

ICIMOD

SERVIR 



Birendra Bajracharya

Connecting Space to Village





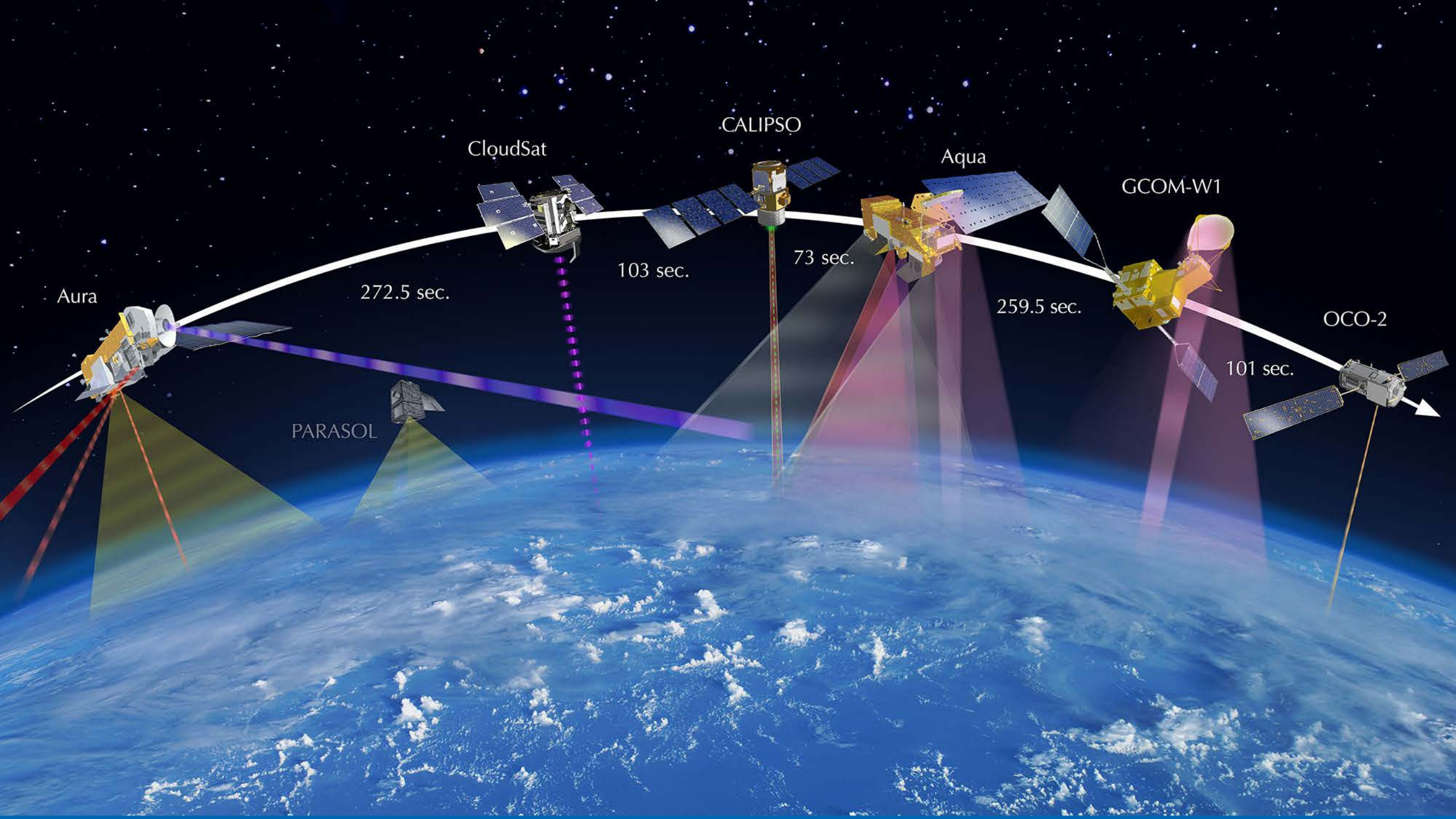
HUMANITY'S RETURN TO THE MOON

NASA plans to put the **first Woman on the Moon** in 2024





Earthrise, taken on December 24, 1968, by Apollo 8 astronaut William Anders



CloudSat

CALIPSO

Aqua

GCOM-W1

Aura

272.5 sec.

103 sec.

73 sec.

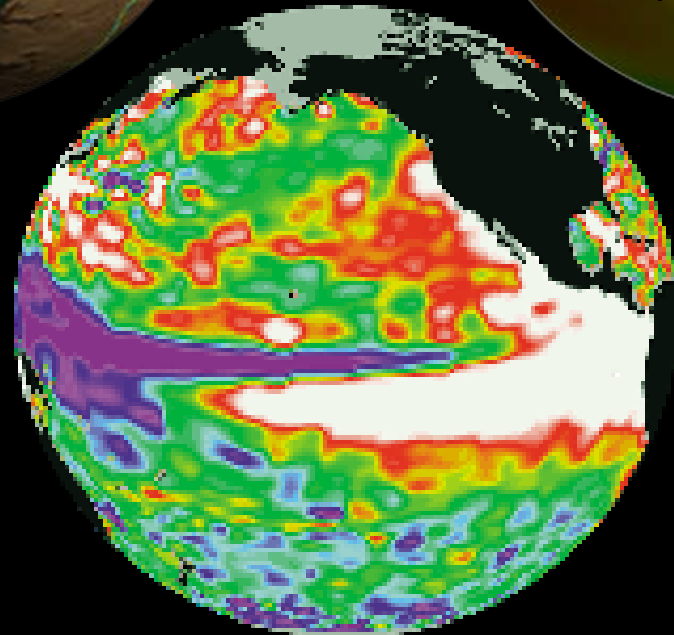
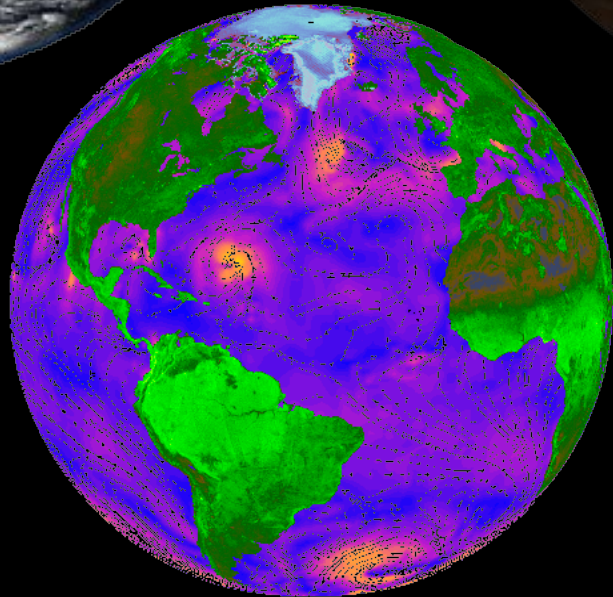
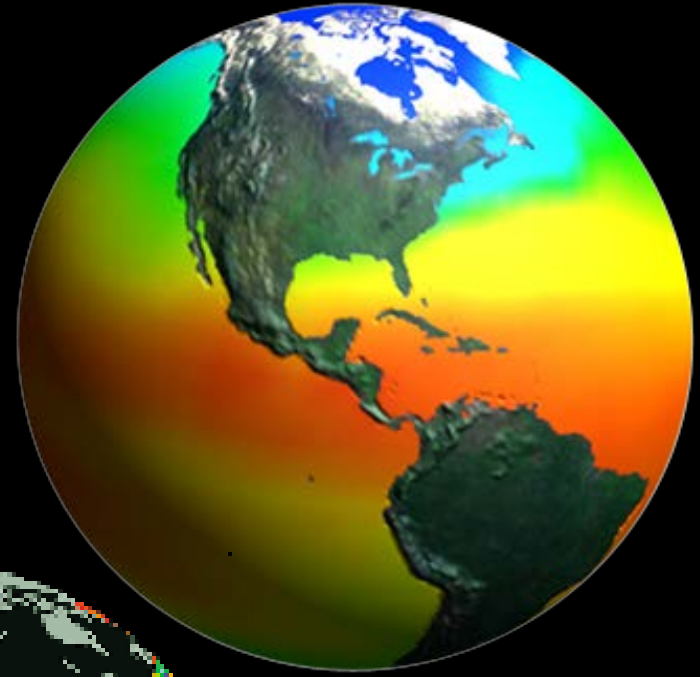
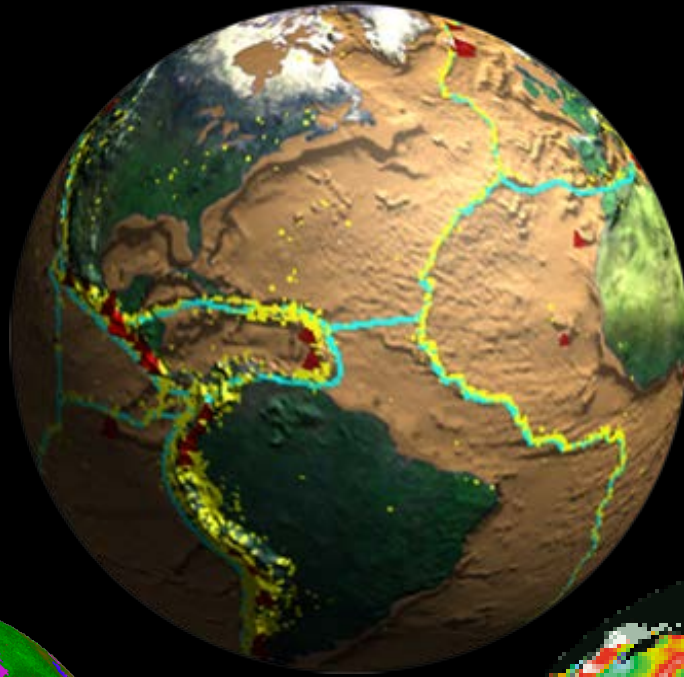
259.5 sec.

