



4TH GEO

BLUE PLANET SYMPOSIUM

4-6 July 2018 – Toulouse, France

6th July 2018@ Toulouse

Ocean Literacy in Bangladesh

Blue Green Foundation Bangladesh, AMEA, Radiant Fish World

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Initial Board Member, Asia Marine Educators Association

NF-POGO Alumni



Presentation includes

Why Ocean Education ?

Why it needs in Bangladesh?

Formal Ocean/Marine Education in Bangladesh.

What and Why Ocean Literacy ?

Practices in Informal Ocean education
(BGFB, Radiant Fish World, AMEA and POGO)



United Nations
Educational, Scientific and
Cultural Organization




Intergovernmental
Oceanographic
Commission



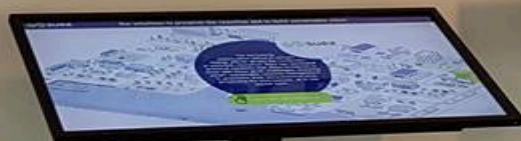
Sustainable
Development
Goals

ONE PLANET, ONE OCEAN

THE OCEAN WE NEED FOR THE FUTURE WE WANT

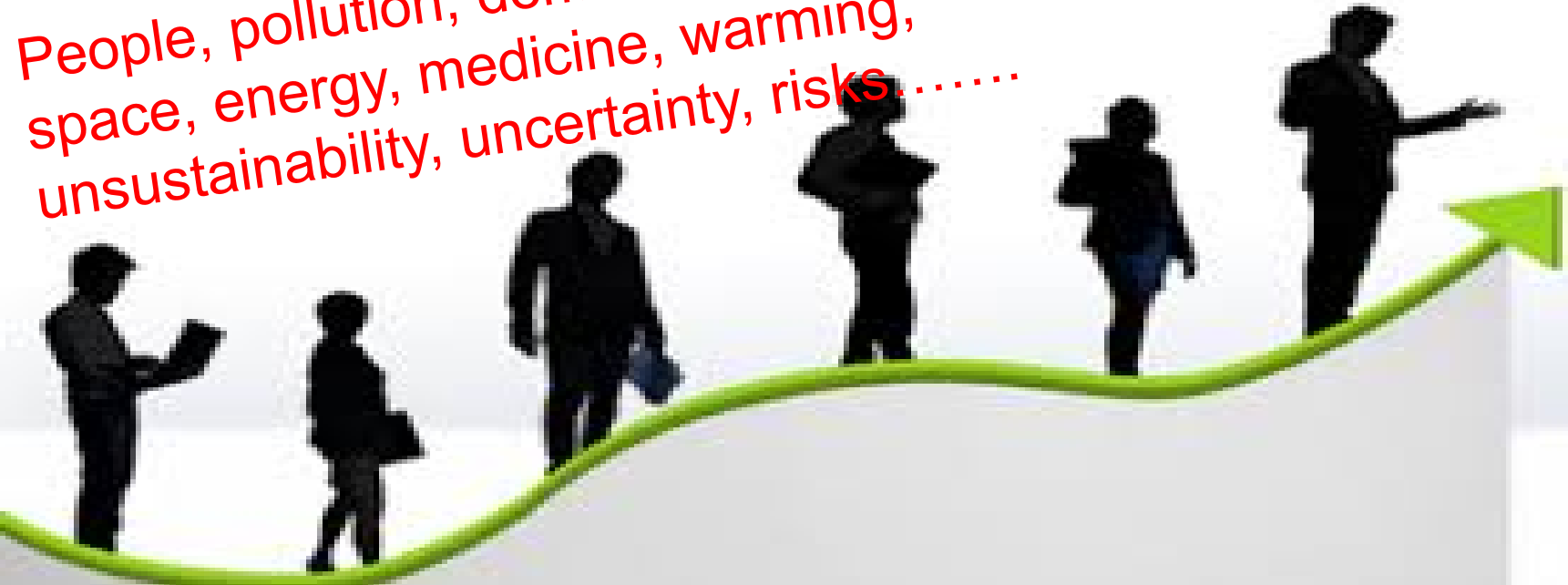
Find more about IOC/UNESCO 
[#suez4ocean](#)

This is a non paper exhibition.



Why Ocean Literacy ?

People, pollution, demand for food,
space, energy, medicine, warming,
unsustainability, uncertainty, risks.....



warning

Land and Land base Facilities Decreasing

Bangladesh

OUR WORLD OCEAN

provides

THE AIR WE BREATHE



>50% The ocean produces over half of the world's oxygen and stores 50 times more carbon dioxide than our atmosphere.

CLIMATE REGULATION

70% Covering 70% of the Earth's surface, the ocean transports heat from the equator to the poles, regulating our climate and weather patterns.



TRANSPORTATION



76% Percent of all U.S. trade involving some form of marine transportation.

RECREATION



From fishing to boating to kayaking and whale watching, the ocean provides us with so many unique activities.

ECONOMY



\$282 billion Amount the U.S. ocean economy produces in goods and services. Ocean-dependent businesses employ almost 3 million people.

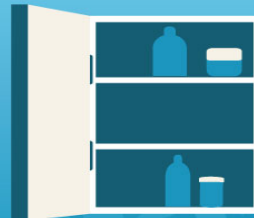
FOOD

The ocean provides much more than just seafood. Ingredients from the sea are found in surprising foods such as peanut butter and soymilk.



MEDICINE

Many medicinal products come from the ocean, including ingredients that help fight cancer, arthritis, Alzheimer's disease, and heart disease.



Oceans: Benefits and threats to living organisms

60% of the world's major marine ecosystems – that sustain the world's populations – have been significantly degraded or are unsustainably used

The ocean holds an estimated **80%** of the Earth's mineral resources



Around **90%** of the energy from warming of the Earth system has been stored in the ocean over recent decades



Warm ocean **temperatures** are the driving force behind tropical cyclones and monsoons

The ocean carries **90%** of world trade

Mean sea surface temperatures have risen by about **0.7°C** over the past 100 years, and are likely to increase by over **3°C** in some ocean regions by the end of this century

The ocean covers **71%** of the Earth



It contains...

