Internatioanal Cooperation on Marine Scientific Research and Environmental Protection among China and ASEAN Countries

A Brief Review and Future Perspectives

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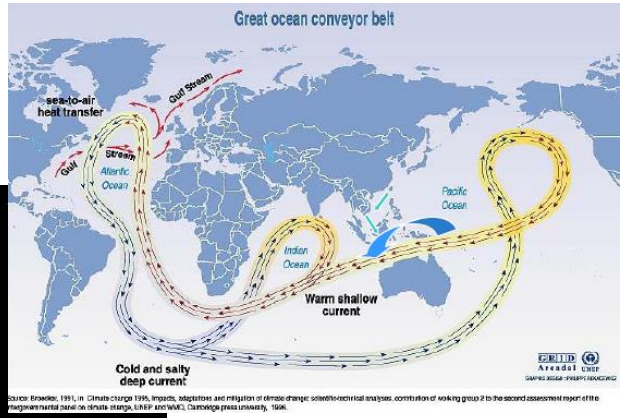
Tokyo, 8 Feb. 2017

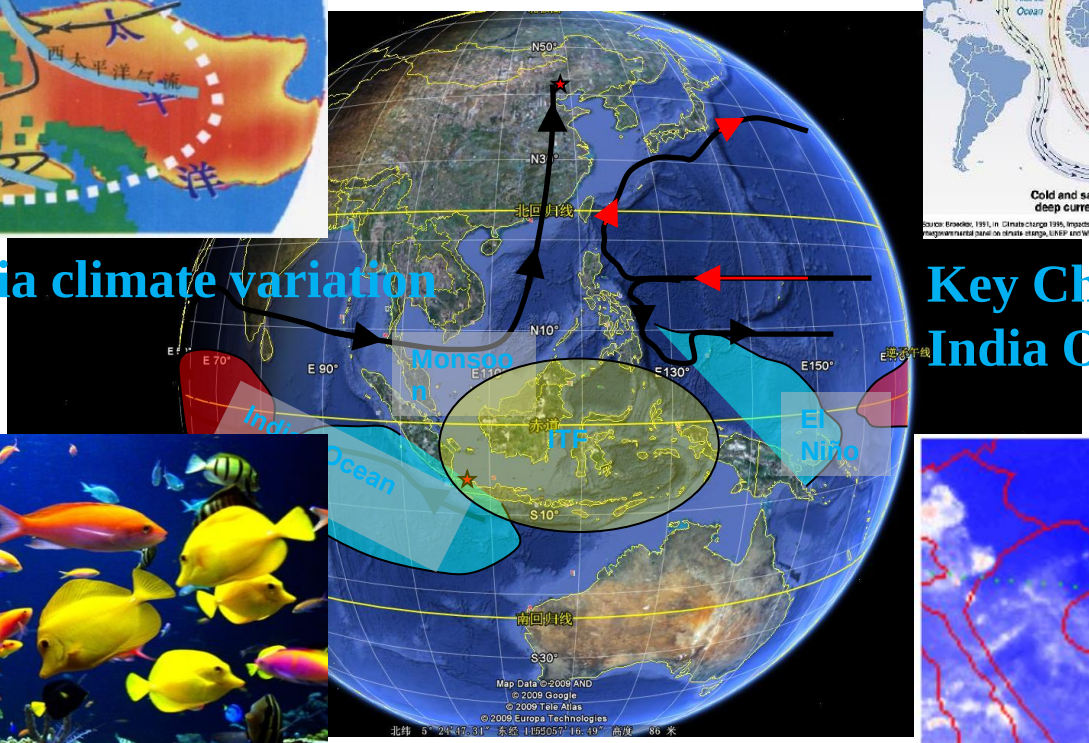
The background for cooperation

Enhancing our knowledge and Promoting its application

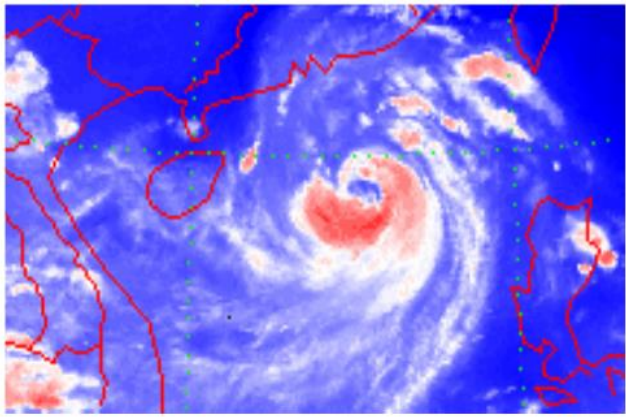
Key area for Asia climate variation



Key Channel for Pacific to India Ocean Throughflow



High marine biodiversity



Natural and anthropogenic hazards

The background for cooperation

Committmentamong the partners in the region

《Declaration on the Conduct of Parties in the South China Sea》(DOC) Nov 4, 2002

6. Pending a comprehensive and durable settlement of the disputes, the Parties concerned may explore or undertake cooperative activities. These may include the following:

a. marine environmental protection;

b. marine scientific research

Outline of cooperation activities

- Regional workshops
