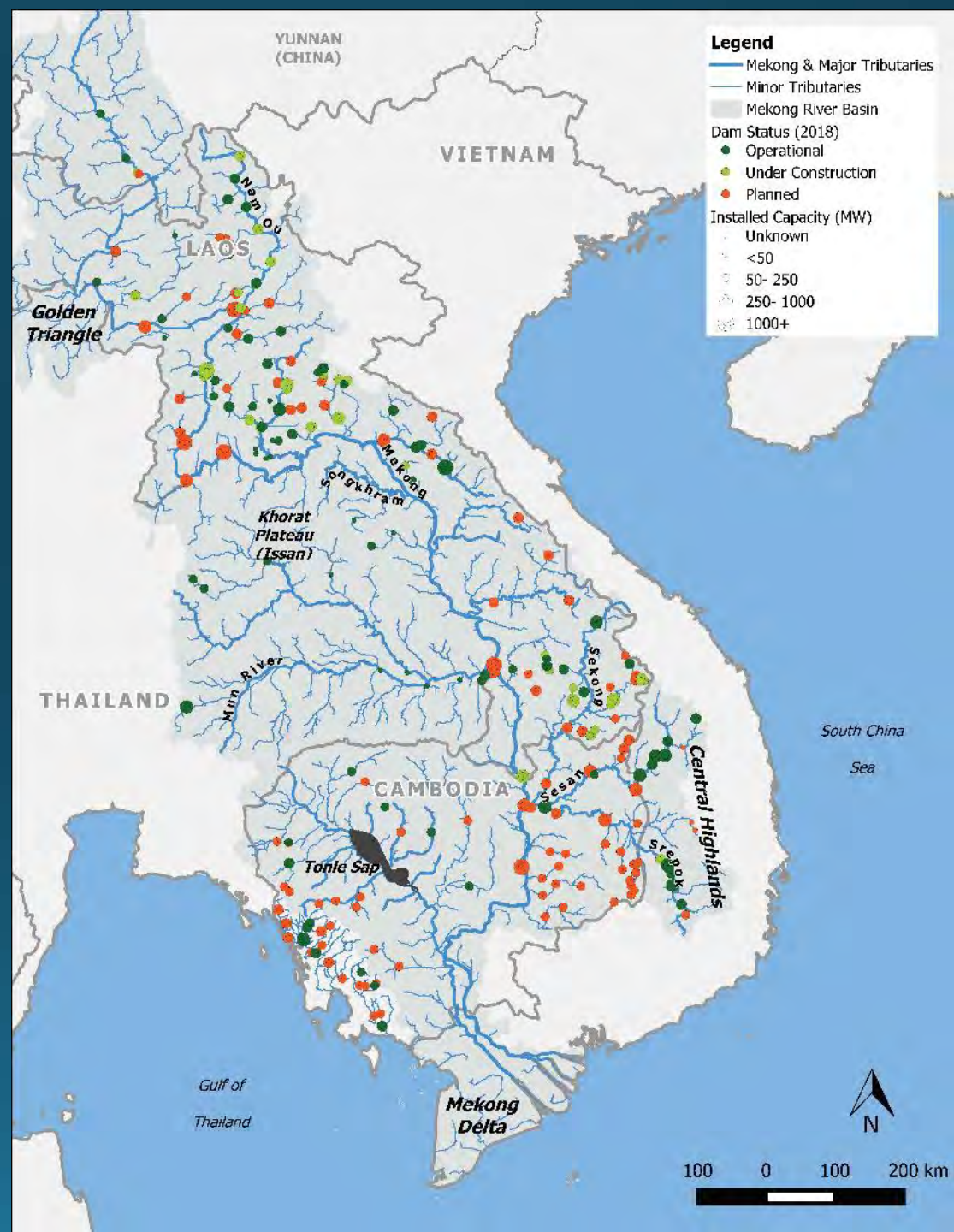
BOOT projects – IPP/PPP

Project-by-project approach

China invested in >40 dams + many more
MOUs

Poor mitigation attempts

Induced poverty in resettled communities

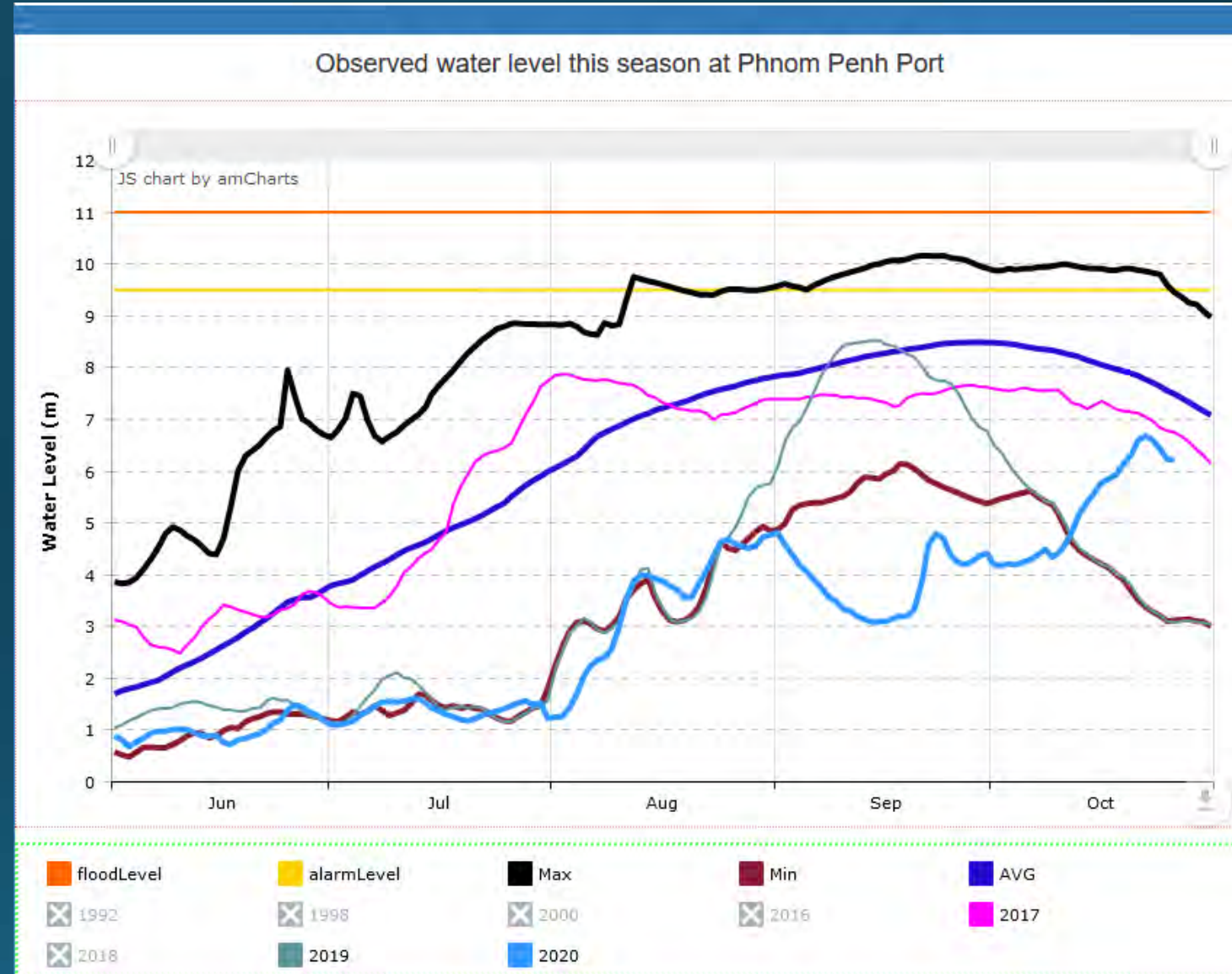


Mekong Basin Hydropower Status to Date

Status (# projects)	China	Thailand	Lao PDR	Cambodia	Viet Nam	Total
Completed	11*	9	67	4	16	102
Under Construction	1	0	47	1	0	64
Inventory/Pipeline	7	0	286	47	0	374
total	18*	9	397 (257 <15MW)	52 (39 <15MW)	16	540

Status (MW capacity)	China	Thailand	Lao PDR	Cambodia	Viet Nam	Total
Completed	21310	780	8,137	414	3213	31382
Under Construction	0	0	2,830	80	0	6709
Inventory/Pipeline	5796	0	15,491	7,864	0	31871
total	27106	780	26,458 (2101 MW < 15)	8,358 (242MW<15)	3213	69962

- Major droughts in 2016, 2019, 2020
- Climate change models largely indicate that the monsoon season will be shorter and that rainfall will be more intense
- 2019-20 set records for lowest ever recorded levels in the Mekong
- Policymakers in Thailand and Cambodia are already exploring options for groundwater pumping, pushing farmers to avoid planting rice, and other measures to conserve water in 2020