96% of the Earth's living space



80% of living organisms



99% of the biosphere



Fisheries support more than **170 million** jobs

The ocean provides **60%** of dietary protein in tropical developing countries

Ocean plants produce almost **half** of the oxygen we breathe

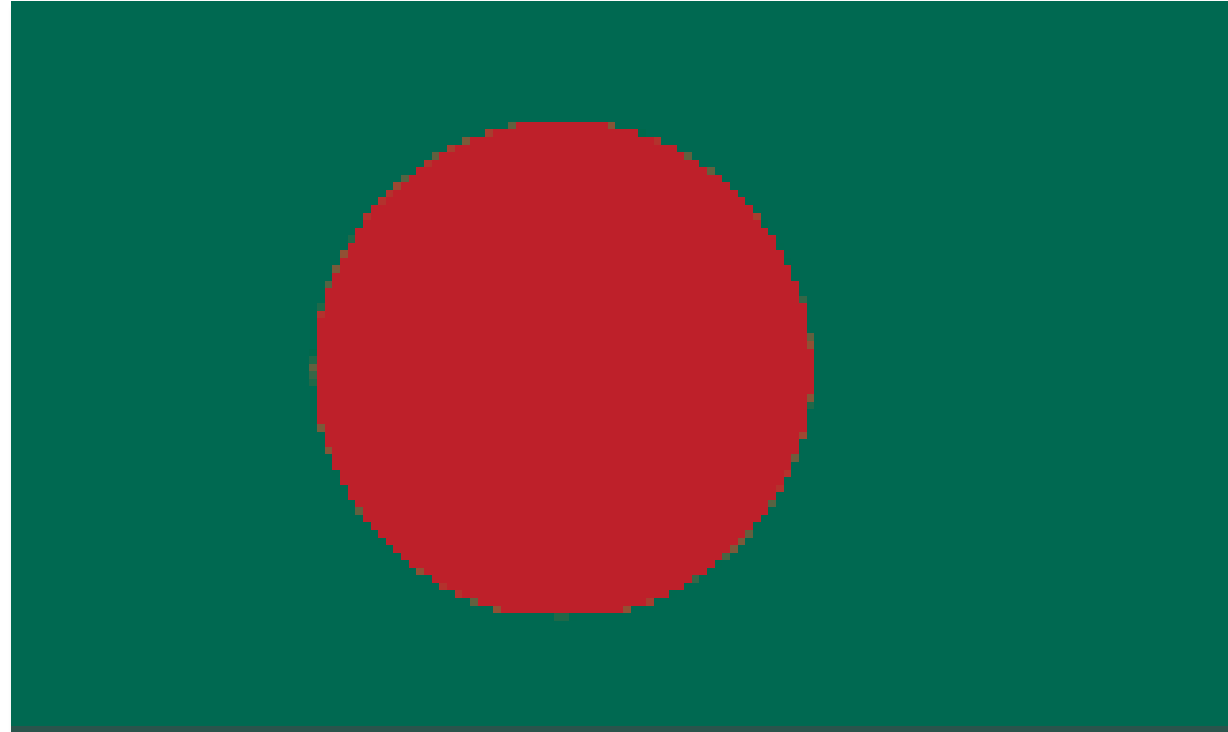
Under a 'business-as-usual' scenario, by 2100, emissions could result in the ocean becoming up to **2x** more acidic (compared to pre-industrial levels) leading to the further loss of marine ecosystems

Models estimate that the oxygen content of the ocean will **decline** over the next century

Marine and coastal tourism, aquaculture and other uses of marine environments (excluding fisheries) provide livelihoods for **millions** of people

An estimated **90%** of coral reefs will be threatened by 2030

Bangladesh

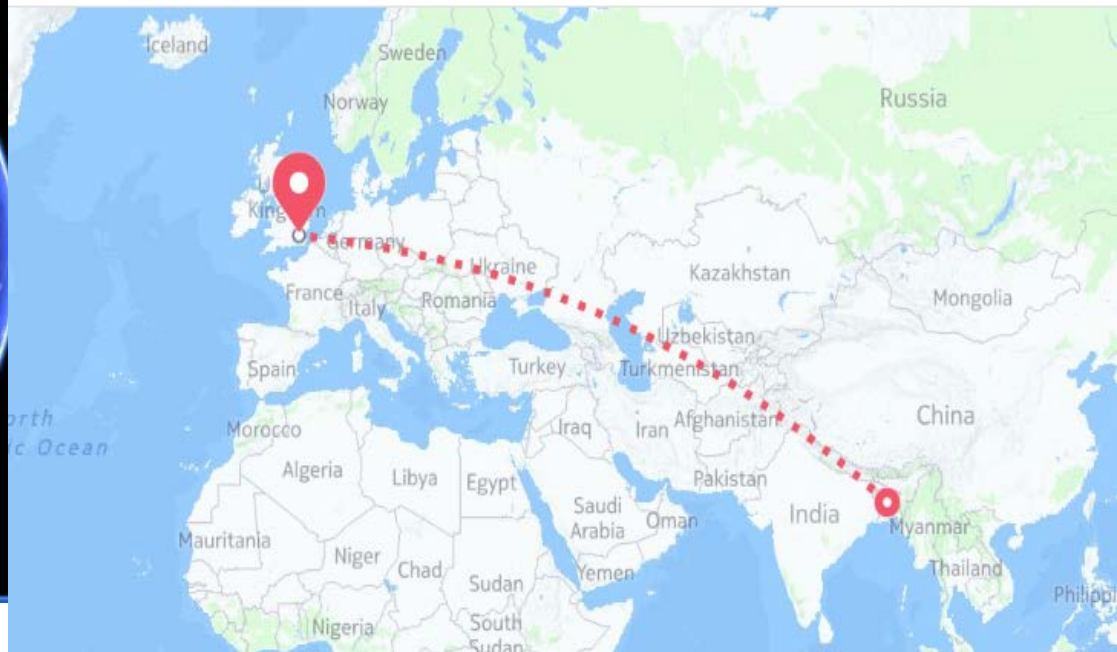


Where is Bangladesh?



Mohammad Muslem Uddin Munna was 🚗 traveling to Cdg - Paris from 📍 Hazrat Shahjalal International Airport.

