

2015.

ektorat
ayaan

NDONESIA

Home the Islands My Yard the Sea

979 8
POJ
i



INDONESIA

My Home the Islands, My Yard the Sea

Editor:
Ingrid HE Pojoh



Directorate of Underwater Cultural Heritage
Ministry of Culture and Tourism

Copyright
Directorate of Underwater Cultural Heritage
First Edition
2011

ISBN : 978-979-17541-3-2

INDONESIA

My Home the Islands, My Yard the Sea

INDONESIA:

My Home the Island, My Yard the Sea
ISBN : 978-979-17541-3-2

BOARD OF EDITORS

Advisor :

Director General of History and Archaeology

Responsible Person :

Director of Underwater Cultural Heritage

Editor :

Ingrid HE Pojoh

Writers :

Bambang Budi Utomo
Bambang Rudito
Daud Aris Tanudirdjo
Lucas Partanda Koestoro

Courtesy :

Aryandini Novita
Bambang Budi Utomo
Don Hasman
Gatot Ghautama
Gugun Gunawan
Horst Liebner
Lien Dwiari Ratnawati
Lucas Partanda Koestoro
Nurhadi Rangkuti
Peter Loud
Suparno
Sulayman
Wahyu Saptomo
William Marsden

Cover Designer :

Ivan Efendi

Address :

Direktorat Peninggalan Bawah Air
Kompleks Depdikbud gedung E Lt. 11
Jl. Jend. Sudirman, Senayan
Jakarta 10270
Telp dan Fax (021) 5725531
Email : arkeologi@yahoo.co.id

Production :

Direktorat Peninggalan Bawah Air
(Directorate of Underwater Cultural Heritage)

FOREWORD

Action Director General of History and Archaeology

During its early years of establishment, the boundaries of the Republic of Indonesia are based on the *Territoriale Zee en Maritieme Kring-Ordonantie 1939 (TZMKO 1939)*, article 1, act1, which mentioned sea territorial boundary is 3 miles width from coastline. That means that waters between islands is free waters, not belong to Indonesia territory.

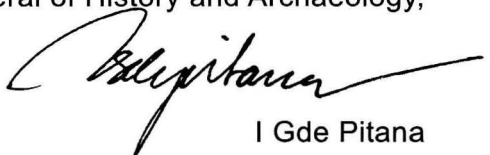
Putting it in the territory of Indonesia requires hard efforts. December 13th in the year 1957 was the beginning of all the efforts; that was when Indonesia announced the Djoeanda Declaration which mentioned Indonesia as an archipelagic state. Some years later, with the *Wawasan Nusantara* concept, the sea between islands become interior sea and the regions within is treated as unitary.

Not much archipelagic state in this world and Indonesia is the largest. It covers 1,9 million square area and 13,458 large and small islands. Different environmental condition of these island make the people of Indonesia are very diverse in their cultures. The heterogeneity is expressed on 19 local customary law areas, 770 ethnic-groups, and 726 spoken-languages.

Considering the history of human spreading, the people who live in Indonesia are basically multi-cultured maritime people. As maritime people we are very conscious about the power within the sea that can be disseminated through the maritime culture consciousness.

This book, tittled *INDONESIA, My home the Islands, My Yard the Sea*, is intended to bring maritime culture consciousness; it is about the culture of maritime people. It is hoped that this book will trigger and increase the pride and responsibility on preserving noble values as reflected in the cultural remains of maritime people of Nusantara. And may this book confide us about how maritime nation flourishes and developed without ignoring the preservation of the nature and environment for the benefit of the nation.

Jakarta, January 2012
Action Director General of History and Archaeology,



I Gde Pitana

FOREWORD

Director Directorate Underwater Cultural Heritage

Indonesian people are maritime people, living in archipelagic region, and with rich cultural diversity; but not all of them realize that we are maritime people. As an effort in providing information about maritime to Indonesian people, the Directorate of Underwater Cultural Heritage in coordination with the Secretariat General of Ministry of Culture and Tourism published a book titled *Pandanglah laut Sebagai Pemersatu Nusantara* in year 2007.

In addition, it is our duty to introduce to the world that we are maritime people. Start from lack of information for foreign people, the Directorate General of History and Archaeology, Ministry of Culture and Tourism initiated to publish the book in English, titled *Indonesia; My home the islands, my yard the sea*.

This book is about the origin of this maritime people, former and present maritime technologies, spreading of maritime people in Nusantara, efforts in maritime development, and the forming of an archipelagic state that was approved by the United Nations.

This book would not be published without the hard work of the writers; they are Bambang Budi Utomo, Dr. Bambang Rudito, Dr. Daud Aris Tanudirjo, and Lucas Partanda Koestoro. To all of them I would say my thankfulness. In particular I express my gratitude to Ingrid H.E. Pojoh for her editing work so that this book is ready to be published.

Finally, criticisms and suggestions are always welcome for improvement as nothing is perfect.

Directorate of Underwater Cultural Heritage,

A handwritten signature in black ink, appearing to read 'Surya Helmi', with a long horizontal stroke extending to the right.

Surya Helmi

FOREWORD FROM THE EDITOR

The forming of Archipelagic State by the name Republic of Indonesia could not be separated from the long history and culture of its people; started from living in China mainland, crossing to Taiwan, Philippine, and spreading in to Nusantara thousand years ago. Yet many of us do not perceive. For that purpose this book is here, titled INDONESIA. *My home the islands, my yard the sea.*

This book is a rewrite version of the former book titled *Indonesian Maritime and Waterways* by Bambang Budi Utomo, Bambang Rudito, Daud Aris Tanudirdjo, and Lucas Partanda Koestoro, for Proyek Arkeologi Maritim Asean COCI Sub-Committee Malaysia 2006 (Directorate for Underwater Cultural Heritage). Later the Directorate of Underwater Cultural Heritage initiated the re-publication of the book, with some improvement and adjustment, for commemorating the Maritime Day and the Golden Commemoration of the 1957 *Djoeanda Declaration*, as well as introducing the activities of the Directorate of Cultural Underwater Heritage.

This book is written in a more popular style. Some terms that are too technical are removed, as well as description about ethnic groups which are not directly related with maritime culture.

May this book encourage people to know more about this homeland, as well as the maritime culture inherited by the ancestor, so the idea of the concept of *Wawasan Nusantara* could be more imbued by all Indonesian people.

Ingrid H.E. Pojoh

CONTENS

Foreword Action Director General of History and Archaeology	v
Foreword the Director Directorate Underwater Cultural Heritage	vi
Foreword from the Editor	viii
Maps	ix
Figures	x
Photos	xiii
Table	xvi
Abbreviations	xvii
1. THE BEGINNING OF MIGRATION IN NUSANTARA	1
1.1 Initial Development in Formosa	7
1.1.1 Initial Dispersal	8
1.1.2 Dispersal Continuation	9
1.2 Interaction between Region	11
1.3 Regionalization	16
1.4 Development along Historical Era	18
2. MARITIME KNOWLEDGE AND TECHNOLOGY	
2.1 Boat Building	23
2.1.1 Lug-lashed Technique	24
2.1.2 Pegged Technique	29
2.2 Ship Building Development in Southeast Asia	34
2.3 Disaster at Sea	43
3. TRADING ROUTE IN NUSANTARA DURING 7 TH TO 16 TH CENTURY	
3.1 Seafaring and Economy System	56
3.2 Sea and Trade Route in Southeast Asia	58
3.3 Spice Trading Era	73
4. MARITIME PEOPLE BUILDING THE BOATS	

4.1	The Making of Boats among the Buginese	78
4.1.1	Types of Boats	78
4.1.2	Rituals on the Making of Pinisi	81
4.1.3	Boat-making Process	82
4.1.4	Materials	84
4.2	Boat Making among the Madurese People	85
4.2.1	Sorts of Boats	85
4.2.2	The Making Process	87
4.2.3	Materials	88
4.2.4	The Poteran Island	89
4.3	The Making of Boat in Jawa	90
4.3.1	Dugout Boat	91
4.3.2	Plank-boat (<i>Gading-gading</i>)	92
4.3.3	Types of Boats	92
4.3.4	Varieties of Boats in Southern Coast of Java	96
5.	MARITIME PEOPLE ARE EVERY WHERE	
5.1	Settlement Pattern	98
5.1.1	Coastal Settlement	98
5.1.2	Boat-house Settlement	103
5.1.3	Poled-house Settlement	107
5.2	Life Pattern of Coastal People	111
6.	THE UNIFICATION OF NUSANTARA	
6.1	My Ancestor	113
6.2	The Seafarers	115
6.3	Nusantara Attractiveness	117
6.4	Seafaring Routes	117
6.5	Efforts of Unifying	118
6.6	The Controlling of Maritime People	123
6.7	Archipelagic State	124
	Bibliography	126

MAPS

No.	Description	Page
1.1	Migration of the Proto-Melayu from West Kalimantan to Sumatra according to Nothofer (1966)	10
1.2	Covering area of the Austronesian-speaking people	13
2.1	One of the first map made by Francisco Rodriguez (Source: Indonesian Heritage, vol.3)	52
3.1	Some location of ancient harbors based on archaeological evidences found (Source: Google Earth)	58
3.2	O.W. Wolters reconstruction on the seafaring routes on the western Nusantara around 7 th century (1974)	66
6.1	Majapahit and desantara kacyya, 14-15 Century.	121

FIGURES

No.	Description	Page
1.1	Poled-house, house of the Malayu ethnic group (Source: History of Sumatra, 1966)	14
2.1	Balanghai boat from Philippine. A reconstruction of boat making using the sewn-planks and lug-lashed techniques (Doc.: Bambang Budi Utomo)	26
2.2	Details of bulkhead 1 and 2 of boat remains from the Bukit Jakas wreck site (Doc.: Puslitbang Arkenas)	33
2.3	Hybrid boat according to Dutch sketch, 19 th century (Source: NION, 1926)	38
2.4	Kora-kora from Banda (Source: Indonesian Heritage, vol.3)	40
2.5	Javanese jung on the Java waters, according to Lodewijcks (Source: Indonesian Heritage, vol.3)	41
2.6	Sunk in the Lucipara water, Moluccas (Source: Cultureel Indie 1939)	48
3.1	Kora-kora from Gebe (Indonesia Heritage III)	61
3.2	Aceh harbor	70
3.3	Banten harbor	71

3.4	Malacca harbor	72
3.5	Ternate, with the Fort Gamalama, 1726	74
4.1	Jukung Pajangan	86
4.2	Jukung Gambringan	86
4.3	Jukung Pagur	86
4.4	Jukung Tengkongon	86
4.5	Kateran Legung	86
4.6	Patetedan	86
4.7	Karoman	86
4.8	Pajangan Madura'an	87
4.9	Lete' Gole'an	87
4.10	Panjaringan	87
4.11	Jonggolan	87
4.12	Comprenng (Tembon)	92
4.13	Sope	93
4.14	Dogol	94
4.15	Jegong Kecil	94

4.16	Jegong Besar	94
4.17	Kolek/Mayang	95
4.18	Motor boat	95
4.19	Congkren	96
4.20	Gillnet	97
6.1	Caricature drawing about the implication of Djoeanda Declaration (Source: Kompas, 13 December 2007)	125

PHOTOS

No.	Description	Page
1.1	Experimenting strait crossing using raft by Liang Bua (Flores) research team (Doc.: Liang Bua Research Team)	3
1.2	Poled-house, House of the Melayu ethnic group (Source: Cultureel Indie 1939)	14
1.3	Boat, Rock art painting from Muna Island. Left drawing shows some people are rowing a boat, and the right drawing shows two single-sail boats (Doc.: Puslitbang Arkenas)	15
1.4	Bronze kettledrum, Dong Son culture	17
2.1	Part of hull, made using Southeast Asia technology, from Cirebon wreck (Doc.: Horst)	24
2.2	Some planks with tambuko from Sambirejo, Mariana (Doc.: Puslitbang Arkenas)	28
2.3	Bulkhead 1 and 2 of boat remains from the Bukit Jakas wreck site (Doc.: Puslitbang Arkenas)	33
2.4	Dugout boat from Papua (Doc.: Don Hasman)	39
2.5	Lighthouse in Lengkuas Island, Belitung (Doc.: Aryandini Novita)	49
2.6	Astolabe, a 10 th century navigation equipment	53
2.7	Bronze kettledrum.	59

3.1	Mould (Doc.: Suparno)	63
3.2	Bell (Doc.: Suparno)	63
3.3	Persian bottles (Doc.: Suparno)	63
3.4	Ceramic kendi (Doc.: Suparno)	63
3.5	Terracota jar (Doc.: Suparno)	63
3.6	Boat (left) and ship (right), Borobudur Temple (Doc.: Bambang Budi Utomo)	65
4.1	Sandeq	79
4.2	Pade'wakang (Doc.: Horst Liebner)	80
4.3	Pinisi (Doc.: Don Hasman)	80
4.4	Rituals on the making of <i>Pinisi</i> boat in Ara, South Sulawesi	81
4.5	The making of <i>Pinisi</i> in Tanah Beru, South Sulawesi (Doc.: Peter Loud)	83
4.6	Jonggolan boat, Madura	88
4.7	Front linggi (bow) ornament (Doc.: Sulaiman)	89
4.8	Antek motif on parao jonggolan (Doc.: Sulaiman)	89
4.9	Row of boats in Indramayu, northern coast of Java (Doc.: Don Hasman)	91
5.1	Malayu-Jambi settlement in Batanghari	99
5.2	Floating market in Barito River, Banjarmasin. Peddlers on their boats (Doc.: Gugun)	101

5.3	Village of the Lamalera ethnic group in Lembata, Flores	102
5.4	A Suku Lamalera <i>lemafa</i> (spearman) is piking a whale.	102
5.5	Boat-house of Suku Laut	104
5.6	A Suku Ameng Sewang family in Bangka (Source: Suasana, Agt. 1987)	105
5.7	Simple house of Suku Laut in shallow water	106
5.8	Village of Suku Bajau, built in shallow water	107
5.9	Buginese traditional house	109
5.10	Traditional fisherman	111
5.11	Standing bagan in shallow water, Jakarta Bay (Doc.: Bambang Budi Utomo)	112
6.1	Mentawai people	116
6.2	Spices (nutmeg, clove, pepper, and cinnamon) from Moluccas (Doc.: Bambang Budi Utomo)	117
6.3	Cāmuṇḍi statue and Cāmuṇḍi inscription written on the backside of Cāmuṇḍi statue (Doc.: Bambang Budi Utomo)	119

TABLE

No.	Description	Page
1	Journeys of Admiral Chêng Ho	69

ABBREVIATIONS

- Amerta : Amerta, Warna Warta Kepurbakalaan. Published by Dinas Purbakala Republik Indonesia (now: Pusat Penelitian dan Pengembangan Arkeologi Nasional).
- BÉFEO : Bulletin de l'École Française d'Extrême-Orient. Paris, Hanoi, Saigon, École Française d'Extrême-Orient
- BKI : Bijdragen tot de Taal-, Land-, en Volkenkunde. Uitgegeven door het Koninklijk Instituut voor Taal-, Land-, en Volkenkunde, s'Gravenhage, Leiden.
- Djåwå : Djåwå. Tijdschrift van het Java Instituut. Surakarta, Yogyakarta.
- ENI : Encyclopædie van Nederlansch-Indië
- FK-UGM : Fakultas Kedokteran Universitas Gajah Mada
- FSK-UGM : Fakultas Sastra dan Kebudayaan Universitas Gajah Mada
- FSUI : Fakultas Sastra Universitas Indonesia
- IJNA : International Journal Nautical Archaeology
- JBG : Jaarboek van het Bataviaasch Genootschap van Kunsten en Wetenschappen
- JRAS : Journal of the Royal Asiatic Society of Great Britain and Ireland. London.
- JMBRAS : Journal of Malayan Branch and Royal Asiatic Society. London

- KBG : Koninkijk Bataviaasch Genootschaps van Kunsten en Wetenschappen.
- KIPN I : Kongres Ilmu Pengetahuan Nasional Pertama
- LIPI : Lembaga Ilmu Pengetahuan Indonesia
- MISI : Madjalah Ilmu-ilmu Sastra Indonesia. Published by Jajasan Penerbitan Karja Sastra, Ikatan Sardjana Sastra Indonesia, Djakarta.
- NBG : Notulen van de Directievergaderingen van het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen. Batavia, Albrecht & Co., 's-Gravenhage, Martinus Nijhoff.
- NION : Nederlandsch-Indië Oud & Nieuw
- OJO : Oud-Javaansche Oorkonden. Nagelaten transcripties van wijlen Dr. J.L.A Brandes, uitgegeven door Dr. N.J Krom. Batavia, Albrecht & Co., 's-Gravenhage, Martinus Nijhoff, 1913 (VBG, LX).
- OV : Oudheidkundig Verslag van de Oudheidkundige Dienst in Nederlandsch-Indië. Uitgegeven door het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen. Weltevreden, Albracht & Co., 's-Gravenhage, Martinus Nijhoff
- PEFEO : Publication de l'École Française d'Extrême-Orient.
- PMP : Proto Malayo Polinesia

- ROC : Rapporten van de Commissie in Nederlandsch-Indië voor Oudheidkundig Onderzoek op Java en Madoera. Uitgegeven door het Bataviaasch Genootschap van Kunsten en Wetenschappen.
- ROD : Rapporten van den Oudheidkundigen Dienst in Nederlandsch-Indië. Uitgegeven door het Bataviaasch Genootschap van Kunsten en Wetenschappen.
- SEAMEO : South-East Asia Ministry Education Organization
- SPAFA Digest : SEAMEO Project in Archaeology and Fine Arts Digest.
- TBG : Tijdschrift voor Indische Taal-, Land-, en Volkenkunde. Uitgegeven door het Bataviaasch Genootschap van Kunsten en Wetenschappen.
- VBG : Verhandelingen van het Koninklijk Bataviaasch Genootschap van Kunsten en Wetenschappen. Batavia, Albrecht & Co., 's-Gravenhage, Martinus Nijhoff
- VG : Prof. Dr. H. Kern, Verspreide Geschriften. 's-Gravenhage, Martinus Nijhoff, 1913-1928, 15 jilid.
- VKI : Verhandelingen van het Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde. 's-Gravenhage, Martinus Nijhoff
- YAPERNA : Bulletin Yaperna, Berita Ilmu-ilmu Sosial dan Kebudayaan, Yayasan Perpustakaan Nasional, Jakarta

Chapter 1.

THE BEGINNING OF MIGRATION IN NUSANTARA

"Perahu Cina ke Indragiri. Anaklah Riau jadi nahkoda". That is partly the lyrics of Melayu song that often sung by Melayu children, which unfortunately now vaguely heard. The Melayu nation is a seamen nation as indicated by most of the lyrics in traditional Melayu songs that frequently had nuances of sea. As a seamen nation, the people explored many islands in Nusantara. Within western and eastern region of Nusantara, they lived at the coast and lowland area. It could be said that they had been the ruler of the sea, at least in the Western of Nusantara.

Republic of Indonesia is an archipelagic state with a variety of ethnic groups, languages, and cultures. Physically, between one cultures to others separated by sea. However with the approach of maritime history, the segregation is never existed. This is because the sea around Nusantara functioned as unifying medium that integrates thousands of those separated islands. In the development process, the level of integration could be varied in their geographic, politic, economic, social and culture.

In a country called Indonesia lives a great heterogeneous people who inhabited the archipelagic state region. They are divided into two groups of people; one group inhabited the coastal area and the other inhabited inland area. Both groups, consciously

or unconsciously, lived in having reliance to the sea. Everything is back to the concept of life and consciousness of the environment which leads back of being a heterogeneous nation. Later in its history, there is also an antagonist desire to control between both large groups. The group who lived in land tried to control the coastal area with all their efforts to obtain sea products and vice versa.

Sea is the place to find their living for both groups of people. Biotic and abiotic resources can be exploited from the sea, as well as many promising and fascinating maritime activities. This is what encourages both groups of people toward the sea. Initially, their aim is to find a living, and to sustain their lives. Ultimately, they have an objective to grow their prosperity, or on other words to build triumph and wealth from maritime activities. This phenomenon eventually formed the characters of seamen nation, such as the establishment of Kadātuan Śrīwijaya, Mālayu Kingdom, Majapahit Kingdom, Makassar Sultanate.

Sea can be considered as a unifying medium because through the sea people from many nations could perform their economic activities, intercontinental or among islands, with the help of seafaring. Since the beginning of Christian era, the Nusantara waters have been enlivened by ships from all over the world. With those water transportation vehicles, trading commodities are transported from one place to another for trade treaty.

Indonesian archipelago is located in a strategic position. It's not only because it's located between two continents: Asia and Australia, but also located between two oceans: the Pacific and

Indonesia Ocean. This position brings Indonesian archipelago into a cross cultural location of social interaction between nations in surrounded area. Even in the old times this area was a challenging area of human invasion. During the Ice Age, when sea levels dropped, islands in the western region were united with Asia continent in the area now known as Sunda Shelf, while in the eastern region, New Guinea and Aru Islands were united with Australia continent in the Sahul Shelf. These two shelves is bordered by a zone called Wallacea Zone where Celebes island is located and also other small islands which is now included in the area of The Moluccas and Lesser Sunda.



0.1

Throughout history, Wallacea Zone is always surrounded by deep sea, never connected with Sunda Shelf and Sahul Shelf. Therefore, this area is often considered as the "barrier" of ancient people dispersion. However, the results of archeological

research about Wallacea Zone showed that this area was inhabited by ancient people since 800,000 years ago. This is proven by the findings of ancient stone tools along with ancient elephant's fossils, dwarf elephant *Stegodon* in Flores. These findings proved that ancient men *Homo erectus* in Indonesia had the ability to travel across the water and straits between islands from Bali to Flores. It is assumed that the *Homo erectus* were able to make bamboo raft as water vehicle. Scholars believed that this is the earliest seafaring ever in the world.

Seafaring activities in Indonesian archipelago seemed to increase with the arrival of *Homo sapiens* some 75,000 years ago. Physically, *Homo sapiens* is more advanced than *Homo erectus*, and were more like recent people. Even though their culture was not developed, they proved to be more widely spreaded in Nusantara. Archeological evidences indicate that about 60,000 years ago *Homo sapiens* were able to travel across vast ocean, from Timor Island to Australia Continent which is about 90 km in distance. They were the pioneers of continent habitation which ecologically is different from Asia mainland. By adapting to the coastal environment, they continued to migrate along the coast until they reached the Huon Peninsula in Papua New Guinea about 40,000 years ago. Within almost at the same time, *Homo sapiens* who lived in eastern coast of Kalimantan started to sail across Makassar Strait to inhabit South Celebes, and their descendants continued the migration to the north until they reached small islands in Talaud Islands about 30,000 years ago. Meanwhile, around the area of Bird's Head in West Papua, also about 30,000 years ago, human began to explore northern Molucca

Islands. Golo Cave in Gebe Island stored living evidences of the oldest human living in this area about 32,000 years ago. If seafaring technology used by human at that time was not reliable enough, human dispersion within those islands would never happened. Therefore, it is almost certain that inhabitants of Indonesia archipelago have developed sea crossing's technology so that they also can inhabit remote islands. Until now, it has not been discovered what kind of sea crossing's technology that has been developed at that time.