OCO-2

101 sec.

PARASOL

Earth as a System



'We have landed
on the Moon,
we now must
understand the Earth'

Al Gore, 1998

Arctic sea ice - 1979



Arctic sea ice - 2015



6/2017

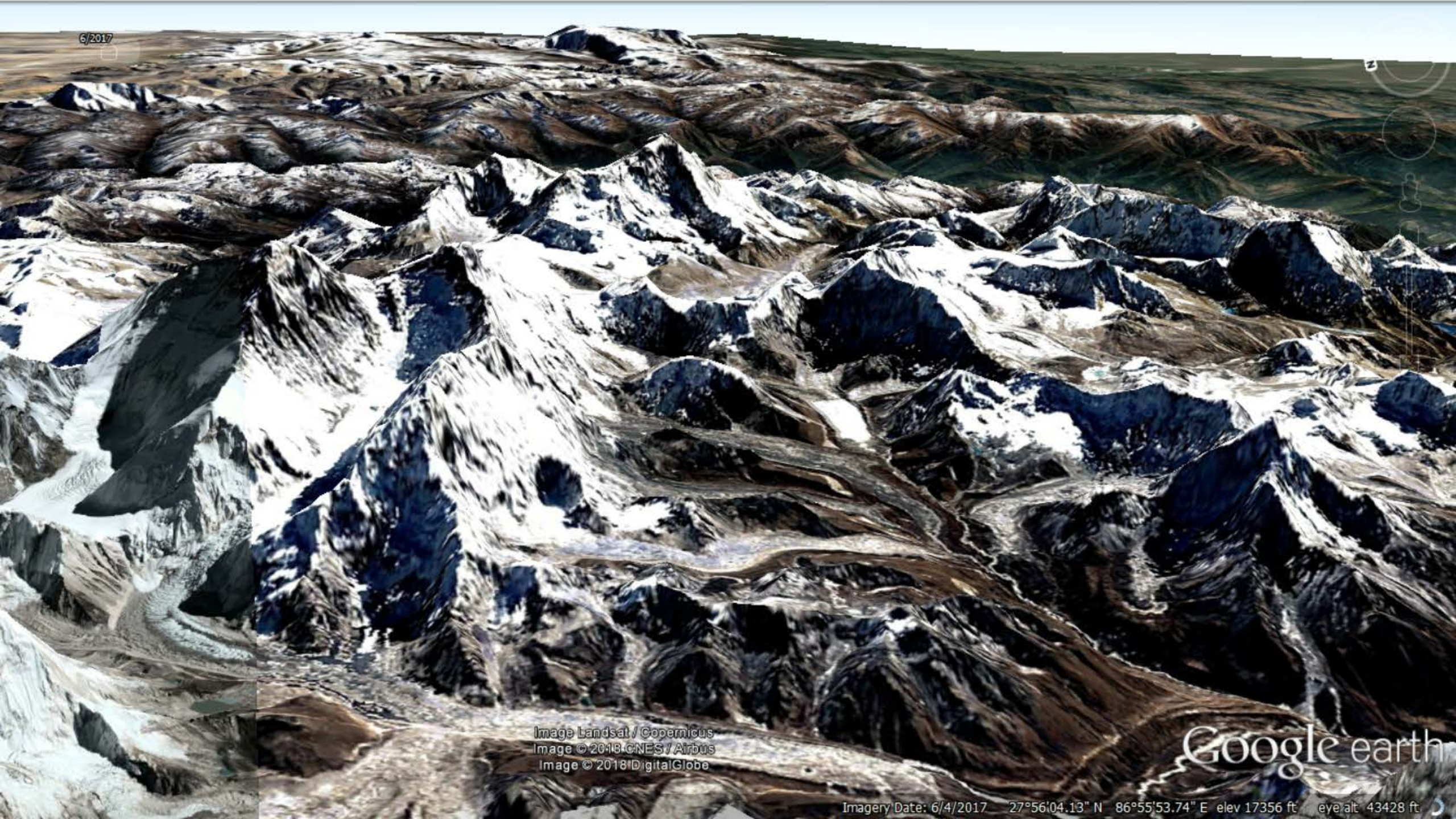


Image Landsat / Copernicus
Image © 2018 CNES / Airbus
Image © 2018 DigitalGlobe

Google earth

Imagery Date: 6/4/2017 27°56'04.13" N 86°55'53.74" E elev 17356 ft eye alt 43428 ft

