

Inventory of Networks – Phase II

ICELAND

Compiled by Rannís and Arctic Portal

1/20/2012



Preface

The Arctic Council and IASC agreed in 2011 to establish Sustaining Arctic Observing Networks (SAON). Yet preparation for SAON had been underway since 2007.

The purpose of SAON is to support and strengthen the development of multinational engagement for sustained and coordinated pan-Arctic observing and data sharing systems that serve societal needs, particularly related to environmental, social, economic and cultural issues. SAON promotes the vision of well-defined observing networks that enable users to have access to free, open and high quality data that will realize pan-Arctic and global value-added services and provide societal benefits. Its goal is to enhance Arctic-wide observing activities by facilitating partnerships and synergies among existing observing and data networks (“building blocks”), and promoting sharing and synthesis of data and information. SAON also is committed to facilitating the inclusion of Arctic indigenous people in observing activities, in particular by promoting community-based monitoring (CBM) efforts.

Iceland has a unique feature – alongside Greenland - of being the only state that is fully situated within the Arctic. Iceland is also an interesting case study since it is an island in the midst of the north Atlantic, where changes of climate and other aspects of nature can be viewed in a relatively isolated ecosystem.

This report introduces the contemporary monitoring institutions and networks in the country. These institutions cover many fields of research and monitoring and they belong to six different ministries.

As one of the roles of the Icelandic Centre of Research (RANNIS) is to coordinate and promote Icelandic participation in collaborative international projects in science and technology, RANNIS has been appointed as the national contact point for SAON in Iceland. The Cooperation Committee on Arctic issues serves as the Icelandic National SAON Coordinating Committee. Many of the institutes which are covered in this Inventory are represented in this committee.

The first edition of this inventory was compiled and published by the Arctic Portal in 2009. It has now been updated by the participating institutions and jointly edited and published by RANNIS and the Arctic Portal. It is hoped that this inventory will enhance the main goals of SAON i.a. to promote sharing and synthesis of data and information.

Akureyri in January 2012

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Directorate of Health - Centre for Health Security and Communicable Disease Control - Embætti landlæknis – sóttvarnalæknir

Contact person:

Haraldur Briem, Chief Epidemiologist: hbriem@landlaeknir.is

Web site:

<http://landlaeknir.is/Smitogsottvarnir>

Main objective of the network:

The Centre for Health Security and Communicable Disease Control at the Directorate of Health is operated according to the Act on Health Security and Communicable Diseases, No. 19/1997 (http://eng.velferdarraduneyti.is/media/Reglugerdir-enska/Act_on_Communicable_Diseases_2007.pdf).

This act applies to diseases and agents that can cause epidemics and other serious infectious diseases or pose a threat to public welfare. “Diseases” means disease or infection caused by infectious material, microbes and their toxins or parasites as well as serious health consequences caused by toxic chemicals and radio nuclear materials. The act also applies to unusual and unexpected events which may cause severe health consequences of international concern.

The Chief Epidemiologist (CE) is responsible for maintaining a register of communicable diseases, including agents causing diseases and health threat events, immunisations and the use of antimicrobial drugs. These registers are intended to be of use in preventive measures and in epidemiological research.

The CE chairs an inter-organisational committee on response measures if there is a risk that animals, food, water, sewers, ventilation or anything else in the environment is spreading or could spread infectious sources of disease, toxic chemicals or radio-nuclear agents that threaten the health of humans.

The Minister decides, on the advice of the CE, whether official measures should be implemented, such as immunisation, isolation of infected persons, disinfections, quarantining of communities or the whole country, closing of schools or prohibition of public gatherings. The CE may apply such emergency measures without seeking authority in advance, if he believes that any delay would entail a risk, but he must inform the Minister of his actions immediately

Member/connected to global network:

Legally the CE is the Icelandic National Focal Point relating to the corresponding World Health Organisation Focal Point according to the International Health Regulations and other international treaties to which Iceland is a party. The CE collaborates closely with the European Centre for Communicable Disease Prevention and the Health Security Committee of the European Commission.

Type of network:

- Thematic observations
- Health care observations
- Community based observations
- Epidemic intelligence

Thematic area:

- Public health
- Zoonosis
- Early warning and response

Main variables:

Epidemic monitoring, outbreaks, public measures against communicable diseases and health threats.

When operational:

Since 1998.

Geographical coverage:

Global

Data archive:

<http://landlaeknir.is/pages/28>

<http://landlaeknir.is/Pages/875>

<http://influensa.is/?PageID=1437>

Data availability.

Metadata available

Contact person:

Kristín Linda Árnadóttir, Director General, kristinlinda@ust.is

Web site:

<http://www.ust.is>

Main objective of the Agency:

The Environment Agency operates under the direction of the Ministry for the Environment. It's role is to promote the protection as well as sustainable use of Iceland's natural resources, as well as public welfare by helping to ensure a healthy environment, and safe consumer goods.

Areas of operation:

1. Information and advice for the public, businesses and regulatory authorities
2. Monitoring of environmental quality
3. Evaluation of environmental impact assessment and development plans
4. Operation supervision, inspection, operating permits, etc.
5. Assessment of conservation effects and registration of unique nature
6. Management and supervision of designated protected areas
7. Wildlife management and conservation
8. Eco-labeling
9. Labeling and handling of toxic as well as other hazardous substances
10. Coordination of health and safety in public places
11. Coordination of local environmental and health inspectorates
12. Genetically modified organisms (GMO)

Member/connected to global networks:

Participating in International conventions, agreements and co-operations including but not limited to Arctic Council, IMO, Strategic Approach to International Chemicals Management, OSPAR, European Environment Agency, CBD, UNFCCC (Kyoto, Agenda 21), UN CSD, UNEP, Un ECE LTAP, The Stockholm Conventions, The RAMSAR convention.

Type of network:

- Thematic observations
- Community based observations
- Coordination

Thematic area:

- Atmosphere
- Climate
- Coastal
- Ocean and Maritime issues
- Freshwater
- Conservation of Nature and Natural phenomena

Main variables:

Protected areas, wildlife, toxic and polluting substances, Genetically modified organisms (GMO), waste management, air- and water quality, GHG

When operational (year):

The Institution started operations in current form in 2003, when it took over the assignments of various governmental agencies and boards. These assignments fall under four categories or departments and are Environmental regulation, Environmental Supervision, Nature conservation and Wildlife management.

