

*The Study on Sabo and Flood Control for Western River Basins of Mount Pinatubo
in the Republic of the Philippines
Final Report
Supporting Report*

Figures

Structural
Bucao River
 1) Heightening of existing right dike (l=7.5 km) and construction of new dike downstream from the bridge (l=2.1 km on left bank, l=2.4 km on right bank)
 2) Reconstruction of Bucao Bridge (321 lm)
 3) Observation of hydrological/geological data at Maraunot Notch
 <to be included in the warning system>

Project Cost: 1,678 million pesos
 EIRR: 15.7%
 Environment: No particular issues
 Resettlement: 29 families (as of May 2003)
 Schedule: 2007-2010 (construction)



Bucao Bridge (during Flood)

CDPP
Agricultural Development on Lahar Area
 Pilot project for agricultural development on lahar as pilot development scheme for 10 ha in the Bucao downstream and 10 ha for the Sto. Tomas middle reach.

Project Cost: 19 million pesos (pilot)
 EIRR: 9.8%
 Environment: No particular issues
 Social Impact: Positive impact for poverty reduction
 Schedule: 2008-2010 (20 ha)



Present

Future image

CDPP
Community Road Rehabilitation
 Community road rehabilitation in Bucao River basin for route-A1 of 16 km

Project Cost: 189 million pesos (Route-A1)
 EIRR: 2.1%
 Environment: Positive impact for forest management
 Social Impact: Positive impact for poverty reduction, and enhancement of social services
 Schedule: 2005-2007



Baquilan Bridge

Non-structural
Warning System
 7 Rainfall/6 water level gauging stations, one monitoring station, and dissemination/transmission system with cellular phone network, radio and siren
Evacuation System
 Designation of 10 evacuation centers and dissemination of hazard map

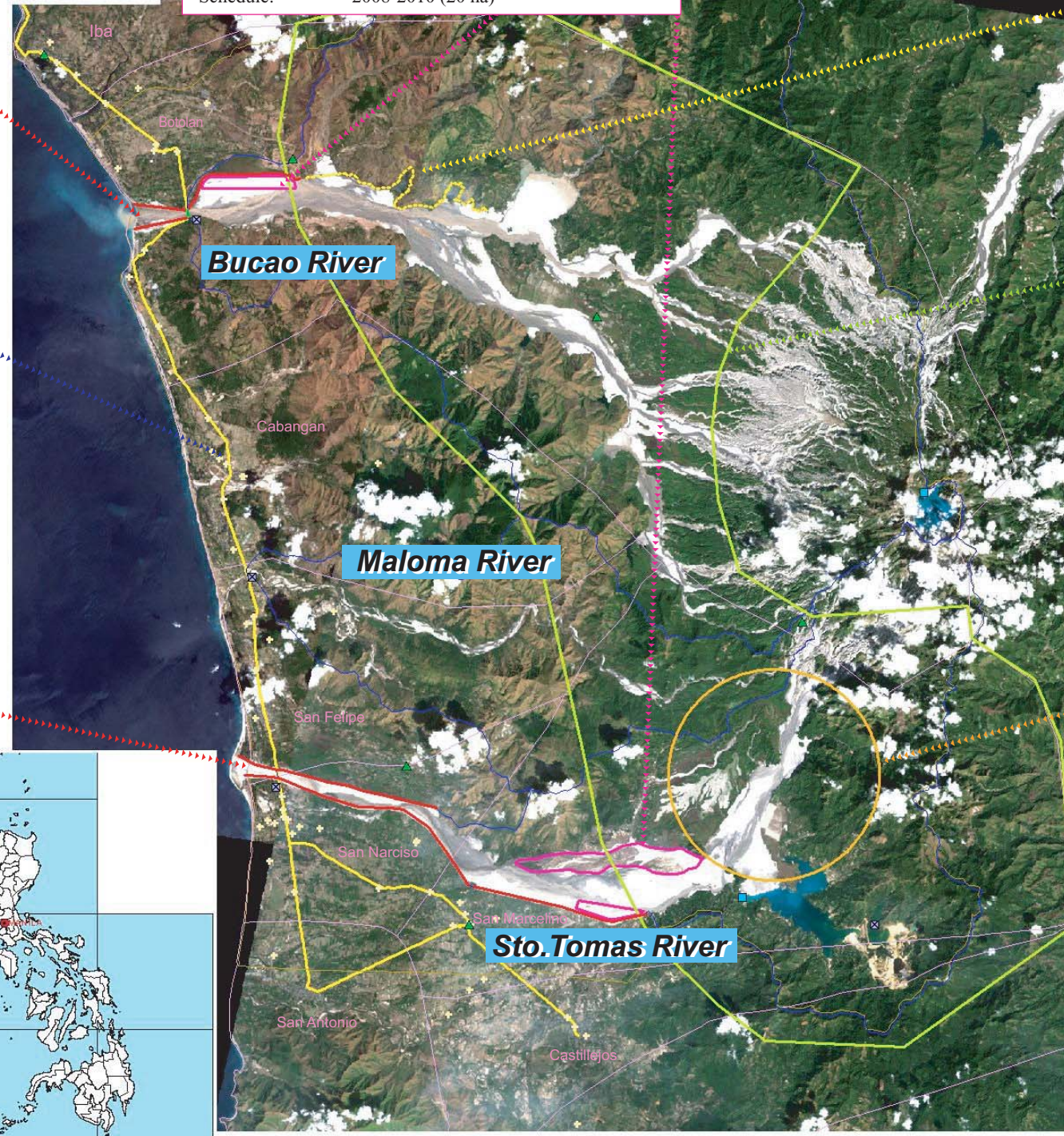
Project Cost: 30 million pesos (operation for 10 years)
 82 million pesos (GSM)
 EIRR: Not calculated
 Environment: No particular issues
 Social Impact: Positive impact to secure human life
 Schedule: 2003-08 (pilot operation)
 2007-12 (GSM system)

