

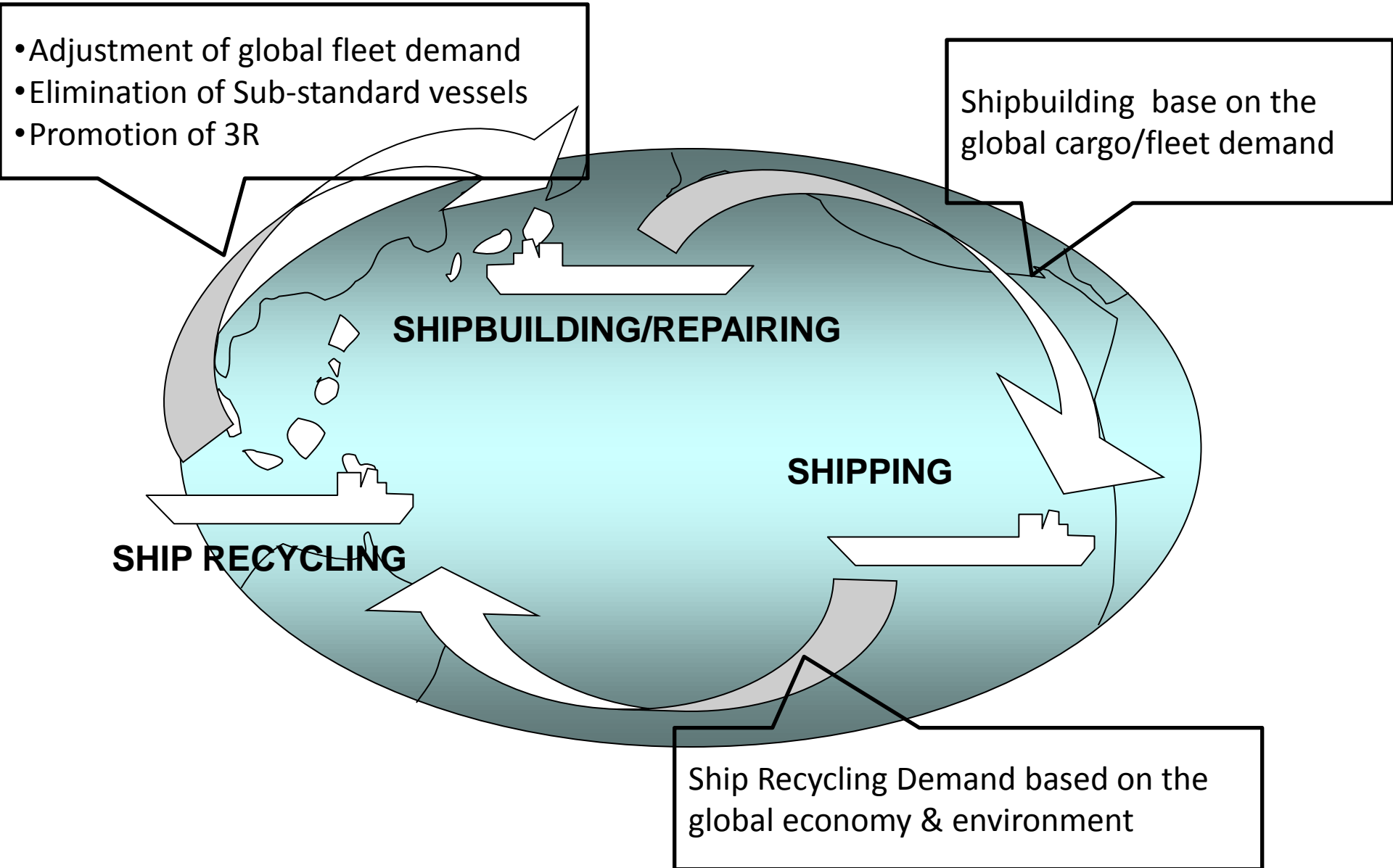
# SHIP RECYCLING CAPACITY DEVELOPMENT

An aerial photograph of Muroran, Japan, showing a large ship recycling facility with a prominent red hull. A suspension bridge spans the water in the middle ground. In the background, snow-capped mountains are visible under a clear sky.