Sailing across islands in regular basis seems to have started already some 10,000 years ago. On some islands in North Molucca, there are evidences that wallaby, a type of kangaroo which only live in the Sahul Shelf region, was been brought in by Papuan people. Perhaps, due to inadequate animals, they were brought in as food supply and to fulfill their needs of animal protein. This shows that there was intensive interaction between Molucca Islands and New Guinea.

The rise of sea level, from about 150 meter below sea level some 20,000 years ago to its current state since some 8,000 years ago, was thought to be one of the encouraging factors that stimulated the inhabitants of Indonesian archipelago to develop a better sea crossing technology. Wide lowland of the Sunda Shelf gradually submerged and larger islands such as Kalimantan, Sumatra and Java began to split. Therefore, communications between inhabitants within those areas can no longer rely on land connection. Communication and water transportation facilities have been developed to maintain the continuity of relations between communities. The logical solution of this necessity was a

network of seafaring. There is an opinion that an advanced maritime culture was first developed in Sunda Shelf. For example, Stephen Oppenheimer, who imagined when the Sunda Shelf began to submerge, most farmers who lived in this land began to develop seafaring technology. And when the sea water rises they managed to migrate to other part of the world. He even mentioned that the rise of various civilizations was enforced by migrants from the Sunda Shelf. Unfortunately, no evidences relating to sea crossing were found. Perhaps, this is due to many past inhabited sites are currently under the sea.

A clearer picture on Indonesia maritime culture is gained together with the study of the dispersal of Austronesian-speaking people to Indonesia archipelago and the Pacific some 4,500 years ago, which is considered as phenomenal. Austronesian family languages are nowadays spoken by over than 350 million people, from Madagascar in the west to Easter Island in the east, from Taiwan and Micronesia in the north to New Zealand in the south. 'Out of Taiwan' theory is a theory that so far is accepted to explain about this dispersal. Based on archeological and linguistic data, this theory suggests that the ancestor of Austronesians-speaking people originated from Taiwan or Formosa, and New Zealand was the last island that was colonized by them about 800 years ago. In other words, the dispersal and colonization process of Austronesians-speaking people took less than 3,500 years to occur. This dispersal was very rapid if compared with the dispersal of other language speakers, and could only occur if supported with advanced maritime culture.

The dispersal of Austronesians-speaking people can be divided into several stages, which may also provide indications on how is the development of maritime culture in the Indonesia archipelago. The stages are, the beginning of language and culture development in Formosa, initial dispersal, extension of dispersal, interaction between region and regionalization.

1.1 Initial Development in Formosa

The language and culture of the Austronesian speakers began to emerge as distinctive culture in Formosa after they migrated from Southern China mainland (possibly around Fujian or Guangdong) to this island about 6,000 years ago. The appearance of this culture was characterized by, among others, the use of the so-called Initial Austronesian language which was different with the Austric languages that were spoken in the Asia mainland. This culture is archaeologically marked by the presence of the so-called Dapenkeng artifacts in North Taiwan some 5,500 years ago. In general, it showed the presence of agricultural culture.

About 4,700 years ago, this language and culture broke into variety of cultures and local dialects. It was not known to what extent the maritime culture has colored the life of initial Austronesians-speaking community. From linguistics tracing, it is somewhat difficult to know whether the Proto-Austronesians-speaking people had the seafaring technology. When referring to the vocabulary of several languages in Taiwan at this time, there

is a possibility that the initial Austronesians community had recognized a simple sailing boat with paddles and sails, like a canoe. This is reasonable considering they were able to cross the strait between China Mainland and Formosa Island. Meanwhile, archeological research in Pescadores islands (Peng-hu) in Taiwan Strait indicated that seafaring activity had enabled the people, who lived in a very remote island in Taiwan since 6,000 years ago, on stone exploring to make stone tools.

1.1.1 Initial Dispersal

It is very possible that the Austronesians-speaking people exploring to the Southeast Asia, north Philippine respectively, already began some 4,500 years ago. They even might have explored to north Kalimantan. This initial dispersal was possibly meant as an effort to track inhabitable areas. With their seafaring skill they were able sailing even till the islands of the Philippines.

Researches in Batanes and northern Luzon Islands indicate the traces of initial migration of these Austronesians-speaking people who began to inhabit this area about 4,500 years ago. While these groups began to move to Philippine Islands, their language started to change, which eventually known as Proto-Malayo-Polynesian (PMP) languages.

Interestingly, PMP's vocabularies reflected the occurrence of very important development on seafaring aspect. Many new vocabularies emerged to provide a detailed description of the

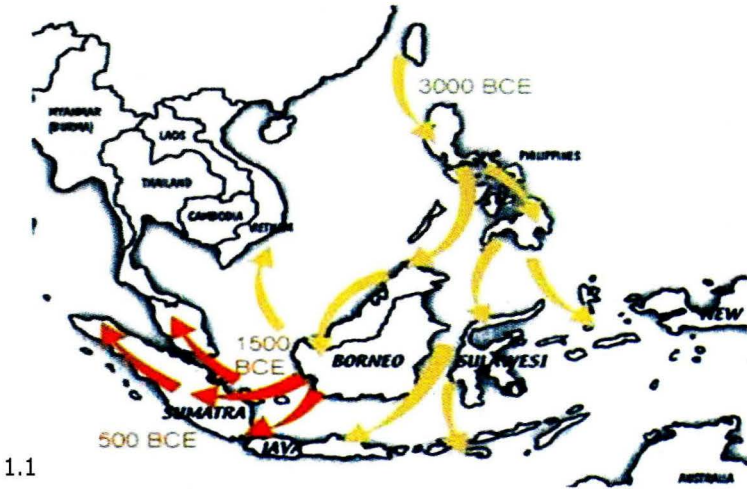
vessel parts, among of them are ways of sailing, paddle, rudder, sail, seats lie across in the hull of canoe, and the anchor. Based on the reconstruction of these vocabularies, it is strongly suspected that innovations in seafaring technology occurred in the area of Philippine and Indonesia territorial waters. Adequate sophisticated outrigger canoe, with varieties in shape, was being used. This innovation is seen as a form of adaptation towards sea environment with its small islands.

1.1.2 Dispersal Continuation

Since the establishment of PMP languages, the speakers continue to spread to the east to the Micronesia islands, and to the south-via the Philippine- to Kalimantan, Celebes, and northern Moluccas. From Kalimantan and Celebes they moved to Java and Sumatra, and the Malay Peninsula; while other migration moved from north Molucca to the south to The Lesser Sunda, and to the east to the northern coast of West Papua. This migration might occur from 4,000 to 3,300 BCE, and was characterized by the red-slipped pottery which was found widely dispersed in those areas.

The ability of long distance sailing across the sea seems has encouraged the so-called leap-frogging process migration. That means, they migrated directly to the areas that fairly far and just passed by the closest areas. In this way, PMP-speaking people could reach West Melanesia in a relatively short time; probably it took them one to two century after the migration from Philippine-Northern Indonesia began. "Leap-frogging process" migration

occurred simultaneously with the returning to homeland migration. Very possible that islands where these people used as "stepping stones" were Halmahera, Bird Head of Papua, and Bismarck Islands. It is these places which later became the central area of languages development of the Proto Central Malayo-Polynesia, Proto Eastern Malayo-Polynesia and Proto-Oceanic. From these central areas, other surrounding areas were colonized. Such relationships cannot be occurred without an adequate sophisticated marine facility.



1.1

Geoffrey Irwin, an archeologist who is also a skilled seaman, assumed that marine area between Philippine-Northern Indonesia and Melanesia was a voyaging corridor for the early community of Austronesian-speaking people. Along this corridor they practiced and applied various new seafaring technologies, until Austronesian community's navigation technology and seafaring ability rapidly developed. It is very likely that a double

hulls canoe was developed within this voyaging corridor. Wal Ambrose and several other experts more specifically designated the area between Molucca and Melanesia as a place of long distance seafaring engineering innovations, including the double hulls canoe. Indeed, with the technology of double hulls canoe, boat cargoes could increase, making it possible to carry more people and food supplies for long distance seafaring. Double hulls canoe, known as "*catamaran*", is certainly capable of breaking the waves better than a big and massive hull. Therefore, double hulls canoe could sail faster on sea surface.

Wahdi tried to reconstruct the shape and technology development of Nusantara's watercraft. From his research he showed that the first water transport facility of the Austronesian-speaking people was bamboo raft, which later slightly evolved with the using of tightened wood logs. The middle part of the wood logs was sometimes dug out to make it looks like a canoe. This wood log raft was then developed to double hulls canoe or *catamaran*. Later on one of the double hulls canoe was functioned as asymmetrical double canoe for counterweight. This shape then developed into a single-outrigger canoe and finally a double-outrigger canoe.

1.2 Interaction between Region

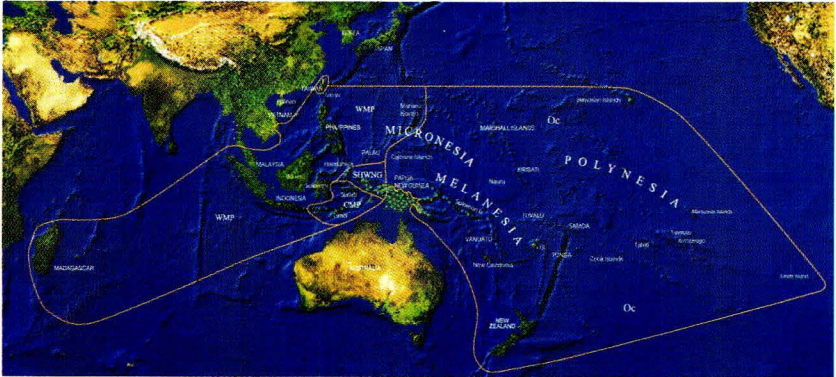
The model of leaping-frogging migration process opened the possibility of extensive interaction because there is always a tendency for a community who inhabited a new area to continue

their communication with their communities in their homeland. This tendency was facilitated by a fairly sophisticated transportation and native language that could possibly become a lingua-franca. In linguistics, the pattern of this continuous relationship is recorded onto the relationship between languages in Austronesian language family. According to Malcom Ross, the diversity of Austronesian languages from PMP was primarily caused by the presence of a new dialect and not due to the separation of new community from their main community (language split).

Within this stage, a global process occurred which is often considered as globalization. However, according to Jonathan Friedman, a global process has a broader dimension of interactions and can be seen as an extensive interaction between various lifestyles or cultures so that all communities would feel living in one big village (global village). The occurrence of global process can be measured with the increase of interconnection, interdependency, as well as the exchange of people, image and commodity.

An important element that enhanced the global process was the acceleration in communication and transportation, which later causing the interaction between various parties became frequent and faster due to shorter travel time between several places. Obviously, this can happen with the support of innovations in communication-transportation technology and also the presence of lingua-franca that has been widely used. Whoever that can manage both elements would be able to play a dominant role in global process. In traditional society, cross-culture interaction

was often driven by the needs of 'prestige goods', namely goods with social and symbolic values rather than functional values. By owning 'prestige goods' one would be able to express one's self-identity. That was what happened after the Austronesian-speaking people widely dispersed.



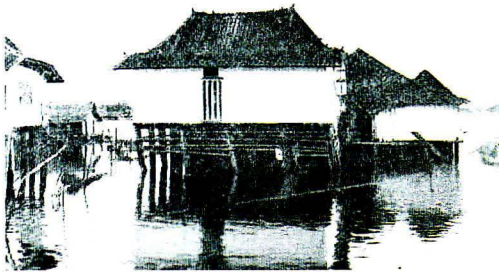
1.2

The increase of interconnection and interdependency within dispersal area of Austronesian-speaking people at that time are proven at least by the discovery of artifact assemblages which tend to be similar. In fact, the finding of obsidian originated from Talasea (Bismarck Islands) in Bukit Tengkorak site (Sabah) has proven that there was a network of long distance exchange of goods, from Borneo to Fiji that is about 6,500 km apart. It was even possible that this long distance-exchange involved the community of mainland Asia, especially South China. Small fragments of agate stone found in Bukit Tengkorak site are similar to those found in Guangzhou area. This long distance exchange indicated the big role of Austronesians maritime culture. It is almost confirmed within that time that sea-nomads were having a big role in this process. Their ways of living probably were not so

much differ from the current communities who lived in same ways.



1.1



1.2

Within this global process, the culture of Austronesian-speaking people became a dominant culture. Therefore, their lifestyle which was characterized by living at the open rural village, houses built on wooden poles (rumah panggung), arboriculture and horticulture utilization, animal livestock (pig, dog, chicken), betel eating, stone pickadze using, seashell jewelry, pottery-making, seafaring technology and the usage of Proto-Malayo-Polynesia languages became preferences and adopted by communities who involved in the global process, including the Papua languages.

Consumptive culture seemed also present at this time. Obsidian, decorated pottery, and seashell artifacts seemed to be very popular "prestige goods". In accordance with the patterns that occurred in global process, the productions of these goods were decentralized. In this context, it can be explained why dentate (toothed) stamp decorated pottery that is typical of Lapita culture was found in Bismarck Islands and other Oceania areas.

Stood out decoration with dentate (toothed) stamp in Lapita pottery proved that there was a desire to establish a new culture identity by the community of Austronesian-speaking people in that new area (West Melanesia). The prominence of dentate stamped motif on Lapita pottery proved the desire of the Austronesian-speaking people in gaining identity in the new land, the western Melanesia.



1.2

Glocalization process also occurred as seen on the similarity of pottery ornamentation found in Lapita, Bukit Tengkorak (Sabah) and Kalumpang (Central Celebes) site. This similarity is to be seen as an effort to localizing their local culture in the new land. Glocalization phenomenon can also explained why early pottery assemblages did not show the sequence pattern that older assemblages were not close to the dominant culture origin. Besides, the presence of non-Austronesian enclaves (i.e. Papua language used in North Halmahera, Morotai, Timor, Alor,

northeast New Britain, central New Ireland, and Bouganville) also prove the occurrence of glocalization.

1.3 Regionalization

In the course of history, global process did not last forever. It was only one phase of a recurring process (cycle). Global process will be followed by fragmentation and regionalization process. This usually began with established system disorder caused by decentralization, glocalization, and competition among local communities or cultures that is always seeking its own identity. All those processes worked together and influenced the declining of cultural hegemony and global economic. This is not occurring only at global level, but its implications will continue to propagate at local level and even individual. To some extent it will cause social anxiety into social disorder, or even into war, which will be followed by the establishment of new social structure and culture until it formed a new hegemony and transaction zone. In this context, religion and ethnicity will become one of the sources in seeking new identity.

The global process that occurred in Southeast Asia archipelago to Oceania entered the last stage towards 2,500 BCE. There was an indication that the interconnection and interdependency between the western regions of Southeast Asia with the eastern regions of West Melanesia become loosened. The occurrences of social conflicts and even wars were reflected from the presence of a new artifact in the form of obsidian spears.

Inter-regional trade and exchange became geographically constricted and reduced in intensity and amount.

Meanwhile, a new tendency emerged within the area of Indonesian archipelago. Trading seamen were more involved in trade-exchange network that started to develop between Mediterranean-India-China. Through this network, important commodities from Eastern Indonesia, such as cloves, nutmegs, bird feathers and fragrant woods were introduced to a western world. Conversely, western goods such as metal (iron in particular), beads, green stone jewelries (jade), began to enter the western region of Nusantara. From the observation on the distribution of certain types of artifacts, apparently there were two sea exchange networks in some centuries BCE. One of the networks includes Southern Philippine, Sabah, North Celebes and North Molucca (perhaps until West New Guinea), and the other network connected the Malay Peninsula, Sumatra, South and Northwest Kalimantan, Java, Lesser Sunda and even south part of West New Guinea.



1.3

The relationship with South China and Indo-China improved when metal technology of Dong Son culture rapidly developed. Dong Son cultural objects, among others are bronze kettledrums and axes, appeared to become

"prestige goods" for Nusantara's inhabitants. Therefore, Austronesian seamen frequently sailed to those areas. In fact, Austronesian-speaking communities began to form in mainland Asia since 2,500 years ago, and until now they still inhabit certain areas in Vietnam. Bronze kettledrums are spread through the southern route while bronze axes through both network routes. Bronze kettledrums network appeared to be a dispersal route of India cultural influences. In fact, Hinduism and Buddhism kingdoms are only found along this kettledrum route, mainly in Sumatra, Java, East Kalimantan, West Kalimantan and Bali.

1.4 Development along Historical Era

The development of maritime culture in Indonesian archipelago definitely has not ended during the regionalization phase. Maritime culture in Indonesia continues to become important point until historical period. In fact, inhabitants of Indonesian archipelago, with their seafaring skill, began to get acquainted with Indian culture. Early kingdoms, as Kadātuan Srīwijaya, Mālayu, Matarām Sultanate, and even Siṅhasāri and Majapahit Kingdoms were able to develop from their maritime culture.

Recent research on maritime by experts have provided more supporting data on the role of Indonesian people in bringing Indian culture influence to Indonesia archipelago. Wahdi, for example, considered seafaring activity to India mostly done by Austronesian seamen since Indian seafaring technology was not

as advanced as the Austronesian. Even more, there is a possibility that Austronesian seamen had sailed through a wider exploration area, from Molucca, South China, to Red Sea towards at the beginning of the Christian century. One should also take into consideration that it was very likely the Austronesian had been sailing the South China Sea water since more than 2,500 years ago, as proven by the findings of agate stones in Bukit Tengkorak Sabah. Cloves become known in China and Europe as a result of their seafaring activity. Since Han dynasty (2 BCE - 2 CE) in China, cloves were chewed by empire officials as a mouth refresher when they were about to make visit to the Emperor. In Europe on 1 CE, a Roman naturalist named Pliny mentioned about a ship that come from the East brought in spices (cloves) along. It is very likely bronze goods from Dong Son also have been brought in by Austronesian seamen.

Austronesian seamen seafaring activity in South China Sea has been also recorded in Chinese history, particularly during the Han Dynasty period in about 2 BCE. According to early Han Dynasty's chronicles compiled by Chinese officials Ban Gu (32 - 92 CE), trading relationship between India and China through Southeast Asia began to develop since the reign of Emperor Wu Di (140 BCE to 87 BCE). Chinese merchants rode along to the south with Yue (another term for Austronesian-speaking people) people's boats to the southeastern coast of Thailand and the Malay Peninsula, perhaps until Kra Isthmus. From here, they took land route to west coast. Next, they continued the journey by sea to Huangzhi or the Ganges in India. Nevertheless, the relationship between India and Southeast Asia, include west part of Indonesian

archipelago, is strongly believed to be present several centuries before 2 BCE. All discoveries of glass beads in Thailand, Malay Peninsula, Vietnam and Philippine indicated that this commodity had been exchanged from India since around 4 BCE. Meanwhile, glass beads in Gilimanuk site were introduced between years 195 BCE to 65 BCE. Other than that, Sumatra Island (Suwarnnabhūmi) and Java Island (Jawadwīpa) were mentioned in Ramayana and *Mahabarata* Epic which was written in 2 BCE. Therefore, it can be confirmed that the relationship between India and Indonesia archipelago has occurred before that.

The extent of Nusantara's seafaring network within that time was supported by the results of language researches. According to Adelaar, Austronesian seamen had visited East Africa since more than 2,000 years ago. It is very possible that they were the seamen from Kalimantan. Several centuries after that, the relationship between East Africa and Indonesia archipelago continued with seafaring activity carried out by Śrīwijaya seamen. They even later resided at Madagascar. Therefore, even until now they became residents of that island and are still using Austronesian language.

Even though genetic evidences signified that South Asian people had lived in the north coast of Bali since the early century CE, it didn't weaken the assumption that Indonesian seamen were the most responsible in introducing Indian culture in this area. There is a big possibility that the early visit of the South Asian people to Nusantara were done with traveling on Austronesian boats.

Interestingly to know that the dominant influence of Indian culture only occurred through the south route that connected the areas around western part of Java Sea. This was proven by the distribution pattern of oldest archaeological artifact with Indic culture. No provided information can explain why Indic culture did not influence the northern and northeastern region of Nusantara. In fact, there were lots of commodities from India (especially beads and iron) were traded within this area, as well as the iron industry technology and cremation tradition which are considered to come from India.

It can be assured that the maritime culture keep continue and grow in the eastern region of Indonesia. Island environments in this region inevitably induced seafaring technology to become major mainstay. Unfortunately, not much data could be gotten, so little is known about how the maritime culture develops within this area.

Chapter 2.

MARITIME KNOWLEDGE AND TECHNOLOGY

Based on archeological data, evidences of boats usage can be found from visual image in the form of sketches, carves, drawings, two or three dimensions reliefs, or ruins of the boats.

Based on archeological data, the using of boats apparently started since the Neolithic period, a period when people had recognized farming technology. Discovery of shell-moundsi or kyökkenmodinger in several places indicated that the consumption of marine products is related to nutrients needed. Boats are assumed to be used as transportation vehicle in effort to collect shells. This assumption was proven by the discovery of rock art drawings from the rockshelters on Muna Island in the province of Southeast Celebes. There is a drawing with red color paint of a boat paddled by several people. In addition, there are several boats drawn using sails.

Other data relating to boats were also discovered inside the caves along the Seleman Gulf (Northern Ceram Island) in the form red and white color paintings. Those drawings were discovered together with several hand-stencils. Next discovery was found in Little Kei Island on rockshelters along the seashore, showing several drawings of a boat, fish, sun and human face using red

color paint. Within this place, it was also discovered a drawing of a boat ride by few people wearing strange headgear, and other boats had been drawn using a sail (roof) with the bow and stern sticking up.

Boat drawings that have been discovered in this Kei Island are similar with those discovered in East Timor. In 1963, Ruy Cinetti conducted a research and discovered drawings of boats together with humans, animals and the sun figures. Within this site, it was also discovered a drawing of a boat with a distinctive characteristic called *kora-kora*.