Structural
Sto. Tomas River
 Heightening of existing dike (l=13.4 km), strengthening of existing dike (l=13.9 km) and construction of new dike (l=2.0 km) with Gabor River drainage improvement (l=1.7 km)

Project Cost: 1,960 million pesos
 EIRR: 26.3%
 Environment: No particular issues
 Resettlement: 77 families (as of May 2003)
 Schedule: 2007-2010 (construction)

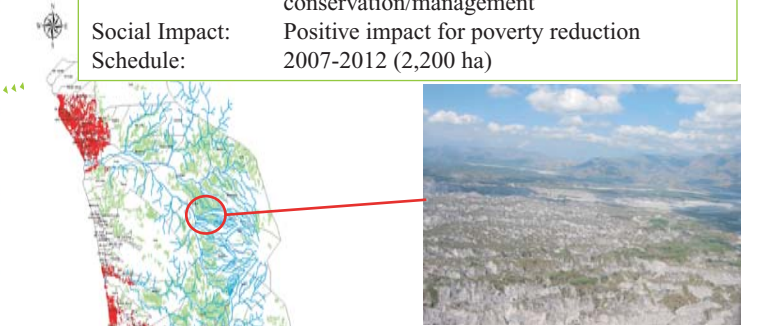


Sto. Tomas River (Middle reach, looking downstream)



CDPP
Community-based Forest Management (CBFM)
 Extension of CBFM with 2,200 ha as pilot development scheme

Project Cost: 76 million pesos (pilot)
 EIRR: 21.5%
 Environment: Positive impact for forest conservation/management
 Social Impact: Positive impact for poverty reduction
 Schedule: 2007-2012 (2,200 ha)



Priority Development Area of CBFM (green)

CDPP
Establishment of Aeta Assistance Station (AETAS)
 Support to NGOs' activities for Aeta Upland Farming school, assistance for registration of ancestral domain land, livelihood development program and detailed study for establishment of Aeta Assistance Station.

Project Cost: 15 million pesos
 EIRR: Not calculated
 Environment: Positive impact for forest management
 Social Impact: Positive impact for prevention of tradition, culture of Aeta tribe
 Schedule: 2005-2009 (pilot scheme)

- Monitoring
- ▲ Rain
 - Rain&WaterLevel
 - ⊠ WaterLevel
 - Evacuation Center
 - Bucao Bridge
 - Community Road
 - River Structural Measure
 - Non Structural Measure
 - CBFMProject
 - Lahar Agriculture
 - AETAs
 - Watershed boundary
 - Municipality boundary
 - Project Area