**The Ship Recycling International Symposium in Muroran  
June 15, 2010**

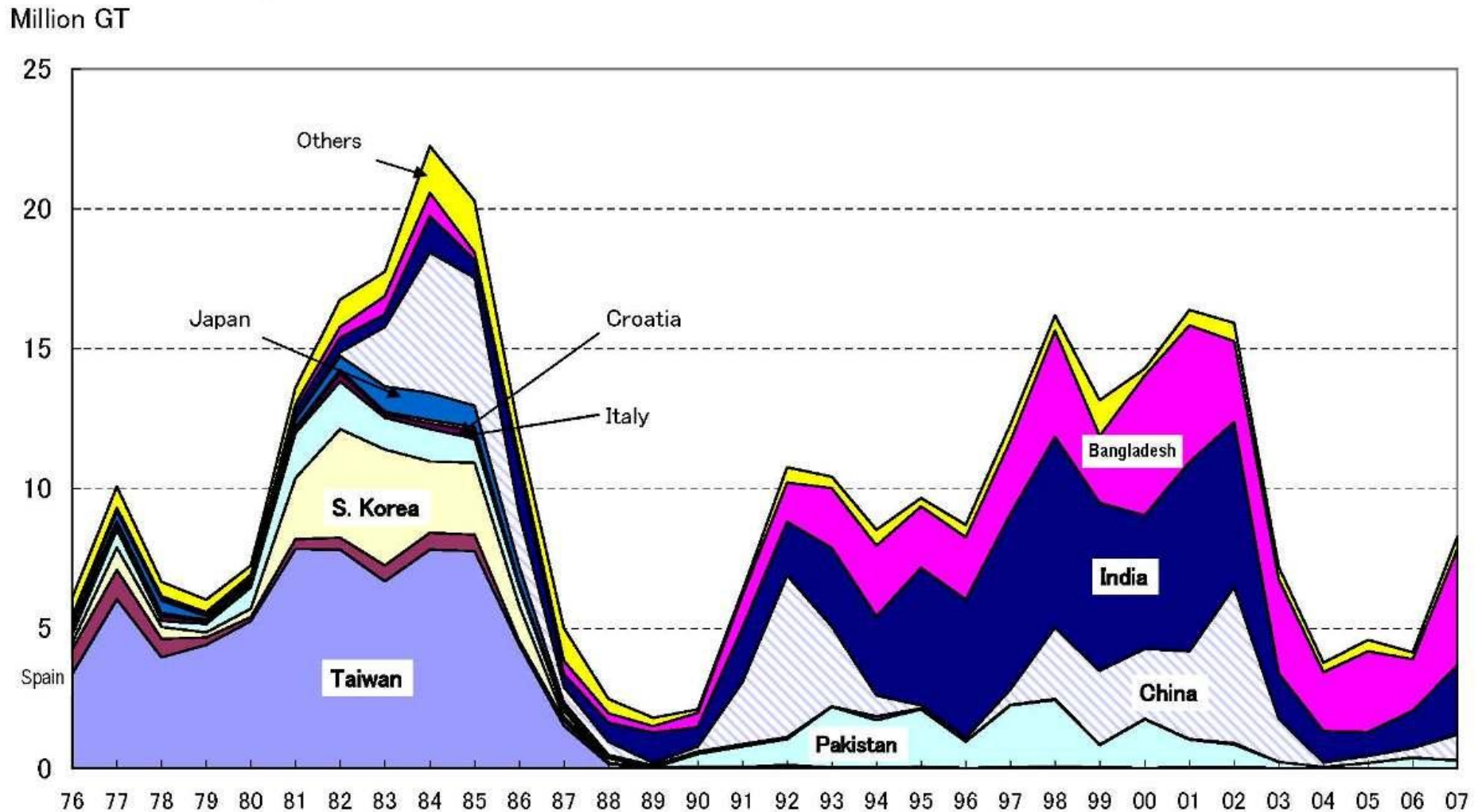
**Yasuo NAKAJO, Japan Marine Science Inc.**

# ROLE OF THE SHIP RECYCLING IN THE GLOBAL MARITIME CLUSTER



# MAJOR SHIP RECYCLING COUNTRIES

Up to 80th, Taiwan, S.Korea dominated  
90<sup>th</sup> till now, SW Asia with China dominate



(Note) 1. Data Source : Lloyd's Register.  
2. Ship Size Coverage : 100 Gross Tonnage and over.

# CURRENT SITUATION IN BANGLADESH - 1

- About 90% of the domestic steel demand is replenished by the recycled ship.
- unsafe work conditions, no environmental measures are taken.



# CURRENT SITUATION IN BANGLADESH - 2



# CURRENT SITUATION IN CHINA-1



- Environment and Worker protection is well controlled
- Government regulates environmental issues
- Close relationship with EU shipowners for green ship recycling



# CURRENT SITUATION IN CHINA-2



# CURRENT SITUATION IN INDIA



- 2007 Indian Supreme Court issued Ship Recycling Order
- Stricter regulations are enforced
- control of all yards are under process

