

Multi-year Expert Meeting
on Transport, Trade Logistics and
Trade Facilitation
8th Session

**Climate Change Adaptation for Seaports
in Support of the 2030 Agenda
for Sustainable Development**

27–28 October 2020

**Cases of Maldives and Male'
Commercial Harbor**

Presentation by

Ms. Aishath Shimla
Assistant General Manager
Port Authority, Maldives

Cases of Maldives and Male' Commercial Harbor

Aishath Shimla

Maldives Ports Limited



1

Maldives and climate vulnerability

- Maldives is formed around 26 natural ring like atolls just across the equator. Country is made up of about 1,190 coral islands, population of around 515,696 people dispersed across 197 islands.
- Maldives is the lowest county in the world and the lowest point is 1 meter above the sea level. an average natural ground levels of 2.4 meters and 1.5 meters above sea level.
- According to World Bank reports climate change severely and threatens the existence of the Maldives as well as diminishing existing human capabilities on these islands. with "future sea levels projected to increase in the range of 10 to 100 centimeters by the year 2100, the entire country could be submerged".
- Its projected Maldives could be almost completely inundated by about 2085.

2

Economy and livelihood depend on ports

- Heavy import dependency introduces two main types of climate change related risks to food security in Maldives. Firstly, any climate change related impacts on food production in those countries/regions will directly impact on food security. *Secondly*, disruption to transportation of food due to extreme climate events would put a halt within the country.
- Numerous far-flung atoll communities access to goods and economic opportunities depend on sea transportation, Climate change affects the coastal transport infrastructure and hinterland transportation, without well-functioning and climate- resilient port entire logistic services of Maldives may come to an end.
- The principle activity of economy, tourism depend on the “sun, sea and sand” which is vulnerable to rising sea levels, storm surges, coastal erosion and coral bleaching.

3



- Male' Commercial Harbor (MCH) consists of a main berth 101 m in length with an alongside depth of 9.5m.
- All port activities, from docking, clearing all the way to storage are provided from the MCH facility.

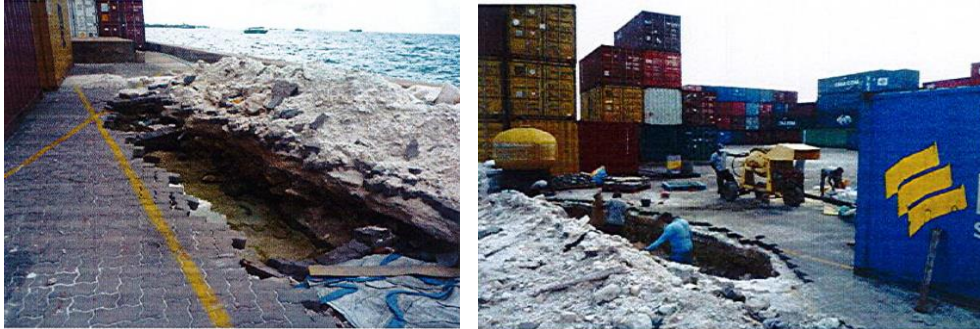
- It has been estimated that approximately 40 percent of imported goods are subsequently re-shipped to consumers on the outer islands via the markets of Male', and 90 percent of this domestic interchange currently occurs at Male' North Harbor which is adjacent to MCH.
- Due to limited market size and to physical constraints on accommodating large vessels, the outer islands are served by small vessels with capacities of 50 – 250 tons.

4

Climate change impact on Maldives-Effects on the port

• Coastal Inundation

- Temporary coastal inundation: this extreme occurrence did not take days it was sudden.
- MCH faces the issues of sinking parts of port ground area. Heavy machinery and cargo weight add more impacts to the sinking part of the ground.



5

- Island *fainu* 200 years old trees stood till 2019. It's said to be the island was protected from 2004 Tsunami because the trees at front beach. Within **one and half MONTH** what could have happened to all the trees fell into the mercy of sea.
- People of island believe the reason for such disaster could be due to **construction of local harbor** and design of the harbor. Although, trees fell almost 3 and half years after local harbor project.

