



Photo: Children panning for diamonds, Sierra Leone

MAP-X

Supporting the sustainable development of natural resources



1. Our mission, mandate and key findings
2. Introducing MAP-X
3. Going forward – future areas of work
4. Questions and discussion



UN Environment is the voice for the environment in the United Nations system. We promote the wise use of the planet's natural resources for sustainable development.

“Many conflicts are triggered, exacerbated or prolonged by competition over scarce natural resources; climate change will only make the situation worse.

That is why protecting our environment is critical to the founding goals of the United Nations to prevent war and sustain peace.”

António Guterres, UN Secretary-General, 2017





Our work in conflict affected environments

Focus areas of UN Environment's post-conflict and disaster management branch include:

- Environment and disaster risk reduction
- Strategic assessments of post-conflict environments
- Research into the role natural resources play as a driver of conflict and opportunity for sustaining peace
- Practical tools to support the sustainable development of natural resources

Increasing emphasis on public private collaboration



What do we find?

- Increasing competition for resources
- Investment in frontier markets and fragile states
- Climate change effects
- Water crises
- Governance challenges
- Unequal distribution of benefits/ lack of access to information
- Interlinkages between resources, conflicts and organized crime



- Consumer demand and private sector leadership in promoting responsible mineral supply chains
- Expansion of supply chain transparency legislation
- Spotlight on human rights, FPIC, shared benefits
- Emerging technologies: novel ways of engagement and increased access to information

However: Insufficient attention paid to environmental risks and environmental transparency



A number of questions remain unresolved. How can importers:

- *Access authoritative third party data to inform their policies/strategies?*
- *Contextualize data they collected?*
- *Relate the impact of their interventions to the broader socio-economic and environmental context?*
- *Effectively share their data with stakeholders upstream and/or downstream or other operators using an impartial platform?*
- *Assess and communicate the effectiveness of their efforts?*
- *Promote the long-term sustainable development of mineral resources?*



Introducing MAP-X



MAP-X is an impartial online mapping platform to support the sustainable development of natural resources

Aggregates the best available data and assesses the integrity

Provides visualization and analytical tools

Offers customized dashboards for managing and monitoring data

MAP-X mission: Help entities working in the natural resources sector to transform authoritative information into impact.

UN data integrity framework and authentication set MAP-X apart



Data Integrity Seal

Country (user selection): Democratic Republic of Congo
Dataset scored (user selection):



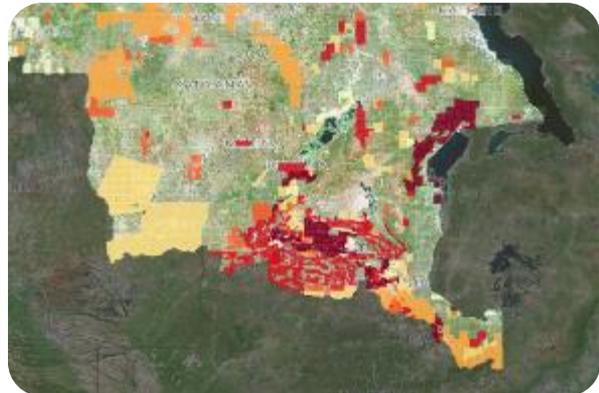
- LEGEND:**
- Full compliance
 - Partial compliance
 - No compliance

Data provider :
Year : 2010
EITI requirements supported:
2.3 "Register of licenses" and
7.2 "Data accessibility"

MAP-X analytical and visualization tools



Area of interest



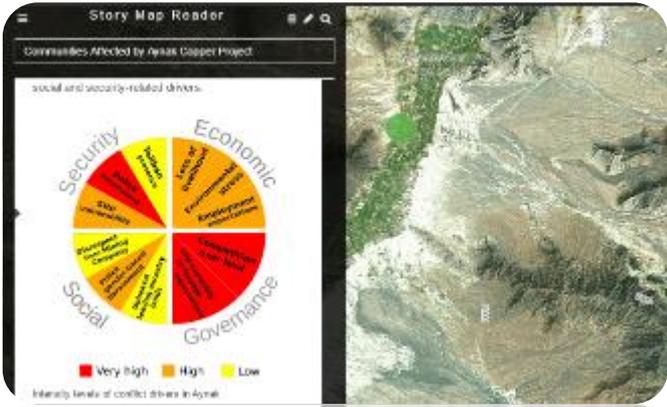
Heat Mapping



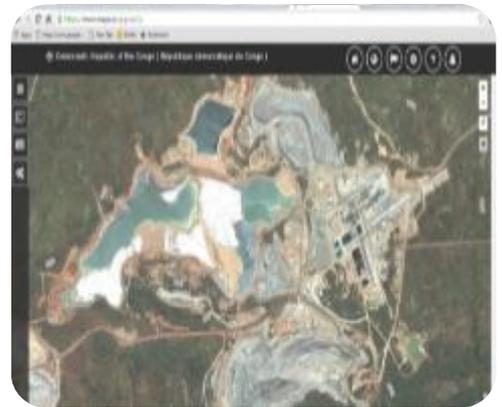
Dash boards



Overlapping layers



Story mapping



Satellite analysis

Supporting transparent and responsible mineral supply chains



MAP-X can support responsible supply chains and importers by creating a platform which is:



An impartial, trusted source of information



Easy to use, interactive and up to date



Fully customized and interoperable



Supports company reporting by making data and maps available for download

MAP-X Select impressions

Photo: Women panning for diamonds, Sierra Leone

Visualize distribution of mineral reserves



Example: USGS data on mineral reserves in Afghanistan

Views

Search view

Filter options

☰ Access to drinking water (2011-2012)

☰ Access to electricity sources (2007-2008)

☰ Drivable roads (2011-2012)

☰ Sanitation facilities (2007-2008)

☰ Land Cover Map over Mes Aynak (2010)

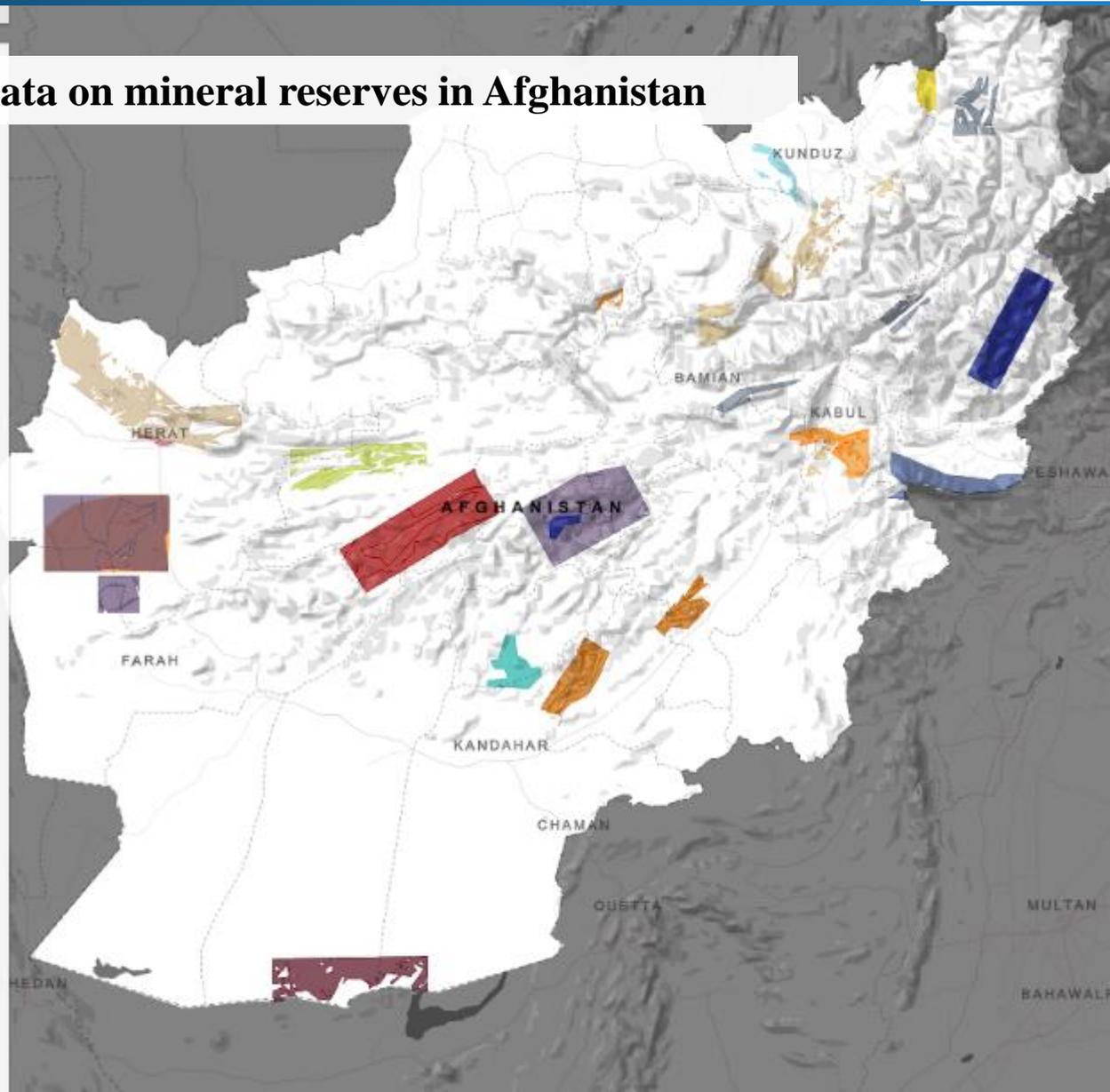
☰ Poverty depth (2007-2008)

☰ Enrollment rate (2007-2008)