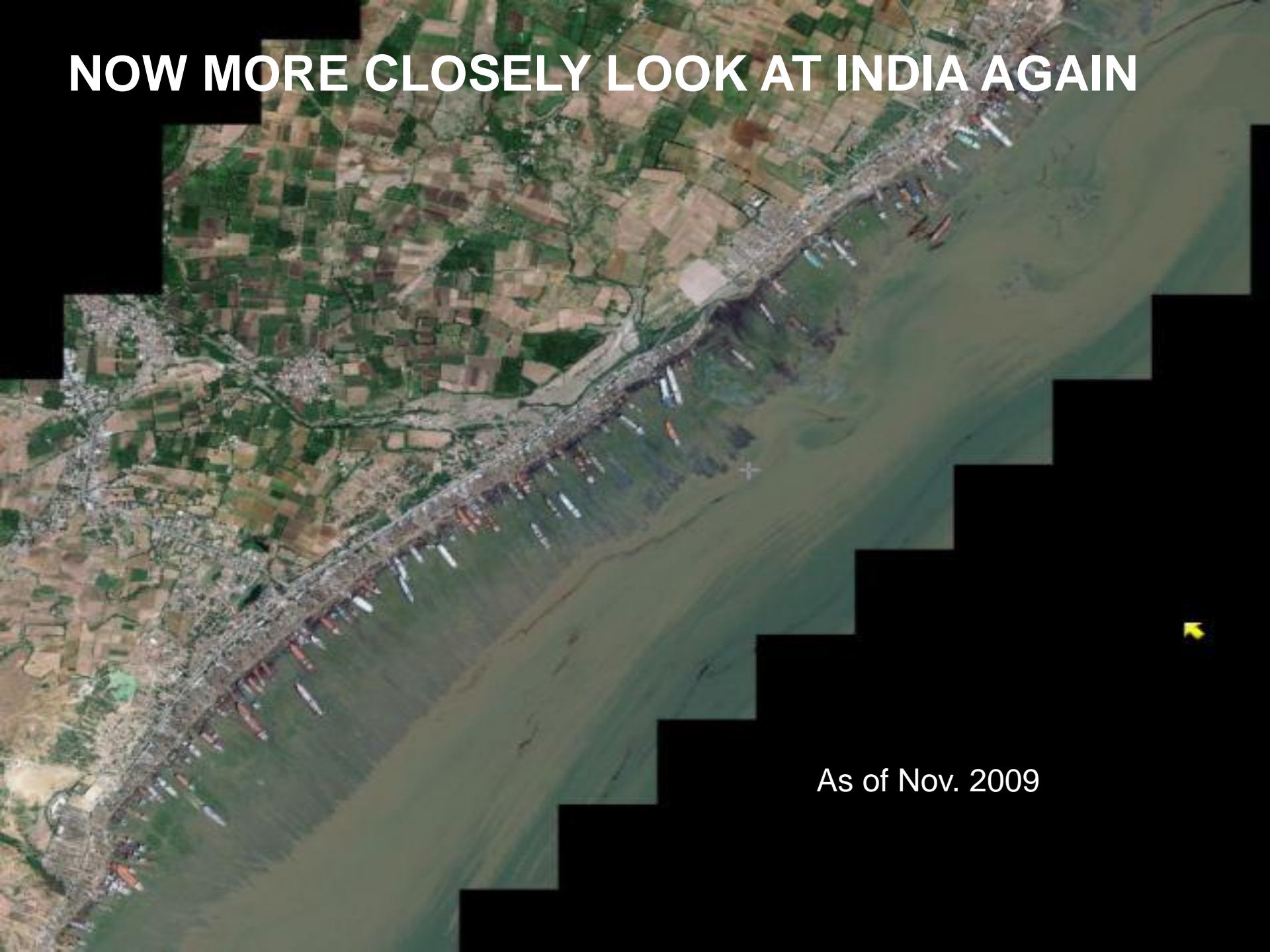




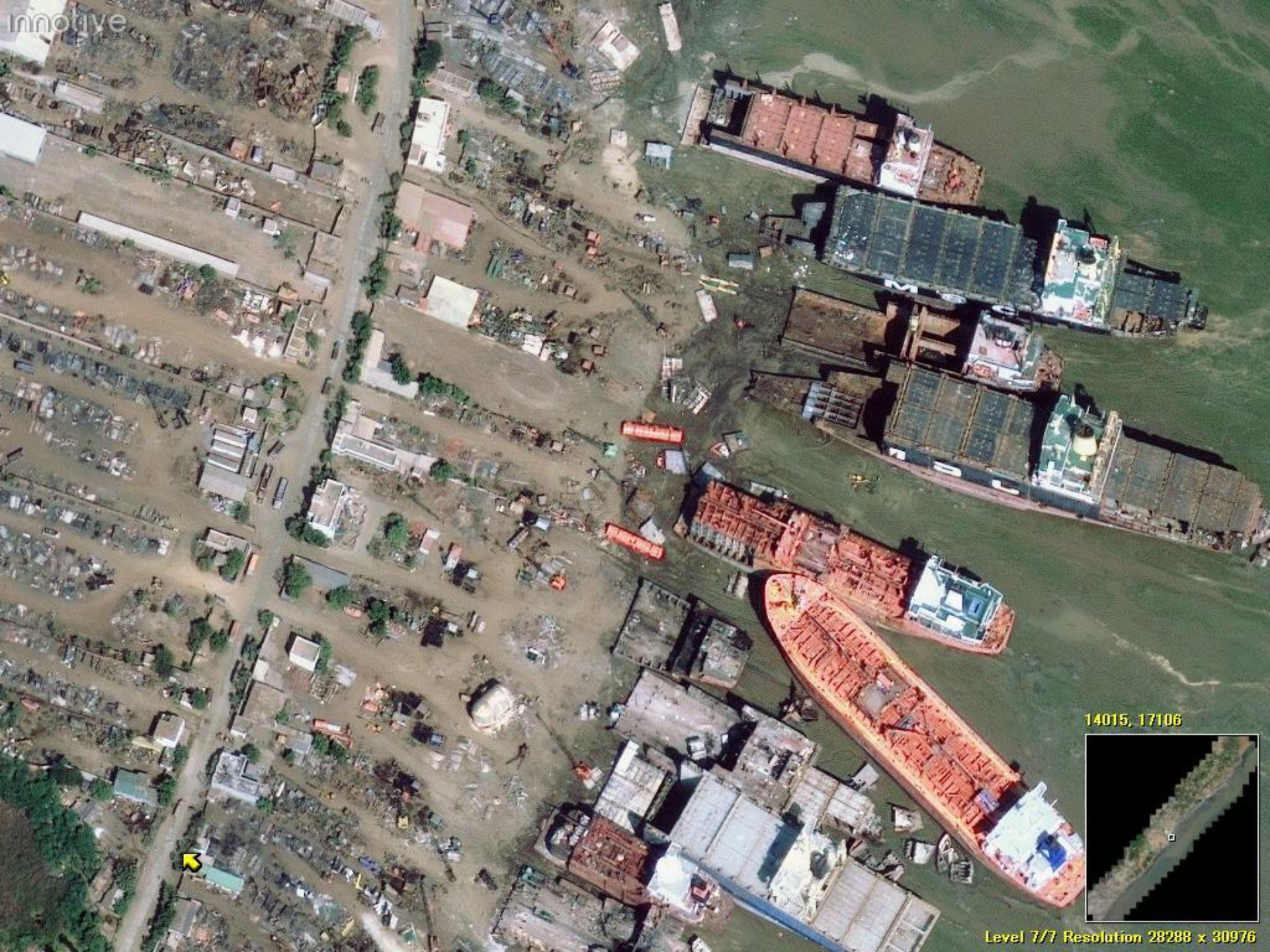
# CURRENT SITUATION IN INDIA-2



**NOW MORE CLOSELY LOOK AT INDIA AGAIN**



As of Nov. 2009



14015, 17106



# SHORELINE/INTERTIDAL ZONE



**HOWEVER**

# OIL / DEBRIS SPILL



22369, 9227



# PROBLEMS ON THE SHIP RECYCLING PROCESS

- Work under the inferior work conditions results accident involving human injury
- Poor management of Hazardous Materials results negative impact to the environment



Movement to control Ship Recycling

**THEREFORE**

**HONG KONG INTERNATIONAL  
CONVENTION FOR THE SAFE AND  
ENVIRONMENTALLY SOUND  