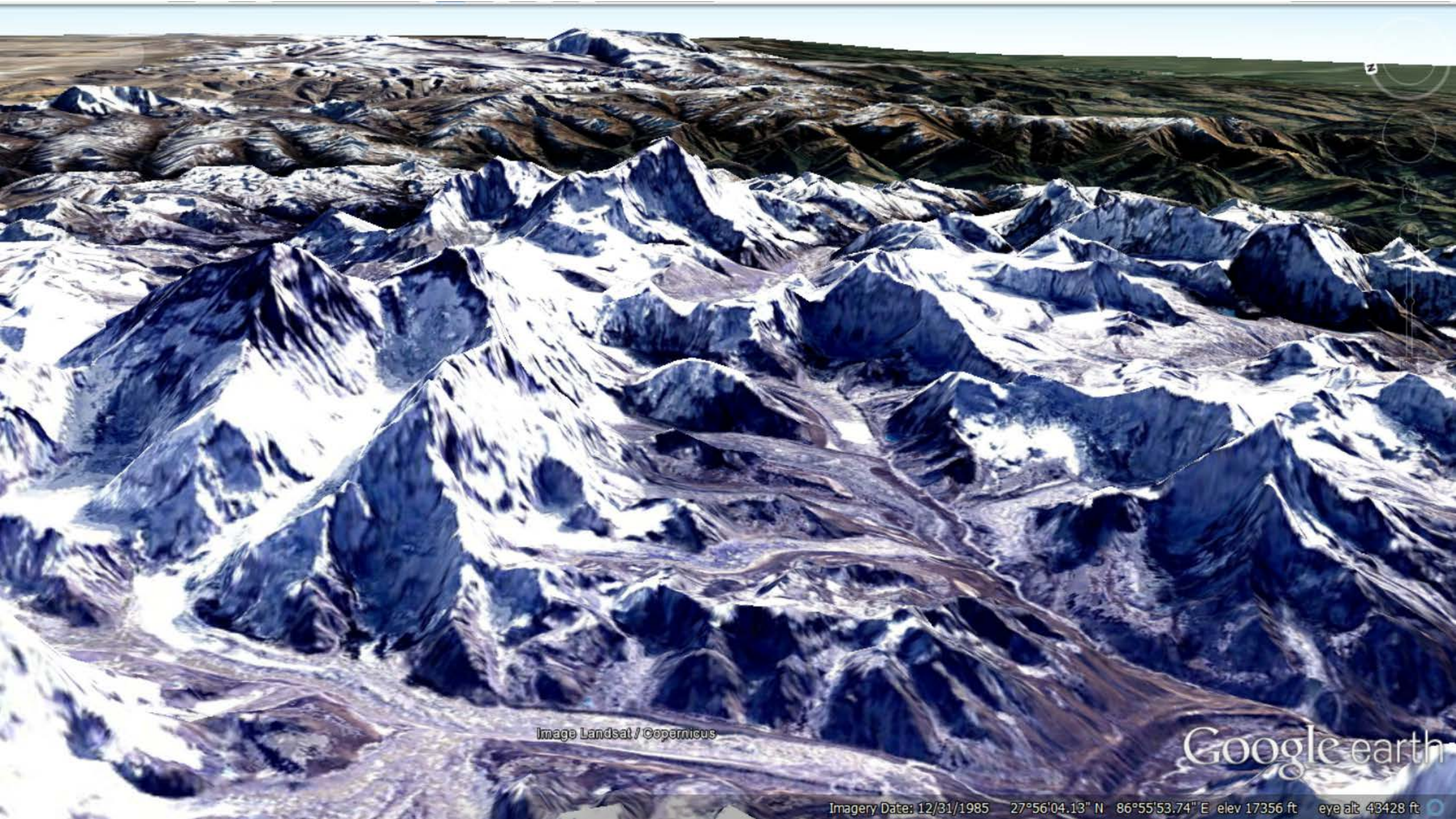


Image Landsat / Copernicus

Google earth

Imagery Date: 12/31/1985 27°56'04.13" N 86°55'53.74" E elev 17356 ft eye alt 43428 ft



Image © 2018 DigitalGlobe

Google earth

Imagery Date: 10/21/2003 27°38'36.41" N 85°19'28.38" E elev 4336 ft eye alt 11978 ft

1/5/2018

N

Image © 2018 DigitalGlobe

Google earth

Imagery Date: 1/5/2018 27°38'36.41" N 85°19'28.38" E elev 4336 ft eye alt 11978 ft

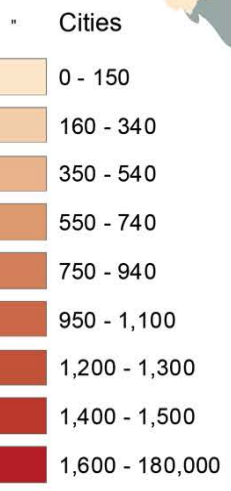
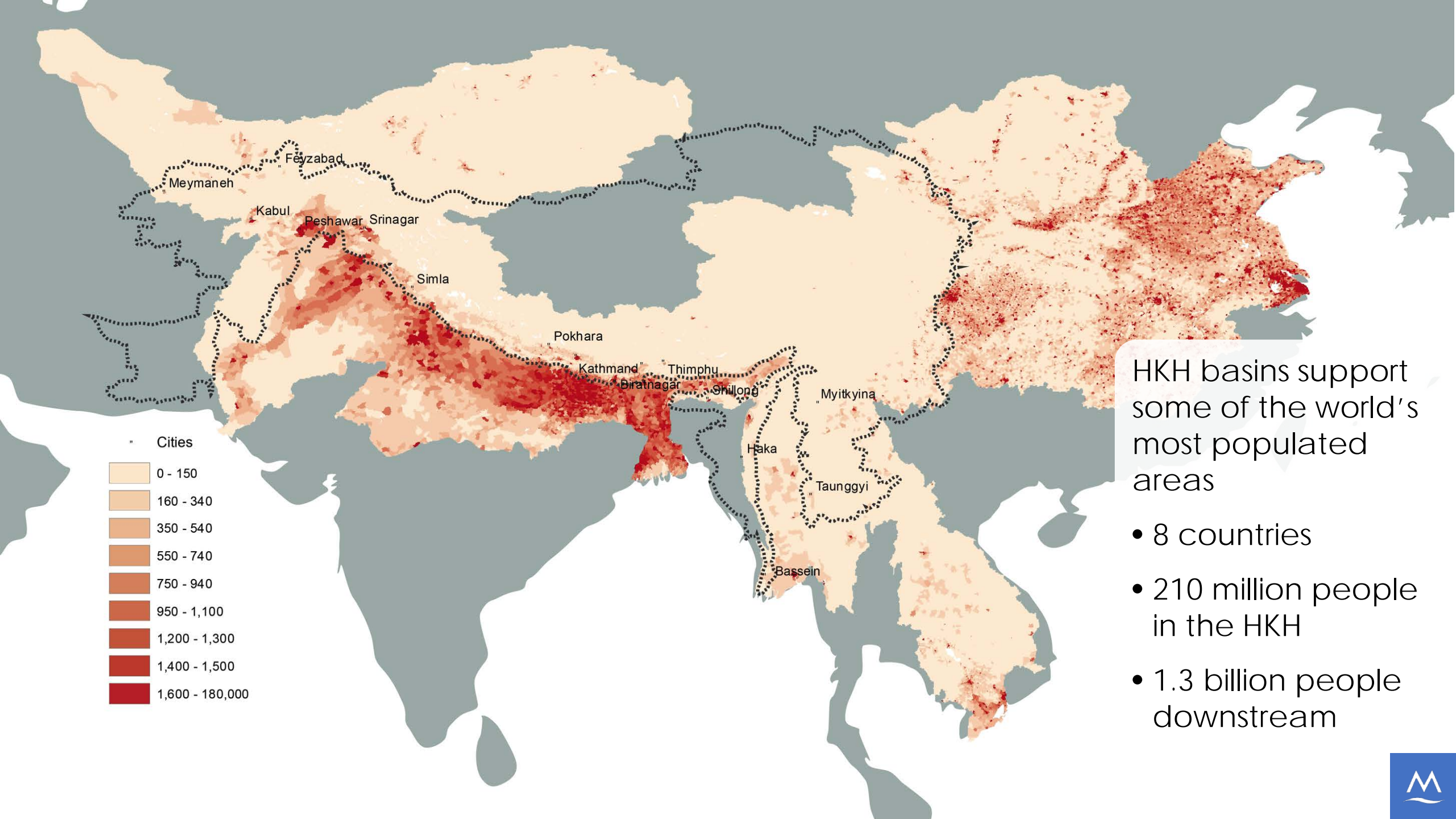
- connects space to village by helping developing countries use satellite data to address critical challenges
- develops innovative solutions to improve livelihoods and foster self-reliance in Asia, Africa, and the Americas.



