

| <b>1 - METHOD BACKGROUND</b>                |  |  |
|---|--|--|
| NAME OR CODE                                |  | <b>LAWA-OS - Overview Survey</b>   |
| COUNTRY                                     |  | Germany  |
| KEY REFERENCE                               |  | LAWA (2002b)   |
| WEBPAGE                                     |  |  |
| CATEGORY                                    |  | The aim is to get an overview of the physical/hydromorphological conditions of rivers  |
| <b>2 - METHOD CHARACTERISTICS</b>           |  |  |
|   | Maps/Remote sensing                          | Present and historical maps (topographic, geological, land use, etc.), aerial, satellite photos and other GIS tools are used for the Overview survey   |
| A - SOURCE OF INFORMATION / DATA COLLECTION | Field survey                                 | NOT APPLICABLE (but a ground check is recommended)   |
|   | Rapid field assessment                       | NOT APPLICABLE   |
|   | Existing database                            | Flood statistics, reports, plans, etc.   |
|   | Modelling                                    | NOT APPLICABLE   |
| B - SPATIAL SCALE                           | HIERARCHICAL SPATIAL SCALE                   | River catchment/Water body/ Reach/Cross Section  |
|   | LONGITUDINAL SPATIAL SCALE                   | Fixed length   |
|   | LATERAL SPATIAL SCALE                        | Scaled to channel width  |
|   |  | Variable length  |
|   |  | Channel  |
| C - TEMPORAL SCALE                          | Physical and morphological assessment        | Consistent with LAWA-FS but 2 main parameters (instead of 6)   |
|   | Hydrological assessment                      | Same as LAWA-FS  |
|   | Characterization/classification              | NOT APPLICABLE   |
|   | Assessment by index                          | The method makes an inventorying and maps features   |
| D - TYPE OF METHOD                          | Deviation from reference                     | The method mainly uses a functional-unit score system, where scores are assigned following a the hierarchical/stepwise approach  |
|   | General assessment / Design framework        | Same as LAWA-FS  |
|   | Modelling status / Scenario                  | NOT APPLICABLE   |
|   | Final expert judgment                        | NOT APPLICABLE   |
|   | Links with other systems                     | Local expert knowledge provides information on the possibility of water flow across the floodplain and on artificial barriers (Weiss et al., 2008)   |
| E - REFERENCE CONDITIONS                    |  | In conjunction to LAWA-FS to get more detailed observations; it could also be used when field conditions are not favourable to apply LAWA-FS   |
|   | RIVER TYPOLOGY                               | Same as LAWA-FS  |
|   | TYPOLOGY LIMITATIONS                         | Same as LAWA-FS  |
|   | TYPE-SPECIFIC (Protocol / Assessment method) | Consistent with LAWA-FS (except for large rivers); it depends upon data availability; not applicable to small rivers   |
|   | BASIS FOR STANDARDS / THRESHOLDS             | It applies to large rivers more than 10 m wide (where features are visible form maps)  |
|   | REACH SCALE SURVEY STRATEGY                  | The individual parameters are associated stepwise because of different ecological value. The total value of 'hydromorphological quality' results from the combination of the two partial values 'river-bed dynamics' and 'floodplain'. Same score classes as for LAWA-FS |
| F - GENERAL INFORMATION                     | TIMING AND FREQUENCY                         | No particular reach survey strategy, all the river is assessed in continuum (more attention at the lateral spatial scale --> floodplain)   |
|   | DATA PRESENTATION (OUTPUT/LAYOUT)            | The overview survey is less time consuming than the field survey method; the recommended monitoring frequency is 6 years, with respect to morphology and continuity (Weiss et al., 2008)   |
|   | METHOD SUPPORT / APPLICATION TOOLS           | Same as LAWA-FS  |
|   | SPATIAL COMPARISON                           | A standardized survey sheet for each 500 m-1 km survey; surveys cross-checked by two or more surveyors   |
|   | CONNECTION TO ECOLOGY                        | Consistent with LAWA-FS (but for large rivers)   |
|   | USERS  | The scoring system weights in parameters following their ecological relevance, but direct connections between habitat and biology are difficult because of the large-scale approach  |
|   | SCALE INFORMATION                            | Same as LAWA-FS  |
|   | NUMBER OF END PARAMETERS                     | Large scale characteristics are collected and used as basis for the reach scale assessment   |
|   |  |  |

