Ⅳ SESSION REPORTS

1. Japan

Mr. Kazuhiro NISHIKAWA

Infrastructures for Global and Regional Environment
-Good Practices and Lessons-

Kazuhiro Nishikawa
Director-general
National Institute for Infrastructure and Land Management

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Outline

I. Introduction to NILIM
II. Natural and societal background of Japan
III. Actions and consequences
IV. Conclusion

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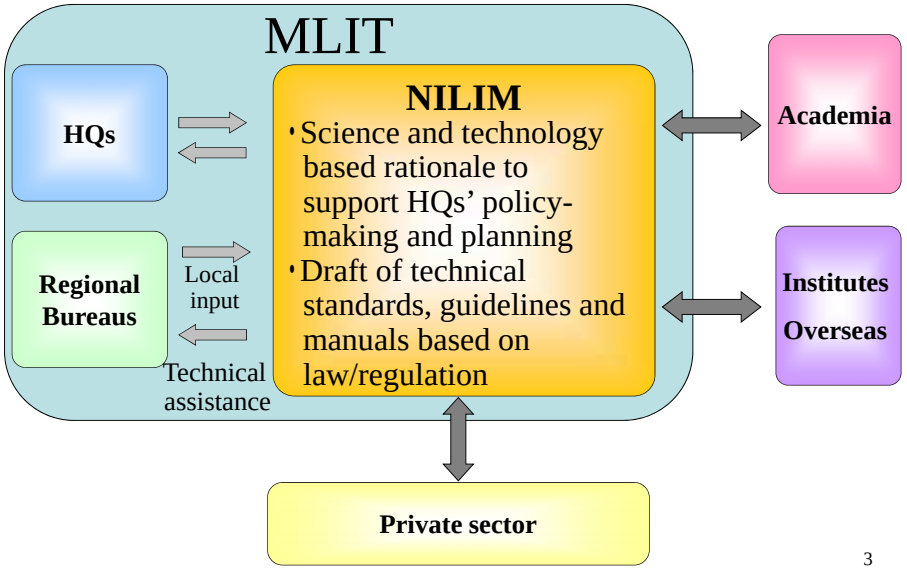
NILIN in civil engineering society



3

Research departments and centers at NILIN

Environment Department
Water Quality Control Department
River Department
Road Department
Building Department
Housing Department
Urban Planning Department
Coastal and Marine Department
Port and Harbor Department
Airport Department
Research Center for Land and Construction Management
Research Center for Advanced Information Technology
Research Center for Disaster Risk Management

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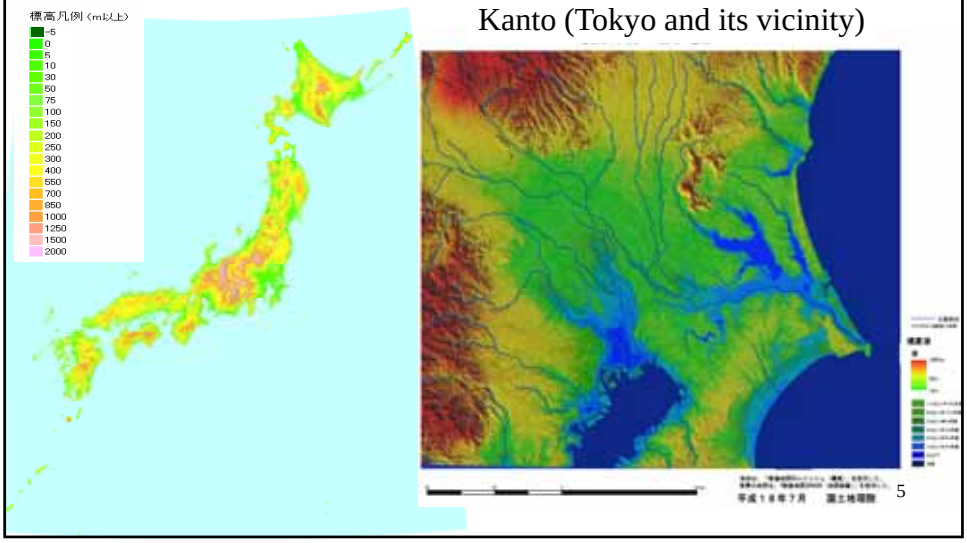
Landscape of Japan



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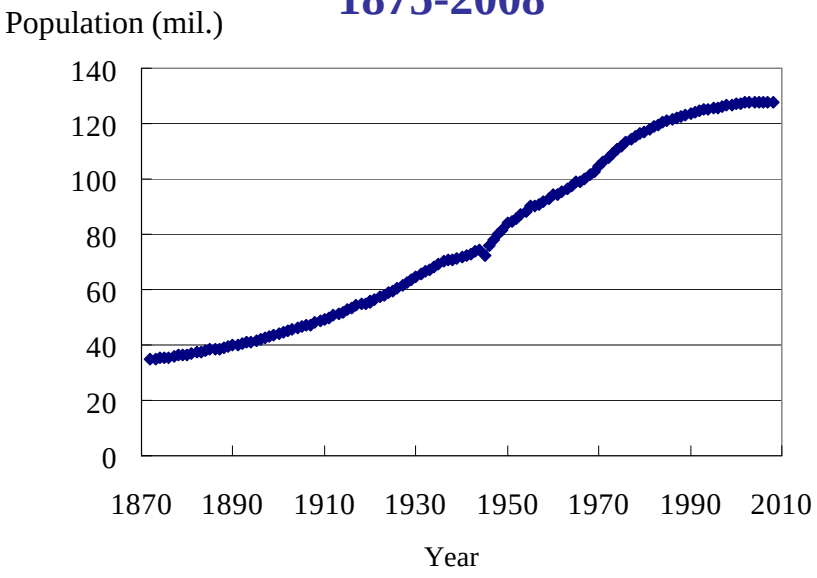
Demographic Change of Japan 1875-2008



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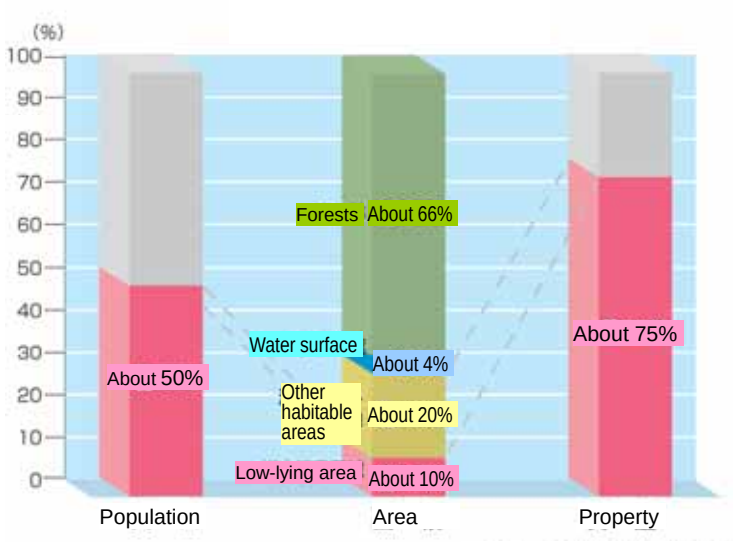
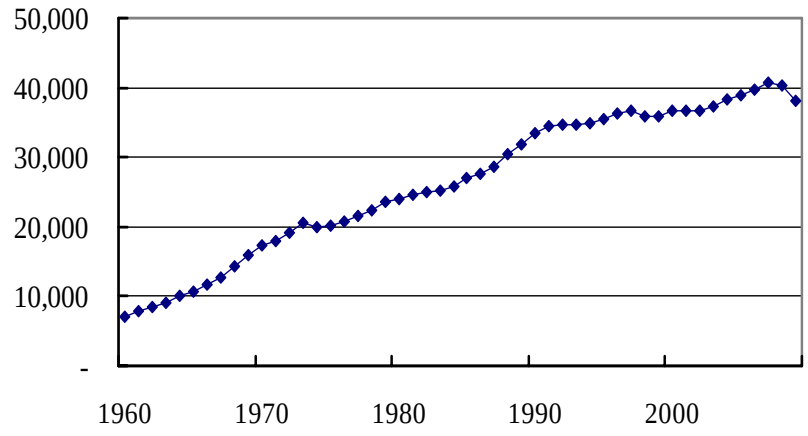
Landuse in Japan



