

Contents

	<i>page</i>
Preface	iii
Acknowledgements	v
List of tables	xi
1 African environments and resources: an overview	1
Introduction to the African environment	1
Conceptions and misconceptions about the African environment	13
Introduction to development issues in Africa	19
Conclusions	33
2 The African environment: an historical overview	36
◊ Geologic and geomorphologic background	36
The history of climatic change	41
The impacts of climatic change on land–water relationships	54
Conclusion	69
3 The patterns of political change: relationship to the environment	71
Precolonial	71
Colonial period	76
Independence	95
Population	96
Urbanization	97
Sedentarization	100
Rural populations	101
Agricultural crops and change	103
Livestock	107
Industrial growth	109
Land disturbance	109
Water–air pollution	110
Water and energy sources	110
Transport systems	111
Summary	112
4 Tropical rainforest environments	114
Introduction	114
General population prospectives	117

CONTENTS

Current trends in areal coverage of rainforest	118
The macroclimatic characteristics: a brief introduction	119
Microclimate	127
Vegetation attributes	130
Soil properties of rainforest areas	132
Hydrology of rainforest areas	134
Rivers of the rainforests	136
Human activities: resource use	142
Summary	153
5 The dry areas	155
Introduction	155
The deserts: myth and reality in environmental conditions	160
Important environmental processes in dry areas	168
Patterns of resource use in dry areas	170
6 The savanna and dry-forest environments	202
Introduction	202
Climate	204
Other factors in the savanna and dry-woodland ecology	210
Farming and grazing in the savanna: an overview	214
East Africa: a case study of the savanna	223
Conclusion	243
7 The highlands	244
Introduction	244
The highlands of eastern and central Africa	245
Characteristics of highland environments	248
Rural population in the highlands	259
River basins and some impacts of development	260
Conservation practices within highland river basins	263
Agroclimatologic zones: a Kenyan Highland example	272
General conclusions	281
8 Extratropical and southern Africa	282
Definitions and purpose of this chapter	282
The Mediterranean area	282
Extratropical southern Africa	293
9 Water: a scarce resource	308
Introduction	308
Precipitation and water-balance patterns	308
River characteristics	312

CONTENTS

African lakes	322
Swamps	335
The Sudd and Jonglei Drainage Project	336
Summary	338
10 Urban and industrial growth	339
General population growth in Africa	339
Urban population growth in Africa	340
Industrial growth	343
Distribution and classification of cities	346
Summary and conclusions	365
11 Minerals, industry, and the environment	366
Introduction	366
Minerals, mining, and the environment	367
Industries and the environment	374
Summary	377
12 Environment and development in Africa: a review and prospect	378
Introduction	378
The general characteristics of the African environment	378
Historical patterns of resource use	380
Special issues related to ecologic zones in Africa	381
Urban Africa	386
Water systems	387
Trends in African development	387
Critical development and environment issues for Africa	388
Environment and development in Africa: the next two decades	393
References and Bibliography	394
Index	401