☰ Mineralized Areas 2011

Mineralized Areas, USGS

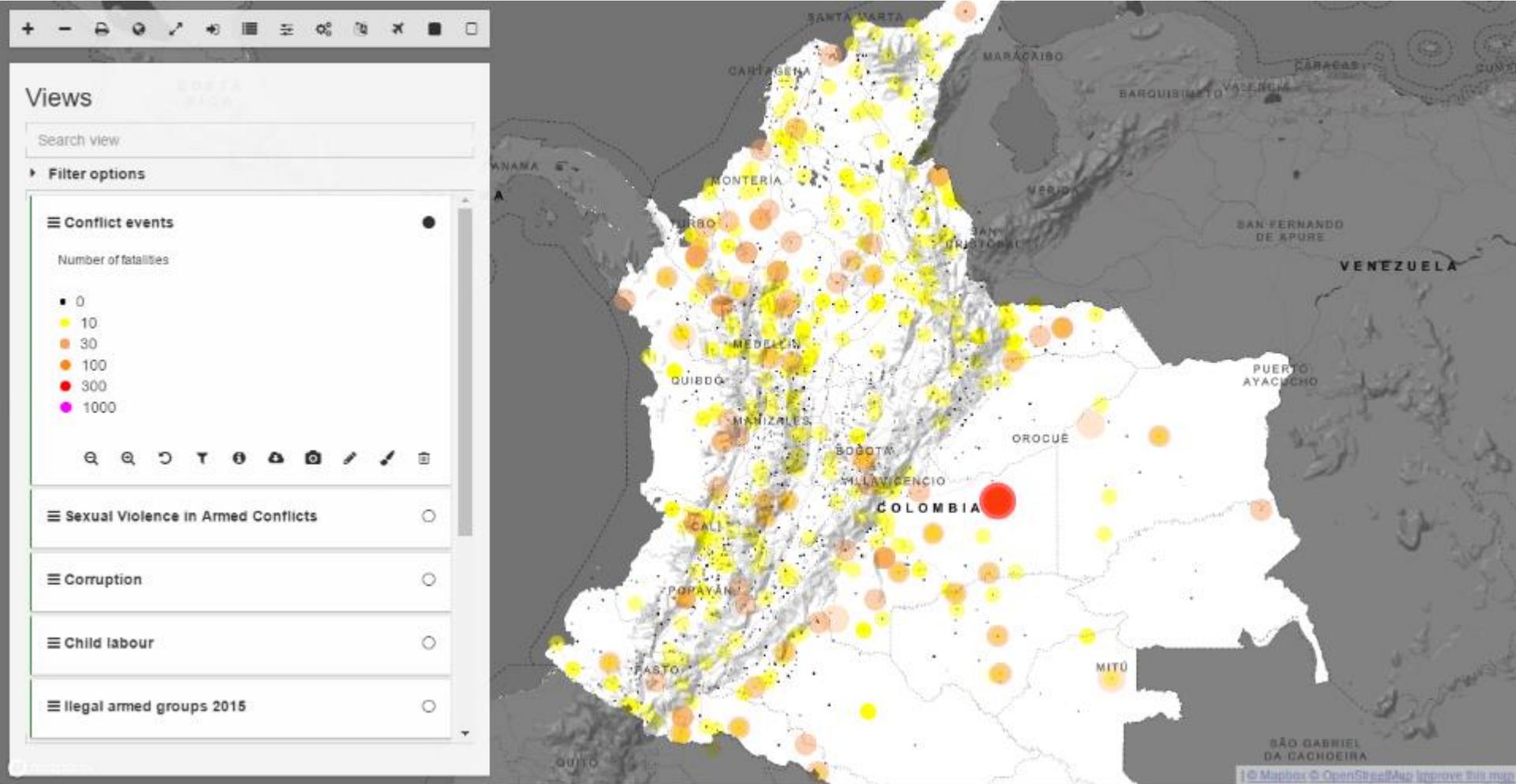
-  Celestite
-  Copper
-  Copper, Porphyry
-  Fluorite
-  Gold
-  Gypsum
-  Iron
-  Lead, Zinc
- Limestone



Visualize incidents of armed conflict



Example: Conflict events in Colombia



Visualize human rights indicators



Example: Sexual violence in armed conflict in DRC

Views

Search view

Filter options

Armed groups IPIS

Sexual violences in Armed Conflicts

Use of sexual violence in all state-based conflicts active between 1989 and 2009 at the level of the conflict-actor-year.