- Joint projects under China-ASEAN Maritime Cooperation Fund
- Enriched by fruitful bilateral cooperation
- Successful capacity building

Regional workshops

China-Southeast Asia countries Workshop on Marine cooperation

Bali, November 21-22, 2013

Phuket, December 15-17, 2014


Qingdao 28-29 Dec. 2015

Phnom Penh Cambodia 15 December 2016

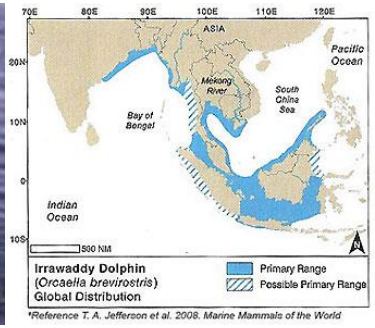
Regional Workshops

Academic Workshop of South China Sea

3 projects supported by China-ASEAN Maritime Cooperation Fund

1. Southeast Asian Marine Endangered Species Research

from Cambodia, China, Laos PDR, Malaysia, Philippines and Thailand



2. Operational Ocean Environment Forecasting and Disaster Reduction System for the Southeast Asia areas

This system will:

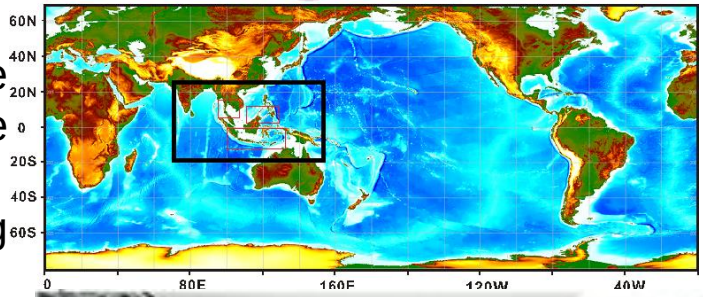
•conduct real-time marine monitoring of the Southeast Asian and adjacent sea areas, and inspire a better understanding on the ocean processes.

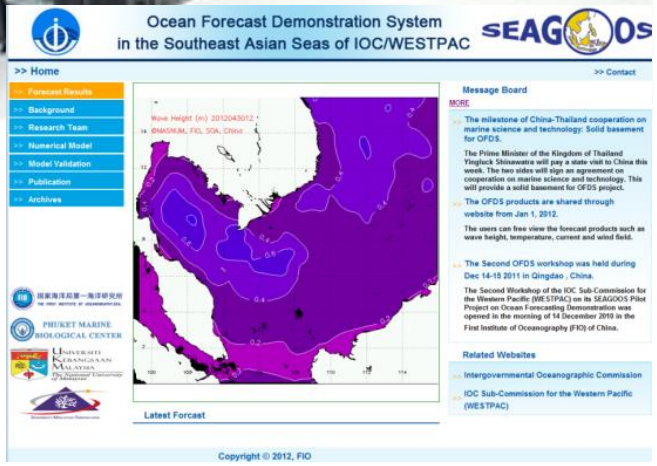
•provide 72 hours marine environmental forecasting and early warning information