Aeta people

5 0 5 10 Kilometers

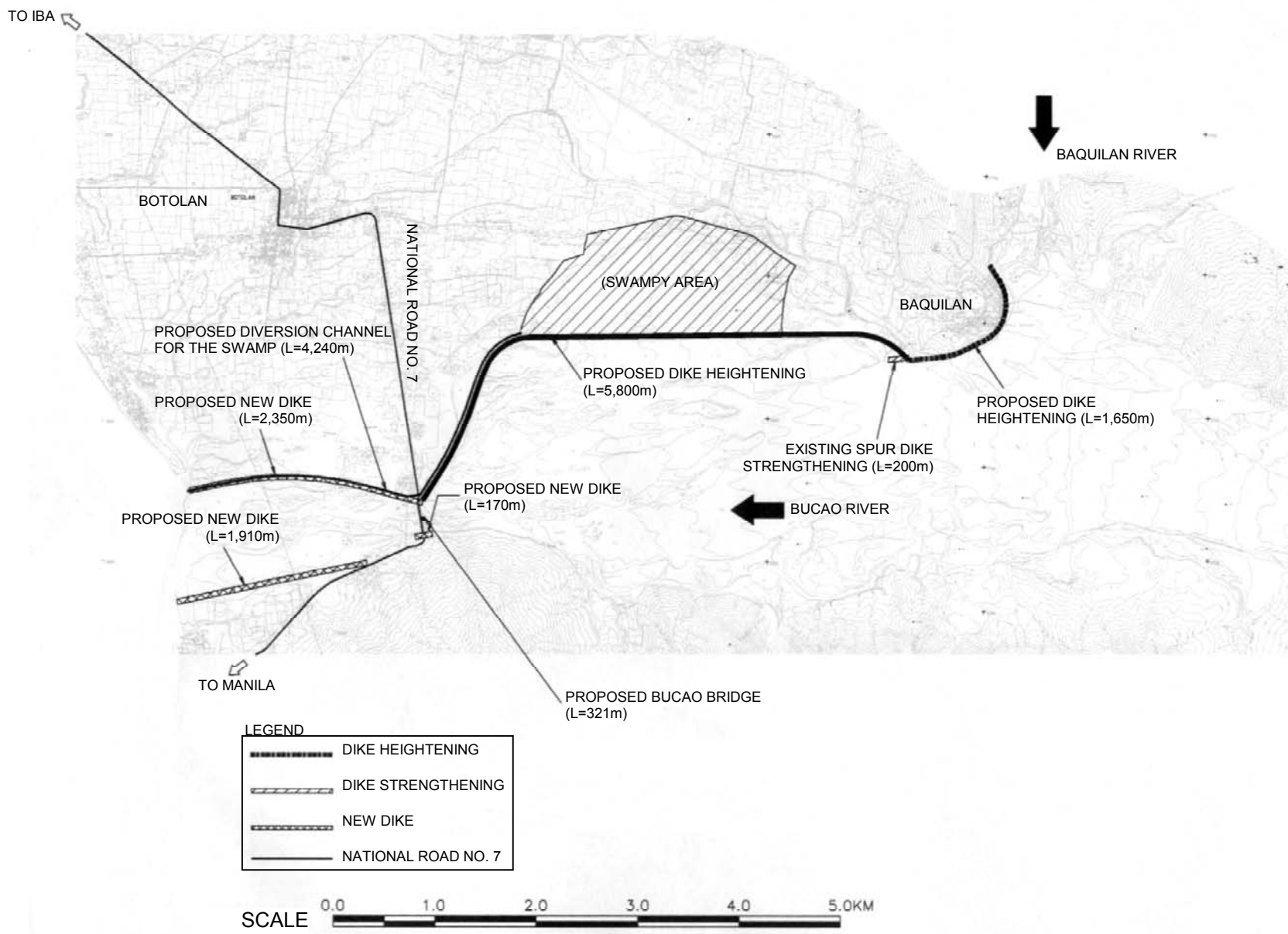
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Figure 1.1.1

