



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS

International Charter ,Space and Major Disasters' Outlines

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8th UN International Conference on Space-based Technologies for Disasters
Risk Reduction , 11-12 September 2019, Beijing, China



History

Declaration of UNISPACE III Conference (Vienna, 1999)

The international space community is asked to initiate a programme to promote the use of [...] Earth observation data for disaster management by civil protection authorities, particularly those in developing countries.



History

- Following UNISPACE III, the French Space Agency (CNES) and the European Space Agency (ESA) initiated the International Charter.



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- The Canadian Space Agency CSA signed the Charter on October 20, 2000.
- Charter declared operational as of November 1, 2000
- The Charter is the world's premier multi-satellite system of data acquisition for emergency response



Charter Members

CSA
Canada

NOAA
USGS
USA

ABAE
Venezuela

INPE
Brasil

CONAE
Argentina

UKSA/DMC
UK

CNES
France

DLR
Germany

ESA
EUMETSAT
Europe

UAESA
UAE

ISRO
India

ROSCOSMOS
Russia

CNSA
China

KARI
Korea

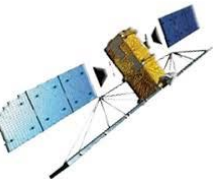
JAXA
Japan

17 members in 2019
from 14 countries + Europe



Charter Satellites

	ABAE	VRSS-1
	CNES	PLEIADES, SPOT
	CNSA	CBERS-4, GF-1, GF-2, GF-3, GF-4, FY-3C
	CONAE	SAOCOM
	CSA	RADARSAT-2
	DLR	TerraSAR-X/TanDEM-X RapidEye
	DMC	UK-DMC2
	ESA	Sentinel-1, Sentinel-2, PROBA-V
	EUMETSAT	Meteosat, Metop
	ISRO	Cartosat-2, Resourcesat-2, Resourcesat-2A
	INPE	CBERS-4
	JAXA	ALOS-2, KIBO HDTV-EF
	KARI	KOMPSAT-2, KOMPSAT-3, KOMPSAT-3A, KOMPSAT-5
	NOAA	POES, SUOMI-NPP, GOES
	PLANET	Planetscope
	ROSCOSMO	RESURS-DK, METEOR-M, KANOPUS-V, KANOPUS-V-IK, RESURS-P
	UAESA	DubaiSat-2
	USGS	Landsat-7, Landsat-8, QuickBird, WorldView, Geoeye





What is the Charter?

An International agreement among participating Agencies to provide images/information of the member's Earth-observing satellites in support of the management of major disasters worldwide.



Space agencies contribute

- **Priority satellite tasking**
- Archive retrievals
- Organisation of map production

No cost for the User!