July 3 at 1:20 AM · 🌐 ▼

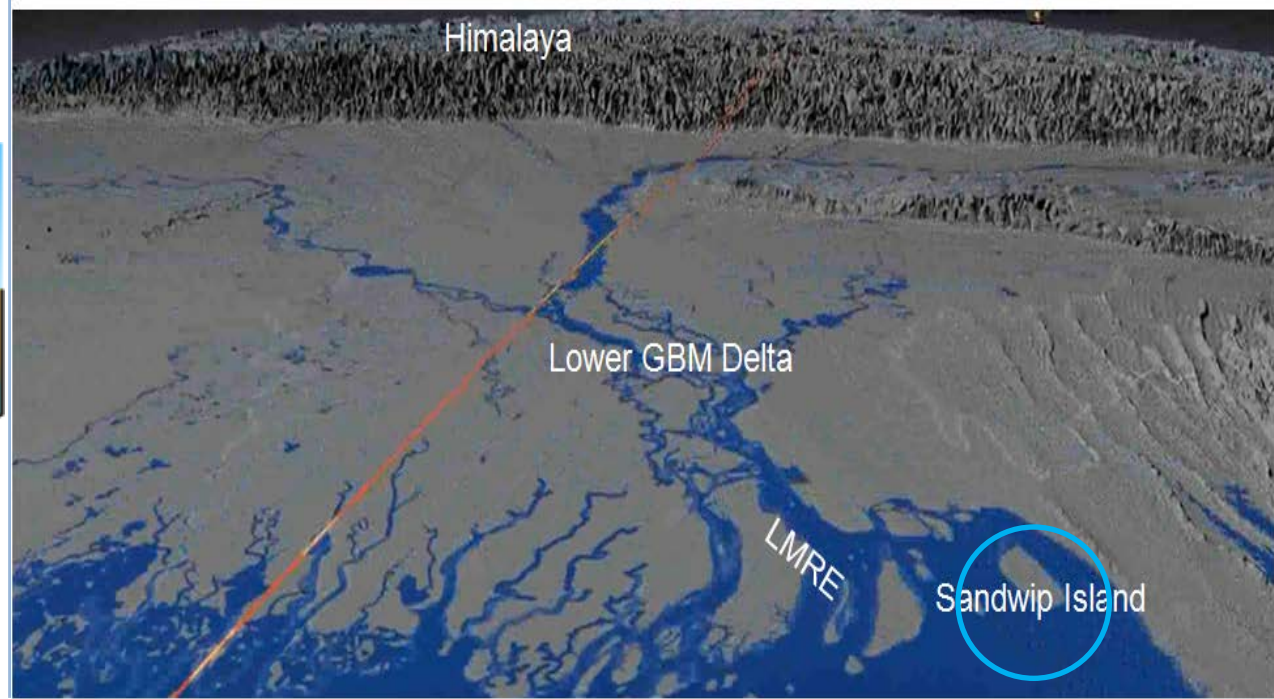
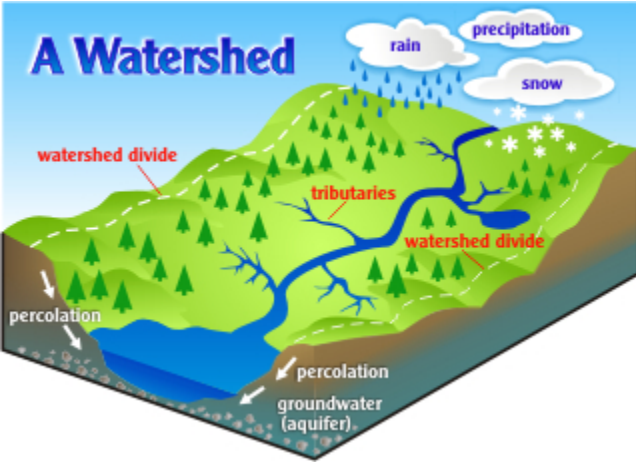


Bangladesh

Plain Land, Hills, Rivers and Oceans

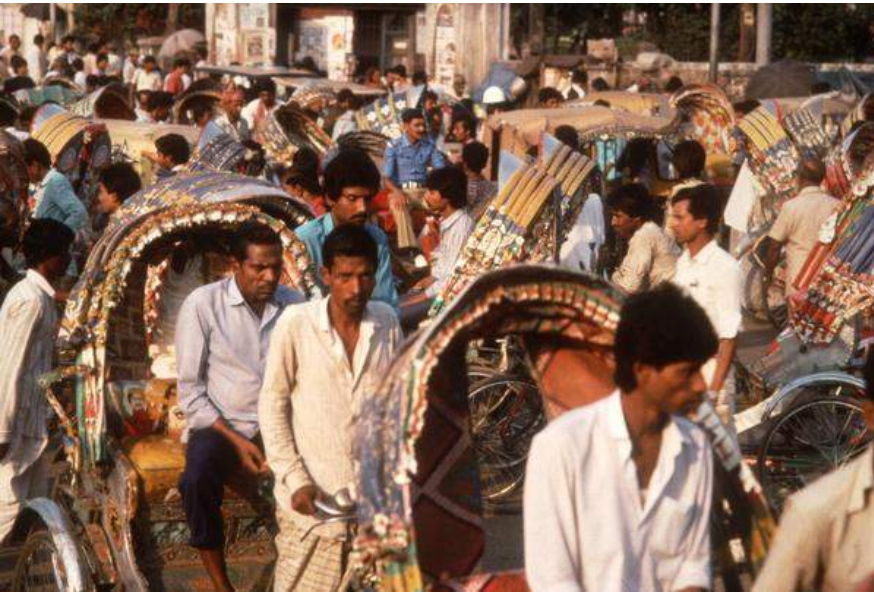


WATER SHEED of Bangladesh

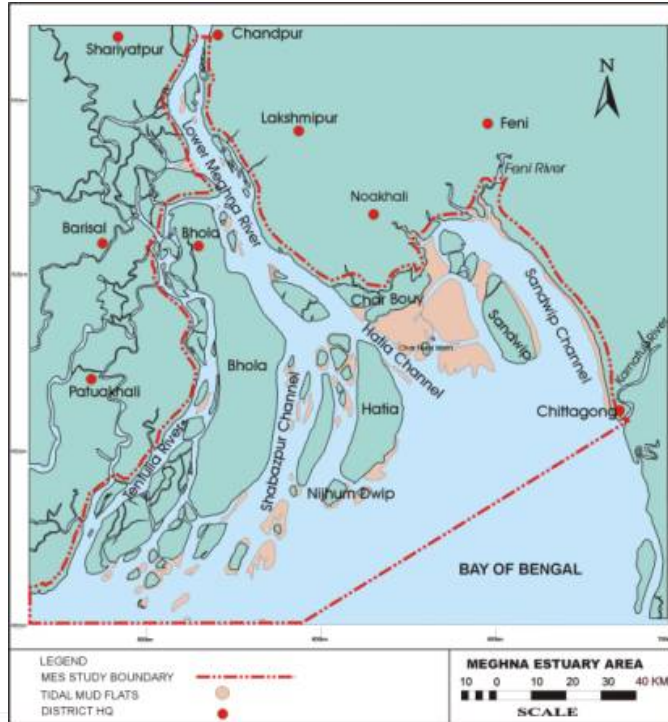
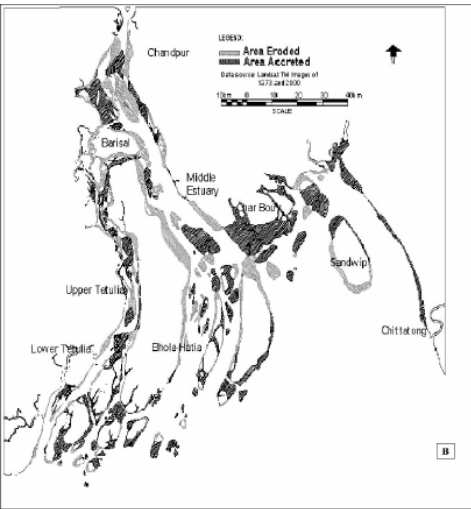


Population Explosions in Bangladesh VS Demand Expansion

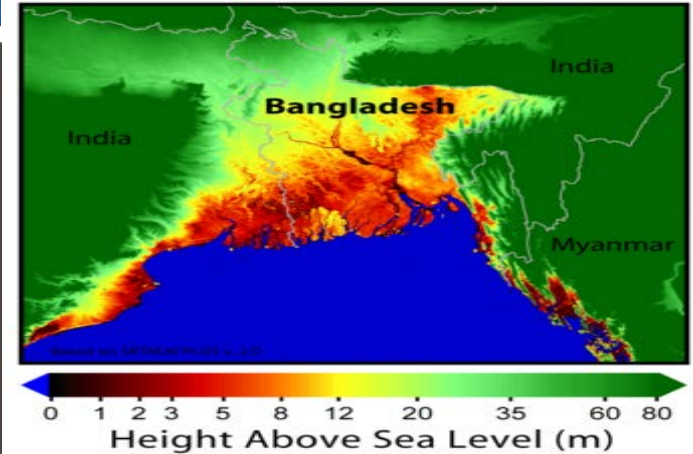
- Population is highly increasing than it's space.
- Unemployment, illiteracy, child marriage, child labor, imbalance of environment, pollution, corruption etc.



