

# The Survey Program for The National Transport Development Plan In The Republic of The Union of Myanmar



## **Brief Explanation for The Feasibility Study on Inland Water Transport Facilities Improvement and Development Project**

**7 March 2014**

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# 1. Background

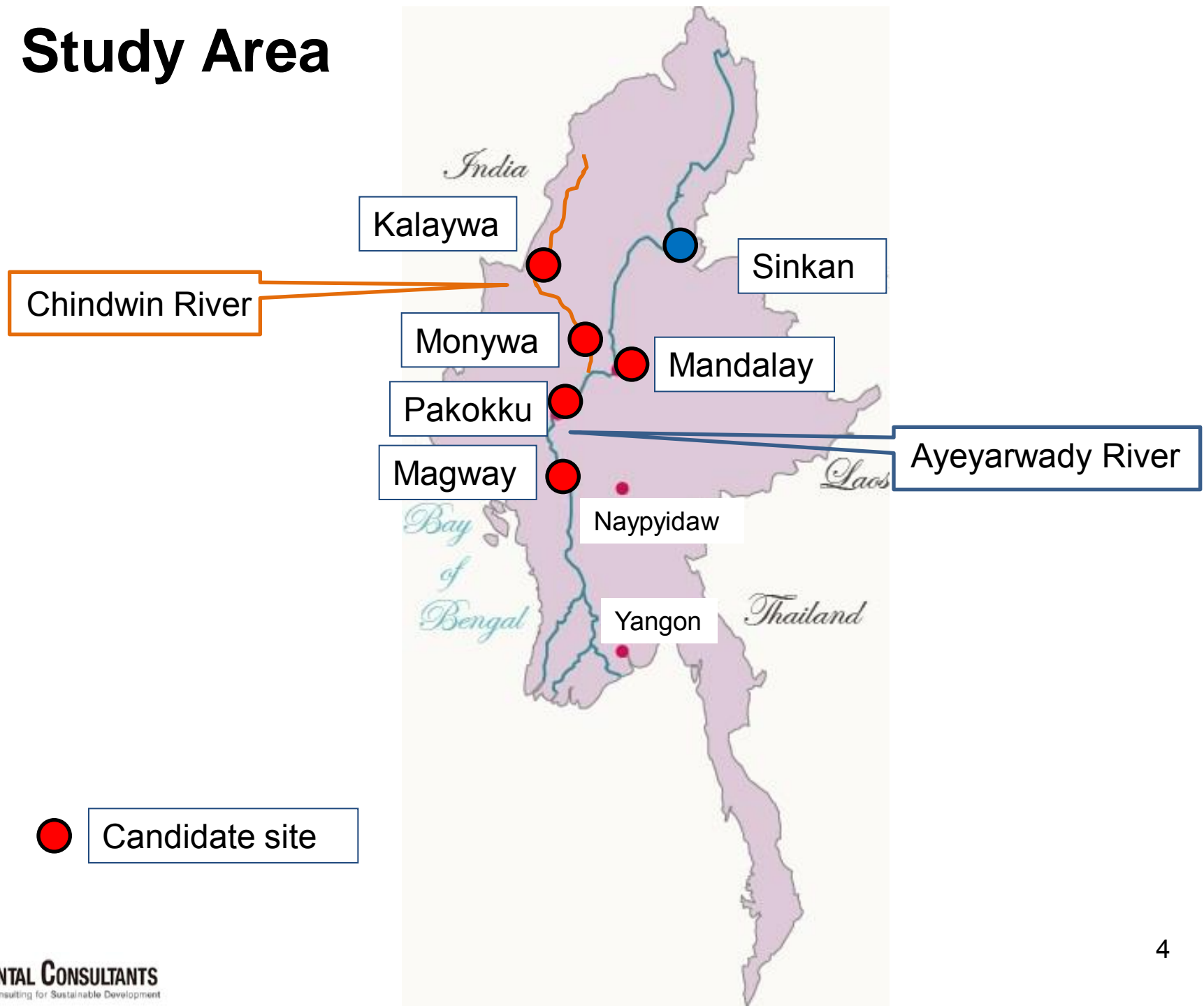
- Two Joint Coordinating meetings (JCC) were held in December 2012 and February 2013 respectively in the initial stage of the National Transport Development Plan in the Republic of the Union of Myanmar (MYT-PLAN, JICA Study).
- In each meeting, the Myanmar side requested a feasibility study regarding inland water transport.
- The request has two components; one is to develop six major river ports and the other is to update IWT ships.
- In reply to the request, JICA agreed to conduct the study.
- Examination on port development is focused on Mandalay Port only, as the result of prioritization and,
- As for ship procurement, it should start from reviewing of original proposal by IWT.

