

Contents

<i>Acknowledgment</i>	3
<i>Extended Summary</i>	11
<i>Introduction</i>	13
1. Basic Characteristics of the Basin	15
1.1 Location and Accessibility.....	15
1.2 Population, Settlements and Health Status.....	16
1.3 Land Use.....	21
2. Selected Physical and Geographical Settings	23
2.1 Geomorphology	23
2.2 Soil and Vegetation Cover.....	24
2.3 Climatic Characteristics.....	26
2.3.1 Climatic Zones and Measurements.....	27
2.3.2 Precipitation.....	29
2.4 Hydrography and Hydrology of the Area	36
2.4.1 Surface Water Network Development.....	36
2.4.2 Surface Water Regime	38
2.4.3 Baseflow	39
2.5 Drought and Climate Change	45
3. Geological Settings	49
3.1 Previous Work	49
3.2 Stratigraphy	49
3.3 Lithology.....	50
3.3.1 Precambrian Formation (Basement)	50
3.3.2 Mesozoic Sedimentary Rocks	50
3.3.3 Tertiary Volcanic and Sedimentary Rocks.....	51
3.3.4 Late Tertiary and Quaternary Sedimentary Rocks	54
3.4 Structure.....	55
4. Hydrogeology	57
4.1 Water Point Inventory	57
4.2 Hydrogeological Classification/Characterization.....	59
4.3 Elements of the Hydrogeological System of the Area (Aquifers and Aquitards).....	60
4.3.1 Extensive and Moderately Productive Porous Aquifers.....	61
4.3.2 Extensive and Moderately Productive Fissured Aquifers	62
4.3.3 Extensive and Low Productive Fissured Aquifers.....	65
4.3.4 Aquitards and/or Minor Aquifers with Local and Limited Groundwater Resources	66
4.4 Hydrogeological Conceptual Model.....	66
4.5 Annual Recharge in the Area	67
5. Hydrogeochemistry	69
5.1 Sampling and Analysis.....	69
5.2 Classification of Natural Waters	70
5.2.1 Rain Water	73
5.2.2 Surface Water	73
5.2.3 Groundwater in Volcanic Rocks.....	74
5.2.4 Groundwater in Sandstone	74

5.2.5 Groundwater in Quaternary Sediments.....	74
5.3 Water Quality	75
5.3.1 Domestic Use.....	75
5.3.2 Irrigation Use.....	76
5.3.3 Industrial Use.....	77
5.4 Mineral and Thermal Water.....	78
6. Natural Resources of the Area	79
6.1 Economic Geology	79
6.2 Water Resources.....	79
6.2.1 Surface Water Resources Development	81
6.2.2 Groundwater Resources Development.....	82
6.3 Human and Land Use Resources and Development.....	85
6.4 Wind and Solar Energy Development.....	85
6.5 Environmental Problems and their Control / Management.....	85
6.6 Touristic Potential of the Area.....	88
<i>Conclusions.....</i>	<i>89</i>
<i>References.....</i>	<i>91</i>
Annex 1 – Field Inventory Data.....	93
Annex 2 – Water Chemistry.....	103
Annex 3 – Well Logs.....	109