

**Annex 14 The contents of the guideline**  
**Overall Implementation Plan of ISDM for Mt. Merapi Model Area**

**Contents**

	<b>Page</b>
1. Introduction	1-1
2. Target of phenomenon	2-1
3. Socio-economic condition in the area	3-1
4. Estimation of the amount of basic sediment	4-1
4.1 Estimation of unstable sediment	4-1
4.2 Estimation of the transportable sediment	4-4
4.3 Conclusion of the target amount of sediment	4-6
5. Setting of the hazardous area under the present condition of Sabo facilities	5-1
6. Countermeasure planning	6-1
6.1 Facilities planning	6-1
6.1.1 Erosion and sediment control	6-1
6.1.1.1 Basic concept	6-1
6.1.1.2 Layout of Sabo facilities	6-1
6.1.1.3 Participation of local people to this plan	6-7
6.1.2 Priority and conclusion of Sabo facilities	6-8
6.1.3 Design Sabo facilities	6-9
6.2 Plan of warning and evacuation system	6-22
6.2.1 Target area under the planning condition of Sabo facilities	6-22
6.2.2 Setting contents and methods of communication about warning and evacuation information	6-25
6.2.3 Assumption of warning and evacuation method (a method, a route, a place)	6-29
6.2.4 Timing of warning and evacuation level	6-29
6.2.5 Making a Hazardous area map	6-29
6.2.6 Cooperation with local people, NGO and administration	6-34
6.2.7 Making of implementation plan for training of warning and evacuation drill	6-35
6.2.8 Socialization and enlightenment to the local people	6-35

Annex 15 Contents of manual for Making Hazard Map of  
Sediment Related Disaster - Debris flow / Mudflow - (DRAFT)

CONTENTS

Chapter 1 Introduction

Purpose

Chapter 2 Standard investigation

2.1 Investigation procedure

2.1.1 Content of investigation

2.2 Content of investigation

2.2.1 Prepared material and equipment

2.2.2 Investigation procedure

2.2.3 Method of calculating peak discharge

2.2.4 Decision of magnitude of targeted mudflow

2.2.5 Method of calculating Flow velocity and water depth of mudflow

2.3 Topography investigation

2.3.1 Cross section

2.3.2 Bed material investigation

2.4 Investigation of past sediment related disaster

2.4.1 Flood mark investigation

2.4.2 Interview to local residents

2.4.3 Investigation of location of houses and roads

Chapter 3 Presumption of hazard area

3.1 Method of establishing hazard area by using the topographic map

3.1.1 Method of extracting the reference point

3.1.2 Method of extracting the end of hazard area

3.2 Presumption of hazard area

Chapter 4 Setting the refuge area and evacuation route

4.1 Calculation of required time for evacuation

4.1.1 Calculation of time of debris flow concentration

4.1.2 Calculation of required time of information

4.1.3 Calculation of required time of evacuation

[ Example of Calculation at Gendol River ]

4.2 Setting the refuge area

- 4.2.1 Picking up the provisional refuge area
- 4.2.2 Investigation the provisional refuge area
- 4.2.3 Setting the refuge area
- 4.3 Setting the evacuation route
- 4.3.1 Picking up the provisional evacuation route
- 4.3.2 Investigation the provisional evacuation route
- 4.3.3 Setting the evacuation route

#### Chapter 5 Making the hazard map

- 5.1 Basic concept of making the hazard map
- 5.1.1 The study of the concept
- 5.1.2 Form
- 5.1.3 Size
- 5.2 The study of the decision of legend
- 5.2.1 The study of contents of the hazard map
- 5.2.2 The study of the mark of the hazard map

#### Chapter 6 Hearing the comment

- 6.1 Hearing the comment about hazard map draft
- 6.1.1 Preparing for hearing
- 6.1.2 Executing the hearing
- 6.1.3 Revising the hazard map

#### Chapter 7 The method of spreading a hazard map

- 7.1 Study of method of spreading a hazard map
- 7.1.1 Target of distributing a hazard map
- 7.1.2 Study of method of spreading

#### Chapter 8 Updating a hazard map

- 8.1 Updating a hazard map
- 8.1.1 Investigating and arranging period of volcanic activities
- 8.1.2 Study of the period and content of updating
- 8.1.3 Study of the method of updating

Annex 16 Contents of the Manual for  
the investigation methods of the Slope Disaster (Draft)

CONTENTS

PREFACE

The investigation methods of the slope disaster

1. Review	-----	1
2. The investigation of the slope disaster	-----	1
2.1 Purpose	-----	1
2.2 Outline	-----	1
2.3 The definition of the hazard area for slope disaster	-----	1
2.4 The extraction of the area for field investigation	-----	3
2.5 The attention point	-----	7

Annex 17 Survey and Zoning Manual for Streams Susceptible to Debris Flows  
(Draft)

A table of Contents

1. General description
  - 1.1 Objective of the survey
  - 1.2 Scope
  - 1.3 Expected user
  - 1.4 Outline of the survey methods
  - 1.5 Survey materials
  - 1.6 Definition of debris flow hazard area
2. Semi-quantitative geomorphologic engineering method
  - 2.1 Break of slope line (BS line)
  - 2.2 Valley landscape
  - 2.3 Outlet of valley and sediment flood initiation point
  - 2.4 Debris flow farthest reaching line (FR line)
  - 2.5 Debris flow hazard area
3. Qualitative survey method
  - 3.1 Debris flow farthest reaching line (FR line)
  - 3.2 Debris flow hazard area
4. Verification by field survey
  - 4.1 Break of slope line (BS line)
  - 4.2 Valley landscape
  - 4.3 Outlet of valley and sediment flood initiation point
  - 4.4 Debris flow farthest reaching line (FR line)
  - 4.5 Debris flow hazard area
5. Glossary and Notation in the manual

Annex 18 Contents of manual to investigate sediment-related disaster (primary)  
(draft)

**Contents**

	Page
1. Introduction -----	2
2. Objective of the disaster investigation -----	2
3. Application of this manual -----	2
4. Image flow of disaster countermeasure -----	2
5. Outline of the disaster investigation -----	4
6. Items and Methods for disaster investigation -----	6
6.1 Investigation items of common matters -----	6
6.2 Investigation items of debris flow -----	6
6.3 Investigation items of landslide -----	8
6.4 Investigation items of slope failure -----	10
7. Method of sketching -----	12
7.1 Plane figure -----	12
7.2 Cross section -----	18
8. Method of taking photograph -----	20
9. Making the investigation sheet -----	29