

Climate Change - impacts and adaptation of Hoi An heritage city, Viet Nam

ベトナムの世界遺産都市ホイアンにおける気候変動の影響と適応



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Impact of Climate change in Vietnam (reported by MONRE,2022)

- ◆ 1 of Top 5 countries/nations most vulnerable to climate changes.
- ◆ If sea level rises by 1m, Vietnam will lose 5% of its land area, 11% of its population will be affected, 7% of agricultural activities will be affected, and 10% of GDP will be reduced.
- ◆ Most vulnerable regions: Red River Delta and Mekong River Delta
- ◆ Most vulnerable sectors: Agriculture, Water Resources, Transport, Trade, Education...
- ◆ Most vulnerable group: the poor, women, children, and ethnic minorities...
- ◆ Manifestations of climate change in Vietnam: increased strength and frequently of extreme weather, natural disasters, rising sea levels, coastal erosion and landslides.

世界でも気候変動に脆弱な上位5か国に入る、海面が1メートル上昇したらGDPの10%が影響を受ける、最も脆弱な地域は紅河デルタとメコンデルタ、最も脆弱な分野は農業、水資源、交通、貿易、教育など。女性・子ども・少数民族の人々などがもっとも影響を受ける。



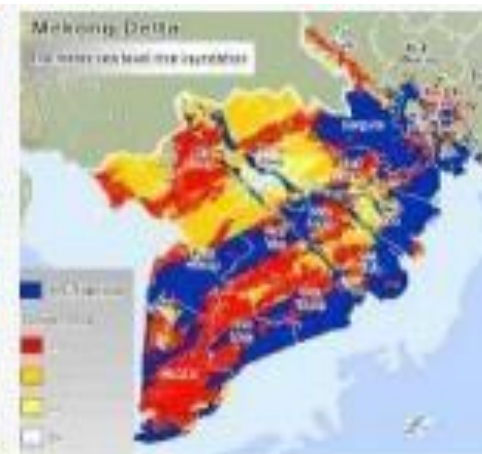
Flooding



Drought



Storm



Salinization



Climate change impacts in Hoi An heritage city

世界遺産都市ホイアンにおける気候変動の影響

- Seagrass are destroyed and coral are bleached
- Loss of biodiversity
- Big storm combined with flood are imparting Hoi An ancient town
- Disease spreads after each storm and flood.
- Droughts, intense heat waves
- Sea level raise
- Beach erosion (# 7.5 km), landslide.

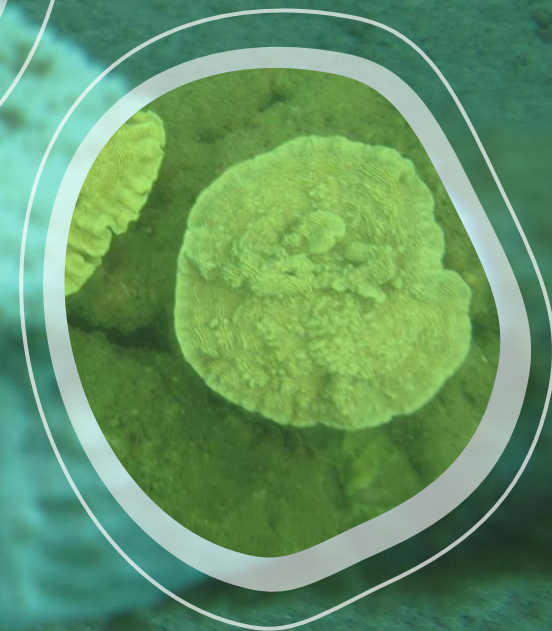
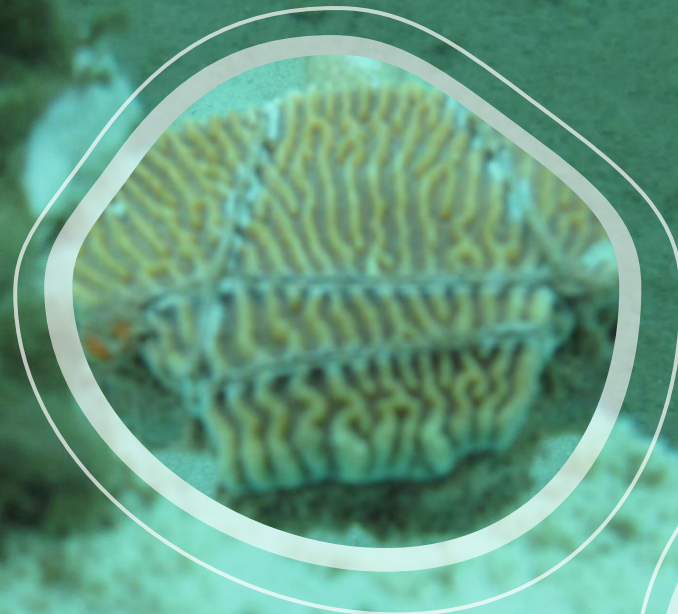
海草が壊滅、サンゴが白化、生物多様性の喪失、台風による洪水による被害、洪水のあとに発生する感染症、干ばつ、暑熱、海面上昇など