•develope the relevant capacity building

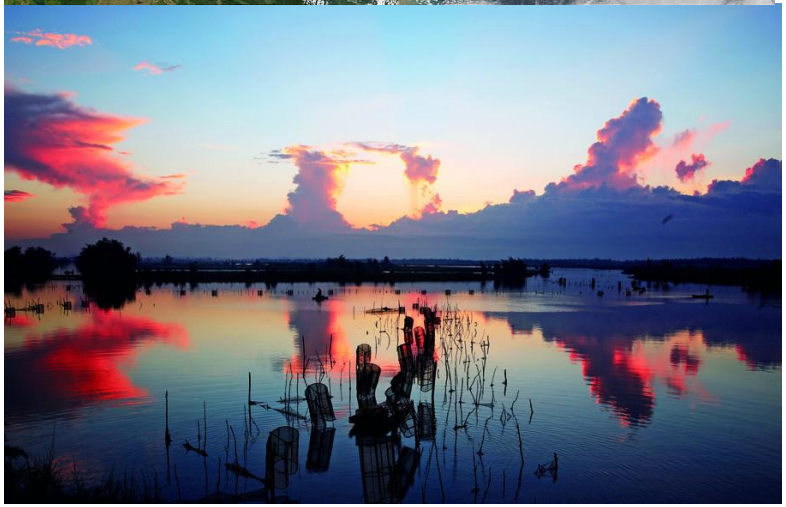
The system could:

•improve the ability on the marine environmental forecasting and early warning of the marine hazards.





3. Cooperative Management of the Environment in the Beibu Gulf (Tonkin Gulf) between China and Vietnam

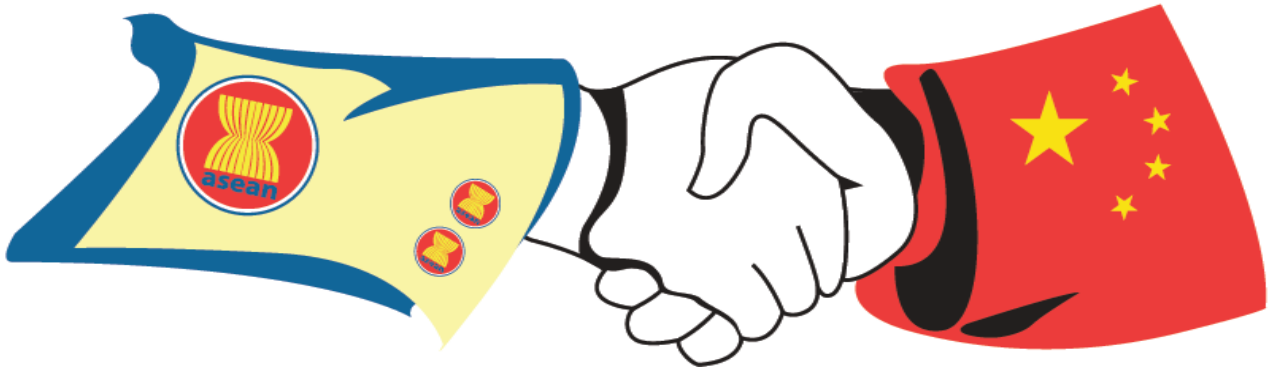


Cooperation activities

The State Oceanic Administation (SOA) of China has lunched the 2016-2020 Framework Plan for International Cooperation of the South China Sea & Its Adjacent Oceans.

fruitful bilateral cooperation between China and

Indonesia	Cambodia	Myanmar
Thailand	Vietnam	……
Malaysia	Brunei	



Indonesia

Joint Committee Meeting (JCM) on the Cooperation in the Field of Marine Affairs

China-Indonesia Workshop on Cooperation of Marine Science and Environmental Protection

ICCOC

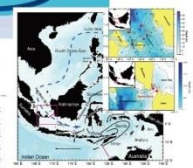
INDONESIA - CHINA CENTRE FOR OCEAN AND CLIMATE

Indonesia-China Center for Ocean and Climate

May 2010 -

中国-印尼海洋科技合作项目

The joint marine S&T cooperation project between China and Indonesia

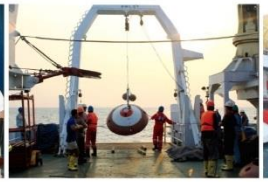


南海-印尼海水交换及其对鱼类季节性迁徙的影响
South China Sea-Indonesian Seas Transport/Exchange and Its Impacts on Seasonal Fish Migration (SITE)

