

Table of Contents

Location Map of the Study Area	
Photographs	
Executive Summary	
	<u>Page</u>
Chapter 1 Introduction	
1.1 Background of the Study	1-1
1.2 Objectives of the Study	1-1
1.3 Scope of the Study	1-2
1.3.1 Study Area	1-2
1.3.2 Study Period	1-2
1.3.3 Scope of the Study	1-2
1.4 Methodology of the Study	1-3
1.4.1 Overall Design of the Study	1-3
1.4.2 Questionnaire Survey.....	1-3
1.4.3 Loss Assessment Survey.....	1-5
1.4.4 PCM (Project Cycle Management) Workshops.....	1-5
1.5 Technology Transfer	1-5
1.5.1 Working Group	1-5
1.5.2 Training Seminar in Japan	1-6
1.5.3 Technology Transfer Seminar.....	1-6
1.5.4 Counterparts.....	1-7
1.6 Reports.....	1-10
Chapter 2 Socio-Economic Background	
2.1 Cambodian Socio-economic Situation.....	2-1
2.1.1 Recent Socio-economic Reforms.....	2-1
2.1.2 Macro-economic Index	2-2
2.1.3 Socio-economic Indicators	2-5
2.2 Economic Development and Market Economy	2-6
2.2.1 National Plan	2-6
2.2.2 Economic/Financial Policy Matters.....	2-9
2.2.3 Role of Concerned Ministries	2-12
2.2.4 Development Assistance of the Japanese Government	2-16
2.2.5 Performance of Other Donors and NGOs.....	2-19
2.2.6 Direction of Economic/Financial Policy.....	2-21
2.3 General Conditions of Agriculture.....	2-24
2.3.1 Natural Conditions.....	2-24
2.3.2 Land Use.....	2-25

2.3.3 Food Crops Production	2-26
2.3.4 Population of the Agricultural Sector	2-27
2.3.5 Income Level of Farm Households.....	2-25
Appended Chart.....	2-29

Chapter 3 The Study Area / Field

3.1 Rice Production.....	3-1
3.1.1 Overview.....	3-1
3.1.2 Rice Ecosystems and Cropping Patterns by Region.....	3-1
3.1.3 Production Technology and Yield.....	3-5
3.1.4 Cultivated Area and Yield of Farm Households	3-8
3.1.5 Situation of Rice Crop Damage	3-10
3.1.6 Supporting System for Rice Production	3-12
3.1.7 Direction of Progress in the Agriculture Sector.....	3-13
3.2 Food Security	3-16
3.2.1 Food (Rice) Balance Situation.....	3-16
3.2.2 A Future View on Rice Balance	3-22
3.2.3 Rice Reserve Policy	3-25
3.2.4 Food Distribution for the Vulnerable People.....	3-26
3.2.5 Food Reserve by GTC	3-27
3.2.6 Problem and Direction of Development	3-28
3.3 Marketing System	3-31
3.3.1 Trade Flows	3-31
3.3.2 Transport.....	3-33
3.3.3 Marketing System.....	3-34
3.3.4 Price Mechanism	3-44
3.3.5 Market Information System of Rice	3-48
3.3.6 Characteristic of Rice Consumption in Phnom Penh.....	3-49
3.3.7 Development Constraints.....	3-52
3.3.8 Direction of Development	3-55
3.4 Post-harvest Processing	3-58
3.4.1 Situation surrounding the Post-harvest Processing of Rice	3-58
3.4.2 Situation of Post-harvest Processing of Rice.....	3-61
3.4.3 Result of the Loss Assessment	3-64
3.4.4 Problems in Post-harvest Processing	3-73
3.4.5 Basic Conditions for Chalking out Improvement Plan.....	3-74
3.5 Milling Process	3-76
3.5.1 Milling Facilities.....	3-76
3.5.2 Custom Mill.....	3-76
3.5.3 Commercial Mill.....	3-77

