FINNS DEMAND CLIMATE ACTION NOW

FINNS DEMAND CLEAN AIR NOW

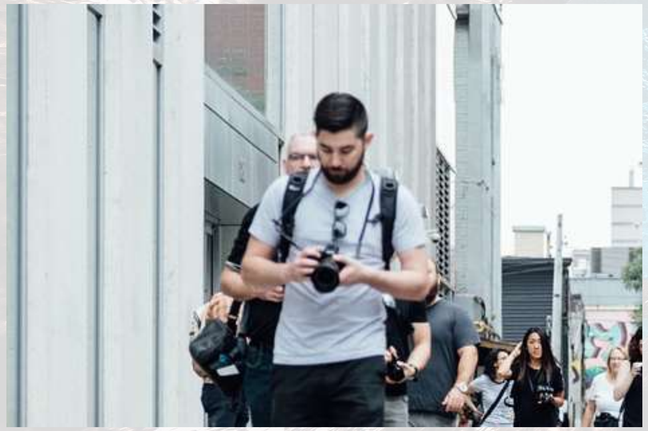

FINNS DEMAND STOPPING FOSSIL SUBSIDIES NOW
SOKOS
FORUM
LAPSUUDEN LOPPU
SAVE POND HOCKEY
#nyt on pakko


FINNS DEMAND CLIMATE FRIENDLY FORESTRY NOW


POLITICAL PARTIES PROMISE 10 YEARS FROM NOW
ILMASTOMARSSI -
ILMASTOMARSSI -
ILMASTOMARSSI -
ILMASTOMARSSI -

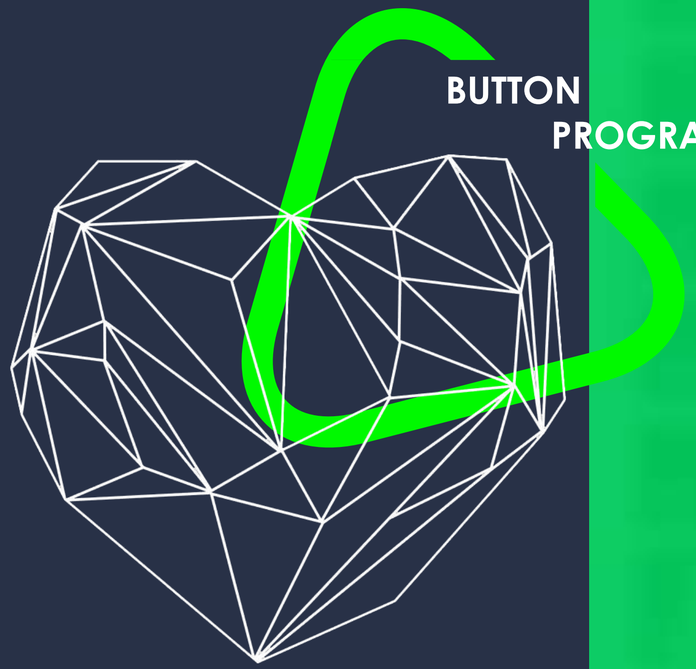
USE CASES FOR SATELLITE DATA MAP VISUALIZATIONS AND TOOLS:

Public information



Air quality monitoring

Land management



Button Program

Building digital solutions.
Making sustainability achievable.