- None
- Some
- Many
- Massive



Conflict events

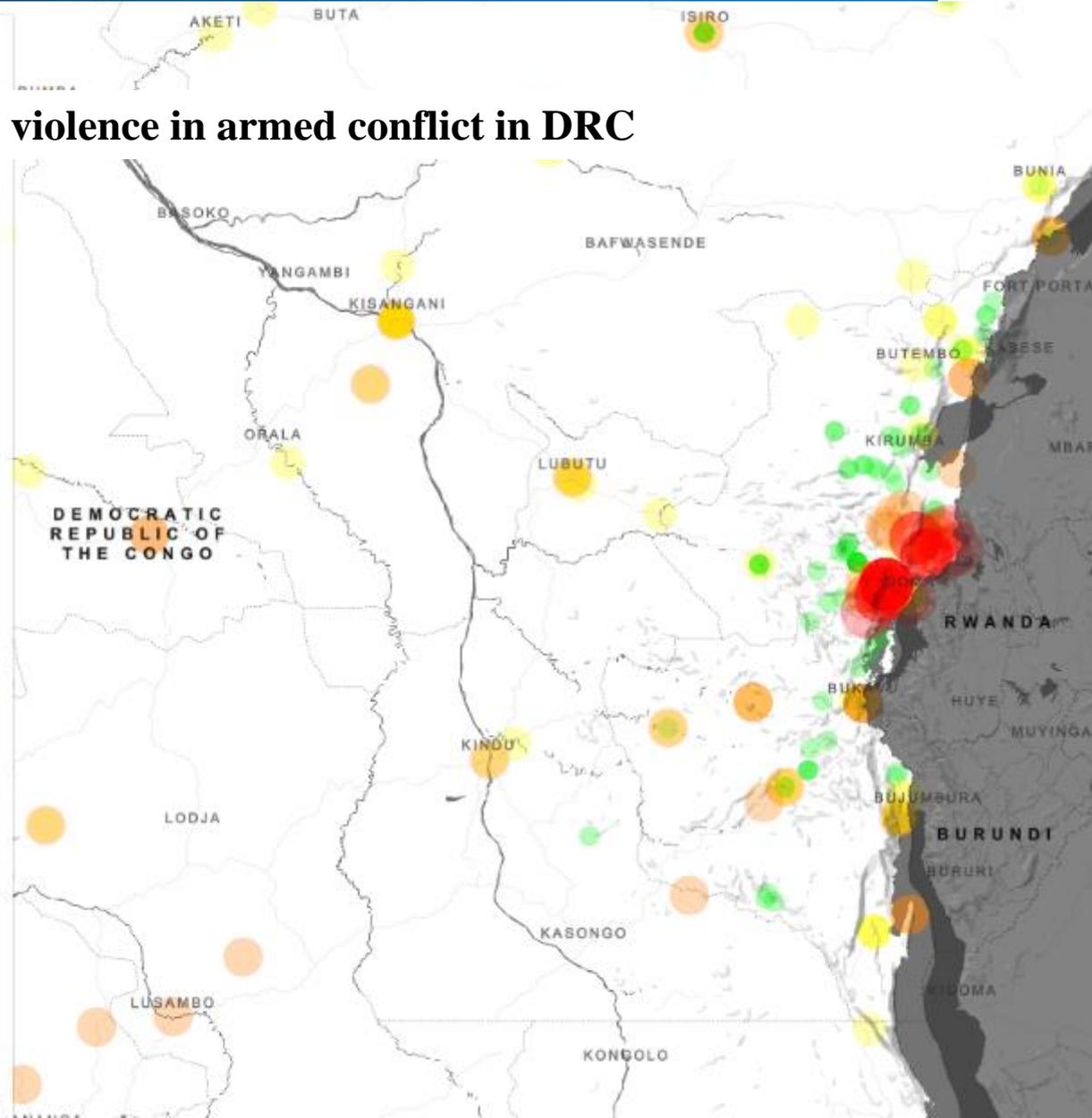
Corruption

Child labour

Aclcd 2016

Unemployment rate by province

Poverty rate by province



Create heatmaps and contextualize your data sets



Example: Total concession payments and poverty rates in DRC

EXTRACTIVES

MINING CONCESSIONS EITI DEC...

CONCESSIONS ACTIVITY COMPANY

MINING CONCESSIONS

ARTISANAL MINING

DECLARATION RELIABILITY

EXPORTATION BY COMPANY (VA...

BENEFICIAL OWNERSHIP

EXPORTATION BY COMPANY (VALUE)

EXPORTATION BY COMPANY (QUA...

