# Sea Turtle Monitoring & and No Net Loss

Tema Port Expansion Project

# Outline

1. **Sea Turtles in Ghana & the Project Area**
2. **Identified Project Impacts (**Onshore & Offshore)
3. **Residual Impact**
4. **Offsetting Program**
5. **Offset Activities**
6. **NNL Assessment**
7. **Monitoring Plan**
8. **Potential Roles for Stakeholders**
9. **Discussions**

# 1. Major Components of TPEP

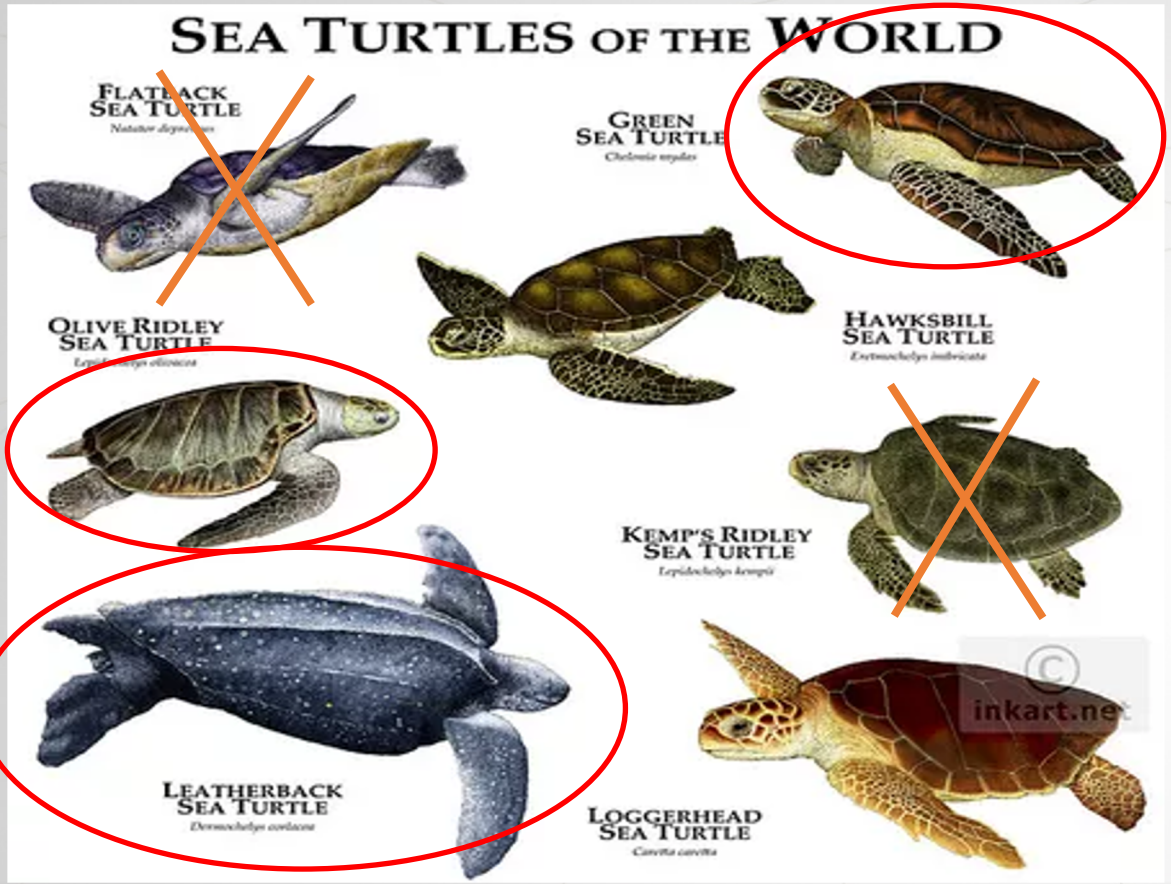
**Components of the new TPEP**:

- Construction :
  - a 3.85 km breakwater
  - a 1,400-meter quay for four berths
  - 121 hectares (ha) of yard (of which 76 ha is for container yard)

- Dredging and reclamation (7 million $m^3$ to be dredged and 9.8 million $m^3$ to be reclaimed),

- Infrastructure and buildings (operations, staff, customs, gate, workshop, backup power generation).