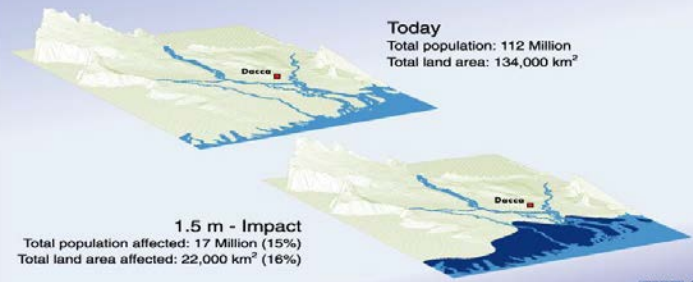
Geomorphological dynamics, SLR, Inundating, Flood



Sea Level Risks - Bangladesh



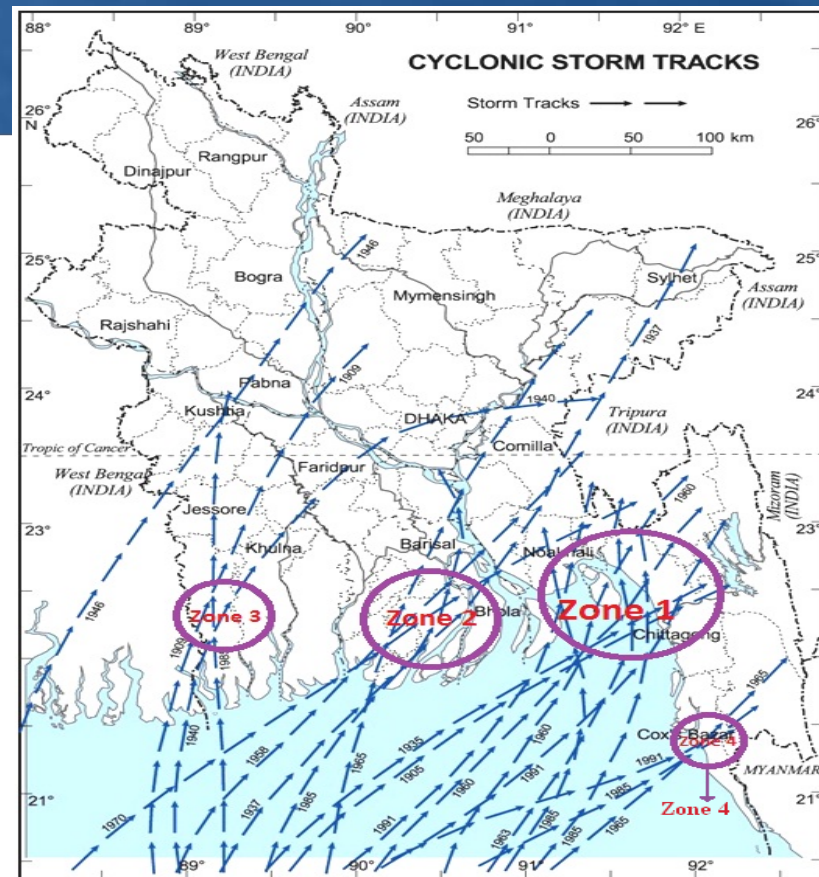
Potential impact of sea-level rise on Bangladesh



Cyclones and Storm surges

Land Fall Date	Location of Land Fall	Max. Wind speed (km/h)	Max. Surge Height (m)	Death
30 Oct 1960	Chittagong-Cox's Bazar	208	6.1	5179
09 May 1961	Bhola, Noakhali	160	3.0	11468
28 May 1963	North of Chittagong	203	3.7	11520
11 May 1965	Barisal, Noakhali	162	4.0	19 279
15 Dec 1965	Cox's Bazar	210	3.7	873
23 Oct 1966	Noakhali, Chittagong	145	6.7	850
12 Nov 1970	Chittagong	222	10.6	300 000
25 May 1985	Chittagong	154	4.3	4264
29 Nov 1988	Khulna	160	4.4	1498
29 Apr 1991	Chittagong	225	6.1	138 000
02 May 1994	Cox's Bazar	215	3.3	188
19 May 1997	Chittagong	225	4.6	126
26 Sep 1997	Chittagong	150	3.0	155
16 May 1998	Chittagong-Cox's Bazar	165	2.5	12
15 Nov 2007	Barguna, Patuakhali	220-250	6	3500

Source: MES (2001)



