

Table 2. Monitoring program descriptions – Part 1

Prog. No.	Country/ Org.	Program Title	Management / Funding	Start Date	End Date	Purpose
NORTH AMERICA						
1	Alberta	AESA Soil Quality Benchmark Program	Alberta Environmentally Sustainable Agriculture Program-Alberta Agriculture, Food and Rural Development	1998		- provide baseline soil information, evaluate landscape effects on soil quality, provide data for modeling and monitor changes in soil quality over time
2	Alberta	Long-Term Soil and Vegetation Plots Established in the Oil Sands Region	Synchrude Canada/ Suncor Energy/ Albian Sands/ Cumulative Environmental Management Association	2000		- initial purpose was to determine forestry success and meet equivalent productivity with reclaimed sites - now more focus on the importance of biodiversity and the value of understory
3	Canada	Soil Quality Benchmark Sites	Agriculture and Agri-Food Canada	1992		- assess soil quality change, provide validation for models, provide well documented sites for future integrated research programs and evaluate sustainability
4	United States of America	Forest Health Monitoring Program (1990-1999) / Forest Inventory and Analysis Program (1999-present)	USDA Forest Service / Environmental Protection Agency / USDA Bureau of Land Management / USDA Natural Resource Conservation Service	1990		- determine the status, changes and trends in indicators of forest health on an annual basis - identify important forest health and sustainability issues, select appropriate data and develop approaches to address the issues
EUROPE						
5	Albania	Map of Soils of Albania	Soil Science Institute of Tirana			
6	Austria	Forest Soil Monitoring System	Federal Forest Research Centre	1987		- originated as part of the Forest Damage Monitoring System to research causes and effects of forest diebacks
7	Bulgaria	Background Monitoring	Bulgarian Executive Environmental Agency			- background monitoring of atmosphere, precipitation, surface water, soil and vegetation
8	Bulgaria	National Environment Monitoring System	Bulgarian Executive Environmental Agency			
9	Czech Republic	Basal Soil Monitoring Scheme	Ministry of Agriculture / Ministry of Environment	1992/ 1993		- characterize the status of soils, observe changes in soil as a result of human activity, test new analytical methods and develop new strategies/standards of soil protection and prevention
10	Denmark	Heavy Metal Monitoring Programme	Danish Environmental Protection Agency	1993		- statistically safe detection of a 2% increase in the mean concentration of heavy metals in soils

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11	England and Wales	National Soil Inventory	National Soil Resources Institute	1978-1983/ 1994-1996		- provide information on the range of concentrations of pollutants, nutrients, soil organic matter and pH in soils of England and Wales
12	England and Wales	Annual Representative Soil Sampling Scheme	Ministry of Agriculture, Fisheries and Food / Agricultural Development and Advisory Service	1969		- provides an estimate of the status of agricultural soils in relation to changes in agricultural practices
13	Finland	National Forest Inventory	Finnish Forest Research Institute	1921		- to produce objective and up to date information on forest resources, forest health conditions and their development for national and regional decision making
14	Finland	Soil Quality Monitoring Program		1992		
15	France	Soil Quality Observatory	Ministry of Environment / Ministry of Agriculture / French Environmental Institute / National Institute of Agronomic Research	1986		- assess the present situation of soils, monitor their changes and identify the causes to improve on and implement a soil preservation policy - provide data for modeling and increase soil quality awareness
16	France	RENECOFOR	National Forest Office	1992		- help detect long-term changes in a wide variety of ecosystems and determine the cause of those changes
17	Germany	Permanent Soil Monitoring Sites		1986		- to investigate how soils change due to anthropogenic involvement
18	Germany	Air Measuring Network	Federal Environmental Agency			- registration of extensive emission loads caused by air pollutions, including depositions - determine influence of air pollution on soil quality
19	Great Britain	Country-side Survey		1978/ 1984/ 1990/ 1998		- estimate extent and characterize habitats, derive sustainable development indicators and provide data and databases
20	Hungary	Information and Monitoring System of Soil Conservation (TIM) - National Basic Monitoring System	Ministry of Agriculture / Plant Protection and Soil Conservation Service	1992		- to provide information for scientifically based planning and implementation of sustainable land use and rational soil management