全球大洋传送带对地球气候系统起着关键调节作用，太平洋–印度洋贯穿流是其中重要环节。方国洪等（2002）根据数模结果提出了太平洋–印度洋贯穿流南海分支概念；卡里马塔海峡和巽他海峡是这一南海分支的重要通道，也是印尼的重要渔业水域。项目自2007年启动后已执行10个合作航次、布放17套坐底潜标，获取的资料填补该海域海流连续观测的空白，证实了我们提出的太平洋－印度洋贯穿流南海分支的存在。这一分支对于南海的水团形成、海气热量交换和淡水交换有着重要的意义。

Great ocean conveyor belt plays a crucial regulatory role of the global climate, and Pacific-Indonesia Ocean Throughflow is an important part of the conveyor belt. Based on modeling results, Fang Guohong et al.(2002) pointed out that there is the South China Sea branch of Pacific-Indonesia Ocean Throughflow. The Karimata and Sunda Straits is important passages to the South China Sea branch of Pacific-Indonesia Ocean Throughflow and an important fishing ground of Indonesia.

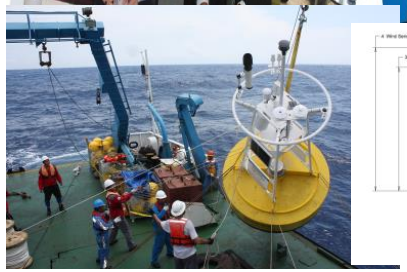
Initiated in 2007 with ten successful joint cruises in the Karimata and Sunda Strait, SITE has deployed seventeen sets of TRBMs and filled up the gaps of current observation in this region. The project outputs confirmed the existence of the South China Sea branch of the Pacific-Indonesia Ocean throughflow. This branch has an important influence on water mass formation, air-sea heat exchange, and fresh water exchange in the South China Sea.

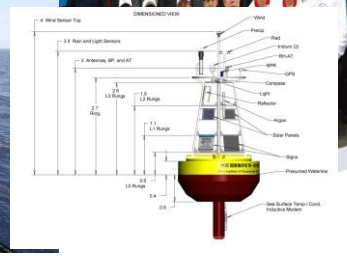


The joint marine S&T cooperation project between China and Indonesia

爪哇上升流变异及对鱼类季节性迁徙的影响
Java Upwelling Variation and Its Impacts on Seasonal Fish Migration (JUV)

爪哇上升流在印度洋偶极子（与太平洋区域的厄尔尼诺现象相似的气候现象）中起重要作用，其变异对印尼气候和渔业有重要影响。项目2007年启动后执行8个航次，布放深海大气浮标和海洋学观测潜标各一个，弥补了爪哇上升流现场观测资料空白。





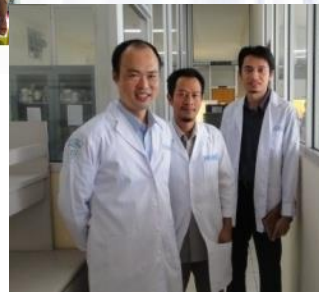
中国-印尼海洋科技合作项目
The joint marine S&T cooperation project between China and Indonesia

海洋生物技术合作研究
Marine Biotechnology Joint Study

印尼海域独特的热带海洋生态系统和丰富的海洋生物种类提供了天然良好的海洋科研资源。中印尼合作进行生物技术和生物多样性研究，不仅可以提升双方的科技影响力，而且有助于更好地保护海洋环境和生物资源，造福百姓。