Source: River Bureau, MLIT

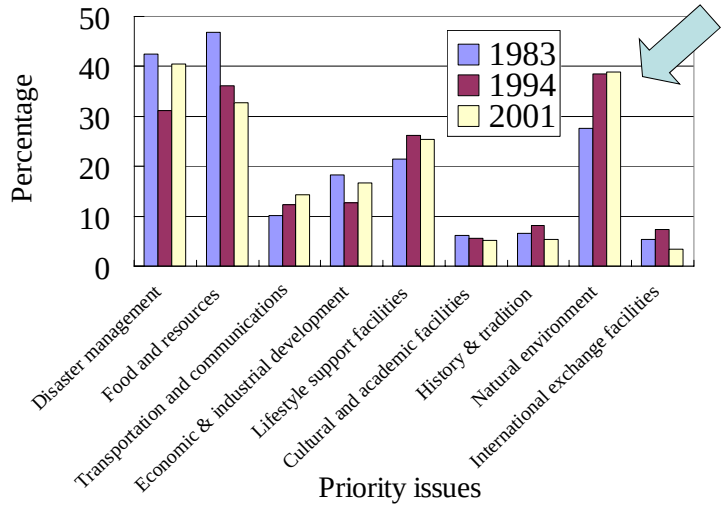
GDP

GDP per capita (constant 2000 USD)



Sources: World Databank

Growing public awareness on environment



Sources: Public opinion survey on Perspectives of Future Land, Cabinet Office

Evolution of environmental concerns

Pollution (public disruption)

Natural Environment

Global Environment

1967 Basic Law for Environmental Pollution

1933 Basic Environment Law

1972 Nature Conservation Law

1998 Law Concerning the Promotion of the Measures to Cope with Global Warming

Pollution (Public Disruption)

Public disruption: Wide-area pollution caused by business or others that harm health or living environment of the public

Air pollution from traffic

River surface covered with detergent foam from domestic effluent

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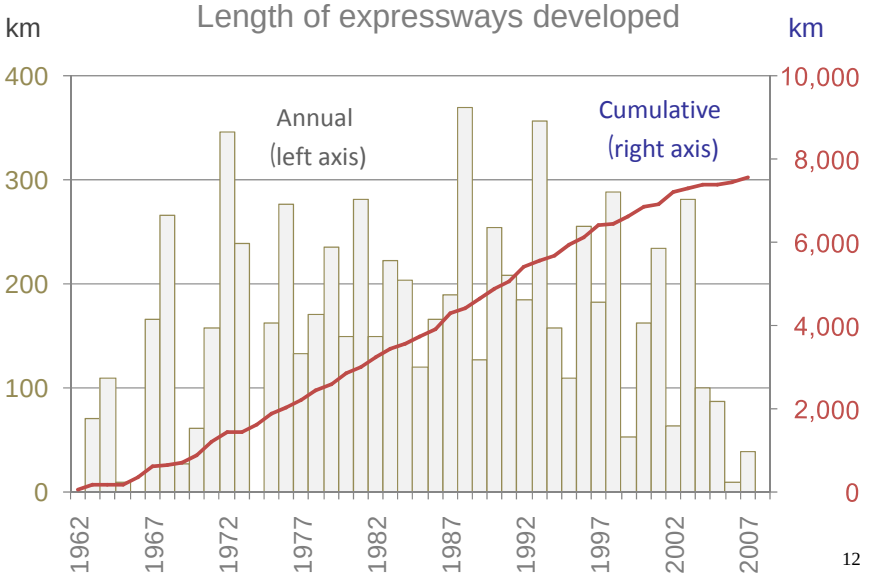
Expansion of expressways



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Expressway build on river in downtown Tokyo

Photo: Takahiro Abe

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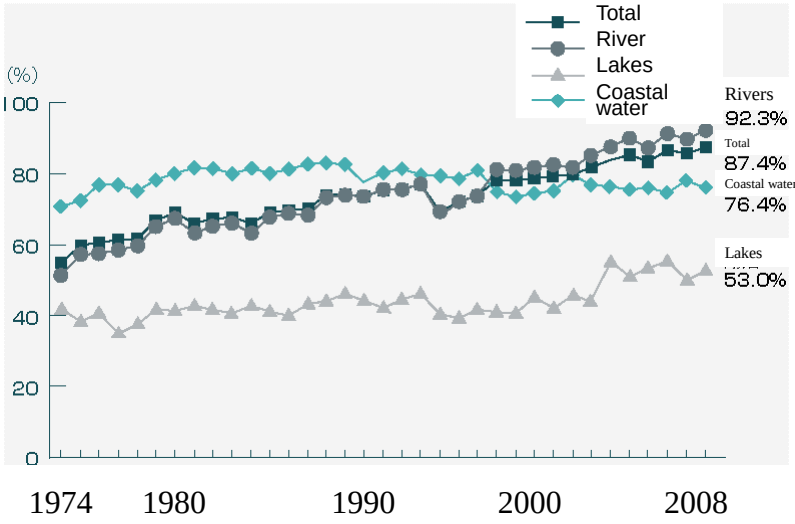
Achievement Rate of Environmental Standards (BOD/COD)



Source: 2010 White Paper on Environment, Environmental Agency, 2010

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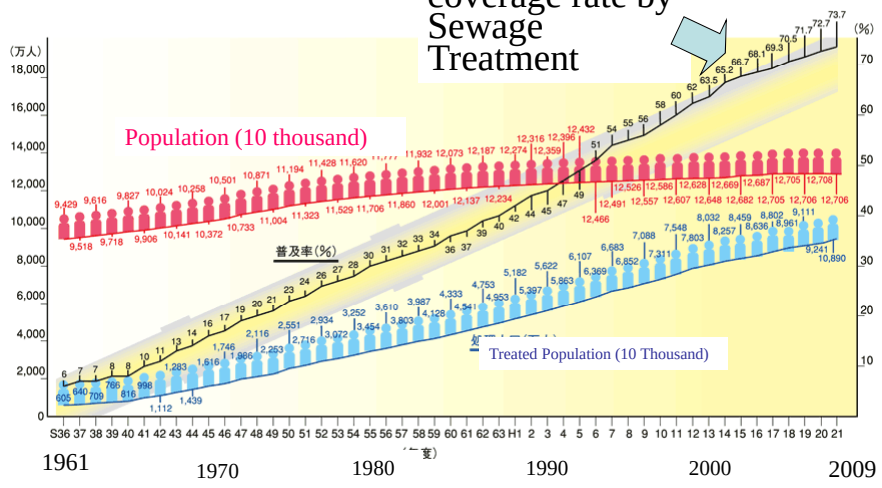
Progress of Sewage Treatment Works



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Restored water quality and plants and animals