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21	Hungary	Information and Monitoring System of Soil Conservation (TIM) - Forestry Observation Points	Ministry of Agriculture / Plant Protection and Soil Conservation Service	1992		- to provide information for scientifically based planning and implementation of sustainable land use and rational soil management
22	Hungary	Information and Monitoring System of Soil Conservation (TIM) - Special Areas Monitoring	Ministry of Agriculture / Plant Protection and Soil Conservation Service	1992		- to provide information for scientifically based planning and implementation of sustainable land use and rational soil management
23	Hungary	Soil Fertility Monitoring System		1978	1986	- monitor changes in soil parameters and make recommendations on nutrient supply to farmers
24	Hungary	Microelement Survey		1987	1990	
25	Latvia	National Agricultural Land Monitoring Programme	State Land Service	1992	2000/ 2001	- supervise process and trends of soil quality changes, gather information, make interpretations and report regularly to the public and decision makers - long-term observations of anthropogenic impacts on agricultural land
26	Lithuania	National Environmental Monitoring Programme - Field Soil Monitoring	Agrochemical Research Centre of the Lithuanian Institute of Agriculture / Joint Research Centre of the Ministry of the Environment	1993		Soil monitoring component: to analyze and explain the development of qualitative and quantitative processes, to forecast and control anticipated processes and to identify the means for prevention of loss of soil stability
27	Lithuania	National Environmental Monitoring Programme - Forest Soil Monitoring	Lithuanian Forestry Institute	1992		Soil monitoring component: to analyze and explain the development of qualitative and quantitative processes, to forecast and control anticipated processes and to identify the means for prevention of loss of soil stability
28	Lithuania	National Environmental Monitoring Programme - Integrated Monitoring of Agricultural Ecosystems	Lithuanian Water Management Institute / Institute of Ecology / Agrochemical Research Centre of Lithuanian Agricultural Institute / Institute of Botany / Institute of Geography			- to determine, assess and forecast the status of ecosystems subjected to intense agricultural activities and its changes in time with consideration of the type of farming practices
29	Netherlands	National Soil Quality Monitoring Network	National Institute of Public Health and Environmental Protection (RIVM)	1993		- establish changes in soil quality over time in soil and upper groundwater - determine actual quality of soil and upper groundwater with a focus on the rural environment
30	Netherlands	Regional Soil Quality Monitoring Networks	individual provinces of the Netherlands	1991		- provide insight into geo-chemical soil quality trends on which to base new provincial policies

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31	Netherlands	Soil Quality and Shallow Ground Water Monitoring	National Institute of Public Health and Environmental Protection (RIVM)	1992		- assess the vulnerability of agricultural soils and ground-water to pollutants such as manure and artificial fertilizers
32	Norway	Agricultural Environmental Monitoring Program	Ministry of Agriculture / Ministry of Environment	1992		- to relate losses of plant nutrients to catchment characteristics and changes in agricultural practices
33	Poland	National Program of Environment Monitoring	Ministry of Agriculture and Food Economy	1994		- to perform a detailed evaluation of existing resources in order to identify areas of high risk to the food chain
34	Poland	Arable Soils Monitoring Program	Ministry of the Environment	1995	1998	
35	Poland	Programme for Forest Monitoring		1989		- to monitor environmental threats to the forest ecosystem such as atmospheric pollution
36	Republic of Estonia	Estonian Environmental Monitoring Program - Agricultural Landscape Monitoring	Estonian Environment Information Centre	1996		- monitor long-term and large-scale changes in environment, identify problems which need countermeasures and future research - to define changes in land use and assess the anthropogenic impact on ecological status of soil
37	Romania	National Integrated Soil Monitoring System	Research Institute for Soil Science and Agrochemistry	1992		- to identify problem areas, causes of problems and possible remedial actions
38	Slovakia	Slovak Environment Monitoring	Ministry for the Environment / Ministry of Landhusbandry	1993		- reflect the environmental situation and apply measures for environmental improvement
39	Slovakia	Slovak Environment Monitoring - Soil Monitoring System- Humus	Soil Science and Conservation Research Institute	1993		- to monitor soil contamination and soil properties
40	Sweden	National Swedish Environmental Monitoring Programme - Integrated Monitoring	Swedish Environmental Protection Agency	1981		- regular and permanent recording of environmental conditions and long-term changes in background regions - to track the flux of pollutants in and between various media
41	Sweden	National Swedish Environmental Monitoring Programme - National Survey of Forest Soils and Vegetation	Department of Forest Resource Management and Geomatics / Swedish University of Agricultural Sciences	1983		- describe the state of and changes in forest resources of Sweden