Impact from the mainland to Cu Lao Cham island : Pollution, sediment, etc



Coral bleaching
(Cu Lao Cham – MPA, 2022)

サンゴの白化

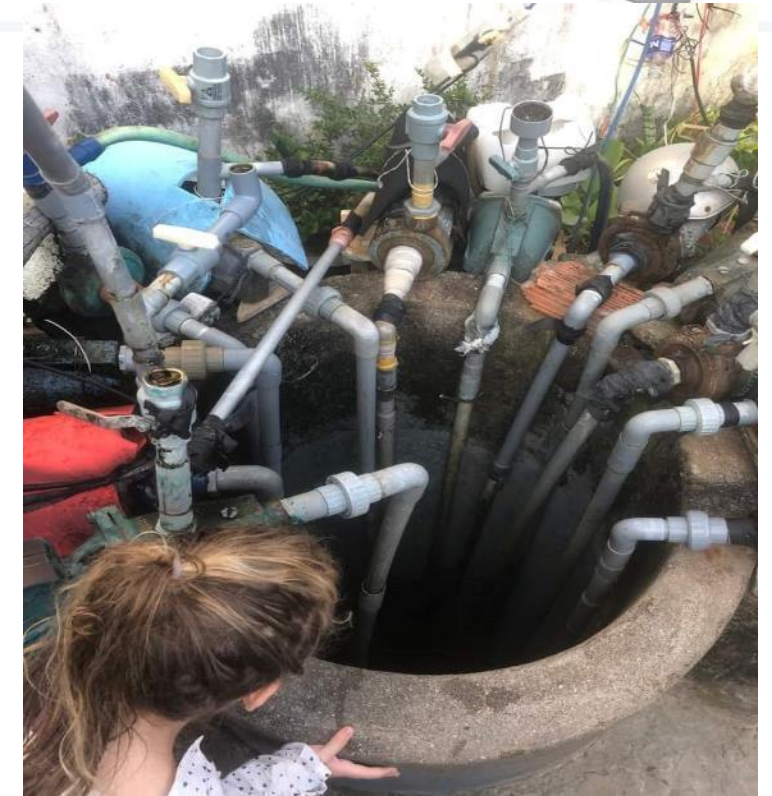


VIET NAM CLIMATE CHANGE ADAPTATION

ベトナムの気候変動・適応分野の取り組み

- ❑ Collecting climate-related data, vulnerability, impact and adaptation options through scientific research and development of tailored adaptation plans
- ❑ Public & private climate-related services: knowledge and information dissemination, consultation, management and training (from specialized agencies)
- ❑ Developing a database of adaptation knowledge, best practices for training, capacity building for the community, actively investing in study & research for the most efficient & feasible adaptation options
- ❑ Learning from other localities and national best practices
- ❑ Capacity building for relevant stakeholders

気候関連のデータの収集、脆弱性・影響・適応オプションの検討と適応計画の策定。官民による気候関連サービスの提供。適応分野での優良事例データベースの構築・研修・能力向上。国内の優良事例や他都市の取り組みから学ぶ。