## 2. Purpose of Study

The goal of study was set to contribute to further economic growth of Myanmar. In this study, 2 items are objective.

- 1) Examination on new development of Mandalay Port and,
- 2) Review of proposed ship renewal by IWT and recommend new procurement plan.

# 3. Study Area



# 4. Scope of Works

## 1. Mandalay Port

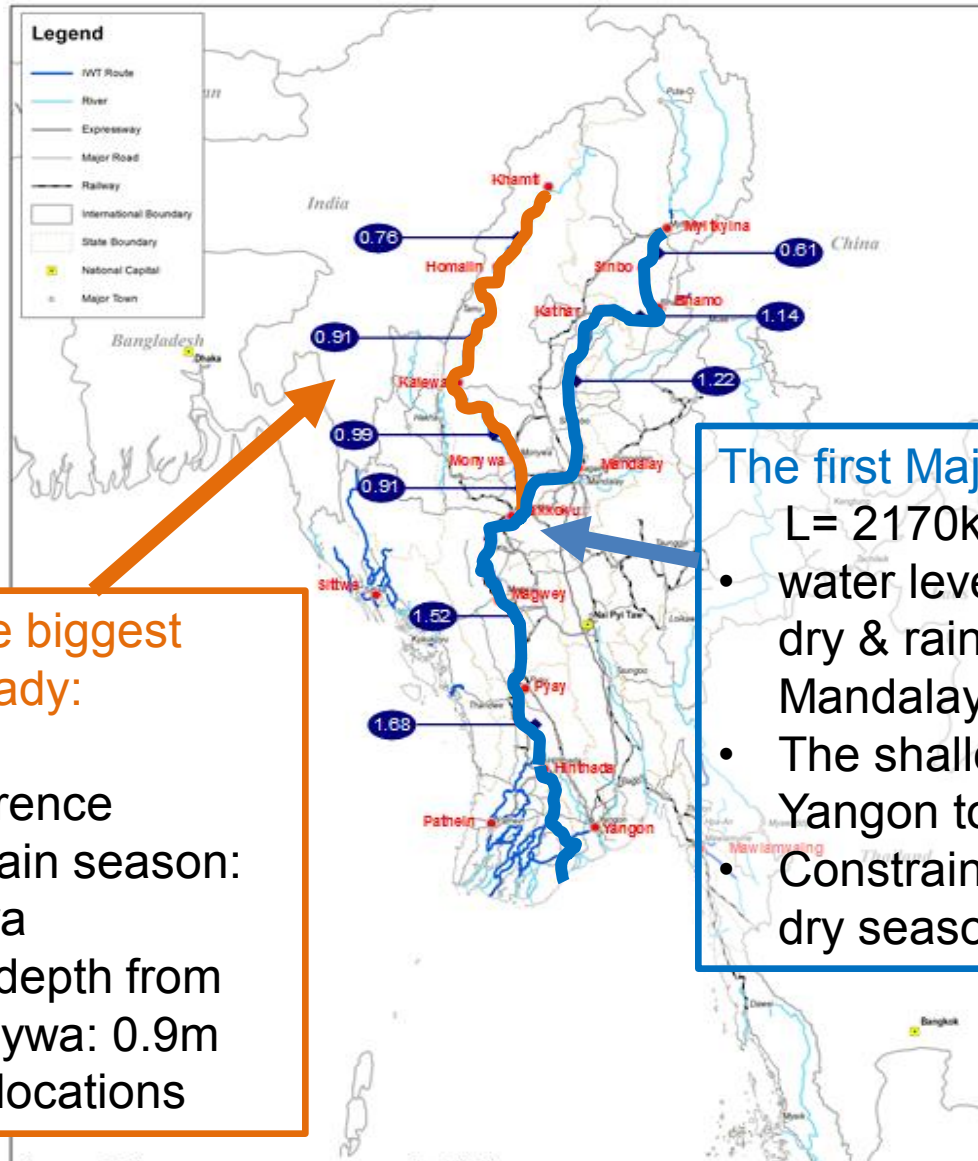
- a) Natural condition surveys (topo/ hydro, boring, sampling and River flow analysis)
- b) Conceptual Design
- c) Preliminary work schedule & cost estimates
- d) Port Operation & Maintenance
- e) Environmental Consideration
- f) Demand forecast and Economic/ Financial Analysis