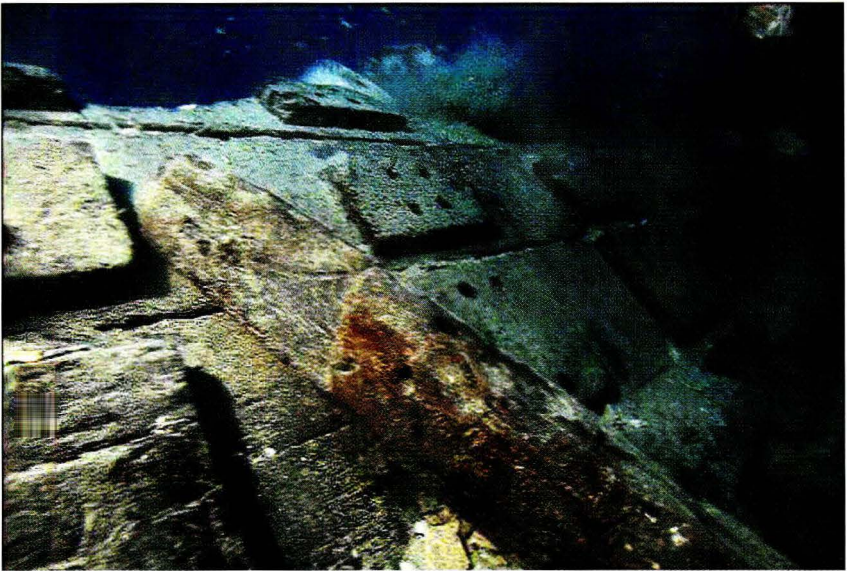
Those remnants of ancient culture from archeological sites in Nusantara provide us information that ancestors of Indonesian nation have recognized water-transport prior the era of BCE. We are familiar with the form of water-transport, ranging from a very simple (raft) to complex (ship), and this show that there was boat and ship development. It might look simple to built a boat, but when studied thoroughly it is quite complicated. The knowledge in the making of water vehicles is passed down to all maritime ethnic groups in Nusantara.

2.1 Boat Building

Based on the result of researches on the boat wreck site in Indonesia, as well as utilizing similar remnants in surrounding area, it is known that there are two ancient traditions of Southeast Asian boat building, and they are the lug-lashed technology and pegged technology.

2.1.1 Lug-lashed Technique

Lug-lashed technique is a technique of using ropes (palm fiber, *Arrenga pinnata*) to assemble planks of wood into a boat hull. This assembling use fiber ropes with the support of tambuko (deep sockets into which removable parts are lifted). This is the technique that has been used in Southeast Asia (and on ancient Viking's boat), and it's different with the sewing technique used in Indian Ocean, which is still using fiber ropes with continuous knots just



2.1.

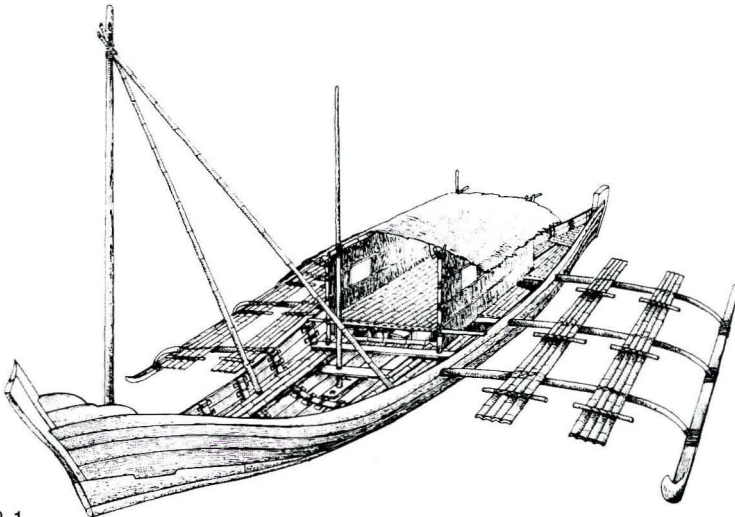
It is ascertained until now that lug-lashed technique is still being applied as can be seen in various places in Southeast Asia, such as Hainan (Vietnam), Philippine, and Indonesia. In Indonesia, boat building with lug-lashed technique can be found in

An example on how lug-lashed technique was used in the past can be found in Kuala Pontian, Malaysia. Three planks, remains of a boat keel and several boat frames were found on the site of East Coast Pahang. The longest size of the remain planks is 6,1 meters. The most interesting discovery is the using of lug-lashed technique, as seen from the holes for tying the ropes on each edge of the planks. In addition, there were also other holes that serve as a place to plant wooden pegs. Tambuko in Malaysia has a round shape, different from the one found in Indonesia. C-14 analysis results of a sample planks taken from the boat provides calibration data between 260-430 CE.

The remaining works of similar technique can also be found in Thailand. Several pieces of wood, which were part of boat's structure are preserved in Wat Khlong Thom Museum, Krabi Province, South Thailand. Those were found in Khuan Luk Pat Site. Based on the similarity of the shape of boat's parts found in Kuala Pontian Site, it is believed that the remaining boats found in Wat Khlong Thom originated from around the first half of first millennium BCE.

Another example of the past usage of lug-lashed technique on boat building can be found in Phillipine. In 1976, four buried planks were found at a site located in Northern part of Mindanao Island. This ancient discovery was announced by Antonio Pigafetta in mass media as parts of balanghai, a type of Phillipine's ancient boat. Antonio Pigafetta was a former Portuguese Governor General in Ternate.

One year later, another nine planks were discovered about one kilometer to southeast of the first discovery location from the same boat. It was brought into National Museum in Manila for preservation. Location of both discoveries is around the estuary of Butuan River in the administration area of Ambangan, Libertad, Butuan City. Considering the condition of the matrix, it was certain a former coastline in the past.



2.1

The first discovery, which later named as Balanghai I, was parts from a boat with its frames formed by carving. To assemble those planks, wooden pegs were planted on the edge. In addition, lug-lashed technique was also used as seen from the presence of tambuko. There were 9 tambukos on a 9.9 meters plank. There were also 19 tambukos which are smaller than other tambukos of another planks, discovered on the remaining boat keel with the length of 10.6 meters. The length of the boat is estimated to 11.6 meters.

Dating estimation with C-14 of a sample of boat's parts showed different results. The first result indicated the planks come from 3rd-5th century and the following analysis showed it was from around 13th-14th century. Manguin believes the remains of the boat come from 3rd-5th century, different from Scott who believes it comes from 13th-14th century.

Balanghai II, which has larger size, also uses the similar boat building technique as Balanghai I. The length of the planks was around 15 meters, with 20 centimeters width and 3 centimeters thick. The planks were assembled using 19 centimeters wooden pegs. To fastened the boat keel with the planks, wooden pegs were planted on the edge of planks and keel on every 12 centimeters interval. As on Balanghai I, Balanghai II also showed the use of tambuko which is carved inside the boat's body. The remains of fiber ropes used to assemble the boat's planks were also discovered on Balanghai II.

In Indonesia, description about assembling techniques that are use ropes could be obtained from the remains found at Kolam Pinisi, Sambirejo, and Paya Pasir boat-wreck sites. interesting feature of Indonesian boat-wreck sites is the always-present of pegs and ropes used in assembling planks of woods into boat hull. Existing data indicates that in the early phase, as shown in the Kuala Pontian remains, the use of pegs were no more as the knot's reinforcement. That means the usage of lug-lashed technique is still the dominant one.

Next, boats from Sambirejo site indicated how wooden pegs started to replace the using of ropes. Bit by bit, knotted ropes serve only as the reinforcement of boat's body that has been fastened together using pegs. An additional phase started to evolve in Paya Pasir (Medan, North Sumatera); the use of ropes to assemble boat's body was not found anymore.



2.2.

Only to assemble planks of wood into a boat hull that tambuko can still be found, which means that knotted ropes was still used.

Another matter that can also be discovered from those objects can be associated with the existence of Kadātuan Srīwijaya. The remains of boat from several wrecksites in South Sumatera (Sambirejo; Kolam Pinisi; Tulung Selapan; Karanganyar) indicated that the use of lug-lashed technique was shifted by the using of wooden pegs. Closer distance between the holes to insert wooden was no longer serves only as a tool to reinforce the linkage but it is become a main part in boat building techniques.

In Sumatera, the word "boat" was mentioned for the first time in old-Melayu language on the Kedukan Bukit inscription,

found in 1920 in Palembang. Coédés mentioned the using of word "samwau" to describe a boat from Srīwijaya war fleet at the end of 7th century¹. Based on the period of the course of events as described on Kedukan Bukit inscription, it seems worth to consider the possibility of using the same boat shapes that is discovered in South Sumatera as one of the boat shapes used when Kadātuan Srīwijaya under development. If this hypothesis is correct, then the meaning of "samwau" refers to a type of boat ruins in South Sumatera.

2.1.2 Pegged Technique

Combination technique between lug-lashed and pegged technology in boat building has closely related to the existence of Kadatuan Sriwijaya in western part of Nusantara. Considering the size, the boats from 5th-13th century that was discovered in Kolam *Pinisi* and *Paya Pasir* were very likely, are ships. There is no doubt that the remains of boat, which are using pegs, from several wreck sites in Nusantara were ships.

¹ On the eleventh day of the full moon of Waisakha, His Majesty took a boat to make a profit"// On the seventh say on the full moon of Jyestha, His Majesty departed from Minana and brought 20.000 troops with two hundred (crates) of supplies was sailing...//

In the 16th century Portuguese manuscript, one could find a full description about jung², that was built only with pegged technique, and could carry freights up to 500 tons. There were neither knotted ropes nor iron nails. Even the frames were being assembled by using pegs. Until few years ago, pinisi from Celebes and lete from Madura are ships, that completely using pegged technique and to be used as a commercial ship with capacity of 250 tons, were still being built.

Unfortunately, there is no evidence in Southeast Asia of ship using only pegged technique. Even though there were discoveries from shipwreck sites in Indonesia and Thailand showing the use of pegged technique, but they were combined with the usage of nails.

A site, which located at a depth of 26 meters between Pattaya and Kho Lan (Coral Island) on Siam Gulf, has been examined by Australian and Thailand team in 1982. Underwater archeological activities succeeded in discovering remains of a ship with 9 meters of length and 4.5 meters of width.

² So far, we've always imagined jung as a Chinese transportation vehicle which has U-shaped body and sail made from woven palm leaves/mat. Actually, jung can be associated with the word "jong", it's a technical term to describe a large sailboat on 11th-12th century Ancient Bali inscription. Along with jong, there were also bahitra, *lancang* (small boat), and sambo. The word "sambo" reminds us with samwau as a water transportation mode that involves with Sriwijaya troops as written in Kedukan Bukit inscription (604 Saka or around end of 7th century) in Palembang.

The ship has a V-shaped hull, and was constructed with three layers of planks; the first layer (the internal walls of the hull) has 7 centimeters of thickness, and the second and third layers have 4 centimeters of thickness. The planks were fastened together with wooden pegs.

The compartments inside the hull were formed by the bulkhead. Each compartment has a drainage hole with 11 centimeters of diameter. The bulkhead has the function of replacing the frames. On one of the bulkheads, there was a mast pedestal with the same shape as the remaining ships found in Bukit Jakas Site. The keel was made using a whole wood log with the width of 30 centimeters on the bottom part, 20 centimeters on the upper part, and 30 centimeters of thickness.

The result of C-14 analysis from wood pieces of the ship indicated that the remaining boats, which were loaded with Sawankhalok ceramics (Thailand) and tin bars, come from around 14th-15th century.

Another example come from the Ko Kradat Site. This is a site that is located at a depth of 2 meters in Ko Kradat, an island under the territory of Trat Province in Southeast Thailand. Excavation on this shipwreck site was carried out in 1979 and 1980 by a joint team of Thailand and Australia.

Another interesting site is at the Ko Si Chang III; excavated in 1986 by a joint research between Thailand and Australia. A site lay at a depth of 24 meters on Siam Gulf located about 5.9 sea miles northwest of Ko Si Chang, Si Racha Province.

The remaining keel was 13.8 meter long, approximately 32 centimeters wide and 24 centimeters thick. There were two layers of planks to form the shape of the ship's body. The first layer of planks is fastened together using wooden pegs that were planted at the edge of the plank. The planted holes have 2 centimeters of diameter and made on every 7.5 - 8.5 centimeters intervals. The second layer of planks are nailed into the first layer. Inside the ship body, seven bulkheads are found.

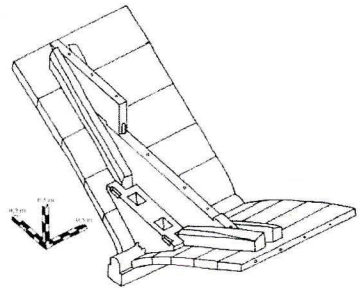
This ship is estimated had a length of more than 20 meters, width approximately 6 meters and was built with V-shaped hulls. It was also estimated that this ship had 16 compartments, each with the size approximately 1.2 meters. This was a form of a commercial ship in a relatively small coastal area. Discovery of the remaining cargo of the ship was ivory, resin, nuts, oils, wheat and also Vietnamese potteries.

The output from C-14 analysis from wood pieces of this ship indicates it was from years around 1380 - 1500. With using the same method, a sample of resin from that site resulted year between 1420 and 1660.



2.3

It can be concluded from those mentioned sites such as Bukit Jakas Site, that there were similar characteristics and those are the utilizing pegs for reinforcement on assembling the ship's body, the use of nails to fasten the planks to frames and keel, the ship with V-shaped hulls, and a mast with adjusted size, shape and function.



2.2

2.2 Ship building Development in Southeast Asia

From some hypotheses built to explain the migration of Austronesian-speaking population within Southeast Asia islands, the Pacific, and around Madagascar, one would see that navigation was very essential. If we observe an older theory concluded by I.C. Glover in 1979, cultural expansion of rectangular axes, which marks the beginning of Neolithic era, took place in the Northern of Southeast Asia around Malay Peninsula and surrounding islands. At the same time there were developments on rice agriculture, water buffalo and pig domestication, the using of barks as clothing material, outrigger boat, and Austronesian-family language.

Simultaneous use of new data supported by linguistic and dating of archeological remnants enabled Bellwood to provide different interpretation of early Austronesian culture. It was said that around 4,000 BCE or prior, Taiwan had been inhabited by Austronesian people. Around 3,000 BCE, part of the inhabitants migrated to Luzon, travelled by sea, then dispersed through entire Philippine. After that some of them went to Molucca, others to Celebes and western of Indonesia and also to Malay Peninsula through Palawan Island. Last migration occurred within time period of 2,000 to 500 BCE. All migrations were being done by traveling by sea. That hypothesis is supported by F.L. Dunn and D.F. Dunn who estimated a real navigation already existed in South China Sea around 5,000 years ago. Ship building technique had developed quite advance that it allowed middle-of-sea adventuring, and as fisherman. They developed

the ability to travel quite far from the shore.

Until today, older and prehistoric site in Southeast Asia that bear ship element is in Malay Peninsula, namely at the edge of the Langat River, near the Jenderam Village, Selangor. It was a paddle, found together with other dated Neolithic tools from around 600 BCE.

Since no written sources are available about the presence of past fleets in Nusantara, scholars used bronze kettle-drums as data to prove that there must be a trading network which unify the Asia mainland and islands. Also, pottery goods that have been shipped from Arikamendu (South India) into Karangagung (South Sumatera), Buni Site and Patenggeng (West Java) and Sembiran Site (Bali), as reported by Ardika and Bellwood, proved that commercial relationship existed between Indonesia and India in around early century.

Older references about ships in Southeast Asia come from Chinese sources (3rd and 8th century). A ship, according to those sources, has the size that reached up to 50 meters long and could carry up to 500 passengers altogether with their luggage. Elements of the ship's body were assembled by knotted fiber plants. A book from around 4th century about Chinese plants that grow in Southeast Asia, mentioned that somewhere along that area they were using fiber ropes to assemble ship hull.

Southeast Asia's wrecksites as mentioned above revealed the presence of sophisticated techniques of ship building that have been developed in that area approximately in the mid of first millennium BCE. Although physical evidences of huge ship mentioned by Chinese sources are not found yet, at least it was believed that all the constituent elements of a maritime trade were present. Boats from 5th-13th century as revealed by the Kolam Pinisi or Paya Pasir sites were known as ships. On the other side, there was no doubt to say that all remnants of boat on wrecksites, which boats using pegs, were also ships.

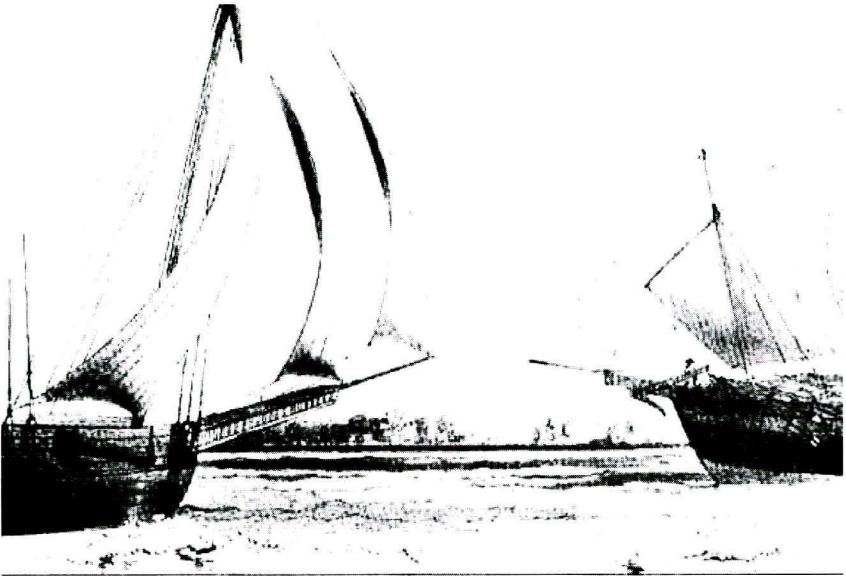
Based on the ship building techniques, it is recognized two groups of techniques: the lug-lashed technique and pegged technique. The pegged technique still can be classified into ships that using only pegs and ships that use the combination of pegs and nails.

In the relation with lug-lashed technique tradition, it has been declared that it was a technical development in assembling the planks. Boat hull is firstly built using simple knotted ropes that assemble each planks. Pegged technique later fully replace the using of lug-lashed technique (except the presence of tambuko as typically found in Southeast Asian's boats). Different stages of development can be observed through registered wrecksites or other sites in 20th century through ethnographic data.

It seemed that, probably with some local apports exterieurs, a new development was achieved in the first half of the second millennium; knotted ropes were replace by wooden pegs. *Jung* in 15th - 16th century, as described in Melayu and Portuguese sources, had definite tonnage, represented the fulfillment of an essential Southeast Asian tradition.

Chinese wrecksites in Quanzhou indicated similarity with Southeast Asia sites. Some of the characteristics show the boat ruins as the only unique Chinese tradition. This site can be considered as evidence of trade between China and Southeast Asia. Manguin called it as Hybrid tradition of South China Sea, which he differs from "original" tradition of Southeast Asia and China. He suggested two hypotheses to explain first, is the mutual influence of Chinese and archipelago techniques starting in 11th - 13th century, the period of at the massive trading expansion in China, and the second is the presence of greater South China tradition (in contrary with North China tradition), which are culturally closer to the traditions of Southeast Asia before China's influence.

None is known about when Indonesia aware about boat building. There is only few archeological and historical data which successfully disclosed that matter. The only archeological data which slightly related with boat building technique is from cave's drawing. In there we can see the shape of prehistoric boats; it was a simple shape. A tree with a quite large diameter was cut down and the inside was dug out with a simple tool like a hatchet made from a stone. It Looks simple but it is quite difficult in reality.



2.3

The thickness of boat's wall needs to be precisely measured; it cannot be too thin nor too thick. It needs to be considered that the boat should not easily broken or leaked when hit the reefs, or when landed hard on the beach. After the basic shape was completed, an outrigger will be added on the left and right side of the boat. This type of boat is called a dugout canoe. The length of the boat is approximately 3-5 meters and approximately 1 meter wide. An example of using this simple boat building technique can be seen on primitive ethnic boat used for catching fish on rivers, lakes, or shallow seas as their living.

In the prehistoric period, outrigger boats played important role in inter-insular trade relations of Indonesia and between Indonesia and Southeast Asia mainland.



2.4

Due to the fact of their relation with Southeast Asia mainland, there were certainly activities related with exchanging technology information in all fields, for example in temple construction, urban development and of course in boat building.

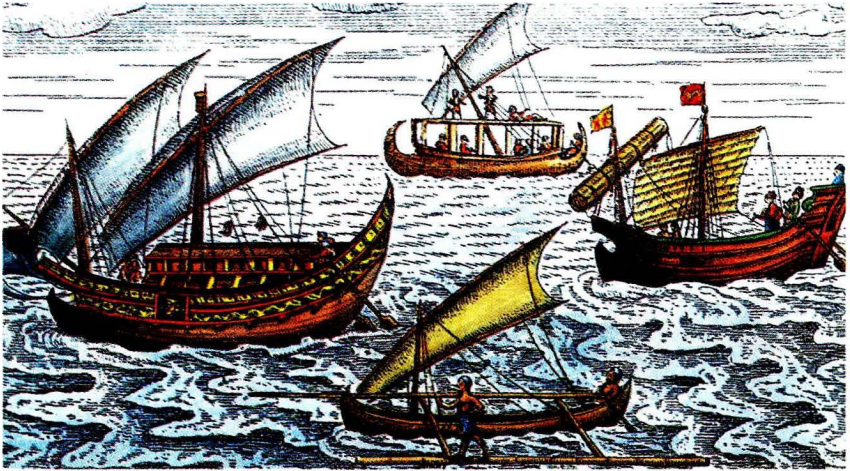
In all Nusantara waters, many wrecksites were discovered. From the ruins, boat experts can identify the technology of boat building. They formulated the traditions of boat building technology based on their cultural area, which are Southeast Asian Culture and Chinese Culture.



2.4

The characteristics of boat building with the traditions of Southeast Asia technology among others are the V-shaped hulls with keel, symmetrical bows and sterns, no partitioned watertight bulkheads, no use of iron nails, two lateral rudders each on left and right side of stern. The most amazing technique found nowadays is their ways on assembling the planks without using iron nails, instead they used fiber ropes to fasten each planks altogether. A plank, on a specific part is made prominent and four holes are pierced through the thick side. With using these holes, fiber ropes are fastened to the others planks. On the thick side, it was reinforced by wooden or bamboo pegs. These plank assembling techniques is called "sewn-plank and lashed lug technique".

The boat remains found in Samirejo and Kolam Pinisi and other remaining other places in Nusantara and neighboring countries, show similarities on their building technologies. Among others are a) lashed-lug technique, b) wooden/bamboo pegged technique, c) combination of lashed-lug and wooden/bamboo pegged technique, and d) an integration technique between wooden pegs and iron nails. Looking on those boat/ship building technologies, dated can be identified.