Data archive:

Various country information:

Ministry for the Environment: <http://www.umhverfisraduneyti.is>

Environment Agency of Iceland: <http://www.ust.is/>

Iceland Statistics: <http://www.hagstofa.is/>

State of the Environment. Report in Icelandic:

http://www.umhverfisraduneyti.is/media/PDF_skrar/umhverfiogaudlindir2009.pdf

EEA's SOER 2010, Country assessments: <http://www.eea.europa.eu/soer/countries/is>

OECD Environmental Performance Reviews: Iceland 2001:

http://www.oecdbookshop.org/oecd/display.asp?K=5LMQCR2K7ZTB&lang=EN&sf1=SeriesIdentifier&st1=SER00141P1&sf2=AvailabilityCode&st2=50,55,60,80,100,120,140,160,180,200&sp2=and%20not&sf3=VersionCode&st3=3&sort=sort_date/d&ds=OECD%20Environmental%20Performance%20Reviews&m=24&dc=56&plang=en

Air Quality:

Loftgæðavefur

National Parks:

Snæfellsjökull

Database on air quality measurements in Iceland:

<http://www.ust.is/einstaklingar/loftgaedi/>

Data availability:

Fully processed data

Main gaps:

Metadata archives and metadata availability

The Icelandic Centre for Research - Rannsóknamiðstöð Íslands, RANNÍS

Contact person:

Hallgrímur Jonasson, Director General, hallgrimur@rannis.is, Thorsteinn Gunnarsson, SAON Representative, thorsteinng@rannis.is

Web site:

<http://www.rannis.is/>

Main objective of the network:

The Icelandic Centre for Research (RANNIS) reports to the Ministry of Education, Science and Culture and operates according to the Act on Public Support for Scientific Research (No. 3/2003).

The Icelandic Centre for Research (RANNIS) supports research, research studies, technical development and innovation in Iceland. RANNIS cooperates closely with the Icelandic Science and Technology Policy Council and provides professional assistance the preparation and implementation of science and technology policy in Iceland. RANNIS administers competitive funds and strategic research programmes, coordinates and promotes Icelandic participation in collaborative international projects in science and technology, monitors resources and performance in R&D and promotes public awareness of research and innovation in Iceland. Rannis is the Icelandic national contact point for SAON.

RANNIS has a permanent staff of 22 but also relies heavily on the involvement of external contacts, including scientists and technical experts who assist in the evaluation of grant proposals.

The main competitive funds and strategic research programmes administered by RANNIS have the following annual budgets for 2010:

The Icelandic Research Fund: 815 MISK

The Equipment Fund: 115 MISK

The Technology Development Fund: 720 MISK

The Icelandic Research Fund for Graduate Students: 100 MISK

The Icelandic Student Innovation Fund: 50 MISK

The Fund for Non-fiction Writers: 13 MISK

Strategic Research programme for Centres of Excellence and Research Clusters: 160 MISK

Strategic Research programme for Postgenomic Biomedicine and Nanoscience and Nanotechnology: 160 MISK

Member/connected to global network:

SAON, International Arctic Science Committee (IASC), Connecting Climate Knowledge for Europe (Clik'EU), Northern Research Forum (NRF)

Type of network:

- Research coordination
- Implementation of Science Policy

Thematic area:

- Research coordination in all fields of science

Main variables:

-Funding of research, technological development and innovation, coordination of international R&D cooperation, advice to and implementation of policy making.

When operational:

Since 2003, however its predecessor the Iceland Research Council was established in 1994.

Geographical coverage:

Iceland

Data archive (data center):

Statistical documentation of supported research projects is available in Icelandic, see www.rannis.is

Iceland Geosurvey – Íslenskir Orkurannsóknir

Contact Person:

Ólafur G. Flóvenz, General Director, ogf@isor.is

Web site:

<http://www.isor.is> or <http://www.geothermal.is>

Main objective of the network:

Iceland GeoSurvey ÍSOR is a self-financing, state-owned, non-profit institution in the field of natural sciences, it's main activity being related to the geothermal industry in Iceland and abroad. It was established 2003, when the GeoScience Division of Orkustofnun (the National Energy Authority of Iceland), was spun off as a separate entity according to the law of Iceland GeoSurvey no. 86, March 26th 2003 (<http://www.althingi.is/lagas/135a/2003086.html>). The main role of ÍSOR is to work on projects and research in the field of natural resources and energy, as the directive board of the institute decides.

ÍSOR offers research consulting services worldwide on most aspects of geothermal exploration, development, and utilization, and provide training and education on related issues. It is based on six decades of continuous experience in the field of geothermal and hydropower research and development. The focus is on geothermal exploration, development, and utilization, but cover also many other geoscience-related fields as well, including groundwater studies, marine geology, and environmental monitoring.

Member/connected to global network:

International Geothermal Association (IGA)
EuroGeoSurveys
European Geothermal Energy Council (EGEC)
International Energy Agency (IEA)
International Partnership for Geothermal Technology (IPGT)

Type of network:

Field stations
Thematic observations

Thematic area:

Geological mapping and standards
Groundwater reservoir management
Geothermal reservoir management
Geophysical research and exploration
Geochemical research
Borehole monitoring and testing
Seismicity
Environmental research

Geographical coverage:

Iceland. Additional international coverage in selected countries where ÍSOR has worked and acquired thematic data.

Data archive:

Data stored by ÍSOR is owned by private or public entities and sometimes cooperation between the two. In cases where the research is conducted on behalf of a public entity or funded with public funding the data is made available in association with the particular entity. In other cases, the data is stored by ÍSOR and access to the data must be negotiated with the particular private entity.

Some of the public data can be viewed in the [Iceland Energy Portal](http://www.orkuveysja.is/veysja/orkuveysja_en.html) (http://www.orkuveysja.is/veysja/orkuveysja_en.html) and the [Iceland Continental Shelf Portal](http://www.landgrunnsveysja.is/veysja/icsp.html) (<http://www.landgrunnsveysja.is/veysja/icsp.html>), both maintained in association with Orkustofnun.

Orkustofnun with United Nations University Geothermal Training Program (UNU-GTP) and ÍSOR operate a research library in Reykjavík. The library is open to the general public and consist of over 20000 titles on energy research and development. This includes earth sciences, geothermal energy and hydropower, all reports published by Orkustofnun and ÍSOR as well as reports and yearbooks from UNU-GTP. Reports published by ÍSOR are available at the library as well as being filed at Gegnir (www.gegnir.is), a system hosting the Icelandic national catalogue of library information. In addition metadata of selected publications can be found at

<http://www.geothermal.is/publications/publications>.

Icelandic Institute of Natural History – Náttúrufræðistofnun Íslands, NÍ

Contact person:

Jón Gunnar Ottósson, Director General jgo@ni.is,

Trausti Baldursson, Director of administration and international affairs trausti@ni.is.

Web site:

<http://www.ni.is/>

Main objective of the network:

The Icelandic Institute of Natural History dates back to 1889 when the Icelandic Natural History Society established a Natural History Museum in Reykjavik. The Icelandic Institute of Natural History (IINH) is a governmental institute under the auspice of the Ministry for the Environment and conducts basic and applied research on the nature of Iceland in the fields of botany, geology and zoology. The Institute maintains scientific specimen collections and holds databases on the Icelandic nature, i.e. all animal and plant species, rocks and minerals, it assembles literature on the natural history of Iceland, operates the Icelandic Bird-Ringing Scheme, prepares distribution, vegetation, and geological maps, conducts research in connection with environmental impact assessments and sustainability, advises on sustainable use of natural resources and land use, and monitors and assesses the conservation value of species, habitats and ecosystems.