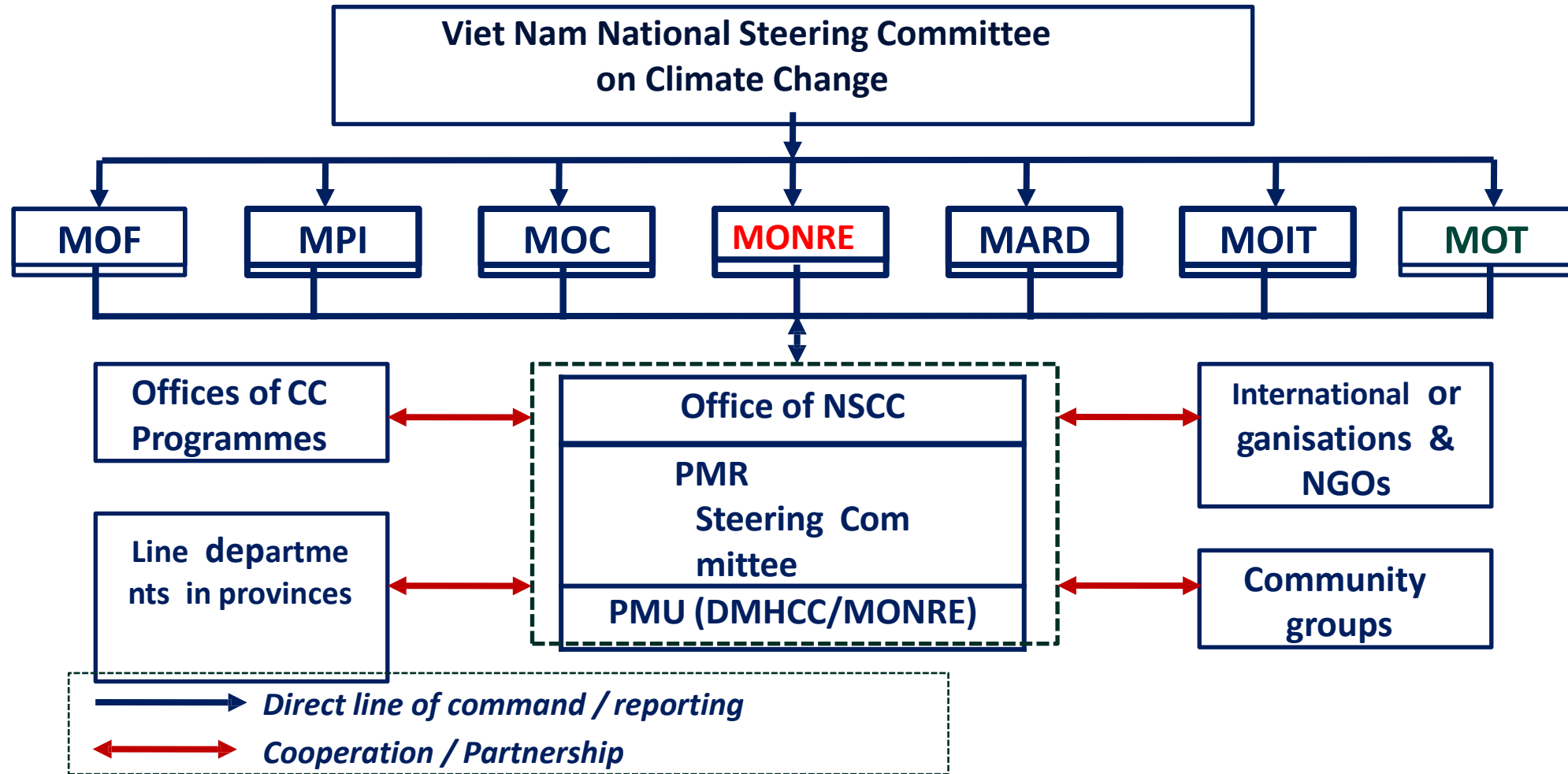


More than 3/4 of the Hoi An ancient town area will be submerged in water if the sea level rises by 1 m (scenario to 2050).

