

**JAPAN INTERNATIONAL COOPERATION AGENCY
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
THE REPUBLIC OF THE PHILIPPINES**

**THE STUDY
ON
COMPREHENSIVE DISASTER PREVENTION
AROUND MAYON VOLCANO
IN
THE REPUBLIC OF THE PHILIPPINES**

FINAL REPORT

**VOLUME III: SUPPORTING REPORT (1)
(PART I: MASTER PLAN)**

October 2000

NIPPON KOEI CO., LTD.

KRI INTERNATIONAL CORPORATION

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LIST OF REPORTS

Volume I EXECUTIVE SUMMARY

Volume II MAIN REPORT

- Part I : Master Plan
- Part II : Feasibility Study

Volume III SUPPORTING REPORT (1): Master Plan

Chapter

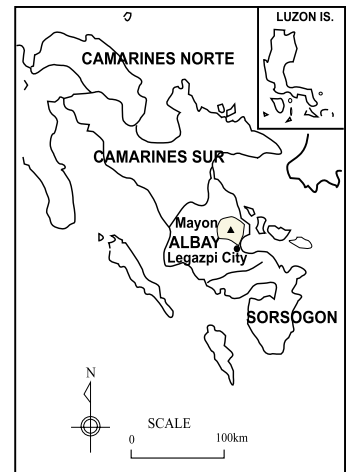
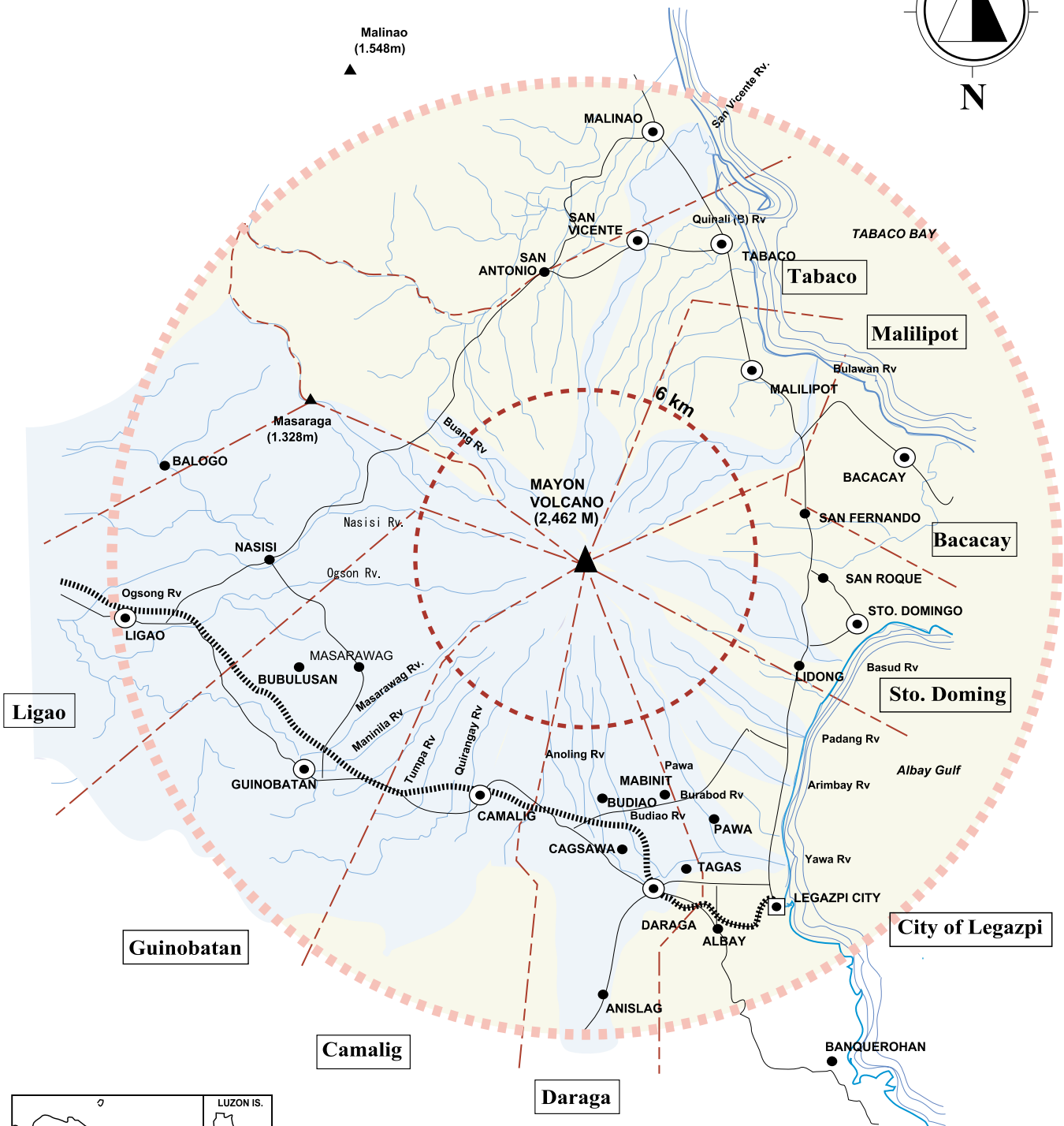
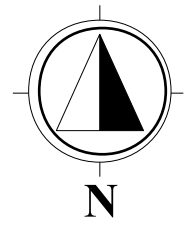
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- VI : Disaster Mapping/ Hazard Mapping
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Volume V DATA BOOK