Member/connected to global network:

IINH is the national representative in the Bern Convention on the conservation of European wildlife and natural habitats and participates in the several working groups of the Convention in areas that are relevant to Iceland.

IINH is the national representative in The Conservation of Arctic Flora and Fauna (CAFF) and has had a representative on the board of CAFF from the beginning. IINH participates in expert groups on marine birds, vegetation, sanctuaries, and biodiversity monitoring in the Arctic within the CAFF.

IINH is further participating in the work of a Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) under the Convention on Biological Diversity (CBD).

IINH is the national representative in the Global Biodiversity Information Facility (GBIF) and participates in The North European and Baltic Network on Invasive Alien Species (NOBANIS) on behalf of Iceland.

Type of network:

- Species monitoring
- Area monitoring, incl. protected areas
- Thematic observations
- Community based observations
- Endangered species

Thematic area:

- Terrestrial ecosystem
- Marine ecosystem
- Freshwater ecosystem 7 SAON: Inventory on Monitoring Networks Iceland

Main variables:

The Icelandic Bird Ringing Scheme. Ecological and monitoring studies of ecosystems and species, e.g. White-tailed Eagle, Gyrfalcon, Black Guillemot and other seabirds, Brent Goose, and Ptarmigan, as well as all red listed plant and animal species. Atlas of the breeding distribution of Icelandic birds. Annual Christmas Bird Counts. Species composition, monitoring and distribution of terrestrial and marine invertebrates. Environmental Impact Assessments, ecological research and recommendations on economic important and pest species. Mapping of habitat types, terrestrial, freshwater and coastline. Vegetation monitoring in permanent plots. ICP Vegetation - Heavy metal concentrations in mosses. Climatic change. Keeping of checklists. Depository of information on straggling species. Research and listing of endangered and invasive species. Biodiversity Information Centre and the Icelandic Museum of Scientific Specimens.

Geographical coverage:

Iceland

Data archive:

The IINH operates a library, both in Reykjavík and Akureyri. The Institute's library contains 12.000 volumes and 450 journal titles on the natural history of Iceland, botany, geology and zoology. The main aim of the library is to gather expert knowledge on the Icelandic nature in one place, serving thus better the staff of the IINH as well as the public. The data is available to public at the library and lending of the material is allowed only in special cases. Outcome of the research conducted by the IINH are published in educational or scientific magazines in addition to the publications that the IINH issues itself.

Icelandic Maritime Administration - Siglingastofnun, IMA

Contact person:

Hermann Guðjónsson Director General, Hermann@sigling.is

Web site:

<http://www.sigling.is>

Main objective of the network:

The Minister of the Interior is responsible for centrally administrating maritime, harbour and lighthouse affairs, except where otherwise provided for in a different law.

The IMA, with a staff of around 70, handles numerous activities in the field of maritime administration and supervision, such as operation of lighthouses and navigational systems, vessel registration and supervision of ship surveys, manning and certification. The IMA also conducts research into ship stability and ship and harbour security and harbour development, coastal changes and coastal protection.

Member/connected to global network:

The IMA participates in a wide range of international cooperation. It represents Iceland in all relations with the IMO (International Maritime Organization), EMSA (European Maritime Safety Agency), IALA (International Association of Lighthouse Authorities) and PIANC (Permanent International Association of Navigation Congresses), and also takes part in relevant EEA/EU meetings. The IMA is responsible for Port State Control, and foreign relations in respect of it. Furthermore, it participates in consultation meetings with sister organizations in the other Nordic countries.

Type of network:

- Thematic observations in main fields

Thematic area:

- Harbor and coastal research
- Environmental research
- Research relating to the safety of ships and crews

Main variables:

A Wide Range of Maritime Tasks. The IMA handles seamen's certification and crew issues. Furthermore, it administrates the activities of manning and dispensation committees, and registration of seamen, professional diving and pilots' certificates.

The IMA is responsible for preparing and publicizing the adoption of new maritime legislation. It also publishes marine safety training materials and promotes training in other ways. Vessel registration is the oldest task at the IMA, which has a statutory responsibility for maintaining the main register of ships.

Research and Development: Harbour and coastal research, environmental research and research relating to the safety of ships and crews. Research contributing to the safety of seafarers and right decisions in selecting solutions in coastal construction. Basic plans and model experiments regarding improvements in ports and harbour channels carried out according to the work programme of the government's transport policy as well as the programme of the safety of seafarers.

The Icelandic Maritime Administration's (IMA) weather and sea state information system increases safety for seafarers and contributes to more efficient fishing. The system is based on both real-time measurements and forecasts. The IMA website (www.sigling.is) provides updated information every hour about weather and sea state, weather and sea level height in harbors, and wave height inside and outside harbors, using data from wave measurement buoys, operated by the IMA, and automatic weather stations at lighthouses and in harbors.

Besides real-time information on the weather and sea state, forecasts are also given for wave height and the weather for several days, together with, tides, tidal currents and storm surge. Predictions are based on weather forecasts and the ocean wave forecast from the European Centre for Medium-Range Weather Forecasts, in cooperation with the Icelandic Meteorological Office. Due to increased oil and LNG transport from Russia and Norway towards North America, wave and weather forecasting has been extended to cover the new sailing route in the northern Atlantic from the Barents Sea to the southernmost part of Greenland. The forecasts have been extended up to five days for weather forecasts and seven days for wave forecasts updated twice a day.

Icelandic Meteorological Office - Veðurstofa Ísland, IMO

Contact person:

Árni Snorrason, Director General, arni.snorrason@vedur.is

Web site:

<http://www.vedur.is/>

Main objective of the network:

The main purpose of IMO is to contribute towards increased security and efficiency in society by:

- Monitoring, analyzing, interpreting, informing, giving advice and counsel, providing warnings and forecasts and where possible, predicting natural processes and natural hazards;
- issuing public and aviation alerts about impending natural hazards, such as volcanic ash, extreme weather, avalanching, landslides and flooding;
- conducting research on the physics of air, land and sea, specifically in the fields of hydrology, glaciology, climatology, seismology and volcanology;
- maintaining high quality service and efficiency in providing information in the interest of economy, of security affairs, of sustainable usage of natural resources and with regard to other needs of the public;
- ensuring the accumulation and preservation of data and knowledge regarding the long-term development of natural processes such as climate, glacier changes, crustal movements and other environmental matters that fall under IMO's responsibility.

IMO has a long-term advisory role with the Icelandic Civil Defense and issues public alerts about impending natural hazards. The institute participates in international weather and aviation alert systems, such as [London Volcanic Ash Advisory Centre](#) (VAAC), the Icelandic Aviation Oceanic Area Control Center ([OAC Reykjavík](#)) and the European alarm system for extreme weather, [Meteoalarm](#).

