

### **Annex 2.1.3.3 Acceptance/inclusion criteria/tables for macro-invertebrate datasets**

#### **CB rivers GIG macro-invertebrate intercalibration exercise**

- **Comparison Inclusion Criteria (Table A1)**
- **Evaluation of MS Datasets (Table A2)**
- **Summary of Type Coordinators' Recommendations (Table A3)**

Please note that all the following criteria must be fulfilled for any Member State macro-invertebrate dataset to be included in the calculation of the **GIG boundary** (and harmonisation band):

- All the data requirements listed in Table A1 and Table A2 must be met.
- The national classification system for macro-invertebrates must be officially endorsed by the country and the national boundaries must be officially accepted.
- The boundary setting procedure must be compliant with WFD normative definitions.

Member States with datasets that do not meet the criteria will be included the comparison but do not contribute to the calculation of the GIG boundary or harmonisation band.

**Table A1 Checklist for inclusion in the CB GIG macro-invertebrate comparison (from Steering Group meeting Edinburgh May 2006)**  
MS – Member States; SG- Steering Group; TC – Type Coordinators\*

<b>Task</b>	<b>Responsibility</b>
Provision of raw family lists per national dataset	MS
Provision if necessary: physio-geographical parameter values (catchment size, altitude, geology, substrate, additional parameters) for checking type allocations	MS
Check that country has completed the normative definitions questionnaire?	SG
Check that country has completed the REFCOND criteria and thresholds questionnaire?	SG
Establishing common view on national reference declarations (which countries fulfill the criteria?)	SG
Review of the characteristics of national assessment and classification methods: are type specific quality classification available?	SG
Checking of national reference sites using questionnaire data	TC
Reference sites and samples available (checked by the GIG criteria)	
- minimum number of sites: <b>2</b>	TC
- minimum number of samples: <b>6</b>	
Number of test sites/samples per quality class according to national classification	
- high: <b>4 samples</b> (incl. reference samples)	
- good: <b>4 samples</b> (incl. reference samples)	
- moderate: <b>4 samples</b>	TC
- poor: if not provided → still acceptable	
- bad: if not provided → still acceptable	
Exploration of relationship national method: ICMi	
R square is analysed, low values ( $R^2 < 0.5$ ) will be flagged and excluded from harmonisation band calculation in boundary comparison and harmonisation	TC
Discontinuous national indices: in class boundary translation via regression, use only values that occur in national method (no artificially derived mean values); in each case boundary values generally belong to next higher class	TC
Review of IC typology data	TC
Median of MS EQR derived from reference samples according to GIG criteria should be around 1; if not, countries have to justify	TC/MS

**\*Type Coordinators:**

RC1	Andrea Buffagni/Stefania Erba
RC2	Isabel Pardo
RC3	Isabel Pardo
RC4	John Murray-Bligh
RC5	Sebastian Birk
RC6	Jean-Gabriel Wasson

**Table A2: Type Coordinators' evaluation of MS datasets and methods for CB GIG (Rivers) macro-invertebrate intercalibration (Requirements are highlighted in 'green').**

**Please note that while the contents of the table were valid at time of writing, some of the data/calculations may be have updated or corrected for the final report.**

