Annex 2.1.4.1– Comments from Member States regarding the results of macro-invertebrate comparison

Please find comments from the following Member States:

- **Belgium Flanders**
- **Belgium Wallonia**
- **Denmark**
- **France**
- **Latvia**
- **Sweden**

Comments Belgium Flanders (W Gabriels)
Flemish Environment Agency

After further analysis, Flanders proposed to adjust the boundaries to 0.70 for good-moderate and 0.90 for high-good. See paragraph 2.1.4.2 for further details. .

Comments from Belgium Wallonia (P Gerard)

We suggest that the proposed bilateral harmonisation (of Belgium Flanders and the Netherlands) could be extended to a part of Wallonia, namely the lowland rivers covered by RC1. We did not present an intercalibration exercice for this RC1 type in Wallonia due to the lack of reference conditions. For those rivers, the situation in Wallonia is the same than in Flanders and in The Netherlands. Furthermore, the concerned rivers are sometimes the same and are located in the international district of the Scheldt.

Comments from Denmark on the Danish data and the Danish method (LMK Larsen)
See also Annex 2.2.4.5.

Reference conditions: Reference conditions in Denmark can only be found in some small forest streams. In medium sized and larger streams catchment use and water chemistry indicate that streams are more or less impacted. We have therefore only used "best available" streams. In order to get an idea about the difference in biological communities between "best available" streams (Denmark) and unimpacted streams (Lithuania) a project is running in Lithuania in 2006. Totally, 14 medium sized and larger streams are sampled for macroinvertebrates, macrophytes, fish, hydromorfologi, water chemistry and other supporting parameters.

Size of the Danish datasets: In the first preliminary intercalibration exercise the Danish dataset included data from all sites. Results from this exercise indicated a lot of variance probably because of two reasons. The first reason being that Denmark is composed of Jutland connected to the European mainland and the rest being a number of islands. Zoo-geographically there are differences between Jutland and the islands. Many more species of macroinvertebrates can be found in Jutland compared to the islands. An example for some families of mayflies, stoneflies and caddisflies is given below. Historic records are also included (specimens from museum collections)

Number of species in selected families of mayflies, stoneflies and caddisflies in two Danish regions: Jutland (Western Denmark and the islands Funen, Seland etc. (Eastern Denmark).

	Jutland	Funen, Seeland etc. (islands)
Heptageniidae	5	1
Caenidae	5	3
Nemouridae	9	6
Leuctridae	4	3
Perlodidae	5	1
Chloroperlidae	2	0
Brachycentridae	2	0
Odontoceridae	1	0
Lepidostomatidae	3	2

As a consequence it was decided only to use streams in Jutland for the final intercalibration exercise.

The second reason is that the Danish regional authorities use different taxonomic identification levels. Some regional authorities uses full sorting and species identification. Other authorities use only the minimum level described in the national guidelines (not all taxonomic groups are considered and used in the Danish Stream Fauna Index). As a consequence taxa lists from authorities using only the minimum level (national guidelines) are shorter than taxa lists from authorities using full sorting and species identification. Because all families basically are used for the ICM index calculation it was decided only to use samples with full sorting and identification for the final intercalibration exercise (families like Corixidae, Calopterygidae, Dytiscidae, Dolichopodidae, Syrphidae etc. are not used in the Danish index but included in the ICM index calculation).

Lack of sites below moderate status in RC-1 and RC-4: These two stream types can only be found in Western Jutland. The population density is low, and the general water quality is good with most values of BOD5 below 2 mg/l. Therefore, it is nearly impossible to find streams with values of the Danish Stream Fauna Index below 4 (no poor or bad status).

Comments from France (J-G Wasson)
Please refer to Annex 2.2.2 for details of the harmonisation of the IBGN classification for the H/G boundary.

Comments from Latvia (N Kadikis)
Short explanation why Latvia is not included in the calculation of the GIG boundary.
“The Saprobic index method used in Latvia for rivers` ecological quality characterization responds only to a certain pressure – organic pollution while organic pollution / nutrients or more or less combined pressure is intercalibrated within Central/Baltic geographical region ultimately. As a result, there is low regression between the Saprobic index and ICMi. On the other hand, improvement of rivers` quality with respect to organic pollution in Latvia during the recent decade has led to

situation that it is rather impossible to find at least sufficient number of moderate polluted stations and therefore to fulfill the requirements for data quality in order to be included in harmonization and comparison process through calculation of ICMi and EQR. The possible resolution of this situation could be testing and introduction of additional multimetric indexes in Latvia as well as bilateral intercalibration with neighboring countries."

Comments from Sweden (M. Gonczi)

Sweden has fully participated in the intercalibration process for river macroinvertebrates – eutrophication in CB GIG and N GIG. The Swedish DJ index (Dahl & Johnson, 2005) which forms part of the official agreed Swedish Ecological Status Classification of rivers (NFS 2008:1) have been used in the intercalibration work of rivers and streams of benthic macroinvertebrates. This index has been used from the start of the intercalibration process, when the index was still under development. In spring 2007 an error in the calculation routine of the DJ index was found. This was because the index can only take values between 5 (the minimum) and 15 (the maximum) value and when dividing with the reference value to form an EQR then the index could not, for mathematical reasons, identify streams or rivers with an ecological status of "poor" or "bad" according to the WFD. What was then needed was to rescale the index to go from 0 (the minimum) to 10 (the maximum) and at the same time change the reference values and calculate new EQR values. With the new calculation routine, the index can indeed identify streams and rivers in all WFD quality classes when the EQR class boundaries were also changed to accommodate for the change in EQR values. These changes were small, for example, the high-good boundary was changed from 0.9 to 0.8 and the good-moderate class boundary from 0.7 to 0.6.

When comparing the classification results based on the old calculation (i.e. not correct) versus the new (i.e. correct) calculation of the DJ index EQR values using some 700 stream sites with different human pressures (i.e. from references to highly affected) there were no difference in the classification results for 163 streams in Ecoregion 14 (i.e. sites included in the CBGIG intercalibration). In May 2007 all DJ index EQR values were re-calculated and the results included in the intercalibration are based on the new, correct, Swedish DJ index values.

In CB GIG Sweden only have data for RC2. The new EQR ICMi for all types (based on data from RC2) is for high-good boundary 1,03 and for good-moderate boundary 0,92. Both these boundaries fall above the acceptable band.