LEGEND:	
	Approximate Study Area
	City & Municipality Boundary
	6km PDZ (Permanent Danger Zone)
	Major Road
	River
	Target River Basin
	City & Municipality
	Railway

LOCATION MAP OF THE STUDY AREA

List of Acronyms

A&D	Alienable and Disposable Land
ADB	Asian Development Bank
AFP	Armed Forces of the Philippines
Agromet	Agro-meteorological Station, PAGASA
AIT	Asian Institute of Technology
ALECO	Albay Electric Cooperative
ALERT	Albay Legazpi Emergency Rescue Team
APDMC	Asia Pacific Disaster Management Centre
ARCs	Agrarian Reform Committees
ASEAN	Association of Southeast Asian Nations
BAS	Bureau of Agricultural Statistics
BCCARD	Bicol Consortium for Agricultural Resources and Research and Development
BDCC	Barangay Disaster Coordinating Council
BFP	Bureau of Fire Protection
BMG	Bureau of Mines and Geo-science
BOI	Board of Investment
BOT	Bureau of Telecommunication
BRAIC	Bicol Regional Agri-Industrial Center
BRBFCIDP	Bicol River basin Flood Control and Irrigation Development Project
BRS	Bureau of Research and Standard, DPWH
BSBI	Bicol Small Business Institute
BSWM	Bureau of Soils and Water Management
BU	Bicol University
BUCA	Bicol University College of Agriculture
BWAD	Bacacay Water District
CARP	Comprehensive Agrarian Reform Program
CASF	Composite Air Support Force
CBIS	Community-Based Information System
CDA	Cooperative Development Authority
CDCC	City Disaster Coordinating Council
CLUP	Comprehensive Land Use Plan
CNDR	Corporate Network for Disaster Response
CSG	Cemented Sand and Gravel

DA	Department of Agriculture
DA-BFAR	Department of Agriculture – Bureau of Fisheries and Aquatic Resources
DAR	Department of Agrarian Reform
DBM	Department of Budget and Management
DCC	Disaster Coordinating Council
DECS	Department of Education, Culture and Sports
DENR	Department Environment and Natural Resources
DFA	Department of Foreign Affairs
DILG	Department of the Interior and Local Government
DOE	Department of Energy
DOH	Department of Health
DOLE	Department of Labor and Employment
DOST	Department of Science and Technology
DOT	Department of Tourism
DOTC	Department of Transportation and Communication
DPWH	Department of Public Works and Highways
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
EIA	Environmental Impact Assessment
EMB	Environmental Management Bureau
FIDA	Fiber Industry Development Authority, DA
GA	Government Agency
GDP	Gross Domestic Product
GOJ	Government of Japan
GOP	Government of the Philippines
GRDP	Gross Regional Domestic Product
GVA	Gross Value Added
HLURB	Housing and Land Use Regulatory Board
HUDCC	Housing and Urban Development Coordinating Council
IANDR	Inter-Agency Network for Disaster Response
IBRD	International Bank for Reconstruction and Development
IEE	Initial Environmental Examination
IRA	Internal Revenue Allotment
JBIC	Japan Bank for International Cooperation (Ex-OECF & EXIM)
JICA	Japan International Cooperation Agency
LARC	Local Amateur Radio Club