International Centre for Integrated Mountain Development (ICIMOD)

A regional mountain knowledge, learning, and enabling centre devoted to sustainable mountain development for mountains and people





HKH basins support some of the world's most populated areas

- 8 countries
- 210 million people in the HKH
- 1.3 billion people downstream



SERVIR Priority areas

Agriculture &
food security



Weather & climate
services



Land use land cover
& ecosystem services



Water &
related disasters

Improve access to data,
tools, model and online
mapping and visualization

Strengthen capacity of
regional stakeholders

Create user-tailored decision
support tools and information
services

Foster regional cooperation
and build international
partnerships

Drought monitoring and early warning



National agricultural drought watch - Nepal

ICIMOD

Current Seasonal Outlook

Map Controls

☐ Nepal

☒ Province6

☐ Jumla

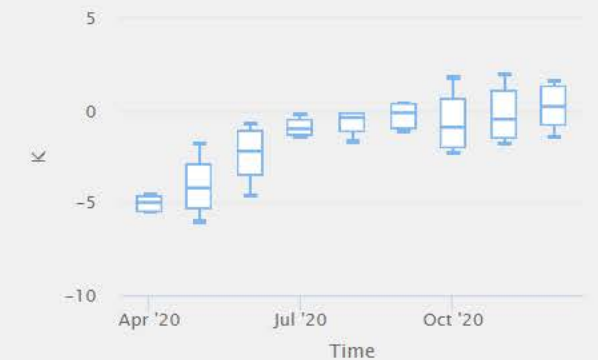
Select Ensemble

Mean

Compute Indices



Forecasted monthly Air temperature Anomaly v Time

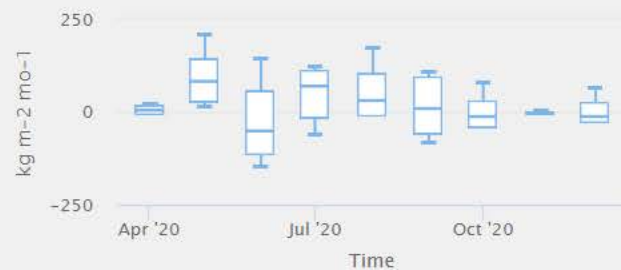


About

ICIMOD is developing an integrated information platform linking weather and climate data with agriculture practices in the region. The platform provides data analysis support to professionals responsible for developing agro-met advisories for government agencies and ...

[View More ...](#)

Forecasted monthly Rainfall flux Anomaly v Time



Forecasted monthly Soil moisture content Anomaly v Time



Forecasted monthly Total evapotranspiration Anomaly v Time



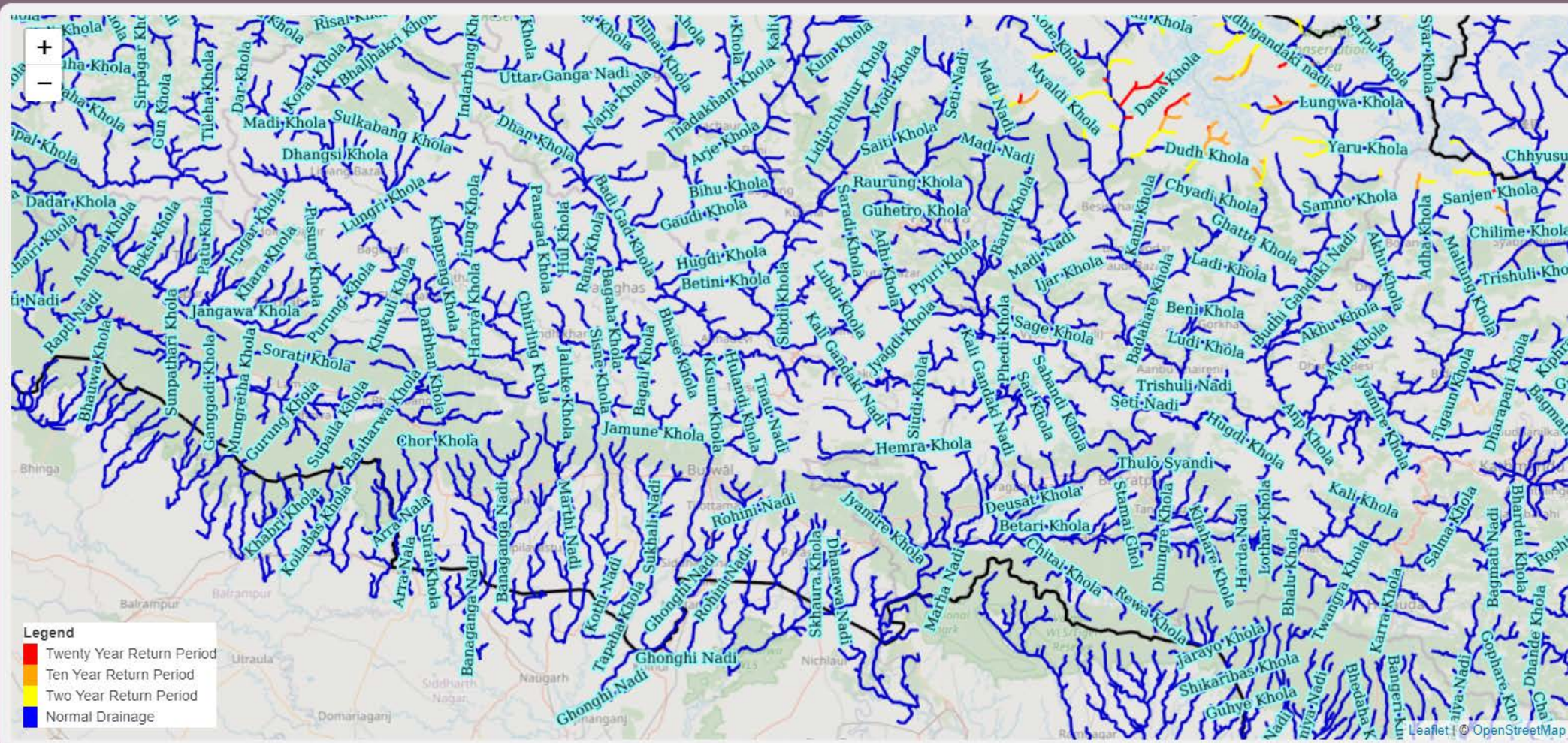
Start

Improving flood early warning



ICIMOD

Streamflow Prediction System (HIWAT-NEPAL)