A nonprofit community of IT & media pros
with scientists and NGOs

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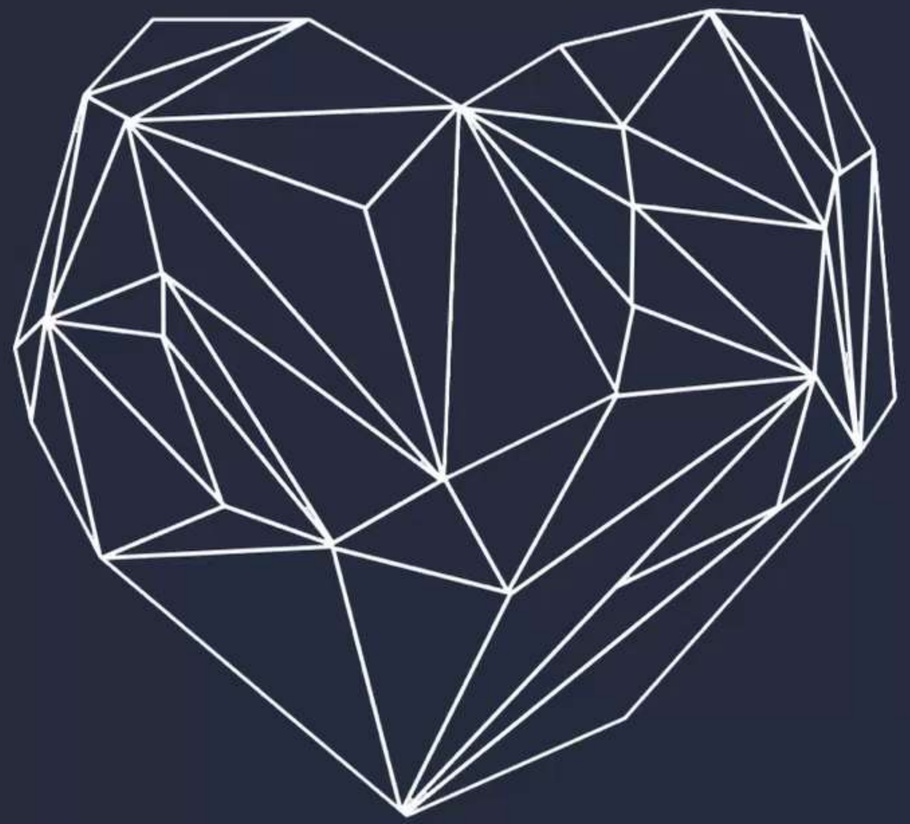
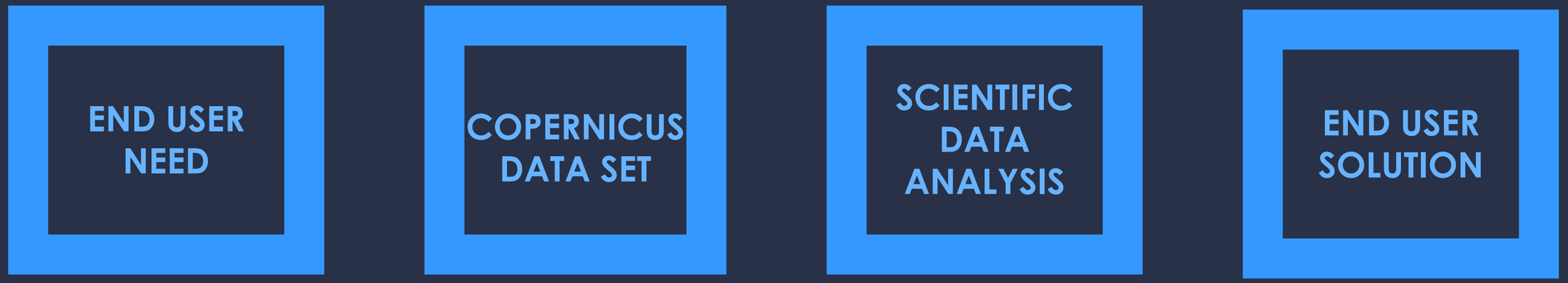


HACKING SUSTAINABILITY

ULTRAHACK 2017

HOW WE OPERATE - MAKING SUSTAINABILITY ACHIEVABLE



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END USER - LAND OWNER

Finnish peatlands were ditched in 60-70's.

40 000 ha of forest gets currently re-ditched every year.

even though it's unnecessary and causing plenty of greenhouse gas emissions.