Intercalibration Type: R-C1										
MS	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB Criteria	GIG Min. number				
	MS should provide a completed questionnaire or equivalent information	MS should provide raw family lists with dataset	No. of sites/samples per class <b>H:</b> 4 (incl. reference) <b>G:</b> 4 (incl. reference) <b>M:</b> 4 <b>P and B:</b> no min.	Check MS reference declarations (e.g. median of MS EQR derived from reference samples should be around 1).	Reference screened against GIG criteria?	Minimum no. of reference <b>sites:</b> 2 Minimum number of reference <b>samples:</b> 6	MS to provide data on catchment size, altitude, geology, substrate etc or other physico-geographical parameter values for checking type allocations	Requirement: <b>R<sup>2</sup> ≥ 0.5</b> for regression between EQR MS_val and EQR ICMi.	Please include any other information which is relevant and not covered by the other headings	Please indicate any relevant comments from the MS
BE (FL)	Info provided. No reference sites exist. The highest reached value of biotic index is considered as a surrogate of reference status. WFD compliancy to be demonstrated	Yes	Samples: H: 11 G: 27 M: 56 P: 84 B: 30	0.85 (median of high status samples: no ref available)	--	0	No	0.79 (Wouter & Nicolas counts)	Not recalculated: not comparable with normalization adopted by MS. No ref sample available.	
DE	Information partially provided. <u>Nearly all chemical parameters above suggested limits.</u> Only N-NO3 ok. Type specific Ref cond. derived applying REFCOND guidance criteria. Tolerance, Abundance, Richness/diversity considered? Not WFD compliant	Yes	Samples: H: 9 G: 20 M: 18 P: 15 B: 6	1		6 sites 6 samples	Yes Altitude < 100m Catchment: < 280km <sup>2</sup> ; Median 40 km <sup>2</sup>	0.50 (CNR-IRSA calculations); 0.45 (Wouter & Nicolas counts)		

Intercalibration Type: R-C1										
				Reference						
DK	Information partially provided. Missing chemical values. No information was provided on Reference sites definition. It was simply stated that all Reference have the highest national biological index value. Not WFD compliant	Yes	Samples: H: 13 G: 22 M: 14	1		4 sites 5 samples	Yes. Altitude all sites 100m Catchment: < 80km <sup>2</sup>	0.70 (CNR-IRSA calculations); 0.71 (Wouter & Nicolas counts)		
FR	Info partially provided. Missing chemical values. Type specific Ref cond. derived applying REFCOND guidance criteria. Tolerance, Abundance, Richness/diversity partly considered. WFD compliant.	Yes	Samples: H: 61 G: 13 M: 25 P: 15 B: 13	1		3 sites 23 samples	Yes Altitude < 80m Catchment: < 280km <sup>2</sup> ; Median 120 km <sup>2</sup>	0.81(CNR-IRSA calculations); 0.81 (Wouter & Nicolas counts)		
IT	Nearly all Information provided. CGIG REFCriteria table compiled (39%, field inspection; 27%, measured; 18%, expert judgment). Nearly all chemical parameters below suggested limits. P-PO4 exceeding suggested limits. Type specific Ref cond. derived applying REFCOND guidance criteria and AQEM/STAR criteria. Tolerance, Abundance, Richness/diversity indirectly considered. WFD compliant	Yes	Samples: H: 74 G: 179 M: 80 P: 17 B: 15	1		5 sites 32 samples	Yes. Altitude all < 200m Catchment: < 40 km <sup>2</sup> ;	0.72 (CNR-IRSA calculations); 0.72 (Wouter & Nicolas counts)		

Intercalibration Type: R-C1										
				Reference						
LT	Information partially provided. CGIG REFcriteria table not compiled. Missing chemical values. No type specific Ref condition. Tolerance, Richness/diversity indirectly considered. Abundance not considered. Not WFD compliant	No	Samples: DSFI H: 10 G: 3 M: 1 P: 1  BI H: 5 G: 8 M: 2	1 (DSFI) 1 (BI)		4 sites 4 samples	No	0.72 (DSFI) 0.73 (BI) (Wouter & Nicolas counts)	Not recalculated from CNR-IRSA. No taxalist available	
NL	Information provided. No reference sites exist. Not WFD compliant	Yes	Samples: H: 57 G: 79 M: 115 P: 121 B: 2	0.97 (median of high status samples: no ref available)		0	No	0.18 (CNR-IRSA calculations); 0.12 (Wouter & Nicolas counts)	No ref. sample available. Recalculated with 75perc high status	MS provided calculation according to 75%ile high status
PL	All information provided. CBGIG REFcriteria table compiled (37% criteria not used; 22%, expert-judgment and field inspection; 20% measured; 18% field inspection). Some problems with P-PO4.	Yes	Samples: H: 12 G: 6 M: 22 P: 10 B: 9	1 (BMWP-P) 1 (Margalef)	Some problems with P-PO4 that in some sites can reach high concentrations.	8 sites 8 samples	Yes Altitude all < 200m Catchment: < 160 km <sup>2</sup>	0.71 (BMWP-P) 0.52 (Margalef) (CNR-IRSA calculations); 0.71 BMWP (Wouter & Nicolas counts)		
UK	All Info provided. CGIG REFcriteria table compiled (35%, expert-judgment and field inspection; 30% other criteria; 16% measured). All chemical parameters below suggested limits. Type specific Ref cond. derived from RIVPACS. Tolerance, Abundance, Richness/diversity considered. WFD compliant	Yes	Samples: H: 290 G: 151 M: 46 P: 10 B: 5	1		25 sites 25 samples	Yes (alkalinity also) Altitude all < 200m Catchment: < 100 km <sup>2</sup>	0.70 (CNR-IRSA calculations); 0.69 (Wouter & Nicolas counts)		