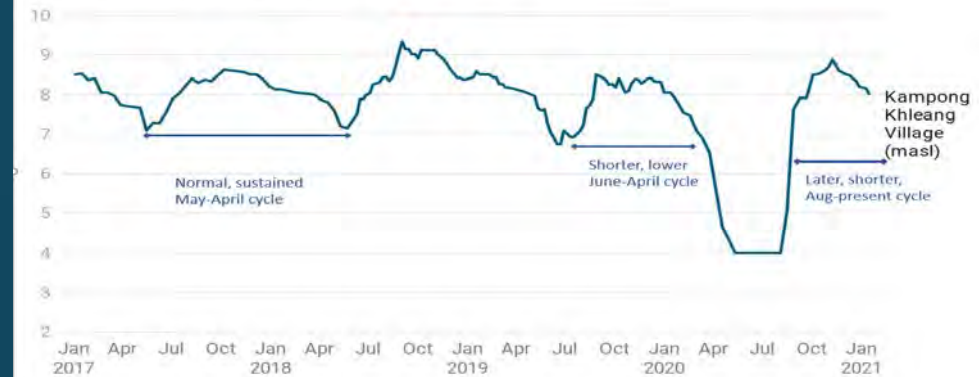


How will this impact the Tonle Sap?

- Tonle Sap expansion
 - Normal: June-December
 - 2019: August-November (later and shorter)
 - 2020: October-December (much later, much shorter)
- From the field:
 - Fish catch this year down more than 80%
 - Some fish species important for food simply didn't show up this year
 - Income drop from low fish catch—combined with year on year decrease in tourism and this year's serious dengue epidemic—is driving outmigration to local labor markets

Water Level (masl) at Kampong Khleang Village

January 2017 - January 2021



Source: Mekong Dam Monitor • Created with Datawrapper

August monsoons bring the Mekong closer to normal levels, but compared to 2017 (normal flood year) Tonle Sap levels are very low. Monsoons also decrease availability of clear satellite images this time of year.

August 22, 2019



August 22, 2017



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planet





Thank you &
Discussion