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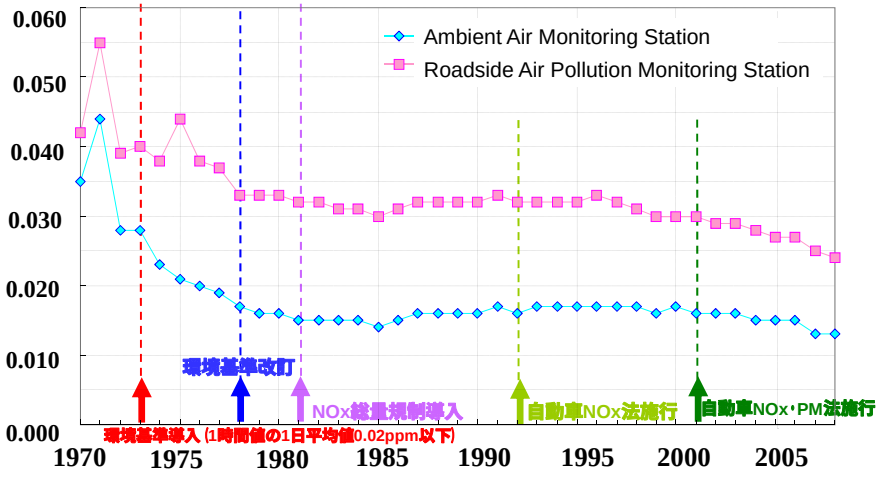
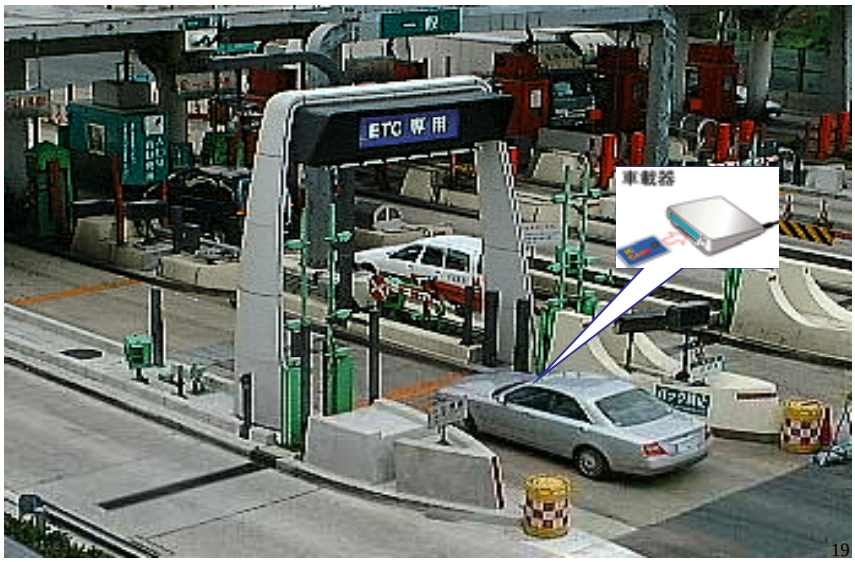
NO_2 concentration in the atmosphere

Annual average of NO2 concentration (ppm)



Intelligent Transport System

Intelligent Transport System



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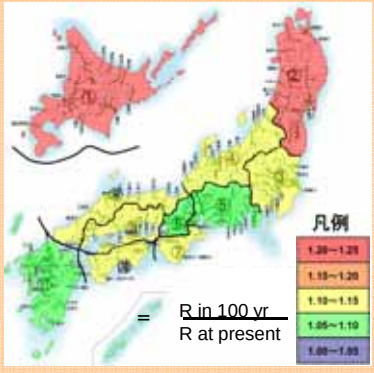
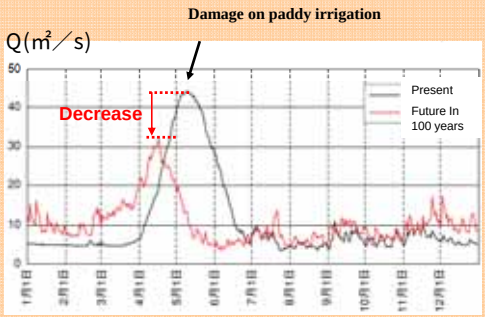
Climate Change Adaptation in Water Resources

Analysis of outputs of GCMs adapted in IPCC report



Annual maximum of daily precipitation



Annual hydrograph flow into a reservior

Base information for "Climate Change Adaptation Strategies to Cope with Water-related Disasters due to Global Warming (Policy Report)", June 2008, Panel on Infrastructure Development

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http://www.mlit.go.jp/river/basic_info/jigyo_keikaku/gaiyou/kikouhendou/pdf/draftpolicyreport.pdf

III. Actions and consequences

Climate Change Adaptation

Improving the reliability of an existing facility (a coastal facility)

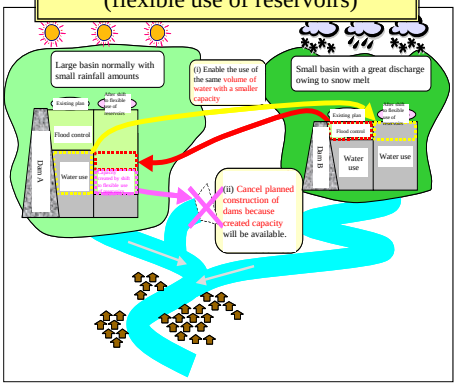
Before improvement

Revetment with deteriorated concrete

After improvement

Revetment with increased thickness

Effective use of existing facilities (flexible use of reservoirs)



Flexible use of reservoirs
- Use the capacity for water use of the existing reservoir for controlling floods
- Flexible use of combined capacity of existing and newly constructed reservoirs

Increase the effectiveness for flood control and safety against floods

IV. Conclusion

Environmental Principles of MLIT

Environmental Policy Outline January, 1994

- Environ. as base of human's activities
- Environ.=Nature elements + Community facilities + Buildings
- Internalization of Environ in Public Works

Environmental Action Plan June, 2004
-Towards greener MLIT administration-

"4 perspectives"

- Reduction in environ. load at every level of administration
- Priority of broader/watershed perspective
- Comprehensive and prioritized actions
- Collaboration with private sectors and promotion of information sharing

Environmental Action Plan 2008 July, 2008
- Livelihood in global environ. era-

"4 perspectives"

- Integration of environ. and economy/society
- Priority of comprehensiveness and collaboration
- Encourage people and companies to act
- Priority of broader area and longer time consideration

Revised River Act of 1997

New mission of environ. added to flood control and water use missions

Strategy for an Environmental Nation in the 21st entury, Cabinet decision in July 2007

Three approaches towards sustainable society

- Low carbon society
- Environmentally-Sound Material Cycle
- Coexistence of People and Nature

Conclusion

Perspectives

- ✓ Integration of environ. and economy/society
- ✓ Priority of comprehensiveness and collaboration
- ✓ Encourage people and companies to act
- ✓ Priority of broader area and longer time consideration

from **Environmental Action Plan 2008** - Livelihood in global environ. era- , July, 2008

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Conclusion

Five stage of environmental care

- ✓ Know the state (monitoring and evaluation)
- ✓ Introduction of alternatives for solution
- ✓ Understand impact and response (prediction/projection)
- ✓ Planning and public communications
- ✓ Action and review

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Thank you!

2. India

Mr. Koneru Venkata RAMANA

Welcome to
JICA Group Training Course on
Infrastructure Development & Management

1

Inception Report on
Directorate of Ports,
Government of Andhra Pradesh, INDIA

By
K.V.Ramana IAS
Director of Ports

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Coastline

- Coastline of India – 7517 Km.
  – 9 States, 2 UTs.
- Coastline of AP – 996 Km.
  – 8 Districts.