# 2. Sea Turtles in Ghana & the Project Area



# 2. Sea Turtles in Ghana & the Project Area (CONT.)

Why care about Project Impact on Sea Turtles?

# 2. Sea Turtles in Ghana & the Project Area (CONT.)

## SEA TURTLES AND THE LAW

**What will happen to those who continue to capture and destroy sea turtles ?**

**The LAWS OF GHANA forbid sea turtle capture and destruction (L.I. 685). Those who are disobedient will be arrested by the Police and sent to jail !!!**

**PORTION OF L.I. 685 DEALING WITH SEA TURTLES**

WILDLIFE CONSERVATION REGULATIONS, 1971 (L.I. 685)

PART 1(1) No person shall at any time hunt, capture or destroy any of the species mentioned in the First Schedule to these Regulations.
(5) Any person who contravenes any provision of regulations ... shall be guilty of an offence and liable on summary conviction ... to imprisonment not exceeding six months ...

Note: Animals listed in the First Schedule of L.I. 685 includes in Series B (iii) "all marine turtles".



*FISHERIES REGULATIONS, 2010*

**Obstruction of mesh and use of chafers**

15. (1) A person shall not use any topside chafers on any trawl net.

(2) For the purpose of preventing wear and tear to a trawl net, a person may attach to the underside of the codend of the trawl net any hides, canvas, netting or other similar material.

(3) A person who contravenes sub-regulation (1) commits an offence and is liable on summary conviction to a fine of not more than two hundred and fifty penalty units or to a term of imprisonment of not more than two years or to both.

**Use of turtle excluder device**

16. (1) A person shall not use a shrimp net for fishing without a turtle excluder device.

(2) A turtle accidentally caught in the net shall be released immediately into the sea.

(3) A person who contravenes sub-regulation (1) or (2) commits an offence and is liable on summary conviction to a fine of not less than fifty penalty units and not more than one hundred and fifty penalty units, or to a term of imprisonment of not more than twelve months or to both.