Disaster Types Supported

Natural events

Earthquakes
Fires
Floods
Landslides
Tropical storms
Tsunamis
Volcanic eruptions

Man-made events

Oil spills
Industrial accidents

Not covered

slow-onset disasters (e.g. droughts)
emergencies due to armed conflicts

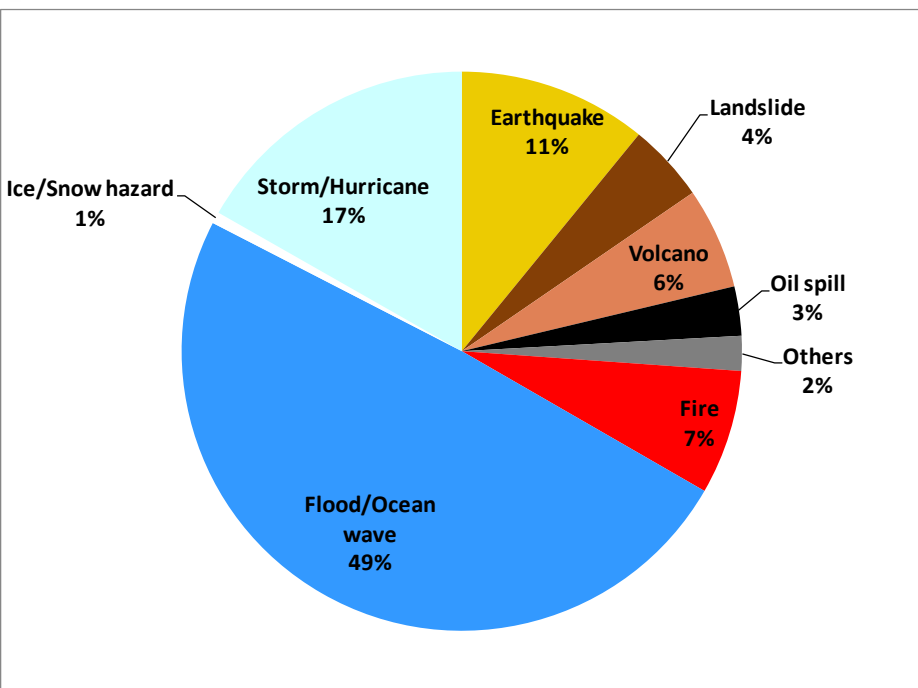
A major disaster is a large, often sudden event with high impact in terms of lives and/or infrastructure & environment.



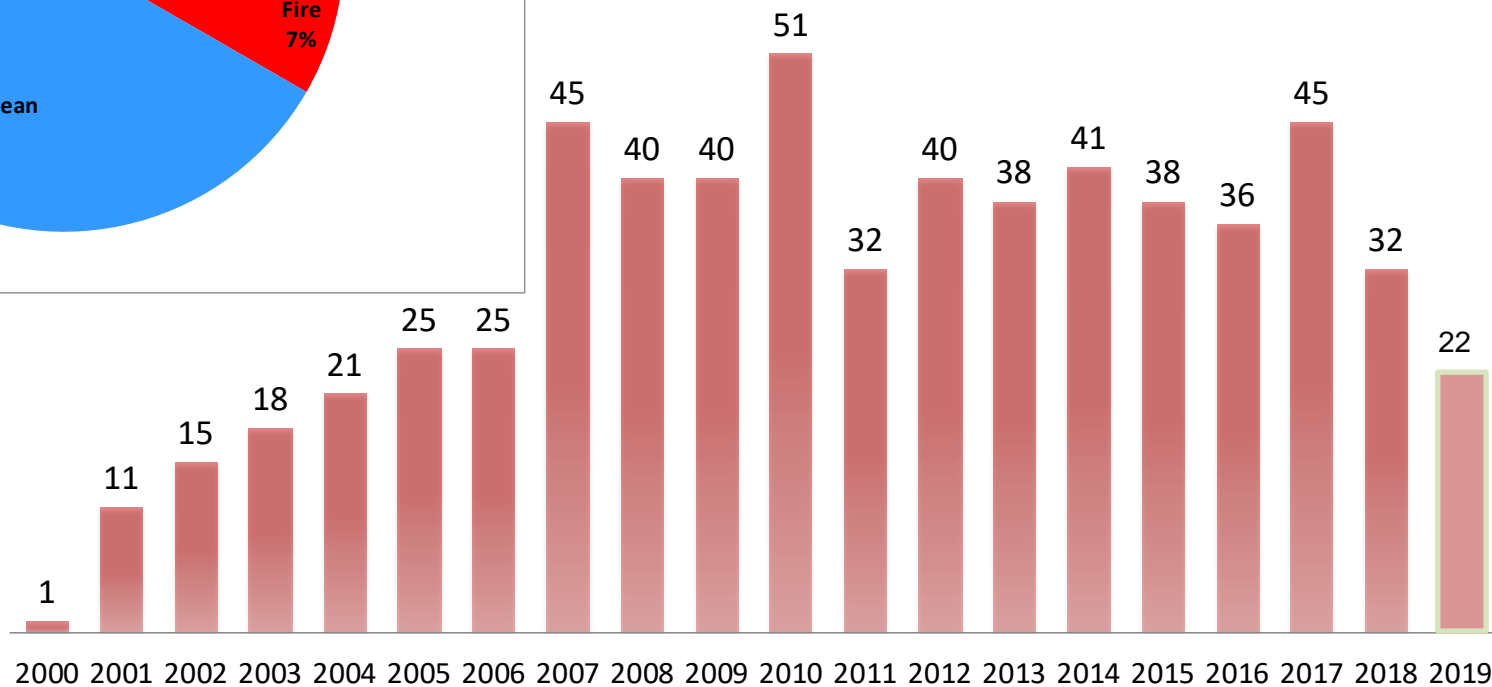
The Charter is **available 24/7**. When activated it executes **priority tasking** of numerous Earth-observing satellite missions in a rapid fashion and provides images and/or derived products.