LBP	Land Bank of the Philippines
LGUs	Local Government Units
LINDGC	Legaspi – Iriga – Naga – Daet Growth Corridor
LTO	Land Transportation Office
LWD	Local Water District
LWUA	Local Water Utility Agency
M/D	Minutes of Discussion
MDCC	Municipal Disaster Coordinating Council
MLUC	Municipal Land Use Committee
MM	Minutes of Meeting
MMSL	Meters above Mean Sea Level
NAAD	Network of Areas for Agricultural Development
NAMRIA	National Mapping and Resource Information Authority
NAPHIRE	National Post Harvest Institute for Research and Extension
NCDPP	National Calamities and Disaster Preparedness Plan
NDCC	National Disaster Coordinating Council
NEDA	National Economic and Development Authority
NFA	National Food Authority
NGAs	National Government Agencies
NGOs	Non-Government Organizations
NHA	National Housing Authority
NIA	National Irrigation Administration
NIPAS	National Integrated Protected Areas System
NPC	National Power Corporation (or NAPOCOR)
NPAAD	Network of Protected Areas for Agricultural Development
NSCB	National Statistical Coordination Board
NSO	National Statistics Office
NTC	National Telecommunication Commission
OCD	Office of Civil Defense
O&M or O/M	Operation and Maintenance
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAMB	Protected Area Management Board
PCA	Philippine Coconut Authority
PCM	Project Cycle Management
PCBTSDP	Presidential Commission on Bicol Tourism Special Development Project

PCG	Philippine Coast Guard
PD	Presidential Decree
PDCC	Provincial Disaster Coordinating Council
PDMO	Provincial Disaster Management Office
PDZ	Permanent Danger Zone
PFDA	Philippine Fishery Development Authority
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PHO	Provincial Health Office
PIA	Philippine Information Agency
PNRC	Philippine National Red Cross
PMO	Project Management Office
PMS	Presidential Management Staff
PNP	Philippine National Police
PNR	Philippine National Railways
PPA	Philippine Port Authority
PPDO	Provincial Planning and Development Office
PPFP	Provincial Physical Framework Plan
PRA	Participatory Rural Appraisal
PSWDO	Provincial Social Welfare and Development Office
PTA	Philippine Tourism Authority
RA	Republic Act
RDC	Regional Development Council
RDCC	Regional Disaster Coordinating Council
RRA	Rapid Rural Appraisal
SIADs	Sub-Integrated Area Development Units
SRA	Social Reform Agenda
SW	Scope of Works
TESDA	Technical Education and Skills Development Authority
TLRC	Technology Livelihood Resource Center
TOR	Terms of Reference

Measurements

Length

mm	=	millimeter
cm	=	centimeter
m	=	meter
km	=	kilometer
LM	=	linear meter

Area

m ²	=	square meter
ha	=	hectare
km ²	=	square kilometer

Volume

cm ³	=	cubic centimeter
l	=	liter
kl	=	kiloliter
m ³	=	cubic meter

Derived Measures

m/s	=	meter per second
m ³ /s	=	cubic meter per second
kWh	=	kilowatt hour
MWh	=	megawatt hour
GWh	=	gigawatt hour
PPM	=	parts per million

Weight

g	=	gram
kg	=	kilogram
ton	=	metric ton

Currency

PHP	=	Philippine Peso
¥	=	Japanese Yen
US\$	=	US Dollar

Time

s	=	second
min	=	minute
hr	=	hour
d	=	day
y	=	year

Other Measure

%	=	percent
°	=	degree
°C	=	degree(s) Celsius
10 ³	=	thousand
10 ⁶	=	million
10 ⁹	=	billion
kmph	=	kilometer per hour

Energy

W	=	Watt
kw	=	kilowatt

Fiscal Year

January 1 to December 31

Exchange Rate

(As of July 1999)

US\$ 1 = PHP38.2

US\$ 1 = ¥122.4