PRODUCTION BY COMPANY

OIL CONCESSIONS

CONCESSIONS TOTAL PAYMENTS

MINING CONCESSIONS

DEVELOPMENT

POVERTY RATE

UNEMPLOYMENT RATE

SOCIAL

INDIGENOUS LANDS

ENVIRONMENT

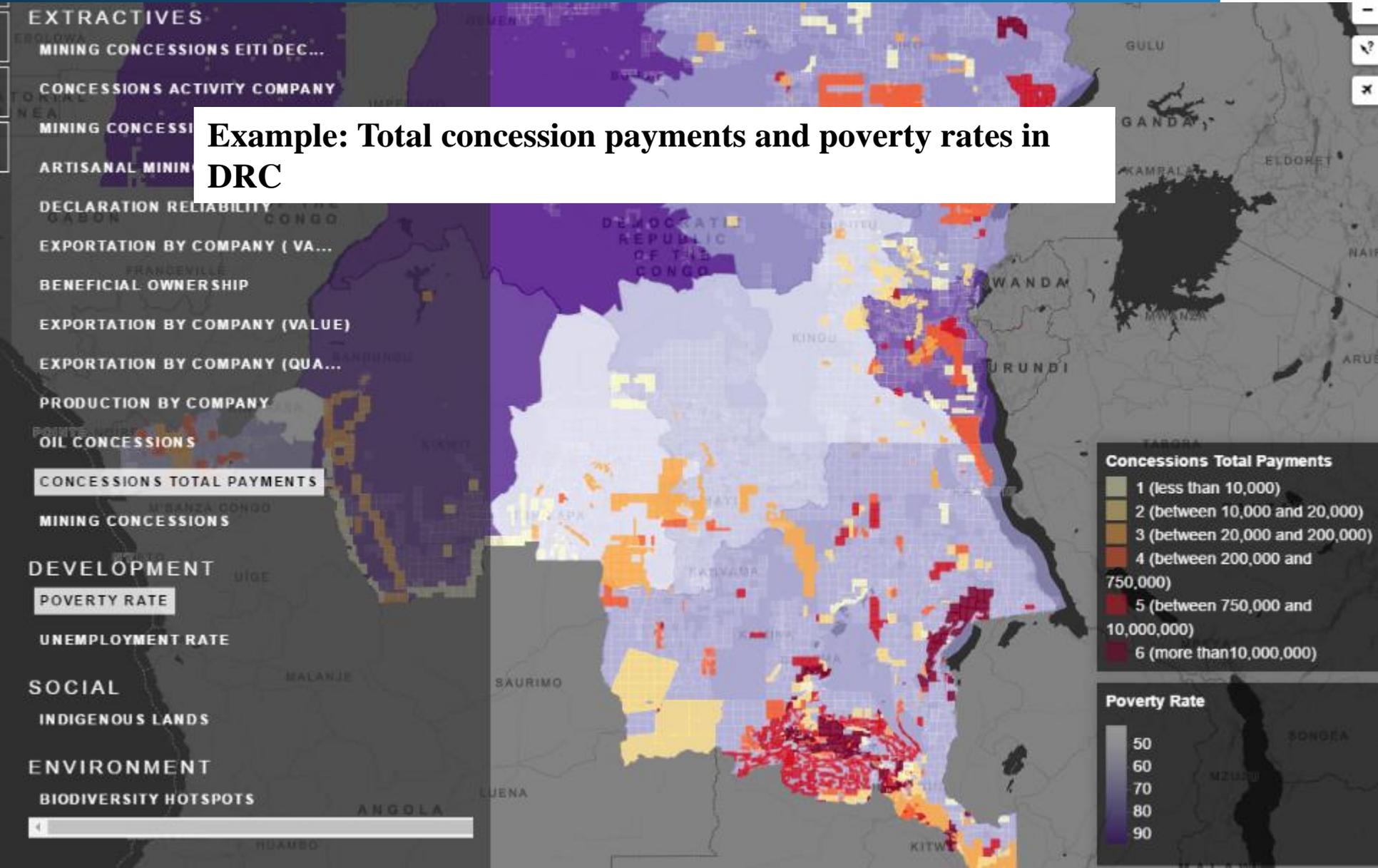
BIODIVERSITY HOTSPOTS

Concessions Total Payments

- 1 (less than 10,000)
- 2 (between 10,000 and 20,000)
- 3 (between 20,000 and 200,000)
- 4 (between 200,000 and 750,000)
- 5 (between 750,000 and 10,000,000)
- 6 (more than 10,000,000)

Poverty Rate

- 50
- 60
- 70
- 80
- 90



Visualize environmental risks – stream external data sources



Democratic Republic of the Congo (République démocratique du Congo)