2000 – 2019: Activation Statistics



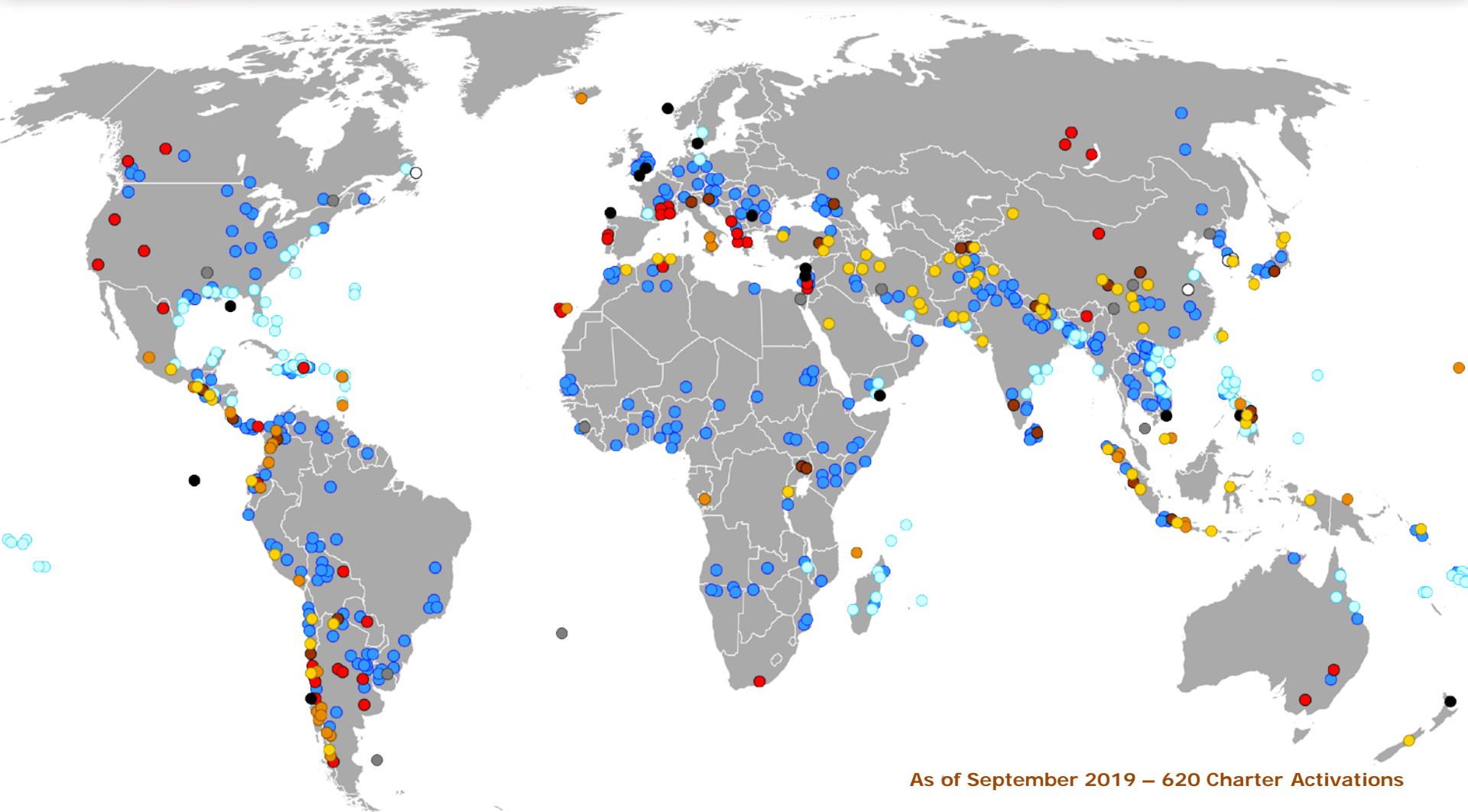
Activation statistics as of September 2019