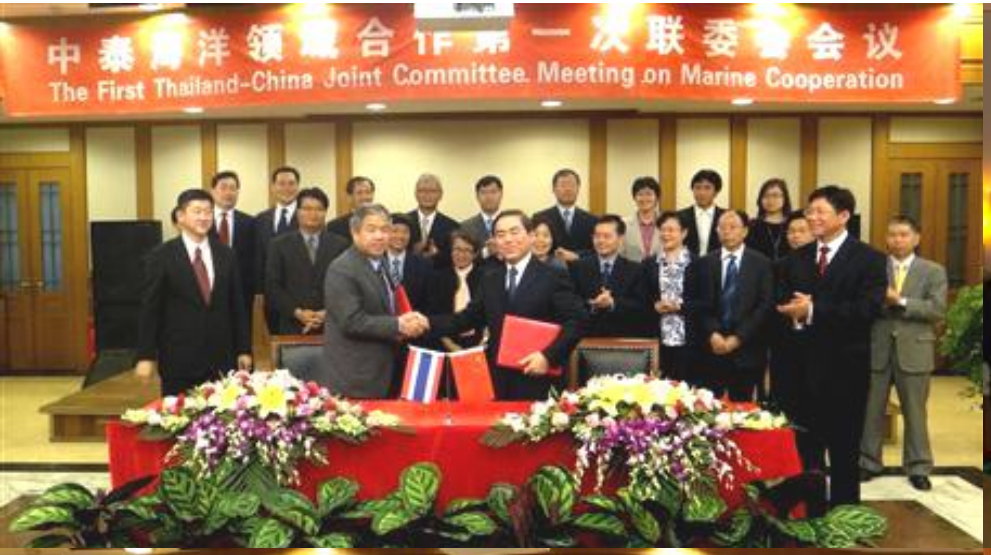
海洋生物多样性合作研究
Marine Biobiodiversity Joint Study

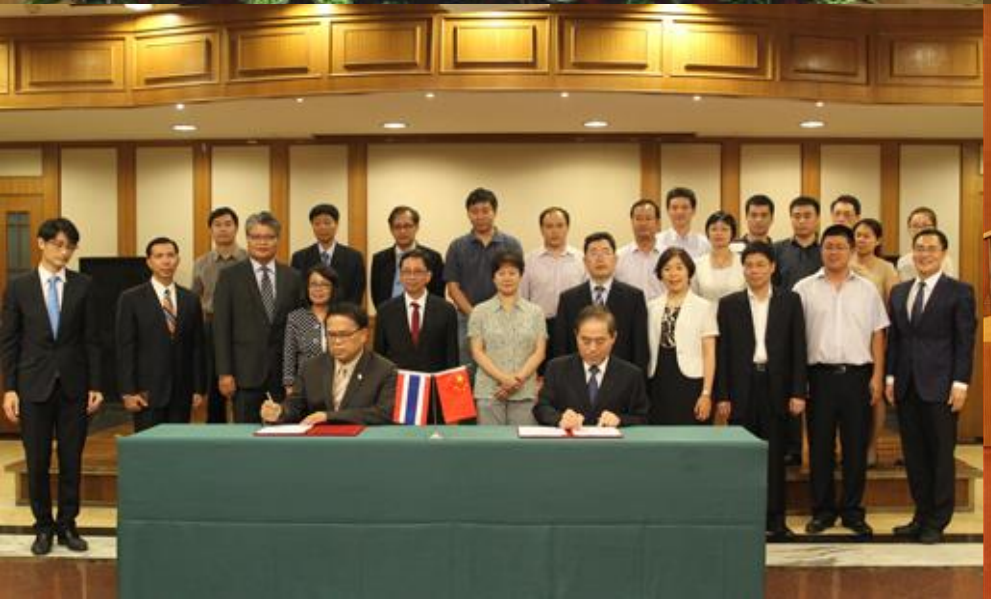
There are unique tropical marine ecosystems and diverse marine lives in the Indonesia seas, which provides ideal grounds for marine science research. The outputs of China-Indonesia joint studies of marine biotechnology and biodiversity, will not only promote the scientific impact of both sides, but also help better protect the marine environment and biological resources and benefit human welfare.