END USER - LAND OWNER

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END USER NEED

Information about annual CO_2e (CO2, CH4, N2O) and nutrient emissions per acre from his/her land types: forests and fields

COPERNICUS DATA SET

Daily updating satellite images for base map

SCIENTIFIC DATA ANALYSIS

Layering open forest and field areas on top of the base map. Scientific estimation of emissions based on land types. Built with help of Finnish Forest Institute and University of Helsinki

END USER SOLUTION

A map visualizing land based emissions and guiding sustainable land management + allowing landowners to submit data

Programming, designing, implementing machine learning, building a market mechanism

FIRST OF ITS KIND LAND MANAGEMENT TOOL VISUALIZING GREENHOUSE GAS AND OTHER EMISSIONS.

Peatland carbon and humus map

How are the emissions calculated?

The demo calculations and scientific citations will be shown here.

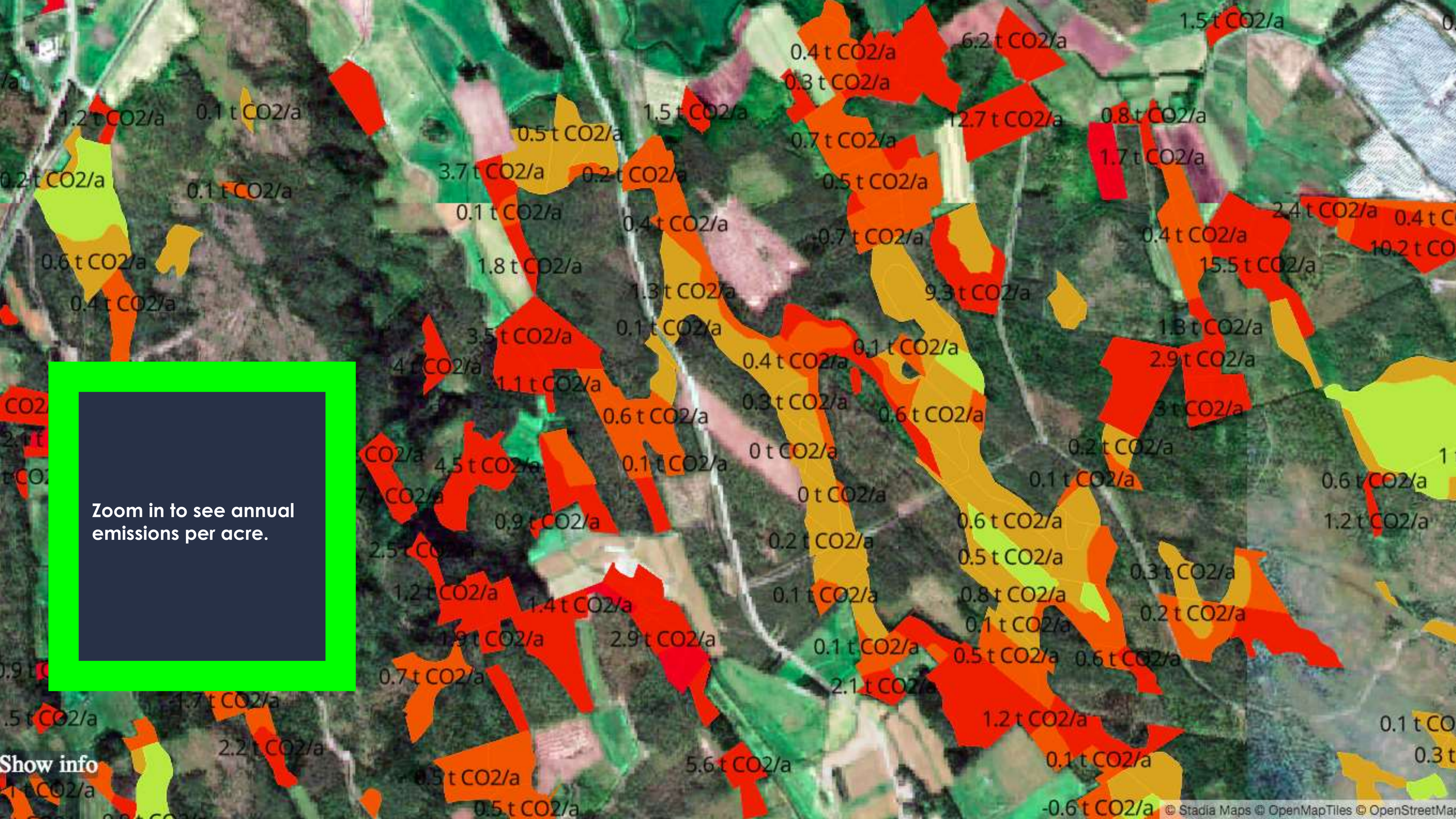
Wet ditched peatland = remarkable emissions
Dry ditched peatland = small emissions
Very dry ditched peatland = usually not suitable for forestry