Intercalibration Type: RC-2										
Country	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB Criteria	GIG REF table Min. number				
FR sub-Type12A	Tolerance, abundance, Richness/diversity partly considered. WFD compliant	Yes	OK	Yes	Info provided. CBGIG REF criteria table compiled	Yes	Data provided. But catchment area ranges from 8 km <sup>2</sup> to close to 181 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. Not adjusted to RC2 type	r <sup>2</sup> = 0.8525	Either to merge the 2 subtypes for the RC2 comparison, or just use one type	
FR sub-Type12B	Tolerance, abundance, Richness/diversity partly considered. WFD compliant	Yes	There are no samples in the poor class. But that is ok.	Yes	Info provided. CBGIG REF criteria table compiled  For the reference population there are 2 samples in moderate class	Yes	Data provided. But catchment area ranges from 7 km <sup>2</sup> to close to 194 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. Not adjusted to RC2 type	r <sup>2</sup> = 0.6013	Either to merge the 2 subtypes for the RC2 comparison, or just use one type	c
ES	Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	OK	Yes	Info provided. CBGIG REF criteria table compiled	Yes	OK RC-2 typology variables	r <sup>2</sup> = 0.9035		

Intercalibration Type: RC-2										
				Reference						
IE	Tolerance, abundance, Richness/diversity considered. WFD compliant	No info provided	OK	OK	Info not provided. CBGIG REF criteria table compiled. They agreed with the general outline of REFCOND table. More info to be provided.	Yes	No info provided	$r^2 = 0.4880$		
SE	Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	Poor and bad not represented	Yes	Info provided. CBGIG REF criteria table compiled. Reference sites had not been checked biologically. Only phys-chem variables are used. There is one reference sample in moderate status 0,6.	Yes	OK	$r^2 = 0.4132$		
UK	Type specific Ref. cond derived from RIVPACS. Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	There are not samples in the poor class. But that is ok	OK	Info provided. CBGIG REF criteria table compiled	Yes	Data provided for a part of the dataset. OK, RC-2 typology variables	UK(site_spec) $r^2 = 0.5645$ ; UK(type_spec) $r^2 = 0.4170$ ;		

Intercalibration Type: RC-3										
Country	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB GIG Criteria	Min. number				
AT	Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	There are no samples in the bad class, only 2 in poor. But this is ok.	Issue to be resolved regarding reference calculation. All sites in high class were used to derive the reference median.	Info provided. CBGIG REF criteria table compiled	Yes	Data not provided	$r^2 = 0.7569$		
Be (Wa)	Info provided. Tolerance, Richness/diversity considered. Abundances not considered	Yes	OK	All sites in high class have been used to derive the "reference median", value is around 1	Info on CBGIG REF criteria table not compiled. Only check with FQ data. Reference criteria are based on best available biological	--	Data provided. But catchment area ranges from 7 km <sup>2</sup> to close to 184 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. Not adjusted to RC3 type	$r^2 = 0.9565$		
CZ	Information missing.	No information provided	There are no samples in the bad class. But this is ok.	There are reference sites, but the reference median", value is 0.882	Info on CBGIG REF criteria table not compiled	Yes	Data provided. But catchment area ranges from 8 km <sup>2</sup> to close to 181 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. Not adjusted to RC2 type	$r^2 = 0.3429$		
DE	Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	Yes	OK	Info provided. CBGIG REF criteria table compiled.	Yes	Data provided. But catchment area ranges from 1,3 km <sup>2</sup> to close to 171 km <sup>2</sup> , over the 100 km <sup>2</sup> thresholds. And altitudes from 23 to 820 m. Not adjusted to RC3 type	$r^2 = 0.5307$		