Member/connected to global network:

Iceland has been a member of the World Meteorological Organization (WMO) since 1948 for which the IMO's Director General has been the permanent representative. WMO focuses both on meteorology and hydrology in a comprehensive manner and leads many activities and networks that IMO takes part in, e.g. the ArcticHYCOS, which concentrates on the Arctic hydrometric network, the Global Framework for Climate Services, EC Panel of Experts on Polar Observations, Research and Services, and the Global Cryosphere Watch, to name a few.

At Stórhöfði in the Vestmannaeyjar Islands south of Iceland, IMO runs a comprehensive environmental monitoring station in cooperation with National Oceanic and Atmospheric Administration NOAA, Earth System Research Laboratory, Global Monitoring Division and Air Resources Laboratory (US), University of Miami, Rosenstiel School of Marine and Atmospheric Science, State University of New York Marine Sciences Research Center, Environment Canada Global Atmospheric Passive Sampling, Norsk Institutt for luftforskning and Research Centre for Environmental Chemistry and Ecotoxicology, National POPs Centre in Masaryk University in Czech republic.

Moreover, the IMO has participated in many European and Nordic funded research projects, having the role of lead partner in some of them. These projects include research on changes in the stability and variations of Arctic land ice, building up seismic early warning for Europe, the effect of climate impacts on the Nordic electricity system, infrastructure building and e-Science for data and observatories on earthquakes, volcanoes, surface dynamics and tectonics, to name a few. Scientists and research institutes from all around the world have taken part in these projects.

Type of network:

IMO's nationwide monitoring systems consist of 115 automatic and 100 manned weather stations, a network of 170 hydrological gauges in rivers, a 55-station seismic network (SIL) with automatic, real-time data acquisition and earthquake location, a continuous GPS (ISGPS) network of 70 stations, a 5-station borehole strain meter network is operated in southern Iceland, and a weather radar system of 2 stationary weather radars as well as 2 mobile radars is being developed for monitoring volcanic plumes. In addition, IMO conducts extensive monitoring of glacial-river and sub-glacial floods (jökulhlaup), of glacier mass balance and margin positions and participates in nationwide GPS campaign measurements. Environmental monitoring (chemical) is carried out at 3 main stations as well as in several rivers in Iceland. Moreover, IMO is the contact for the lightning measurement network operated by UK Met Office in Iceland and publishes their data on the IMO's website.

Thematic area:

- Atmosphere / Ozone
- Weather (incl. precipitation and water conditions)
- Seismicity
- Tectonic
- Volcanism
- Coastal
- Ocean / Sea-ice
- Hydrology
- Cryosphere
- Environmental monitoring

Main variables:

IMO measures all main weather related variables (e.g., temperature, precipitation, wind, atmospheric pressure, cloud cover, sunshine hours, snow cover/snow depth), location and magnitude of earthquakes, earth deformation with GPS and strain measurements, discharge and water level of rivers/lakes/groundwater, glacier movements/ablation/elevation, chemical composition of precipitation, air, aerosols, and freshwater, ash /aerosol concentration, as well as sea-ice location and density/type.

When operational (year):

The "new" IMO was established in January 2009 when the former Icelandic Meteorological Office founded in 1920 and the Hydrological Service of the National Energy Authority of Iceland founded in 1947 were merged into a new institute. The measurements, however, have in most cases been conducted much longer, occasionally for the largest part of the 20th century.

Most fields are monitored regularly. In 1920 when the former IMO was established the number of weather stations were 20. Today weather monitoring is conducted hourly, either by automatic monitors or by manual monitoring. The first seismometer was set up in Iceland in 1909, but earthquake monitoring started at IMO in 1925. In contrast, the first GPS meter was established at IMO in 1999, The seismometers as well as the GPS-network is an on-line-system with continuous data streaming. Water levels and river discharge has been monitored continuously since 1959 and with occasional non-continuous stations initiated earlier. The discharge data are usually published in a daily format; however, specifically defined flooding stations give warnings, both on the basis of changes in water level as well as changes in water temperature and conductivity. Sea-ice records have been collected at IMO since its establishment in the 1920s, and today sea ice is monitored with daily satellite pictures, by notifications from ships, and by regular sea-ice monitoring flights. Daily monitoring on SO₄-S, NO₃-N, Cl, Na, Mg, K, Ca í mg/l and SO₂-S í µg/m³ in rain, particulates and atmosphere has been conducted in Grímsnes, in south west of Iceland, since 1972 and in Reykjavík since 1982.

Transboundary pollution has been monitored in Iceland, under an international project called Stórhöfði, since 1991. CO₂, CH₄, CO, H₂, SF₆ and N₂O in addition to ¹³C and ¹⁸O isotopes in CO₂ and ¹³C isotope in methane are measured and the data is sent yearly to European databases. Sulfur is monitored in algae and other marine substances and ozone on the surface to research the seasonal changes in these substances and their connection to weather.

Geographical coverage:

The monitoring covers Iceland and in some cases the Icelandic EEZ.

Data archive:

The data is retained at the IMO, but is available for the public on request. The IMO provides both iframe services and XML-service when delivering weather information.

The Icelandic Road Administration - Vegagerðin -

Contact person:

Hreinn Haraldsson, Director General, hreinn.haraldsson@vegagerdin.is

Thorir Ingason, Head of Research Department, thorir.ingason@vegagerdin.is

Web site:

<http://www.vegagerdin.is>

Main objective of the network:

The Icelandic Road Administrations main function is to maintain and develop roads in Iceland.

Research and development has always been a part of the Road Administrations functions.

Member/connected to global network, if yes which:

FEHRL (Forum of European National Highway Research Laboratories)

COST Transport and urban development (European cooperation in the field of scientific and technical research) The Icelandic Road Administration

OECD (Organization for Economic Co-operation and Development) Projects connected to ECMT (European Committee for Ministers of Transport)

PIARC (World Road Association)

ERTRAC (European Road Transport Research Advisory Council).

NordFoU (The Nordic Road authorities' research cooperation)

NVF (Nordisk Vejforum)

Type of network:

- Thematic observations
 - Field stations
 - Community based observations

When operational (year):

Operational from 1918.