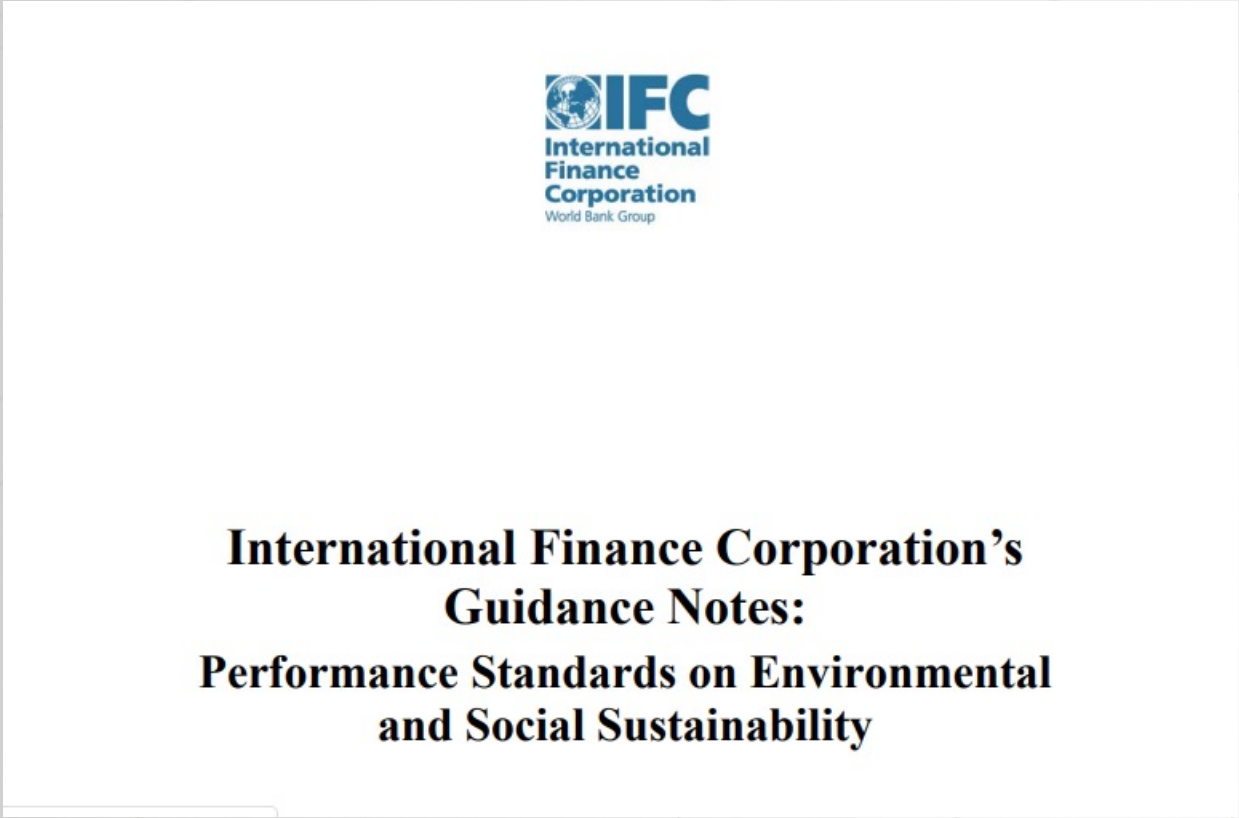
# 2. Sea Turtles in Ghana & the Project Area (CONT.)

**Conventions and Treaties**:

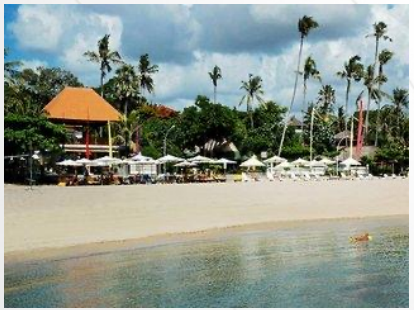
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on International Trade in Endangered Species of Wild Flora and Faun (CITES)
- Convention on Biological Diversity (CBD)
- Ramsar Convention
- Abidjan Convention

# 2. Sea Turtles in Ghana & the Project Area (CONT.)

## Organisational Requirement and Obligation:



**Sea Turtles also provide numerous benefits which makes them warrant such care and protection**

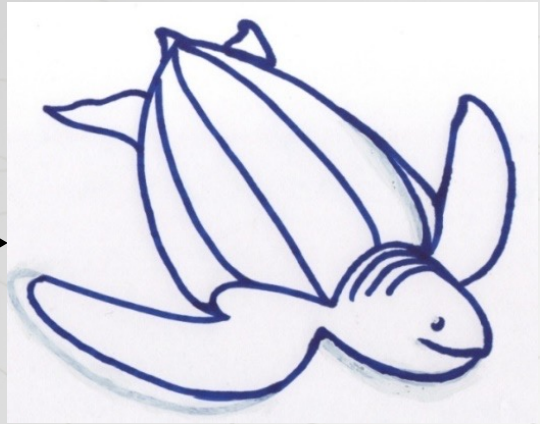
# 2. Sea Turtles in Ghana & the Project Area (CONT.)