3.5.4	Warehouses and Milling Facilities of the Government and GTC.....	3-79
3.5.5	Problem of Milling Process and Warehouse.....	3-81
3.5.6	Direction of Development of Rice Milling Industry.....	3-82
3.6	Rice Quality Control.....	3-84
3.6.1	Present Quality Control	3-84
3.6.2	Problems in Quality Control and Inspection.....	3-84
3.6.3	Quality of Milled Rice	3-86
3.6.4	Quality Control System	3-87
3.6.5	Utilization of Quality Standard and Future Trend of Rice Industry	3-89
3.7	Rural Society / Farmers Organization.....	3-90
3.7.1	Structure of Rural Society	3-90
3.7.2	Farmer's Organizations (FOs)	3-91
3.7.3	Rural Credit Associations	3-93
3.7.4	Other Organization Related to Rice Marketing	3-95
3.7.5	People's Participation (PCM Workshop).....	3-97
3.8	Transportation Infrastructure	3-100
3.8.1	Transportation Network.....	3-100
3.8.2	Present Conditions of Infrastructures of Transportation.....	3-101
3.8.3	Problems of Transportation and Traffic.....	3-103
3.8.4	Direction of Development of the Transportation Network.....	3-104
3.9	Policy and Support System for Rice Marketing.....	3-106

Chapter 4 Development Concept for Master Plan

4.1	Background for Development Concept	4-1
4.1.1	Development Potentials	4-1
4.1.2	Development Constraints.....	4-2
4.1.3	Development Potentials and Constraints in Each Field.....	4-3
4.2	Direction of Development.....	4-6
4.3	Framework of Master Plan.....	4-8
4.3.1	Strengthening of Food Security	4-8
4.3.2	Development of Rice Industry.....	4-8
4.3.3	Consistency with the National Plan.....	4-9
4.3.4	Basic Conditions of the Marketing System	4-9
4.4	Development Concept.....	4-10
4.4.1	Development Targets.....	4-10
4.4.2	Targets Year.....	4-10
4.4.3	Development Scenario	4-10
4.4.4	Development Targets and Expected Outcomes	4-11
4.4.5	Development Targets and Activities.....	4-12

Chapter 5 Master Plan

5.1 Identification of Proposed Projects	5-1
5.1.1 Procedure for Project Identification	5-1
5.1.2 Project Long List	5-1
5.1.3 Integration of Projects	5-15
5.2 Profile of the Proposed Projects.....	5-17
5.3 Evaluation of the Proposed Projects	5-40
5.3.1 Procedure of Evaluation	5-40
5.3.2 Result of Evaluation	5-44
5.3.3 Selection of Priority Project.....	5-46
5.4 Implementation Plan	5-49
5.4.1 Implementation Schedule	5-49
5.4.2 Implementation Agency.....	5-50

Chapter 6 Priority Projects

6.1 Project on Improvement of Post-harvest Processing	6-1
6.1.1 Purpose and Background/Rationale	6-1
6.1.2 Contents of the Project	6-4
6.1.3 Pre-condition, External condition and Risk.....	6-7
6.2 Open Paddy Market Project	6-8
6.2.1 Purpose and Background/Rationale	6-8
6.2.2 Basic Concept.....	6-9
6.2.3 Feasibility Study.....	6-13
6.2.4 Pilot Project	6-15
6.2.5 Input and Output.....	6-16
6.2.6 Implementation Schedule	6-17
6.2.7 Pre-conditions, External condition and Risks	6-17
6.2.8 Recommendation.....	6-17
6.3 Master Plan Study on Establishment of Agricultural Cooperatives.....	6-19
6.3.1 Purpose and Background/Rationale	6-19
6.3.2 Basic Concept.....	6-20
6.3.3 Study Plan	6-21
6.3.4 Implementation Schedule	6-22
6.3.5 C/P Training	6-24
6.3.6 Remarks.....	6-24
6.4 Project on Establishment of Rice Quality and Inspection Standard	6-26
6.4.1 Purpose and Background/Rationale	6-26
6.4.2 Basic Concept of Quality standards and Procedure for its introduction.....	6-27
6.4.3 Contents of the Project	6-31
6.4.4 Pre-condition, External condition and Risk.....	6-34

6.4.5 Remarks.....	6-34
6.5 Project on Improvement of Rice and Paddy Trade System	6-35
6.5.1 Background and Rationale	6-35
6.5.2 Purpose	6-35
6.5.3 Contents of the Project	6-36
6.5.4 Pre-condition, External condition and Risk.....	6-38
6.5.5 Remarks.....	6-38
6.6 Project on Increase of National Rice Reserve.....	6-40
6.6.1 Background and Rationale	6-40
6.6.2 Basic Concept.....	6-40
6.6.3 Model Plan	6-43
6.6.4 Personnel required for the Model Plan.....	6-46
6.6.5 Recommendations	6-48