2000 – 2019:

Support to disaster response in more than 120 countries
620 activations as of today



As of September 2019 – 620 Charter Activations

Legend: ● Earthquake ● Landslide ● Volcano ● Storm/hurricane ● Flood/ocean wave ○ Ice/snow hazard ● Fire ● Oil spill ● Other



Success in 2000 – 2019: Authorized Users in 66 countries



The Charter works with **Authorized Users** – these entities are able to directly trigger a Charter activation.



Success in 2000 – 2019: Additional Access Mechanisms

In addition, there are agreements with entities allowed to use/trigger the Charter in certain cases:

- UNOOSA/UN-SPIDER
- UNITAR/UNOSAT
- ADRC (Sentinel Asia)
- EC-ERCC / Copernicus Emergency Management Service



Universal Access (implemented since 2012)

Any national disaster management authority can become a Charter User!

The following conditions apply:

- The entity must be a **national disaster management authority or its delegated agency** in that country.
- It must have the **capacity to download and use maps**.
- It must be able **to submit and pursue an activation request in English**.

An official letter of the organisation and a filled **Registration Form** (www.disasterscharter.org) needs to be sent to the Executive Secretariat (ExecutiveSecretariat@disasterscharter.org).

Becoming an Authorized User does not happen from one day to the next, but involves an assessment by the Charter members as well as a training and simulation exercise.