## 2. Ship Renewal

- a) Review of IWT Proposal ( Procurement of 37 ships with Yen Loan Scheme)
- b) Site investigation & data collection
- c) Preliminary work schedule & cost estimates
- d) Port Operation & Maintenance
- e) Environmental Consideration
- f) Demand forecast and Economic/ Financial Analysis

## 3. Recommendation for the following stage

# 5. Present Status of Inland Water Transport



**Chindwin River, the biggest branch of Ayeyarwady:**  
 L= 1120km,  
 • water level difference between dry & rain season: 15m at Kalayewa  
 • The shallowest depth from pakokku to Kalaywa: 0.9m  
 • Constrains : 37 locations

**The first Major Ayeyarwady River:**  
 L= 2170km,  
 • water level difference between dry & rain season: 8m at Mandalay  
 • The shallowest depth from Yangon to Mandalay: 1.5m  
 • Constrains (shallow points in dry season) : 46 locations

Ayeyarwady River	
Waterway Section	Water Depth
Hinthada ~ Pyaw	5' 6" (1.68m)
Pyaw ~ Mandalay	5' 0" (1.52m)
Mandalay ~ Kathar	4' 0" (1.22m)
Kathar ~ Bamaw	3' 9" (1.14m)
Sinbo ~ Myittha	2' 0" (0.61m)

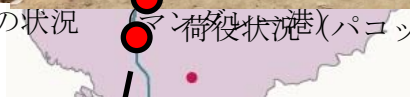
Chindwin River	
Waterway Section	Water Depth
Chindwin ~ Monywa	3' 0" (0.91m)
Monywa ~ Kalewa	3' 3" (0.99m)
Kalewa ~ Homalin	3' 0" (0.91m)
Homalin ~ Khamti	2' 6" (0.76m)