ホイアン古都の4分の3以上の面積が2050年までに海面上昇によって1メートル浸水すると予測

Institutional arrangements

ベトナムにおける気候変動の取り組み機構



The climate change adaptation strategy of Hoi An heritage city

ホイアン市の気候変動適応戦略

1. Strengthen communication, raise awareness about the impact of climate change

2. Strengthening protection of the ancient town in the storm season combining floods

3. Create financial resources, build carbon credits

4. City planning according to sea level rise scenario

5. Mainstreaming climate change into the development planning and policy making

6. Solutions for each sector or local

7. Harmony between conservation and development

8. Domestic and international cooperation



Hoi An city is trying to restore the beaches

ホイアンでは海岸線の修復につとめている





Strengthen the protection of important ecosystems of the biosphere reserve including: primary forest, coral; seagrass and mangrove forests at the Thu Bon estuary

トウボン川河口の森林・サンゴ礁・海草・マングローブ林の保護を強化

3-layer ecological embankment will be used instead of hard concrete embankment

コンクリートの護岸に代わって環境にやさしい3段階の堤防をつくる



Potential for cooperation on climate change adaptation with Japan, especially technologies to be introduced at EGM

環境技術専門家会議で紹介される企業との連携の可能性

- Mitigation and adaptation to climate change;
- Marine/ocean waste management;
- Environmentally sustainable cities;
- Water and air pollution;
- Environmental Protection;
- Ecosystem and biodiversity monitoring and conservation
- Low carbon technology and carbon credit program;
- Renewable energy
- Other fields of environmental protection and improvement

気候変動の削減と適応、海洋管理、環境持続可能な都市、水や大気の汚染、生物多様性モニタリング、低排出技術、カーボネクレジットプログラム、再生可能エネルギーその他



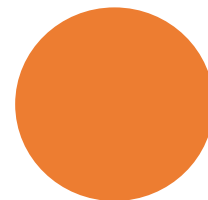
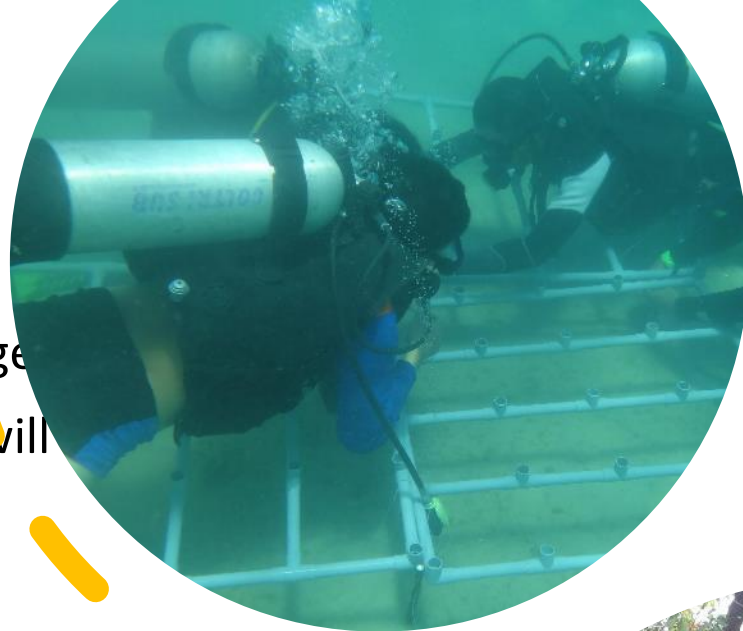
Cooperation agreement btw the MONRE (Vietnam) and the Ministry of Environment of Japan (2020)

Conclusions

結論

- Vietnam is a country heavily affected by climate change
- By the end of the 21st century, a sea level rise of 1m will cause the loss of 40% of the area of the Mekong River Delta, the coastal plains and the Red River Delta.
- Agriculture will be the most affected sector
- 3/4 of the area of Hoi An ancient town will be submerged in water if the sea level rises 1 meter
- Vietnam needs to quickly develop a detailed scenario of 1m sea level rise as a foundation for developing resilience activities at national, sectoral and local levels.
- Promote international cooperation, especially in the field of science and technology, to improve the resilience of ecosystems and people to climate change.

ベトナムは最も気候変動の影響を受ける国、21世紀末までに海面が1メートル上昇すればホイアン古都の4分の3は浸水する。1メートル上昇のシナリオを早急に組み立てる必要がある。技術分野での国際協力が必要。



Thank you for your attention!