Intercalibration Type: RC-3										
				Reference						
ES	Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	OK	Yes	Info provided. CBGIG REF criteria table compiled	Yes	OK RC-3 typology variables	$r^2 = 0.7766$		
FR (MC)	Tolerance, abundance, Richness/diversity partly considered. WFD compliant	Yes	OK	Yes	Info provided. CBGIG REF criteria table compiled For the reference population there are 2 samples in moderate class	Yes	Data provided. But catchment area ranges from 10 km <sup>2</sup> to close to 149 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. And altitudes >800 m (up to 1000m). Not adjusted to RC2 type	FR (MC) $r^2 = 0.8230$	Either to merge the 2 subtypes for the RC3 comparison/harmonisation, or just use one type	
FR (V)	Tolerance, abundance, Richness/diversity partly considered. WFD compliant	Yes	OK	Yes	Info provided. CBGIG REF criteria table compiled	Yes	Data provided. But catchment area ranges from 10 km <sup>2</sup> to close to 159 km <sup>2</sup> , over the 100 km <sup>2</sup> threshold. Not adjusted to RC3 type	FR (V) $r^2 = 0.8177$	Either to merge the 2 subtypes for the RC3. Comparison/harmonization, or just use one type	c
LU	Tolerance, abundance, Richness/diversity partly considered. WFD compliant	Yes	There are no samples in the poor class. But that is ok	OK	Info provided. CBGIG REF criteria table compiled For the reference population there is 1 sample in moderate class	Yes	Data provided. Alkalinity on the range of 0,3 to 1.8. Not adjusted to RC3 type	$r^2 = 0.7945$		

Intercalibration Type: RC-3										
				Reference						
UK	Type specific Ref. cond derived from RIVPACS. Tolerance, abundance, Richness/diversity considered. WFD compliant	Yes	There are no samples in the moderate-poor classes	OK	Info provided. CBGIG REF criteria table compiled	2 ref samples only	OK RC-3 typology variables	UK(site_spec) $r^2$ = 0.5737		

Intercalibration Type: R-C4										
Country	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB Criteria	GIG Min. number				
BE (FL)	OK (MMIF)	OK	X (H: 3)	X	X	X(0)	X	OK	No reference sites – max value used for ICMs and 1.00 for national metric	
CZ	X	X	X	X	X	X	X	X	No data; no REFCOND template or normative definitions table	
DE	OK	OK	OK	OK (no formula)	OK	OK	X (no geology or alkalinity)	(OK)	r-squared = 0.49	
DK	OK	OK	X (M: 3)	OK	X	OK	8(no geology or alkalinity)	OK	MS Metric categorical, not continuous No P or B samples DSFI does not comply fully with normative definitions	
EE	OK	X	OK	OK	OK	OK	X	OK	No P or B samples Raw data = ASTERICS metrics results	

Intercalibration Type: R-C4										
				Reference						
ES	OK	OK	OK	OK	OK	OK	OK	OK		
FR	OK	OK	OK	OK	OK	OK	X (no geology or alkalinity)	OK		
IE	OK	X	OK	OK	X	OK	X	OK	Large no reference sites (140) National metric is categorical, not continuous No information about incorporation of macrophyte & phytobenthos data in the invertebrate metric	
LT	OK	X	OK	OK	OK	OK	X	OK	Both national metrics categorical, not continuous. Very few P and B samples No raw data – metrics data from ASTERICS instead Not all land use criteria values were used (urban/agriculture) to screen reference	

