

April 2022



KEEPING TRACK OF RETREATING GLACIERS IN ICELAND

>>> A few years later

Updating the national map base of Iceland continues to be one of the main tasks of the NLSI. Since 2018, the emphasis has been on updating the hydrological layer, using data of higher spatial resolution than Sentinel-2.

Gunnar Kristinsson, National Land Survey of Iceland (NLSI)



BENEFICIARIES	National Land Survey of Iceland	National Land Survey of Iceland	Ministry of Environment, Energy and Climate; Tourism and citizens associations	Citizens and Society
SERVICES	TIER 1: SERVICE PROVIDER Sentinel-2	TIER 2 PRIMARY USER Exact glacier outlines for almost all of Iceland's glaciers; Late Summer Snow Line (LSSL); Glacial river pattern in front of glaciers	TIER 3 SECONDARY USER Monitoring of glacier retreat resulting from climate change; Monitoring of hazardous proglacial environment	TIER 4 END USER BENEFICIARIES Update information on safety when travelling around the glaciers; Providing updated information for hydropower plants functioning (80% of energy supply in Iceland)

Value chain definition following SeBS Methodology - <https://earsc.org/sebs>

The space-based solution

This Copernicus-based solution was developed by the Public Administration for other users.

The Usage Maturity Level

This solution remained at more or less at the same UML and no noticeable modification were performed from technical perspective.

Thematic Area



CLIMATE, WATER AND ENERGY

Region of Application



LANDSBYGGD

Sentinel mission used



S2

Copernicus Service used



-

Usage Maturity Level



4

Overall benefits

ECONOMIC



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

INNOVATION



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

ENVIRONMENTAL



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

SCIENCE



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

REGULATORY



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

SOCIETAL



No noticeable additional modification/impact on the functioning of the public administration nor on the lives of the citizens since 2018.

Benefits classification following SeBS Methodology - <https://ears.org/sebs>

Interesting facts...

Since 2018, the task of updating the glacial extent has moved to another institution and is now conducted by the Icelandic Meteorological Office (Met Office), still based on Sentinel data.



Outlook to the future

In the future, the plan is to continue the use Sentinel-2 data for updating the glacial extent and glacial rivers. The main benefit of such data is that they provide large areas captured and an adequate accuracy at the same moment.

Contacts

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