- **Maintain of ecological balance in the ocean**
  - Hatchlings of turtles eaten by bigger fish e.g. sharks
- **Sea turtles help in the growth and propagation of sea grasses**
- **Fashion Industry**
- **Medicinal values**
  - Treatment of Asthma, Infertility, Aphrodisiac

# 2. Sea Turtles in Ghana & the Project Area (CONT.)

- **Nourishment of beaches with nutrient**

# 2. Sea Turtles in Ghana & the Project Area (CONT.)



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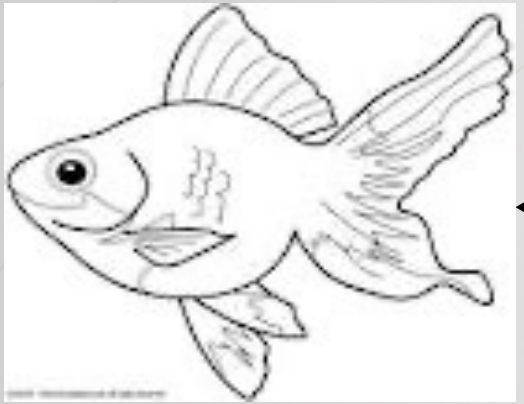

Associates with

# 2. Sea Turtles in Ghana & the Project Area (CONT.)

- **Tourism and Revenue Generation**

# 2. Sea Turtles in Ghana & the Project Area (CONT.)

- **Employment (Direct and Indirect)**
  - Tour Guides
  - Local Research volunteers
  - Auxiliary jobs

# 2. Sea Turtles in Ghana & the Project Area (CONT.)


# 3. Identified/Predicted Impacts – Onshore

## Ports, harbours and

Port, harbour and jetty development facilities on th
industry, offshore oil and gas development, marin
military operations, and navigation. Major impacts
of natural coastal habitats, (ii) dredging and dest
obliteration and destruction of nearshore benth
pollution and (v) increased coastal illumination.

### Impact on sea turtles

Ill planned location of ports, harbours and jetties
sites and breeding congregations directly impa
permanent loss of their nesting and congregating ha
foraging grounds when large scale dredging oper

The increased navigation of ships, boats and othe
migratory routes of marine turtles. Since marine tu
and fidelity to their natal nesting beaches, any infri
have an impact on their reproductive cycle as well as
and congregating grounds.

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## Coastal Development

For decades, sea turtles have been facing many life threatening obstacles which have caused devastating decreases in populations around the world. While many of the difficulties they face occur in the water, nesting adult females and hatchlings have even more threats to face on the beach, since the females must come up on land to lay their eggs in the sand. Nesting habitat loss is a major concern for sea turtles, and coastal development, beach armoring, and beach renourishment all impact habitat loss.

Beach development has seen an exponential rise in recent decades has more people migrate toward the coasts. Early development wiped out dunes and vegetation. Vegetation, such as beach grass and sea oats, not only help to accumulate sand and prevent erosion, they are prime nesting locations for sea turtles. As these areas are lost and beach erosion occurs, sea turtles are forced to lay their nests closer to shore line where nests are more susceptible to drowning from high waves and washing out to sea. Unnatural lighting along the shore cause hatchlings to crawl away from the ocean, and crawl towards pools, parking lots, and roads.

As development increases, so does beach armoring. Beach armor consists of any man made structure, such as sea walls and rock revetments, put in place to protect buildings and prevent sand loss. However, beach armor does not allow beaches to naturally recover after erosion from a storm, and as a result, these structures decrease the amount of beach over time. These structures also cause an unnaturally high amount of false crawls, as females run into them while looking for a nesting site and return to the water. If a nest is laid in front of a structure, the eggs have a much higher chance of being