3

Ports in India

- There are 12 major and 139 non-major ports along the coastline.
- The twelve major Indian Ports are: Calcutta, Haldia, Chennai, JNPT, Kandla, Kochi, Goa, Mumbai, New Mangalore, Paradip, Tuticorin & Visakhapatnam.

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Ports in AP

Major Port	: 1
Non-Major Ports in Operation	: 5
Non-Major Ports under Development	: 6
Non-Major Ports yet to be developed	: 4

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Non-Major Ports in operation

Non-Major Ports in Operation	: 5
Cargo handled	: 43.29 MT
Revenue earned by GoAP	: Rs.75.73 Crores

6

Principles followed in Development of Non-Major Ports

- Development through Public Private Partnership by providing State Support.

- Entered into Long term Concession Agreements under BOOT basis for 30 years period (can be extended).

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Principles followed in Development of Non-Major Ports (contd..)

The State Support includes:

(1) Long Lease of lands.

(2) Fiscal Incentives.

(3) Provision of external infrastructure like Road connectivity, Power and Water supply up to the boundary of the Port.

(4) Bearing the cost of R&R of the project by the Govt.

8

Kakinada Deep Water Port (KDWP)

- GoAP has constructed 3 berths by 1996 at a total cost of Rs.293 crores with ADB Loan of Rs.242 crores.
- KDWP was awarded to M/s International Seaports Ltd. (now renamed as Kakinada Seaports Ltd.) on OMST basis in the year 1999, initially for a period of 20 years.
- 22% of Gross Income as Revenue share to GoAP.

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KDWP (contd..)

- 4 berths and 2 OSV Jetties completed.
- M/s KSPL has invested an amount of Rs.400 Crores.
- Cargo handled at KDWP – Ammonia, Bitumen, Coal, Cement Clinker, POL products etc.
- M/s KSPL is proposing for expansion of cargo handling capacity upto 17 MTs by constructing 5th and 6th berths with an investment of Rs.800 Crores.

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Gangavaram Port

Equity Partners :

M/S DVS Raju & Others	–	58.11 %
Warberg Pincus	–	31.50 %
Govt. of AP	–	10.39 %

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Gangavaram Port (contd..)

Expenditure incurred by Govt :

	Rs. in Crores
• Lands (1800 Acres Towards Equity + 1052 Acres on Lease)	35.00
• Road Connectivity	15.00
• Water Supply	13.72
• Power Supply	30.74
• R&R Package	61.00
• Hill Top Road	12.75
• Fish Landing Centre	3.00
• Nallah Diversion	7.00
• Total Expenditure	Rs.178.21 Crs.

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Krishnapatnam Port

- Concession Agreement entered on 17-09-2004 for 30 years on BOST basis.
- 5 multipurpose berths each with a length of 300m were built.
- Current draft of 14.5 m to be increased to 20m.
- 3 more berths under final stages of construction.
- Export – Iron Ore, Granite Stone.
- Import - Steam Coal, Coking Coal, Pet Coke, Fertiliser, Raw Sugar.

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Krishnapatnam Port (contd..)

Rail Connectivity :

- KRCL is a SPV comprising the GoAP, KPCL and Rail Vikas Nigam Ltd, formed to provide rail connectivity to the port.
- Phase-I: A dedicated 19-km railway line connecting the port to the Chennai-Kolkata main line.
- Phase-II: A 91-km new broad gauge line between the port and Obulavaripalle with an outlay of Rs.600 Crores. This rail line will reduce the distance between the port and the region in eastern Karnataka and Southern AP by 75 km, thereby saving substantial freight cost.
- Project cost:Rs.788 Crores. (Equity of GoAP - 13 %).

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Krishnapatnam Port (contd..)

Road Connectivity :

- Dedicated 26-km four-lane road connecting the port to NH No.5 (Chennai-Kolkata Highway) will be upgraded to six-lane road in the future.

Air Connectivity :

- 180 km from the International Airport at Chennai.
- 120 km from domestic airport at Tirupati.
- Proposed air strip dedicated to the port.
- Six helipads inside the port area.

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Krishnapatnam Port (contd..)

Phase II :

- 7 additional berts - 4 dedicated for coal, 2 for General Cargo & 1 for Containers.

Govt expenditure:

	Rs. In Crores
• Providing four lane road from Venkatachalam to Krishnapatnam Port (R&B Department) (20 Km)	149.00
• Power Supply (A.P.Transco)	10.93
• R&R	57.00
Total	Rs.216.93 Crores

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Issues and Challenges

1. Logistics is not governed by a single Ministry.

- Ministry of Road Transport and Highways
- Ministry of Shipping
- Ministry of Civil Aviation
- Ministry of Railways
- Ministry of Finance
- Ministry of Commerce and Industry

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Issues and Challenges (contd..)

2. Legal procedures are often fragmented and Government clearances take a long time to be acquired.

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Issues and Challenges (contd..)

3. Customs procedures for transporting goods are long and cumbersome, leading to delays in reaching the destination.

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Issues and Challenges (contd..)

4. Multiple check posts and documentation requirements further delay the delivery of cargo.

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Issues and Challenges (contd..)

5. If the countries are not interlinked each other through improved transportaion network, regional integration process will not move ahead at desired pace.

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Efforts and Innovations in India

1. Stepping up public investment in infrastructure through various programmes.

- National Highways Development Project
- National Maritime Development Programme
- Dedicated Freight Corridors
- Mass Rapid Transit System

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Efforts and Innovations in India (contd..)

2. An Inter-Ministerial Committee (IMC) was set up in 1992 to facilitate the development and implementation of a multimodal infrastructure.

   The Ministry of Commerce and Industry, as the nodal agency, co-ordinates with the other Ministries.

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Efforts and Innovations in India (contd..)

3. The Multimodal Transportation of Goods Act, 1993

   - to regulate the multimodal transportation of goods from a place in India to a place outside it involving two or more modes of transport based on a single multimodal transport contract.

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Efforts and Innovations in India (contd..)

4. The Foreign Direct Investment (FDI) regulations permit 100 percent FDI under the automatic route for all logistics services except courier and air transportation services.

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Efforts and Innovations in India (contd..)

5. Development of cross-border infrastructure, especially transportation linkages and energy pipelines with neighbouring countries is underway and expected to contribute to the regional integration in Asia by reducing transportation costs and facilitating intra-regional trade and services.

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Thank You

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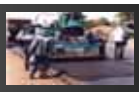
3. The Republic of Indonesia