# 5-1 Present condition at each river port

## Site investigations along Ayeyarwady River

### Pakokku

### Mandalay



河岸（港湾）の状況（パコック河港）の状況（マンダレー港）の状況（パコック河港）の状況

### Magway



河岸（港湾）の状況（マンダレー港）

河岸（港湾）の状況（マグウェー港）



# 5-1 Present condition at each river port

## Site investigations along Chindwin River

Monywa

Kalawwa



河岸（港湾）の状況（カレワ港）



荷役状況（カレワ港）



湾）の状況（モニワ港）

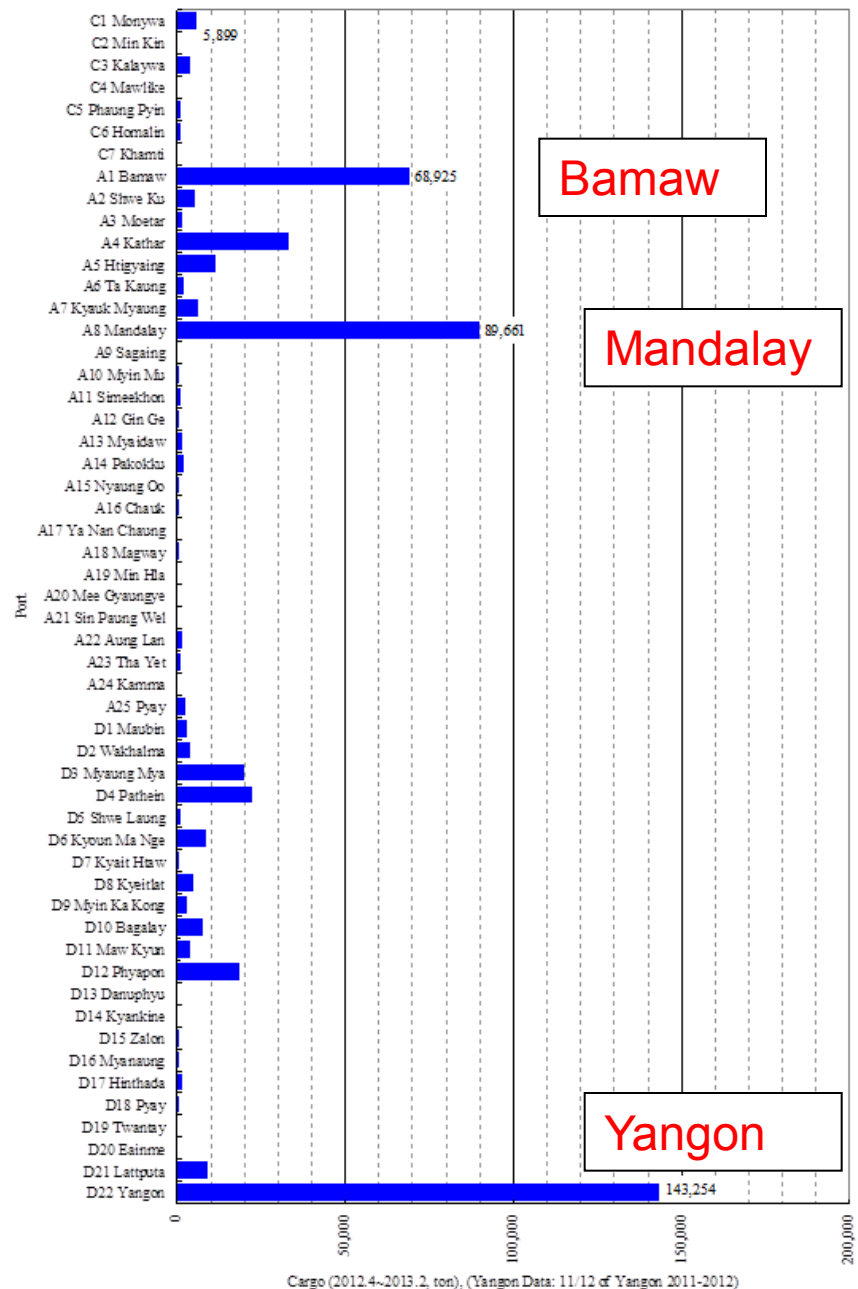
In Ayeyarwady & Chindwin Rivers,

- Cargo handlings are by manpower,
- No machinery and equipment at ports
- No information about navigation

# 5-2 Cargo handling Volume

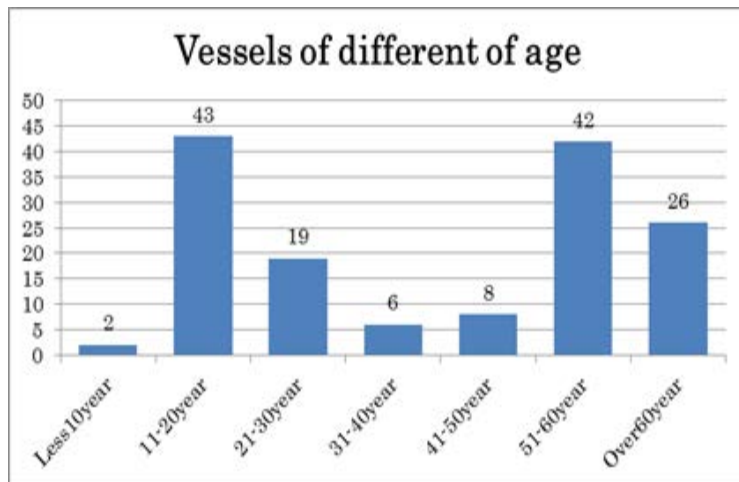
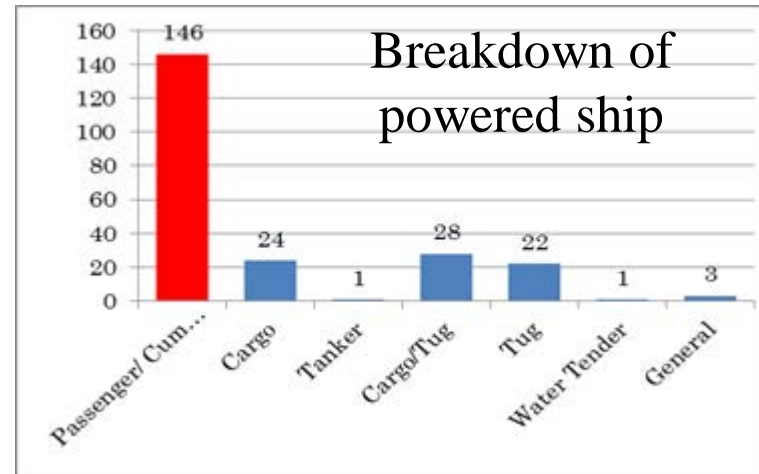
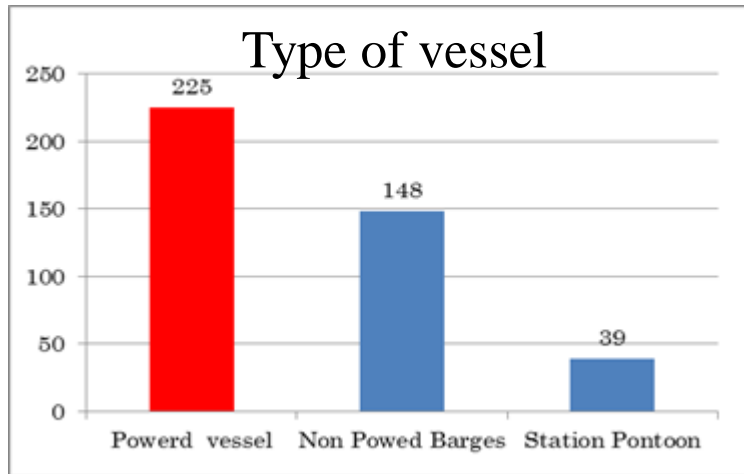
Ayeyarwady, Chindwin, and delta divisions (2012 – 2013, only IWT)