Source :Rana et al, 2011

Potentiality of Blue economy Based green Bangladesh

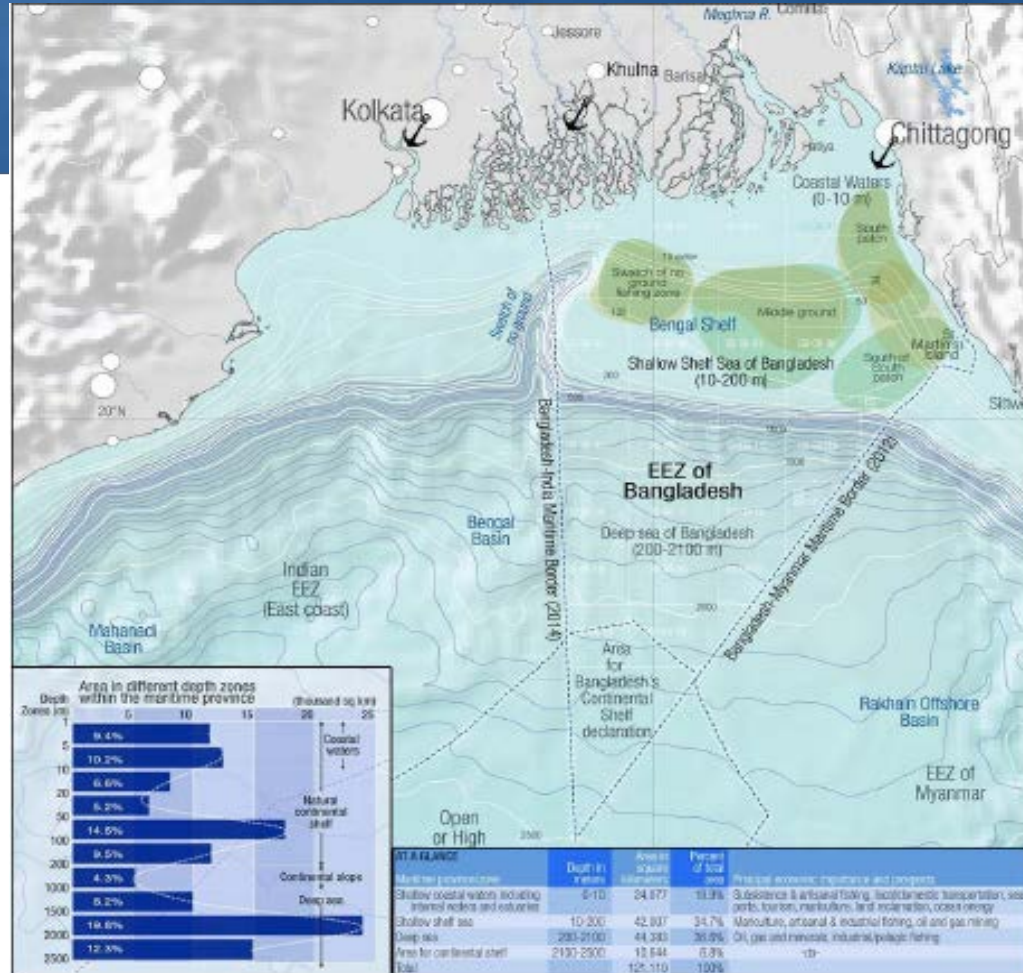


Recently, by two verdicts, Bangladesh got confirmation of her maritime boundary from India and Myanmar.

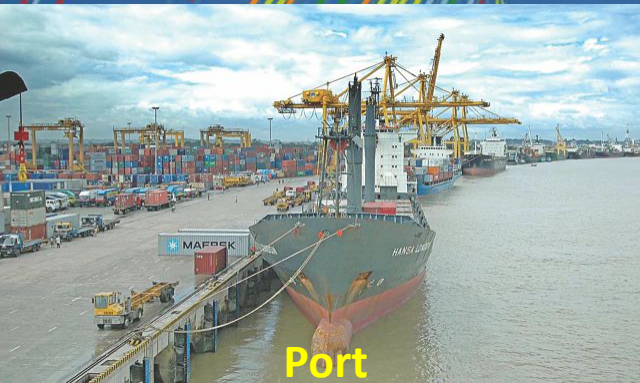
Added a new impetus in the political and economic arena of Bangladesh.

The areas we have gained under these verdicts are equivalent to winning a 'New Bangladesh'

1,47,000 eqv 1,18,813 km²



Blue Economic Resources in Bangladesh



Threats

Pollution



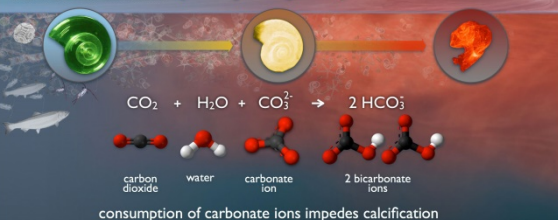
Coral Destruction



OCEAN ACIDIFICATION

HOW WILL CHANGES IN OCEAN CHEMISTRY AFFECT MARINE LIFE?

CO₂ absorbed from the atmosphere



Illegal Fishing



Over Fishing



Challenges

Taking control over it and utilizing its sea-bed resources
sustainable extracting of resources is Important

Prerequisite: Experts, Researchers, concerned Planners and Policy Makers and well informed citizen

Bangladesh is located in the strategically important region of South Asia, Asia and the world as well. In the sphere of using maritime boundary, Bangladesh can influence the regional and international politics to many extents

Ocean Education in Bangladesh



Photo: Sohel Parvez
www.bdfish.org

Elementary > 2nd. School > High School

শুন ও বল



অমর আসে।



অলি হাসে।



আম খাই।



আতা চাই।

অমি

অমি

আম




আতা

অ




আ

২. ছবির দিচ্ছে শব্দ লিখি।

আম	শসা	পামি	ফল	অবা	মুলা
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৩. সূত্রবর্ন ভেঙে লিখি।

ফল	ক	স	ক
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প্রতিদিন

সুন্দর

শুকবার

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Almost No Contents of Ocean Education In the Curriculum

Formal Ocean Science Education in Bangladesh

University of Chittagong (1966)

⇒ Realizing the importance of ocean in our everyday lives, started marine science education and research in 1971 as Department of Marine Biology and Oceanography (1971)

Reshaped as Institute of Marine Sciences (1981)

Institute of Marine Sciences and Fisheries (2006) with additional academic scope and opportunities

IMSF offering degrees

- Bachelor with Honor's in 3 disciplines
- Masters in 6 disciplines
- MPhil
- PhD

Now Faculty of Marine Sciences and Fisheries with department of Oceanography, Marine Science and Fisheries

Ocean Science Education in Bangladesh

Department of Oceanography/Marine Science/Fisheries



Dhaka University



Bangabandhu Sheikh Mujibur
Rahman Maritime University,
Bangladesh



KHULNA UNIVERSITY
www.ku.ac.bd



Bangladesh Marine Academy
A Branch of World Maritime University, Malmö, Sweden



NSTU

Noakhali Science And Technology University



About 12 Universities have Oceanography out of 150 universities'

Ocean Science Education in Bangladesh Other than Formal Education

NORI

The only Government Research Organization for Ocean Research is still under processing for full sewing



Radiant Fish World

আমাদের জীবিত জলজ প্রাণী সংরক্ষণ

First Time Live Fish Aquarium in Bangladesh

NOAMI

Working on Training the Professionals on
Marine Affairs

BELA

Working on Pollution and Marine protection
Laws



Working Towards a Blue
Economy Based Green
Bangladesh

Ocean Science Education in Bangladesh

The Worst question People are asking to the Students and Researchers of
**OCEANOGRAPHY/HYDROGRAPHY/
MARINE SCIENCE.....**

WHAT ARE DOING????????????????
Where will you fit for your Job?



Trends in Science Education Worldwide

Two very distinct and conflicting societal demands shape science education programs in different countries. These are:

1. Demand for specialist manpower.
2. Demand for a more scientifically literate citizen, i.e.

Our concern: Top priority should be given to make the generation Ocean literate to make all above recommendation a success of developing the country based on Blue economy.

Ocean Literate Society

Ocean Literacy

Ocean literacy is an understanding of the ocean's influence on you and your influence on the ocean.

An ocean-literate person:

- Understands the Essential Principles and Fundamental Concepts about the ocean;
- Can communicate about the ocean in a meaningful way; and
- Is able to make informed and responsible decisions regarding the ocean and its resources.

Ocean Literacy

Ocean education, marine education and ocean Literacy

Craig: In the early 2000s, many of us in the US took on the challenge of defining what we think every US student should understand about the ocean by the time they complete secondary school.