☐ Thailand

Joint Committee Meeting (JCM) on the Cooperation in the Field of Marine Affairs

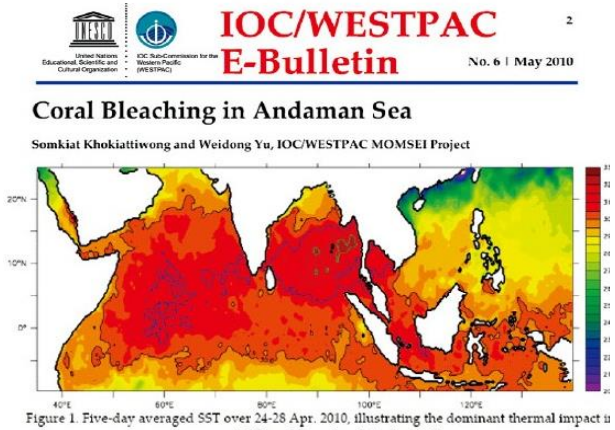




Thailand-China Joint Laboratory for Climate and Marine Ecosystem
June 2013 -

Marine geology and coastal vulneralbility

Monsoon observation in the Andaman Sea and Bay of Bengal


IOC/WESTPAC E-Bulletin

2

No. 6 | May 2010

Coral Bleaching in Andaman Sea

Somkiat Khokiattiwong and Weidong Yu, IOC/WESTPAC MOMSEI Project

Figure 1. Five-day averaged SST over 24-28 Apr. 2010, illustrating the dominant thermal impact i
central Bay of Bengal and Andaman Sea

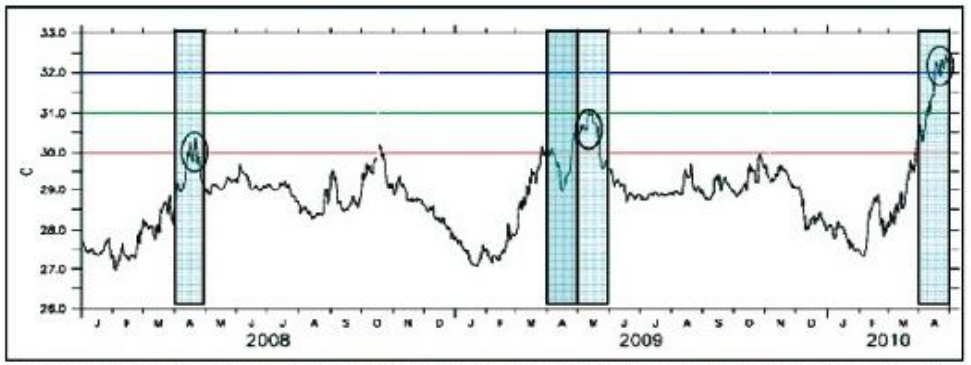
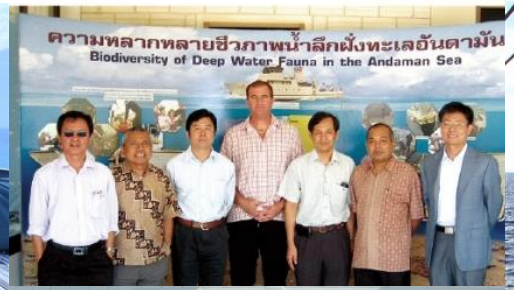
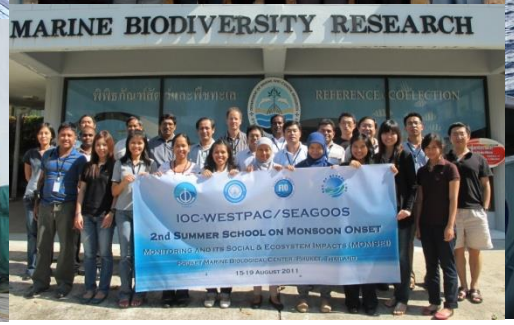
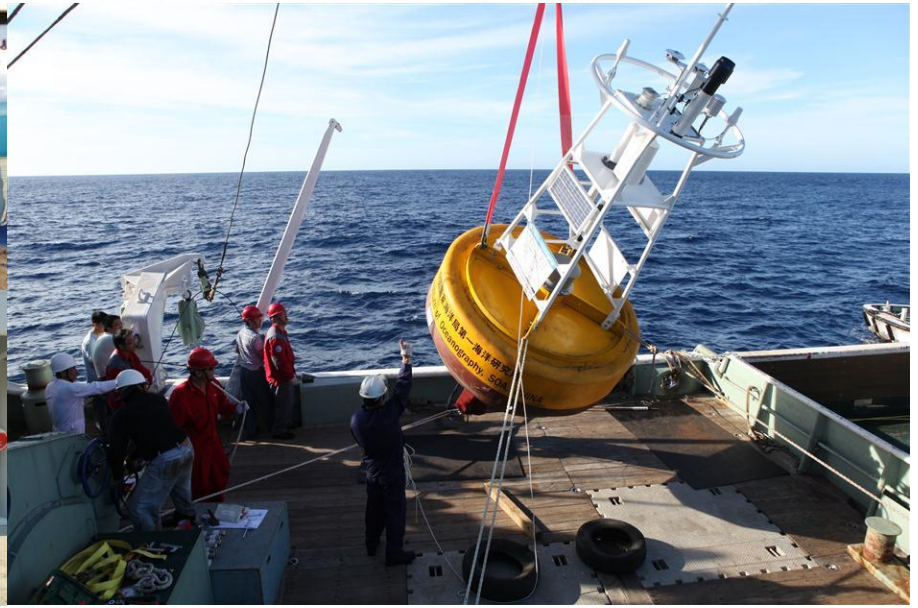