2.5

The oldest written sources that described the usage of wooden/bamboo pegs in Nusantara's boat/ship building originated from Portuguese sources in early 16th century. In these sources it is stated that commercial ships of Melayu's and Java's people, called as jung (with a capacity more than 500 tons), was built without using any iron; instead they used wooden pegs to fasten the planks. The same method can still be found in Nusantara, as can be seen on 250 tons capacity commercial ships from Celebes and Madura.

In his book, Antonio Galavo, General Governor of Portuguese in Molucca in the year of 1544, revealed the development of boat building in eastern of Nusantara (Molucca's area and surroundings). He described the boat as egg-shaped, and both ends slope upwards for the intention to sail forward and backward.

The boat was not nailed or caulked, but it was tied with fiber ropes through holes on its keel, ribs, bow and stern. Inside the hull there was a prominent part with the shape of a ring as a place to tighten the fiber ropes. The planks are assembled by wooden or bamboo pegs that are inserted through tiny holes on bow part. Previously, the seams between planks were caulked with baru (a kind of resin) to prevent leaking. Then the planks are assembled by hemming in with high proficiency, so people who see it will think the boat was made by one plank. A horned-dragon head was attached to the prow.

When the boat's body completed, the next step is to place transversely 10-12 planks and hooked them into the boat's wall. The purpose of these planks is to place ngaju, a type of deck that is wider than the width of the hull. Two or three pieces of bamboos are placed over the ngaju, in line with the hull, called cangalha. Cangalha has a function as seating places for rowers, separated from other rowers inside the deck cabin. At the end of ngaju is pagu (branched wood) which is used as a place to tie bigger and longer bamboos. These bamboos are called samah and have a function for placing the outriggers to balance the boat.

An upper deck of ngaju, made from splitted rattan, is called baileo. If there is any gunmen attacked the people on baileo, they can swept baileo altogether with ngaju and those people will fall into water. In baileo there was an enclosed higher upper deck with mat floor where the authorities and the captain sat. The sail was made from gunny sack or mat. The paddles are made artistically with a beautiful engrave and with a tip of the blade pointed out like a spear.

2.3 Disaster at Sea

There are four main factors that can cause ship to sink or wreck. Those are the knowledge of marine geography, weather (mastering on meteorological knowledge), war and human error.

In Nusantara, a quite busy waters that is passed by many ships from around the world are Strait of Malacca, Karimata Strait, Gaspar Strait, Java Sea, Flores Sea and Molucca water. As mentioned earlier, the most busy straits or waters are the Malacca Strait, Karimata Strait and Gaspar Strait. Within those straits, many ships has sunk and wrecked from various causes. It was frequently passed by the ships; from time to time that it make the seamen managed to learn the geography and memorized the seafaring routes.

In accordance with the advances of ship building technology, navigation skills also developed together with geography knowledge to recognize visited location; hydrography, to determine the sea currents in certain time and safe seafaring courses; meteorology to study the movement of the wind which can be advantageous for ship's movements; and astronomy to understand the rotation of moon and stars which will determine the direction of the wind and routes.

Nusantara waters looked calm, no huge waves and storms. However, in calm waters there are hidden dangers that are not expected by any seamen. Monsoon storms might unpredictably hit, coral reef under the sea, and hirsts in shallow water are the dangers that can cause disaster anytime. Especially due to the knowledge of marine geography that was still limited and there was no sea map.

As a maritime nation, most of the people who lived in the sea learnt about the types of wind. Without knowing it, they could be in danger. Variety of languages in Nusantara "contributed" the terms in describing names of the wind. For instance, swirling wind is named as *angin langkisan*, *angin puting beliung*, or *angin puyuh*. If there is an undefined course of wind, it is named as *angin gila*, while strong wind is named as *angin gunung-gunung*, *angin taufan*, or *angin ribut*. A mild wind is named as *angin sendalu* and an unfavorable wind is named as *angin salah*. Wind blows at dawn is named as *angin pengarak pagi*.

Most of the wind's names were contributed by maritime people. *Angin haluan* and *angin buritan* in sailing indicate where the wind comes from. A strong *angin turutan* is *angin sorong buritan*. *Angin sakal* that comes from the front is seafaring's wind barrier, meanwhile *angin paksa* will force seamen to sail away. *Angin ekor duyung* are the winds that come from many directions, while *angin tambang ruang* is a strong wind from the side of the ship.

From geographical position, Nusantara is located along the equator which supposedly to be within the area of *angin pasat*: in the southern hemisphere of equator blows *angin pasat tenggara*, and in northern hemisphere blows *angin pasat timurlaut* along the years. The area where both winds come together is called inter-tropical front and known as "The Dead Wind". The laws of nature in Nusantara are different from other areas which are also lying along the equator.

There are 2 differentiation's factors, as follows:

1. The Earth's rotation circling the sun cause "The Dead Wind" to move around from Lintang Mengkara (Tropic of Cancer) to Lintang Jadayat (Tropic of Capricorn). Consequently, when *pasat tenggara* travelled across the equator, it will change into *pasat baratdaya* and when *pasat timurlaut* travelled across the equator to the south, it will change into *angin pasat baratlaut*.
2. The location of this continent will lead to a low pressure that sufficiently effect "The Dead Wind" to shift further to the south or north depends on the season thus changing the direction of relevant wind.

Both factors caused the seasonal wind to change their direction every half year as if the wind rotated the course. In several particular places, due to local condition, west wind blows from December to February and east wind blows from September to November.

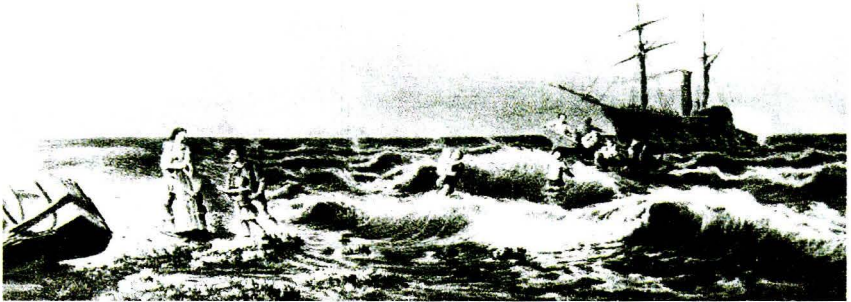
Those season's changes have been acknowledged by Nusantara's seamen since long time ago. By utilizing the wind changes, in October many ships sailed away from Molucca to the trade centers in Makassar, Gresik, Demak, Banten, up to Melaka and other cities in Western Nusantara. Seafaring to the east can be carried with utilizing west wind. From June to August, wind in South China Sea blows to the north so it eases the seafaring to Ayutthaya, Campa, Chona and Northern Kingdoms. This wind will change the its direction in September and December so trip back to the south can be started.

Nusantara is located in an exceptional position with the presence of this seasonal wind system, especially in the west part. Ships from around the world gathered in this place. No wonder if the first great kingdom centralized in this region. This geographical position is very beneficial as a meeting place of seafaring and trading courses.

Seamen who control a large seafaring have to be skillful in knowing the wind directions of Nusantara. Written sources often describes about ships that travelled within certain distance longer than other ships. Fa Hsien in year 414 CE complained about the distance between Melacca and Canton which are usually sailed within 50 days, has to be sailed in more than 50 days. On the contrary, Chia Tan (in 8th century) sailed from Canton to "The Strait" only 18.5 days; it was a major improvement. But not much compared with Chang Chun (in 7th century) who sailed within 20 days from Canton to Southern Malay Peninsula, or a ship rode by I-t'sing in 671 who sailed from Canton to Sriwijaya within less than 20 days. Eleven century afterward Tomé Pires' seafaring (1517) on the same course still required a longer time, which was 45 days.

Marine geography knowledge is very important for seamen. Sandbars and coral reefs on shallow water could cause a ship to sink or wreck. Due to the fact that there was no map of the sea at that time, an experienced ship's captain or helmsman has a role in passing dangerous courses of seafaring. In the early seafaring in Southeast Asian water, there was no map that specify the location of coral reefs and sandbars that were widely spread. Among others are the sandbar in Gaspar and Karimata Strait, also coral reefs in Enggano Island and around Belitung.

One method to mark the presence of sandbars or coral reefs that can endanger the seafaring was by placing buoys. Unfortunately, this method was not very helpful when the weather turned into a violent storm. Huge waves could wash away the buoys and heavy rain could distract the vision where it can lead the ship into a trap. Monsoon storm is a very dangerous storm as it comes unexpectedly and lasts not long. After that weather became sunny again.



2.6

Other method to mark the presence of sandbars or coral reefs is by building lighthouses. In Indonesia, lighthouses started to be built by Dutch government in the 1800s. Several places with lighthouse are Bangka Island, Belitung, Martelo (Thousand Islands, Jakarta), Anyer (Banten), Semarang and several other islands in Indonesia.



2.5

Who knows Nusantara waters with its various wind characteristics and unique sea geography? Of course, they are the local seamen. Written data on the navigation capabilities of local seamen which sourced from Nusantara's script can be confirmed there was none. Perhaps, it was only clearly stated on western sources. These western sources were usually found on seafaring journal (*logboek*). In this journal the navigator who led the seafaring must be mentioned. In a seafaring journal it was stated that the first Europe's ship that entered Nusantara waters had employed a local navigator to get them to their destination. On Magelhaens expedition in 1521, d'Elcano stole two local sea guide ships to escort his ships from Philippine to Tidore. When VOC fleets led by Cornelis de Houtman arrived in Nusantara, besides using Portuguese people who had been to Nusantara before he also used

local navigator's knowledge and experiences, like what he did in his seafaring in Sunda Strait on his way to Banten. It was recorded that the first VOC ships used the offer of boat skipper, whom they met in Sunda Strait to escort them to Banten, with 5 real payment.

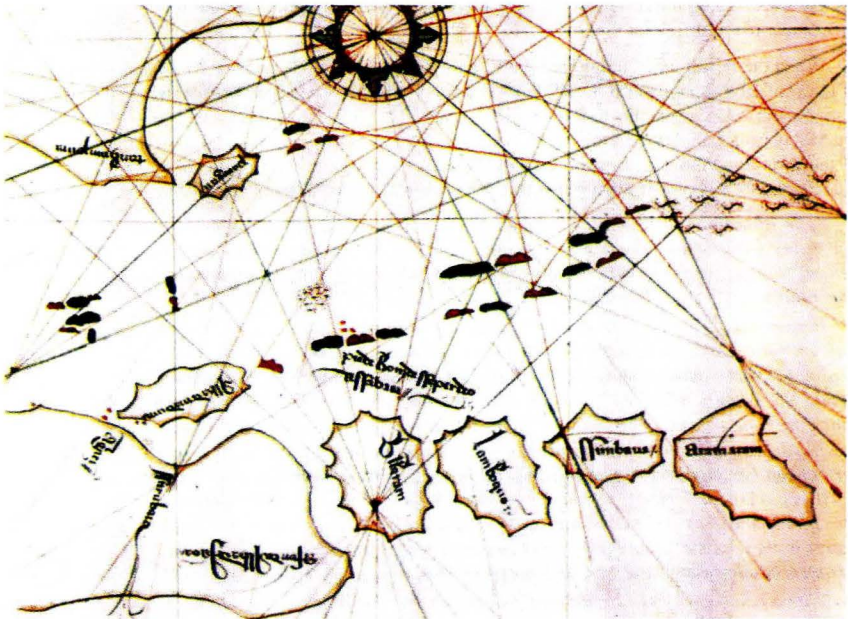
A better picture on how skillful the Nusantara's seamen in counting the length of time of a seafaring travelled from one place to the others and the ability of Nusantara's navigator sailed foreign ship to their destination can be found in the seafaring journal. It can be said that local navigators were very proficient as the ship is larger and using different technology of ship building and with more advanced navigation equipments. Even with those differences, they did not have problems.

Local navigators' knowledge in sailing foreign ship is certainly not similar as sailing their own ship. In their first exploration on Nusantara waters, the Portuguese was much helped by local seamen. In this way they got to know about local climate and geography. Sea maps and roteiros (sea guidebook) that the Portuguese made were not only based on their own observations but also on their ability in gaining nautical information from local (Nusantara) seamen.

One example of roteiros is a guidebook of Sumatera's Eastcoast, from north to south. The lane used by the Portuguese were the muddy coastal line of Sumatera, to avoid coral reefs along the waters of Bangka Island. The navigators were also requested to accurately count the number of capes they passed and also measure the depth of the water and should sail the ship in water with the depth of 7-12 fathom. This means that they sail on water

approximately 5 sea-miles or some 9 km from coastal line of Sumatera, which often the depth is only 3 fathom. No wonder, many written sources about Nusantara's seafaring mentioned that the people would rather sunk into the mud in Sumatera than hit the coral reefs around Bangka Island.

Besides memorized the geography, Nusantara seamen also know about maps. A 16th century Portuguese account mentioned about it, and also that the Portuguese were so much in willing to get those maps. First map about Nusantara was made by Rodriguez in year 1512-1513. From another sources, one knows that Rodriguez interviewed some local seamen and event sent a copy of "Java map" to Lisabon via Alburquerque to be presented to the king of Portugal. But the map, which is written using Javanese script, never reached Portugal. Alburquerque ship sank in the Malacca water.



2.1

With the missing of the map, we do not have any evidence about seafaring knowledge of Javanese people at that time. This map, which was made by a Javanese, also includes the area across Indonesia Ocean to South American territory (Brazil). It could be very possible that the improvements of Portuguese cartography of Southeast Asia, Nusantara waters in particular, are based on maps made by Nusantara cartographers.

Knowledge on winds and sea geography are not enough to ensure the safety in the sea. Other navigational equipments are also required in a seafaring, such as astrolabe, compass and sextant. Compass serves as a tool to determine the direction and place based on the declination and inclination of its needle, while sextant serves to determine location according to the height measurement of the sun. The latter is very useful when the ship was in the middle of the sea where no land is visible.



2.6

Astrolabe, which means "math's diamond" is an astronomy instrument used by astronomers, navigators and astrologers in 11th - 16th century. This instrument was discovered in about 9th century in the Middle East region. The oldest evidence dated back to year 860, and was found in Baghdad. Astrolabe is mainly used for locating and predicting the position of the sun, moon, planets and stars; and also

to determine local time when local

³ In the development era of Islamic (Middle Ages), astrolabe used to study astronomy, navigation, surveying, calculate the Kiblah and to find the times for Shalat. In Europe, astrolabe used by astrologers to predict someone's fate based on their horoscope. Astrolabe later manufactured in Prague in 1585.

latitude and longitude are known. These instruments were frequently used by Arabic/Persian seamen whom are known as tough seamen. Have Nusantara's seamen known about these instruments?

An Italian source mentioned that Ludovico di Varthema, on his journey from Kalimantan to Java in 1506, saw a compass was used by the navigator of the ship he was on. Beside a compass, "a map full with horizontal and vertical lines" is used as well. Perhaps it was a map of the sea. Moreover, it also mentioned that far away to the south of Java island, was a wide ocean where day time was very short, only 4 hours. If Varthema's story is true, it shows that seafaring in the Indonesia Ocean had passed the southern subtropical line. In other words, the Nusantara seamen had reached the Antarctic Circle. The problem is, where they equipped themselves with compass and sextant, or only relied on their astronomy knowledge?

Compass has long been known by Asian seamen. This instrument discovered in China in 10th-11th century, but the first users were the seamen from Arab, Persian and India. It still unknown whether all ships in the past were equipped with this instrument. Whether it was used or not, Nusantara seamen must had been introduced with this instrument through seamen from Arab, Persia, and India.

Compass is a navigation instrument to reckon direction. It has magnetic pointing arrow which freely adjusting to earth magnetic accurately.

Compass provides particular direction references, so it is very useful in navigation. The frame of reference defines the four cardinal directions, which are north, south, east and west. If it is used in conjunction with the clock and sextant, then it would provide more accurate direction. This tool has its role in the development of maritime trading since it made long and far journey safer and efficient if compared when people relied on star constellation in defining directions.

How Nusantara seafarers know which direction go and what method was used as guidance when compass was not discovered yet or owned? The conditions of climate and geography of Nusantara enabled native's seamen to use islands, mountains, and capes as reference in guiding while sailing along the coast. At night, they used stars in the bright sky as guidance to determine their position in the middle of the sea. All of these were based on their astronomy knowledge. Thus, navigation instruments, such as compass and sextant, were less necessary in Nusantara waters which are far from fog and storms.

Chapter 3.

TRADING ROUTE IN NUSANTARA DURING 7TH TO 16TH CENTURY

3.1 Seafaring and Economy System

Nature has been giving us various advantageous sources, among them are spices. Demand on spices was strong enough that it enlivened the trade seafaring from and to Nusantara. Inter-insular trading through sea route is one medium that support the existence and endurance of sea harbors in Nusantara. This situation had been like that even since the 15th century, together along with the spreading of Islam in Nusantara.

Aristocracies at that time, who held the political control and trading dominance, did not support entrepreneurship among local coastal people who were in fact being another active side within the maritime activities. But in contrary, since seafaring and maritime activities are basically kind of open communication, it weakened feudal authorities and stimulated the forming of opened societies who do not recognize social structure differences. That is one of the reasons how Islam, religion followed by mostly merchants and seafarers, is more likely accepted by coastal people.

The arrival of the Portuguese caused strong competition in the trading world, and brought impacts in religion life as well. The

Portuguese was principally rejected by coastal people who were Moslem.

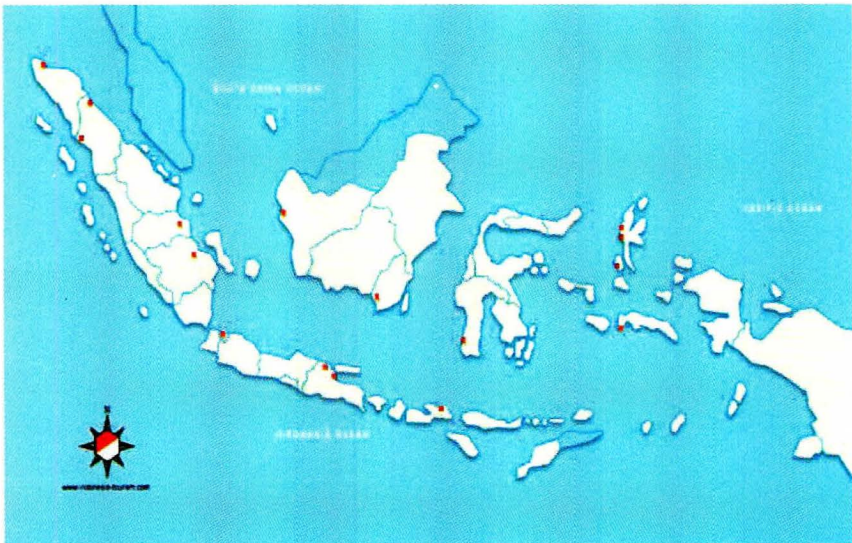
After the coming of the European, the role of Nusantara merchants was complementary. But that was not for the Chinese merchants whose role was more significant even though they were made powerless and ineffective later by *VOC*.

The prosperity of Nusantara's harbor in the 16th century depends on trading. Interland authorities have the chance in getting advantages from commodities traffic in the coastal area. But Portuguese trading seafaring had caused losses for harbors' prosperity. Added with the political situation during that period, those harbors started to decline and eventually lost their independency by Mataram dominance and Dutch Company as well.

The "future" of economic life in Nusantara changed drastically when capital economy system was applied in 19th century as the western was the part that got the biggest advantages. With the development of technology, economical activities could be quantified. Nusantara economy which was based on primary export products, agricultural product, and natural products, moved to mine products. Industrial Revolution and the opening of Suez Pass in 19th century increasingly influenced Nusantara economy business. Nusantara economy activity eventually "defeated" by the western, and the Dutch was the side that got most advantages since it controlled almost all part of Nusantara.

3.2 Sea and Trade Route in Southeast Asia

Seafaring and trading are inherent with ships or boats, and sea as medium for transportation and communication. All this played important role in the culture development and human civilization in the Southeast Asia since 3,000 BCE. But the peak occurred during the end of Neolithic around 1,500 BCE, or Palaeo-metallic around 1,000 BCE.



3.1

For almost 2,000 years people in the western Nusantara have been involved in the Asian maritime trading, and keep developing ship tradition. Like the Asian and European, they are known as skillful seafarer. And by the end of the first millennium before the Christian era, local maritime trading grew and expanded to the eastern ports in China, Persian Gulf, Red Sea, and Madagascar in the Indonesia Ocean.



2.7

Maritime history scholars believe that boats/ships had played important role in the Nusantara waters before written sources (inscriptions and ancient manuscripts) mentioned about it. Their assumptions are based on the fact that prehistoric bronze artifacts, such as bronze axe and bronze kettledrums (nekara and moko), which are believed Southeast Asia mainland as its origin, were found in some places in Nusantara (Sumatera and Rote respectively). Also the presence of South India pottery (known as the Arikamedu, Karaikadu and Anuradhapura pottery) in Karang Agung (South Sumatera), Buni, Batujaya and Patenggeng (West Java), and Sembiran (Bali) show that there was relationship between India and Nusantara during the first century CE. All those goods must have been certainly carried by inter-insular boats or ships.

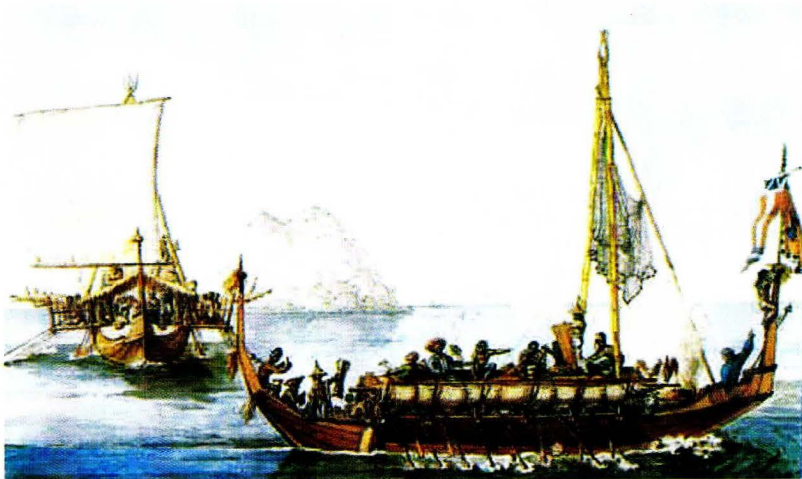
Geographically Nusantara is on a strategic area because it can be reached from all directions when using boats/ships. The Southeast waters and the Malacca Strait had been the busiest water area between 3rd-19th century, it had been always astir with boats/ships from around the world. The spirit of exploring the sea and countries beyond, political and economy reasons, wars and religion spreading accelerated the maritime sector as shown by West Asia, Southeast Asia, and China.