Example: Multiple risks – Africa

POLYGON OF INTEREST

EXTERNAL WMS LAYER

Select a predefined WMS server

preview.grid.unep.ch

Edit WMS server

http://preview.grid.unep.ch:8080/geoserver/wms

Select available layer

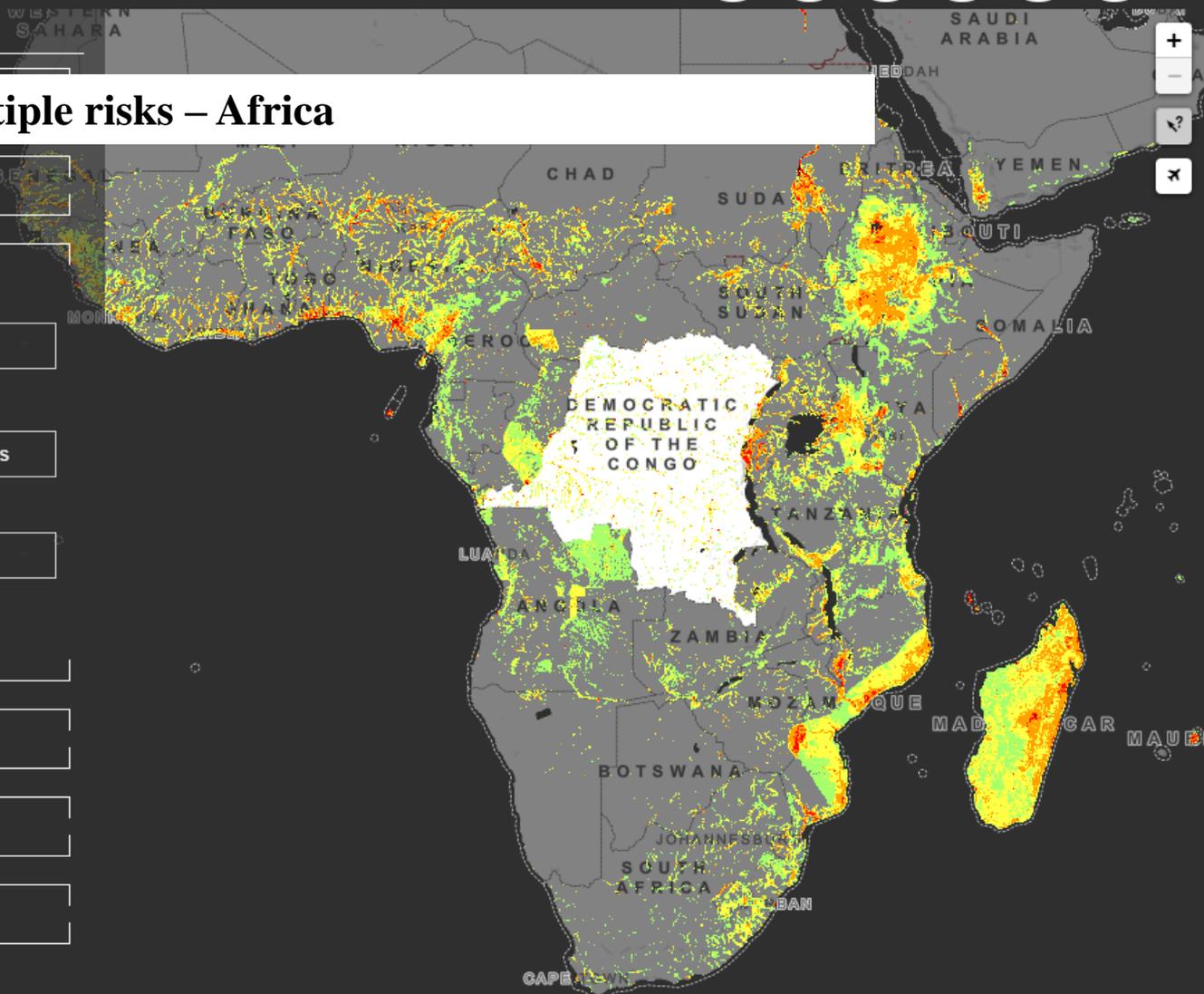
Multiple risk



AERIAL/SATELLITE IMAGERY

CREATE A VIEW

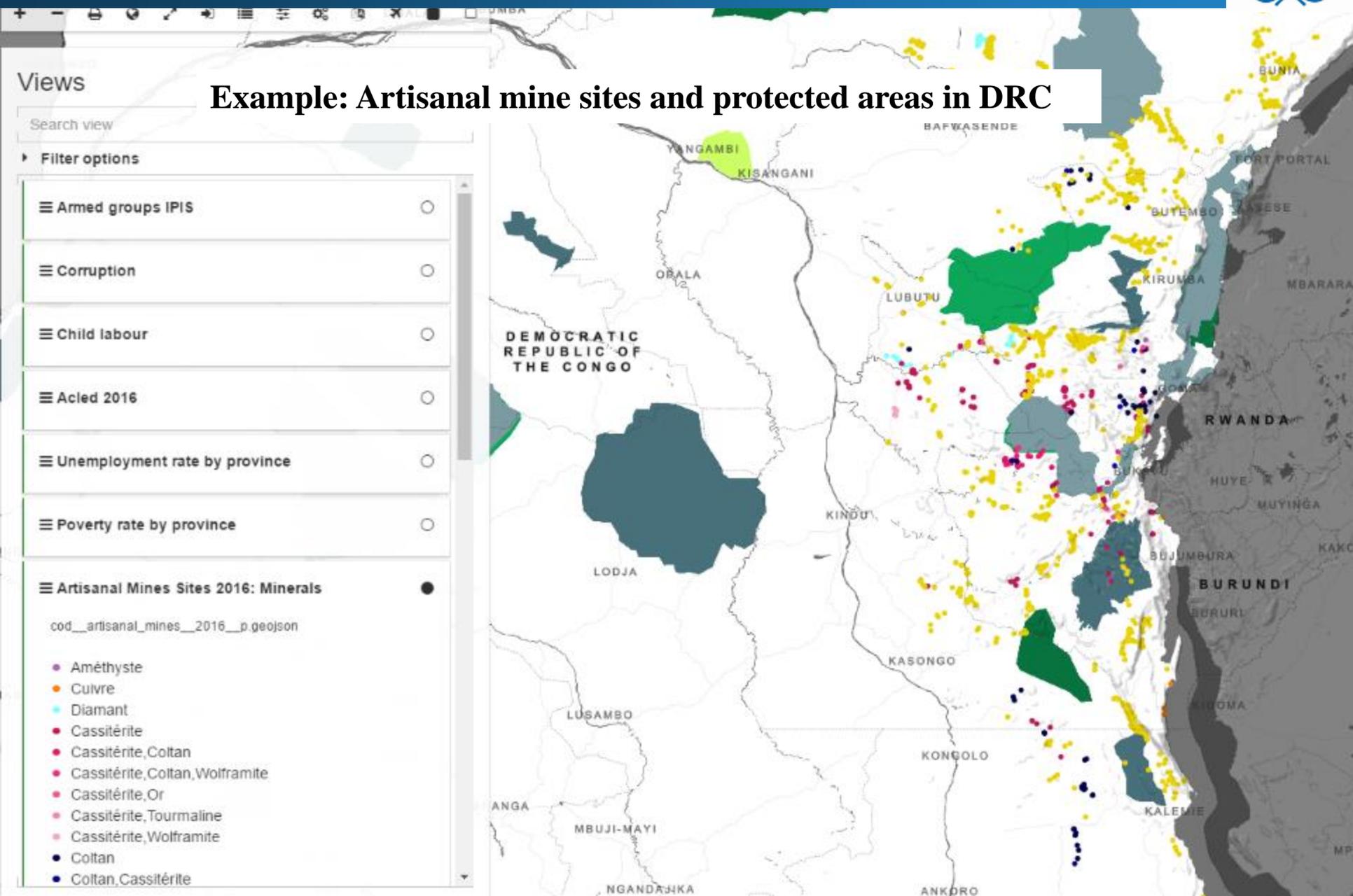
CREATE A STORY MAP



Visualize overlaps