Priority Projects Location Map



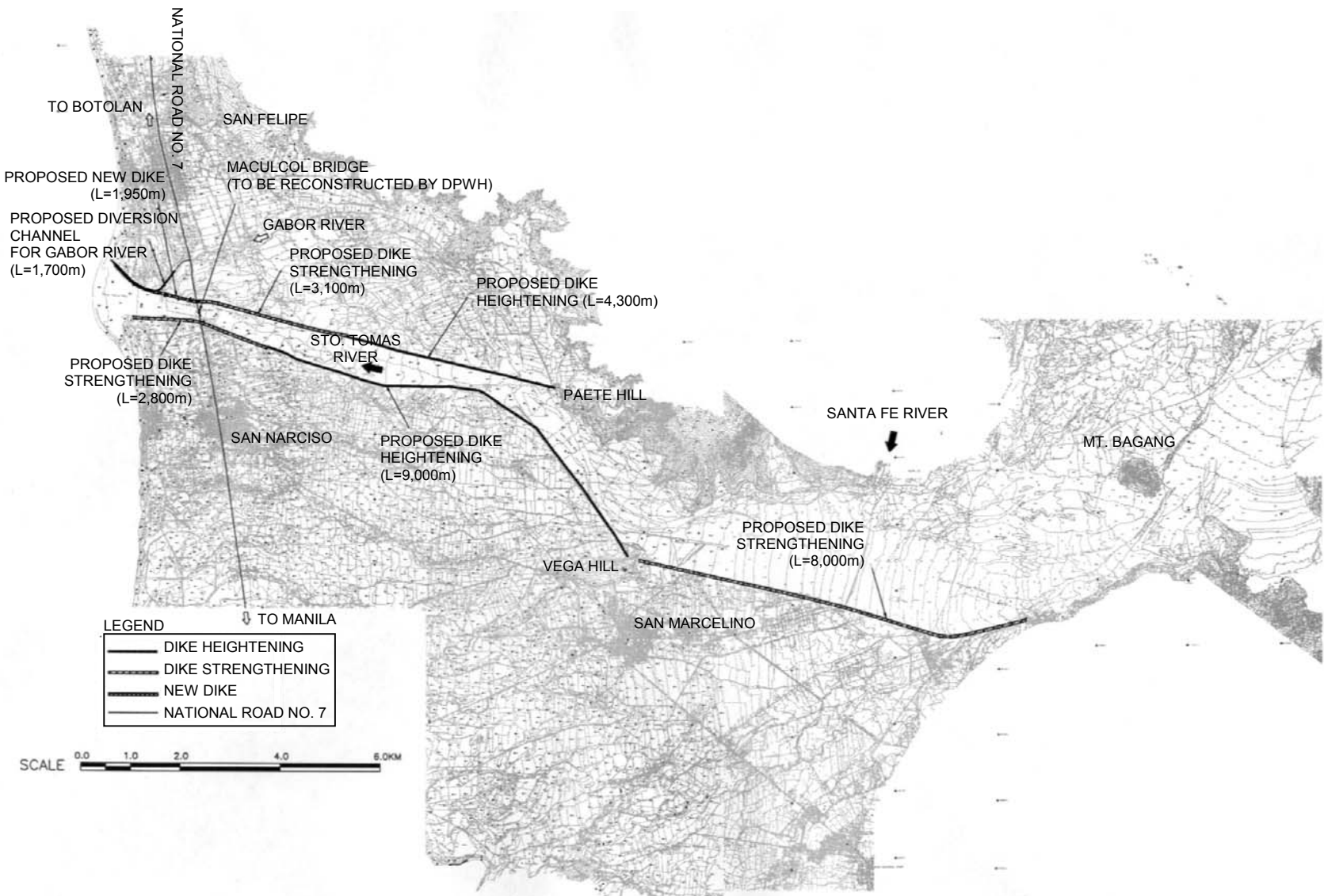
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Figure 2.3.1

Locations of the Bucao River Dikes



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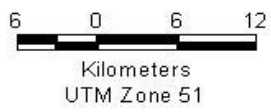
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Figure 2.3.2