- Generally it is recognized Privateers are handling 70-80% of all cargos
- Yangon, Mandalay, and Bamaw show remarkable volume



# 5-3 Present condition of IWT Ships

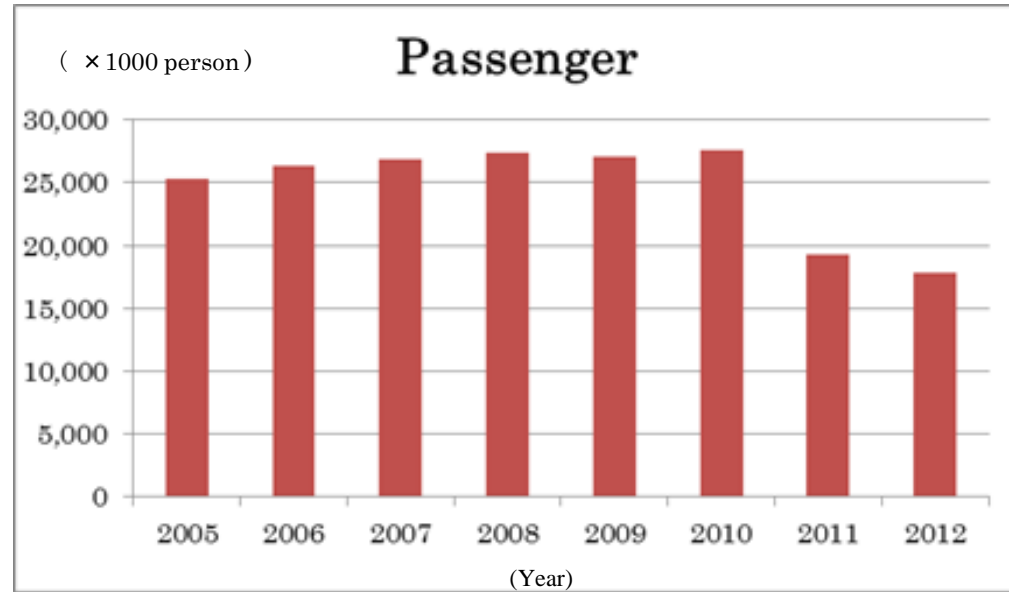
- Ship numbers owned by IWT is decreasing; 621 in 2003⇒413 in 2013 (Main reason: Decrepit and damaged by Cyclone Nargis in 2008)
- Breakdown of IWT ship numbers are shown in the following



**Over 20 years: 69%**

**Ship renewal is necessary**

# 5-4 Trend of Passengers using IWT service



IWT users are decreasing due to road development and shift to private vessel operators (cheaper and faster)