Example: Artisanal mine sites and protected areas in DRC



Download maps and data for due diligence reports



views

Search view

Filter options

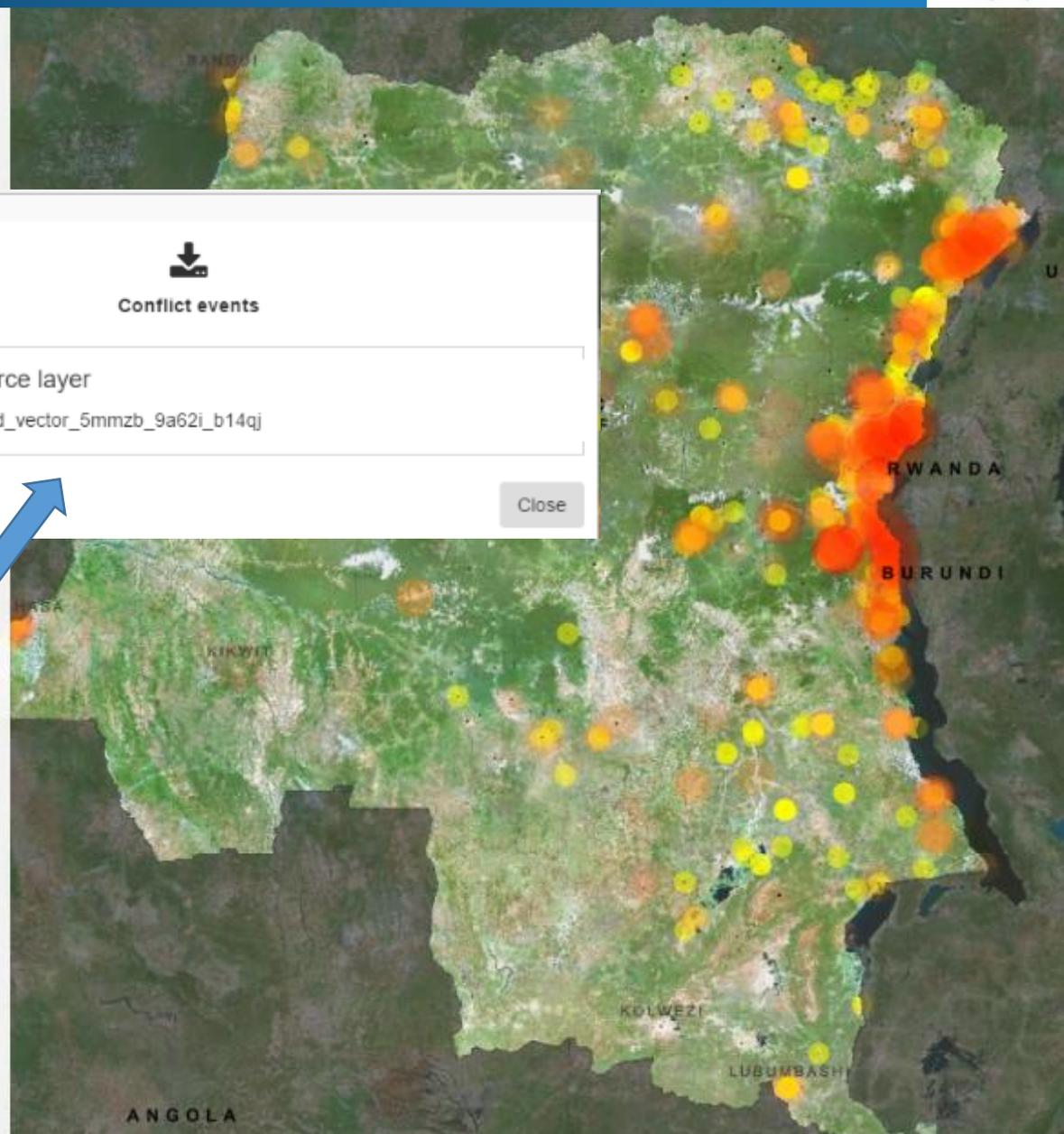
- Armed groups IPIS
- Sexual violences in Armed Conflicts
- Conflict events**
 - Number of fatalities
 - 0
 - 10
 - 30
 - 100
 - 300
 - 5000
- Corruption
- Child labour
- Aclcd 2016
- Unemployment rate by province
- Poverty rate by province