Locations of the Sto. Tomas River Dikes

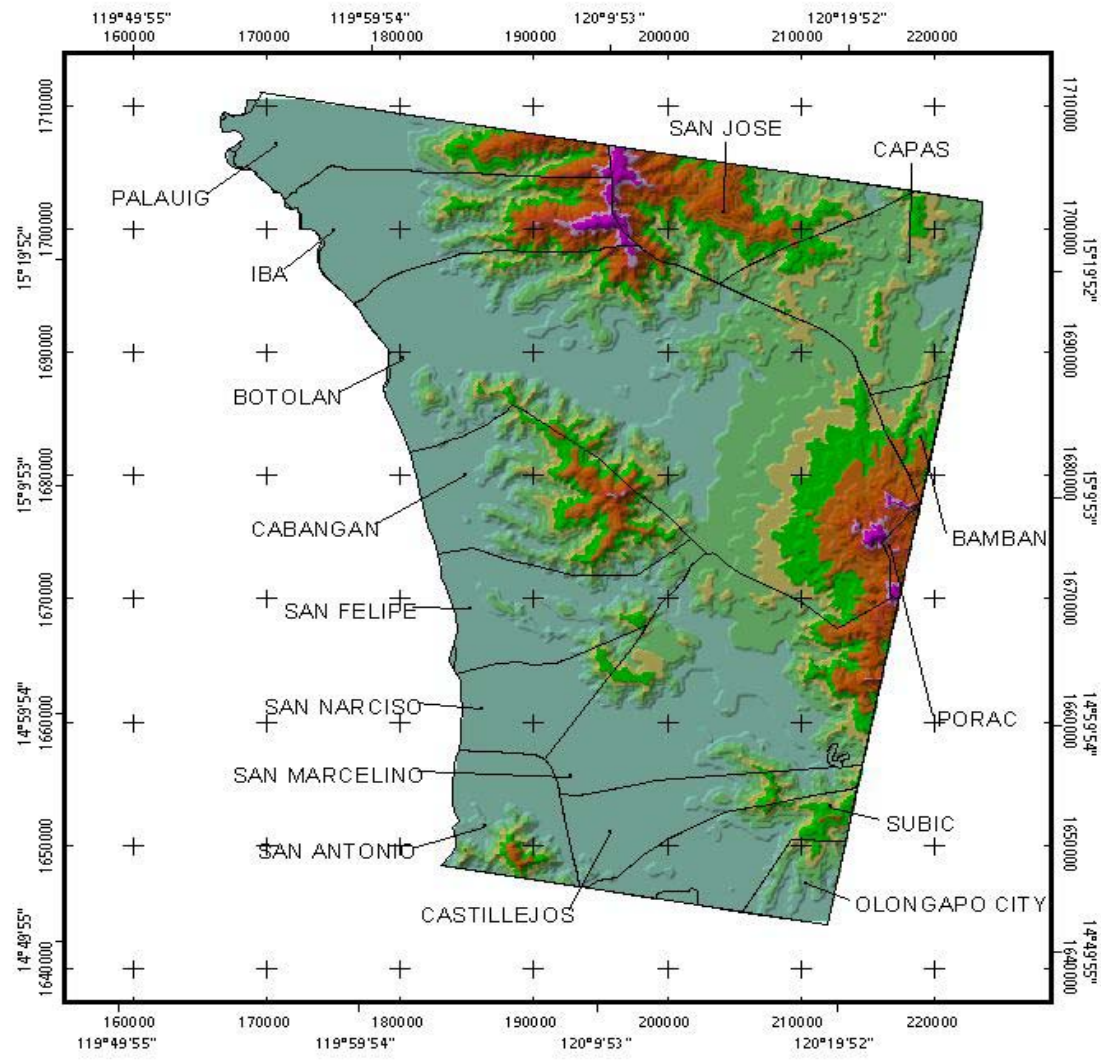
ELEVATION MAP



LEGEND:

Elevation (masl)	
100 - 260	100 - 260
260 - 419	260 - 419
419 - 579	419 - 579
579 - 739	579 - 739
739 - 899	739 - 899
899 - 1058	899 - 1058
1058 - 1218	1058 - 1218
1218 - 1378	1218 - 1378
1378 - 1538	1378 - 1538
1538 - 1697	1538 - 1697

Map Source:
 Contour: 100 meters contour interval
 Topographic Map
 Boundary: SPOT Satellite: April 2002
 Map Generated By: GTS, Inc.
 Date Created: 24 June 2002