Intercalibration Type: R-C4										
				Reference						
LU	OK	OK	OK	X(ref sites not indicated, no formula)	OK	X(not indicated)	OK	OK	IBGN does not comply with normative definitions	
LV	X	OK	X	X	X	X	X	X(no regression)	Quality of sites not indicated No metrics calculated	
NL	(OK)	X	OK	X(75-percentile calculated)	X	OK	X	X	Some negative EQRs – should not be possible	
UK	OK	OK	OK	Site-specific OK Type-specific OK	OK	OK	OK	OK	Site-specific reference calculation not provided	UK can provide evidence (including spreadsheets) to show calc of site-specific metric using median

Intercalibration Type: R-C5										
Country	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB GIG Criteria	Min. number				
EE	okay	okay	not available (number of moderate sites/samples too low)	not available (no national EQR values)	generally okay (but template was not filled in per type)	only sites/samples available 5	not available (only distance from source data)	okay	only boundaries of one metric are intercalibrated, no national EQR classification	
ES	okay	okay	okay (low number of good sites)	okay (median = 1)	okay	okay	okay	okay	two different national subtypes, but only reference value is derived from	
LT	not available	okay (species level data)	not available (only high sites + 1 good site)	no reference sites delineated	not available	not available	not available	not available (ICMi not calculated)	generally not possible to intercalibrate at this stage of data delivery	Email Normunds Kadikis (26.05.06): - not able to provide full quality spectrum - not able to provide reference sites

Intercalibration Type: R-C5										
				Reference						
IE	okay	not available	okay	okay	not available (?screend according to North GIG criteria?)	in total 15 reference samples available, not able to tell from how many different sites	not available	okay	none	
LU	okay	okay	no high status sites	see MS comment	see MS comment	see MS comment (but anyway, only 2 sites available)	okay	okay	very few data included, but more important: reference conditions are not met (see MS comments)	see footnote <sup>1</sup>

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<sup>1</sup> Email Alain Dohet (31.05.06) "Concerning your question, it's true that we mention some "reference" sites for the R-C5 type for Luxembourg in the first intercalibration exercise. However, in this first exercise, an appropriate method (WFD compliant) to select reference sites was not available in Luxembourg and this selection has to be understood more like the best available sites for this R-C5 type in the country. So, clearly, in my opinion, these sites cannot be considered as "reference". In the last intercalibration exercise, we have used, as far as possible, the new reference criteria defined by the GIG and none of these previous selected sites for R-C5 has been retained this time. So finally, the intercalibration exercise for Luxembourg concerns only R-C3, R-C4 and R-C6."

Intercalibration Type : R-C6										
Country	Normative definitions	Family list	No. samples	Reference			Typology	R <sup>2</sup>	TC Comment	MS Comment
				REFCOND	CB GIG Criteria	Min. number				
DK	Yes	Yes	H : 13 G : 16 M : 13 P & B : 3	Yes	No answer	Yes	Yes (no geology information)	0.778	Discontinuous index	
EE	Yes	No	H : 11 G : 8 M : 6 P & B : 2	MS value = ASPT ; MS ref value not provided (eqr values H/G & G/M don't correspond to the description of the normative definitions)	Yes	No samples) (5	No information	0.731	The MS value provided in the dataset corresponds only to the ASPT	
ES	Yes	Yes	H : 6 G : 8 M : 7 P & B : 5	Yes (value = 0.975)	Yes	Yes	Yes (no geology information)	0.877		
FR (HER 9 & 10)	Yes	Yes	H : 36 + 79 G : 28 + 117 M : 38 + 78 P & B : 20 + 28	Yes	Yes	Yes	Yes (no geology information)	0.797 & 0.609		
IE	Yes (but no description of reference criteria)	No	H : 478 G : 761 M : 290 P & B : 206	Reference sample based on biological classification	No	Yes	No information	0.570		
LT (DSFI & BI)	Yes	No	H : 19 + 16 G : 13 + 26 M : 39 + 30 P & B : 2 + 1	Yes	Yes	Yes	No information	0.639 & 0.613		