66 countries with Authorized Users



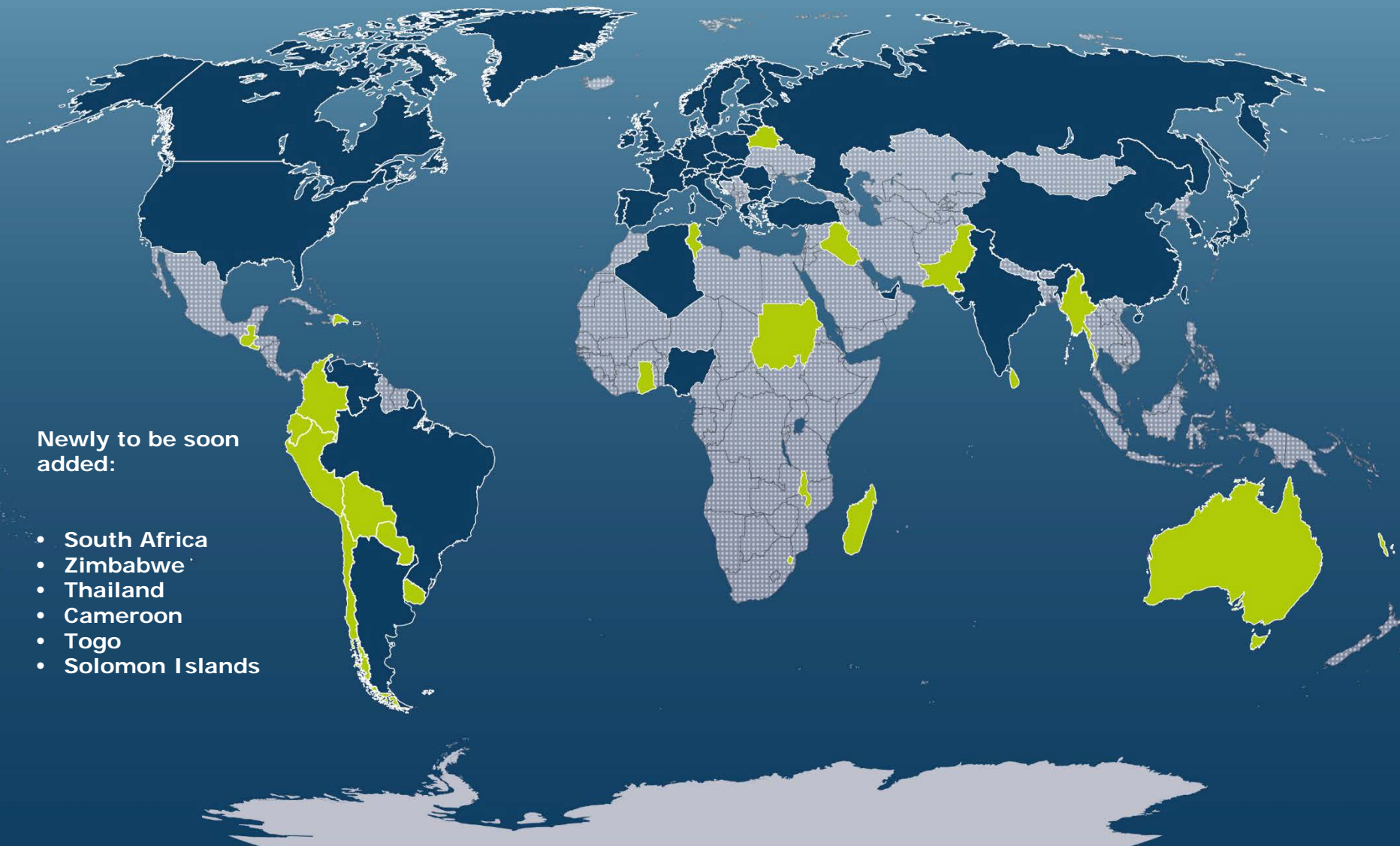


Universal Access

Already 24 Authorized Users countries since 2012

Newly to be soon added:

- South Africa
- Zimbabwe
- Thailand
- Cameroon
- Togo
- Solomon Islands





Charter – UNOOSA/UN-SPIDER Collaboration

- The Charter and UNOOSA/UN-SPIDER have been working together since 2007 through regular meetings and exchanges (working meetings, Charter PM training)
- UNOOSA is a Charter Cooperating-Body, thus entitled to trigger the Charter
 - 2007 – 2017 : on behalf of UN Organizations
 - Since 2017 : on behalf on UN organizations and national disaster management authorities
- Charter Universal Access promotion through UN-SPIDER Technical Advisory Missions (Latin and Central America, Africa, South Asia, Oceania)
- 16 countries (among 31) have become or are becoming Charter Authorized Users since 2012 thanks to joint efforts between UN-SPIDER and the Charter.



Example: Malawi

Malawi's Department of Disaster Management Affairs became an Authorized User in 2014. It activated the Charter in 2015 due to major flooding impacting half of the country.