# 5-5 Cargo Handling Volume at Mandalay

## Private Cargo Volume

Month	Passenger cum Cargo Ship			Cargo Barge			Total (t)
	In (t)	Out (t)	Total (t)	In (t)	Out (t)	Total (t)	
Feb-2013	343	11,490	11,833	33,291	1,155	34,446	46,279
Mar-2013	356	12,665	13,021	35,721	3,598	39,319	52,340
Apr-2013	651	10,478	11,129	20,838	2,985	23,823	34,952
May-2013	720	10,846	11,566	24,422	1,965	26,387	37,953
Jun-2013	621	12,898	13,519	32,547	1,685	34,232	47,751
Jul-2013	573	11,308	11,881	21,299	4,456	25,755	37,636
<b>TOTAL</b>	<b>3,264</b>	<b>69,685</b>	<b>72,949</b>	<b>168,118</b>	<b>15,844</b>	<b>183,962</b>	<b>256,911</b>

Note: Exclude liquid cargo, wooden logs, and sand/stone.

Source: DMA

**Assumed Annual Volume: 513,822**

## IWT Cargo Volume

Month	By Passenger cum Cargo Ship		
	IN (t)	OUT (t)	TOTAL (t)
Apr-2012	4,203	5,171	9,374
May-2012	5,497	5,597	11,094
Jun-2012	4,717	5,486	10,203
Jul-2012	2,629	5,460	8,089
Aug-2012	2,122	4,713	6,835
Sep-2012	2,418	5,110	7,528
Oct-2012	2,068	4,970	7,038
Nov-2012	2,098	4,193	6,291
Dec-2012	2,309	4,238	6,547
Jan-2013	2,959	4,678	7,637
Feb-2013	4,473	5,804	10,277
Mar-2013	4,901	5,590	10,491
<b>TOTAL</b>	<b>40,394</b>	<b>61,010</b>	<b>101,404</b>