RECYCLING OF SHIPS  
HAS BEEN ADOPTED**

# SHIP RECYCLING CAPACITY IN THE WORLD

SHIP RECYCLING CAPACITY OF MAJOR SHIP RECYCLING COUNTRIES  
(x 1,000)

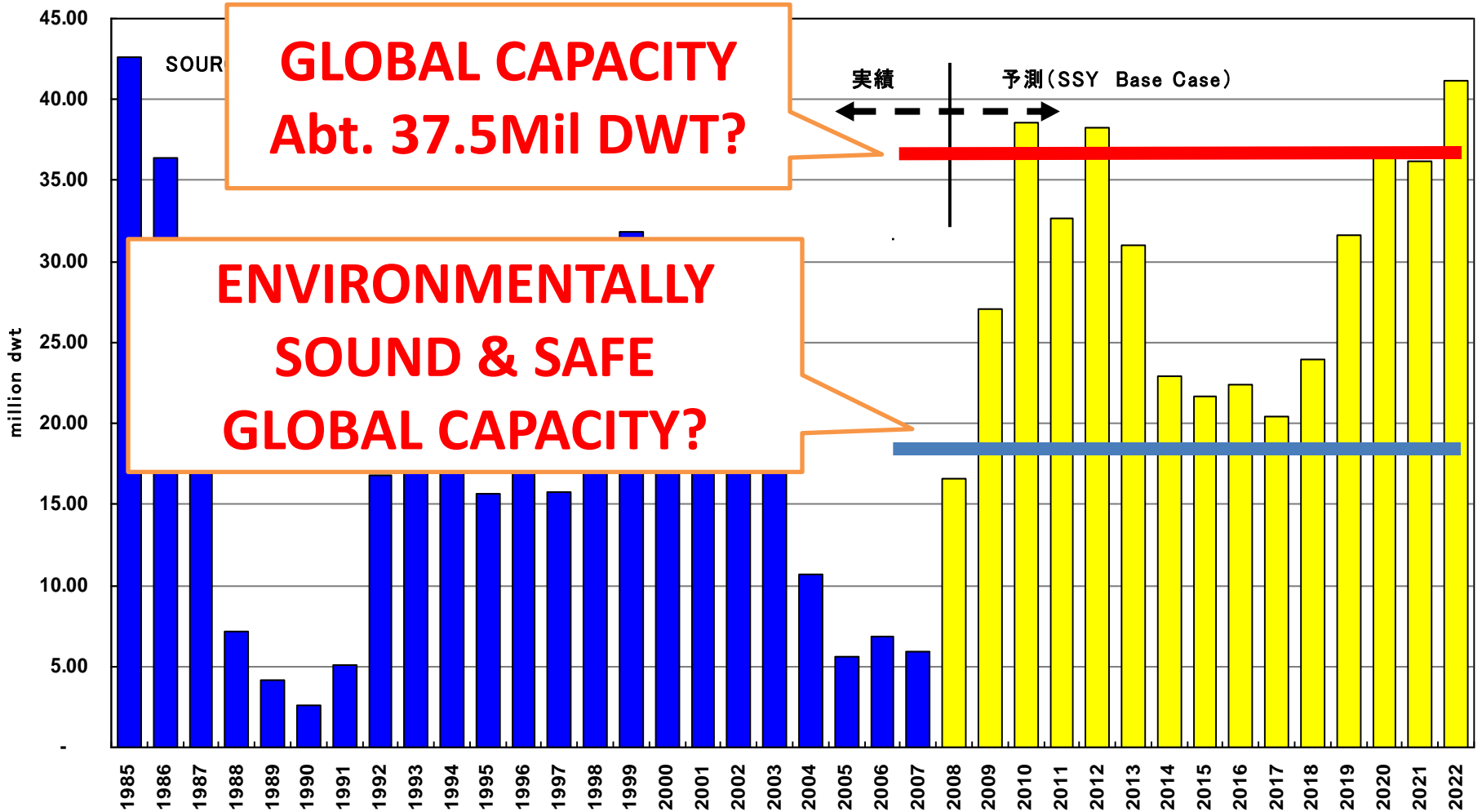
	NOMINAL CAPACITY			RECORD MAX. GT (Year)
	LDT	DWT	GT	
<b>INDIA</b> (Beaching)	3,000	15,000	10,000	7,561 (2009)
<b>CHINA</b> (Afloat)	3,000	15,000	10,000	7,738 (2009)
<b>BANGLADESH</b> (Beaching)	1,700	8,500	5,700	6,609 (2009)
<b>PAKISTAN</b> (Beaching)	2,000	10,000	6,700	2,101 (2009)
<b>TURKEY</b> (Landing)	900	4,500	3,000	557 (2009)
<b>SUB-TOTAL</b>	10,600	53,000	35,400	24,565
<b>OTHERS</b>				472 (2003)
<b>TOTAL</b>	10,600	53,000	35,400	25,037