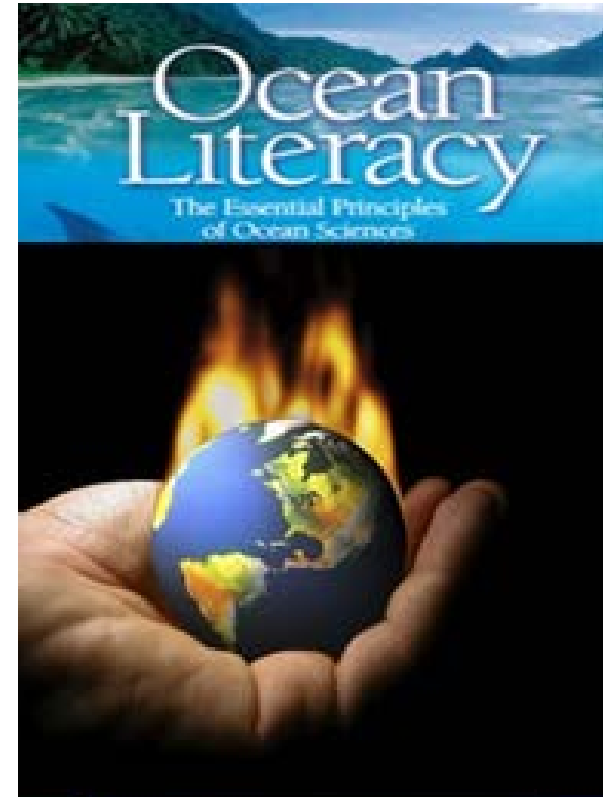
We didn't want to claim that every kid should understand every cool fact or know the names of every amazing animal, only the most ESSENTIAL ideas about the ocean. We called these essential ideas the principles and concepts of Ocean Literacy.

We claim that **you can't be science literate without being ocean literate**, since the ocean is such a dominant force in earth systems. We agreed that an ocean literate person should understand those ideas, be able to communicate about them, AND be able to use them to make responsible decisions

What are the most important things to know about the ocean?

Ocean Literacy 7 Essential Principles:

- 1. Earth has one big ocean with many features.**
- 2. The ocean and life in the ocean shape the features of Earth.**
- 3. The ocean is a major influence on weather and climate.**
- 4. The ocean makes Earth habitable.**
- 5. The ocean supports a great diversity of life and ecosystems.**
- 6. The ocean and humans are inextricably interconnected.**
- 7. The ocean is largely unexplored.**

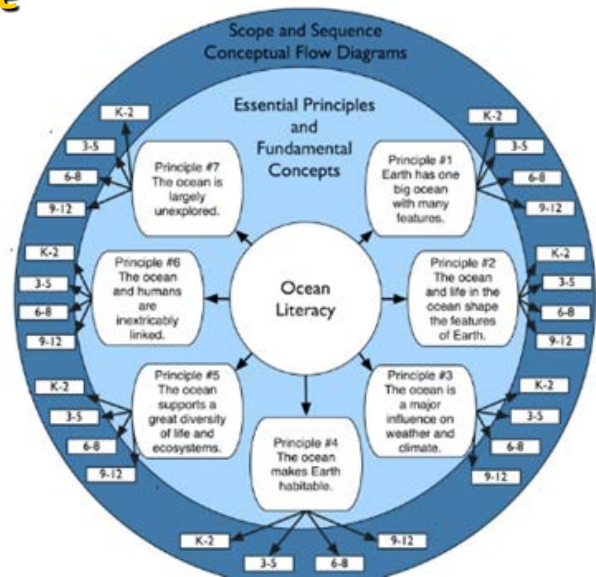
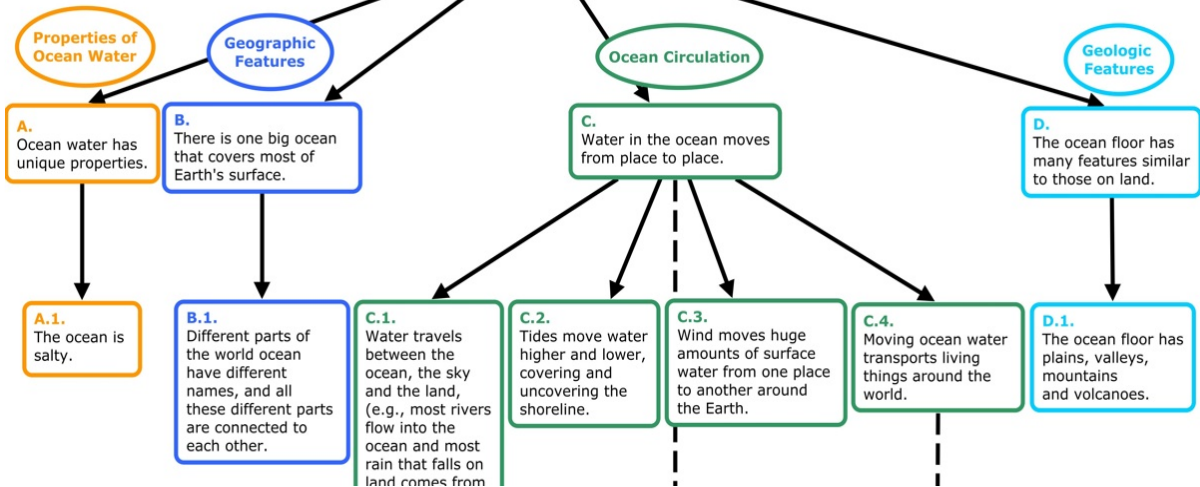


What are the most important things to know about the ocean?

Principle 1: Grades K-2

Principle 1: Earth has one big ocean with many features.

Example



What influenced me and When?

Giving Birth of a Dream

2010 at Oceanography lab
In CCOM, UNH, USA



2011 on started to work on Science Literacy



Science
Literacy
Campaign in
Bangladesh



Literacy
Campaign in
Bangladesh



Climate
Literacy
Campaign in
Bangladesh



NANO outreach project



NF-POGO Alumni Network for Oceans
Outreach Project 2015
Sandwip, Chittagong, Bangladesh

“Ocean and Climate Literacy Workshop”

সমুদ্র ও জলবায়ু সাক্ষরতা

26-29 August' 2015



Ocean Literacy Campaign in Bangladesh



nano
Global Ocean
Education

NANO
outreach
project



Blue Green Foundation Bangladesh

Working Towards a Blue Economy Based Green Bangladesh



Among other planned projects there are **Ocean Olympiad, Generation of marine sciences syllabus for K-12 students, Establishing Marine Aquarium**

- Having a Cruise vessel of it's own for conducting research and fun trip in the Bay of Bengal, off day schooling / summer school on Ocean and environment courses etc are mentionable.
- Organizing seminar, symposium, workshop, drawing and debating competition on ocean and environment affairs.
- Publishing books, journals, etc

Blue Green Foundation Bangladesh

Working Towards a Blue Economy Based Green Bangladesh



Meeting, Training
and Motivation
among the
members



Ocean Literacy Campaign in Bangladesh



Meeting, sitting and Planning with organizations

Ocean Literacy Campaign in Bangladesh

Celebration of World Ocean Day 2017



Ocean Literacy Campaign in Bangladesh

School Project



Ocean Literacy Campaign in Bangladesh School Project



Ocean Literacy Campaign in Bangladesh School Project

Ocean Literacy School Project: Ocean talent Quiz Competition



Ocean Literacy School Project: Ocean talent Quiz Competition

Congratulations
1st Prize
Ocean Literacy School Project
Quiz Competition

Working Towards Blue Economy
Based Green Bangladesh

www.bgfbd.org
10 August 2017

Congratulations
2nd Prize
Ocean Literacy School Project
Quiz Competition

Working Towards Blue Economy
Based Green Bangladesh

www.bgfbd.org
10 August 2017

Congratulations
3rd Prize
Ocean Literacy School Project
Quiz Competition

Working Towards Blue Economy
Based Green Bangladesh

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10 August 2017

Heartfelt Thanks
To VIRNO Family
For Your Continuous Support
Ocean Literacy School Project