The pioneering of Nusantara trading-route network was triggered by spice trading. Based on European sources, Rouffaer assumed the spices traded in Europe were from Nusantara as they only grow there. This spice enchantment had brought merchants to sail miles and miles away from their native land through the ocean.

Spices (clove, nutmeg, and mace) are like the energy which attracts the establishing of trans-border trading in Southeast Asia. Clove tree (*Eugenia aromatica*, Kuntze) are endemic plant that grow in Ternate, Tidore, Moti, Makian, and Bacan, and nutmeg (*Myristica fragrans*, Linn) and mace come only from Banda Island. Both are in the Molluca Islands. That made them rare commodities at that time and therefore they were expensive. It was since year 1550 that they were planted outside.

By tracing the spice trading route one may learn the connection of Molluca with the world outside. A roman source from Plinius Major (75 CE) mentioned garyophyllon, a sort of plant that only grew in sacred forest in India. Rouffaer assumed that garyophyllon is clove tree. But long before it, in an archaeological excavation in Terqa site (Mesopotamia, Syria) a jar full with cloves were found in a simple stove room from around 1700 BCE. Other sources from China, from the Han Dynasty (3 BCE), mentioned the obligation of empire officials to chew cloves when gave visit to the Emperor. And so is another European source which mentioned that St. Silvester, a Roman bishop (314-335 CE) received 150 pounds of cloves as gift.

Considering that clove and nutmeg only grow in Molluca but found in places far away outside, one might ask questions: who brought the spices, were they brought or picked up, how they were transported, and what is the transportation vehicle? From written sources from Molluca one get to know that it was not merchants or tradesmen who came to Molluca to pick the merchandises but the Mollucans brought them outside. A misleading description was given by famous writer Ibnu Baṭṭuta (1350 CE): ". . . part of clove tree that were traded are the trunk, its fruit is called nutmeg, and the flower is called fuli. . .". This shows that Ibnu Baṭṭuta know nothing about clove tree and nutmeg tree as well.



3.1

How far did the Nusantara seafarers crossing the ocean? Did they only sail across inter-insular waters and small straits? Or did they sail more far across to South Asia, East Asia, or even to Europe? A water painting made by Alphonse Pellion titled "Kora-kora from Gebe, North Mollucas, 1818" shows a big boat with nine

to ten paddlers. This big boat is suitable for long distance seafaring and carrying spices as well, particularly cloves and nutmegs, to the Southeast Asia entrepôt harbor.

India and Arabian merchants were first to come, and when China developed shipbuilding technology and started exporting their trade commodities, the seafaring and trading in Nusantara was astir by merchants and traders from Champa, China, and Japan. Ceramics were the favourite commodities.

There was a kingdom by the name Kadātuan Śrīwijaya in the mid of first millennium CE. Before the establishment of this kingdom, a figure named Dapunta Hiyarj left Minarja on 19 May, 682, brought along two laksa troops and 200 boxes supplies that were carried with boats. On 16 June, 682 they arrived at Mukha Uparj and started to build a settlement called Śrīwijaya. That was the start of Śrīwijaya which developed into a political center of a Kadātuan.

The description of its people was obtained from the accounts written by Chinese travellers. A Chinese account from year 1225 described the people of Swarnabhūmi (or Śrīwijaya) who lived around the city, or on house-raft topped with sago-palm leaves roof. They were very brave and skilled in fighting and war, either on sea or land.

As maritime kingdom, most of the people of Śrīwijaya lived from trading and they built relationship with other kingdoms in Asia, such as China, India, Persia, and Middle East. Political relationship was more for maintaining and securing the trading activities.

Inter-kingdom relationship was more intense with China and India compared to Middle East.



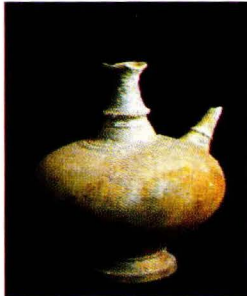
3.1



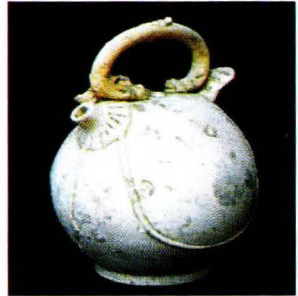
3.3



3.2



3.5



3.4

The bureaucratic system of Śrīwijaya also reflects its maritime characteristic. Telaga Batu inscription mentions the officials and employees that were taken vow by Dapunta Hyang to not commit insurrection; and they are puhāvam (ship captain) and vaniyāga (merchant, trader).

Arabian sources mentioned the name Srībuza (=Śrīwijaya) when it described commodity goods, and the seafaring routes of the Arabian seamen from Oman and Siraf to Kalah (= Kedah) as

well. Probably the Arabian (Ta-shi) seafarer travelled only to Kalah and the seafaring within the strait was covered by the Melayu seafarers.

An Arabian merchant, Ibn Hordadbeh, visited Śrīwijaya from year 844 to 848. He wrote that the king of Zābag (=Śrīwijaya) is called mahārāja and his power covering the islands in the east. The main product of this country is camphor. Other merchants who made visit to Śrīwijaya are Sulayman (in year 851) and Ibn al-Fakih (in year 902). Both mentioned the volcanoes in Zābag, as well the commodities goods (camphor, clove, sandalwood, and nutmeg). The big harbor, Fansur (=Barus), is located in the west coast.

Other Arabian sources came from Ibn Rosteh (903 CE) and Abu Zayd (916 CE). Both mentioned the richness of the king which was over the richness of the great king of India. The king of Zābag was that rich that he throw gold to a pond near his palace everyday. Forest products from Zābag are camphor, varieties of sandalwood, ivory, and mine products such as gold and tin, and spices.

Beside merchants, Arabian geographer that was recorded to visit Zābag, was Mas'udi. He visited Zābag in year 955 CE. He mentioned in his account that the great king of Zābag has many islands and big strong soldier troops, and that he ruled the trading from Siraf and Oman. Products that come from this country are camphor, clove, sandalwood, areca nut, nutmeg, and cardamom.

Indian culture influenced kingdoms existed in Nusantara during the period from 7th until 15th century CE. They were those who built trading and religion relationship with kingdoms from South Asia, Southeast Asia, and China. Among them were Śrīwijaya and Mālayu in Sumatera, Sunda and Mdaᅇ (Matarām) in Java, and Wijayapura (Chin-li-pi-shih) in West Kalimantan. In maintaining their relationship obviously inter-insular transportation and trading network were built.

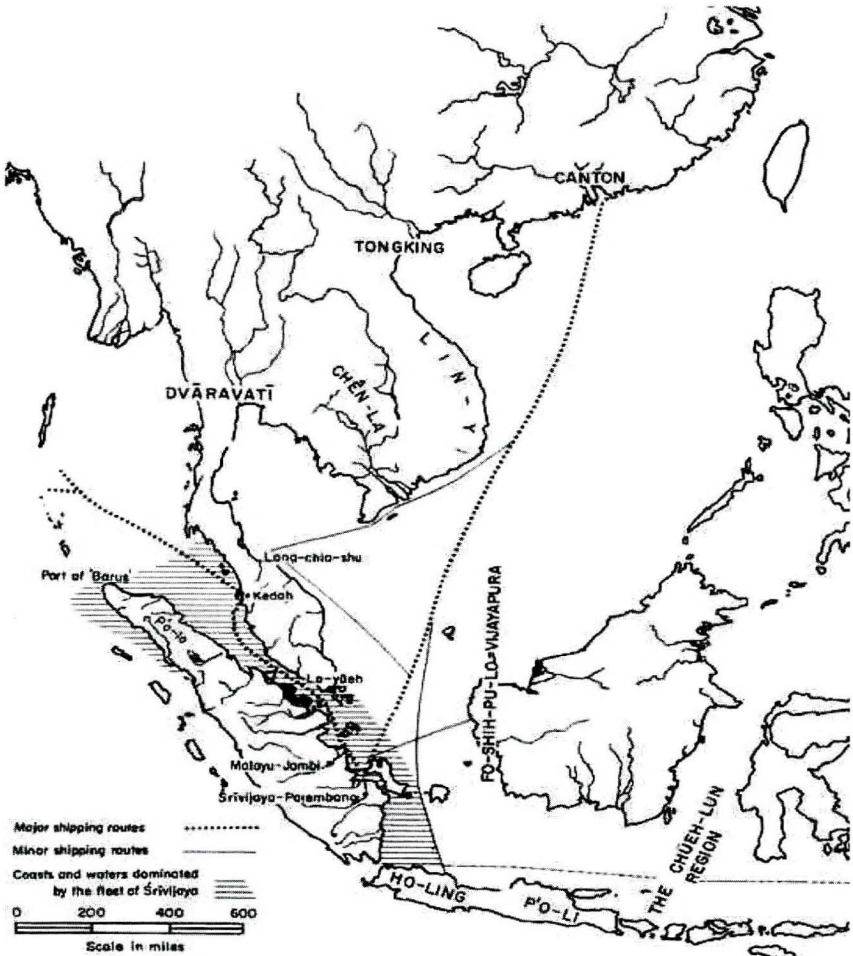


3.6

Matarām, with its archaeological remains caᅇᅇi and stūpa, was an agricultural kingdom. Even though their life was based on agricultural products the people had the knowledge about maritime culture as shown by the relief from stūpa Borobudur. The relief showed transportation vehicles, such as of outrigger boats (sailed and not sailed, single and double sails) and single-sail boat.

Besides the reliefs of the Borobudur temple, maritime culture was also shown on the official functions as mentioned in the Daᅇ Puhāwaᅇ Glis inscription found on the foot of Sumbing Mountain in Temanggung area, Central Java. This old-Malay inscription, dated from 17 May year 827, mentioned a ship captain named

Daṅ Puhāwaṅ, whose origin is Sumatera, gave offerings to his sīma.



Evidences related to 8th century maritime network and the role of Kadātuan Śrīwijaya and Matarām are old inscriptions and stone and metal statues. There are also evidences showed political

relationship between Java and Khmer (Cambodia) around 8th century but seems that it was not a good relation as shown by some inscriptions found in Khmer.

King of Khmer, Jayavarman II, issued some inscriptions and some of them mentioned Java. The inscription Sdok Kak Thom (802) consists information related to historical relationship between Khmer and Java. In the Khmer language part it is stated ". . . His Majesty, Parameśwara, came from Java to become king in Indrapura Kingdom" (line 61–62). In other line (71–72) it is stated: "Honoured Brāhmana, Hiranyadāma, who is expert in magic power, came from Janapada on His Majesty Parameśwara invitation to perform religion ritual so Khmer would not depend on Java any more because His Majesty had become a cakrawarti.

Other inscription that mention "Java" is Yang Tikuh, published by King Indrawarman in year 799. It mentioned the commemoration of the finishing of the renovation of the Bhadrādhipatīśvara temple, which was burned and destroyed by troops from Java in year 787.

The Java aggression was impressed so deeply among the people of Khmer that they mentioned it to an Arabian merchant by the name Sulaeman when he visited Khmer in year 851. He wrote in his account about the suffering of the people of Khmer caused by the aggression of troops from Zābaj king, Śrī Mahārāja. The name "Śrī Mahārāja" was mentioned in several 8th century inscriptions found either in Java (the Kalasan inscription, 775 CE) or Kra Pass (Ligor B inscription, 778 CE).

The presence of Śailendra's influence in Malay Peninsula, Sumatera, and Java was firstly known from found inscriptions. These inscriptions mentioned a person from the Śailendra dynasty by the name Śrī Mahārāja Rakai Panamkaran. At the Ligor A inscription in Ligor, this person was said to build trisamaya caitya for Padmāpāṇi, Śākyamuṇi, dan Vajrapāṇi, while in Java he was said to build sacred temple for Tārā (Kalasan inscription), the Sewu temple for worshipping Mañjusri (Kelurak inscription), the Plaosan Lor temple (Plaosan inscription), Borobudur, and one of the temples in the Ratu Baka Hill. Even it is mentioned that Panamkaran built sacred temple in Ligor, no inscriptions mentioning he built such temples in Sumatera. From the Siwagrha inscription one can only assume that Panamkaran's grandson, Bālaputra, might have brought the Śailendra's influence to Sumatera when he escaped to Sumatera after being defeated by Rakai Pikatan.

Outside Java and Sumatera, Śailendra's influence is also found in West Kalimantan. Some statues with Śailendra style (8th–9th century) are found. Within this period, a kingdom by the name Wijayapura (Ch'in-li Pi-shih) was in power.

Majapahit is an agricultural kingdom who also developed maritime activities. At the same period some harbors known, such as Kambangputih (Tuban), Pajarakan, Gresik, Surabaya, and Canggü. Long before that time, during the period of king Airlangga (11th century), division of harbor function already present. Hujunggaluh was insular harbor on Brantas Rivers it is located

near Mojokerto now, while Kambangputih was the inter-insular harbor and located on the coastal of Tuban.

Maritime trading in Nusantara reached its peak in the 15th century when Moslem and Chinese merchants developed more tensed trading relationship with kingdoms of Nusantara. The Malacca Strait became a bustling area since it connects East Asia and West and South Asia, trigerring the establishment of harbor cities along its side. Among these was Malacca which was established by Parameswara, a south Sumateran nobleman who evacuated to Malay Peninsula. Malacca grew into a very busy harbor since its location which was geographically very strategic.

Table 1. Journeys of Admiral Chêng Ho

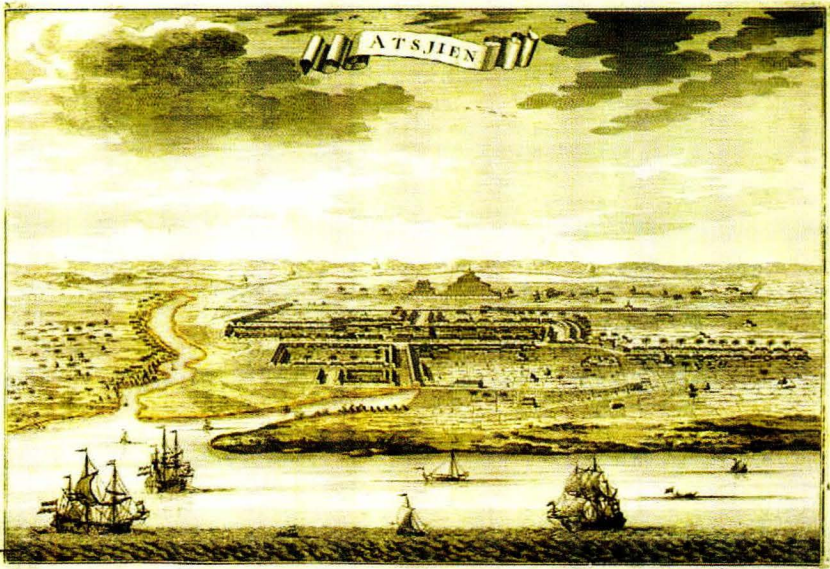
Nos.	Year	Visited area in Southeast
1.	1405-1407	Champa, Malacca, Java, Samudra Pasai (Pase), Lambri (Banda Aceh), and Palembang.
2.	1407-1409	Champa, Malacca, Siam, Kalimantan (Borneo), Java, and Lambri
3.	1409-1411	Champa, Malacca, Java, Samudra Pasai (Pase), and Lambri.
4.	1413-1415	Champa, Malacca, Pahang, Kelantan, Java, Palembang, Nakur, Lambri, and Aru.
5.	1417-1419	Champa, Malacca, Sulu, Pahang, Java, Palembang, Samudra Pasai (Pase), and Lambri.
6.	1421-1422	Champa, Siam, Malacca, Samudra Pasai (Pase), Lambri, and Aru.
7.	1431-1433	Champa, Malacca, Siam, Java, Palembang, Samudra Pasai (Pase), Lide, Nakur, Aru, and Lambri.

Source: Prof. Kong Yuanzhi

In the early of 15th century the Emperor of China, Yung Lo, sent ambitious missions involving hundreds of jungs with

thousands of ship crews under Admiral Chêng Ho, to places from western Nusantara to east Africa. The goals of the mission were to strengthen the position and influences outside China, as well as introducing the new emperor and inviting foreign merchants to do trading in China.

Chêng Ho's mission were carried out seven times, including to some places in Nusantara. Ma Huan wrote in his Ying-yai Shêng-lan (Overall Survey of the Ocean's Shore) that Chêng Ho visited Palembang in his first mission (1405-1407) in order to arrest a pirate who escaped from Fujian Province.



3.2

Spirit of exploring, together with maritime technology development, brings people to find new world. West Asian merchants did not only do trading but spreading Islam as well. First place in Nusantara where Islam flourished was north

Sumatera; and Samudra Pasai (13th century) was the first Islamic kingdom. This sultanate was established by a Moslem merchant from Gujarat (west coast India). From Samudra Pasai Islam was spreaded to the east, Malacca, Java, dan eastern area of Nusantara.



3.3

Most of 15th—16th century Moslems are merchants who lived at coastal area such as Lambri, Aru, Jambi, Palembang, Banten, Kalapa, Cirebon, Demak, Tuban, and Surabaya. These were important entrepot harbors, where many foreign ships with cargoes filled with trading commodities anchored. Among them Demak was known as powerful in maritime and was known to draw away the Potuguese from Malacca in year 1511.

Before the coming of the European in Southeast Asia, Malacca was an important harbor. Chinese jungs stopped over in Malacca for supplies before continue continued the journey to West Asia.

Together with them they brought trading items such as perfume essence, silk threads and textiles, luxury linen, art objects and ceramics; and from Malacca they brought spices, sandalwood, tin, and ivory.

The activity and maritime dominance of the European (Portuguese, Spain, Dutch, and Britain) within the Southeast Asia seaways eventually influenced the maritime world as a whole. Portuguese and Spain are countries who ruled the sea: Portuguese mastered the seafaring routes through the Cape of Hope, Indonesia Ocean, Nusantara, and Brazilia, while Spain mastered the route of Carribia Ocean, Middle of America, Northern America, and western Pacific (including The Philippines and northeast Nusantara).



3.4

The Portuguese travelled to Asia in around 1500, when Alvares Cabral with his 13 ships attacked Calcutta. After the fall of Calcutta the Portuguese attacked other harbor, Goa (in year 1510) and Malacca (in year 1511). Portuguese eventually ruled the world

trading routes through the Malacca Strait for almost 200 years since the fall of Malacca.

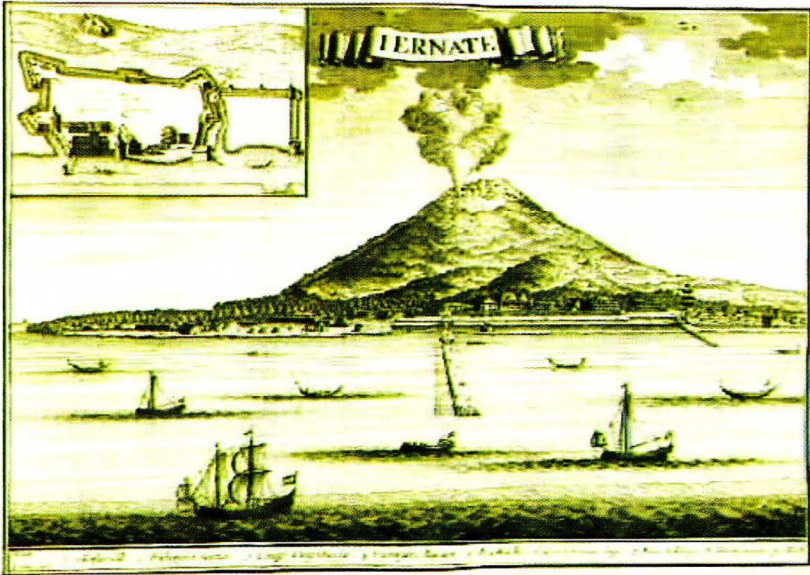
In early of 18th century, Portuguese dominance was threatened with the emerging of two new maritime powers: Britain and Dutch. In 1600 Britain established its trading alliance the East Indian Company (EIC) and in 1602 the Dutch built Vereenigde Oost-Indische Compagnie (VOC). Not only ruling the trading routes but both also monopolizing the trading activities. The Nusantara people were only allowed to do trading either with Britain or Dutch only, and with fixed price.

3.3 Spice Trading Era

The Portuguese first arrived in Nusantara in year 1509, followed by Antonio de Abreu (one of Alfonso de Albuquerque fleet crew) who obtained Molluca, the spice island. Effort to get spice was also done by the Parmentier brothers who came from Dieppe (France) in year 1529 to Sumatera, but unluckily ended with the death of both of them. Next the Dutch came to Java in 1596; they built Batavia in 1619, and eventually took over the role of the Portuguese.

Huge demands on spices affected the history and influence international relationship as well. As commodities spices (such as nutmeg, clove, pepper, and cinnamon) attracted the Europeans to get them from the first hand. In Nusantara, spices are mostly come from the Molucca Islands. Javanese and Sumateran

merchants brought the spices to the center of trading in the West Nusantara area. From there they were bought and carried by them or by Indian merchants to India, where West Asian traders and merchants were ready to buy and brought the spices to the Europe market.



3.5

The Sumateran people, especially those from the very west area, had been involved in trading activities with China since 5th-6th century. Seventh century was the period when Arabian merchant travelled to Nusantara via India. Commodities they traded were pepper and other spices, but the most wanted was sandalwood.

Gresik had long been as one location in the trading network in Southeast Asia. An inscription related with the

presence of oldest Moslem community in Southeast Asia was found in Leran. It is a tombstone from year Hijriah 495 (around 1101 CE) with a name Fatimah binti Maimun on it. The site around the tombstone, the Pasucinan site, indicates it was a harbor before, and the ceramics found were from 10th–14th century with Song-Yuan period as the most.

The presence of the Portuguese in Nusantara started with the western coastal Africa exploration in 15th century. The eager to get richness through trading was the economical motivation; therefore they turned the trading route to the new one. It was thought to bring loss to the power who ruled the Asia–Europe trades, the Turks were among them who were in the effort to conquere European kingdoms. Other reason that triggered the exploration was the responsibility in spreading Christianity as religion devotion.

The Portuguese successfully defeated Malacca in year 1511, and ruled the waters between Java and the Moluccas since then. Its strategic location brings Malacca into a very busy trading center, where merchants from all over the world stopped over and made business. Ships coming from Pegu, Bengal, Ceylon, and Goa; all came from the west while from the east were coming from Siam, China, and Japan. Chinese jungs came to Malacca bringing silk and ceramics, and they bring back pepper, sandalwood, spices, and forest products when returned to China. As comparison to the high price of spice, Tomé Pires mentioned that a quintal of pepper which cost 4 cruzados in Malacca cost 15 to 16 cruzados in China.