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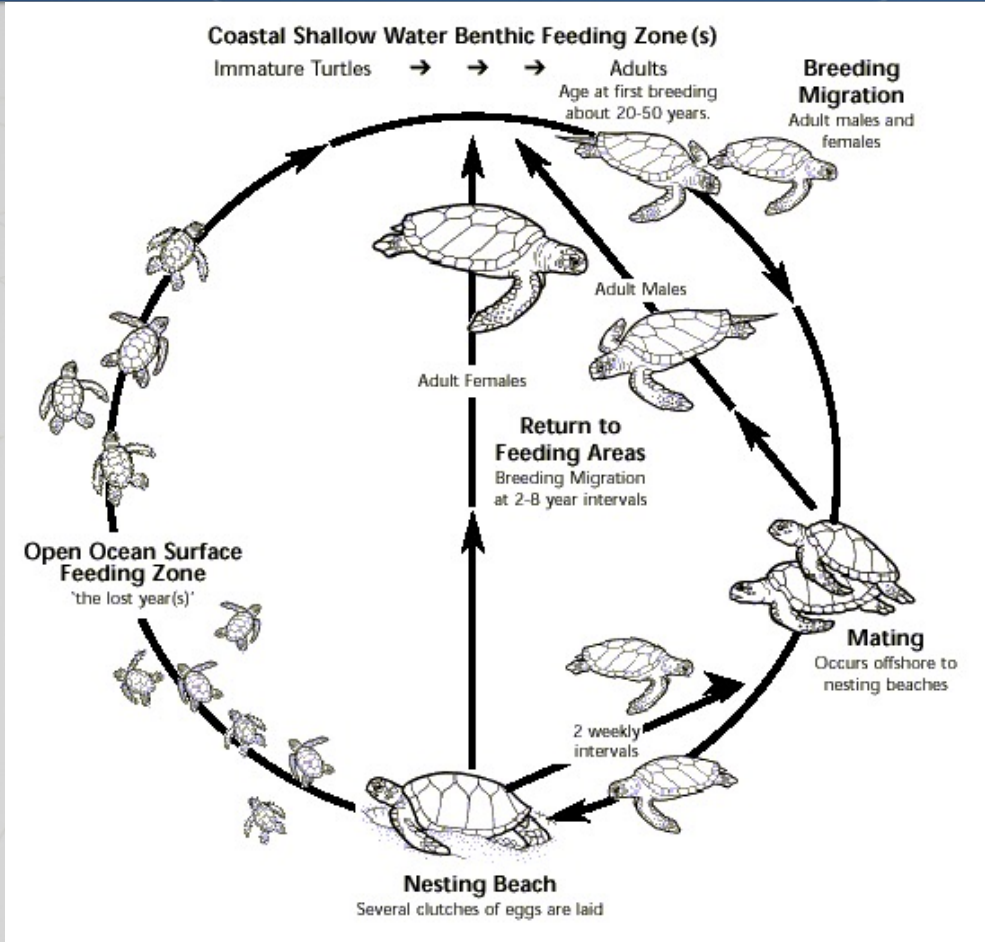
# 3. Identified/Predicted Impacts – Onshore



# 3. Identified/Predicted Impacts – Onshore

- **Direct destruction of nests and eggs (compaction and excavation).**
  - *Nests not hatched or relocated from construction site before start of construction.*

- **Loss of nesting habitat** (construction beach)

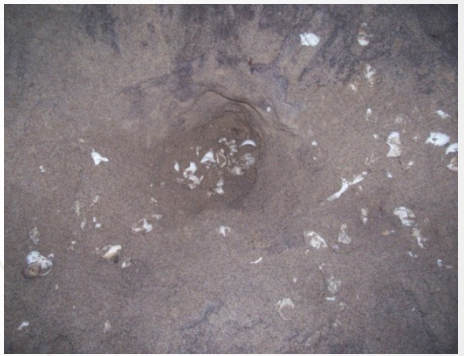
- **Threats associated with displacement**

- **Changes in shoreline dynamics**
  - *Increased erosion and accretion on adjacent beaches resulting from changes in coastal processes*

# 3. Identified/Predicted Impacts – Onshore (CONT.)

**Induced Impacts:**

- Accelerated influx of people to the area
- Illegal sea turtle poaching
- Egg harvesting
- Predation of eggs by domestic animals
- Reduced habitat quality/suitability
  - Artificial illumination
  - Plastic pollution
  - Human disturbance on nesting beaches