Geographical coverage:

Iceland

Data archive (data center):

Nordic Road and Transport Research joint publication in English from the Nordic Countries
<http://nordicroads.com/website/index.asp> 12 SAON: Inventory on Monitoring Networks Iceland

Various country information:

Vegasjá (<http://vegasja.vegagerdin.is/>)

Publications available in four categories (mostly in Icelandic):

Infrastructure: <http://www.vegagerdin.is/upplýsingar-og-utgafa/rannsóknarskýrslur/mannvirki/>

Traffic: <http://www.vegagerdin.is/upplýsingar-og-utgafa/rannsóknarskýrslur/umferd/>

Environment: <http://www.vegagerdin.is/upplýsingar-og-utgafa/rannsóknarskýrslur/umhverfi/>

Community: <http://www.vegagerdin.is/upplýsingar-og-utgafa/rannsóknarskýrslur/samfelag/>

Institute of Freshwater Fisheries – Veidimálastofnun

Contact person:

Sigurður Guðjónsson, Director General, sigurdur.gudjonsson@veidimal.is

Web site:

<http://www.veidimal.is>

Main objective of the network:

The Institute of Freshwater Fisheries (Veidimalastofnun) is a Governmental institution managing freshwater biota and freshwater fisheries in Iceland. Its principal tasks are research of biota in rivers and lakes, research on freshwater fish stocks supervision and guidance to river and lake fisheries associations concerning sustainable fisheries. Among the Institute of Freshwater Fisheries main tasks is research and consultation concerning impact assessment of projects or structures affecting rivers and lakes, creation and management of data banks on rivers and lakes, their biota and fisheries.

Member/connected to global network:

International Council for the Exploration of the Sea (ICES).

EU Water framework directive

Type of network:

- Thematic observations
- Field stations

Thematic area:

- Freshwater ecosystem
- Sustainable fisheries

Main variables:

Status of Icelandic freshwater fish stocks: Atlantic salmon (*Salmo salar* L.), brown trout (*Salmo trutta*) and Arctic char (*Salvelinus alpinus*), European eel (*Anquilla anquilla*) and three-spined stickleback (*Gasterosteus aculeatus*), stock size, exploitation, spatial and temporal changes, catch statistics, fish counters, run timing, juvenile surveys, enhancement of fish stocks etc.

Status of freshwater rivers and lakes in Iceland: invertebrate communities, taxa, water temperature, conductivity, chemical analysis etc.

When operational:

The Institute of Freshwater Fisheries was initially established in 1946 and has been research institutions from 1997.

Geographical coverage:

Iceland.

Data archive:

The Institute of Fresh Water Fisheries operates a database on all research conducted by the Institute. In the database metadata of all research can be found through a search engine including almost all reports from 1946.

Data availability:

- Meta-data only

Isavia Ltd.

Contact person:

Bjorn Oli Hauksson, General Manager, isavia@isavia.is

Web site: <http://www.isavia.is/English/>

Main objective of the network:

Isavia is the national operator of Iceland's airports, air navigation services and air communications system. Iceland is responsible for international services in the North Atlantic including oceanic air traffic control services and the upper airspace of Greenland. The company and its subsidiaries have undertaken other international support tasks in the past, such as the development of Pristina Airport and ATM services in Kosovo. The company conducts air navigation calibrations in Iceland, the Faroe Islands and Greenland. Isavia operates under the regulatory supervision of the Icelandic and Danish Civil Aviation Authorities.

Isavia and its subsidiaries conduct research and development of systems to fulfill all the special needs and safety requirements of the airports and air navigation service operation, with economic considerations in mind. Most of the software systems used by the air traffic control center in Reykjavik and towers are developed in conjunction with the subsidiary company, Tern Systems Ltd. The products have been successfully marketed internationally in several overseas projects.

For more detailed information, please see [Isavia annual report 2010](#).

Type of network:

- Coordination

Thematic area:

- Atmosphere

Main variables:

Flight safety, air navigation service, aerodrome operation

When operational:

2010 (predecessors 1945)

Geographical coverage:

Iceland

Marine Research Institute - Hafrannsóknastofnunin, MRI

Contact Person:

Jóhann Sigurjónsson, Director General, johann@hafro.is

Web site:

http://www.hafro.is/index_eng.php

MRI's activities are organized into three main sections:

Environment Section, Resources Section and Fisheries Advisory Section.

Marine Environment Section:

A large part of the sections work deals with environmental conditions (nutrients, temperature, salinity) in the sea, marine geology, and the ecology of algae, zooplankton, fish larvae, fish juveniles, and benthos.

Amongst the larger projects undertaken within the Environment Section are investigations on currents using satellite monitored drifters and other modern technology, assessment of primary productivity, secondary productivity, overwintering and spring spawning of zooplankton, and studies on spawning of the most important exploited fish stocks.

Marine Resources Section:

Investigations are undertaken on the exploited stocks of fish, crustaceans, mollusks and marine mammals. The major part of the work involves estimating stock sizes and the total allowable catch (TAC) for each stock.

Examples of some large projects within the Marine Resources Section are annual ground fish surveys covering the shelf area around Iceland and surveys for assessing inshore and deep-water shrimp, lobster, and scallop stocks. The pelagic stocks of capelin and herring are also monitored annually in extensive research surveys using acoustic methods. Further, in recent years an extensive program concentrating on multi-species interactions of exploited stocks in Icelandic waters has also been carried out. A designated project for improving understanding of the dynamics of the ecosystem deep north of Iceland has been conducted in recent years.

The Fisheries Advisory Section:

The Fisheries Advisory Section scrutinizes stock assessments and prepares the formal advice on TAC's and sustainable fishing strategies for the government.

Supporting departments:

Important supporting departments are, the Electronic Department and the Fisheries Library. The Electronic Department supervises installation, testing and maintenance of research instruments. The Fisheries Library collects books and periodicals in all fields of marine sciences and publishes the MRI report series. 20 SAON: Inventory on Monitoring Networks Iceland

Type of network:

- Thematic observations
- Field stations
- Community based observations

Thematic area:

- Productivity of exploited fish stocks and other marine animal populations, Oceanography, Marine biology and Fisheries advice.

Main variables:

MRI has five branch laboratories located in fishing communities in different parts of Iceland. Today these branches are located in Akureyri, Höfn, Vestmannaeyjar, Ísafjörður and Ólafsvík. The five branch laboratories provide important data on fisheries and carry out research in close contact with local fishing interests.

MRI runs two research vessels: Bjarni Sæmundsson (55 m) and Árni Friðriksson (70 m). The research vessels are able to operate a variety of fishing gear. They also provide facilities for many other types of sampling and measurements. Shipboard laboratories allow sample analysis and data processing at sea. About 30 people man the ships.

MRI runs a 1350 m² experimental mariculture station with access to geothermal water 7 km west of Grindavík, SW Iceland.

The species mainly studied in recent years for aquaculture purposes are halibut (*Hippoglossus hippoglossus*), cod (*Gadus morhua*), turbot (*Scophthalmus maximus*) and arctic char (*Salvelinus alpinus*).

Other experimental work have dealt with species such as catfish (*Anarhichas lupus*), spotted catfish (*Anarhichas minor*), lemon sole (*Microstomus kitt*), Greenland halibut (*Reinhardtius hippoglossoides*), haddock (*Melanogrammus aeglefinus*), salmon (*Salmo salar*), seithe (*Pollachius virens*), lumpfish (*Cyclopterus lumpus*), butterfly (*Pholis gunnellus*), Iceland scallop (*Chlamys islandica*), green sea urchin (*Strongylocentrotus droebachiensis*), Norway lobster (*Nephrops norvegicus*), abalone (*Haliotis rufescens*) and Japanese abalone, Ezo awabi (*Haliotis discus hannai*). MRI has also participated in several aquaculture projects outside the institute, frequently in cooperation with private companies.