Base Layers Legend

- ☒ Outline
- ☐ Province
- ☐ District
- ☒ River Names
- ☐ Station Names

About Streamflow Prediction **i**

Description:

The Streamflow prediction application is the collection of river network created within specific countries which has the unique ID which then is connected to the database to have the 48-hours forecast. The user can



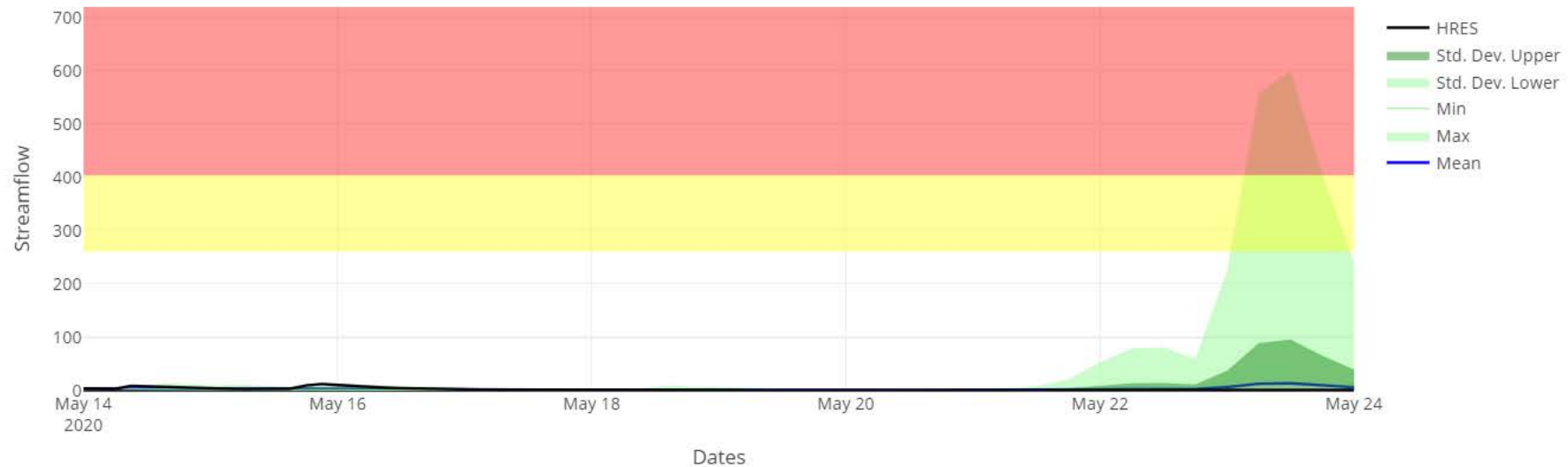
Improving flood forecasting and early warning

Streamflow Prediction System (Nepal)



Forecast Historical Flow-Duration Download

Forecast at Date (Time Zone: UTC) 2020-05-16, River ID: 56421



Dates	5-14	5-15	5-16	5-17	5-18	5-19	5-20	5-21	5-22	5-23	5-24
Percent Exceedance (2-yr)	0	0	0	0	0	0	0	0	0	2	0
Percent Exceedance (10-yr)	0	0	0	0	0	0	0	0	0	2	0
Percent Exceedance (20-yr)	0	0	0	0	0	0	0	0	0	0	0

ICIMOD

Use Layers Legend

Outline:
Province:
District:
Station Names:

About Streamflow Prediction

Description:
The Streamflow prediction application is the collection of river network created within specific countries which has the unique ID which then is connected to the database to have the 15-day forecast. The user can