# 3. Identified/Predicted Impacts – Offshore

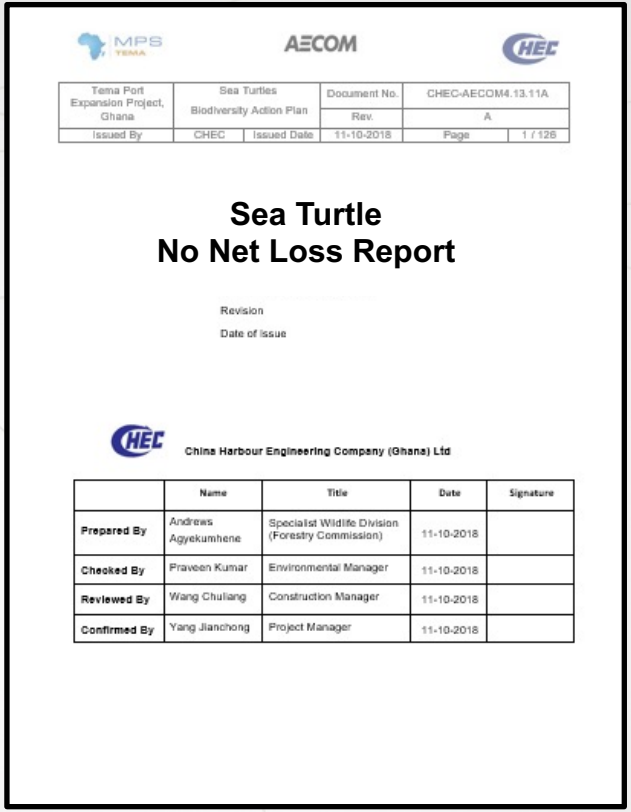
- **Mortalities through injuries from propellers and boat strikes**.
  - *Likely to increase during the operation phase of the project*
- **Mortality from blasting activities, dredging and dumping activities.**
- **Entrainment by dredger**
- **Increased turbidity**
- **Disturbance to feeding habitats**

# 4. Impact Mitigation (CONT.)

A comprehensive

**Sea Turtle No Net Loss Report**

with strategies to address and minimize the identified impacts



MPS YEMA AECOM CHEC

| Tema Port Expansion Project, Ghana | Sea Turtles Biodiversity Action Plan | | Document No. | CHEC-AECOM4.13.11A |
|---|---|---|---|---|
| | | | Rev. | A |
| Issued By | CHEC | Issued Date | 11-10-2018 | Page 1 / 126 |

**Sea Turtle**
**No Net Loss Report**

Revision

Date of Issue

CHEC China Harbour Engineering Company (Ghana) Ltd

| | Name | Title | Date | Signature |
|---|---|---|---|---|
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| Checked By | Praveen Kumar | Environmental Manager | 11-10-2018 | |
| Reviewed By | Wang Chuliang | Construction Manager | 11-10-2018 | |
| Confirmed By | Yang Jianchong | Project Manager | 11-10-2018 | |

# 4. Impact Mitigation (CONT.)

- The project will **Permanently** take over 2 km of nesting beach from the turtles- **RESIDUAL IMPACT**


Avoidance

Minimisation

Restoration

Offsetting

# 4. Impact Mitigation (CONT.)

## Present Activities:

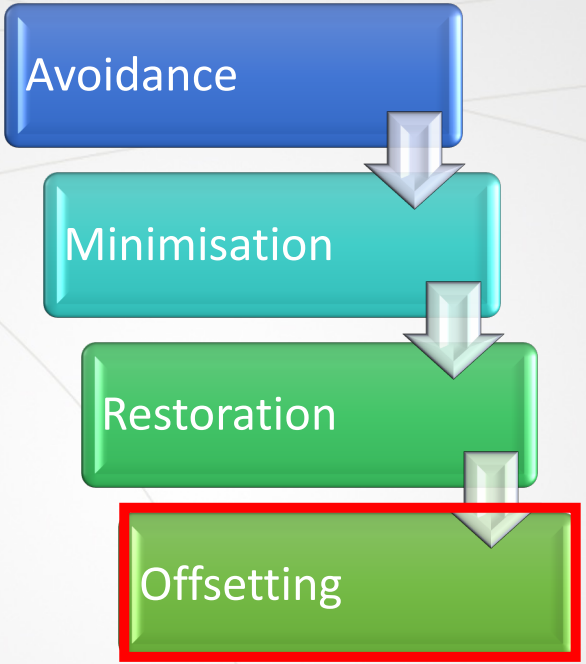
# 5. Offsetting Activities

# 6. Offsetting Activities

- **Improving habitat quality/ Increase nesting success**
  - Beach clean up at Ningo
  - Reducing artificial lighting
  - Reduce beach disturbance e.g. driving
  - Reduce sand mining