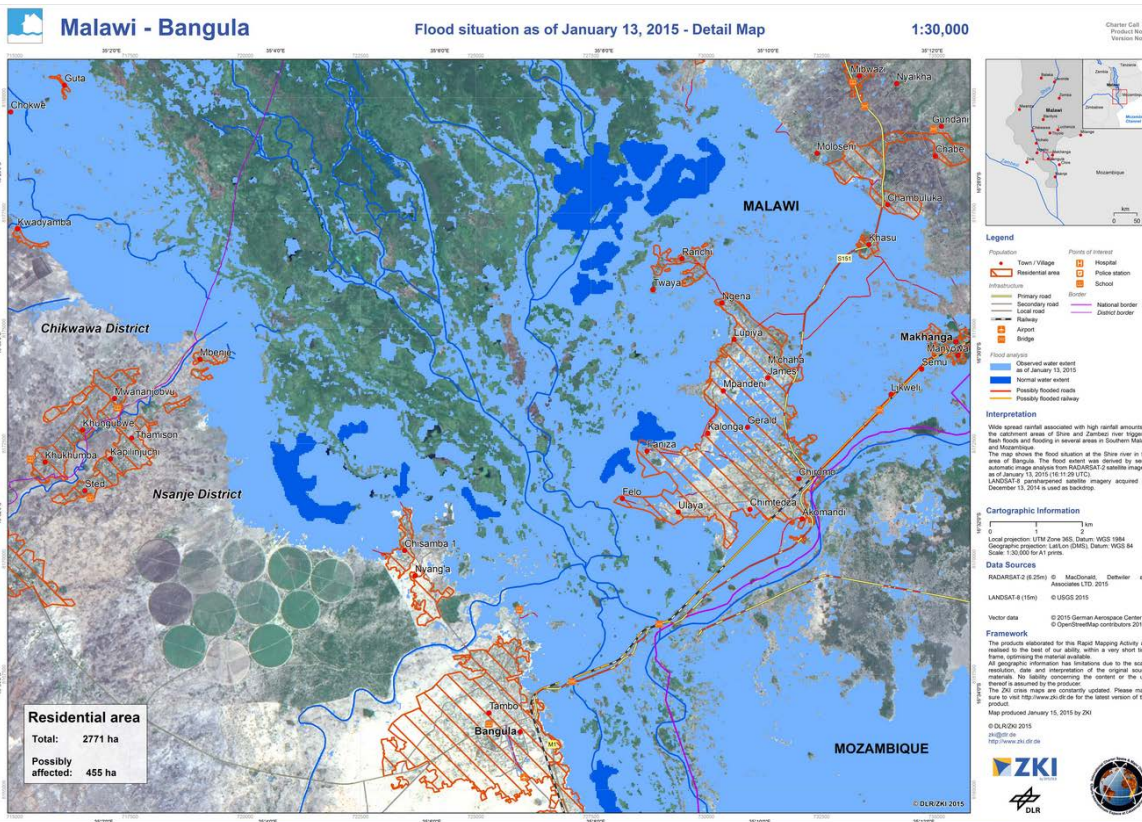


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Left: map based on RADARSAT-2 and LANDSAT imagery





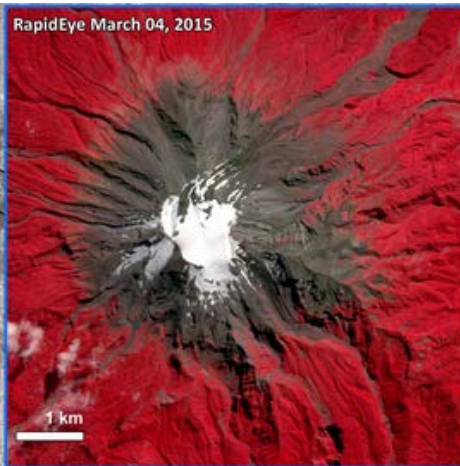
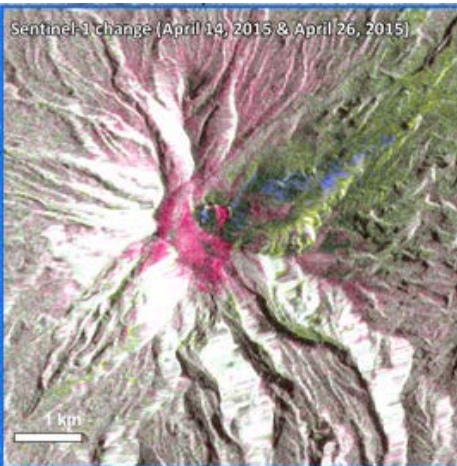
Example: Chile

The National Emergency Office of Chile became an Authorized User in 2014.

