# Revision of the TNMN

## Strategy for the development of WFD compliant monitoring programmes at the basin-wide level

**Draft discussion paper**

prepared by Dr. Igor Liška
in cooperation with Dr. Ursula Schmedtje

for the MLIM EG

## Preface

In line with this provision, the ICPDR asked the MLIM EG at the 6th Ordinary Meeting in December 2003 to prepare for the 7th Ordinary Meeting an interim report on the TNMN upgrade in line with the EU WFD requirements including the organization and financing of AQC schemes. The Secretariat in cooperation with the MLIM EG prepared a paper on Upgrade of TNMN in response to WFD implementation and presented it to the ICPDR. As a follow-up action the MLIM EG agreed that the whole TNMN upgrade process should be driven by the MLIM EG, which should agree upon the overall strategy. As a start-up the Secretariat was asked by the MLIM EG to prepare a strategy paper for upgrading the TNMN to the requirements of the WFD.

This paper outlines the overall strategy for ensuring that the basin-wide monitoring programmes are in line with the requirements of the WFD and provide an overview on water quality on a basin-wide level. It is intended to use this paper (or major parts of it) as part of the report to Brussels in March 2007, which addresses the operation of monitoring programmes in line with the requirements of the WFD. This paper will be supplemented by the report of the UNDP/GEF DRP consultants assigned with the development of the technical details of the monitoring programmes.

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**Strategy for the development of WFD compliant monitoring programmes at the basin-wide level**

***Discussion paper***

## *1. Introduction*

According to the Article 8 of the EU Water Framework Directive (WFD) the Member States shall ensure the establishment of programmes for the monitoring of water status in order to establish a coherent and comprehensive overview of water status within each river basin district. These programmes shall be operational at the latest six years after the date of entry into force of WFD (i.e., by December 2006). Such monitoring shall be in accordance with the requirements of Annex V of WFD.

## *2. Current objectives of the Transnational Monitoring Network*

The Transnational Monitoring Network (TNMN) is the basin-wide monitoring network of the ICPDR. It was established in 1995 and builds on the earlier monitoring network set-up under the Bucharest Declaration. The overall purpose of the TNMN is

- To provide an objective and reliable source of data on water quality
- To provide a basis for assessing the effectiveness of point and diffuse source pollution abatement measures
- Safeguarding the health of humans using the Danube (and tributaries) as a source of drinking water
- Safeguarding all other agreed uses of the Danube such as commercial and recreational fisheries, bathing and other water contact recreations, as a habitat for flora and fauna, as a source of irrigation water, industrial uses and so on

The objectives of the TNMN were based on the results of the EC Environmental Programme for the Danube River Basin and were agreed as follows:

- To be capable of supporting reliable and consistent trend analysis of concentrations and loads of priority pollutants
- To support the assessment of water quality for water use
- To assist in the identification of major pollution sources
- To include sediment monitoring and bioindicators
- To include quality control

It was agreed that the monitoring network in the frame of TNMN would be based on national surface water monitoring networks. For TNMN monitoring sites the following selection criteria had been set up:

- located just upstream/downstream of an international border
- located upstream of confluences between Danube and main tributaries or main tributaries and larger sub-tributaries (to enable estimation of mass balances)
- located downstream of the major point sources

- located to control the important water use

## *3. Monitoring requirements of the Water Framework Directive*

Article 8 of the Directive establishes the requirements for the monitoring of surface water status, groundwater status and protected areas.

### *3.1. Surface waters*

Annex V indicates that monitoring information from surface waters is required for:

- The classification of status.
- Supplementing and validating the Annex II risk assessment;
- The efficient and effective design of future monitoring programmes;
- The assessment of long-term changes in natural conditions;
- The assessment of long-term changes resulting from widespread anthropogenic activity;
- Estimating pollutants loads transferred across international boundaries or discharging into seas;
- Assessing changes in status of those bodies identified as being at risk in response to the application of measures for improvement or prevention of deterioration;
- Ascertaining causes of water bodies failing to achieve environmental objectives where the reason for failure has not been identified;
- Ascertaining the magnitude and impacts of accident pollution;
- Use in the intercalibration exercise;
- Assessing compliance with the standards and objectives of Protected Areas; and, Quantifying reference conditions (where they exist) for surface water bodies.