From the south ships which were full loaded with perfumed woods and land and forest products from Sumatera, Java, and the Moluccas filled merchants' warehouses. All this activities stimulated the grow and development of entrepot harbors in the northern coastal of Java, such as Cirebon, Demak, Jepara, and Tuban, as well as giving the opportunity in getting demanded products as clove (for the Mollucas), nutmeg (for Banda), and sorts of sandalwood (for Lombok and Timor).)

The arrival of Diego Lopes de Sequiera at Pedir in year 1509 marked the relationship between Sumatera and Portuguese before the latter ruled Malacca. He continued his journey to Pasai for its nature products, such as sandalwood, camphor, resin, pepper, and ginger.

The conquest of Goa and Malacca by Portuguese caused the change of spice trading route. If earlier it used the route from Red Sea, Cairo, Mediterania to enter Europe, it then moved to the Hope Cape. It did bring advantage for the Portuguese but not for the Venetians.

Other nation who involved in "spice hunting" was the Dutch. They built VOC as a federation of six trading alliences which since 1596 had sent trading fleets to harbors in Nusantara. Important places that produce highly demanded commodities were put under their control. They carried these commodities from the Batavia harbor, and brought money, VOC needed stuff, and some commodities.

The Dutch had to work hard in their effort to control the spice trading in Nusantara. Chinese merchants still had some controls on pepper trading during the 17th century, and they even successfully prevented the Dutch control pepper trading in Kalimantan in year 1730. The Dutch plan in monopolizing Europe pepper market could not be implemented soon as shown that the English East India Company was able to carry pepper to London of the same amount as the VOC got in Batavia from all over Nusantara.

Chapter 4.

MARITIME PEOPLE BUILDING THE BOATS

4.1 The Making of Boats among the Buginese

Boats are very important for the Buginese since they are mostly fishermen or wandering merchants. Started with very simple small boat they developed a more advance boat, the Pa'dewekang type, which is equipped with various and more complete necessities for long journeys. This kind of boat was used by the Buginese to sail to the northern coast of Australia.

4.1.1 Types of Boats

The Ara, Lemo-lemo, and Bira people are experts in boat making. In the myth of Sawerigading, it is mentioned that when his boat broke into pieces its keel was lashed at Ara beach, the sotting at Lemo-lemo beach, and all the yards at Bira beach; therefore only people from this areas are they who have the skill in boat making.

Various boats used by the South Sulawesi people, respectively the Buginese, for their daily activities as fishermen are:

Sampan, is type of dugout boat with pointed end. In South

Sulawesi they call this type of boat as lepa-lepa: used for fishing and could only carry 2 or 3 people. This kind of boat is mostly found as picture in rock art paintings.

Soppe, is a kind of outriggered-boat. Basically it has the form like dugout boat but longer and wider, and equipped with triangle-shaped sail. Its outriggers are made of bamboo. This kind of boat can be found anywhere in Indonesia but with different local names. It is believed that this type of boat was used in the past as transportation vehicle by the ancestor in finding new and safer places.

Jarangka, It has the form like soppe but bigger. On the upper deck stand a half-opened room topped with leaves or wood planks roof. It has quadrangle sail, single or double.

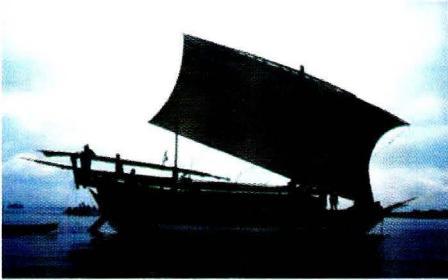


4.1

Sande, It is kind of boat used by the Mandar people. It has the same form as soppe but slimmer. It has protruding front and back ends, and triangle shaped sail.

Pa'dewakang, It is assumed that this kind of boat appeared during the flourish period of Islam, or 18th century the latest. It is the main type of many kinds of long distance boats from South Sulawesi. The technology used in making this type of boat is said to be more advance; it is not made from single wood log but from wood planks and has keel on the bottom where the planks are

attached. It has two sails, one is a big quadrangle sail and the other is a smaller triangle sail in front. Its carrying power could reach 10 tons. It is assumed that with this kind of boat the



4.2

Makassarese sailed to Australia in order to hunt sea cucumbers in the 16th century, as well as trading to the east and west during the period of Goa sultanate, Somba Opu.

Lambok, is a typical boat belongs to the Mandar and Buton people. It has the form like rowing boat, rounded back end and protruding front end. Its carrying power reaches 15-60 tons.

Pajala and Patorani, Both have similar form and have quadrangle sail and big mast. The carrying power is around 4 tons only.

Salompong, is a big size boat with quadrangle sail with mast on the front part of the upper deck.



4.3

Pinisi, This type of boat is not only perceived as transportation vehicle to carry people and goods but more as a symbol of power, advancement, and pride among the Buginese. Therefore many rituals are

performed along with the making of this kind of boat.

4.1.2 Rituals on the Making of Pinisi

The making of Pinisi among the Buginese is always accompanied with belief rituals. The rituals are as follows.



4.4

1. **Trees felling.** Wood trees that usually used to make boats are teakwood, ironwood, bayan wood, suryan wood, etc. Trees felling rituals are meant to calm the supernatural power in the forest so they won't disturb the workers while cutting down the trees.

2. **Annattara**, is the ritual carried when end of boat keel is to be attached with other wood junction. Offerings that are used in this ritual are incense burner, chicken, and bunch of bananas.
3. **Appasiki**, is the ritual meant as "bad spirit repellent". Spiritual elder will lead the ritual, which is carried out on boat (*barasanji*), speak the prayers. They use some offerings and traditional comestibles as well.
4. **Ammasi**, is the ritual carried out when boat making almost done. A rope knot will be fixed at the center part of the boat (*kalebiseang*). Offerings that are used are bananas, coconuts, chicken, brown sugar, etc.
5. **Boat launching**, is carried out when the boat is being launched to the sea for the first time. Offerings that are used are rice, an egg, palm fibers, variety of light dishes, pandan leaves, jasmine and *lamingan* flowers, etc.

4.1.3 Boat-making Process

1. Chopping wood logs, especially for the keel. The tree felling has to be done on right time and hours as well. Usually they do it before noon because tree felling at noon is forbidden for the Buginese. Curved trunks are good for some parts that need curved shapes.
2. Making the hull. Teakwood log is the best material. The hull is made from teakwood planks of 30 centimeters to 40 centimeters wide. Planks are joined using two

techniques, the laso technique (inserted join) and *jembatan* (bridge) technique (overlay technique). Wooden pegs were used to strengthen the join in the past, but now they metal bolts and nuts. Other parts that are assembled within this step is the *pengepak* (part that connect the right and left under strakes), *uru sangkara*, *sotting*, and *kanjai*.



4.5

3. Installation of base boards (*terasal*). This is the process of forming the base “floor” of boat. The wood boards are placed after the installation of *pengepak*, *mula sangkara*, and *papan kanjai* is done. The *terasal* boards are joined using pen technique with interval of 15–20 centimeters.
4. Installation of the boat frames, is to strengthen the body of the boat. Strong wood logs and planks are used. The process starts from the bottom. Important steps on this process are as follows.

- a. *kelu*, the very bottom frame when papan terasal is fixed.
 - b. *kelu* connector (gading)
 - c. *saloro* (frames on the right and left side of the boat)
 - d. *saloro* connector
 - e. *lepe* (suppressor wood on gading)
 - f. *lepe* kalang (the point where kalang rest)
 - g. *lepe batang* (lepe at the hull body)
 - h. *taju* (lugs)
5. When boat frame is ready, the next step is to work on the rear part where the rudder is fixed, continued with joining the *lamma* with the front and back hull. When it is done, they work on the deck, mast, and boards' joint.

4.1.4 Materials

The best material for making Pinisi boat is teakwood. It needs about 126 wood boards, which installation can be described as follows.

1. first arrangement, two boards
2. second arrangement, six boards
3. Third arrangement, eight boards
4. fourth arrangement, consists of long and short boards that are used to connect planks and sotting
5. fifth arrangement, ten boards

6. sixth arrangement, ten boards
7. seventh arrangement, ten boards
8. eighth arrangement, twelve boards
9. ninth arrangement, fourteen boards
10. tenth arrangement, sixteen boards
11. eleventh arrangement, eighteen boards
12. twelfth arrangement, ten boards

4.2 Boat Making among the Madurese People

4.2.1 Sorts of Boats

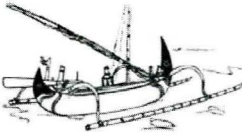
The Madurese boats are of much kind of form and size. Large boat is called *perahu*, and often equipped with strong mast and wide sail. Madurese boats can be seen on Jawa Sea and Madura Strait waters, and the harbors are Pasuruan and Muncar. Most of the Madurese boats are outrigger boats, either singled or doubled, and used for fishing (drednet boat, net boat). In their language they called this type of fishing boat as *perahu golekan*.

The Madurese use to sail in groups. They paint their boats with flashy colors to make visible from distance. They also put flashy colored flags in the mast and yards.

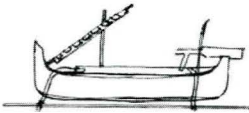
A study by Jakarta Cultural Media Project in year 1980 shows that there are more than 30 kinds of Madurese boats, among them are as follow.



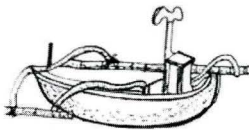
Jukung Pajangan, is a double-outrigger *jung* of 13-15 meter long. It has ornaments in the forms of dragon and bird which can be unfastened.



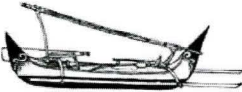
Jukung Gambringan, is a common jung but has high bow and stern (*linggi*). Blue is the dominant color used to paint the hull. Typical ornament motifs, sun and flower, are applied in the middle part of the bow and stern.



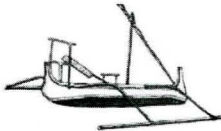
Jukung Pagur, is a singled-outrigger boat that is used to catch and to net fish on water that are not far from seashore.



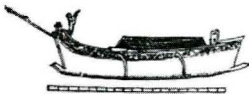
Jukung Tengkongan, its name come from Sapudi to denote *jung* in Tarebung and Bawean. The booms support is near to the place where the steering man. This type of boat is used for fishing.



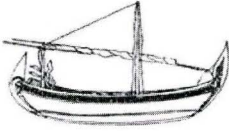
Sampan Kateran Legung, is a doubled-outrigger *jung*.



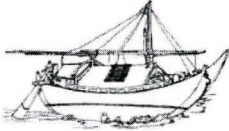
Sampan Petetedan, is a doubled-outrigger *jung* with not-pointed bow and stern.



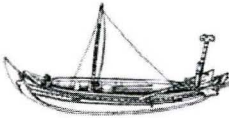
Perahu Karoman, is a doubled-outrigger *jung* with higher hull, and ornamented bow and stern.



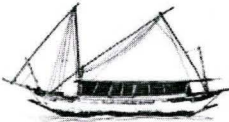
Parao Pajangan Madura'an, has high *linggi* which is ornamented. The gunwales are also ornamented.



Perahu Lete' Gole'an is a type of boat which is not used for fishing but for trading, cargo, and passengers.



Sampan Panjaringan, is type of large boat for fishing, has no outrigger, used not only for fishing.



Parao Jonggol is large boat, around 30 meters long. Its deck is used for cargoes and supplies. It has two strong masts.

4.2.2 The Making Process

1. Preparation of wood construction. They need years to get and collect woods to make planks of 4 to 5 centimeters thick. Besides planks, woods are also needed for beams from many sizes. For beams they usually use teakwood or ironwood while for the wood planks they use *nyamplong* wood.
2. Making curved wood planks. Woods that have been cut into flat boards need to be formed into curved. They use bonfire to heat the board, and put heavy things on each end as ballast. Regularly they pour water on it to prevent the wood got burned.

It takes about 30 minutes to 45 minutes to make curved planks.

3. The making of the hull. This is the most important step in making boat. They use teakwood boards of around 3 centimeters thick and 20 centimeters width; while the length depends on demand. Within this process bow and stern are fixed; the process of fixing the bow and stern is called *makabin linggi*.

4.2.3 Materials

Not all kinds of wood could be used for boat making. Certain woods are forbidden, such as *nangka* wood, wood with knur on, and woods that had been hit by lightning. The best wood for boat is teakwood and *nyamplong* wood. Sometimes they need to import teakwood from outside Madura, for instance from Tuban area.



4.6

Other material they need is coconut fibers. With *gelam* they twist the coconut fibers to make ropes, which they use to clog the spaces between boards or parts that are thought might leak.

They also use wood putty that are made traditionally from castor oil and chalk powder to fill smaller spaces so the hull won't leak. If no castor oil available they use

nyamplong oil or coconut oil. They use a sort of calico cloth for the sails, and to decorate the boat they use oil paints.

The whole technology the Madurese people use in making the boat is the so-called Southeast Asia traditional technology; no use of nails but wood pegs instead. The using of wood pegs is considered safer and long life since metal bolts and nuts can get corroded.



4.7



4.8

4.2.4 The Poteran Island

In the east of Madura Island, some 500 meters in front of the harbor Kalianget, lies a small island by the name Poteran. There is a village whose inhabitants are boat makers; they make

the perahu payangan type and the customers are mostly come from surrounding area as Sampang and Pamekasan Districts.

Tools they use are saw, hammer, hand drill, measurement tape, and panyipaden (a tool to make line on wood). The making of the payangan boat starts with making the heel and then the hull. They do not recognize making technical drawing because all their knowledge is gotten traditionally from older people. When the hull is done, they make the frames (gading-gading) accordingly the shape of the hull.

The problem the Poteran people facing now is the difficulties in getting wood because either in Poteran or Madura no wood forests exist anymore. Therefore they need to import woods from Kangean Island, which is known as one of the best teakwood producer, but unfortunately they are very expensive.

4.3 The Making of Boat in Jawa

There are two types of boat that are made by the Javanese, the dugout boat (*perahu lesung*) and plank boats (*perahu papan*, *perahu gading-gading*). Examples of dugout boat are the so-called *perahu congkren* in Pelabuhan Ratu (Sukabumi) and wood *jukung* in Pangandaran (Ciamis); and examples of plank boats are *perahu compren*, *sope*, *dogol* (in the northern coast of Jawa), and *perahu paying*, *bleketek*, and diesel motorboat (in the southern coast of Jawa).



4.9

4.3.1 Dugout Boat

This type of boat is made from one wood log. Firstly, the middle part is "dug" to make certain deep oblong hole with U or V shape in transverse section. The side parts have to be in the same thickness. Then one end of the log is shaped to make the stern and the other end is tapered to make the bow.

The next step is to make the inner part. Wood boards are placed; one is for the base of the mast and others as seat bars, and place for outrigger booms to rest on. After that the inner side of the hull's body is coated with paint or asphalt. The last step is to paint the outside of the hull's body.

4.3.2 Plank Boat (*Gading-gading*)

First thing the people work on is the making of the keel, and then the front side and back side construction. After that they fix the *gading-gading* and the strakes. In smaller boat, the *perahu compreng* and *sope* for instance, they made the strakes first then followed with the *gading-gading*.

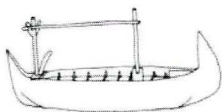
The strakes of the hull are formed in curved shape. Wood plates are heated one by one with both ends are loaded with heavy ballast.

They use wooden pegs in fixing the strakes and the ribs, as well between strakes. Spaces between strakes are then filled with pieces of *gelam* wood (*Melaleuca leucadendra*) and finished with putty.

In some cases, the upper end of the bow of the boat (*serang perahu*) is made bigger and protruding. This kind of form is called *linggi*, and functioned to prevent water run to the inside of the body. In boats like *perahu compreng*, *kolek*, *dogol* this part is often highly decorated as expression of the boat maker.

4.3.3 Types of Boats

Compreng (Tembon)



Known also as *perahu tembon*, and are common boat in the northern coast of Java.

Gebang (in Cirebon) is a place known as center of *perahu compreng* making.

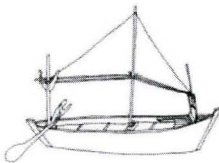
Parts of the *perahu compreng* are *lunas* (keel), front and rear *linggi* (bow and stern), *gading-gading*, mast, and *tataban* (deck wooden boards). Body of the boat is called *golak*. At the center of the deck is placed a holed plank (*pulangan*) for the mast.

A transverse wood plank (*dapur*) is placed in the rear part for *sanggan layar* (location to place rolled sail). *Sumbi-sumbi* is placed in front of *sanggan layar*, to put the rudder handle when the boat is sailing.

Andang-andang is found in bigger *perahu compreng*; *andang-andang* is bamboo that is placed transversely from mast to upper *sanggan layar*, often used to place fishing equipments.

In some cases, *perahu compreng* is equipped with outboard motor, which is used when the wind is not strong enough to push the boat, or when the boat need to go in and out of the harbor.

Perahu Sope

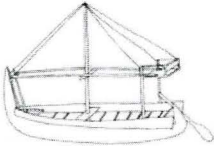


This type of boat is very common on Cirebon and Indramayu waters. At the Jakarta Bay water, it is called *jegong*. In the northern Java waters this type of boat is equipped with outboard motor, known as motor boat; while in the southern coast is known as diesel boat and *perahu bleketek*.

The form of the boat is very simple, it has no specific features. Size is various from 3.5 meters long until dozens.

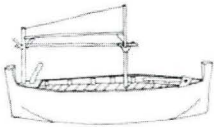
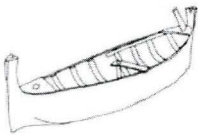
Perahu Dogol

It is originated from Central Java, with Brebes as one of the center of boat making. It is used mostly by fishermen from Eretan (West Java). In East Java they call this type of boat as *konting* boat, and the center of making is in Tuban and Gresik.



In Eretan, *dogol* boat has been modified by adding a sort of balcony at the rear part for placing fishing equipments.

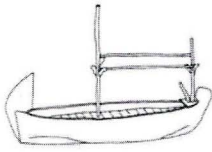
Perahu Jegong



This type of boat can be found in Indramayu, Pamanukan, and Jakarta. It has high bow and high stern. Two kinds of *jegong/sope* boat are known, the bigger and the smaller. If the smaller one is very simple, the bigger has deck, cargo space for fish keeping, mast, cold storage room, and navigation equipments. Small *jegong* is crewed by one to two people while bigger *jegong* by three to five people.

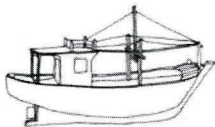
Perahu Kolek (Mayang/Payang)

This type of boat is also known as *payang*, *mayang*, *kolekan*, *golekan*, and *konting*; and can be found at the northern coastal of Java. The center of making this boat is in Batang (Central Java).



It is much decorated and very artistic. The form is similar with *compreng* but has wider and bigger *linggi*. Its size is from intermediate to large, and very popular because of its fast sailing.

Perahu Motor



As mentioned by the name, this type of boat is equipped with diesel motor. It has no sail but instead is equipped with navigation equipments.

The form of the bow and hull are similar with the sope boat. But it has a structure like a house that stand on the upper deck, which is used as crews' room as well as supplies' room.

There are two kinds of motorboat, the motorboat I and motorboat II. The motorboat I has curved stern while the motorboat II has pointed stern.

4.3.4 Varieties of Boats in Southern Coast of Java

Traditional boats from Pelabuhan Ratu are the so-called *congkren* and *payang* boats; the *payang* boat is not the same as that from northern coast. While from Pangandaran is the *jukung*, which is influenced by the Cilacap *jukung*.

Most of the boats from southern coast use motor as moving engine, except the *congkren* that still use sail. Small boats are usually from the outrigger kind, for instance the *congkren* and *jukung* boats. Main features of the southern coast boats are the high bow and flat stern to place the motor machine.

There at least eight types of boats: *congkren*, *payang*, *gillnet*, Pelabuhan Ratu resin boat, *bagang*, *bleketek*, diesel, and Pangandaran *jukung*.

Congkren



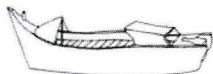
This type of boat is a very simple outrigger-dugout boat. The keel and half of the hull's wall is made of one wood log; the rest is made of wood planks. It uses paddles and sail as moving engine, and usually can only accommodate two people.

Pelabuhan Ratu Payang

Similar with the *payang* boat at the northern coast of West Java, the *payang* boat from southern coast is also used for fishing. The form of the boat is simple, and it has two poles to place fish

nets. The bow is high and the stern is flat for placing the motor machine. It accommodates three to five people.

Gillnet



The *gillnet* boat is a modification of *payang* boat by adding roof at the stern part. The space under the roof is used for supplies. The net that is used is of the gill net.

Chapter 5.

MARITIME PEOPLE ARE EVERY WHERE

Indonesia is a multi-cultured archipelagic state. Maritime activities are the basic of people's living mode. Trade relation occurred as the result of fulfilling basic needs which might be different between islanders. The dynamic life within archipelagic state as the result of its "open" characteristic may have influenced the forming of culture as well as the social organization of maritime people.

5.1 Settlement Pattern

Culture and surrounding environment characterized the settlement patterns of Indonesia's ethnic people. At least two types of pattern are recognized: the coastal settlement and "water" settlement. Two types of shelters are used in "water" settlement, that is the rafting house and the pole-house.

5.1.1 Coastal Settlement

The housing in coastal settlement is mostly parallel to the sea line, and usually is grouped according to the kinship the

people shared. Mostly they are patrilineal people and virilocal (stay with the family from man side).

In the past, materials they used to build their houses are woods and weaved bamboos. But now they use more bricks and cements, and therefore one would see more houses that stand directly on land surface compared to the pole- and rafting houses.

Pattern of housing in fisherman villages is not much differing from the past. While in the urban area it took the form according to ethnical groupings.

The Malayu or Jambi-Malayu Ethnic Group



5.1

Settlement of this ethnic group lies in line with the river banks; and the houses stand on poles so they call it rumah betiang (pole-house). Spaces under the floor are used to keep their livestock, and the back area is used to keep their agricultural

products and agriculture tools. The front side is facing the river and the back side to the fields. The poles are used to tie their boats. This kind of house, which used to use organic materials, is recently made using bricks and cement and concrete poles that are deeply planted.

Most Jambi people live from trading, using sea and river as transportation facility. Batanghari River is the main water facility where boats go to and fro.

The Madura Ethnic Group

The Madurese come from Madura Island and small surrounding small islands like Gili Raja, Sapudi, Raas, and Kangean. But they also live at the eastern part of East Java, from Pasuruan to northern Banyuwangi.