Working Towards Blue Economy
Based Green Bangladesh

www.bgfbd.org
10 August 2017

Heartfelt Thanks
Eden Residential School & College
Authority as a Proud Host of
Ocean Literacy School Project

Working Towards Blue Economy
Based Green Bangladesh

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10 August 2017

Ocean Literacy Campaign in Bangladesh

Outreach Project



Ocean Literacy Campaign in Bangladesh

Beach Clean Up Carnival



Beach Cleanup Carnival 2017

সৈকত পরিচ্ছন্নকরণ উৎসব ২০১৭



তারিখ : ১৪ অক্টোবর ২০১৭



স্থান : পতেঙ্গা সী বীচ, চট্টগ্রাম

“সমুদ্র অর্থনীতি নির্ভর সমৃদ্ধ বাংলাদেশ গড়ি”

যৌথ ব্যবস্থাপনায় : ব্লু গ্রীণ ফাউন্ডেশন এবং বাংলাদেশ মেরিন একাডেমী



Ocean Literacy Campaign in Bangladesh

World Ocean Day 2018 Celebration




Ocean Literacy Campaign in Bangladesh

School Project

Installing...
Nationwide

Ocean Literacy Campaign

Organized By :



Blue Green Foundation Bangladesh

Working Towards Blue Economy Based Green Bangladesh

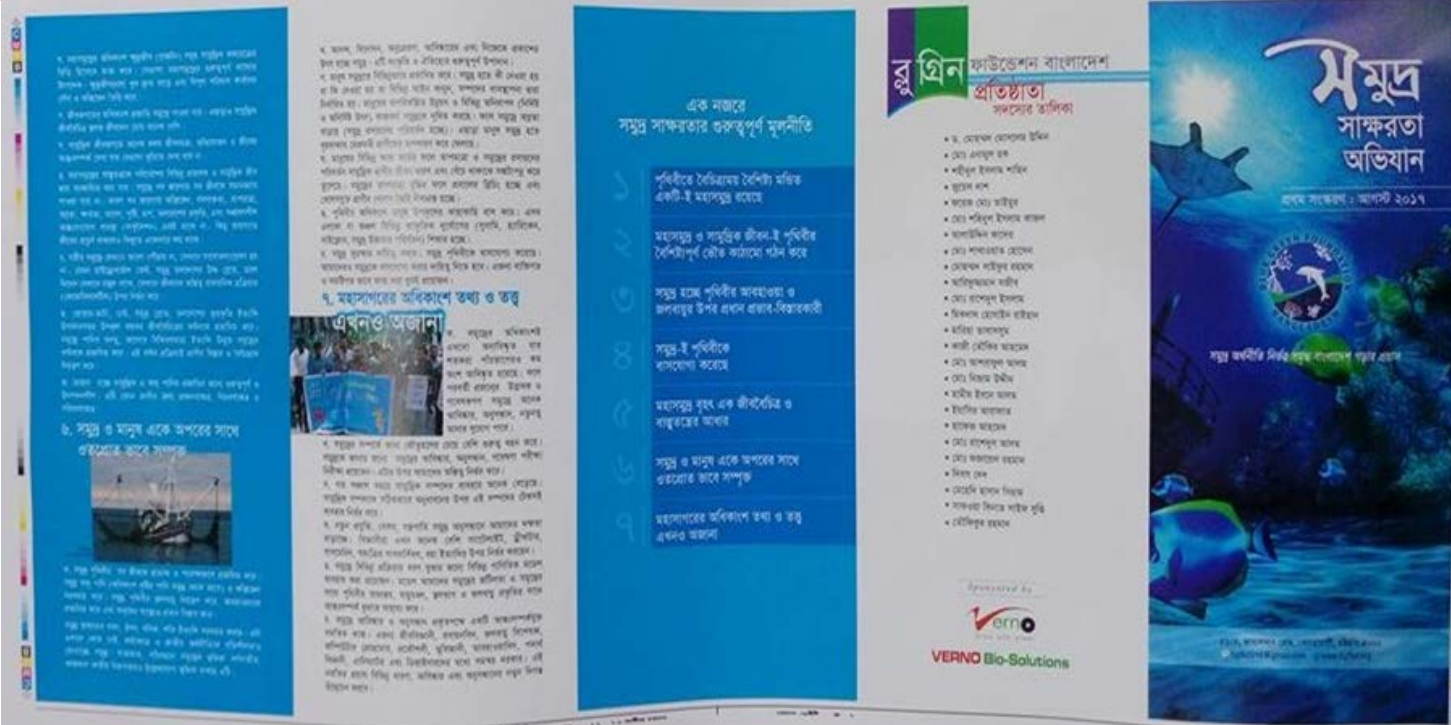




Ocean Literacy Campaign in Bangladesh

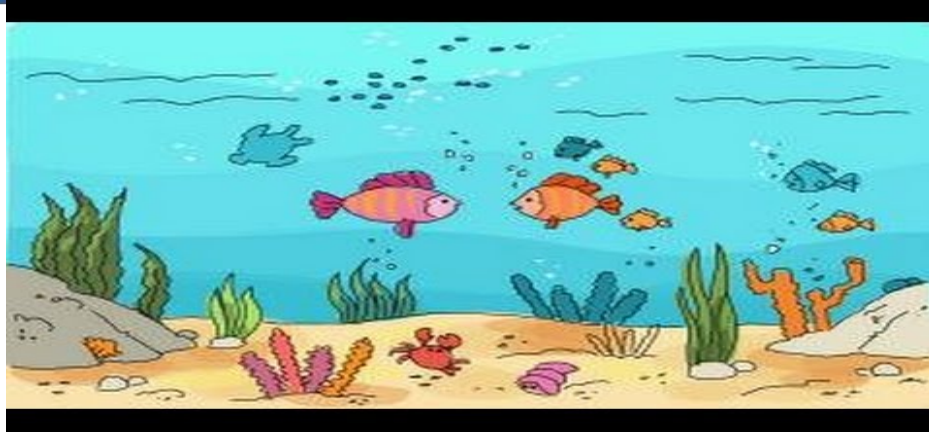
Publications in Native Language (Bangla)

Ocean Literacy Brochure in Mother Language



Incorporating Ocean Literacy in the existing Curriculum

K-1 following Ocean Literacy principles and Concepts



Many More kinds of organisms are found in the ocean than on land.

