CRED CRUNCH

Issue No. 15 "Disaster Data: A Balanced Perspective" *December 2008*

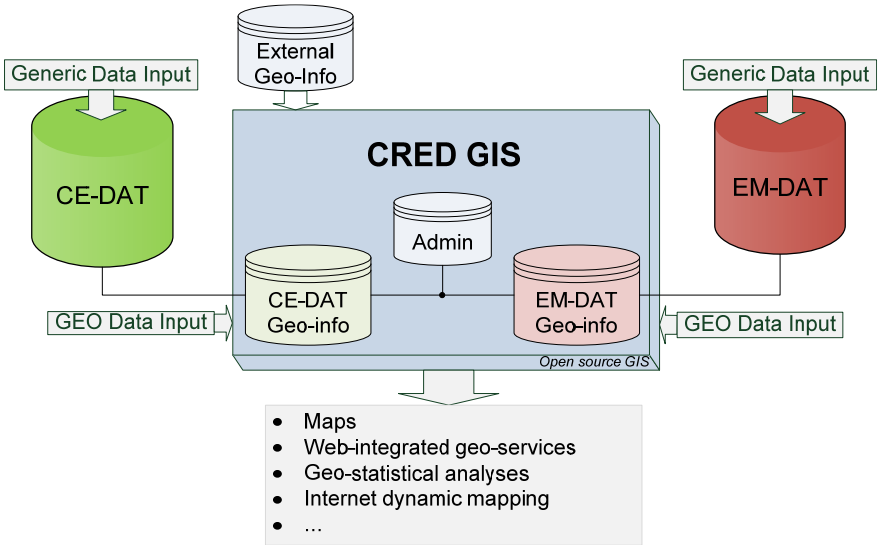
CRED & GIS

First of all, on behalf of the CRED team let me wish you a Merry Christmas and a peaceful and productive year 2009.
This issue of the CRED CRUNCH, for once, does not focus on the analysis of EM-DAT data but is devoted to the presentation of the GIS initiative that is being developed by the centre.
GIS technology has imposed itself as an essential tool for all actors involved in the different sectors of the disaster and conflict management cycle.
Over the last decade, the world witnessed a significant increase and diffusion of easily and freely available geographic information on disasters and conflicts. Notably, there has been a growing trend in the availability of satellite-based disaster monitoring initiatives.
Aware of the strong research potential and the high added value of these technologies, CRED decided jump on the bandwagon and make a first step towards the integration of the EM-DAT and CE-DAT databases into a geographic information system.

Africa administrative level 1 units that were affected by natural disasters

Beyond creating a GIS in which both databases could be integrated, we are developing a multi-database interface through which users could concurrently query both EM-DAT and CE-DAT and retrieve data on, for example, malnutrition or mortality rates in areas recently impacted by a flood or drought.
To link both databases through a unique interface first meant identifying a common denominator. However, the spatial nature of the two databases was quite different, with CE-DAT registering its data at the 2nd or 3rd administrative level and EM-DAT at a national scale.