Mr. Srie Handono MASHUDI

KEMENTERIAN PEKERJAAN UMUM
DIREKTORAT JENDERAL BINA MARGA



INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT

TREES FOR LIFE

JICA GROUP TRAINING COURSE FY 2010

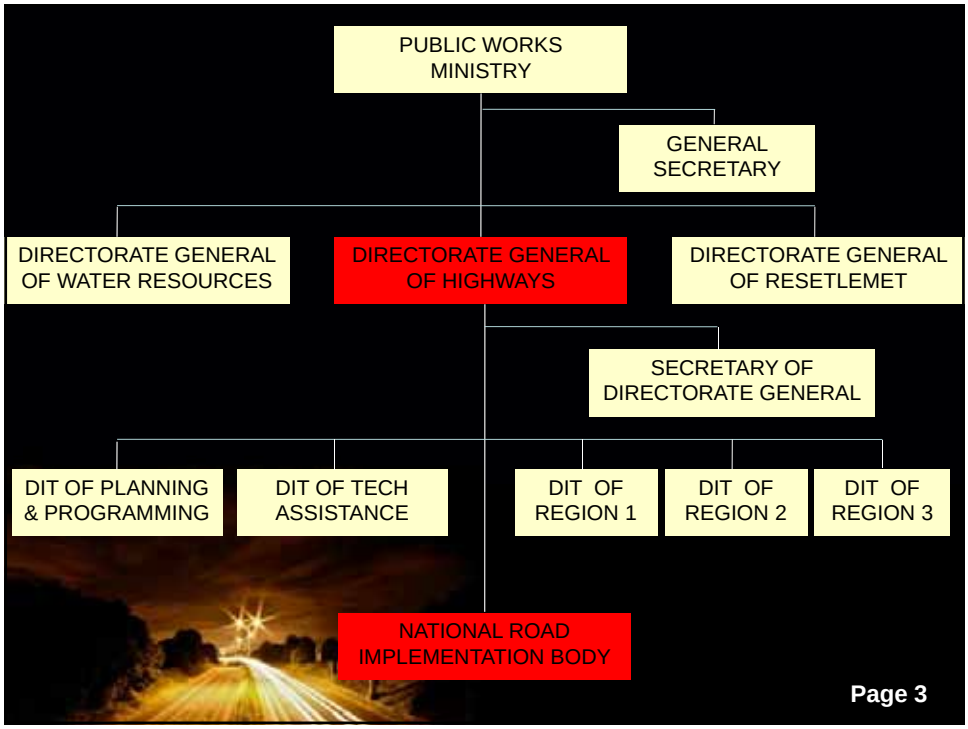
PRESENTED BY : SRIE HANDONO MASHUDI

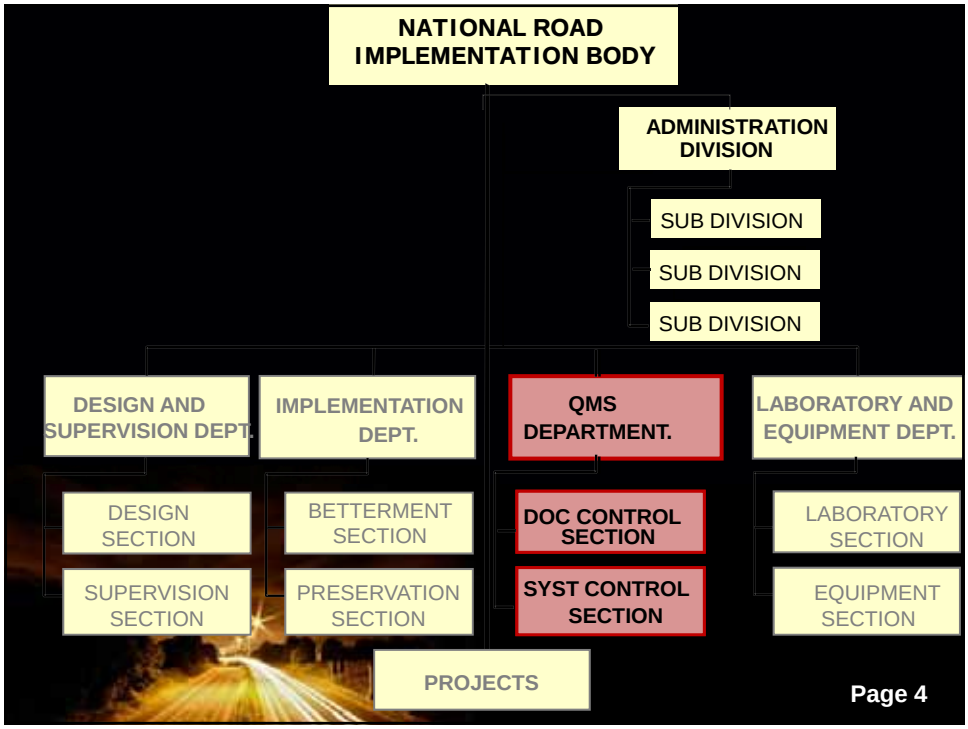
NAT ROAD IMPLEMENTATION BODY
DIRECTORET GENERAL OF HIGHWAYS

1. MAIN TASK :

THE ROLE OF NATIONAL ROAD IMPLEMENTATION BODY IN ROAD DEVELOPMENT IS ENSURING THE IMPLEMENTATION OF ROAD CONSTRUCTION IN A PROPER MANNER INLINE WITH THE INDONESIAN GOV RULE AND PROVISIONS OF THE TECHNICAL SPECIFICATION OF THE DGH

Page 2


PUBLIC WORKS MINISTRY
GENERAL SECRETARY
DIRECTORATE GENERAL OF WATER RESOURCES
DIRECTORATE GENERAL OF HIGHWAYS
DIRECTORATE GENERAL OF RESETLEMET
SECRETARY OF DIRECTORATE GENERAL
DIT OF PLANNING & PROGRAMMING
DIT OF TECH ASSISTANCE
DIT OF REGION 1
DIT OF REGION 2
DIT OF REGION 3
NATIONAL ROAD IMPLEMENTATION BODY
Page 3


NATIONAL ROAD IMPLEMENTATION BODY
ADMINISTRATION DIVISION
SUB DIVISION
SUB DIVISION
SUB DIVISION
DESIGN AND SUPERVISION DEPT.
IMPLEMENTATION DEPT.
QMS DEPARTMENT.
LABORATORY AND EQUIPMENT DEPT.
DESIGN SECTION
SUPERVISION SECTION
BETTERMENT SECTION
PRESERVATION SECTION
DOC CONTROL SECTION
SYST CONTROL SECTION
LABORATORY SECTION
EQUIPMENT SECTION
PROJECTS
Page 4

NAME OF ORGANIZATION

QUALITY MANAGEMENT SYSTEM DEPT
NATIONAL ROAD IMPLEMENTATION BODY V
DIRECTORATE GENERAL OF HIGHWAYS.

Page 5

QMS DEPT MAIN TASK

CONTROLLING, SUPERVISING, MONITORING AND IMPROVING THE IMPLEMENTATION MINISTRY OF PUBLIC WORKS QMS SINCE PLANNING, PROGRAMMING, DURING CONSTRUCTION AND AFTER CONSTRUCTION OF THE NATIONAL ROADS IN EAST JAVA , CENTRAL JAVA AND THE SPECIAL REGION OF JOGJAKARTA PROVINCE.

Page 6

SUMMARY OF ORGANIZATION:

QUALITY MANAGEMENT SYSTEM DEPARTMENT, NATIONAL ROAD IMPLEMENTATION BODY V IS A UNIT OF TECHNICAL IMPLEMENTATION OF NATIONAL ROAD UNDER DIRECTORATE GENERAL OF HIGHWAY.

Page 7

2. BACK GROUND :

SINCE THE CONSIDERATION TO THE GLOBAL CLIMATE CHANGE THE DIRECTORATE GENERAL OF HIGHWAYS NEEDS EXPERTS IN INFRASTRUCTURE MANAGEMENT WHO ALSO ABLE TO MANAGE THE INFRASTRUCTURE DEVELOPMENT CONSIDERING TO THE GLOBAL AND LOCAL ENVIRONMENTAL ISSUES.

Page 8

3. PROGRAMS:

1. ONE OF THE NATIONAL ROAD IMPLEMENTATION BODY (NRIB) V PROGRAM IS TO IMPROVE THE ROAD SIDE ENVIRONMENT BY PLANTING VARIOUS VARIETY OF TREES WHICH ABLE TO DECREASE THE LEVEL OF AIR POLLUTION..
2. THE NRIB V WORKING TOGETHER WITH PT. DJARUM KUDUS IN THE CORPORATE SOCIAL RESPONSIBILITY PROGRAM.