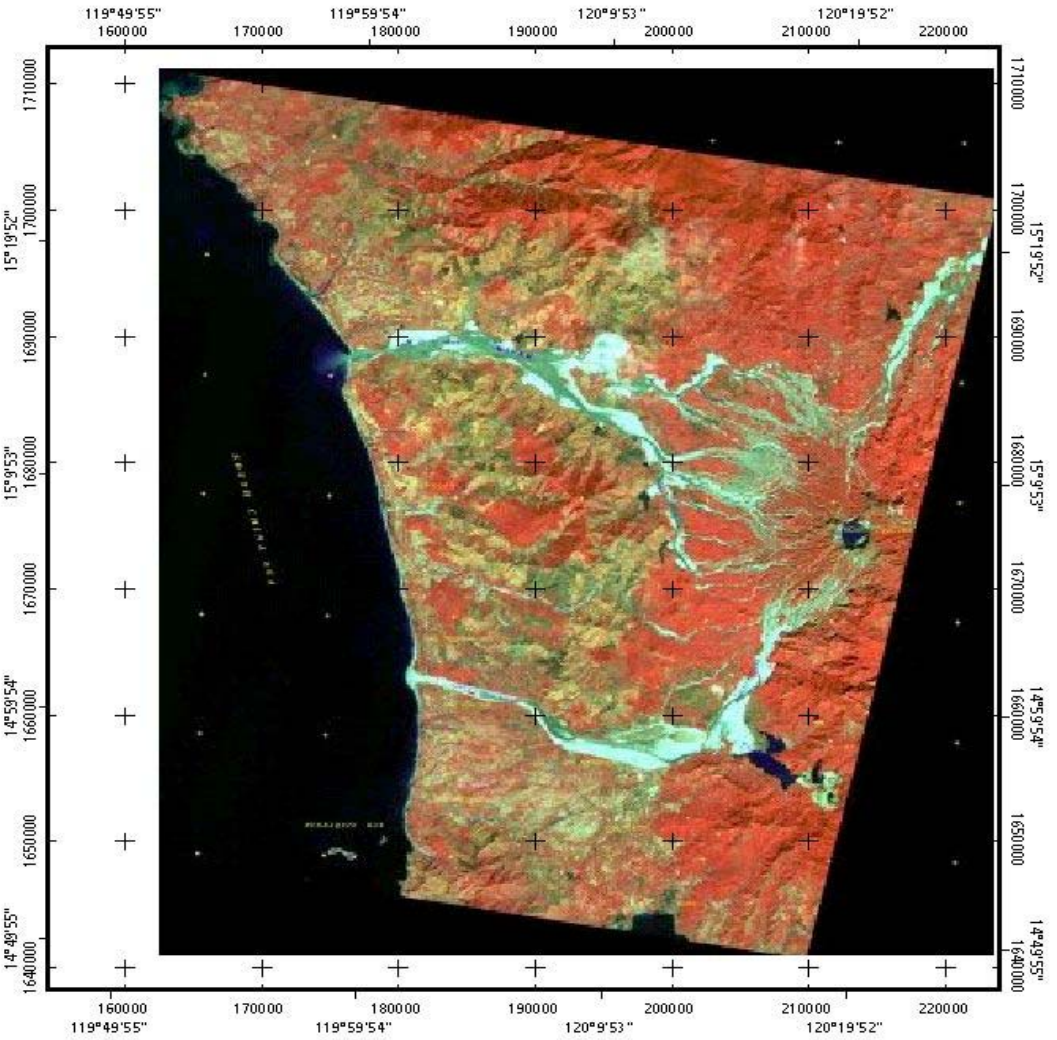
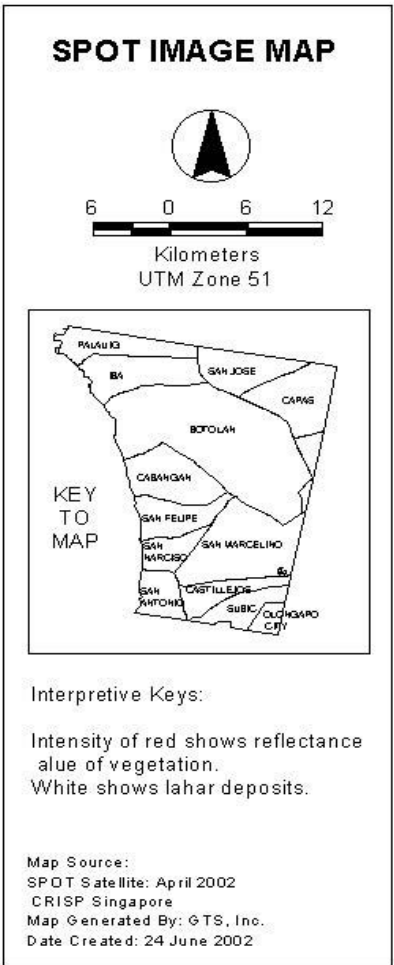