Source: IWT

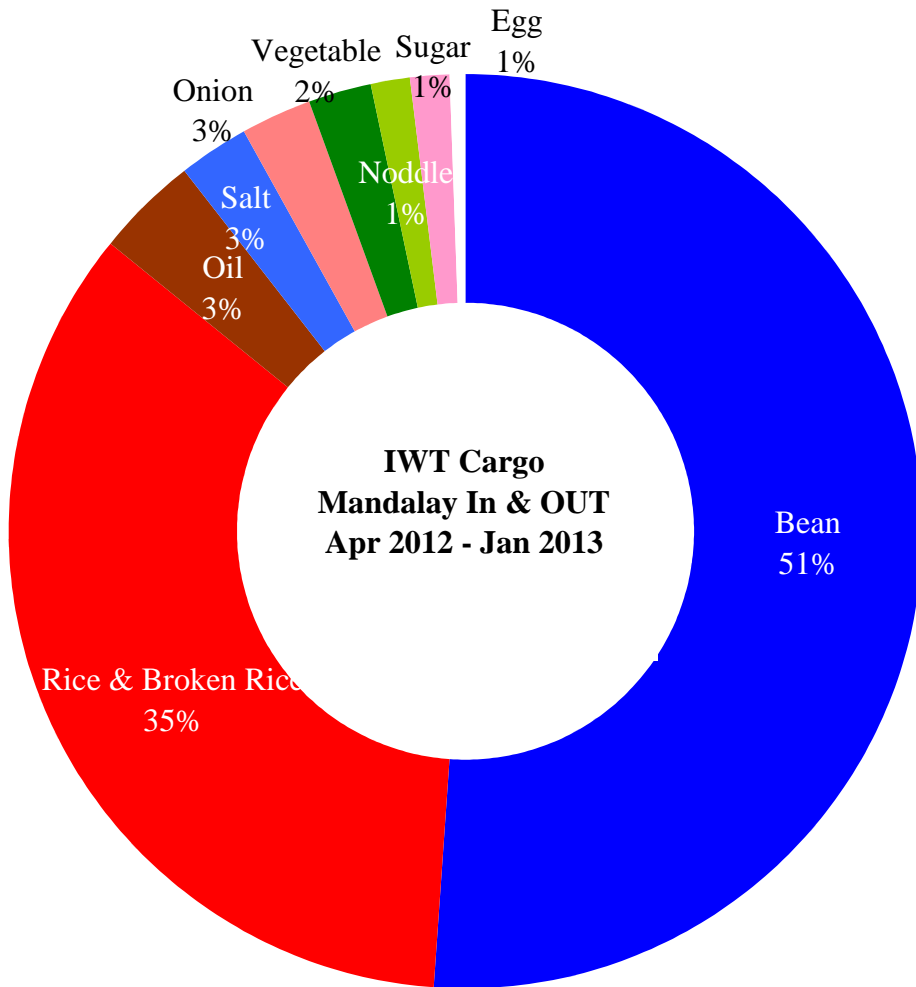
Private 500 000 t  
 IWT 100 000 t  


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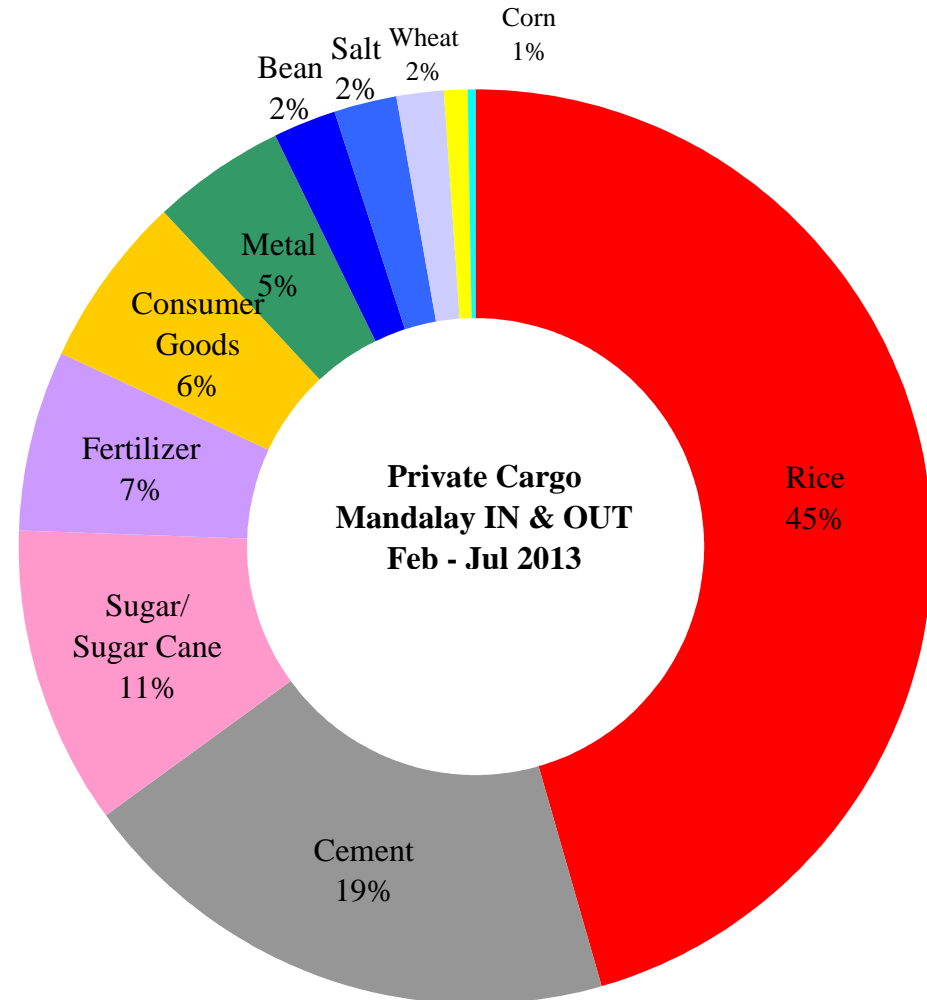
 Total 600 000 t