As mentioned earlier, the objective of monitoring is to establish a coherent and comprehensive overview of water status within each River Basin District and must permit the classification of all surface water bodies into one of five classes. However, this does not mean that monitoring stations will be needed in each and every water body. Member States will have to ensure that enough individual water bodies of each water body type are monitored. They will also have to determine how many stations are required in each individual water body to determine its ecological and chemical status.

For surface water bodies, the Directive requires that sufficient surface water bodies are monitored in **surveillance programmes** to provide an assessment of the overall surface water status within each catchment and sub-catchment within the river basin district. For surveillance monitoring, parameters indicative of all the biological, hydromorphological and all general and specific physico-chemical quality elements are required to be monitored.

**Operational monitoring** is to establish the status of those water bodies identified as being at risk of failing their environmental objectives, and to assess any changes in their status resulting from specific measures. Operational monitoring programmes must use parameters indicative of the quality element or elements most sensitive to the pressure or pressures to which the body or group of bodies is subject. This means that fewer quality element values may be used in status classification.

The Directive also mentions **investigative monitoring** for situations where the reason of exeedances is unknown, where surveillance and operational monitoring are insufficient or to ascertain the magnitude and impacts of accident pollution.

### 3.1.1. Objectives of the surveillance monitoring

The objectives of surveillance monitoring of surface waters are to provide information for:

- Supplementing and validating the impact assessment procedure detailed in Annex II;
- The efficient and effective design of future monitoring programmes;
- The assessment of long term changes in natural conditions; and
- The assessment of long-term changes resulting from widespread anthropogenic activity.

The results of such monitoring should be reviewed and used, in combination with the impact assessment procedure described in Annex II, to determine requirements for monitoring programmes in the current and subsequent River Basin Management Plans (RBMP). Surveillance monitoring has to be undertaken for at least a period of one year during the period of a RBMP. The deadline for the first RBMP is 22 December 2009. The monitoring programmes must start by 22 December 2006. The first results will be needed for the first draft RBMP to be published at the end of 2008, and then for the finalized RBMPs at the end of 2009. If there is low confidence in the Annex II risk assessments (e.g. because of limited existing monitoring data), more surveillance monitoring will be required initially to supplement and validate the assessments than will be the case where existing information is extensive.

Surveillance monitoring may also initially need to be more extensive in terms of the number of water bodies included, monitoring stations within bodies and the range of quality elements. This is because:

- of the probable lack of appropriate existing monitoring information and data;
- the Directive requires Member States to consider a different range of quality elements and a different range of pressures than have previous Directives.

Member States may also wish or have the need to (depending on the amount of existing information and the confidence in the first Annex II risk assessments) undertake surveillance monitoring each year.

### 3.1.2. Objectives of the operational monitoring

The objectives of operational monitoring are to:

- Establish the status of those bodies identified as being at risk of failing to meet their environmental objectives; and
- Assess any changes in the status of such bodies resulting from the programmes of measures.

Operational monitoring has to be undertaken for all water bodies that have been identified, by the review of the environmental impact of human activities (Annex II) and/or from the results of the surveillance monitoring, as being at risk of failing the relevant environmental objectives under Article 4. Monitoring must also be carried out for all bodies into which priority substances are discharged.

### *3.2. Additional monitoring requirements for protected areas*

With respect to protected areas the Directive stipulates that the programmes for surface water and groundwater shall be supplemented by those specifications contained in Community legislation under which the individual protected areas have been established (Art. 8 WFD).

### *3.3. Groundwater*

Article 8 of the WFD establishes the requirements for the monitoring of groundwater status. Annex V indicates that monitoring information from groundwater is required for:

- Providing a reliable assessment of quantitative status of all groundwater bodies or groups of bodies; (Member States must provide maps illustrating the quantitative status of all groundwater bodies or groups of bodies using the colour-coding scheme set out in the Directive);
- Estimating the direction and rate of flow in groundwater bodies that cross Member States boundaries;
- Supplementing and validating the impact assessment procedure;
- Use in the assessment of long term trends both as a result of changes in natural conditions and through anthropogenic activity;
- Establishing the chemical status of all groundwater bodies or groups of bodies determined to be at risk. (Member States must provide maps illustrating the chemical status of all groundwater bodies or groups of bodies using the colour-coding scheme set out in the Directive.);
- Establishing the presence of significant and sustained upwards trends in the concentrations of pollutants. (Member States must indicate on the maps of chemical status using a black-dot, those groundwater bodies in which there is a significant upward trend); and,
- Assessing the reversal of such trends in the concentration of pollutants in groundwater (Member States must indicate on the maps of chemical status using a blue-dot, those groundwater bodies in which a significant upward trend has been reversed).