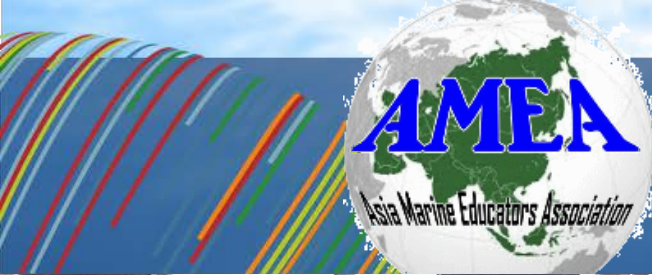
There are distinct and unique ocean habitats throughout the ocean and on the coast, offshore, in the deep ocean and at the surface.



Incorporating Ocean Literacy in the existing Curriculum

K-2 following Ocean Literacy principles and Concepts

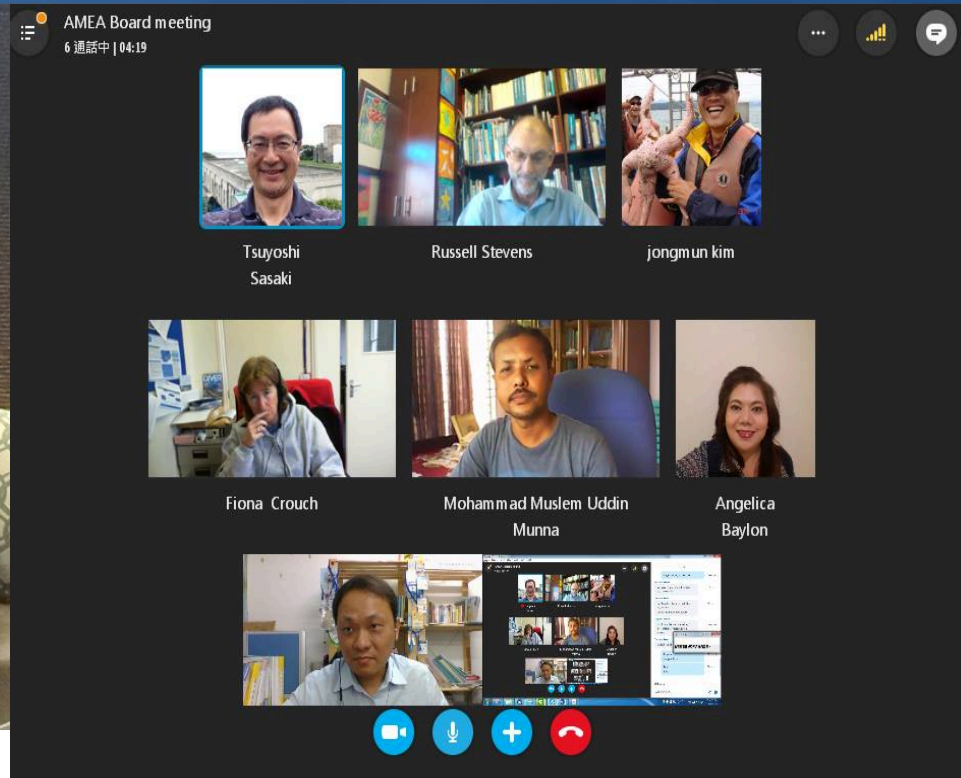
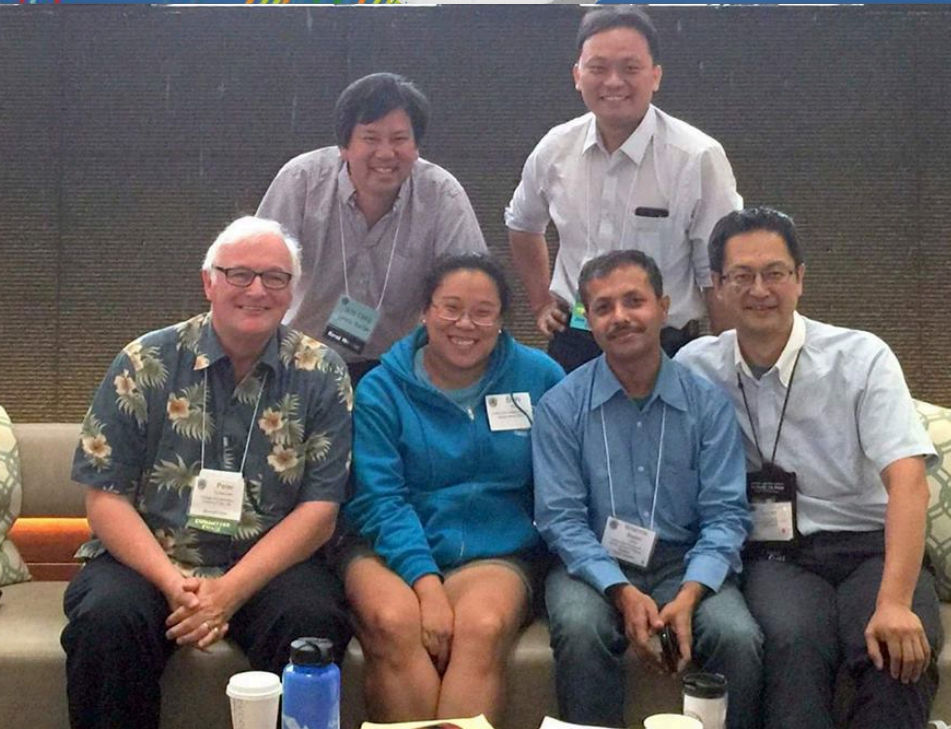




Ocean Literacy Campaign in Bangladesh

International Connection

2015 AMEA Formed in RI, USA Following NMEA 2015





Ocean Literacy Campaign in Bangladesh

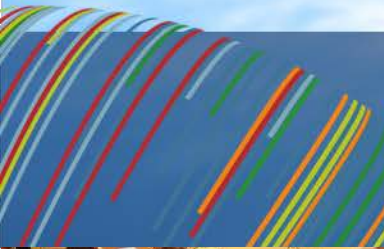
International Connection

2016 AMEA Workshop in Taiwan



2017 AMEA conference in Philippine





Ocean Literacy Campaign in Bangladesh

International Connection



Sea Aquarium

Radiant Fish World

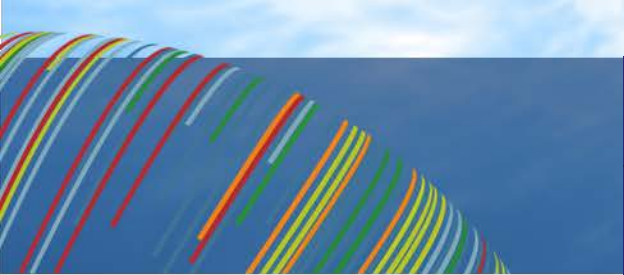
Cox's Bazar

Ocean Literacy Campaign in Bangladesh

National Collaboration







INSTITUTE OF MARINE SCIENCES AND FISHERIES
UNIVERSITY OF CHITTAGONG

Since 1971

ইনস্টিটিউট অব মেরিন সায়েন্সেস অ্যান্ড ফিশারিজ
চট্টগ্রাম বিশ্ববিদ্যালয়

Thanks for Your Patience



nano
Global Ocean
Education

