

## 4 Drought and desertification

### 4.1 General

Desertification is the degradation of land in arid, semi-arid and dry sub-humid areas, mainly as a result of climatic variations –decreasing rainfall, higher evaporation- and human activities -increasing demands for human consumption, irrigation and industrial purposes- .

Thanks to favourable climatic and topographical conditions, the Netherlands does not experience severe desertification and drought problems. According to the national survey on water deficits, water supply in The Netherlands is secure in the near future. Climate scenarios, however, suggest that water deficits may become an issue after 2015.

Drought problems, however, do exist in some of the Netherlands' nature protection areas due to drainage of nearby agricultural lands, and as a result of ground water extraction for domestic and industrial use. Management policies addressing drought problems are the joint responsibility of the Ministries of Agriculture, Nature and Food Quality, Housing, Spatial Planning and the Environment, and Transport, Public Works and Water Management. These policies include the National Environmental Policy Plan, the Nature Policy Plan and the Water Management Note ([www.verdroging.nl](http://www.verdroging.nl)). These policies must comport with the EU Water Framework Directive and the Habitats Directive. They are further specified at the levels of provinces, water boards and municipalities. The Dutch approach to combat drought problems in nature protection areas focuses on regions and integrates multiple functions of land.

At the European level, desertification appears in the form of soil erosion by water and wind in south-east and eastern Europe and in the Mediterranean region and, in the form of salinization, degradation of vegetation and forest fires in the Mediterranean region. Recent droughts have caused economic problems in Bulgaria (1996 and 2000), in Romania (2000) and in Portugal and Spain (2005-2006). Over the coming decades, the frequency of droughts is expected to increase and their effects may be further exacerbated by temperatures increasing the demand for water.

The Netherlands addresses the issue of desertification and drought in the European context and world wide, through multilateral environmental conventions, agreements and processes, through participation in international research and education programmes and through activities jointly with the private sector.

### 4.2 Multilateral environmental agreements and processes

The Netherlands is a Party to the United Nations Convention to Combat Desertification (UNCCD, See [www.unccd.int](http://www.unccd.int)). UNCCD's main objectives are to combat desertification and mitigate the effects of drought, and to achieve sustainable development in drought-affected areas. The Netherlands' Ministries of Foreign Affairs/DGIS, Agriculture, Nature and Food Quality (LNV) and Economic Affairs (EZ) contribute to the implementation of the UNCCD through multi- and bi-lateral financing mechanisms. Six major Dutch NGO's cooperate with the UNCCD: Both Ends, Friends of the Earth, ISRIC World Soil Information, NOVIB, the Platform for Sustainable Development and Youth for Development and Cooperation. Other multi-lateral environmental agreements (MEA) and processes (MEP) in which the Netherlands is involved are listed in Table 2.

In the framework of the European Union, Netherlands' authorities, NGO's and research institutes address desertification and drought as part of the following standards, policies and regulations: (i) The 6<sup>th</sup> Environment Action Programme of the EC (2002-2012); (ii) The European Water Framework Directive; (iii) The EU Thematic Strategy for Soil Protection; (iv) The Common Agricultural Policy of the EU; (v) The Sustainable Development Strategy; (vi) The Environmental Impact Assessment Directive; (vii) The Strategic Environmental

Assessment Directive; (viii) The Directive of Public Participation and (ix) The European Research Area

### 4.3 Science and education

Research institutes, universities and enterprises in the Netherlands are involved in international, multi-institute research initiatives on desertification and drought world wide. These research initiatives include large programmes, networks, databases on desertification and drought and research projects on different aspects of desertification. A selection of leading research initiatives on desertification and drought, in which the Netherlands is, or has been, involved, is given in Box 6 and in Annex 2. The Annex in particular shows that the Netherlands is active in all research orientations, from policy-oriented research to the development of fundamental knowledge and instruments. A main challenge is to ensure that stakeholders may continue to access and use the developed knowledge and tools upon completion of the projects.

<b>Table 2</b> <i>Netherlands' involvement in  multilateral environmental agreements (MEA) and processes (MEP)</i>	
<b>MEA/MEP</b>	<b>Reference to desertification and drought</b>
Agenda 21	Options to combat land degradation
World Summit on Sustainable Development (WSSD)	Priority on agriculture: The natural resource base in the Johannesburg Plan of Implementation
Rio Declaration	Principles 7 and 8: – "...conserve, protect and restore the health and integrity of the Earth's ecosystem..."; – "...responsibility ... in the international pursuit to sustainable development..."; – "...reduce and eliminate unsustainable patterns of production and consumption..."
Millennium Development Goals (MDG)	MDG 7: 'Ensure environmental sustainability'
Convention on Biological Diversity (CBD)	Sustainable use of biodiversity components
UNEP: Combating Land Degradation (Global Environment Facility, GEF)	Funding of projects on focal area 'Land Degradation'
UNEP Governing Council Decisions (Land)	Decisions 20/10 and ss.V/7: Land Degradation – Arid and semi-arid land ecosystems and desertification control – Desertification in Africa
UN Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP)	– Activities to limit greenhouse gas emissions; – Activities to sequester and store carbon in agricultural soils
Water for Life Decade 2005-2015	Themes: scarcity, capacity-building, financing, valuation, Integrated Water Resources Management, environment and biodiversity, food and agriculture
United Nations Forum on Forests (UNFF)	Conservation and sustainable development of forests

Several universities and institutes for professional education in the Netherlands offer post-academic, scientific, higher and secondary education in the field of natural resources, in which the problems of desertification and drought are being addressed. Examples are the MSc Course 'International Land and Water Management' at Wageningen University, the MSc Course 'Environment and Resource Management' at the VU University, Amsterdam, the MSc Degree Course 'Water resources and environmental management' at the International Institute for Geo-Information Science and Earth Observation (ITC, Enschede) and professional secondary education in cultivation techniques and water management at institutions for higher agricultural education. Furthermore, the Netherlands hosts the UNESCO-IHE Institute for Water Education. This institute carries out research, education and capacity building activities in the fields of water and environment.