LU	Yes But definition of classes in the Normative definition and dataset are different. Needs clarification.	Yes	H : 26 G : 29 M : 48 P & B : 42	Yes	Yes	Yes	Yes	0.845	Unclear definition of classes; Why IBGN-1 used instead of IBGN ?	
SE	Yes	Yes	H : 6 G : 9 M : 5 P & B : 0	No ; value = 0.7 (Good status)	Yes	No samples) (3	Yes	0.526	Weak dataset and the Reference samples doesn't correspond to the MS ref value	
UK (site & type specific)	Yes	Yes	H : 507 G : 492 M : 226 P & B : 113	Yes	Yes	Yes	Yes	0.776 & 0.682		

**Table A3: Summary of Type Coordinators' Recommendations (please refer to Table A2 for detailed evaluations of MS datasets)**

Country	Decision of use of MS dataset for the calculation of GIG boundary and harmonisation band	
	Yes or No	Comment
<b>R-C1</b>		
BE (FL)	No	No reference sites exist and WFD compliancy of the method should be demonstrated
DE	Yes	
DK	No	
FR	Yes	
IT	Yes	
LT	Withdrawn	National method is not WFD compliant
NL	No	
PL	No	
SE	No	
UK	Yes	
<b>R-C2</b>		
ES	Yes	Only one dataset from France should be included in the calculation of a harmonized boundary, so, either merge the 2 subtypes (as Germany did for the RC-3), or just use one subtype for the IC boundaries harmonization.
FR 12A	Yes	
FR 12B		The 12B subtype has not reference compliant criteria for the GIG
IE	Yes	
SE	No	
UK	Yes	
<b>R-C3</b>		
AT	Yes	Reference criteria are based on best available biological information.
BE (Wa)	No	
CZ	No	
DE	Yes	

REFCOND criteria, low regression values and median of reference sites lower than 1

<b>FR (MC)</b>	Yes	Several issues were checked: - existence of 2 reference samples in moderate class. Yes if they are removed. - Need for either merge the 2 subtypes for the RC3 comparison/harmonization, or just use one type - Improve the adjustment to the type, samples catchment area should be <100 km <sup>2</sup> to be compared with similar systems.
<b>FR (V)</b>	Yes	Several issues have to be checked, after their revision, the MS can compare: - Need for either merge the 2 subtypes for the RC3 comparison/harmonization, or just use one type - Improve the adjustment to the type, samples catchment area should be <100 km <sup>2</sup> to be compared with similar systems.
<b>LU</b>	No	Several issues have to be checked, after their revision, the MS can compare: -For the reference population there is 1 sample in moderate class -Alkalinity on the range of 0,3 to 1.8. Not adjusted to RC3 type. National system is being revised to fulfill WFD requirements.
<b>ES</b>	Yes	
<b>UK</b>	Withdrawn	
<b>R-C4</b>		
<b>Be (FL)</b>	No	No reference sites
<b>CZ</b>		Withdrawn
<b>DE</b>	Yes	Warning for ICMi regression, regression co-efficient is low but within agreed levels to 1 significant figure.
<b>DK</b>	No	The method is not WFD compliant.
<b>EE</b>	Yes	
<b>ES</b>	Yes	
<b>FR</b>	Yes	
<b>IE</b>	Yes	
<b>LT</b>	No	National system still in development.
<b>LU</b>	No	National system is being revised to fulfill WFD requirements.
<b>LV</b>	Withdrawn	
<b>NL</b>	No	No reference sites indicated.
<b>UK</b>	Yes	
<b>R-C5</b>		
<b>EE</b>	No	National method in development.
<b>ES</b>	Yes	
<b>IE</b>	Yes	
<b>LU</b>	Withdrawn	
<b>LV</b>	Withdrawn	

R-C6		
DK	No	Compliance with CB GIG reference criteria needed.
EE	No	National method in development.
ES	Yes	
FR (HER 9 & 10)	Yes	Both datasets, representing a mean value for the MS.
IE	Yes	
LT (DSFI & BI)	No	National method still in development.
LU	No	Checking compliance with WFD.
SE	No	Could be included with more ref samples, and justify the low value of ref sample.
UK (site & type specific)	Yes	National system still being revised.