### Extended geological thematic data for managing geological and mining hazards

**Daniel Pacyna & Marc Salmon**

**Context**
The geology of Wallonia, despite its small superfi-
sity, is quite complex, including for-
formations from late Cambrian to Carbonife-
rous, some Triassic and Jurassic deposits, and
a cover of Upper Cretaceous, Eocene and
Miocene tabular deposits in the nor-
thern part. It is also mostly covered with
Holocene deposits, often quite thick. The
Paleozoic bed-rock is intensively folded
and faulted, as a consequence of oroge-
neries. So, Wallonia shows a great diversity
of geological environments.

More than 110,000 outcrops and borings (60,000 de-
scriptions) are now recorded in a new database, for 92
maps on 142. The next step is to include about 200,000
descriptions of old points from archives and the future
data, to update the geological map.

**Outcrops and borings of the Geological Map of Wallonia**

In order to draw the Geological Map of Wallonia, ten
geologists of several institutions (UCL, ULg, ULB, UMons,
FUNDP and SGB) are collecting new field data and are
reviewing the SGB archives. More than 110,000 outcrops and borings (60,000 de-
scriptions) are now recorded in a new database, for 92
maps on 142. The next step is to include about 200,000
descriptions of old points from archives and the future
data, to update the geological map.

**Mines and ancient exploitations items**

Wallonia has a 8 centuries old mining (coal, zinc, lead, pyrite and iron) and quarrying history, on various rocks and ores, with a noticeably de-
by the collect of data on non strict “mines” items. The work is to be achieved in 2014. These items comprise :

- 12,000 mine shafts or gallery exits (30,000 occurences) – average scale : 1/2.500;
- mine drainage galleries - average scale 1/10.000;
- maps of past soil subsidence (coal mines);
- 5,000 underground quarries, on a base of cadastral
- about 1,500 iron ore exploitations (mostly superficial) – scale 1/1.000 to 1/40.000;
- more than 800 slag heaps of collieries;
- zones of administrative and geotechnical requirements
- zones of administrative and geotechnical requirements
linked to mine works sensu stricto.

**Geological items**

Some others geological items have been gathered and
localised, on the basis of mine files and maps and scient-
ific and historic descriptions, e.g.:

- metallic ore deposits, by UMons (1,200 objects –
scale between 1/1,000 and 1/40,000);
- iron ore deposits and layers, by ULg (3,300 objects –
scale between 1/1,000 and 1/40,000);
- Geochimical data, collected on the field, are also availa-
able (about 9,900 spots).

**Geomorphological items**

The Thematic application is aimed not only to show
the objects and their localisation, but also to inform about
the administrative requirements for construction or in-
dustry, linked to these objects.

Three items and three relative requirements are showed on the Thematics WebGIS service:

- the Atlas of Walloon Karst (8,000 objects); zones of falling rocks.
- landslides in the western and eastern parts;
- zones of falling rocks.

The two last thematic have been collected by ULg on
an initiative of DG04. The Atlas of Walloon Karst is based on
an initiative of DG04, and done by the CNEPS, in
collaboration with DG04. The scale of these items is 1/10,000.

**Perspectives**

A “Certificate of Underground State” will be developed in order to integrate all these data in a document to join to
application forms for permits or to real estate transac-
tions. It will also serve data on seismicity and radon ha-
Zards.

**Acronyms**

- CWEPSS : Commission Wallonne d’Etude
et de Protection des Sites Souterrains
- DG04 : Direction générale opérationnelle
  Agriculture, Ressources naturelles et
  Environnement
- DG04 : Direction générale opérationnelle
  Aménagement du territoire,
  Logement, Patrimoine et Energie
- FUNDP : Facultés Universitaires
- SGB : Service Géologique de Belgique
- ULg : Université catholique de Louvain
- UMons : Université Libre de Bruxelles
- ULg : Université de Liège
- UMons : Université de Mons

(DGO04 Agriculture, Ressources Naturelles et Environnement, DGO, DGIGM Centre Souterrain / Belgique, Avenue Prince de Liège, 1, B-1100 Bruxelles, Daniel Pacyna & Marc Salmon - Email : dpacyna@spw.wallonie.be & msalmon@spw.wallonie.be)