- **Increase hatching and emergence success and recruitment**
  - Reduce nest predation by dogs
  - Reduce beach driving (compaction of nests)

- **Decrease adult mortality**
  - Reduce fishery by-catch using LED lights
  - Safe handling and release of turtles
  - Reduce poaching along nesting beaches



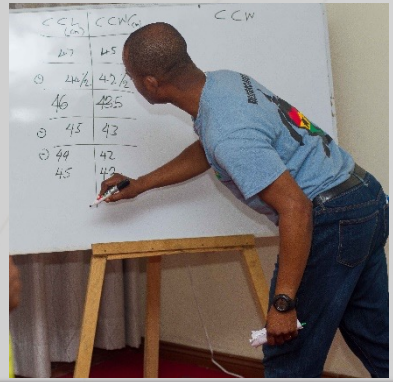
# 6. Offsetting Activities

- **Increase community participation**
  - Awareness creation in schools and communities
  - Developing sign posts, posters etc.
- **Strengthen traditional systems and regulations**
  - Encourage the enactment of by-laws
- **Support law enforcement and prosecution**
  - Reporting illegal activities
- **Introduce some social interventions**
  - Replacement of broken fishing nets
  - Livelihood trainings (e.g. soap making, etc)

# 6. Offsetting Activities (CONT.)

Stakeholder Consultations

# 6. Offsetting Activities (CONT.)



# 6. Offsetting Activities (CONT.)

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# Future Offset Site Activities