# 5-5 Cargo Handling Volume at Mandalay (continued)

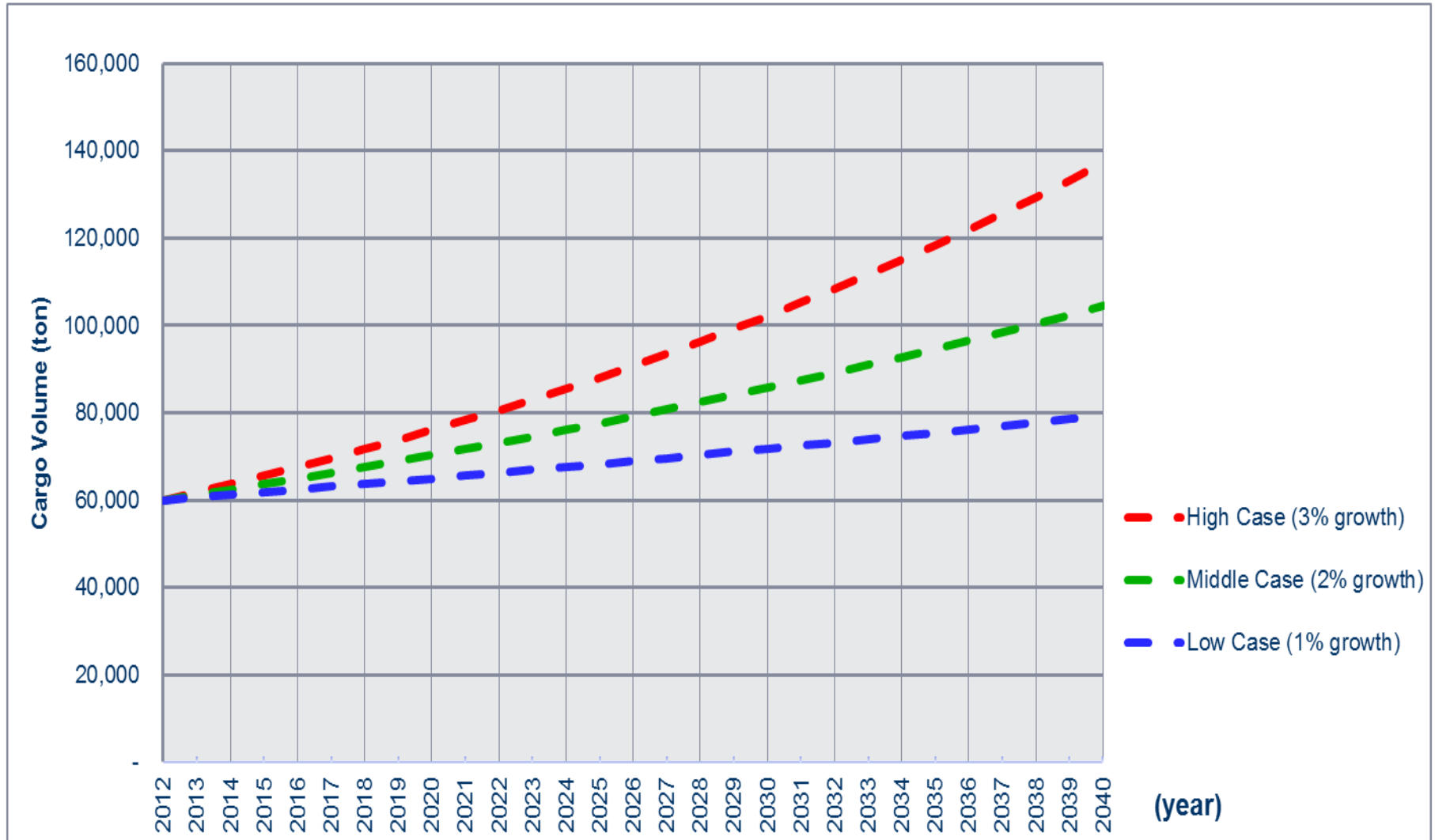
## IWT



## Private



# 6. Demand Forecast



# 6 Demand Forecast (continued)

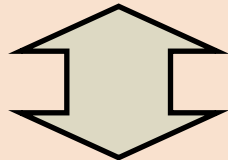
## Mandalay Port

### 1. General Movement on Logistics

- Shorter Travel Time
- Cheaper Transport Cost

### 2. Facility Development Time Flame

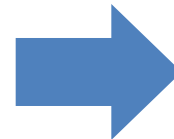
Road and Rail need longer time  
& higher investment cost



Waterway needs shorter time  
& lower cost

### 3. Requirement of Improvement of Port

- Modernization Mandalay



**Mandalay Port**  
**First Modern**  
**Inland Port**

**Pilot Project**



# 7. Further Discussions

- 1) Need to develop port facilities at Mandalay (the second biggest volume)
- 2) Need to introduce machinery cargo handling and new operation & maintenance system
- 3) Need to conduct river survey to secure navigation channel
- 4) Rote between Yangon (including Thilawa area) and Mandalay seems to have high potential

\* Distance of Yangon ~ Mandalay: 590 miles (950km)

# End of Presentation