### 3. RECORDED FEATURES

|                                    |  |   |
|------------------------------------|--|---|
| A - CATCHMENT / VALLEY             | LARGE SCALE CHARACTERISTICS  | Large scale land use, info on water regulation  |
|                                    | HYDROLOGICAL REGIME  | Hydrological conditions<br>Discharge regulation<br>Metrics of hydrological regime<br>Flood frequency<br>Hydro-peaking<br>NOT APPLICABLE |
|                                    | VALLEY FORM / FEATURES   | River valley type   |
| B - CHANNEL                        | CHANNEL PATTERN / PLANFORM   | Curvature, river planform   |
|                                    | CHANNEL FORMS  | NOT AVAILABLE   |
|                                    | BED CONFIGURATION  | NOT AVAILABLE   |
|                                    | CHANNEL DIMENSIONS   | Variation in width  |
|                                    | FLOW-TYPE  | NOT APPLICABLE  |
|                                    | PHYSICAL / HYDRAULIC VARIABLES   | NOT APPLICABLE  |
|                                    | SUBSTRATE  | NOT APPLICABLE  |
|                                    | IN-CHANNEL VEGETATION<br>WOODY DEBRIS  | NOT APPLICABLE<br>NOT APPLICABLE  |
| ARTIFICIAL FEATURES AND STRUCTURES |  | E.g. Weirs  |
| C - RIVER BANKS/<br>RIPARIAN ZONE  | BANK PROFILE / SHAPE   | NOT APPLICABLE  |
|                                    | BANK MATERIAL  | NOT APPLICABLE  |
|                                    | RIPARIAN VEGETATION STRUCTURE  | NOT APPLICABLE  |
|                                    | LONGITUDINAL CONTINUITY OF RIPARIAN VEGETATION                                 | NOT APPLICABLE  |
|                                    | RIPARIAN VEGETATION WIDTH  | NOT APPLICABLE  |
|                                    | VEGETATION COMPOSITION, COVERAGE AND OTHER RIPARIAN VEGETATION CHARACTERISTICS | Existence of bank vegetation; River belt mapping  |
|                                    | ARTIFICIAL FEATURES AND STRUCTURES<br>LAND USE                                 | Bank protection<br>Land use in the riparian belt  |
| D - FLOODPLAIN                     | FLUVIAL FORMS  | NOT APPLICABLE  |
|                                    | INFO ON FLOODPLAIN FEATURES  | NOT APPLICABLE  |
|                                    | LAND USE   | Land use in the floodplain  |

### 4. RIVER PROCESSES

|                              |  |  |
|------------------------------|--|--|
| A - LONGITUDINAL CONTINUITY  | Sediment and wood                      | Migration barriers                     |
|                              | Water flow                             | Migration barriers                     |
| B - LATERAL CONTINUITY       | Lateral hydraulic continuity           | Flood protection measures              |
|                              | Sediment (and wood) lateral continuity | Potential for river-bed migration      |
| C - BANK EROSION / STABILITY |  | Bank erosion, stability of the profile |
| E - CHANNEL ADJUSTMENTS      | Planimetric (pattern & width)          | NOT APPLICABLE                         |
|                              | Vertical                               | NOT APPLICABLE                         |
| F - VERTICAL CONTINUITY      | Groundwater connection                 | NOT APPLICABLE                         |

### 5. APPLICATION TO WFD

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| OFFICIAL METHOD (WFD implementation) / COMMONLY USED METHOD (not compulsory)   |  | It has been accepted by Germany in the first "River Basin District Analysis 2004" (DE: Bestandsaufnahme 2004) (Weiss et al., 2008), but it lacks some information required by WFD (because of no field survey) |
| APPLICATION TO ALL WATER BODIES<br>USED IN THE CLASSIFICATION OF HIGH-STATUS / OTHER STATUS CLASSES                                |  | It applies to large rivers when data are available   |
| USED TO PREDICT RISK OF DETERIORATION<br>USED TO IDENTIFY IMPROVEMENT TARGETS<br>USED TO HELP IDENTIFY CAUSE OF ECOLOGICAL IMPACTS |  | Consistent with LAWA-FS but less powerful because less information collected   |
| KEY STRENGTHS FOR RIVER MANAGEMENT   |  | It uses a fast and not much expensive approach (possible to produce regional and nation-wide surveys); features are carried out continuously   |