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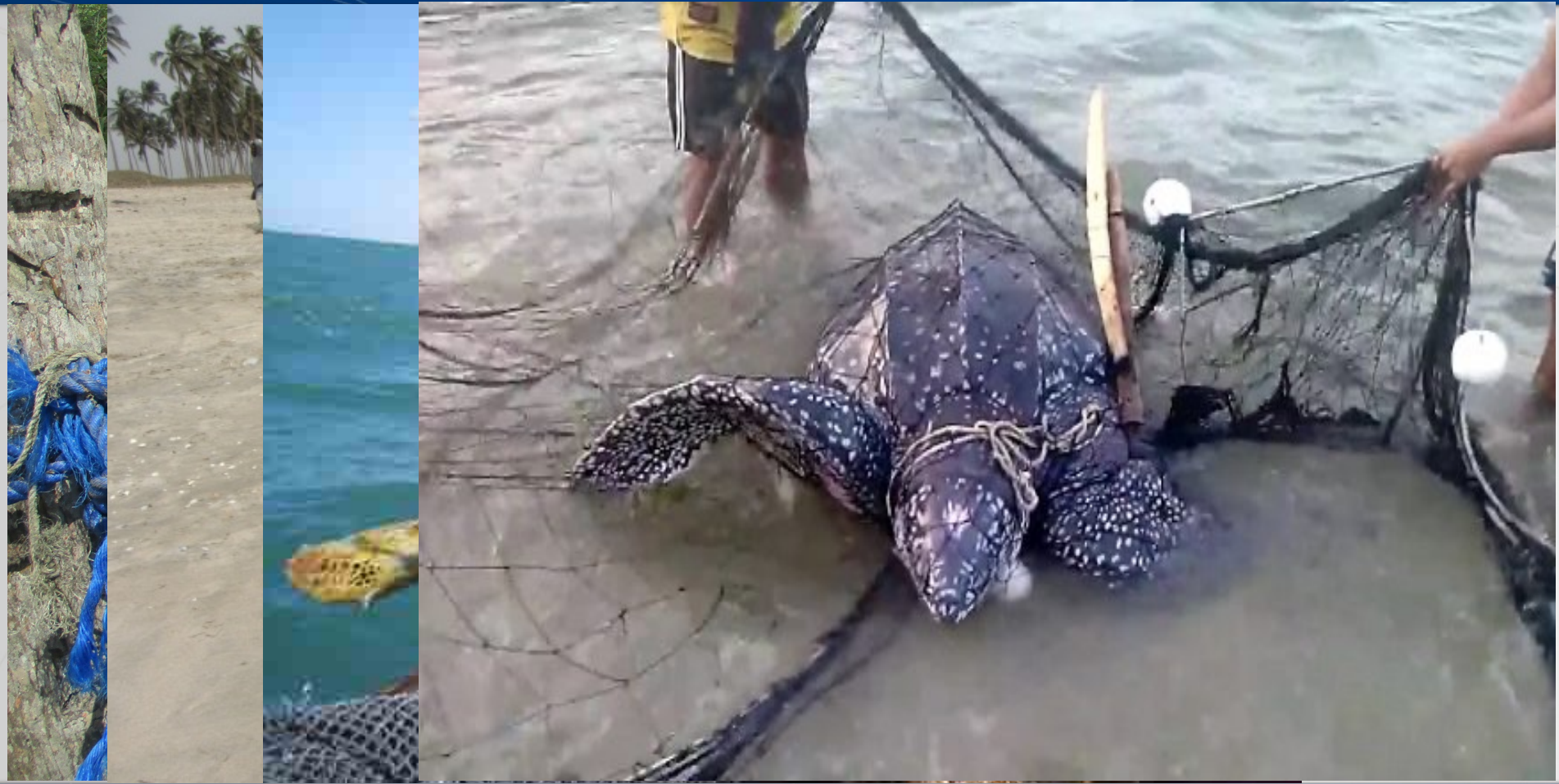

# Future Offset Site Activities


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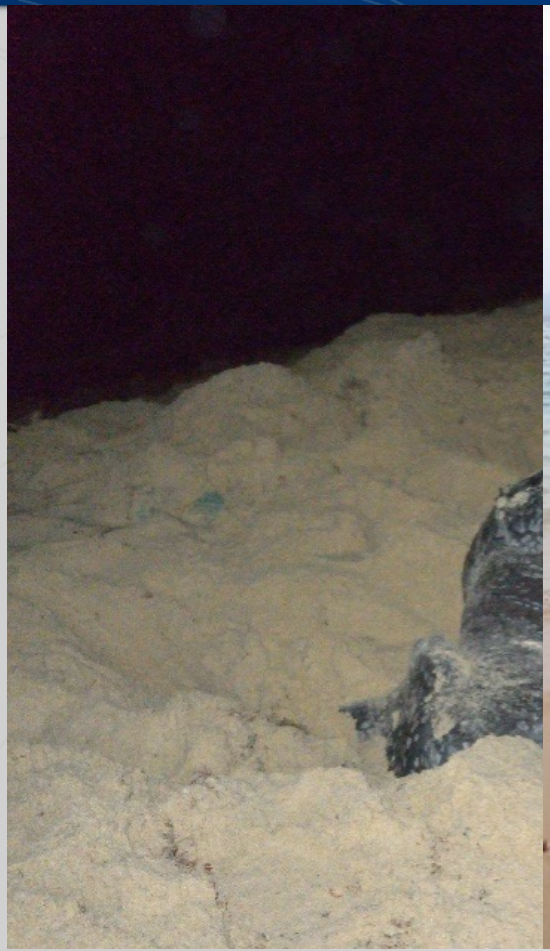
Working with the **Ghana Police** and **Wildlife Division**

# Future Offset Site Activities



# Future Offset Site Activities

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**We Know…**

# Thank You

Photo credit: SWOT

# Future Offset Site Activities