8 Final Remarks

In the present document a large number of examples of flood maps are shown, produced by various European countries. The aim of this document is to provide the reader with illustrative examples of various types of flood maps that might form an inspiration for future mapping efforts. As a kind of final remarks, in this section some do's and don'ts are formulated regarding the flood information that can be presented in these type of maps. In some occasions map examples are described as being very clear and/or as an example of an excellent flood map. Evidently these are the subjective opinions of the compilers of this document and the users are invited to browse through it and form a personal opinion that may be brought forward within the context of EXCIMAP.

Although in Chapter 1 a number of different types of flood maps are mentioned, not all these types are equally well presented.

Most countries have flood extent maps. This flood extent should be related to a specified flood frequency. Frequencies used in the maps vary from 1/30 to 1/10,000. Most countries use only 2 or 3 different frequencies (e.g. 1/100 and 1/1000, or the less accurate “frequent” and “exceptional”), Flanders seventeen (2, 5, 10, 15, 20, 25, 30, 40, 50, 75, 100, 150, 200, 250, 300, 500 and 1000 years). England & Wales distinguish between floods originating from the sea (1/200) and flood from rivers (1/100), while Ireland gives an indication of the uncertainty of the flood extent. Maps become difficult to read when flood extent is presented in iso-lines (instead of coloured surfaces) or when current velocities are presented is arrows (that may merge together with parallel current lines).

Often flood extent for different frequencies is presented in one map. Increasing intensities of blue, suggesting increasing flood depth, represent the most frequent flooded (deeper) areas (like England & Wales, Finland, Germany). Flood depth maps may be presented for one representative flood frequency, e.g. 1/100. An interesting example is from Japan, in which the flood depth intervals are such that it contains “danger/how to act” information for individuals. In France maps exist that also present flood duration.

Information on historic floods is shown on maps from France, Finland and Ireland. With this type of information one should be aware that since this flood event floodwave characteristics and floodplain topography may have changed considerably and that therefore this historic flood may not representative for present conditions. However, this information is valuable to increase flood awareness.

Flood hazard maps, indicating where the combination of current velocity and waterdepth may be dangerous, are published in England & Wales. Austria uses the more or less comparable dragforce parameter. In Rheinland-Pfalz (Germany) and Switzerland this velocity-depth information is related to frequency, expressing this hazard information in a more sophisticated way for professional users. The dominant colours for this type of hazard information are red, orange and yellow.

In terms of flood risk maps, official maps indicating potential damage are rare. The only examples are from Germany (Rheinland-Pfalz, Sachsen). Italy, Spain and Switzerland have official risk zone maps. These maps are based on the probability of flooding in combination with the land use sensitivity/vulnerability to flooding. In Italy and Switzerland this risk zonation relates to spatial planning regulations and construction requirements. Specific vulnerability maps are available in England & Wales (social vulnerability of the population) and Sachsen (Germany) (vulnerable services, like hospitals).

A special group of flood maps comprise the insurance maps, which are used as a basis for both the general user, to check on the liability of his/her property to flooding, and the insurance companies to assess the actual risk of flooding. These maps contain information on flood risk, represented as flood extent probability on damage potential.

Evacuation maps are slowly becoming more usual, although most of them are still produced outside the EU. USA and Japan have a large tradition on this and may be valuable when European countries start to prepare these maps. Examples are found in Germany and also the Netherlands. These maps concentrate on how to act when a flooding threat becomes evident (evacuation routes, location of refuge/shelters, etc.), often combined with
recommendations on what to take with you. Sometimes those maps are combined with “threat” information (potential flooding depth / flood extent depending on hurricane force).

Apart from flood information (the core of the map of course) some additional information is essential for a proper use of the map: adequate title, date of publishing, responsible authority, orientation of the map, scale (preferably with a scale rod, to avoid confusion when printing or copying maps on other scales), relevant topographic information (roads, railways, buildings, cadastral information (e.g. in Austria)). Interesting opportunities arise when combining flood maps with Google Earth, however care should be taken to avoid an overload of topographic information in this way.

Other desirable information is a small set-in map to locate the mapped area. Some Finnish maps indicate the area covered by the model calculation. In addition the map from Finland has a nice example of a Disclaimer.

Another issue is language: in some instances English is used instead of the local language, but it is recognized that the use of English, especially on the publicly accessible internet sites, may limit the access to the information for those people with limited knowledge of English and the local language is preferred. The use of two languages may make the legend too large or difficult to read. An option is evidently to provide a translation of the map labels in English, especially on the internet sites.

With maps presented digitally on a computer care should be taken that the legend remains readable, especially with (scanned) files of original hardcopies. Still many maps will be printed as well (A3 as most frequent maximum size), which requires that map and legend are printed on the same page.

The Atlas shows for some of the maps a wide variety of layouts. When accompanied by a clear legend this may not be a problem, however for transboundary catchments / maps it is advisable that a certain level of uniformity is accomplished. Nice examples of such an approach are shown in the Chapter 5 on transboundary flood mapping.

Apart from the large number of different types of layout, that will be evident when browsing through this document, it is important to realize that the differences in layout are only the outside of the discrepancies between the various maps that according to their titles might assume to show the same information (e.g. flood extension for a certain return period). More important than the differences in layout are the different methodologies that are used for the production of the flood maps. Although the return period used is the same, the actual calculation method may be very different and is often not apparent from the map. However, even in cases where background documents do explain the technical details of the calculations, there are too many differences in the approaches followed by the various agencies that the maps would possibly become comparable or, at border locations where they present a continuous line of information, show the same results. And although in theory it would be possible to use one and the same methodology, it is unlikely that the same results would be generated for e.g. border stations as the underlying data are often contrasting and/or the length of the measurement series are different for stations in neighbouring countries.

This demand for uniform approaches not only holds for border areas, but also for maps prepared for different purposes within a country, e.g. national programmes, EU demonstration projects and reinsurance purposes. Because of these initiatives for one area different maps may exist, all presenting some type c.q. aspect of flood risk information.
EXCIMAP was organized by Frederique Martini (France) and Roberto Loat (Switzerland).

The work on this Atlas has lasted from January 2006 till October 2007 finishing with the publication of the document at hand.

The present document contains examples of a non-exhaustive inventory of the current, existing and accessible good practices for flood mapping in Europe. It is based on experiences and knowledge available in the countries represented in EXCIMAP.

The work of EXCIMAP started before the "Directive on the assessment and management of flood risks" endorsement (18 September 2007). The Atlas doesn't intend to present any guidelines on how to implement the Directive despite the work done to produce it having remained as close as possible to the Directive's principles. Neither does the Atlas address all requirements of the Directive.

It has not been verified if the maps and examples presented in this Atlas is compliant with the requirements of the Directive.