

Contents

PRINCIPLES AND SUMMARY

1 Switzerland: Environmental Parameters	9
1.1 Geology	10
1.2 Climate and weather	10
1.3 Hydrology	10
1.4 Natural resources	13
1.5 Nature and landscape	13
1.6 Population and economy	14
1.7 Political structure	15
1.8 State of the environment	15
2 Environmental monitoring and legislation	17
2.1 Co-ordination	16
2.2 Surveys	17
2.3 Example: material flux	17
2.4 Aggregation and interpretation of data	19
2.5 Legal framework and implementation	20
3 Sustainable development	22
3.1 Switzerland is living beyond its means	23
3.2 The "Sustainable development in Switzerland" strategy	24
3.3 Integrated environmental protection	26
3.4 Switzerland's commitment to international efforts	27

PART 1 THE ENVIRONMENT AND POLLUTION

10 Soil	33
10.1 Fundamentals	34
10.2 Man-made impacts on soils	36
10.3 Natural contamination	40
10.4 Sources of contaminant inputs into soils	40
10.5 The objectives of soil protection	40
10.6 Soil protection in law	41
10.7 Other means of protection	42
10.8 Research	43
11 Water	45
11.1 Fundamentals	46
11.2 The state of Switzerland's water bodies	48
11.3 Sources of pollution	53
11.4 Water protection	56
11.5 Outlook	59
11.6 Research	61
12 Air	65
12.1 Fundamentals	66
12.2 Air pollution	68
12.3 Consequences of air pollution	76
12.4 Clean air policy	78
13 Climate	85
13.1 Fundamentals	86
13.2 Warming of the Earth's surface	87
13.3 Gases affecting climate	88
13.4 Effects of climate change	90
13.5 Switzerland's policy on climate	91
13.6 Research	93
14 Biodiversity and landscape diversity	95
14.1 Fundamentals	96
14.2 Habitat diversity	97
14.3 Landscape diversity	102
14.4 Biodiversity	104
14.5 Co-ordinated protection	109

15 Natural hazards, major accidents	115
15.1 Natural hazards – fundamentals	116
15.2 Damage caused by natural hazards	117
15.3 Management of natural hazards in Switzerland	119
15.4 Research	121
15.5 Accident prevention – fundamentals	122
15.6 Progress made in major accident prevention	123
15.7 Major accident prevention – a never-ending task	125

16 Noise	127
16.1 Fundamentals	128
16.2 Emissions and pollution levels	129
16.3 The consequences of noise	133
16.4 Noise abatement	135
16.5 Noise abatement policy	136

17 Waste and contaminated sites	139
17.1 Fundamentals	140
17.2 Waste in Switzerland	141
17.3 Strategies and concepts in Swiss waste management	142
17.4 Municipal waste	146
17.5 Building waste	150
17.6 Special waste	150
17.7 Contaminated sites and their remediation	153
17.8 Policy on waste and contaminated sites: current concerns	155
17.9 Research	160

18 Substances and organisms	163
18.1 Substances	164
18.2 Organisms and biotechnology	171

19 Radiation	177
19.1 Radioactivity	178
19.2 Electromagnetic fields	184
19.3 UV radiation	188

PART 2 PARTNERS FOR SUSTAINABLE DEVELOPMENT

20 Population and Economic Development	193
20.1 Fundamentals	194
20.2 Population trends	194
20.3 Living conditions	196
20.4 Consumer behaviour	198
20.5 Economic trends	198

21 Agriculture, forestry, fisheries and hunting	203
21.1 Agriculture	204
21.2 Forestry and wood	210
21.3 Fisheries and game	214

22 Industry	219
22.1 Fundamentals	220
22.2 Environmental pollution by industry	220
22.3 Private-sector environmental protection	223
22.4 The environment as an economic factor	226
22.5 Private- and public-sector research	

23 Services and Government Offices	229
23.1 Fundamentals	230
23.2 Banks and ecology	231
23.3 Insurers and ecology	233
23.4 Large retailers and environmental protection	234
23.5 Environmental protection in government offices	235



24 Leisure and tourism	239	32 Spatial planning and ecology	311
24.1 Basic principles	240	32.1 Fundamentals	312
24.2 The impacts of tourism on the environment	241	32.2 Trends in spatial development	313
24.3 Protection efforts in Switzerland	247	32.3 Strategies for spatial planning in Switzerland	314
24.4 Planning of forest development	249	32.4 Planning instruments designed to protect nature and the landscape	315
24.5 Research	249	32.5 Environmental impact assessments	319
25 Transport	251	32.6 Strategies and the need for action	320
25.1 Fundamentals	252	32.7 Research at the federal and university level	322
25.2 Patterns of transport: We all want to be mobile	252	33 International policies	325
25.3 The uninterrupted growth of traffic	253	33.1 Fundamentals	326
25.4 Transport: a delicate environmental balance	256	33.2 Follow-up to the Rio conference on environment and development	328
25.5 Costs and effects on the quality of life	259	33.3 International agreements	329
25.6 Switzerland's transport policy	262	33.4 Participation in international bodies	332
25.7 Private- and public-sector research	264	33.5 Financing mechanisms	334
26 Energy	267	33.6 Results of international environmental policies, and Switzerland's priorities	336
26.1 Fundamentals	268	33.7 Research	337
26.2 Production and consumption of energy in Switzerland	269	34 Health	339
26.3 Environmental pollution from energy provision	275	34.1 Fundamentals	340
26.4 Legislation and energy policy	281	34.2 The impact of environmental pollution on health	341
26.5 Research	281	34.3 Health expenditure	346
27 Army and civil defence	283	34.4 The "Environmental Health" action plan	347
27.1 Army	284	34.5 Research	348
27.2 Civil defence	288	35 Energy-saving and renewable energy sources	351
PART 3 CO-ORDINATED PROTECTION FOR THE ENVIRONMENT		35.1 Fundamentals	352
30 Environmental expenditure	293	35.2 Energy 2000	352
30.1 Fundamentals	294	35.3 Efficient use of energy	353
30.2 Pilot study	294	35.4 New renewable energy sources	354
30.3 Integration of environmental factors into the national accounts	298	35.5 Legislation, implementation and research	359
30.4 Valuation of environmental performance	299	36 Public awareness about the environment	363
31 Economic instruments	301	36.1 Background	364
31.1 Fundamentals	302	36.2 The Swiss Environmental Survey	364
31.2 Overview: What's the situation in Switzerland today?	302	36.3 Environmental action – caught between the idea and the practical	370
31.3 Financing on a "polluter pays" basis	303	36.4 The role of the authorities in environmental communication	371
31.4 Incentive taxes	304	INDEX	375
31.5 The CO ₂ law	306		
31.6 Voluntary measures	307		
31.7 Environmental management systems	307		
31.8 Outlook	308		