**Current Estimated Maximum Ship Recycling Capacity of the World = 53Mil. DWT x (25,037/35,400) = 37.5 Mil. DWT**



# WHILE, GLOBAL SHIP RECYCLING DEMAND

World Ship Demolition by Year (All commercial ship types) and  
SSY Base Case: Forecast Ship Recycling, 2008-2022 inclusive



# CRITICAL ISSUES ON GLOBAL SHIP RECYCLING

## CRITICAL ISSUES

INCREASINGLY GROWING SHIP SCRAPING DEMAND AFTER 2009

LACK OF GLOBAL SHIP RECYCLING CAPACITY

NOT ALL SHIP RECYCLERS CAN AFFORD TO COMPLY THE NEW CONVENTION

ENVIRONMENTALLY SOUND & SAFE SHIP RECYCLING FACILITY SHOULD BE DEVELOPED

# **IN ORDER TO COMPLY WITH THE REQUIREMENTS OF THE CONVENTION**

- 1. IMPROVEMENT OF THE INFRASTRUCTURE TO  
MANAGE HAZARDOUS MATERIALS IN AN  
ENVIRONMENTALLY SOUND MANNER IS REQUIRED**
- 2. IMPROVEMENT OF THE WORKERS' SKILL &  
CONCIOUSNESS ON THE SAFETY AND HYGEENE IS  
REQUIRED**
- 3. INTRODUCTION OF GOOD MANAGEMENT SYSTEM IN  
OPERATION, CHECK/MONITORING AND REPORTING  
SYSTEM IS RREQUIRED**
- 4. TECHNICAL AND SUBSTANTIAL COOPERATION TO  
ASSIST SHIP RECYCLING COUNTRIES IS REQUIRED**

# NOW JAPANESE GOVERNMENT

## MINISTRY OF LAND INFRASTRUCTURE TRANSPORT & TOURISM (MLIT)

- Support Shipping and Ship Building Industries to Maintain its Strength
- Promote Japanese Vessels to be Dismantled in an Environmentally Sound Recycling Manner
- Contribute proactively to support Environmentally Sound Ship Dismantling and thus to IMO Hong Kong Convention
- Accelerate International Cooperation in assisting Ship Recycling Countries to be improved in line with the Convention