## ***4. Design of the future TNMN***

### *4.1. Extended scope of the future TNMN*

In order to respond to the requirements of the WFD the TNMN will be extended to cover relevant sampling points in the whole Danube River Basin District. The Danube River Basin District was defined by the ICPDR and covers

1) the Danube River Basin,
2) the Black Sea coastal catchments on Romanian territory, and
3) the Black Sea coastal waters along the Romanian and partly the Ukrainian coast.

The WFD covers different categories of **surface waters** (rivers, lakes, transitional and coastal waters). The WFD Roof Report of the ICPDR identify the following surface waters to be relevant on the basin-wide scale:

- rivers with a catchment size of more than 4000 km²
- lakes with a surface area of more than 100 km²
- the main navigation canals
- transitional and coastal waters

(see also WFD Roof Report 2004: Map 1 DRBD Overview Map).

With respect to surface waters the TNMN will continue to monitor rivers relevant on the basin-wide scale (> 4000 km²). The TNMN could also include monitoring stations on the main navigation canals if needed. There are only few lakes larger than 100 km² of which only one is transboundary (Neusiedler See / Fertö-tó). These lakes will be monitored on the national level. Bilateral harmonization is in place for Neusiedler See. The transitional waters are located in the branches of the Danube Delta and will be monitored on the national level. With respect to the coastal waters the TNMN will be extended to include monitoring stations in the Black Sea. This is an issue of basin-wide importance due to the influence of the Danube nutrient loads for the eutrophication of the Black Sea, in particular of its coastal waters off the Romanian coast which are relevant for the Danube River Basin District.

With respect to **groundwater** the Directive requests information on the chemical and quantitative status of groundwater. The WFD Roof Reports of the ICPDR identify the following groundwaters to be relevant on the basin-wide scale:

- transboundary groundwater bodies with an area of more than 4000 km² or
- smaller transboundary groundwater bodies if there are of great importance based on agreed criteria

(see also WFD Roof Report 2004: Map 15 Overview of important transboundary groundwater bodies).

There are a number of large groundwater bodies or groups of groundwater bodies that have been identified to be of importance on the basin-wide scale. In how far TNMN will include groundwater monitoring sites needs further discussion.

The programmes for surface water and groundwater shall be supplemented by those specifications contained in Community legislation under which the individual **protected areas** have been established. Wetlands play an important role in the Danube River Basin and many of them are transboundary and under international protection. Therefore, an inventory of protected areas for species and habitats has been set up where the maintenance or improvement of the status of water is important for their protection.

The protected areas selected for the basin-wide overview have been defined in the WFD Roof Report 2004 as follows

- an international protection status (RAMSAR and World Heritage Convention, UNESCO/MAB and/or IUCN category II or Natura 2000 site), and
- a size of > 1000 ha.

In how far monitoring needs for protected areas will be included in the TNMN is an issue for further discussion.

**In conclusion, the future TNMN will focus on monitoring needs on the basin-wide level in rivers and coastal waters. A closer analysis of the monitoring needs for groundwater and protected areas will determine if these need to be included in the future TNMN.**

### *4.2. Combining the objectives of the DRPC and the WFD*

TNMN has to reflect the provisions of the DRPC as well as the requirements of the WFD.

From the **WFD** it is clear that TNMN shall be designed so as to provide a coherent and comprehensive overview of the status of surface waters and – where appropriate – of groundwaters within the Danube River Basin District according to Art. 8 WFD and shall permit classification of surface and groundwater bodies in line with the normative definitions (Annex V WFD).

The **DRPC** among others requires that the Contracting Parties shall elaborate and implement joint programmes for monitoring the riverine conditions in the Danube catchment area concerning both, water quality and quantity, sediments and riverine ecosystems as a basis for the assessment of transboundary impacts such as transboundary pollution. Another factor to be taken into account is the availability of the TNMN data from years 1996-2005, which are supported by a sound analytical quality control programme. That is why it is essential to consider the possibility of combining the existing TNMN data with those being collected after its revision in 2006. Such an approach would enable a long-term view of the surface water quality trends in the Danube River Basin and would strengthen the informational basis for the decision makers in the region.