Land cover monitoring



Land Cover Dynamics in Nepal

ICIMOD

Bangladesh Bhutan Myanmar Nepal Pakistan

Land Cover

Summary Statistics

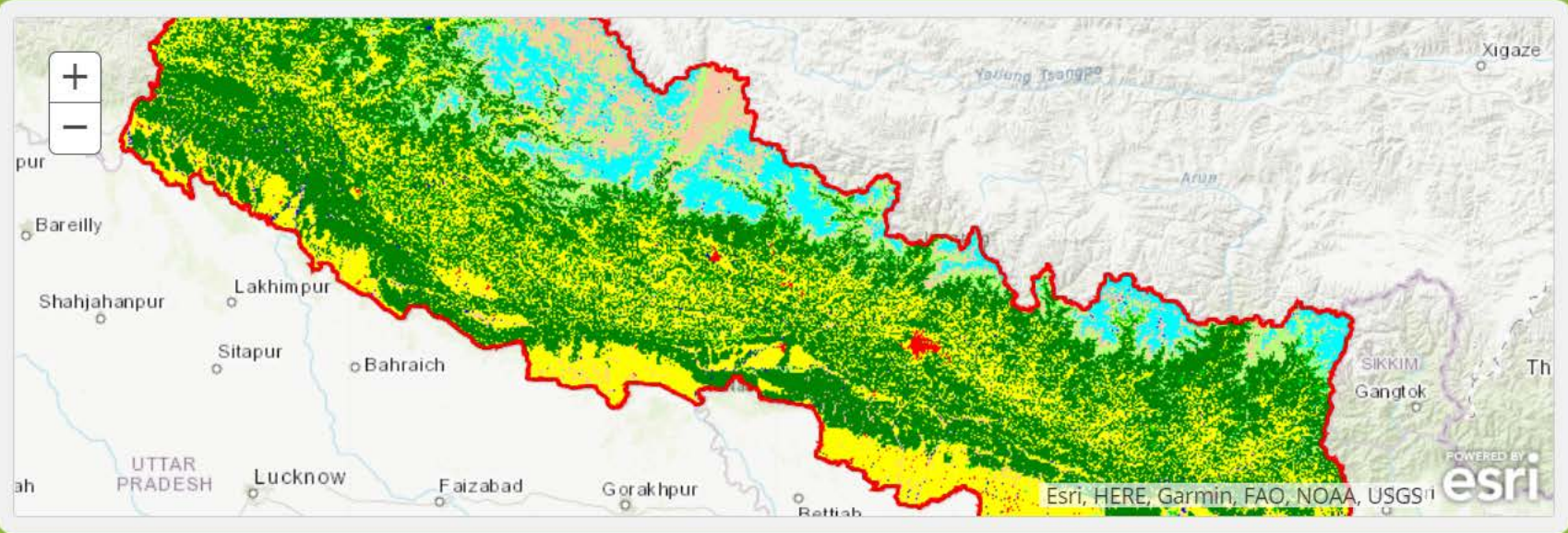
- ☒ Nepal
- ☐ Select District

Achham

View Statistics

Change Statistics

Swipe

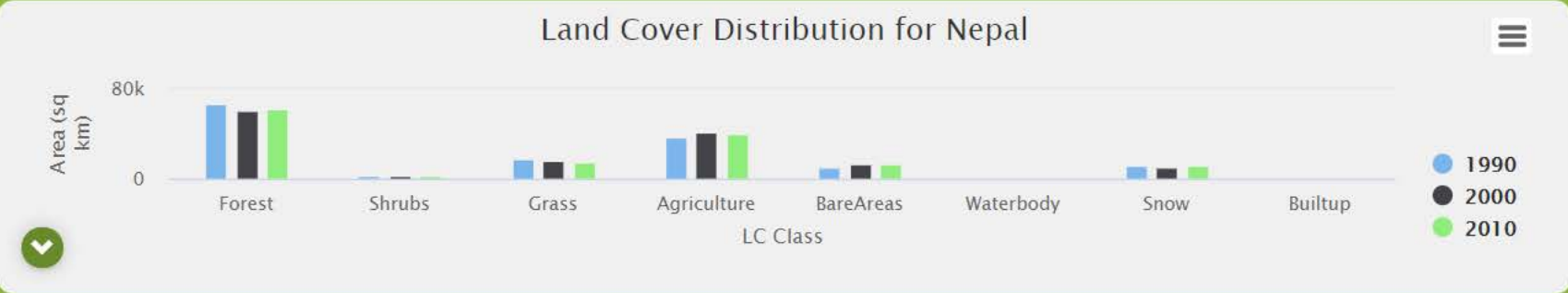


Layer Legend

- ☐ HKH Outline
- ☒ Outline
- ☐ District
- ☒ Land Cover 2010
- ☐ Land Cover 2000
- ☐ Land Cover 1990

Related Dataset

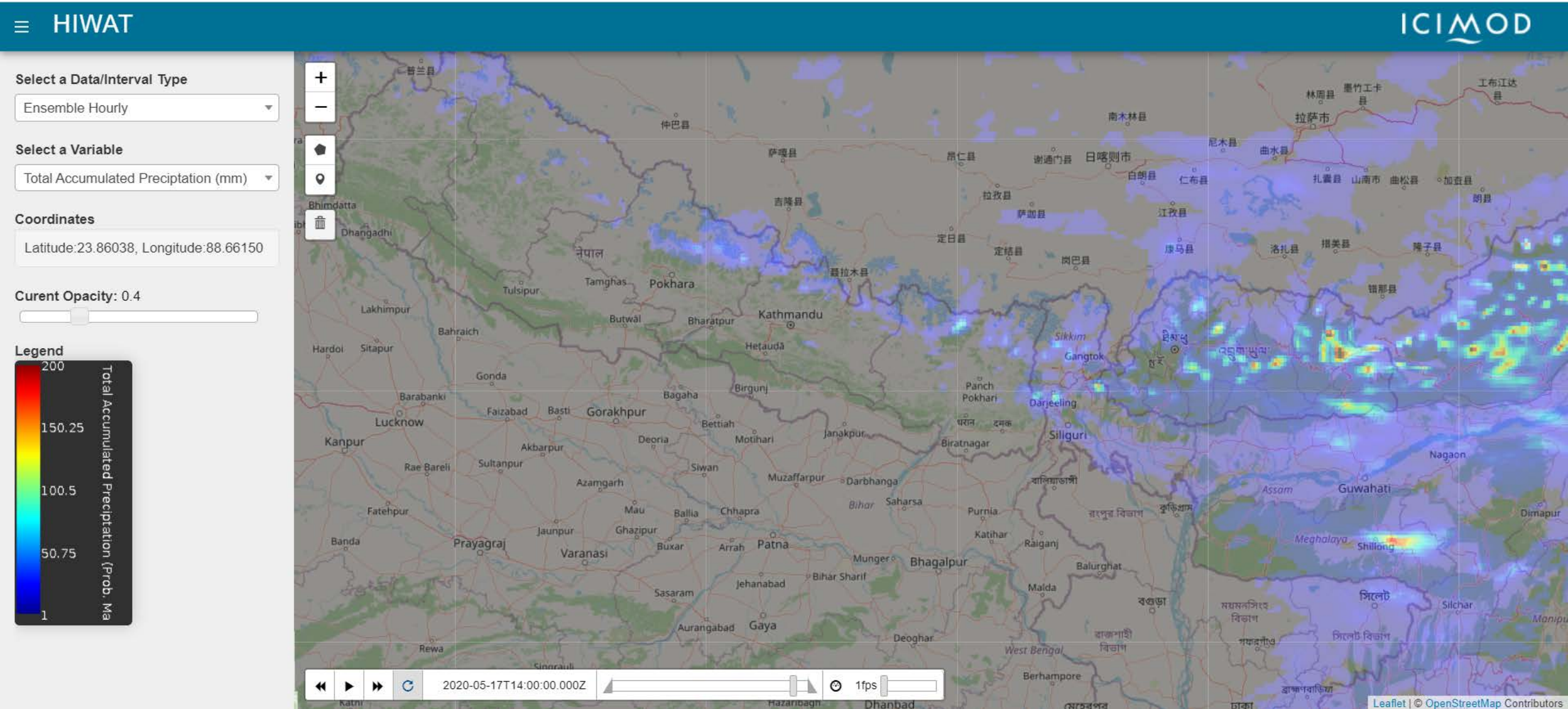
- Landcover Data of 1990
- Landcover Data of 2000
- Landcover Data of 2010



About

The application provides easy access to the harmonised land cover database developed for Nepal over different time slices (1990, 2000 and 2010) and provides.. user

High Impact Weather Assessment Tool (HIWAT)