- Wet ditched peatland with annual emissions over 5,000 kg CO2/ha
  10 kg humus
- Dry ditched peatland with annual emissions under 5,000 kg CO2/ha
  10 kg humus
- Very dry ditched peatland with annual emissions under 1,000 kg CO2/ha
  2 kg humus
- Recovering peatland with annual emissions savings over 1,000 kg CO2/ha
  2 kg humus
- Recovering peatland with annual emissions savings under 1,000 kg CO2/ha
  2 kg humus
- Recovering peatland with annual emissions savings under 500 kg CO2/ha
  0.5 kg humus
- Natural state peatland with annually growing carbon sink over 100 kg CO2/ha

Hide info

BUTTONPROGRAM.ORG/MAP

If 40 000 ha of land would not get ditched annually for 20 years the estimated CO2e saving is 2.6 M t. CO2e


Zoom in to see annual emissions per acre.
Show info
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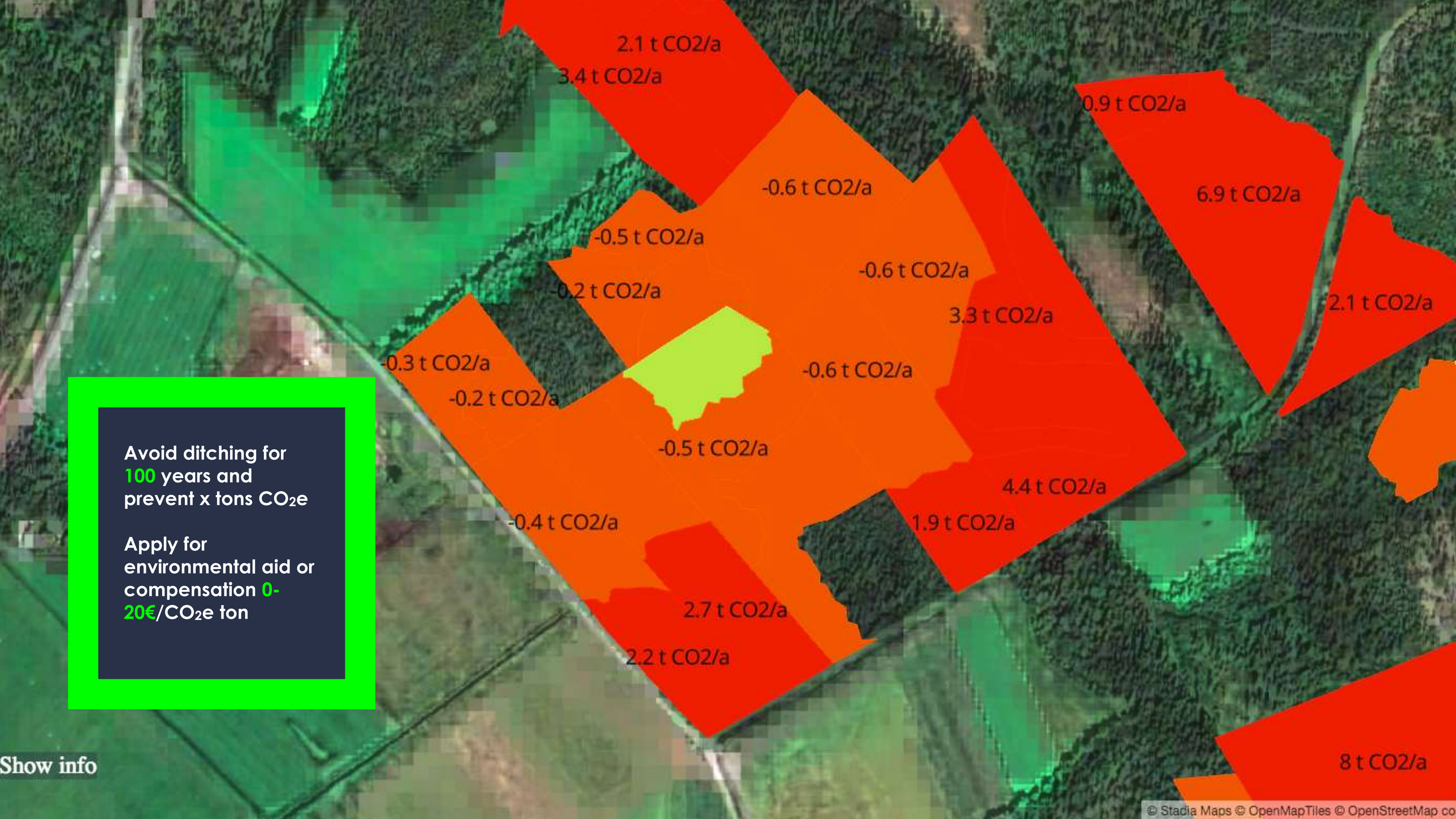
2.1 t CO2/a
3.4 t CO2/a
0.9 t CO2/a
6.9 t CO2/a
-0.6 t CO2/a
-0.5 t CO2/a
-0.6 t CO2/a
-0.2 t CO2/a
3.3 t CO2/a
2.1 t CO2/a
-0.3 t CO2/a
-0.6 t CO2/a
-0.2 t CO2/a
-0.5 t CO2/a
4.4 t CO2/a
-0.4 t CO2/a
1.9 t CO2/a
2.7 t CO2/a
2.2 t CO2/a
8 t CO2/a
Avoid ditching for 100 years and prevent x tons CO_2e
Apply for environmental aid or compensation 0-20€/CO_2e ton
Show info
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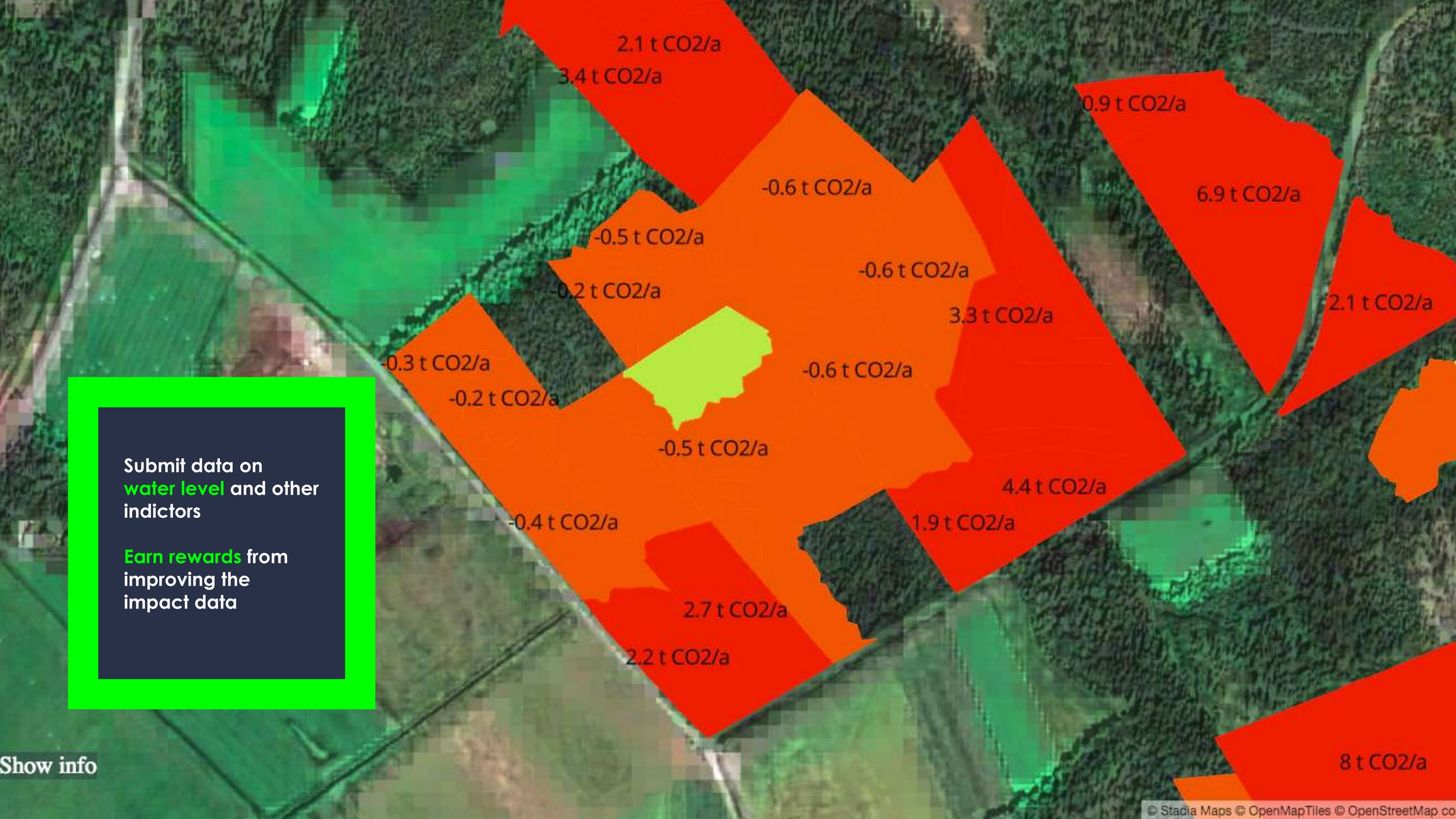
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-0.4 t CO2/a
1.9 t CO2/a
2.7 t CO2/a
2.2 t CO2/a
8 t CO2/a
Submit data on water level and other indictors
Earn rewards from improving the impact data
Show info
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END USER - PUBLIC AND POLICY MAKERS