The Charter was activated in 2015 due to the eruption of Calbuco Volcano.

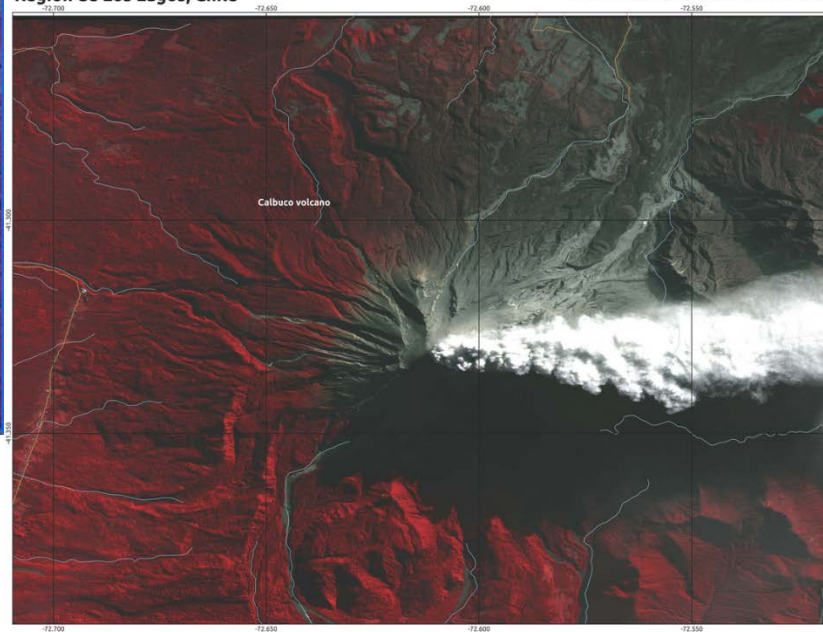


View of the Calbuco volcano in Puerto Varas, Chile on April 24, 2015. / REUTERS



Eruption of the Calbuco Volcano Región de Los Lagos, Chile

April 24th, 2015 - 14:21 hs UTC
International Charter Call ID 528



Left: Change Detection based on Sentinel-1 images of 14 and 26 April 2015

Center: RapidEye image of March 2015

Right: SPOT-6 image of 24 April 2015



Examples: Use of charter maps in the field

Dam collapse in Brazil in January 2019





Conclusions / Societal benefit achieved by the Charter

- The International Charter Space and Major Disasters is a rush-mode mechanism supporting emergency response by providing quick access to satellite data and/or derived products.
- It is the intention of the Charter members to help save lives, property, infrastructure, and the environment in cases of major disasters worldwide in using space technologies.
- The Charter has grown much since 2000, covering more than 600 emergencies caused by disasters in 125 countries as of today.
- **Universal Access** encourages disaster management authorities from all countries to become Authorised Users after training.
- The Charter encourages in-country capacities to act as “Project Managers” and “Value Adders” (producers of satellite-based maps)
- In fruitful collaboration with UNOOSA/UN-SPIDER, UNITAR/UNOSAT, Sentinel Asia, and the Copernicus Emergency Management Service, the Charter intends to help filling the gap between space-faring and space-emerging nations.



Find the Charter at

<https://disasterscharter.org>

<https://twitter.com/disastersChart>

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Staff from UNOOSA/UN-SPIDER and the National Space Research and Development Agency of Nigeria (NASRDA) together with representatives of the Department of Civil Protection of Cameroon explore the Charter website and discuss how Cameroon gets direct access to the Charter through Universal Access in July 2109.

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In memory of Doctor Ahmed Mahmood