### *4.3. Monitoring strategy for rivers*

#### 4.3.1. Design of surveillance monitoring

##### 4.3.1.1. Combined objectives WFD and DRPC

To fulfill the above-mentioned prerequisites, TNMN should have a unique and well-defined role in the basin-wide context. This also means that TNMN outputs should not be redundant to the national monitoring schemes and the TNMN data flow should not simply double the data presentation, which belongs to the national competences of the ICPDR Contracting Parties stemming from the implementation of WFD.

**The major objective of the TNMN should be to provide an overview of the overall status and long-term changes of surface water and – where necessary – groundwater status in a basin-wide context with a particular attention paid to the transboundary pollution load. In view of the link between the nutrient loads of the Danube and the eutrophication of the Black Sea it may be necessary to monitor the sources and pathways of nutrients in the Danube River Basin District and the effects of measures taken to reduce the nutrient loads into the Black Sea.**

Stress should be given to obtaining a continuous long-term data set for the whole basin using a defined set of parameters (the necessity of focusing also to sub-basin level should be further discussed between MLIM EG and RBM EG). If this objective is compared with the monitoring objectives under WFD, a common basis with the principles of the surveillance monitoring can be seen. Therefore, the specific objectives of the future TNMN can be formulated in line with the Annex V of WFD as follows:

a) Supplementing and validating the risk assessment detailed in the Danube Basin Analysis – WFD Roof Report 2004 according to Annex II WFD;
b) The efficient and effective design of future monitoring programmes;

c) The assessment of long term changes in natural conditions;
d) The assessment of long term changes resulting from widespread anthropogenic activity and
e) Estimating pollutants loads transferred across international boundaries and their discharging into the Black Sea.

Ad a) The Danube Basin Analysis – WFD Roof Report 2004 showed the situation concerning the surface water and groundwater, and indicated the gaps and uncertainties of the existing TNMN data. It is in the interest of all Danube countries to supplement the missing information to achieve a complete picture of the status of the major river network in the Danube River Basin District.

Ad b) In future, the results of TNMN may be reviewed and used, in combination with the risk assessment described in WFD, Annex II, to determine requirements for monitoring programmes in the current and subsequent River Basin Management Plans (RBMP).

Ad c) and d) Surveillance monitoring is also required to provide information on long-term natural changes and long-term changes resulting from widespread anthropogenic activity. Information on the first will be important if such changes are likely to affect reference conditions. Monitoring for long-term natural changes is likely to be focused on high and maybe 'good' status water bodies. This is because such changes (possibly relatively small and gradual) are more likely to be detectable in the absence of the impact of anthropogenic activities which may mask natural changes. In terms of changes resulting from widespread anthropogenic activity, monitoring will be important to determine or confirm the impact of, for example, long range transport and deposition of pollutants from the atmosphere. If this is likely to lead to a risk of water bodies deteriorating in status (any status level down to poor) then those water bodies or groups of bodies will have to be included in operational monitoring programmes.

The results of the first round of surveillance monitoring should also seek to establish a quantitative baseline for future assessments of long-term natural or anthropogenically induced changes, and also against which reductions in pollution from Priority Substances (PS), and cessation and phasing out of emissions of Priority Hazardous Substances (PHS) will be judged. This will be important in supplementing and validating the assessment of whether water bodies are at risk of failing Article 4 environmental quality objectives or not. A thorough focus on Priority Substances in future TNMN is essential as currently available information on the occurrence of these substances in surface waters of the Danube River Basin suffers from serious data gaps.

Ad e) The biological quality elements inform on the quality of the ecosystem; data on concentration of a particular substance in a water matrix provide information on a current chemical status of a respective water body. However, to assess a mass balance or flow of certain substance within a catchment, the loads transferred downstream the river must be determined. Therefore, one of the main objectives of TNMN from the beginning of its operation was producing reliable and consistent trend analysis of concentrations and loads of substances diluted in water or attached to sediments. The objective was confirmed also later, in 2000, when getting an overall view of the situation and long-term development of loads of relevant determinands in the important

rivers of the Danube Basin was agreed as the main objective of the TNMN. For the future operation of TNMN it is essential to maintain this objective so that the flow of nutrients and/or specific pollutants in the catchment can be evaluated. Moreover, operation of the TNMN Load Assessment Programme complies with the commitment of the ICPDR concerning the reporting obligations towards the Black Sea Commission.