Chapter 7 Recommendation

7.1 Development Subjects outside of the Master Plan.....	7-1
7.2 Recommendation on Implementation of the Master Plan.....	7-2

ANNEX

ANNEX A	Scope of Works and Minutes of Meeting for the Study
ANNEX B	Minutes of Meeting on Inception Report
ANNEX C	Minutes of Meeting on Progress Report
ANNEX D	Minutes of Meeting on Interim Report
ANNEX E	Minutes of Meeting on Draft Final Report

ABBREVIATIONS AND ACRONYMS

ACLEDA	Association of Cambodian Local Economic Development Agencies
ADB	Asian Development Bank
AFTA	ASEAN Free Trade Area
AMO	Agricultural Marketing Office (MAFF)
APEC	Asia Pacific Economic Cooperation
APIP	Agricultural Productivity Improvement Project
AQIP	Agricultural Quality Improvement Project
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
BAAC	Bank for Agriculture and Agricultural Cooperatives
B/D	Basic Design Study
CAAEP	Cambodia Australia Agricultural Extension Project
CARDI	Cambodian Agricultural Research Development Institute
CARERE	Cambodia Area Rehabilitation Regeneration (Project)
CCC	Cooperation Committee for Cambodia
CIAP	Cambodia IRRI Australia Project
CMAC	Cambodian Mine Action Center
C/P	Counter part
DA	Department of Agronomy (MAFF)
DAC	Development Assistance Committee, OECD
DAE	Department of Agricultural Extension (MAFF)
DAFF	Department of Agriculture, Forestry and Fisheries (Provincial)
D/D	Detail Design Study
DOC	Department of Commerce (Provincial)
DPSC	Department of Planning, Statistics & International Cooperation
DTEE	Department of Technique, Economic and Extension (MAFF)
EC	European Community
EDC	Enterprise Development Cambodia
EPD	Export Promotion Department (MOC)
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FDI	Foreign Direct Investment
FO	Farmer Organization
F/S	Feasibility Study
FTBC	Foreign Trade Bank of Cambodia
FTD	Foreign Trade Department (MOC)
GDP	Gross Domestic Product
GSP	Generalized System of Preferences
GTC	Green Trade Company
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IO	International Organization
IPM	Integrated Pest Management
IRRI	International Rice Research Institute

LDC	Local Development Committees
LFI	Licensed Financial Institution
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEF	Ministry of Economy and Finance
MFI	Micro-Finance Institution
MFN	Most Favored Nation
MIME	Ministry of Industry, Mine and Energy
MIS	Market Information System
MOC	Ministry of Commerce
MOJ	Ministry of Justice
MOWVA	Ministry of Women's and Veteran Affairs
M/P	Master Plan
MPWT	Ministry of Public Works and Transports
MRD	Ministry of Rural Development
MWR	Ministry of Water Resources
NBC	National Bank of Cambodia
NCfDM	National Committee for Disaster Management
NGO	Non-Governmental Organization
NIS	National Institute of Statistics, Ministry of Planning
NR	National Road
NRC	National Radio Cambodia
OECD	Organization for Economic Cooperation and Development
PCM	Project Cycle Management
PRASAC	Programme de Rehabilitation D'appui au Secteur Agricole du Cambodge (Program of Rehabilitation and Support to the Agricultural Sector of Cambodia)
PRGF	Poverty Reduction and Growth Facility
PSI	Pre-shipment Inspection
RDB	Rural Development Bank
RGC	Royal Government of Cambodia
RMA	Rice Millers Association
SEDP	Socio-Economic Development Plan
SOE	State Owned Enterprise
S/W	Scope of Work
SWG	Special Working Group
TA	Technical Assistance
UNCED	United Nations Conference for Economic and Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United State Agency for International Development
VAT	Value Added Tax
VDC	Village Development Committee
WB	World Bank
WFP	World Food Programme
W/S	Workshop
WTO	World Trade Organization

UNITS

ft	foot/feet
ha	Hectare
kg	Kilogram
km	Kilometer
m	Meter
cm	Centimeter
M/M	Man-month
M/T	Metric ton
AUD	Australian Dollar
ECU	European Currency Unit
USD, US\$	United States Dollar
VND	Vietnam Dong