Page 9

4. IMPLEMENTATION :

MAHOGANY (BEST IN ECONOMICAL VALUE AND GOOD IN ABSORBING AIR POLLUTANT AGENTS) HAS BEEN CHOSEN IN EAST JAVA

WHERE AS :

ALBIZIA SAMAN /TREMBESI (BEST IN ABSORBING AIR POLLUTANT AGENTS AND GOOD IN ECONOMICAL VALUE) HAS BEEN CHOSEN IN CENTRAL JAVA.

BOTH OF THE TREES HAVE SUPERIORITY BETWEEN EACH OTHER

Page 10

WHY ALBIZIA SAMAN ?

1. BEST IN ABSORBING CO2 COMPARED WITH OTHE TREES (28,5 TON CO2/YEAR/TREE WITH15 METER IN DIAMETER CANOPY)
2. THE ROOT IS NOT BAD FOR THE ROAD PAVEMENTS
3. 'DIE-HARD TREE' (RAIN FALL INTENSITY 600 – 3.000 MM/YEAR, PH 4,6)
4. GOOD : 3 – 800 METERS ABOVE SEA LEVEL
5. LEAF AND SEED ARE NOT DANGEROUS TO THE TRAFFIC
6. GROW ING FAST

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WHY MAHOGANY?

1. BEST IN ECONOMICAL VALUE
2. THE ROOT IS NOT BAD FOR THE ROAD PAVEM
3. EASY TO FIND
4. GROWING GOOD IN DRY AREA
5. LEAF IS NOT DANGEROUS TO THE TRAFFIC
6. GROW ING FAST

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LENGTH OF NATIONAL ROADS

UNDER THE NATIONAL ROAD IMPLEMENTATION BODY V SURABAYA IS AS FOLLOWS:

East Java	: 2.027 km
Central Java	: 1.390 km
SR of Jogjakarta	: 223 km
Total length	**: 3.640 km**

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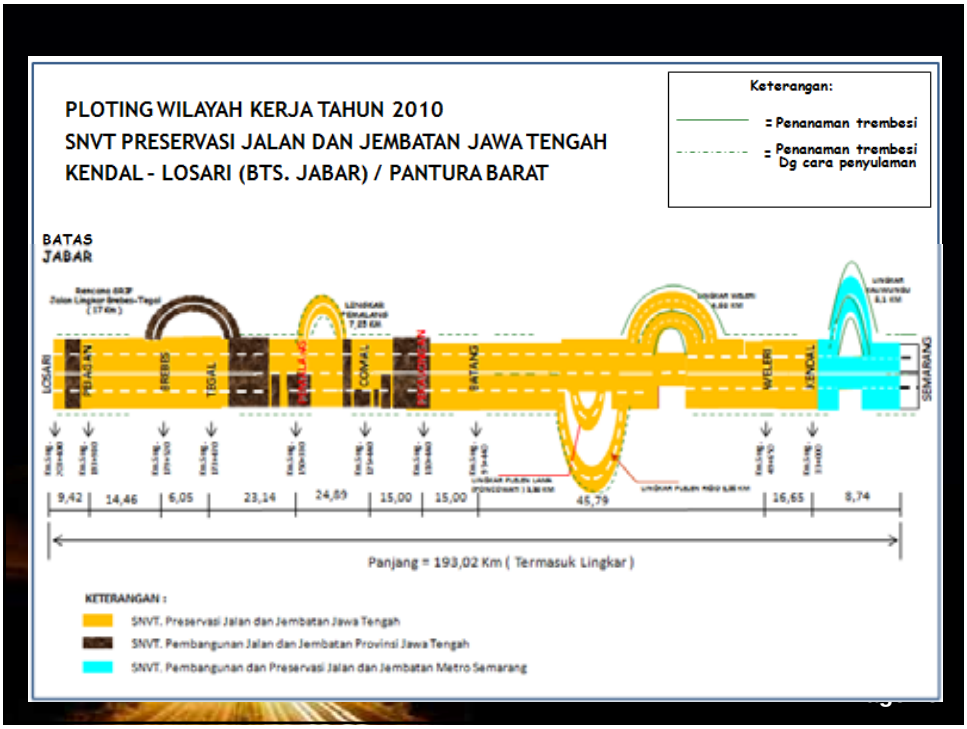


EXECUTION PLAN

1. PLANTING : MONSOON SEASON / OKTOBER 2010
2. 1,5 – 2 meter HIGHT OF TREES
3. FIRST STAGE PLANTING : SEMARANG to PEKALONGAN
4. SECOND STAGE : PEKALONGAN to LOSARI
5. MAINTENANCE : 3 YEARS
6. PLANTING PRIORITY : ALONG NATIONAL ROAD COMPLY WITH NATIONAL ROAD STANDART

Page 20

DOCUMENTATION

EXECUTION PHOTOS
AND
THE PROGRESS

Page 23

STAKING OUT BY DBL TEAM

Page 24


BULAN MARET 2010


Page 40


DJARUM


SEKOLAH TINGGI
AGAMA ISLAM NEGERI KUDUS


TERIMA-KASIH

4. The Union of Myanmar

Mr. Khin Mg SWE

INCEPTION REPORT

ON

JICA GROUP TRAINING COURSE ON
INFRASTRUCTURE DEVELOPMENT AND MANAGEMENT
J.F.Y.2010

SUMITTED

BY

KHIN MG SWE

DEPUTY CHIEF ENGINEER (BRIDGE)

BRIDGE DEPARTMENT

PUBLIC WORKS, MINISTRY OF CONSTRUCTION UNION OF MYANMAR

JICA Group Training Course on

Infrastructure development and management

Sir . No Contents

1. Organization Data
   1.1 Name of Organization
   1.2 Summary of Organization
   1.3 Organization Chart
   1.4 Organization's Position in Government
2. Personal Data
   2.1 Recent Work
   2.2 Contact Address
3. Infrastructure development considering global and local environments
(for sustainable development of society)...

JICA Group Training Course on

Infrastructure development and management

(J.F.Y.2010)

Inception Report

Name	MR. KHIN MG SWE
Country	MYANMAR
Organization	PUBLIC WORKS, MINISTRY OF CONSTRUCTION
Position	DEPUTY CHIEF ENGINEER (BRIDGE)

Infrastructure development considering global and local environments

(for sustainable development of society)

Myanmar has signed a number of the international environmental conventions: it has signed, and acceded to, or ratified Convention on Climate Change and the Convention on Biological Diversity at the 1992 United Nations Conference on Environment and Development (UNCED), the Convention on Biological Diversity (1994), the Convention on International Trade of Endangered species (1979), the International Tropical Timber Agreement (1996) and the Framework Convention on Climate Change (1994). It has also participated in the UN Conference on Environment and Development, and received funds through the Global Environment Facility. Myanmar's path is leading towards increased international engagement in environmental arenas.

This engagement can open up channels of communication to discuss environmental issues with the government. The government has shown, through its limited environmental initiatives, a 'greening' in some of its policies. Although it can be argued that, ultimately,

the government's policies are merely lip service, the government has at least demonstrated some level of awareness of environmental issues in Myanmar. Moreover, in 1997, Myanmar became a member of the Association of Southeast Asian Nations (ASEAN), which is leaning increasingly towards regional cooperation in dealing with environmental problems. For example, in September 1997, ASEAN members signed the Jakarta Declaration on Environment and Development and pledged to use resources efficiently and sustainably. As a result, ASEAN set up the ASEAN Regional Centre for Biodiversity Conservation with the aim of supporting and empowering communities to achieve their ecoefficiency objectives. The Mekong River Commission (MRC), with its pre-eminent role in the Mekong region and expanding work program, is another transnational institutional mechanism that can work with Myanmar.

