



DATASHIFT

GEOTAG-X

CASE STUDY

INITIATIVE NAME:
GEOTAG-X

ONLINE PRESENCE:
[HTTP://WWW.GEOTAGX.
ORG/](http://www.geotagx.org/)

GEOGRAPHICAL SCOPE:
INTERNATIONAL

A Citizen Cyberlab project, GeoTag-X aims to assist in disaster relief efforts on the ground by asking volunteers from around the world to analyse photos and media content taken in the disaster area. By answering a short and structured questionnaire, the volunteers turn photos into valuable data. The organisations that partner with GeoTag-X then use this data to better inform decisions they take during the time of crisis. The platform is still currently being tested through a series of pilot programmes and will soon be ready for widespread use.

GeoTag-X is a crowdsourcing research project set up by the United Nations Institute for Training and Research's Operational Satellite Applications Programme (UNITAR-UNOSAT) as part of the Citizen Cyberlab project.¹ A consortium of seven partners,² Citizen Cyberlab is a European Union (EU) information, communication and technology (ICT) project that aims to help scientists execute laborious tasks and enables citizens to learn about and take part in various aspects of scientific research.³

According to Citizen Cyberlab, disaster response efforts have to analyse massive amounts of data produced during a crisis.⁴ As this is an enormous and time-consuming task, crowdsourcing has proved an invaluable resource. At the same time, photos taken in disaster situations and other humanitarian crises by different people on the ground can potentially be a powerful resource for response teams and can enable the provision of humanitarian aid not only in the immediate response effort but also in future recovery and preparedness work.⁵

Thus, the photo analysis tool, GeoTag-X combines the power of crowdsourcing and that of photos. The tool functions thanks to the hundreds of volunteers who answer a short series of questions, so as to first transform photos into consumable data. This data is then filtered, categorised and mapped for humanitarian workers and larger disaster relief efforts.

The team at Citizen Cyberlab discusses the inspiration and ultimate objectives behind this tool:

"As smartphones with cameras and geo-location capabilities become more accessible, more and more media is being created and loaded onto the internet in a disaster situation. With GeoTag-X, we want to find a way of harvesting this media, categorising it and extracting data that is relevant to the response and relief effort. We want to go beyond binary questions about what is in a photo, and see if we can teach the crowd to perform detailed analyses of media that would normally require specialist skills and expertise."⁶

1 <http://geotagx.org/about>

2 The European Organization for Nuclear Research (CERN), UNITAR/UNOSAT, Imperial College of Science, Technology and Medicine (ICSTM), University College London (UCL), Université de Genève (UNIGE), Université Paris Descartes (UPD) and The Mobile Collective (TMC).

3 <http://citizencyberlab.eu/about/>

4 <http://citizencyberlab.eu/pilot-projects/geotag-x/>

5 <http://scistarter.com/project/999-Geotag-X>

6 <http://citizencyberlab.eu/pilot-projects/geotag-x/>

The GeoTag-X tool aims to assist with disaster relief in events such as earthquakes, floods and hurricanes along with slower-developing events like drought, climate change and pollution.⁷ The tool is currently being tested through a number of pilot projects that analyse photos on topics as diverse as environmental conditions, health, agriculture and engineering.

Thus far there have been 14 pilot projects testing this crowdsourced photo analysis. These include two on the Ebola crisis;⁸ one related to a review of maps;⁹ two on the Somalia drought;¹⁰ two assessing the conditions of emergency shelters in the Middle East;¹¹ one on Yemeni cultural heritage sites at risk during the civil war;¹² and six projects on the Yamuna monsoon floods.¹³

The screenshot shows the GeoTag-X website interface. At the top left is the GeoTag-X logo, and at the top right is a 'Sign In' button. The main content area displays several project cards, each with a title, a representative image, and a statistics bar. The statistics bar for each card shows the number of tasks, the number of volunteers, and the percentage of completion.

Project Title	Tasks	Volunteers	Completion %
Crop identification for drought	-	-	-
Geotag Yamuna photos	-	-	-
Are shelters prepared for winter?	-	-	-
Ebola Response	104	122	100%
Condition of animals and livestock	108	102	99%
Visible Pollution	22	84	95%
Swiss Regional Refugee Crisis: Camp and Non-Camp population	73	69	68%
Swiss Regional Refugee Crisis: Camp and Non-Camp population	81	113	74%

7 <http://www.scientificamerican.com/citizen-science/geotag-x/>

8 <http://geotagx.org/project/category/ebolaresponse/>

9 <http://geotagx.org/project/category/underdevelopment:mapreview/>

10 <http://geotagx.org/project/category/somalidrought/>

11 <http://geotagx.org/project/category/emergencysHELTERassessmentinthemiddleeast/>

12 <http://geotagx.org/project/category/yemeniculturalheritageatrisk/>

13 <http://geotagx.org/project/category/yamunamonsoonflooding2013/>

Each of these projects has its own page on the GeoTag-X platform. Here, there is a description of the crisis, background on the specific projects on GeoTag-X, information on the partner organisations that helped develop the project and the questionnaire for the photo analysis and links to the various ways volunteers can participate.