➤ **Evident that something alarming happening and its beyond our control.**



6

- The islands of Maldives are known to get eroded and recover naturally
- “ Most of the time, harbor construction projects are conducted without not so much as a glance on the impact it can have on the environment. The end result is that sand washed away during the dry Monsoon not being deposited back to the original area during the wet Monsoon. It either gets deposited inside the harbor or is lost to the sea forever in some islands. Dr. Ibrahim from environment protection Agency.
- Kulhudufushi Regional Ports berth is too shallow due to the strong wave crushing the sand into the port area. The basin entrance and port berth area need occasional dredging once in every 5 years.

7

Sea level Rise

- Since the 1950s, sea level in and around the Maldives has been rising at a rate of 0.03–0.06 inches (0.8–1.6 millimeters) per year. Because of the Maldivian topography, small changes in sea level translate into extensive land inundation” .
- In 1987 and 1988 storms flooded Male’ city as a result freshwater stock diminished. This experience alarmed how vulnerable the Maldives can be to even a small rise in sea levels.
- Sea level rise causes wave agitation and swells this impact navigation and berthing of vessels. During wet season flooding in male’ and islands gets worsen, damages hinterland transportation vessels and infrastructure.

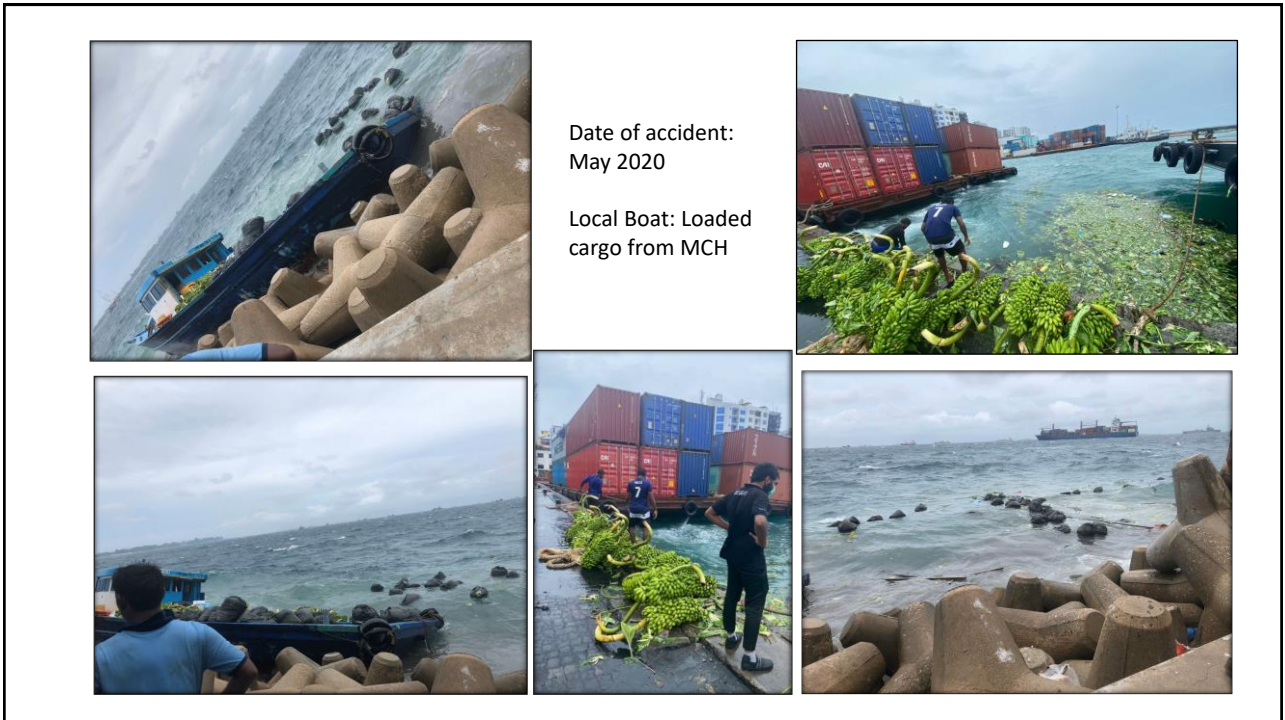
8



9

- CFF operations of MCH gets distressed and land transportation movements from male' port gets discontinued due to the high floods in wet season.
- Strong Wave distress and crashes local boats who calls port to load breakable cargoes.
- In 2005 when Hithadhoo Regional Port operations started the very first ship which call to port crashed into the port fenders due to the strong waves. it took few more construction and design works to make Port "safe shelter".

10



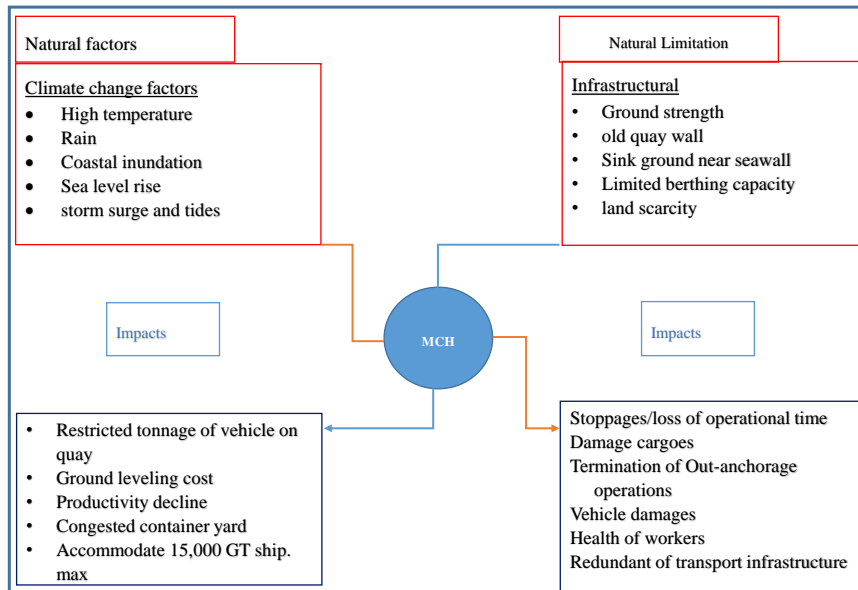
11

High Temperature

- In dry season of Maldives high temperatures requiring more and prolonged usage of air conditioners. However, Port workers who works in field it is not a possible set-up.