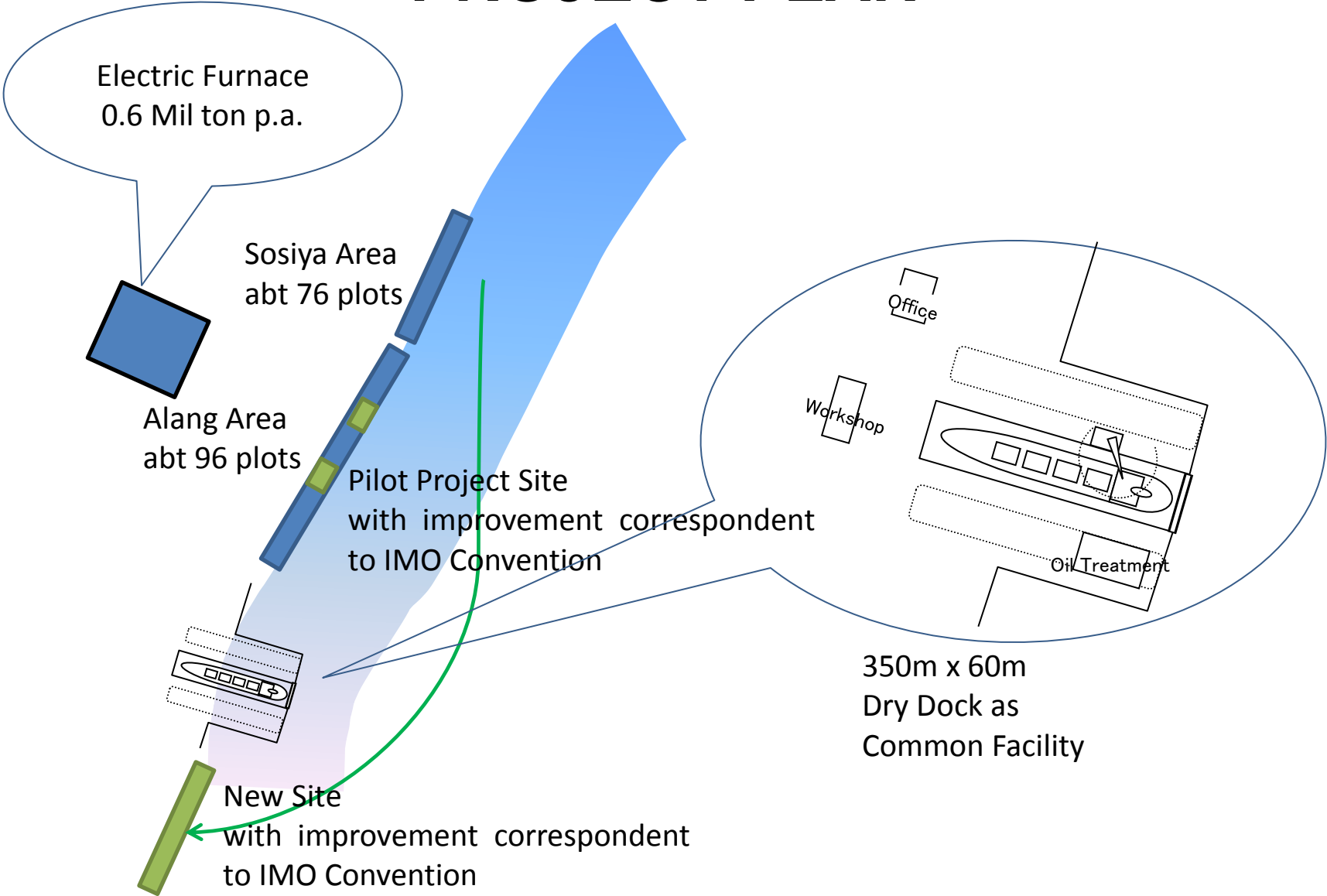
# PLANNED FUTURE COOPERATION IN INDIA

- ❖ Strengthen and Upgrade Ship Recycling Operations in Alang / Sosiya
  1. Be Ready to Comply with Hong Kong Convention
  2. Be Ready to Receive more Vessels, Recycle and Contribute to the Economic Development
  3. Keep and Upgrade the Workforce for more sophisticated technology under Safe Environment
  4. Envisage Upgrading of Ship related Operations in the Medium Term Future,  
e.g. Ship Repairing / Ship Building

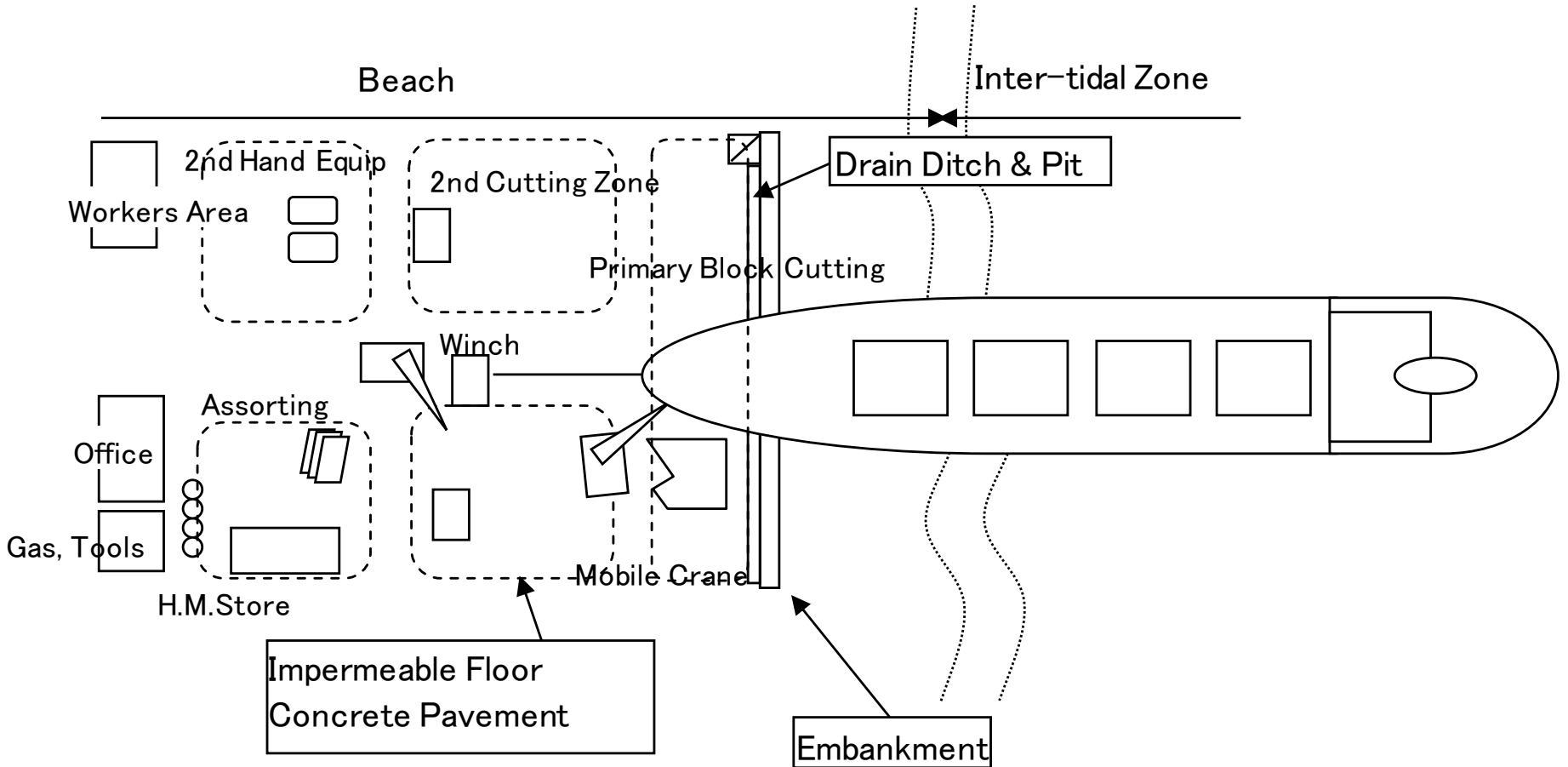
## ❖ Bring Japanese Technology, Investment and Finance under PPP Scheme