EMERGENCY SHELTER ASSESSMENT IN THE MIDDLE EAST

This project is about assessing the suitability of emergency shelter, by answering simple questions about a series of photographs. These are observation questions, which are used to understand people's needs and vulnerabilities. The answers to needs assessment questions like this help local people, governments, and humanitarian actors plan an emergency response.

Total Number of Projects: 2



 FIND PHOTOS FOR THIS PROJECT

 VISUALIZE SUMMARY ON MAP

 EXPORT SUMMARY AS GEOJSON



As this is an international, online platform, anyone can volunteer regardless of their geographic location. The community of GeoTag-X volunteers is currently at 364 users, some of whom have contributed more than 600 times.

A volunteer, or a “citizen scientist”, has two ways to get involved.

- **Analyse photos:** The volunteers first sign up for an account. Then they pick a project they would like to work on from the Project Page.¹⁴ GeoTag-X provides a short tutorial that citizen scientists are encouraged to take. Then they can start analysing photos, as many or as few as they have time for. Each photo analysis takes between one and three minutes and consists of answering a series of short and strictly structured questions based on the contents of the photo.
- **Help find photos:** As photos are the main source of information, GeoTag-X has developed an extension for Google Chrome for volunteers to send relevant photos to the project. To do this, the citizen scientist right-clicks and selects “upload image URL to GeoTag-X”.

¹⁴ http://geotagx.org/#project_grid

An example of a pilot project, the **Emergency Shelter Assessment in the Middle East**,¹⁵ is designed to assess whether emergency shelters in displacement sites in Jordan and Iraq are suitably prepared for winter. When people flee disasters, they may spend time in camps, sometimes for many years. Emergency shelters, often tents, need to be protected from harsh climatic extremes in both summer and winter. Weather conditions in the Middle East are characterised by very warm summers and cold winters, with temperatures sometimes dropping below freezing. This can leave displaced families and informal settlements particularly vulnerable.

i INFO

TASKS

TUTORIAL





STATISTICS

BLOG

ARE SHELTERS PREPARED FOR WINTER?



Shelter assessments for winter.

-  **81 Tasks**
-  **156** Volunteers
-  **81** Tasks Completed
-  **0** Pending Tasks



START CONTRIBUTING

100%
complete

To help in the assessment, GeoTag-X asks questions based around Shelter Cluster indicators,¹⁶ informed by their partner organisation for this project, REACH.¹⁷ Questions the volunteer citizen scientists answer include, for example, is the shelter raised off the ground? Does the shelter have a second cover? Is there space to put a chimney safely inside the shelter? The photos analysed are images of the shelters found online and taken by people in the humanitarian crisis.

¹⁵ <http://www.geotagx.org/project/category/emergencyshesterassessmentinthemiddleeast/>

¹⁶ <https://www.sheltercluster.org/>

¹⁷ <http://www.reach-initiative.org/reach-completes-rapid-assessment-for-shelter-and-cccm-clusters-in-iraq>

Are shelters prepared for winter? TUTORIAL


This is one of the tutorials designed to give you a better understanding of this project. It is highly recommended that you complete as many tutorials as you can before starting the project as they will teach you what to look for. However if you are familiar with this project, you can start contributing right away!

[SKIP TUTORIALS AND START CONTRIBUTING](#)

YOUR CURRENT ANALYSIS IS 0% COMPLETE

I DO NOT SEE A PHOTO

Do you see shelter in this photo?
If you do not know how to answer this question, get some [help](#).



You can learn more about this photo by visiting its [source](#).

The analysis questions are closely linked to the questions in assessments undertaken by REACH so the latter can easily integrate the results into its work and get a better idea of what is happening on the ground during a disaster.

The ultimate aim of GeoTag-X and Citizen Cyberlab is “to have an open source tool and associated analysis questions that can be taken by anyone working in an humanitarian crisis and quickly and easily adapted to their needs”.¹⁸

The Citizen Cyberlab team encourages anyone, organisations or researchers, to get in touch if they have an idea for a project on GeoTag-X, by sending an email to geotag-x@cern.ch

CONTACT POINT

Email: geotag-x@cern.ch

Twitter: [@GeoTagX](https://twitter.com/GeoTagX)

GitHub: [GeoTagX](https://github.com/GeoTagX)

¹⁸ http://www.giscorps.org/documents/GeoTag_JD.pdf



DataShift is a multi-stakeholder, demand-driven initiative that builds the capacity and confidence of civil society to produce and use citizen-generated data to monitor sustainable development progress, demand accountability and campaign for transformative change. Ultimately, our vision is a world where people-powered accountability drives progress on sustainable development.

DataShift is an initiative of **CIVICUS**, in partnership with **the engine room** and **Wingu**. For more information, visit www.thedatashift.org or contact datashift@civicus.org.