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**Figure 3.1.1
 Topographic Map, (Provincial)**

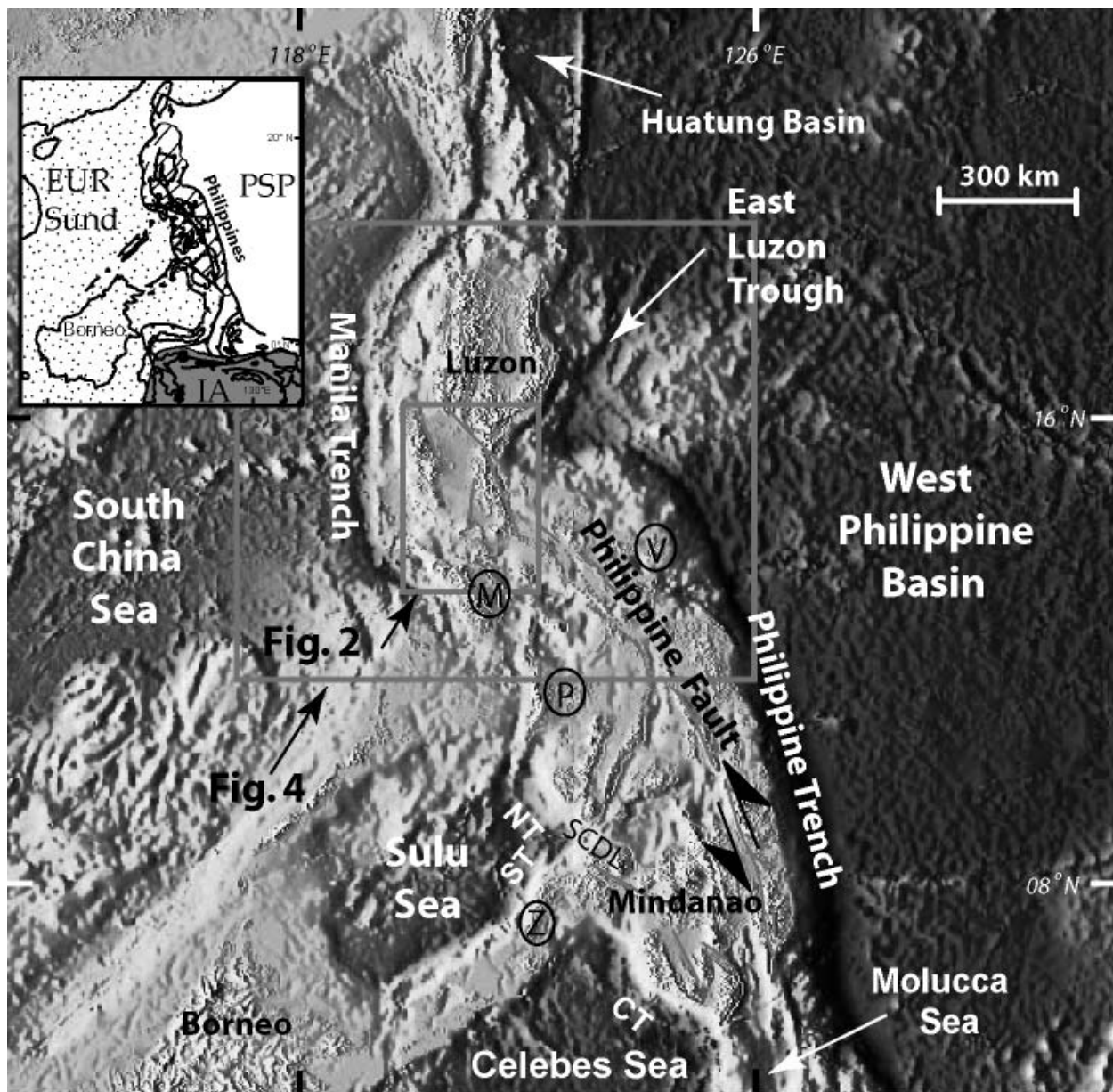


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Figure 3.1.2
Spot Images Map



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Figure 3.1.3
Principal Tectonic Features in the Philippines