When operational:

MRI was established formally in 1965 as a governmental institution. Its predecessor was established in 1937, then as the Department of Fisheries of the University Research Institute. The history of systematic marine research however, dates back to the beginning of the 20th century.

Geographical coverage:

Icelandic Exclusive Economic zone (EEZ)

Data archive (data center):

http://www.hafro.is/undir_eng.php?ID=1&ID=120

<http://www.fisheries.is>

<http://www.hafro.is/Sjora/>

Data availability:

The MRI research data is available through the International Council for the Exploitation of the Sea (ICES) central database. Selected data is also available at the MRI either on the web or by special request.

<http://www.ices.dk/datacentre/Submissions/index.aspx>

Mývatn Research Station

Contact Person:

Árni Einarsson, director, arnie@hi.is

Web site:

Web site: <http://www.ramy.is> (currently under construction)

The Mývatn Research Station is an ecological field research institute under the Icelandic Ministry for the Environment. It operates in close cooperation with the University of Iceland.

Its main task is to carry out and stimulate research that aids conservation and management of the Mývatn-Laxá nature protection area of international interest.

Research activities are twofold: (1) long-term monitoring of the ecological situation; (2) short term research projects focusing on certain aspects of the ecosystem. Ecological monitoring started in 1975. It focuses on the entire food web of the lake.

The nature of Mývatn and Laxá

Myvatn is a large lake at the edge of the volcanic zone cutting through North Iceland. Its water wells up in a number of springs on the lake shore. Craters and volcanoes dominate the landscape. Several famous volcanoes are in the vicinity such as Hverfjall (Hverfell), Krafla and the Threnslaborgir crater row. Volcanic activity in the region gives rare insight into the process of continental drift. Many strange lava formations occur, Dimmuborgir and Höfði being the most famous ones, also the pseudocrates (rootless vents) which are characteristic for the lake shore.

The lake itself and its outflow the River Laxá is the most fertile freshwater system in Iceland. The bird life and fishing (including Atlantic Salmon) is extremely rich. Owing to the position of Iceland between two continents and on the border between the arctic and boreal ecozones the species composition of the biota is unique. The richness is based on phosphate-rich groundwater, relatively high insolation and optimal water depth for aquatic plants and waterfowl.

Fishing and harvesting of duck eggs has always been important for the local household. Hydro- and geothermal power extraction as well as mining activities are currently the main threats to the landscape and ecology of the area. The area attracts large numbers of tourists. The local nature undergoes substantial changes because of soil erosion, volcanic activity, mining, geothermal power utilization, agriculture, changes in grazing regime, structures for communication and other building activities.

The area is a protected nature reserve, managed by the Environment and Food Agency of Iceland, backed up by scientific information from the Myvatn Research Station.

The Myvatn Research Station

The Myvatn Research Station is a research institute focusing on Lake Mývatn and the outflowing river Laxá and their water catchment, with the overall aims of understanding and foreseeing changes in the ecosystem and its surroundings.

Monitoring of the lake biota

The overall aim of monitoring is to follow trends in the biota in order to detect undesired changes that may be caused by human activities and call for management actions. The monitoring is based on simple, well tested and ecologically meaningful methods that tackle various levels of the foodweb to maximize interpretability. Most monitoring projects are backed up by focused short-term research projects and are designed to yield usable data for scientific publications. The monitoring is carried out in cooperation with the University of Iceland, University of Wisconsin (USA), the Nature Center of North-East Iceland, the Institute of Freshwater Fisheries, and the Hólar College.

Monitoring of other areas

For comparative purpose the Myvatn Research Station is actively engaged in monitoring of two other wetland areas in North Iceland, those of Svartárvatn and Svarfadardalur.

Food-web research

The monitoring has revealed decadal fluctuations in the food web that have generated a lot of interest. Our research has focused on the potential drivers of the fluctuations, especially the interaction between the midge larvae and their food organisms (diatoms). We also do research on the effect of fluctuations in the populations of food organisms (midges and crustaceans) on the population dynamics of the vertebrates feeding on them (fish and waterfowl).

Palaeoenvironment

There is also an emphasis on long term palaeorecords of the lake and terrestrial ecosystems, including human impact. The research station organises, carries out or supports research on the palaeoenvironment of Lake Mývatn and the surrounding landscape. The main projects include (1) mapping of Viking Age turf wall systems revealing land division and management in the early days of Iceland's history; (2) mapping and dating of charcoal pits and other features related to deforestation in the medieval period; (3) detailed reconstruction of the lake biota of Mývatn from remains in the lake sediment; (4) archaeological excavation of a midden, covering the whole historical period (870 to present) revealing the history of human use of the local resources; (5) historical documents of wildlife abundance. All this research is carried out in collaboration with a number of universities in the US., the UK and Scandinavia.

Type of activity:

Terrestrial ecosystem monitoring

Main variables:

Lake biota,

- (1) All ducks, swans and geese,
- (2) All fish species,
- (3) All aquatic insect species,
- (4) Most cladoceran Crustacea,
- (5) Nutrients in inflowing water,
- (6) Plankton,
- (7) Benthic macrophytes,
- (8) Water temperature,
- (9) Ice cover.

(2)

Geographical coverage:

Iceland

The National Energy Authority - Orkustofnun, NEA

Contact person:

Gudni A. Jóhannesson, Director General gudni.a.johannesson@os.is

Web sites:

<http://www.os.is/> (Icelandic)

<http://www.nea.is/> (English)

Main objective of the network :

Orkustofnun, formally established in July 1967, works under the auspices of [The Ministry of Industry, Energy and Tourism](#) according to the [Act on Orkustofnun No. 87/2003](#). Other legislation describing the tasks of Orkustofnun includes the [Electricity Act, No. 65/2003](#), the [Act on Survey and Utilization of Ground Resources, No. 57/1998](#) and the [Act on Prospecting, Exploration and Production of Hydrocarbons No. 13/2001](#) .

The main roles of Orkustofnun, the National Energy Authority (NEA) are:

- To advise the government on energy issues and other resource issues that the NEA is responsible for according to legislation and to give the authorities consultations and reviews of these matters.
- To carry out research on energy in Iceland, the energy resources, on-land and off-shore, and on other mineral resources in order to facilitate their quantification and to advise the authorities on sensible and economical development of the resources.
- To gather data on energy resources and other mineral resources, their utilization and the energy utilization of Iceland, to preserve the data and to disseminate the information to the authorities and the public
- To prepare long-term plans on the energy utilization of Iceland and the development of energy resources and other mineral resources, on-land and off-shore
- To facilitate the cooperation of parties that conduct energy research and the coordination of the research projects
- To license and monitor the implementation of licenses granted for research and utilization of mineral and energy resources, the alteration of water courses and construction of dams and dykes, and the operation of power stations and other large energy facilities
- To regulate the energy grid system
- To administer the Energy Fund

Type of network:

- Thematic observations

Thematic area:

- Energy administration and research

Geographical coverage:

Iceland (including the Icelandic Continental Shelf)

Data archive (data center):

Orkustofnun and its predecessor (The State Electricity Authority) have collected data for over 50 years and have managed the repository in a relational Oracle database since 1989. The database contains comprehensive data on the exploration and research of water, hydrocarbon, mineral and geothermal resources, drilling and production of geothermal fields, geothermal system management and exploitation.