Besides the Javanese and the Sundanese, many Madurese transmigrated to west and center of Kalimantan. They are people who like to wander because the land in Madura Island is not suitable for agriculture. Mostly they are merchants, specifically on selling and buying old metal stuffs and used goods.

The Madurese are well-known as straightforward, temperamental but sensitive people. They are also hard-worker, economized, and disciplined people. They are strong Islam follower, even though they practice the Pethik Laut or Roket Tasse ritual, a sort of offerings drifting at the sea.

Part of the Madurese live on sea sources; they are the true seamen. Their braveness at sea had been proven by their exploration to the coasts of Nusantara until Malaysia, the Philippine, Australia, and China. They would spend days at the sea to catch fish, using gole'an boat which accommodates more than five people. They use long and wide nets in catching fishes, but they also use bagan -a bamboo structure that hold net- to get crabs, small coastal fishes, and clams in shallow waters.

The Banjar Ethnic group



5.2

The housing of the Banjarese settlement is usually in the form of densely grouped-houses near to river tributaries. Front of the houses, which mostly are poled-house, are facing to the river or roads.

The Banjarese are mostly peddlers. Common transportation vehicle they use is prau, which they paddle along the river to reach other houses to make visits or selling activities. The river is like a market place where people meet to sell and buy; but all activities are done on prau. This kind of floating market still can be seen in Banjarmasin.

The Lamalera Ethnic Group



5.3

Traditional way. Equipments they use are sail, yards/ropes (made from cotton, gebang leaves, and waru fiber), harpoons (kafe or tempuling), wood prau (peledang), boat, faye (paddle), etc.



5.4

Catholic elements are inserted in the rituals, for instance a Catholic mass at the seashore before lefa season starts, the blessing of peledang, praying together, the use of Holy water in cleaning mistakes and sins rituals.

This ethnic group live in the Lembata Island (former: Lomblen) at the Flores Sea, East Nusatenggara. They are famous for their shark hunting activity in

Traditional big fish (whale, stingray, shark) hunting is well-known as *lefa* season or *olanua* ritual. This ritual takes time from 1st of May until 31st of October. Since its coming in Lamalera in year 1886,

The whole ceremony begins with a mass and *ceremoti* (all people sitting together at the beach, discussing family problems or

any problems that might occur in the village, as well all the stuffs related to the fish hunting itself). They believe that the village and its entire people should be in peaceful condition when the big fish hunting is being carried out; when it is not, then the whole hunting will not be successful.

The entire fish catch is primarily intended for widows, the poor, and orphans. They are what the hunting is for. Incorrect distribution of fishes that are caught will bring bad impact on the next hunting.

There is a rule in the olanua tradition that they are not allowed to hunt pregnant fishes. Therefore, the role of a *lamfa* (spearman) is so important.

The Babar Ethnic Group

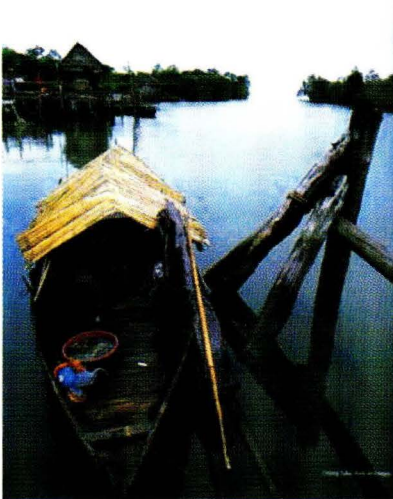
This ethnic group live at the Babar Islands, southeast Moluccas. The housing of this people is parallel with the seashore, and it is grouped according to patrilineal kinship system. Usually there are five to ten houses within a group of extended family. Their houses are made of wood and bamboos, with front side facing to the sea. The people live from sea products, and they use the sea as transportation facility from one *kampong* to another.

5.1.2 Boat-house Settlement

This kind of settlement is characterized by the boat-houses that can move from one place to another; the direction of the movement depends on the moving of fishes in the water.

One boat-house is inhabited by one nuclear family and considered as one household. The boat-house is equipped with fishing equipments. Periodically it will stop at the river bank for fresh water. Why would they live and do their activities on boat? It is the matter of belief; they believe that life exist on water while land is for the dead.

The Laut Ethnic Group



5.5

There is no ethnic group in Nusantara who is more 'maritime' than the Orang Laut ethnic group. A Chinese account from year 1225 mentioned the people of the kingdom of *Swarnabhūmi*. It said that they lived on the estuaries and mangrove forest on the eastern coast of Sumatra, the Riau-Lingga Islands, Kalimantan, Sulawesi, and western coast of Malay Peninsula to southern Thailand. They built their palm leaves-roofed house on a raft. They were skilled in fighting either on land or sea, provided their

equipment needs themselves, and chose their leader and admiral among themselves. Is it possible that the Orang Laut ethnic group who is their descendants?

The Laut or Orang Laut ethnic group is also called *Bajau* people in Kalimantan, Nusatenggara, and Sulawesi; *Ameng Sewang* in Bangka-Belitung, or Orang Selat in the Malacca Strait area. Mostly they do not stay permanently at one place but move from one shallow water area to another. Some of them live in above water *kampongs* built on big rivers estuaries. The unde floor space of their houses is usually used to tie their boats.

Scholars believe that the Orang Laut people are the descendants of the Austronesian spoken-language people who migrated from Asia continent to Nusantara and Southeast coasts until Champa some 2,500-3,500 years ago. They belonged to the Proto-Malay group with Mongoloid physical characteristics.



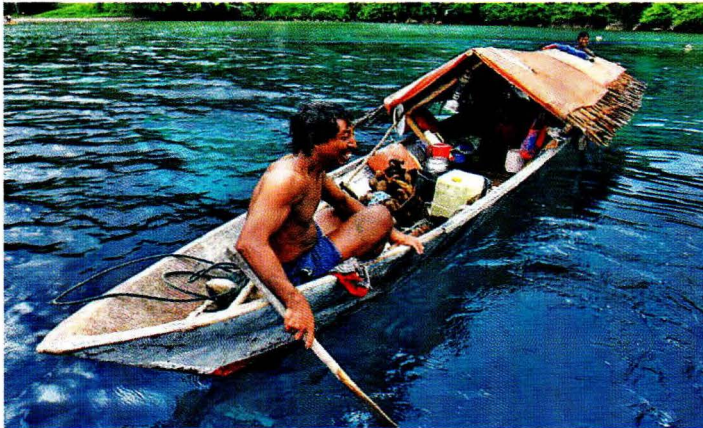
5.6

anchored Dutch ship was attacked by the *Ameng Sewang*; this

The *Ameng Sewang* is a good example to know the socio-cultural way of life of the Laut people in common. Old manuscripts mention that the Laut people have been living on *prau* for a very long time, they never live on land. And a Dutch report from year 1668 mentioned an

shows that the *Ameng Sewang* must be a strong and skilled people on water.

The *Bajau* people are believed come from Sulu Islands (South Philippine). They are nomad sea people, therefore they are also called sea gypsy. They speak Sama-Bajau language, and had been migrating to Sabah and several places in Nusantara some hundreds years ago. The nowadays Moslem Bajau are said to be the last migrants that came from the north Kalimantan direction and entered the East and South Kalimantan coasts and occupied the islands surrounding. They were there long before the Moslem people from Bugis ethnic groups (the Buginese, Makassarese, and Mandarese).



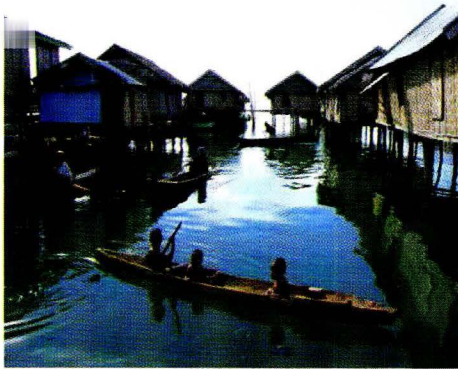
5.7

Bajau habitations are among others in East Kalimantan (at Berau, Bontang, etc.), South Kalimantan (in Kotabaru) where they are known as Bajau Rampa Kapis people, South Sulawesi (Selayar), Southeast Sulawesi, West Nusatenggara, and East Nusatenggara (respectively the Komodo Island).

The language the Orang Laut speaks resembles the Melayu language, and is grouped as local Melayu language. Most of them are fishermen; sometimes they are also called "sea rover" or "sea gypsy"

Included in Laut ethnic group is the Sekak people who inhabit the northern coast of Bangka Island. Parts of them are still the followers of animism and dynamism, while others already followed Islam or Christianity. They live as fishermen. Their language resembles the Melayu language spoken by the Bangka people. The nowadays Sekak people are adapted already with cultures that come from the outside.

5.1.3 Poled-house Settlement



5.8

This kind of settlement is categorized as permanent dwelling, usually found at seashore, estuaries, or shallow sea water. Houses are built on poles. The floor of the houses is high enough from the water surface to prevent sea water during tides. They use wood planks to connect one house to another, and they build wooden bridges to the land in order to get fresh water.

The space between house floor and water surface is used to keep their boats which are tied to the poles, and to place weaved-bamboo container that is used to catch fish.

The Asahan Ethnic Group

The pattern of the kampongs of this ethnic group, who live in North Sumatra, is usually in line with river banks or seashore. Since most of the people are Moslem, each kampong has a mosque or *surau* (small mosque).

The houses are of very high poled-houses, and the front side always facing to the point of sunrise. When not in use, their boats are tied on the poles below the floor. Sometimes they build nets on the water below to collect fishes that are drawn by river current or sea waves.

Most of the Asahan people living are based on fishery. The Batubara coast is very famous with its sea products, namely shell-fish, that the city of Tanjung Balai is well-known as "the city of shell-fish".

The Makassar Ethnic Group

"Makassar" is a Melayu name for a group people who live in the southern coast of southwestern Sulawesi. In their mother tongue they mention it as *Mangkassara'*, meaning "they who are opened".

The Makassar people are democratic in ruling, fighting-spirited, and victorious. No wonder they succeeded in establishing an Islamic power in 14th-17th century under the kingdom of Gowa, with big and powerful naval army, and covering the whole Sulawesi Island, eastern Kalimantan, East and West Nusatenggara, Moluccas, Brunei, Papua, and northern Australia. This kingdom also made agreement with Bali, Malacca, Banten and some other Nusantara kingdom. They fought the Dutch even though defeated later from pitting policy arranged by the Dutch against her subjugated kingdoms.



5.9

Similar with the Buginese, the Makassar people inhabit the region of southwestern Sulawesi, bordered with Makassar Strait in the west, Flores Sea in the south, and the mountains of Maros, Bawakaraeng, and Lompobatang in the east. They occupy hilly and lowland area where rivers run, among them are the Pangkajene, Tallo, Jeneberang, and Kelara rivers.

The Makassarese people speak their own language, the *Mangkasara* which belong to the Malay-Polynesia language group. This language was the official language during the Kingdom of Gowa period. They also have their own scripts, the aksara lontara. The simple version of the scripts is used in Makassarese and Buginese chronicles. Since the coming of Islam in 17th century, Arabic scripts were used in old manuscripts; the people called this Arabic script as *serang*, perhaps from the word "seram", a name of an island in the Moluccas where live the Makassar people.

The Sangihe (Sangir) Ethnic Group

This ethnic group inhabits the Sangihe Islands, in the north of North Sulawesi. They usually are grouped together with the Talaud. The Sangir-Talaud people live as fishermen and build their settlements at the coastal region, either on the land area or above water. The houses are arranged in line with the sea line or roads. There are 3 kinds of houses: *bale*, *deseng*, and *sabua*. *Bale* is permanent or semi-permanent house, *deseng* is typical fisherman house, and *sabua* is temporary house (hut) either built within the village or at the fields.

The Tabati Ethnic Group

The Tabati live in Papua, at the region of Yos Sudarso Bay to be precise. They hold patrilineal kinship system and the family live together according to male line.

Their houses face toward two directions, the sea and the land. Men rooms in the house face towards the sea while women towards the land. There is also a special house, which is only for men, functioned as layover house and meeting house, and for keeping hunting equipments as well.

The Tabati people live from fishing. They use big fishing net (*yan*) by throw it to the water and pulled out using some 20 small boats. They also use fishing spears, fish hooks, and harpoons (use for shark hunting). They manage their fishing period as six month within bay waters and the rest outside.

5.2 Life Pattern of Coastal People

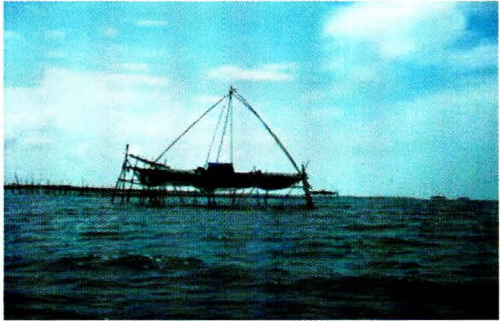
Most coastal people work as fisherman when they live in seashore area or as traders when they live in the land area. Their close life with the sea could be understood from their folklores and myths, which are usually related with sea life.



5.10

Fishermen use simple equipments, and usually only catch fishes to their needs. When there is surplus they would sell it to sellers, or they would make salted fishes or shrimp-paste from them and sell them to sellers as well. Or they would bring the fishes to fish-auction.

Besides using their own fishing nets to catch fishes, they might work for skippers who will carry them to their bagans with their boats. All preparations are done by the skipper: checking all equipments needed such



5.11

as storm lights, foods, and even cigarettes. The boat will leave for the *bagans* at the afternoon, and the skipper will drop 2 fishermen at each of his bagans.

In the next morning the skipper will pick his fishermen together with all what they get the whole night. The fishes will be sorted before being loaded to skipper's boat. Sometimes he meets fish buyers, who use their own boat, on his way to the *bagan*. They negotiate the price and when it's agreed the catch fishes will be loaded to the buyer's boat. But if it's not, the skipper continues to the seashore where women are already waiting on the water, bringing buckets with them. They usually buy fish from the last haul as it may not be sorted yet. The sorted batches of fishes are then brought to the fish auction hall.

Chapter 6.

THE UNIFICATION OF NUSANTARA

Indonesia is a large country with heterogenic people who live in the coastal and inland area. Both are of certain depend their lives on either land or sea sources. Besides the benefits of sea sources, maritime activities would bring glory to the people and the nation as well, as seen on some maritime-oriented kingdoms of Nusantara in the past such as Kadātuan Śrīwijaya, Kingdom of Mālayu, Kingdom of Siṅhasāri, and the Sultanate of Gowa-Makassar.

Ocean can be viewed as unifying instrument because many activities occur there that involved various people from various places or countries. Since the early 1st millennium Nusantara waters had been lively by ships and boats that coming from all over the world. Within them they brought trading commodities to be traded from one place to another.

6.1 My Ancestor

Long before the Christian era, some 7.000 years ago, some islands of Nusantara were occupied by the Australomelanesid

people; they dwelled in caves and lived from hunting and food gathering. Remains of this people, among them are, palaeolithic artifacts such as stone axes, flake tools and stone arrow-heads, are found in the shell-middens (*kyokkenmödinger*) in eastern coastal area of Sumatra, karst rock-shelters in Kalimantan (Borneo), Sulawesi (Celebes), and Java. Are they the ancestor?

Who was the ancestor of the maritime people? Some say they were those who spoke Austronesian, the language group mentioned by linguists for language family in Taiwan between 5.000-7.000 years ago.

In Taiwan, these people developed techniques of agriculture from the South China, being adapted to island ecosystem, and learned how to cross straits. Since about the 3rd millennium BCE they travelled south to The Philippines, and developed the slash and burn agriculture, boat making and pottery. They are later known as the Malayo-Polynesian language-spoken people.

Before the first millennium BCE, the Malayo-Polynesian spoken people had reached the coastal area of Champ, Borneo, Sulawesi, Java, and Sumatera. Continuously they travelled far until they reached Madagascar in eastern coast of Africa, and in this place they form what is called as West Malayo-Polynesian (Malagasy) culture.

The Malayo-Polynesian language-spoken people, who travelled east (respectively the eastern Nusantara, as Halmahera and northern coast of Papua) formed what is called as East

Malayo-Polynesian language. From here they travelled to the Pacific, to Tonga, Samoa, Hawaii, and New Zealand.

So the Austronesian language spoken people occupied the area from Madagascar in the west to Easter Island in the east, and Taiwan-Micronesia in the north to New Zealand in the south. The unification characteristics they shared are the technique of agriculture, technique in boat making, and pottery: they are the ancestor of the maritime people.

They developed the technique of water transportation, starting with making raft using bamboos or wood logs. Later they made dugout boats, using axe and adze; and eventually they developed a more advanced techniques in boat making, the sewn-plank and lashed-lug techniques. This technology is best known as "Southeast Asian tradition technology".

6.2 The Seafarers

Many ethnics with maritime culture live in Nusantara, among them are the Suku Laut, Ameng Sewang, Bugis, Banjar, and Bajau. They live not far from the sea, even some have never been to the land since born. They believe that land is the place for the dead. Therefore they live on their boats, forming boat-people community settling shallow waters, big river estuaries, and calm water bays.

The Buginese are known as skilled seamen, living from one island to another. In the early years they opened lands by the rivers near forest, and started to build pinisi using forest woods and when it's done they left. The spirit of these people are expressed in the proverb "*Kualleangi tallang na towella*" means "better drown than withdrawn before achieving the goal".



As seamen, whose life are mostly spent on ships, they have some rules to obey. Most South Sulawesi seamen and merchants are acquainted with the sea law *Amanna Gappa*. This book consists all the rules related to conditions, obligations, rights, and authorities of sea captain; crews' rights and obligations; trading stuffs; profit sharing; commodities risk guarantee; taking actions due to sea disaster, etc. In short, a ship is as a community with the captain as the leader to obey, even a king has to. This law was valid until around the 1930s.

6.3 Nusantara Attractiveness



Nusantara is a fertile land as the result of many volcanoes with only two type seasons, and moderate rain fall. Mine, forest and land products are produced from this land, all of those are

favorite commodities among the Arabese, Persian, Indian and Chinese merchants in Asia and Europe markets. Spices are the favorite (especially cloves and nutmegs) and only grow in Moluccas (Ternate, Tidore, and Banda islands). Good quality camphor come from forest woods in North Sumatera, and Barus was known as the export harbor.

6.4 Seafaring Routes

Seafarers cross the ocean from one island to another, bringing with them many products. They do not specifically mark their routes; therefore they were sometimes lost by storm or strong currents. But at the end, their activities formed sea and trading

route network between islands later. They are skilled people, formed by their local genius through experience.

Naval knowledge of the local seamen, formerly known as Malay seamen, was later brought advantages for foreign seafarers; they used them as direction guide man. Many European Nusantara waters map that are made were based on the Malay seamen guidance, as well as the routes to spice producing area.

Only one seafaring route was recognized during the beginning until the mid of the first millennium CE, and that was the western route (Canton-Sumatera-Java, Canton-Sumatera-India, and vice versa).

Since the second half of the 2nd millennium, when the European entered Nusantara, new sea trading route to the east was established. The Portuguese travelled from Malacca to the Moluccas through north and south Kalimantan route; while the Spaniard travelled directly to North Molucca (Ternate and Tidore). Big harbors eventually emerged along the routes, such as Kota Cina (Medan), Kedah, Malacca, Jayakarta, Gresik, Surabaya, Banjarmasin, Makassar, Bima, Ternate, Tidore, Ambon, and Banda-Neira.

6.5 Efforts of Unifying

Being maritime people was at first for living, but eventually it grew into maritime-based glory. The emerge of Kadātuan Śrīwijaya,

Kingdom of Mālayu, Kingdom of Siṅhasāri, and the Sultanate of Gowa-Makassar are some of the examples.

Kadātuan Śrīwijaya (established on 16 June, 682) was the first maritime kingdom in Nusantara. Large part of the western Nusantara waters, as well as important ports in the Malacca Strait, were under its power during its peak period (8th-10th century CE). After *Kadātuan Śrīwijaya* declined in 13th century, Siṅhasari emerged and reached its peak during the reign of King Kērtanāgara (1268-1292). In preventing the Moguls expansion, Kērtanāgara implemented *dwipāntara* insight policy, a way of thinking on unification of Nusantara islands. *Pamālayu* expedition, a peaceful expedition, was established with the Mālayu Kingdom in Sumatra by sending a statue of Amoghapāśa.

The Idea of Dwipāntara Insight



The Mogul Empire who already empowered the Empire of China, tried to expand their power to the south in year 1260. In year 1280 Khubilai Khan founded the Yuan Dynasty, and started requesting recognition from China emperors, respectively from the

Song Dynasty. Java was one of his biggest plans. He sent messengers in year 1280 and 1281 to the king of Java in order that the king would send a prince to China as proof of being obey to the Yuan Dynasty.

There is a saying that unity could only occur when there is threats. Mahārāja Kartanāgara from the Kingdom of Siṅhasāri had the similar idea in the unification of Nusantara years before Mahâpatih Gajah Mada made his vow. Implicitly the inscription written on the backside of Câmuṅḍi statue which was issued by Mahārāja Kertanāgara, mentioned the idea of widening *cakrawala* maṅḍala beyond Java, covering all *dwipāntara*. It is mention in the inscription that the statue of Bhattāari Cāmundi was consecrated when Śrī Mahārāja Kartanagara won over all area and successfully put other islands on his power. This idea was realized in year 1270.

Not like Mālayu, weapons were not always used by Śrī Mahārāja Kartanāgara in realizing his idea. *Pamālayu* was a peaceful expedition, where an Amoghapāūa statue was sent as friendship token with the Kingdom of Mālayu.

The Palapa Vow

“I would stop fasting if I defeat Nusantara. If Gurun, Seram, Tanjuṅ Pura, Haru, Pahaṅ, Dampo, Bali, Sunda, Palembang, and Tumasik are defeated, that will be the time when I leave my fasting”.

That was the vow of Mahapatih Gajah Mada as written in the *Pararaton* book. Together with the mentioning of places in Nusantara in the book *Nāgarakērtāgama*, arouse the opinion that the covering area of the kingdom of Majapahit was as big as the recent Republic of Indonesia. This opinion was used as political issue during President Soeharto government to unify Nusantara, which were then accomplished in the form of communication satellite named "Palapa".



Nāgarakērtāgama and some inscriptions from Majapahit period provide us with the information about the structure of the kingdom territory and its relation with other places in Nusantara and Southeast Asia. The territory of Majapahit only covered parts of Central Java, East Java, Madura, and Bali during Hayam Wuruk's period. There were 21 districts within this area, each was lead by Paduka Bhaṭṭara; among the districts were Mataram, Pajang, Jipang, Lasem, Janggala, Madura, Bali, and Gurun.

