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Data management in the Ad-hoc Flood project (Data of the Elbe flood in summer of 2002)

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1. Introduction

A large number of samples was collected in the flooded areas and analysed with different objectives during and after the flood of the century of the river Elbe (in August 2002). An Ad-hoc research project (BMBF FKZ: 0330492) was established to coordinate the activities and to collect the data of 14 participating institutions and co-operating authorities [Geller et al. 2004]. At the end the majority of all measured data is available in an uniform database.
This paper gives a short overview of the structure of the data, the amount of data collected in the last 2 years and access options exist.

2. Material and Methods

The data are physically stored in an Oracle database at the Environmental Research Centre (UFZ). The data model is based on the relational model that worked well for the lakes and rivers research departments in the UFZ [Büttner et al. 2002, www.ufz.de/gefo]. The data model was extended according to the requirements of the Ad-hoc flood project (Figure 1). Access from outside the UFZ was made possible by a Web interface (http://www.ufz.de/hochwasser). The user rights are strictly managed among the project partners involved and implemented in the database. The coordination office of the Ad-hoc-project imported the data supplied by the project partners into the database. Additionally, data of co-operating authorities were integrated into the database. The data can be queried by sample site (city, catchment area, river, etc), by time, by sample class (mud, sediment, sediment core, soil, pore water, surface water) and by group of elements (pesticides, nutrients, heavy metals,...).

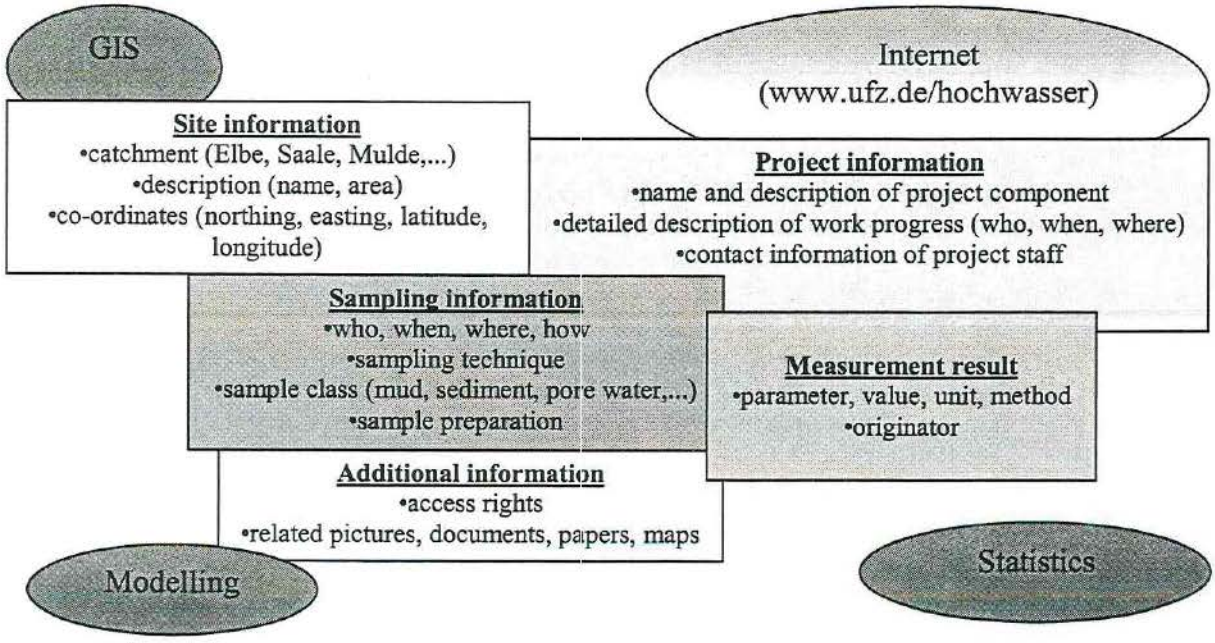

Figure 1: Schematic structure of Ad-hoc database

3. Results

At present approx. 1200 sampling sites within Czech Republic and Germany are registered along the rivers Elbe, Mulde and its tributaries. A connection to a GIS is possible using the saved coordinates. Approx. 50.000 single values were acquired from soil and mud samples, sediment cores as well as pore waters and surface waters during the period of November 2000 (for the purpose of comparison) until March 2003. These values come from approx. 1400 samplings. Altogether 274 different chemical parameters and soil characteristic values can be queried. Methodology and/or a partner for detail questions for sampling techniques and analytic are indicated for each individual value. Unfortunately information on sampling preparation are missing for a part of the values, but can be inquired from the respective person if necessary.

Table 1: Number of analyses and sample sites available in the Ad-hoc database

	analyses			sample sites		
	Before flood	After/during flood	total	Before flood	After/during flood	total
soil	9567	7008	16575	780	132	912
high flood sediments		13598	13598		166	166
surface water	3038	15844	18882	13	90	103
pore water		888	888		13	13
sediments bounded to suspended particulate matter	5493	3513	9006	13	12	25
sediment core	680	748	1428	5	1	6
total	18778	41599	53387	811	414	1225

It is still an open question, how the access of the interested public to the stored data should be organised in the future. At present, only members of the Ad-hoc flood project are allowed to look to the data. A regulation should be found soon.

4. Literature

Büttner, O., Tibke M., Gast H., Spindler J., and Schneidewind A.(2002), Datenbanken in der Gewässerforschung am Beispiel des Informationssystems GEFO. In „Die Elbe - neue Horizonte des Flussgebietsmanagements." Geller W., Puncochar P., Guhr H., v.Tümpling W., Medek J., Smrtàk J, Feldmann H., and Uhlmann O. 2002. p. 143-144. Stuttgart,Leipzig,Wiesbaden, Teubner Verlag.

Geller W., Ockenfeld., Böhme M., Knöchel A. (2004), Schadstoffbelastung nach dem Elbe-Hochwasser 2002 Endbericht des Ad-hoc-Projekts. ISBN 3-00-013615-0

www.ufz.de/hochwasser –Ad-hoc Project Website