In addition to the internal database an [Iceland Energy Portal](#) is maintained, with an interactive map interface on the web of data on energy base maps, electric power plants and geothermal utilization. A separate [Iceland Continental Shelf Portal](#) informs about geophysical map data, place names, licensing and exploration metadata for hydrocarbons in the Dreki licensing area on the Jan Mayen Micro-continent, northeast of Iceland.

The objective of the interactive map portals is to create a common application management system to present geographical information that is kept in the internal Oracle database. Some data is, however, best presented as table statistics, and an example of that is the [Energy Statistics](#) given on the Orkustofnun web.

The National Land Survey of Iceland - Landmælingar Íslands, LMÍ

Contact person:

Magnús Guðmundsson, Director General, magnus@lmi.is

Web site:

<http://www.lmi.is/english/>

Main objective of the network:

The main objective of National Land Survey of Iceland is to provide and share geographical information on Iceland. The Survey gathers and sells digital data on Iceland as well as selling digital aerial photos. The institute is located at Stillholt 16-18 in Akranes 50 km from Reykjavik where it has been located since January 1, 1999. The institute currently has a staff of 29.

Member/connected to global network:

EuroGeographics, EuroSDR, INSPIRE; European Geoportal, cooperation of the Nordic Mapping and Cadaster Agencies and participant in Arctic SDI project.

Type of network:

- Thematic observations

Thematic area:

- Geographical information and geodetic data

Main variables:

Main variable of the Land Survey is the geography of Iceland and mapping.

When operational:

The history of the National Land Survey of Iceland can be traced back to the turn of the 20th century, when the surveying branch of the Danish General Staff began mapping the country. The National Land Survey of Iceland became an independent institute under the Ministry for Communications in 1956, and from 1990 it has been under the auspices of the Ministry for the Environment.

Geographical coverage:

Iceland

Data archive:

The main geographical database of National Land Survey of Iceland is called IS 50V. The reference

scale is 1:50.000 and the vector data is covering all Iceland.. The IS 50V database is constantly being revised at the National Land Survey of Iceland. It is being used at many institutes and municipalities as well as being used for map making and car navigation systems. When revising the data, different source and data is used such as GPS road surveying, aerial photographs, SPOT-5 satellite images and data from other institutes and municipalities. Edition 2.0 in the IS 50V database consists of 7 layers which are divided so: contour lines and points, buildings and other man-made structures, boundaries, roads, hydrology, vegetation and place names. The IS 50V dataset is in Lambert projection with ISN93 datum. All layers are categorized according to the IST120:2007 standard.

Vector data from The National Land Survey is also available in three different databases within the EuroGeographics; in EuroBoundaryMap that shows administrative boundaries in Europe, in EuroGlobalMap which is a digital mapping database of Europe on a scale 1:1 000 000 and in EuroRegionalMap which is a digital mapping database of Europe on a scale 1:250 000.

The National Land Survey of Iceland provides aerial photos on digital format where the film has been scanned in a high quality scanner in 1200 dpi resolution. With about 140,000 photos dating from 1937-2000, this aerial photography collection is unique in Iceland. Photographs of the entire country taken during different time periods are an invaluable source for comparison and historical research. The oldest photos in the collection are from the time of Danish surveying during 1937-1938. There are also many others taken by the British, Germans and Americans during the Second World War, and there are several photo categories in the collection taken by other foreign parties. With the exception of 1999, the National Land Survey of Iceland took photos of the country annually since 1950. Most of the photos are in black&white. The collection is well organised in an aerial photography index. Some of the photos have been put in an Image Window where you can look at photos and save for private use. In the future more photos will be added.

In addition, the National Land Survey offers several Map Services on the web. The Image window shows SPOT 5 satellite images that have been spliced together, The Atlas maps shows maps originally made by the Danish surveyors in the first four decades of the 20th century, The IS 50V Map window contains data which is only from the IS 50V database of the institute, On Loftmyndir (aerial photographs) one can see a Landsat satellite image of Iceland and SPOT-5 satellite images of a great part of the country with 10 meters ground resolution, The Cocodati programs offers users to project/calculate between the coordinate systems applicable in Iceland and the Drawings of Icelandic Farms offers old mappings of Danish surveyors of many Icelandic urban and farm areas.

Data availability:

The National Land Survey stores and supplies most of the land data with a help of an Oracle database or an Arc Info database. It also stores and supplies variety of geodetic data, which is stored specifically and can in some cases be accessed through the internet, (e.g. ftp). There are no restrictions on who can acquire the data and if the data is not available through the internet either in www.lmi.is or in <http://landlysing.lmi.is/>, an access to it can be provided by the Land Survey. In addition to the land data, various other data is stored at the National Land Survey, e.g. aerial photography, maps, film collection, etc. All the data is available by request at the Land Survey in addition to the maps that are accessible in the internet. The pricing is according to the pricelist submitted by the Ministry of the Environment.

The data is stored in various forms, fully processed, metadata, digital, paper and in film. Informations about the data can be found in <http://landlysing.lmi.is/>, which is operated in cooperation with LÍSA foundation.

The Stefansson Arctic Institute

Contact person:

Niels Einarsson, Director, ne@svs.is

Web site:

<http://www.svs.is/english/index.htm>

Main objective of the network:

The Stefansson Arctic Institute is an Icelandic governmental (Ministry for the Environment) research institute with focus on the Arctic region, also involved in public dissemination of research, exhibits, and international collaboration on northern human

dimension issues, social and cultural change and human development, economic development and interdisciplinary aspects of human-

environmental relations in the Circumpolar Arctic and Northern North Atlantic. The institute is involved in a range of

research and information dissemination projects and programmes. The institute was responsible for leading and hosting the project secretariat and publishing the Arctic Human Development Report (AHDR), the first comprehensive scientific assessment of human welfare, social development and cultural change in the circumpolar Arctic, and the follow-up projects Arctic Social Indicators (ASI-I, and ASI-II) 2006-2010.

The Institute leads the work on the second AHDR (2010-2014); and follow-up work to the ASI projects includes the implementation of an Arctic Social Indicators monitoring system with a piloting of a monitoring system in the Inuvialuit region of Canada, North West Territories. The ASI indicators work is also being applied in community case studies on the Alaska North Slope Borough, as well as the North-Atlantic region, Yamal-Nenets, Sakha-Yakutia, and Nunavut.