 Conflict events

Download the source layer

download layer mx_cod_vector_5mmzb_9a62i_b14qj

Close



Future outlook



1. Support implementation of mineral supply chain transparency initiatives
2. Support implementation of the Minamata Convention on mercury in the artisanal and small-scale gold mining sector
3. Support participatory decision making and monitoring of extractives projects
4. Support participatory environmental and territorial planning processes
5. Support conflict prevention and resolution in the natural resources sector by providing access to authoritative information

Recap: MAP-X core attributes



Impartial UN backed platform



Open source technologies allow for tailoring at low cost

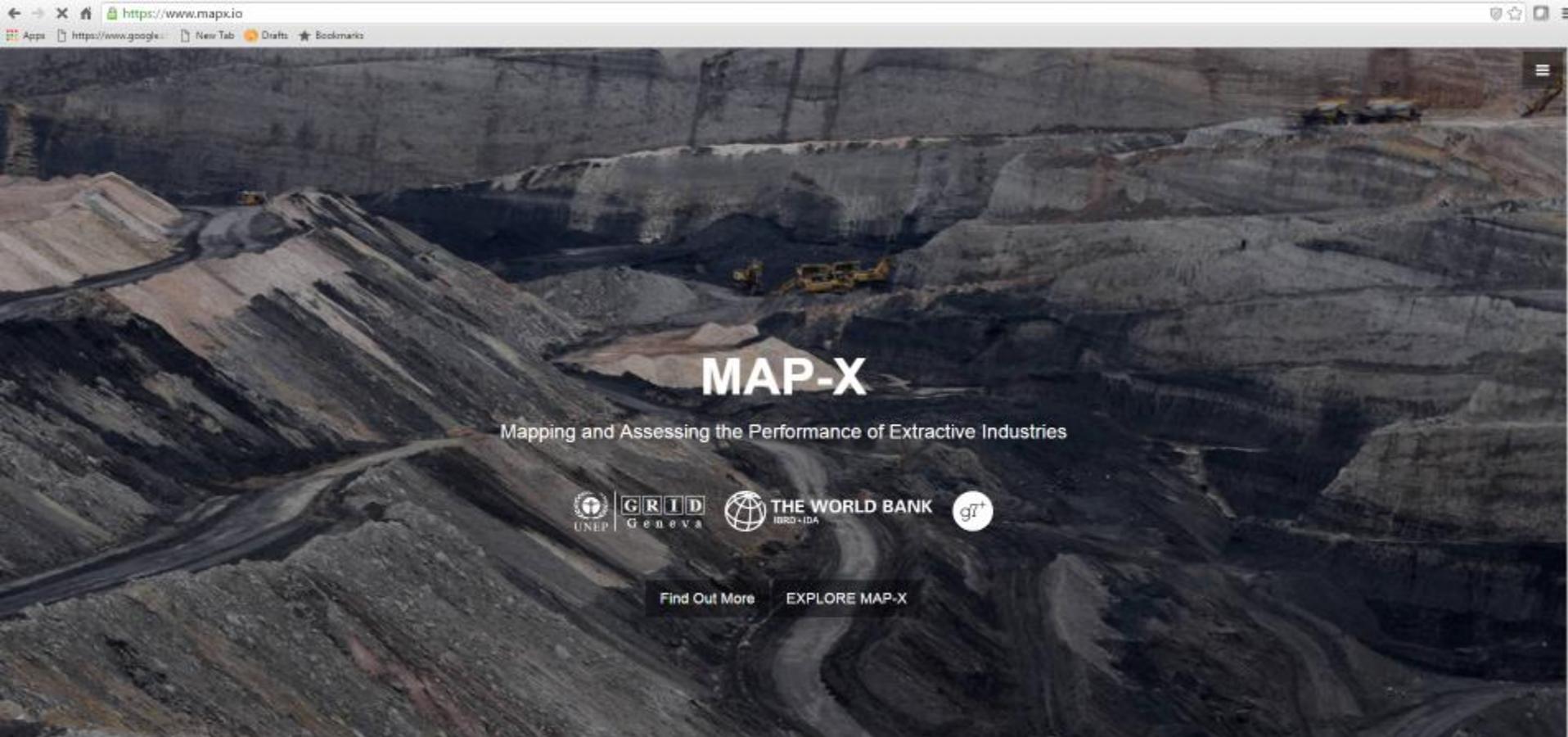


Cluster and cloud infrastructure can scale from local to global



Optimized for low-connectivity environments to allow global access

Visit our website: <http://www.mapx.org>



The screenshot shows the homepage of the MAP-X website. The background is a high-angle photograph of a large-scale open-pit mine with terraced levels and winding roads. In the center, the text "MAP-X" is displayed in a large, bold, white font. Below it, the subtitle "Mapping and Assessing the Performance of Extractive Industries" is written in a smaller white font. At the bottom of the page, there are four logos: UNEP, GRID Geneva, THE WORLD BANK (with IDRO and IDA sub-logos), and gI+. Below the logos are two buttons: "Find Out More" and "EXPLORE MAP-X". The browser's address bar at the top shows the URL "https://www.mapx.io".

MAP-X

Mapping and Assessing the Performance of Extractive Industries

UNEP | GRID Geneva | THE WORLD BANK (IDRO + IDA) | gI+

[Find Out More](#) [EXPLORE MAP-X](#)

Impact begins with trusted information