Figure 2. Time series of the daily SST observed by Buoy in central Bay of Bengal, particularly at (90°E, 12°N), from 1 January 2008 to 29 April 2010, illustrating the extremely high SST (over 32°C) during April 2010





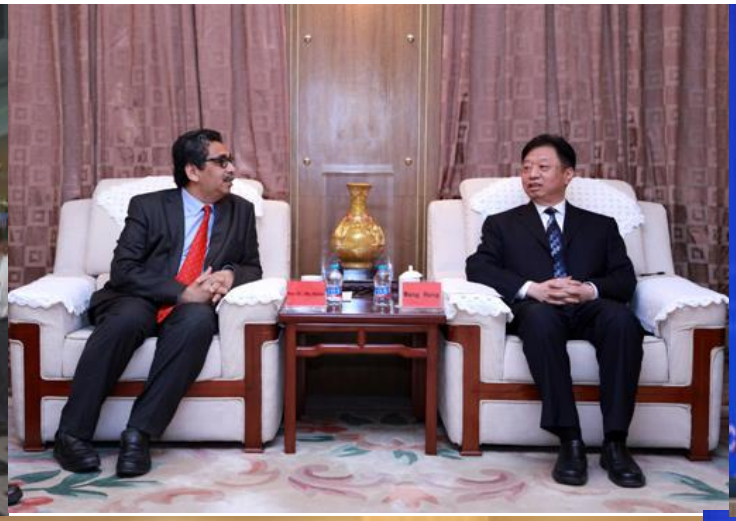


Tropical marine ecology research

- Malaysia

Joint Committee Meeting (JCM) on the Cooperation in the Field of Marine Affairs

China-Malaysia Workshop on Cooperation of Marine Science and Technology



Operational forecast system of marine environment

Marine ecology and oceanography studies

- Cambodia


中柬海洋事务合作研讨会
China–Cambodia workshop on marine affairs cooperation

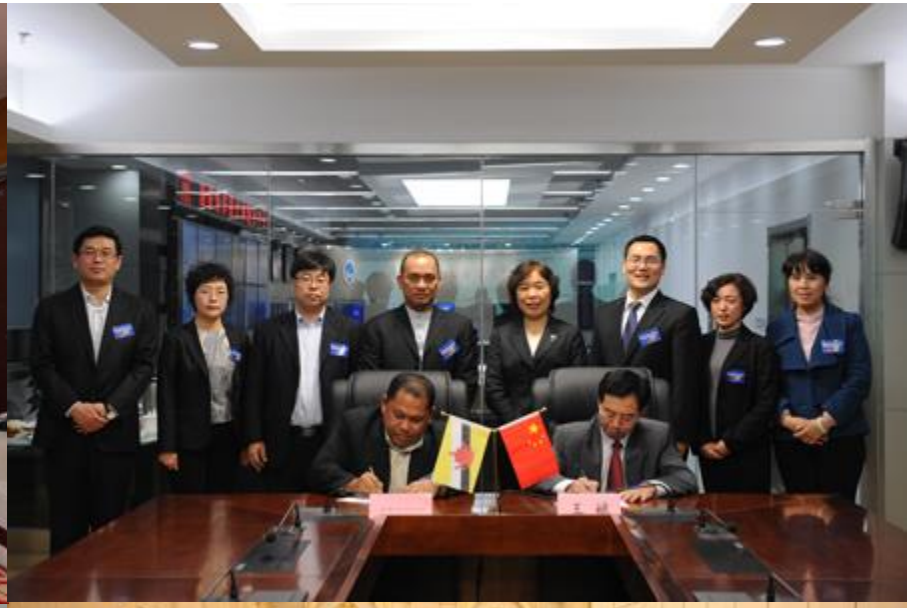
- Joint cruise in 2016

- Viet Nam

  Agreement on cooperative management of the environment of the Beibu Gulf, also formulated as joint project under China-ASEAN Maritime Cooperation Fund