END USER NEED

Visualizing the snow and lake ice data for public and policy makers & other stakeholders through research institutes

COPERNICUS DATA SET

Global Land Service data on snow cover and lake ice extent

SCIENTIFIC DATA ANALYSIS

Counting last day of snow and lake ice per area annually for Seasonal snow cover areas + information of areas of intermittent snow. Built with help of Finnish Environment Institute

END USER SOLUTION

A map visualising snow cover and lake ice extent inter-annual changes + allowing users to submit data

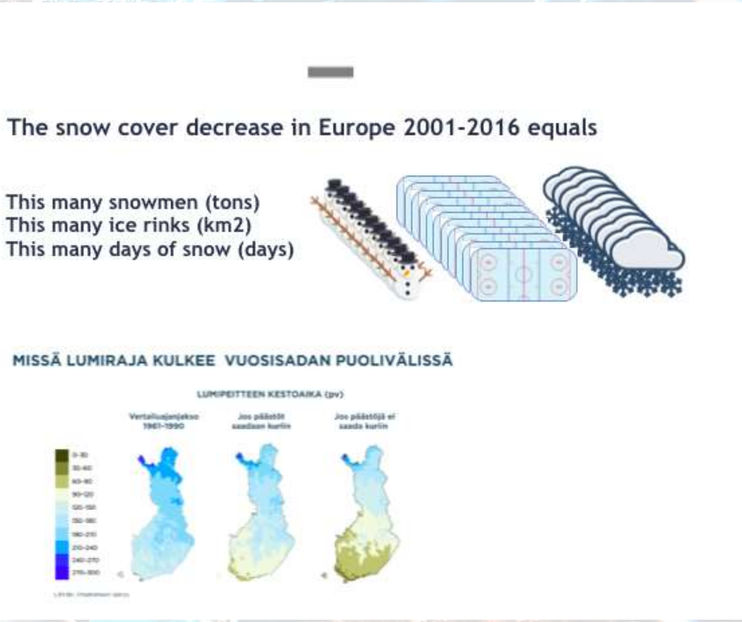
Programming, designing, implementing machine learning, building a market mechanism

