
CONTENT

PREFACE	3
CONTENT	5

PART 1. GUIDELINE FOR WOREDA LANDSCAPE MANAGEMENT

AND PRE-PLANNING ACTIVITIES

LIST OF FIGURES	10
1-1 INTRODUCTION	11
1-2 MAIN ACTORS IN LANDSCAPE AND WATERSHED MANAGEMENT PLANNING	13
1-3 MAIN DEFINITION	15
1-4 ADMINISTRATIVE COOPERATION PROCEDURES	17
1-5 WOREDA PRE-PLANNING WORK	19
1-5.1 Identification of kebele and critical watershed units in woreda	19
1-5.2 How to obtain or create map documentation for woreda pre-planning work	21
1-5.3 Map scale	22
1-6 MAP DOCUMENTATION AND TOOLS FOR WOREDA PRE-PLANNING WORK	23
1-6.1 Landscape Management Plan (LMP)	23
1-6.2 Methodological approach of data analysis and map production for the LMPs	26
1-6.3 Surface runoff and watershed delineation	31
1-6.4 Electronic data collection for LMPs creation	34
1-7 INSTITUTIONAL CAPACITY BUILDING IN LANDSCAPE MANAGEMENT PLANNING	35
1-8 LANDSCAPE MANAGEMENT PLANNING AND INTEGRATED WATERSHED MANAGEMENT	37
1-8.1 Main challenges of soil and water conservation	37
1-8.3 Best practices for cultivated land	38
1-8.4 Best practices for grassland	39
1-8.5 Best practices for forestland	39
1-8.6 Other recommendation	39
1-9 REFERENCES	40

PART 2. SOIL AND GEO-HAZARDOUS PHENOMENA MAPPING

2-10 SOIL SURVEY AND EXOGENOUS GEOLOGICAL HAZARDS MAPPING ...	42
2-10.1 Existing data	42
2-10.2 Soil survey design	48
2-10.3 Documentation	50
2-10.4 Methodology of geological hazard analysis	51
2-11 FIELD INVESTIGATION AND SAMPLING	55

2-11.1 Technical equipment	55
2-11.2 Soil profile description	56
2-11.3 Soil sampling	62
2-11.4 Exogenous geological hazards documentation	62
2-11.5 Geological hazards documentation	65
2-12 LABORATORY DATA	67
2-12.1 Sample preparation	67
2-12.2 Soil analyses	68
2-13 SOIL CLASSIFICATION	71
2-13.1 Reference Soil Groups in Ethiopia	74
2-13.2 Soil-landscape relationships	75
2-14 COMPILATION OF MAPS	76
2-14.1 Map components	76
2-14.2 Soil map	76
2-14.3 Map of geological hazards	78
2-14.4 Digital soil mapping	79
2-15 NEW TECHNOLOGIES IN GEOLOGICAL HAZARD ASSESSMENT AND SOIL MAPPING.....	81
2-16 REFERENCES	83
ANNEXES	85
Annex 1 – A form for soil documentation.....	85
Annex 2 – Characteristics of predominant soils in the mapped area	86