- Brunei

  Agreement on cooperation of oil spill response

Myanmar

Concensus on Cooperation framework & focus topics

- Monsoon observation in the Bay of Bengal
- Operational forecast system of marine environment
- Dynamics of estuarine system

Cooperation activities

- Capacity building:education program

Marine Scholarship of China for PhD and Master studies 2013 -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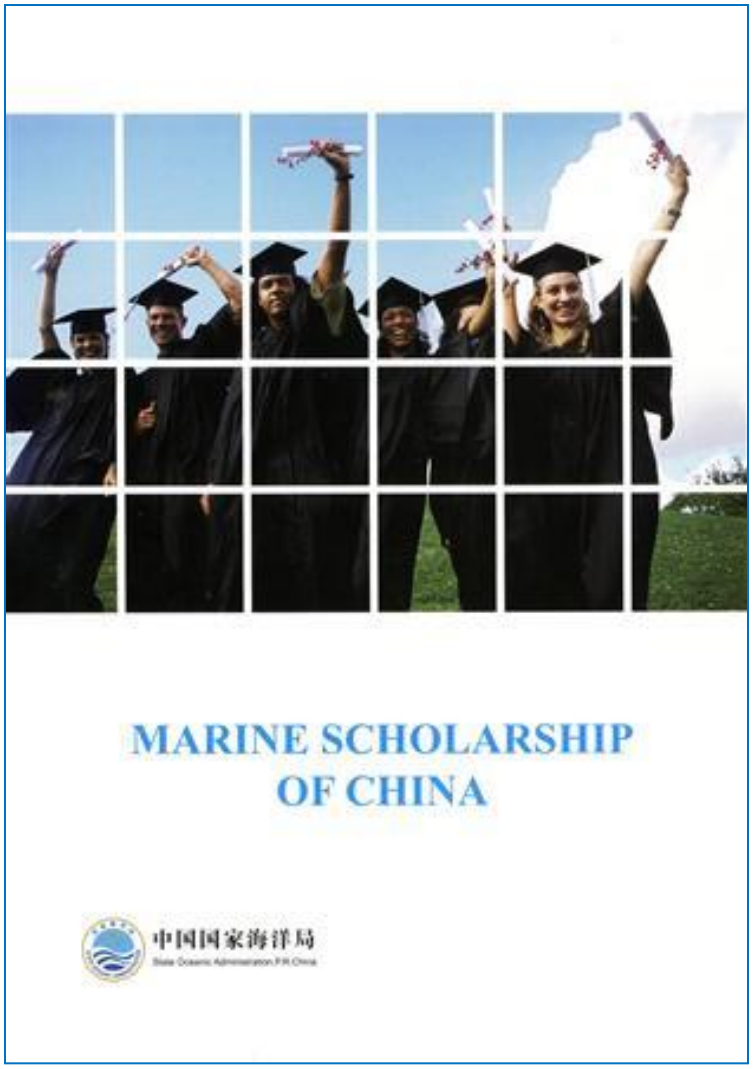

Cooperation activities

- Capacity building:Training courses


Ph.D graduate


Marine ecology training


Biotechnology training


master from ITB


Ph.D student

UNESCO/IOC ODC traning course


GNSS Training


Modern Analysis Training

Future perspectives

- Holding China-Southeast Asia Countries Workshop on Marine Cooperation, to discuss further cooperation on marine scientific research and environmental protection.
- Facilitating the implementation bilateral projects and those under China-ASEAN Maritime Cooperation Fund.
- Promote and conduct more joint training activities to enhance capacity of marine scientific research and environmental protection in the region.

Thanks