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42	Sweden	National Swedish Environmental Monitoring Programme - Agricultural Land Programme Area	Department of Soil Sciences- Swedish University of Agricultural Sciences			- quantify variations in time and space regarding concentrations and transported amounts of nutrients and pesticides in surface and groundwater whose catchment areas are dominated by agriculture
43	Switzerland	Swiss Soil Monitoring Network	Swiss Agency for the Environment, Forests and Landscape / Swiss Federal Office for Agriculture / Swiss Federal Research Station for Agroecology and Agriculture	1985		- scientific validation and evaluation of the success of environmental policy measures aiming long-term conservation of soil fertility
NEW ZEALAND						
44	New Zealand	Implementing soil quality indicators for land - "500 Soils Project"	Ministry for the Environment Sustainable Management Fund / Landcare Research	1998	2001	- to determine the effects of land use on soil quality and integrate the data from regions into a national overview
ICP						
45	United Nations Economic Commission for Europe	UN-ECE ICP Integrated Monitoring of Air Pollution Effects on Ecosystems	UN/ECE Working Group on Effects/ Sweden / ICP IM Programme Centre	1993		- long-term international ecosystem monitoring program to predict the state of and possible medium to long-term changes in natural ecosystems caused by trans-boundary air pollutants
46	United Nations Economic Commission for Europe	International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests - ICP Forests Level 1	UN/ECE Working Group on Effects / Task Force of ICP Forests / Programme Coordinating Centre	1986		- monitor the effects of anthropogenic and natural stress factors on the condition and development of forest ecosystems in Europe - contribute to a better understanding of cause-effect relationships in forest ecosystem functioning
47	United Nations Economic Commission for Europe	International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests - ICP Forests Level 2	Forest Intensive Monitoring Coordinating Institute	1994		- monitor the effects of anthropogenic and natural stress factors on the condition and development of forest ecosystems in Europe - contribute to a better understanding of cause-effect relationships in forest ecosystem functioning
Networks						
48	United Kingdom	Environmental Change Network	Natural Environment Research Council	1994		- detection, interpretation and forecasting of environmental changes resulting from natural and anthropogenic causes
49	International	Terrestrial Ecosystem Monitoring Sites	Global Terrestrial Observing System	1995		- database on terrestrial ecosystem monitoring sites which registers sites and networks carrying out long-term terrestrial monitoring

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50	International	International Long-Term Ecological Research Network	Global Terrestrial Observing System	1993		- promote and encourage long-term ecological research, exchange of data, produce comparable results and facilitate development of other programs
51	Pan-European	Networking of Long-term Integrated Monitoring in Terrestrial Systems - NoLIMITS	European Network for Research in Global Change	future		- facilitate and co-ordinate the exchange and integration of environmental data between other monitoring networks, further scientific research and implement sustainable development policy
52	Europe	proposed European Soil Monitoring Network (EuroSoilNet)	European Commission Directorate General Joint Research Centre	future		- provide policy relevant information on the major threats to soil in Europe in a harmonized and coherent way