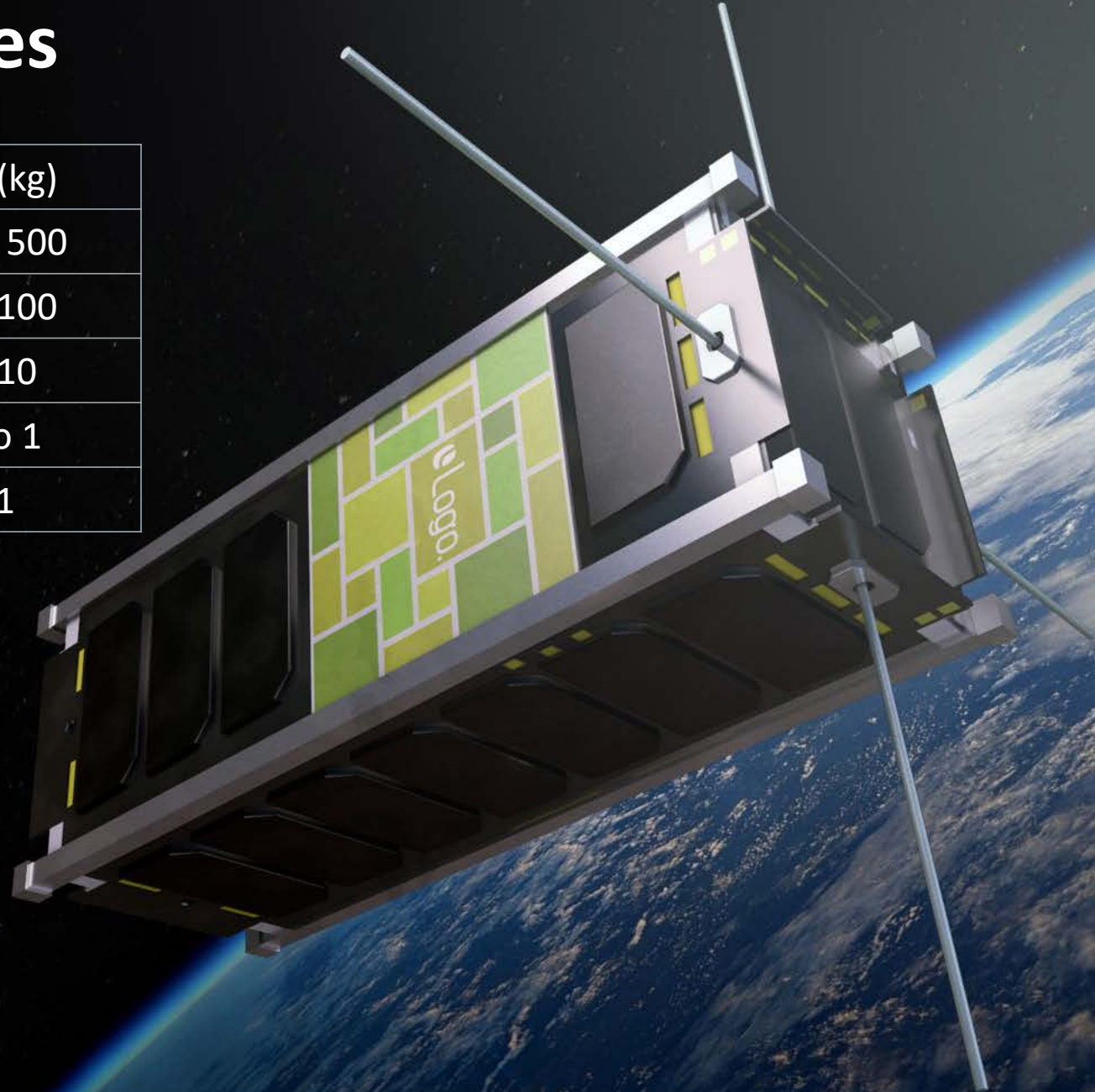
Convergence of Technologies

- Big data
- Cloud computing
- Artificial Intelligence
- Internet of Things



Small satellites

Type	Mass (kg)
Mini satellite	100 to 500
Micro satellite	10 to 100
Nano satellite	1 to 10
Pico satellite	0.1 to 1
Femto satellite	<0.1



A dramatic photograph of a SpaceX Falcon Heavy rocket launching at night. The rocket is positioned vertically, with its three boosters and central core visible. A massive, bright plume of fire and white smoke billows from the base, creating a large, textured cloud that fills much of the lower half of the frame. The sky is a deep, dark blue. In the foreground, the dark, silhouetted structure of the launch pad is visible, including some railings and support beams. The overall scene conveys a sense of immense power and technological achievement.

Private Companies, Not Governments, Are Shaping the Future of Space Exploration

Capacity building

- Structured Training
- On the Job Training
- Training of Trainers
- Policy dialogs