- For semi-labor intensive port such as MCH ship turnaround time depends on port labors. Rising temperatures affect the health of employees and their productivity.
- Container yard area gets extremely intense in dry season that cargo operation head Mr. Ahmed Inaan stated that they allow undocumented break to staffs during noon. Although It affects ports productivity.
- In MCH traditional boats from India unloads break-bulk cargo, primarily foodstuffs, these small vessels gets delayed and effect quality of food due to high temperature.

12

Port vulnerability to climate change *Critical factors and impacts*



13

Recommendations

- **Developing sector specific plan:** MCH needs to develop “climate resilience plan” sector specific to deal with climate change. Also National disaster management should work together when dealing climate change adaptation in port due to their overlapping roles. Responsible authorities should fund more environmental programs to build capacity on environmental management area, also should create awareness and educate youth and women in the field. Also regional integration in crisis management along with skill and knowledge transferring on resilience.
- **“Green port concept”** For country like Maldives which lay on equator, Solar power is an option for decarbonizing terminals and machines. The new up coming port of Maldives should address the issues of safety during flooding, ensuring safe access for both vessels and passengers, buildings, the urban water system, and greater male’ area climate.

14

Conclusion

- Climate change has brought many intense change to small local islands of Maldives and ports of Maldives. Uncertain and changing weather patterns in the form of floods and costal inundation has challenged hinterland transportation infrastructure and system of transportation. With extreme measures from global community can ease the stress projecting to small island developing states.
- Many of environmental issues core heating point is global warming and this is not an issue that one can only address and overcome.