1. Bring Advanced Infrastructure and Technology for Ship Recycling in Compliance with the Convention
2. Keep and Upgrade Human Resources Skills
3. Bring Advanced Technology for Electric Furnace Operations on Recycled Steel
4. Offer a Modernized Recycled Material Market System

# PROJECT PLAN

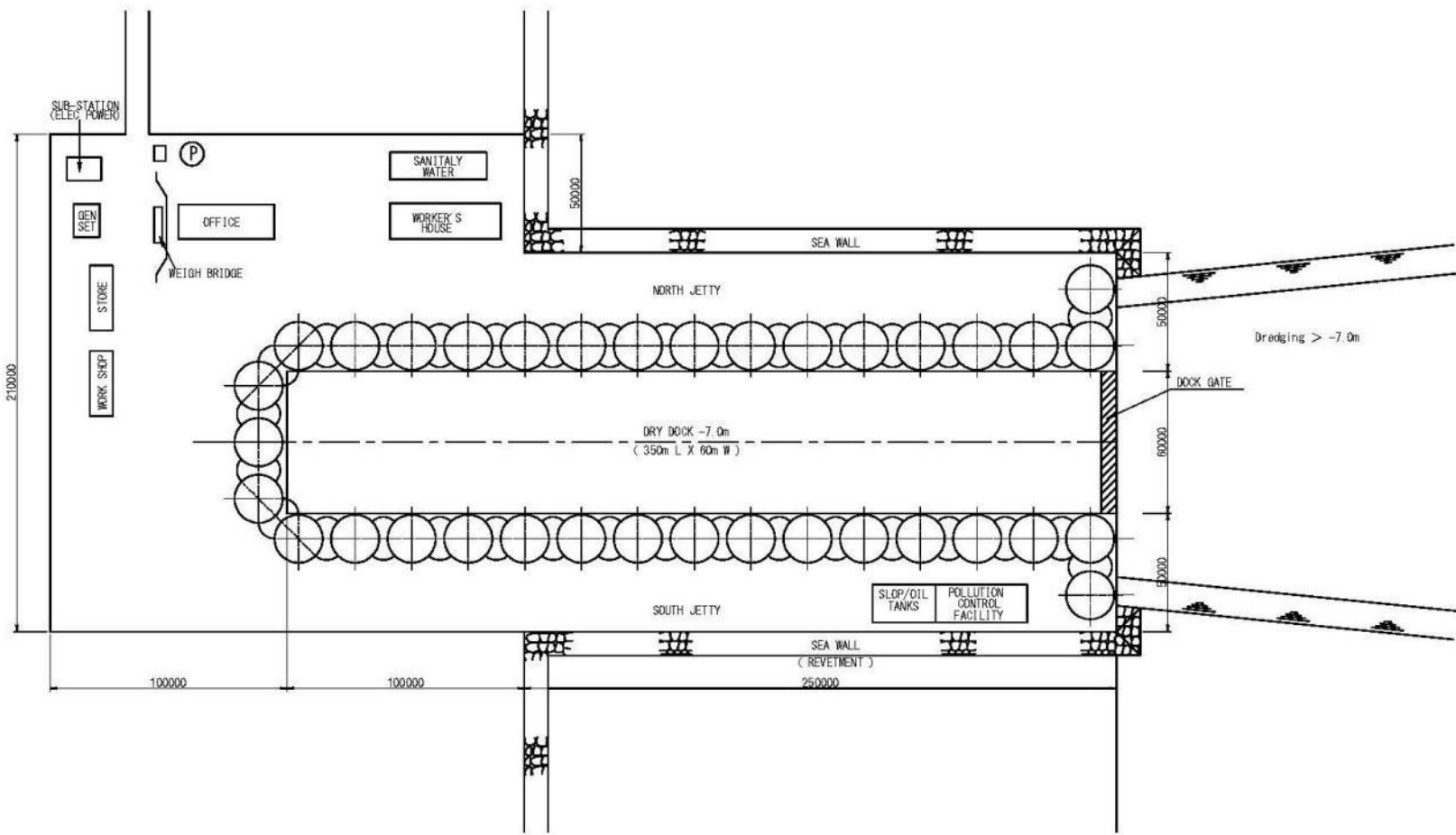


# IDEAL PLAN TO IMPROVE THE BEACHING IN ALANG





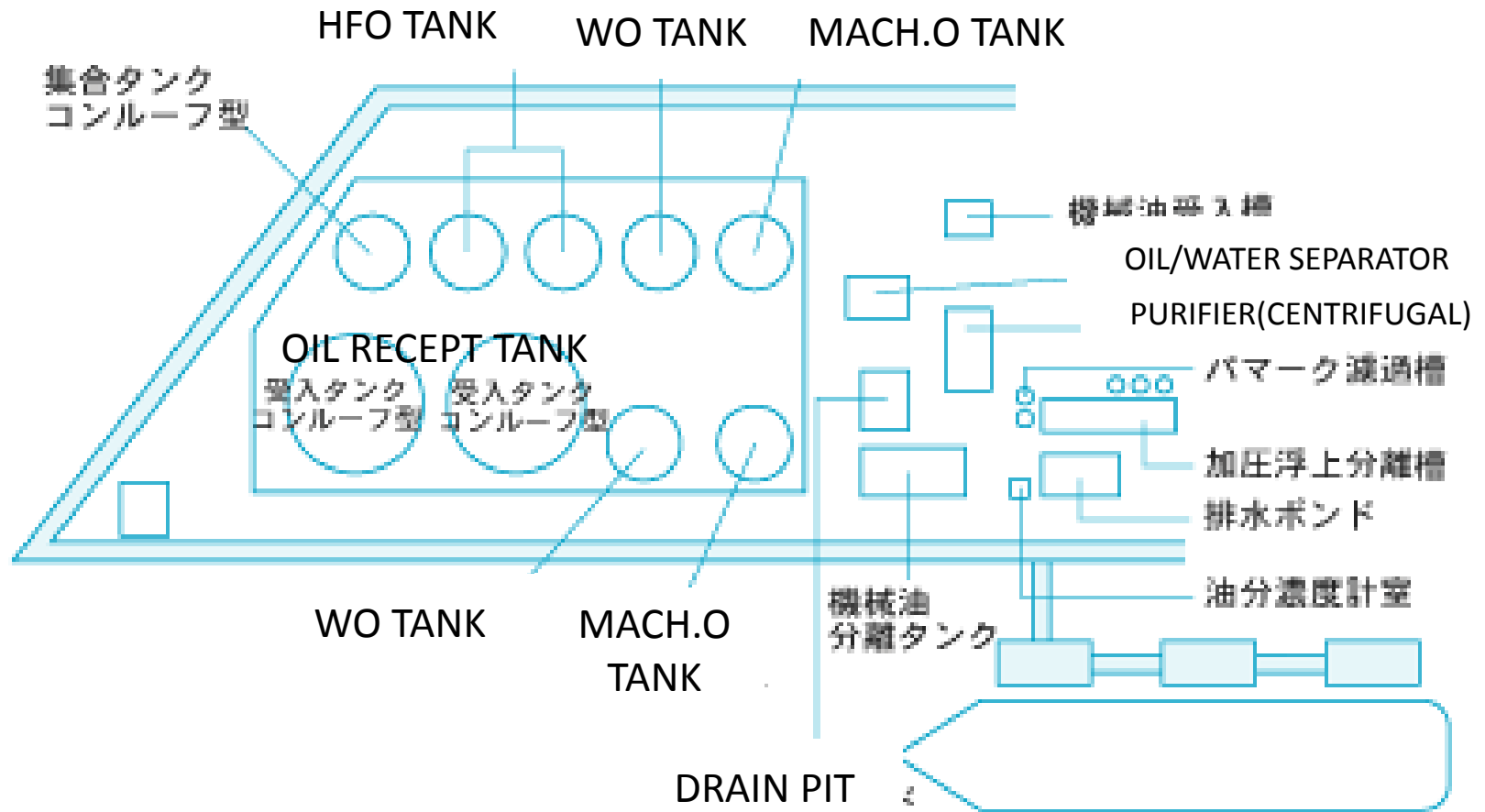