Encouraging women in the field of GIT



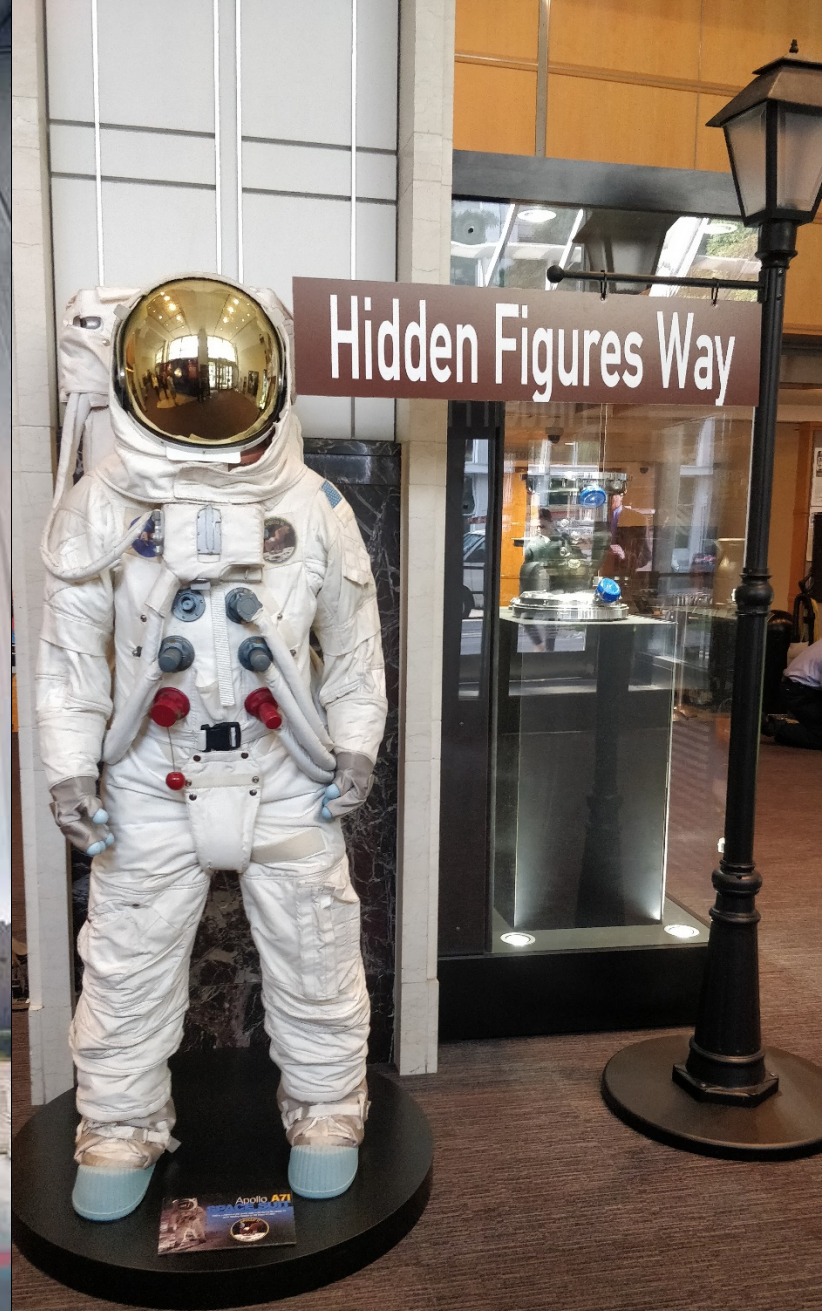
Women in GIT

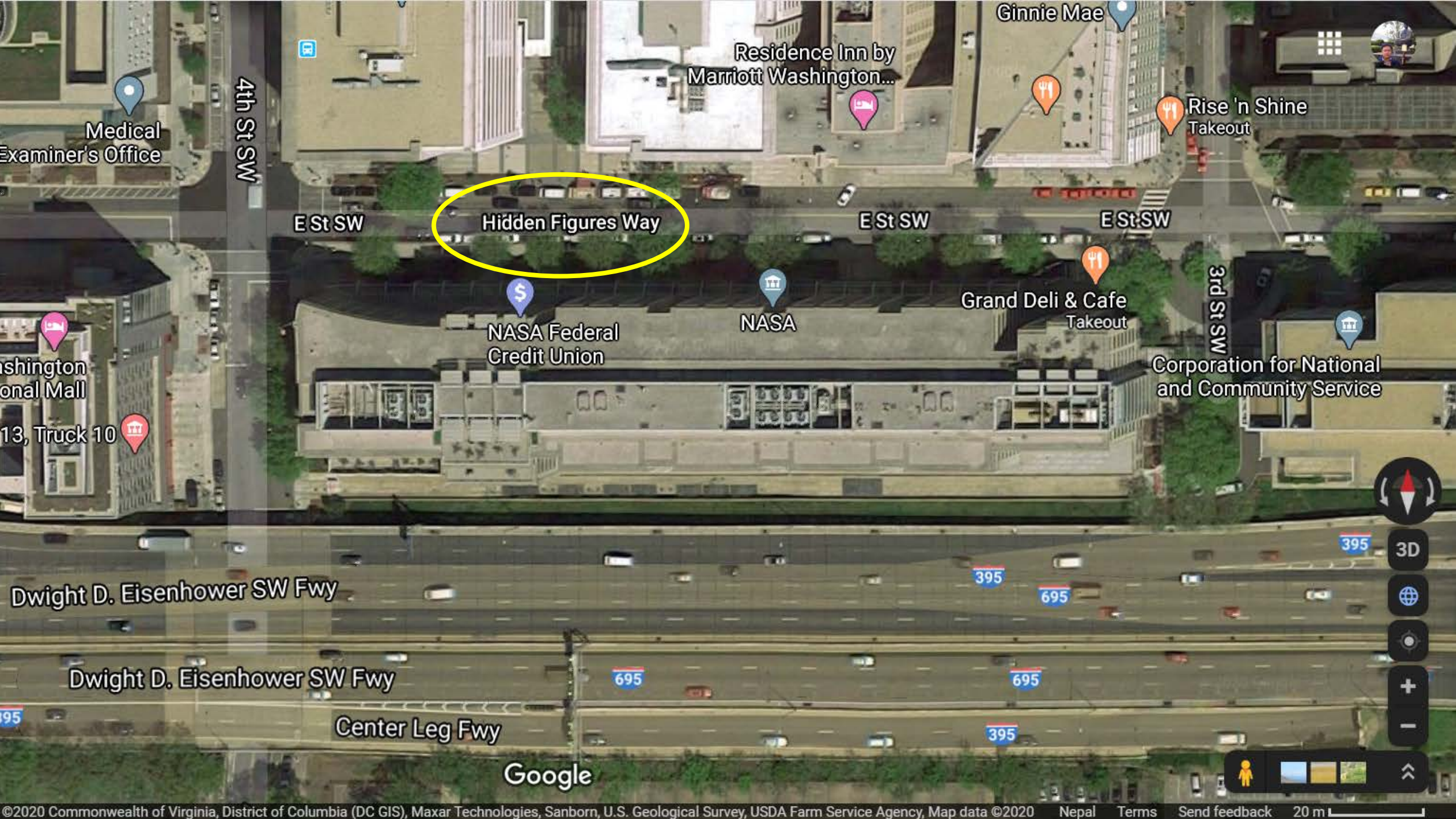


University partnership



Dorothy Johnson Vaughan (September 20, 1910 – November 10, 2008) was an African American mathematician and human computer who worked for the National Advisory Committee for Aeronautics (NACA), and NASA, at Langley Research Center in Hampton, Virginia. (Wikipedia)





Medical Examiner's Office

4th St SW

Residence Inn by Marriott Washington...

Ginnie Mae

Rise 'n Shine Takeout

E St SW

Hidden Figures Way

E St SW

E St SW

Washington National Mall

13, Truck 10

NASA Federal Credit Union

NASA

Grand Deli & Cafe Takeout

Corporation for National and Community Service

3rd St SW

Dwight D. Eisenhower SW Fwy

Dwight D. Eisenhower SW Fwy

Center Leg Fwy

Google

395

3D

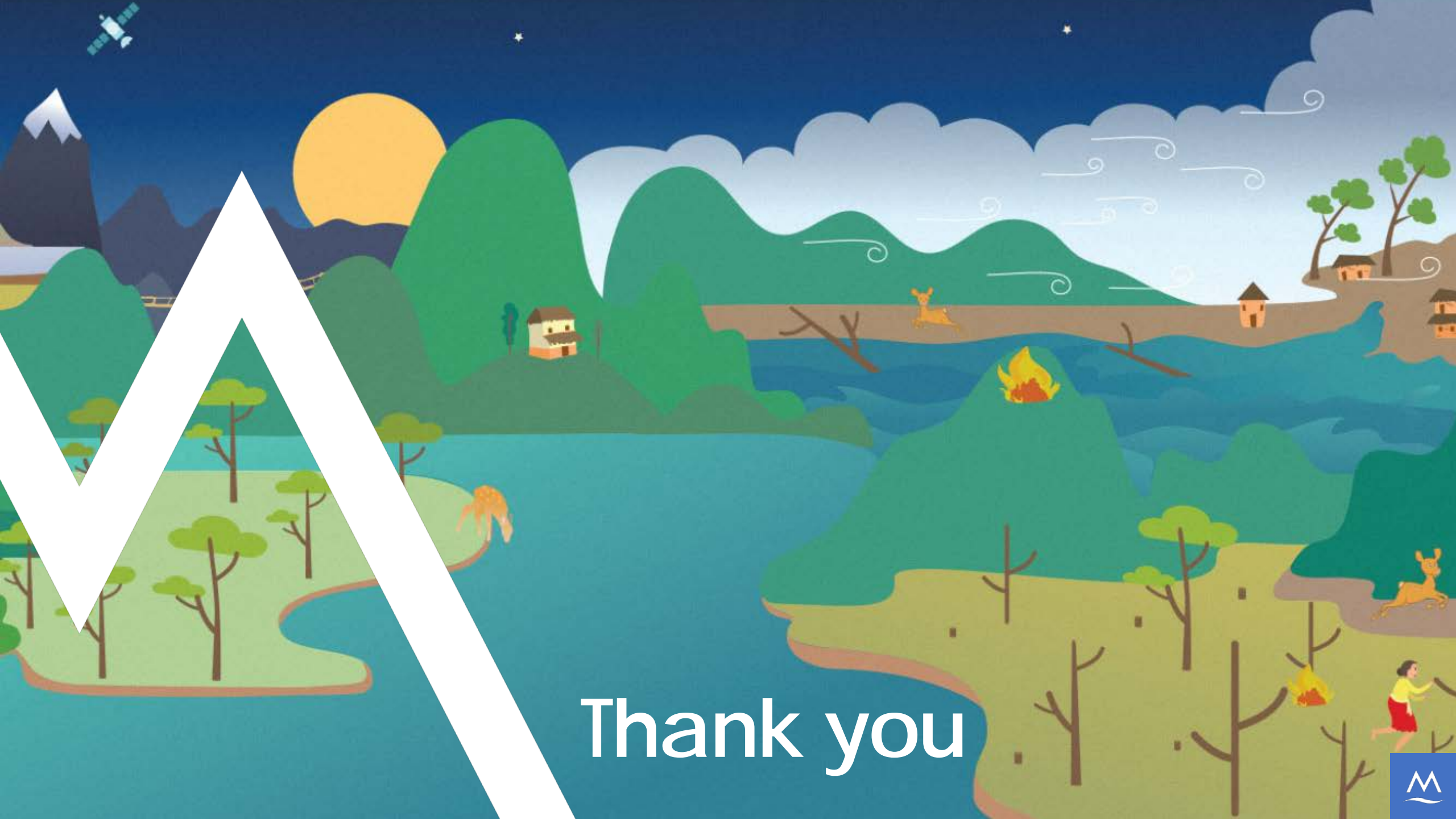
695

395

695

695

395



Thank you