ASEAN, the MRC and the international environmental treaties that the government has signed are all potential institutional mechanisms that can be applied to engage with the government. Such engagement can at least be aimed at information sharing and dissemination about the current state of environmental affairs in Myanmar, perhaps leading to training relevant officials for environmental assessment.

To establish sound environment policies in the utilization of water, land, forests, mineral, marine resources and other natural resources in order to conserve the environment and prevent its degradation, the Government of the Union of Myanmar adopted the following policy on 5 December 1994.

" The wealth of a nation is its people, its cultural heritage, its environment and its natural resources. The objective of Myanmar's environment policy is aimed at achieving harmony and balance between these through the integration of environmental considerations into the development process to enhance the quality of life of all its citizens. Every nation has the sovereign right to utilize its natural resources in accordance with its environmental policies; but great care must be taken not to exceed its jurisdiction or infringe upon the interests of other nations. It is the responsibility of the state and every citizen to preserve its natural resources in the interest of present and future generations. Environmental protection should always be the primary objective in seeking development".

Environmental protection and conservation occupy a place of special significance on the national agenda of Myanmar, and Myanmar's National Commission for Environmental

Affairs will continue to strengthen its efforts for preserving and protecting the environment while participating and cooperating in the global effort.

1. Organization Data

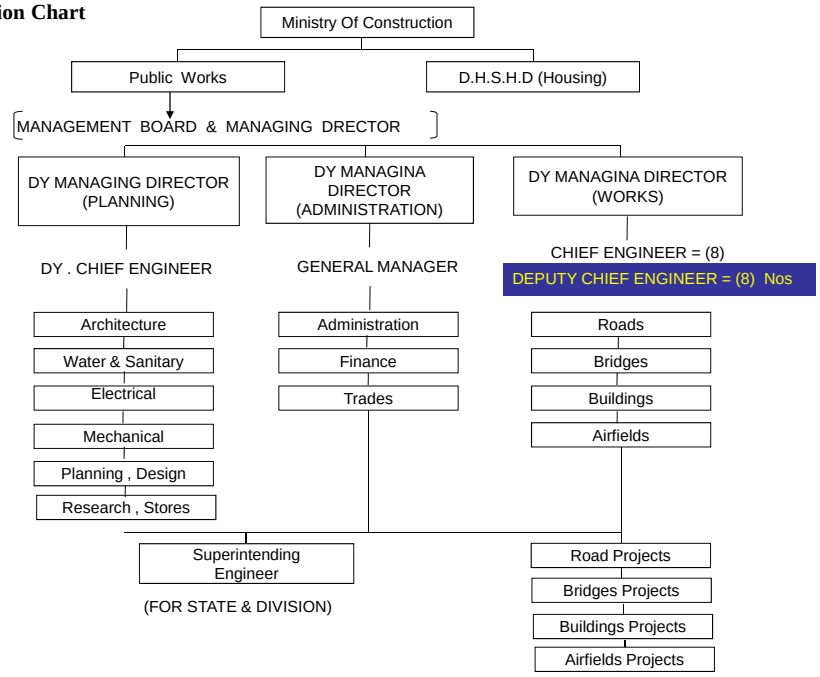
1.1 Name of Organization : Public Works ,Ministry of Construction

1.2 Summary of Organization

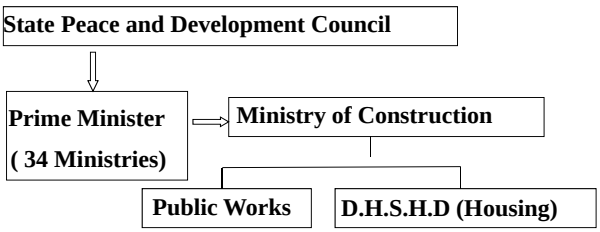
Public Works, under the Ministry of Construction has been undertaking the construction and maintenance of Roads, Bridges, Airfields and Buildings all over the country. According to the long term plan, Public Works will continue to participate in the development of the economic, education, social, health and administrative functions of our country. Public Works which is responsible for construction and maintenance of the budget works assigned by Ministry of Construction and other Ministries concerned. The organization structure is managed by management board which advised to managing director who have overall management responsibilities. Managing director reports directly to deputy minister and minister who are assigned by three deputy managing directors, such as administration,

planning and works. Deputy managing director (works) control and manage section concern with pre engineering works, design and is assigned by chief engineers , deputy chief engineers and superintending engineers. Public Works has a multidisciplinary team of professionals, who have many years of experience in Myanmar. It has over 12000 staffs and including about 9000 engineers and skill technicians. Public Works had been allotted 145 billion Kyat for new construction of bridges and roads, and 30 billion Kyat for maintenance works in the last financial year.

1.3. Organization Chart



1.4 Organization's Position in Government



Before the introduction of market economic system, construction and maintenance of roads and bridges are the sole responsibility of the Government. Public Works had used labor intensive method to implement the project. In 1987 UN funded Road Research and Development Project introduced computerized road network planning and management system in Public Works. But the highway management information system (HMIS)software can operate to a very limited degree because of obsolete computer and software.

Budgets for new construction of the Road and Bridge projects and maintenance are allocated by the National Budgets direct to the Ministry of Construction . Capital Budget is according to the priority of the national plan . Concerning with the Maintenance funds, there are three type of budgets allocated as follow ; (1) Routine maintenance (2) Periodical maintenance (3) Special maintenance .Routine maintenance

we defined as for pot hole patching, jungle clearing along the road way before and after rain in every year etc.. Periodical maintenance we defined as resealing of the surface in two years for single surfacing, three years for double surfacing or four years

and more for asphalt concrete pavement and finally, special maintenance means

damages due to the unforeseen natural disaster such as cyclone, storm, earthquake and land slide etc.. However, sufficient funds are not always available in the budget. It is commonly the case that an initial partial allocation at the beginning of the fiscal year is supplemented with supplementary budget allocation. The priorities for road and bridge projects are set primarily by the higher authority usually emphasizing regional development.

At present among the total road network in the whole country of (130050) km , Public Works ,Ministry of Construction is responsible to undertake the total length of (34178) km. From 1988 to at present, Bridges under responsible by Public Works, Ministry of Construction is as follows.

- Under 50 Ft - 2886 Nos.
- 50 Ft to 100 Ft - 777 Nos.
- 100 Ft to 180 Ft - 344 Nos.
- Over 180 Ft - 276 Nos.