WORK ON PROGRESS - SNOW COVER AND LAKE ICE EXTENT

WE HELP PUBLIC TO UNDERSTAND THE URGENCY OF CLIMATE ACTIONS

Visualizing Environmental Institute snow cover and lake ice extent satellite data analysis

WEB DEMO LIVE



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END USER - AIR QUALITY MONITORING

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END USER NEED

Visualizing the air quality data for public and policy makers & other stakeholders through research institutes

COPERNICUS DATA SET

Sentinel 5, Tropomi NO_2 data indicating air quality

SCIENTIFIC DATA ANALYSIS

Creating data-analysis with wind and without wind. Creating an overlay algorithm to visualize data on smaller areas. Built with help from the Finnish Meteorological institute

END USER SOLUTION

A map visualising air quality and guiding emission reductions + allowing to submit ground level data

Programming, designing, implementing machine learning, building a market mechanism

WORK ON PROGRESS FOR END USER - AIR QUALITY MONITORING

WE HELP CITIES TO COMMUNICATE THE IMPROVEMENT IN AIR QUALITY

Visualizing NO_2 satellite data and ground level measurements

PILOT CITIES IN FINLAND AND INDIA

WHAT IS COMMON BETWEEN SCIENTISTS AND IT PROFESSIONALS?

THEY ARE NOT AFRAID OF MISTAKES!

AGILE NONPROFIT - PRODUCT DEVELOPMENT WITHOUT SHAREHOLDERS

01. MODEL OF OPERATING: No employees. We are an open source network of IT professionals.

02. SHORT TERM WORK: IT consulting, pilots, acceleration programs

03. LONG TERM MISSION: Reducing greenhouse gas and water emissions, improving air quality, restoring biodiversity in scale with 5% commission

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DATA NEEDS FOR SNOW COVER AND LAKE ICE EXTENT & WATER EQUIVALENT

Snow cover and lake ice extent & water equivalent REAL TIME and LONG TIME SERIES data is important for applications including: climate change, hydro power, flood monitoring, transportation, tourism

PIXEL SIZE IS NOT ALWAYS MOST IMPORTANT BUT QUALITY OF DATA

SNOW COVER AND LAKE ICE EXTENT DATA ON NORTHERN HEMISPHERE IS GREAT TO HAVE

PERMAFROST REDUCTION & ITS GREEN HOUSE GAS IMPACT VISUALISATION IS IMPORTANT FOR CLIMATE SCIENCE

OTHER SATELLITE DATA & ANALYSIS INTERESTS FOR CLIMATE PROTECTION

SPOTTING UNDERGROUND COAL SEAM FIRES IN INDONESIA E.G. WITH NIGHTLY INFRA RED. AROUND 10 METRES RESOLUTION WOULD BE NEEDED. OR DAILY ANOMALIES IN GASES.

THICKNESS OF PEATLAND MASSIVES E.G. IN AMAZONAS, AND AFRICA. PREFERRED RESOLUTION AROUND 100M.

SPOTTING SEAGRASS MEADOWS (1-20M UNDERWATER) AND MANGROVES FROM SATELLITE IMAGES.

SPOTTING MATING AREAS OF BLUE WHALES AT AFRICA'S ATLANTIC COAST LINE. NEEDS A RESEARCH TRIP.

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THANK YOU - LET'S COLLABORATE GLOBALLY:

MAKING SUSTAINABILITY ACHIEVABLE

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