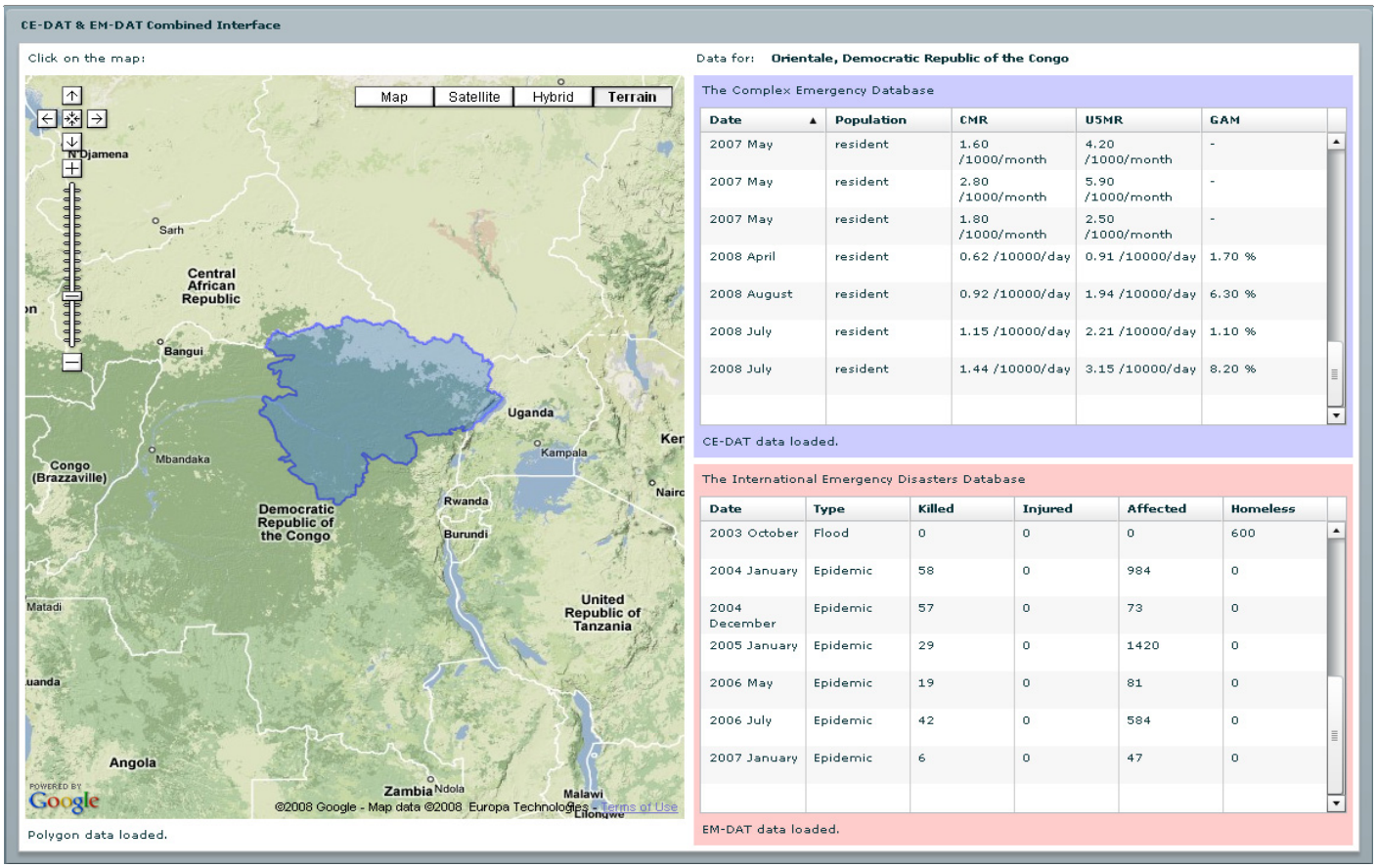
Schematic representation of CRED's GIS structure



It was therefore decided to increase the resolution of EM-DAT data and record disasters at a finer level than the previous national one. This in itself, is a major step for EM-DAT, as significant as the development of website technology in 2002 that allowed for online access to the database.
Secondly, it was necessary to identify a standardized and reliable global spatial dataset of administrative boundaries. The Global Administrative Unit Layers (GAUL) dataset developed by FAO within the EC-FAO Food Security Information for Action Programme was chosen as it provided a standardized spatial dataset up to the 2nd administrative level. (http://www.foodsec.org/tools_gaul.htm).

All the figures presented in the CRED Crunch are coming from "EM-DAT: The OFDA/CRED International Disaster Database"

Centre for Research on the Epidemiology of Disasters (CRED)
Université catholique de Louvain
30.94 Clos Chapelle-aux-Champs, 1200 Brussels, Belgium
www.cred.be, contact@emdat.be



The GIS platform was therefore designed to link the databases at the second administrative level, while keeping a maximum of flexibility for further improvements. At the centre of the GIS infrastructure, PostGIS, an Open Source software solution that provides core GIS system functionalities, was deployed. Around this engine, several applications have been developed to ease the querying of the geographic database and the interaction of researchers with the system.

Currently, all CE-DAT records have been geo-referenced and linked to a recognized administrative unit (for more information on CE-DAT geo-referencing, please visit: www.cedat.org).

Regarding EM-DAT, the geo-referencing of data is still work in progress. However, with the kind support of the University of Hawaii, all natural disasters that occurred in Africa have been geo-referenced and are now available in-house at a first administrative level resolution.

The next steps include the integration of the GIS system within the CE-DAT and EM-DAT websites to bring these new capabilities to our network of users In addition, the use of satellite imagery and external spatial datasets will be explored to further increase the value of the EM-DAT and CE-DAT databases to those involved in the management and research of the impacts of disasters and complex emergencies on human populations.

As always, we welcome your comments and feedback on the development of the CRED GIS and the increase of spatial resolution of the EM-DAT database.

Prof. Debarati Guha-Sapir

CRED News

- CRED is happy to announce that the press conference presenting a first overview of the 2008 disaster figures will be held, in collaboration with ISDR, on the 22nd of January, 2009 in Geneva.
- The EM-DAT Technical Advisory Group Meeting (TAG) will take place in the spring of 2009. All details regarding the date, location and registration procedure , will be communicated later.
- CRED is pleased to present the 2009 Summer Course on **Assessing Public Health in Emergency Situations** (APHES). This course is scheduled to take place on July 6-17, 2009 in Brussels, Belgium. More information at: http://www.aphes.be

Please note that disaster data are subject to change as validation and cross-referencing of the sources is undertaken and as new information becomes available. For any enquiries please contact contact@emdat.be or visit www.emdat.be