- **Total - 4263 Nos.**

Regarding to the infrastructure development, Bridges which are constructed by Public Works (From 1988 to at Present)

No	State/ Division	Under 50ft	50ft -100ft	100ft-180ft	Above 180ft	Total
1	Kachin State	311	81	21	19	432
2	Kayar State	22	2	1	1	26
3	Kayin State	128	50	9	7	194
4	Chin State	13	3	1	3	20
5	Sagaing Division	241	126	41	17	425
6	Thanintharyi Division	80	24	12	7	123
7	Pegu Division	94	47	30	19	190
8	Mgway Division	116	34	14	20	184
9	Mandalay Division	150	38	24	12	224
10	Mon State	68	36	27	4	135
11	Rakhine State	144	76	39	36	295
12	Yangon Division	39	14	14	30	97
13	Shan State (East)	128	28	12	4	172
14	Shan State (South)	142	35	8	5	190
15	Shan State (North)	58	13	9	7	87
16	Ayeyarwaddy Division	181	83	48	50	362
17	Bridges on Road Network in Ayeyarwaddy Delta Region	361	54	26	12	453
18	Bridges on Yangon – Mandalay Express way	590	33	8	23	654
	Total	**2866**	**777**	**344**	**276**	**4263**

Thanlyin Bridge

Aung Zay Ya Bridge

at rmfaZ, svlwlm;

Thanlwin Bridge (Mawlamying)

oHvGfwlwm;(armfvjrdKif)

Ayeyarwaddy Bridge (Yatanarbon)

Regarding to the infrastructure development, Bridges which are under construction by Public Works

No	State/ Division	Under 50ft	50ft -100ft	100ft-180ft	Above 180ft	Total
1	Kachin State	-	1	-	5	6
2	Kayar State	3	-	-	1	4
3	Kayin State	2	1	-	3	6
4	Chin State	-	-	-	-	-
5	Sagaing Division	8	6	3	3	20
6	Thanintharyi Division	2	5	3	-	10
7	Pegu Division	5	3	1	3	12
8	Mgway Division	2	3	2	4	11
9	Mandalay Division	1	2	1	4	8
10	Mon State	3	-	2	-	5
11	Rakhine State	-	3	5	4	12
12	Yangon Division	7	-	-	-	7
13	Shan State (East)	1	1	-	-	2
14	Shan State (South)	-	-	-	1	1
15	Shan State (North)	2	2	2	-	6
16	Ayeyarwaddy Division	5	5	-	7	17
17	Bridges on Road Network in Ayeyarwaddy Delta Region	-	6	-	42	48
	Total	**41**	**38**	**19**	**77**	**175**

Ayeyarwaddy Bridge (SinKhan)

{ &rGwDrWn;(pi fcef)

Ayeyarwaddy Bridge (Pakokku)

Ayeyarwaddy Bridge (Malun)

Ayeyarwaddy Bridge (Nyaungdon)

Leinli Bridge

1.4.1 Private sector participation

Public Works introduce the B.O.T system in roads all over the country .The government supports for the toll road projects by providing the entrepreneur with land and existing road infrastructure. The entrepreneur will improve or construct the road and operate toll collection for agreed period and turnover the facilities to the government on the agreed date. Public Works have also just started introducing toll roads program in (56) roads with 21 companies about 2796 miles. For upgrading Infrastructures foreign investors are being invited to participate in joint-venture operation for production of construction materials such as steel beam, steel truss, cement products and bitumen base surfacing materials. On toll road project, foreign investor could join as partners with Myanmar entrepreneurs.

2. Personal Data

2.1 Recent Work

At present, I am responsible for directing and controlling for technical, financial, materials of Bridge Construction works and Maintenance all over the country.

In the Past three years, I was Executive Engineer of Special Bridge Construction Unit (2) of Public Works. I was responsible for management of Bridge Construction, at Shwe Laung Suspension Bridge, Pan Hlaing Bridge and Pegu Bridge.

Shwe Laung Bridge is 1900 Feet Long Bailey Suspension Bridge, and PanHlaing Bridge is 1940 Feet Long R.C and P.C Bridge. This Bridge was Constructed for smoothly transportation of Delta region and Yangon City.Our Organization has Survey team , Soil research section , Account Section , Bridge design Section , Procurement Section ,Quality Control team and Construction Group.

2.2 Contact Address

- Office Address	:	Building No (11) Public Works,
		Ministry of Construction.
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3. Infrastructure development considering global and local environments (for sustainable development of society)

Myanmar like other developing countries faces environmental problems arising from underdevelopment and poverty. Myanmar has some problems of deforestation, loss of biological resources, land degradation due to wind and water erosion, urbanization and waste management. Natural hazards like cyclones and earthquakes are few and frequency of occurrence is not very high. The degree of air and water pollution caused by industry or agriculture has been minimal due to still low level of industrialization and relatively small amount of chemicals use in agriculture.

The initial challenges for environmental due to infrastructure in Myanmar are rooted in three dimensions: institutional development; budget or resource capacity; and knowledge or environmental education (capacity building). The first challenge for environmental governance in Myanmar is to understand the depth and breadth of the challenges that lie in these three dimensions.

In Myanmar, the environmental awareness is gradually rising. Presently, there is only a partial integration of environment into development, mainly in the form of natural resources conservation projects carried out by the sectoral ministries and departments. The main constraint with integration of environment into development at the moment is the institutional factor. However, with the institutional setting such as the formation of NCEA and adoption of Myanmar Agenda 21, full integration of environmental consideration into the national economic development will come into exist in the near future with realizing the general guiding principle of sustainable development adopted by the World Commission on Environment and Development that is, current generations should meet their needs with compromising the ability of future generation.

AT 2nd, May ,2008, Ayeyawaddy delta region had been destroyed by nargis Cyclone. Life and wealth of many people were lost.

Before Nargis cyclone, Relying only on water way in the past, Ayeyawaddy delta region with poor transport , motor roads, After nargis cyclone Government had been implemented Infrastructure development, road networks, Bridger, Building and cyclone shelters ect: So there will be smooth and better transport in the Ayeyawddy delta region. At transportation sector, There were constructed (11) Road networks and (458) Bridges on the roads.

All of bridge and R.C , Steel truss and Bailey bridge. There are constructed within two year.

The bridges on the road networks are follow

Item	Name of Road	Bridge Under(50')	Bridge (50')to(100')	Bridge (100')to(180')	Bridge Above(50')	Total
1	Maubin-Yelaglay Mawlamying gun road	-	-	-	2	2
2	Mawlamying gun Hlaing Bon-Pyinslu road	1	16	5	22	44
3	Labutta-thinGanGyi-Pyinslu Road	4	1	2	5	12
4	Labutta-ohthwin-Thatsom Road	2	5	1	6	14
5	Bogalay-Kwin-Chang-Kadonkani Road	5	16	8	8	37
6	Bogalay-Satsan-Ama Road	-	5	4	7	16
7	Pyapon-Kyoin-Ka-Don-Ama Road	-	-	-	-	-
8	Kyoin-Ka,don-Satsan Road	-	-	1	-	1
9	Pathain-Mawtim Son Road	348	14	5	2	369
10	Bogalay-Mawgyun-wakhema Road	-	2	-	6	8
11	Pathein-Nga Putaw Road	2	1	-	2	5
	Total	362	60	26	60	458

Photo Records of Bridges.

Road No (1)

Razudine (1) Bridge (1955 Feet)

Road No (2)

Hte Lay Thain Bridge (130 Feet)

Nyaung Pake Birdge (200 Feet)

Mezali Bridge (200 Feet)

Road No (1)

Razudine (2) Bridge (540 Feet)

Road No (2)

Pat Byew Bridge (280 Feet)

Thit ni zew Bridge (100 Feet)

Pyew Cha Tawk Bridge (100 Feet)

Road No (2)

Ye Kyaw to Bridge (90 Feet)

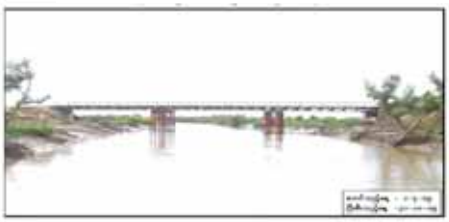
Bingala Bridge (240 Feet)

Danisake Bridge (180 Feet)

Road No (3)

Sakin Bridge (260 Feet)

Na linkyaw Bridge (150 Feet)



Pyinkanu yakyaw Bridge (150 Feet)

Road No (5)

Knout pyan toe Bridge (90 Feet)

Khaya chaung Bridge (260 Feet)

Lamu chaung Bridge (140 Feet)

Road No (6)

Htaw Paing Bridge (350 Feet)

Yway chaung Bridge (80 Feet)