# COMMON FACILITY FOR HAZARDOUS MATERIAL REMOVAL



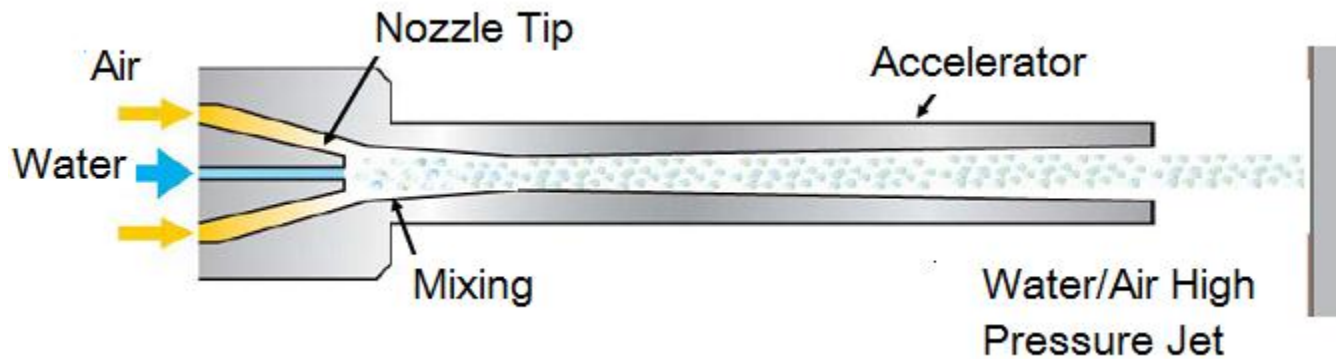
※ WINCH ARRANGEMENT/GUIDE SHOULD BE FINALIZED.  
 WATER/AIR JET EQUIPMENT SHOULD BE WELL ARRANGED.

# TECHNOLOGY TO BE ADOPTED

## OIL/WATER TREATMENT FACILITY



# AIR/WATER JET TECHNOLOGY REMOVAL FOR TOXIC PAINT



**WHAT'S NEXT?  
FOR FURTHER CAPACITY DEVELOPMENT**

**ALL STAKEHOLDERS ARE REQUESTED TO  
COOPERATE FOR THE BRIGHTER FUTURE  
WITH GREENER ENVIRONMENT**