Member/connected to global network:

Northern Research Forum (NRF), North Atlantic Biocultural Organization (NABO), The University of Arctic (UArctic), International Arctic Social Sciences Association (IASSA); Land, Ocean Interaction in the Coastal Zone (LOICZ), and others.

Type of network:

- Thematic observations
- Community based observations

Thematic area:

- Human & socio-economic

Main variables:

Different fields /aspects of social science and economics, including key indicators on quality of life and human development in the Arctic (Arctic Social Indicators, ASI data), e.g. material wellbeing, education, health, fate control, cultural wellbeing, and closeness to nature.

When operational:

The Stefansson Arctic Institute (SAI) was established in 1998.

Geographical coverage:

The Arctic and sub-Arctic

The Soil Conservation Service of Iceland - Landgræðsla Ríkisins, SCSI

Contact person:

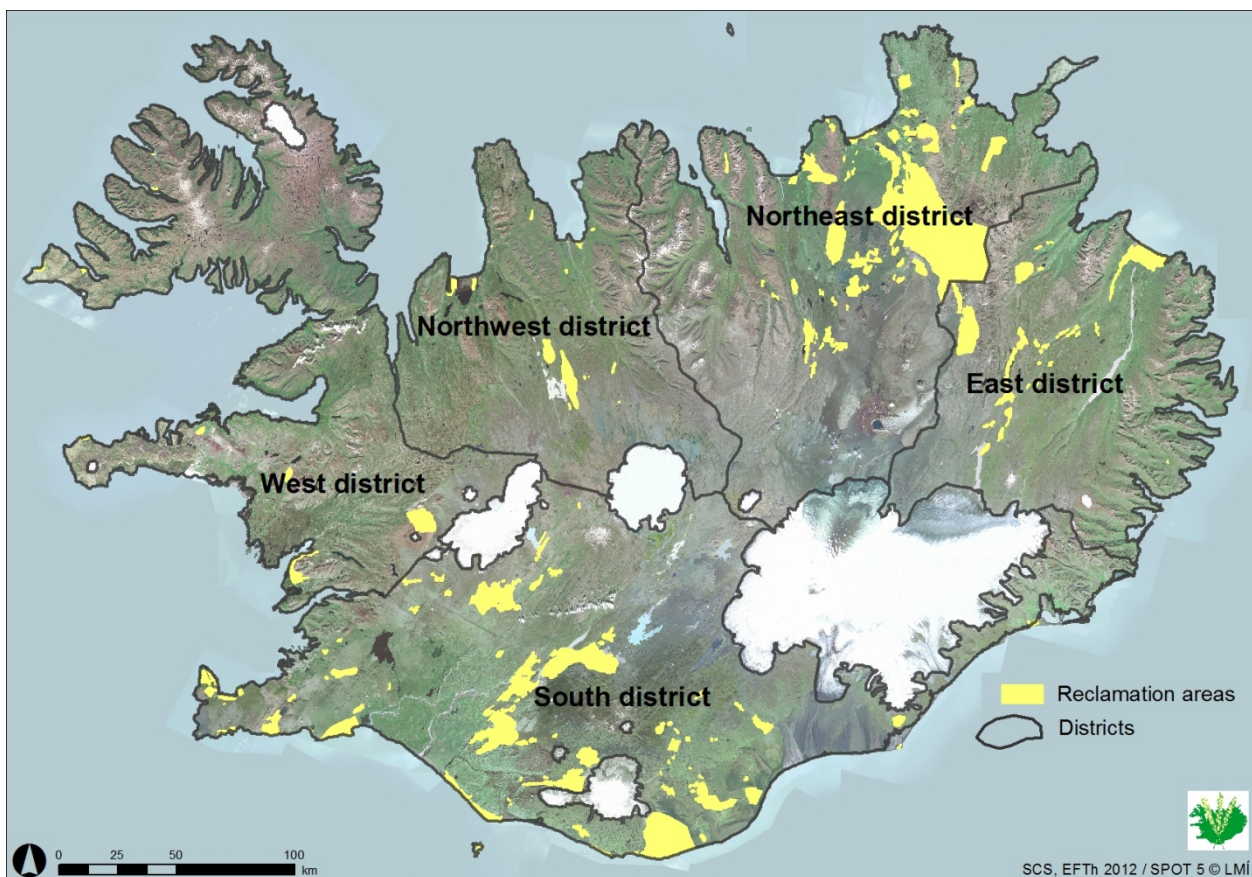
Director, Sveinn Runólfsson, sveinn@land.is

Web site:

<http://www.land.is>

Main objective of the network:

The main tasks of the SCSI include combating desertification, sand encroachment and other soil erosion, promotion of sustainable land use and reclamation and restoration of degraded land. The work is on different levels, from policy making and research, to extension services and management of large- and small-scale reclamation projects. The total area of reclamation sites is about 4460 km². The SCSI operates several district offices around Iceland with headquarters at Gunnarsholt in South Iceland. The total number of permanent staff is about 60.



Reclamation areas (yellow) and districts.

- Over 600 farmers participate in reclamation activities in cooperation with the SCSI. These sites are monitored annually with site visits by SCSI staff.
- The SCSI monitors vegetation dynamics, carbon sequestration in soils and vegetation in all land reclamation sites active since 1990 as a part of Iceland's commitment to the Kyoto emission

limitation commitment. Over 500 plots are monitored since 2007 or about 100 annually, hence revisited every five years.

- The SCSi also monitors streambank erosion.
- The SCSi in collaboration with the University of Iceland, institutes and individuals around Iceland monitor phenology of selected plant species for determining long term impact of climate change on plants. The project started in 2010 with monitoring sites located in diverse conditions.

Member/connected to global network:

The SCSi, in collaboration with the Icelandic Agricultural University, operates the UNU-LRT program (United Nations University – Land Restoration Training programme, <http://www.unulrt.is>), a six month training programme for specialists in the developing countries, on restoration of degraded land and sustainable land management, aiming at assisting developing countries in capacity development within the field.

The SCSi has also bilateral cooperation contracts with various universities and institutions, e.g. Ohio State University and the Joint Research Centre of the Council of Europe in Ispra, Italy. The SCSi is a participant in RENO - a Nordic multidisciplinary network of scientists, practitioners, policy makers and entrepreneurs working with ecological restoration.

Type of network:

- Thematic observations
- Field stations
- Permanent monitoring plots

Thematic area:

- Terrestrial ecosystems

Main variables:

Soil erosion, land degradation, ecosystem restoration, carbon fixation, rangeland condition, grazing issues.

When operational:

The SCSi was established in 1907 and has been operational since.

Geographical coverage:

Iceland

Data archive:

On their website metadata about SCSi research

http://www.land.is/index.php?option=com_content&view=article&id=217&Itemid=462

Data availability:

- GIS data base