Outside there were what is called *desantara kacayya*, that is districts or places in Nusantara – from Sumatera until Papua– which were not under Majapahit power but protected by the king of Majapahit. These districts were unified in regional cooperation,

and regularly sending tributaries as gratitude. Among them were Mālayu, Palembang, Tanjungpura, Pasir, Bantayan, Luwuk, Maloko, and Ceram.

Other kingdoms outside Nusantara, such as Champa, Khmer, Dwarawati, and Burma, were mentioned as *mitra satata* "same level friendly countries". These countries developed political and trading relationship with Majapahit.

The Sultanate of Demak was a kingdom known to have strong naval army after Islam entered and flourished in Nusantara. When the Portuguese was in effort to conquer Malacca in year 1511, Demak gave support to Malacca but then got defeated in a violent sea battle.

A twin kingdom, Gowa-Tallo, was known in South Sulawesi; it is known also as Kingdom of Makassar. At first it was a unification of several small kingdoms, and the leader was more functioned as judge if disagreements occurred. This kingdom reached its peak during the reign of Sultan Hasanuddin (1653–1669), his power covered almost half of nowadays Nusantara until northern coast of Australia. The Dutch built alliance with kingdoms of the Moluccas to conquer Makassar. On 16 November 1667 the Dutch successfully vanquished Makassar, and the Bungaya agreement was signed. Makassar harbor was then closed for any foreign ships and trading activities were restricted.

6.6 The Controlling of Maritime People

Spices, namely cloves, nutmegs, and mace, are only yielded in Molucca. The fragrances were popular till Europe continent, but these fragrances brought disaster later when Portuguese, Spain, and Dutch hunted this product to its producing country.

European merchants and seafarers were well accepted on their first arrival. Even in the Moluccas they were asked to not return to their homeland. The kindness of local people was later being misused by their European guests, who had been competing in their homeland. This competition which at first was on trading stuffs spread to religion hostility.

At the same time Ternate and Tidore in the Moluccas were also in conflict. Portuguese and Spain took advantage of this situation; causing Moluccas became weak and eventually this spice producing land fell under those foreign power controls. Here they built forts, mostly at the coasts, as sea defensive forts. There are at least five forts in Ternate, and one fort each in Tidore, Bacan, Ambon, and Banda.

The newcomer, the Dutch, was later become the winner among them who pursuing beneficiaries from Moluccas spices. They founded the *Vereenigde Oost-Indische Compagnie (VOC)* as trading body. Besides building their own forts, the Dutch also took over Portuguese and Spain forts.

6.7 Archipelagic State

The willingness to build maritime nation was already seen since the period of Śiṅhaśari kingdom under King Kārtanāgara. In the inscription of Cāmuṅḍi, it is mentioned that the king plans to unite the whole *dwiṣāntara*; and this was done to prevent the Moguls expand their territory to Nusantara.

But seemed that to unite Nusantara would take years and too long to realize. The maritime kingdoms that existed already in Nusantara were not able to realize. Yet they were powerful but not able to maintain themselves so when the rulers were not in power any longer so their kingdom fell apart.

Hundred years passed since Kārtanāgara launched his *dwiṣāntara* insight. Even after the independence of the Republic of Indonesia on 17 August 1945, the inter-insular water is still free waters where foreign ships are free to sail. On 13 December 1957, unilaterally Prime Minister H. Djoeanda declared that Indonesia is an archipelagic state. This Djoeanda 1957 Declaration was then brought in the 1st Sea Law Conference in year 1958 in Genève, Swiss. Effort for international admittance was still in the long run. It was after being facilitated by the United Nations, the international sea law convention was signed in year 1982 by 119 delegates, named *United Nation Convention on Law of the Sea (Unclos 1982)*, containing archipelagic state management. The convention was enforced effectively on 16 November 1994 after being ratified by more than 60 countries.

Years later former Minister of Foreign Affairs, Prof. Dr. Mochtar Kusumaatmadja, expressed the idea of *Wawasan Nusantara* (Nusantara Insight), a thought about Nusantara as a unification of political, economy, cultural, defense and safety affairs. All deep inter-insular sea in Nusantara, 12 miles from seashore, is not international water but treated as free water and therefore belongs to the archipelagic state.



Fifty years Indonesia has been as archipelagic state, and that was not easy. It took years and effort as well. The long history of the past was such a precious experience, and therefore we have to maintain and defense this Archipelagic State, the Republic of Indonesia.

BIBLIOGRAPHY

- Abubakar, Yahya bin, 1986, "Portugal dan usaha ke Timur, dengan tumpuan kepada Melaka serta persoalan di sekitar Flor de la Mar", in *Ships and Sunken Treasure*. Kuala Lumpur: Muzium Negara
- Adriati, Ira, 2004, *Perahu Sunda*. Bandung: Kiblat Buku Utama
- Alfian, T. Ibrahim, 1975, "Mengenal masyarakat Aceh yang sedang membangun: Sebuah catatan", in *Buletin Yaperna No 7 II*: 58-65
- Al-Hadar, Y., 1986, *Migrasi Permanen Propinsi DI Aceh*. Jakarta: Lembaga Demografi FEUI
- Ammarell, G., 1999, "Bugis Navigation", in *Monograph 48*. New Haven: Yale Southeast Asia Studies
- Andaya, L.Y., 1981, *The Heritage of Arung Palakka*. Den Haag: Martinus Nijhoff
- Ave, J.B. & V.T. King, 1986, *Borneo, the people of the weeping forest: tradition and change in Borneo*. Leiden: Rijksmuseum voor Volkenkunde
- Bambang Rudito, 1999, *Masyarakat dan Kebudayaan Suku-bangsa Mentawai, Padang*: Lab. Antropologi
- Barnes, R.H., 1996, *Sea Hunters of Indonesia*, Oxford: Clarendon Press
- Bellwood, P., 1985, *Prehistory of the Indo-Malaysian Archipelago*. North Ryde, London: Academic Press
- Blust, R., 1996, "The prehistory of the Austronesian-speaking peoples: a view from language", in *Journal of World Prehistory* 9, pp. 453-510

- Borahima, R. dkk., 1977, *Jenis-Jenis Perahu Bugis Makassar*. Jakarta: Proyek Pengembangan Media Kebudayaan, Departemen Pendidikan dan Kebudayaan
- Bosch, F.D.K., 1952, "Local genius en Oud-Javaanse kunst", in *Mededeelingen der Koninklijke Nederlandsche Akademie van Wetenschappen*.
- Budisantoso, S. dkk. (Eds), 1986, *Masyarakat Melayu Riau dan Kebudayaan*, Pekanbaru: Pemerintah Propinsi Daerah Tingkat I Riau.
- Cense, A.A., 1952, "Makassaars-Boegineesche Prauwvaart op Noord-Australie", in *BKI* 108: 248-264
- Chaudhuri, K.N., 1985, *Trade and civilisation in the Indian Ocean: An economic history from the rise of Islam to 1750*. Cambridge: University Press
- Collins, G.E.C., 1944, "Seafarers of South Celebes", in *National Geographic Magazine*, Oct. 1944
- Cortesaõ, Armando (ed.), 1967, *The Suma Oriental of Tomé Pires and the Book of Francisco Rodrigues*. [translated from the Portuguese MS in the Bibliothèque de la Chambre des Députés, Paris, and edited by Armando Cortesaõ]. Nendeln/Liechtenstein: Kraus Reprint Limited.
- Dahl, O.C., 1991, *Migration from Kalimantan to Madagascar*. Oslo: Norwegian University Press
- Departemen Pendidikan dan Kebudayaan, 1982, *Inventarisasi Permainan Anak Daerah*, Jakarta: Proyek Inventarisasi Permainan Anak.
- , 1983, *Adat Istiadat Daerah Sulawesi Utara*, Jakarta: Proyek Inventarisasi dan Dokumentasi Kebudayaan Daerah Parengkuan.

Dhofier, Z., 1982, "Pendidikan Islam Dewasa Ini", in Dialog, No. 12, VII

Dyen, I., 1965, "A lexicostatistical classification of the Austro-nesian languages", in International Journal of American Linguistic, Memoir 19.

Encyclopædie van Nederlands Indië Vol. II, 1917, pp 508-614, 672. Leiden: E.J. Brill

van Erp, Th., 1923-1924, "Voorstellingen van vaartuigen op de reliefs van den Boroboedoe", in Nederlandsch Indië Oud en Nieuw, 8ste jg. pp. 227-255.

Gibson-Hill, C.A., 1950, "The Indonesian Trading Boats reaching Singapore", in JMBRAS, 23: 108-138

Green, Jeremy, 1983. "The Song Dynasty Shipwreck at Quanzhou, Fujian Province, People's Republik of China", in IJNA, 12(3): 253-261

-----, 1990, "Maritime archaeology in Southeast and East Asia", in Antiquity Vol. 64 No. 243. Cambridge: Antiquity Publications Ltd.

Green, J & R. Harper, 1983, "The excavation of the Pattaya wreck site and survey of three other sites, Thailand 1982", in Australian Institute for Maritime Archaeology, Special Public, no. 1.

Groeneveldt, W.P., 1960, Historical Notes on Indonesia and Malaya. Compiled from Chinese Sources. Djakarta: Bhratara

Hall, D.G.E., 1968, A History of South East Asia. London: Macmillan

Hamid, Abu dkk., 1986, Pertumbuhan Permukiman Masyarakat di Lingkungan Perairan Daerah Sulawesi Selatan, Jakarta: Proyek Inventarisasi dan Dokumentasi Kebudayaan Daerah.

- Harris, Z., 1980, "Bajo, Suku Yang Tinggal Terapung di Perairan Pantai Timur Kendari" in Sinar Harapan, 18 Februari.
- Hasjmy, A., 1986, Adat Bak Poteumeureuhom Hukoom Bak Syiah Kuala. Paper presented in Seminar Ilmu Pengetahuan ebudayaan, Takengon.
- van der Heide, G.J., 1927-1928, "De samenstelling van Hindoe vaartuigen, uitgewerkt naar beeldwerken van den Boroboe doer", in NION, 12e jg.
- Hidayat, Ujang T., 2003, "Potensi 'Bakar Batu' dalam pembangunan Masyarakat Dani Barat" in Jurnal Penelitian dan Pengembangan Usaha Kesejahteraan Sosial, Jakarta: Departemen Sosial
- Hirth, Friedrich dan W.W. Rockhill, 1966, Chau Ju-kua: His Work on the Chinese and Arab Trade in the twelfth and thirteenth Centuries, entitled Chu-fan-chi, Amsterdam: Oriental Press.
- Holton, R.J., 1998, Globalization and the nation state. London: MacMillan Press.
- Hornell, J., 1946, Water Transport: Origins and early evolution. Cambridge: Cambridge University Press
- Horridge, G.A., 1978, "The design of planked boats of the Moluccas", Maritime Monographs 38. London: National Maritime Museum
- , 1982, "The lashed lug boat of the Eastern Archipelago", Maritime Monographs 54, London: National Maritime Museum,
- , 1986, Sailing Craft of Indonesia. Singapore: Oxford University Press
- Horridge, Adrian, 1981, The Prahau. Traditional Sailing Boat of Indonesia. Kuala Lumpur, Oxford, New York: Oxford University Press

Hudson, A.B., 1963, "Dead Ceremonies of the Padju Epat, Ma'anyan Dayaks". In Special Monograph No.1. Sarawak Museum.

-----, 1967, *The Barito Osilects of Borneo*. Ithaca, New York: Cornell University Press

-----, 1972, *Padju Epat. The Ma'anyan of Indonesian Borneo*. Inc. New York: Michigan State University, Holt, Rinehart & Winston

Ishak, 1980, "Suku Laut Terpaksa Berteduh Selama Musim Barat". Kompas, 14 Februari

Kamus Besar Bahasa Indonesia, 1990, Jakarta: Balai Pustaka

Kartodirdjo, Sartono, 1987, *Pengantar Sejarah Indonesia Baru: 1500--1900 Vol. 1*. Jakarta: Gramedia

Koentjaraningrat dkk (1994) *Irian Jaya, membangun masyarakat majemuk*, Jakarta: PT Djambatan

Koestoro, Lukas Partanda, 1993, "Tinggalan Perahu di Sumatera Selatan: Perahu Sriwijaya?", in *Sriwijaya dalam perspektif arkeologi dan sejarah pp. C1-1-10*. Palembang: Pemerintah Daerah Tk. I Provinsi Sumatera Selatan

Kong Yuanzhi, Prof, 2000, *Muslim Tionghoa Cheng Ho: Misteri Perjalanan Muhibah di Nusantara*, p. 268. Jakarta: Pustaka Populer Obor

Kusumaatmadja, Mochtar. 1986, *Hukum Laut Internasional*. Bandung: Binacipta.

Lahajir, 2001, *Etnoekologi Perladangan Orang Dayak Tunjung Linggang*. Yogyakarta: Yayasan Galang

Lapian, A.B., 1992, "Sejarah Nusantara Sejarah Bahari" Pidato Pengukuhan yang Diucapkan pada Upacara Penerimaan Jabatan Guru Besar Luar Biasa Fakultas Sastra Universitas Indonesia pada tanggal 4 Maret 1992.

- Leirissa, R.Z, 1976, "Dokumen-dokumen VOC dari abad ke XVIII", in Buletin YAPERNA No. 17 Tahun III: 44-53. Jakarta: Yayasan Perustakaan Nasional.
- van Leur, J.C., 1955, Indonesian Trade and Society: Essay in Asian Social Economic History, pp. 342-343. Bandung, van Hoeve: The Hague
- Liebner, H.H., 1993, "Remarks about the Terminology of Boatbuilding and Seamanship in some Languages of Southern Sulawesi", in Indonesia Circle, 59/60, London.
- , 1996, Beberapa Catatan tentang Pembuatan Perahu dan Pelayaran Orang Mandar, Laporan Penelitian, Lembaga Penelitian Universitas Hasanuddin, Ujung Pandang, LIPI, Jakarta
- , 1997, Guide to the Village of Panrang Luhuk, Ujung Pandang: P3MP
- , 1998, "Four Oral Versions of a Story about the Origin of the Bajau People of Southern Selayar", in Mukhlis, K. Robinson (ed), Living Through Histories Canberra: The Australian National University
- , 2000, "Pinisi dan kearifan tradisional", KOMPAS 01.01.2000, 1000 Tahun Nusantara, Kompas Media Nusantara, Jakarta
- , 2003, "Indigenous concepts of orientation of South Sulawesian sailors", International Workshop on the Bugis Diaspora and the Dissemination of Muslim Authority, Makassar
- Liebner, H.H. dan Ahmad Rahman, 1998, Pola Pengonsepan Pengetahuan Tradisional: Suatu Lontaraq Orang Bugis tentang Pelayaran, paper presented in Seminar Kelautan Kawasan Timur Indonesia II, Universitas Hasanuddin.
- Lodewyck, Willem, 1598, "D'eerste Boek: Historie van Indien vaer inne verhaelt is de avontueren die de Hollandtsche schepen bejehent zijn", in De eerste schipvaart der Nederlanders naar Oost-Indië onder Cornelis de Houtman.

- Lopa, Baharuddin, 1982, *Hukum Laut, Pelayaran dan Peniagaan*. Bandung: Alumni
- Mack, J., 1986, *Madagascar: Island of the Ancestors*. London: British Museum Publication
- Macknight, C.C. & Mukhlis, 1979, "A Bugis Manuscript about Prahus", in *Archipel* 18
- Manguin, Pierre-Yves, 1979. *The Southeast Asian trading ship: An historical approach*. Paper presented in The History of Commercial Exchange & Maritime Transport Seminar in Perth, Australia
- , 1980, "The Southeast Asian Ship: An historical approach", in *Journal Southeast Asian Studies*, XI/2, pp. 266-276
- , 1983. "Dunia yang ramai: Laut Cina dengan jaringan jaringannya", in *Citra Masyarakat Indonesia*. pp. 83-96. Jakarta: Sinar Harapan
- , 1984, "Garis Pantai Sumatra di Selat Bangka: sebuah bukti baru tentang keadaan yang permanen pada masa sejarah", in *Amerta*, No. 8. Jakarta: Pusat Penelitian Arkeologi Nasional.
- , 1985, "Sewn-plank craft of Southeast Asia: a preliminary review", in *Archeological Series 10*. Greenwich: National Maritime Museum
- , 1995, "Southeast Asian Shipping in the Indian Ocean during the First Millenium A.D.", in Ray, Salles (ed) 1995:181-96
- Manguin, Pierre-Yves & Nurhadi, 1987. "Perahu Karam di situs Bukit Jakas, Propinsi Riau. Sebuah laporan sementara", in *10 Tahun Kerja-sama Pusat Penelitian Arkeologi Nasional dan Ecole Français d'Extrême-Orient*, pp. 43-64. Jakarta: Pusat Penelitian Arkeologi Nasional.

- Meilink-Roelofs, M.A.P., 1962, Asian trade and European influence in the Indonesian archipelago between 1500 and about 1630, pp. 354 note 122. Den Haag: Martinus Nijhoff (Academisch Proefschrift, Universiteit van Amsterdam).
- Miksic, John N., 1990, Borobudur Golden Tales of the Buddhas. Singapore: Periplus Editions
- Miller, J. Innes, 1969, The spice trade of the Roman Empire 29 BC to AD 641. Oxford: Clarendon Press
- Mills, J.V.G., 1970, Ma Huan. Ying-yai Sheng-lan [The Overall Survey of the Ocean's Shores (1433)], Cambridge: Hakluyt Society.
- Nik Hassan Shuhaimi (ed), 1999, Early History (The Encyclopedia of Malaysia Vol. IV), p. 87. Singapore: Archipelago Press.
- Nooteboom, C., 1940, "Vaartuigen van Mandar", in BKI 80: 22-33
- , 1941, Perihal Perkapalan dan Pelajaran di Indonesia, Djakarta: De Moderne Boekhandel
- , 1972, Tentang pelayaran di Samudera Hindia, a.l. Kata Pengantar. Jakarta: Bhratara
- Notulen Bataviaasch Genootschap 1883: 48. Batavia, Albrecht & Co., 's-Gravenhage: Martinus Nijhoff
- Nurhayati, R dkk. (ed.), 2003, La Galigo: Menelusuri jejak warisan sastra dunia, Makassar: Pusat Studi La Galigo
- Oppenheimer, Stephen, 1998, Eden in the East: the drowned continent of Southeast Asia. London: Weidenfield and Nicholson
- Padfield, Peter, 2002, Maritime Supremacy and the Opening of the Western Mind, pp. 7-8. New York: Overlook Press

- Parengkuan, F.E.W. dan L.L. Ticoalu, 1984, Peta Sukubangsa dan Deskripsi Kebudayaan Propinsi Sulawesi Utara, Manado (Naskah Ketik)
- Parmentier, 1883, *Le discours de la navigation de Jean et Raoul Parmentier de Dieppe*. Paris: Ernest Lereoux.
- Pelly, Usman, 1976, "Ara, dengan perahu Bugis-nya", in *Berita Antropologi*, No. 27. Jakarta: Yayasan Perpustakaan Nasional Indonesia
- Pelras, Ch., 1996, *The Bugis*, London: Blackwell Publications
- Pelzer, Karl J, 1985, *Toeang Keboen dan Petani: Politik Kolonial dan Perjuangan Agraria*. Jakarta: Penerbit Sinar Harapan.
- Pigeaud, Th. G. Th., 1962-1965, *Java in the 14th. Century: A Study in Cultural History. The Nagara-kertagama by Rakawi Prapañca of Majapahit, 1365 A.D. vol. 1 (pp. 108-112) & 2 (pp. 156-162)*. The Hague: Martinus Nijhoff.
- Pigafetta, Antonio, 1801, *Premier voyage autour du Monde*, pp. 160. Paris
- Poesponegoro, Marwati Djoenet dan Nugroho Notosusanto, 1983, *Sejarah Nasional Vol. 3*. Jakarta: P.N. Balai Pustaka
- Rahim, A. dan Borahima, R., 1975, *Sejarah Kerajaan Tallo, Ujung Pandang: Lembaga Sejarah dan Antopologi*
- Reid, Anthony, 1992, *Asia Tenggara Dalam Kurun Niaga 1450--1680 (diterjemahkan oleh Mochtar Pabotinggi)*. Jakarta: Yayasan Obor Indonesia
- , 2002, *Sejarah Modern Awal Asia Tenggara*. Jakarta: LP3ES
- Rouffaer, G.P. & J.W. Ijzerman (ed.), 1915, *De eerste schipvaart der Nederlanders naar Oost-Indië... Vol. 1, p. 65. D'eerste boek van Willem Lodeycksz. Den Haag*

- Sahur, H. Ahmad dkk., 1991/92, *Pengetahuan Tradisional Pembuatan Perahu Orang Mandar*, Ujung Pandang: Lembaga Penelitian Universitas Hasanuddin
- Schrieke, B.J.O., 1968, *Indonesian Sociological Studies I*. The Hague Bandung: W. van Hoeve
- Scott, W.H., 1981, "Boatbuilding and seamenskip in classic Philippine society", in *Anthropological Paper No. 9*. Manila: National Museum
- Scott, William H., 1981, "Boat-Building and Seamanship in Classic Philippine Society", in *SPAFA Digest 6, 2*: 15-33
- Setyobudi, W., 1987, "Kehidupan Suku Laut (Ameng Sewang)", seri Masyarakat Terasing di Indonesia, 2, Jakarta: Direktorat Bina Masyarakat Terasing Departemen Sosial
- Tanudirjo, D.A., 2001, *Islands in between, prehistory of North-eastern Indonesian Archipelago*. (Ph.D. thesis). Canberra: The Australian National University,
- , 2005, "Long-continuous or short-occasional occupation? The human use of Leang Sarru Rockshelter in the Talaud Islands, northeastern Indonesia". In *Bulletin of Indo Pacific Prehistory Association vol. 27*
- Wahdi, W., 1999, "The dispersal of Austronesian boat forms in the Indian Ocean", in R, Blench dan M. Spriggs, *Archaeology and Language III, Artefacts, language and texts*, pp. 144-179. London: Routledge
- Wahyono, Ary dkk., 1991, *Masyarakat Nelayan Desa Bebalang Kecamatan Manganitu, Kabupoaten Sangihe Talaud, Sulawesi Utara*, Jakarta: LIPI
- Wolters, OW, 1970, *The Fall of Srivijaya in Malay History*. Kuala Lumpur: Oxford University Press

Wolters, OW, 1974, Early Indonesian Commerce: A study of the origins of Srivijaya, hlm. 65-66. Ithaca N.Y: Cornell University Press.



INDONESIA

My Home the Islands My Yard the Sea

001/I.I

Perpust
Jender