#### 4.3.1.2. Identification of monitoring sites and sampling frequencies

The above mentioned specific objectives have to be taken into account during identification of TNMN monitoring sites and selection of parameters as well as of sampling frequencies. The monitoring network should be based on the national surveillance monitoring networks and the operating conditions should be harmonized between the national and basin-wide levels to achieve the maximum effectiveness.

**Selection of sampling points** should be based on the criteria given in WFD Annex V.1.3.2:

- The rate of water flow is significant within the river basin district as a whole; including points on large rivers where the catchment is greater than 2 500 $km_2$;
- The volume of water present is significant within the river basin district, including large lakes and reservoirs;
- Significant bodies of water cross a Member State boundary;
- Sites are identified under the Information Exchange Decision 77/795/EEC;
- Such other sites as are required to estimate the pollutant load which is transferred across Member States boundaries, and which is transferred into the marine environment.

These criteria are valid for the surveillance monitoring of all relevant water bodies in the whole catchment (= national level). It seems not to be realistic to include all such sites into TNMN as this would lead to a very complex and extensive monitoring network providing doubled information to that available in the national networks. To highlight the essential information of the basin-wide importance an approach similar to that used for the Roof report 2004 should be applied. For this approach, the criteria for selection of the monitoring points are to be slightly modified as follows:

The two guiding criteria should be:

- Significant bodies of water at national borders or crossing bounders of Contracting Parties;
- Sites required to estimate the pollutant load (e.g. of nutrients or hazardous substances) which is transferred across bounders of Contracting Parties, and which is transferred into the marine environment.

The criterion of the significant rate of water flow within the river basin district as a whole including points on large rivers where the catchment is greater than 2 500 $km_2$ should be modified focusing on:

- All water bodies of the Danube River (aggregation of water bodies is possible – to be agreed by MLIM EG); this criterion includes also the WFD criterion that the volume of water present is significant within the river basin district, i.e., the important Danube reservoirs should be included (Iron Gate, Gabcikovo)
- Mouths of large primary tributaries (with a catchment of more than 4000 $km^2$ - definition of large to be agreed by the MLIM EG)

- Points on the large primary or secondary tributaries crossing boundaries of Contracting Parties

Sites, which are currently identified under the Information Exchange Decision 77/795/EEC and do not fulfill the above-mentioned criteria should also be considered for inclusion to TNMN.

As regards the **sampling frequencies**, the minimum requirement given in the WFD for the surveillance monitoring may not always be adequate to achieve an acceptable level of confidence and precision in an assessment of certain quality elements. The Directive for such cases enables to increase the frequencies of at least some surveillance monitoring parameters and monitor more than once every sixth year at those surveillance sites designed to detect long-term changes.

Therefore, it seems reasonable to increase for selected quality elements the surveillance frequency of the monitoring cycle within the TNMN in order to provide a sound picture on the status of the basin. The "increase" in fact means that TNMN would maintain the sampling frequency used at present. This would enable to preserve the current level of long-term considerations and trend assumptions, as well as to maintain current statistical confidence interval. Continuing the operation of TNMN on an annual basis would result to achievement of a sound and stable overview on the status of surface waters in the Danube River Basin. The selection of quality elements for which the annual frequency would be applied should be done after an individual assessment of elements given in WFD Annex V.1.2.

### 4.3.2. Design of operational monitoring

For all bodies of water, which have been identified as being at risk of failing to meet their environmental objectives under Article 4 of WFD and for those bodies of water into which priority substances are discharged an operational monitoring has to be carried out. The results of the operational monitoring will be an essential part of the Danube River Basin Management Plan and will form a basis for drafting of Programme of Measures. Therefore, to fulfill this requirement of WFD and to contribute to the Danube RBMP, the TNMN should also report on the results of the operational monitoring.

The operational monitoring, however, has certain specificity; it is focused only on parameters relevant (i.e., indicating risk of failure) and it expires once a good status was achieved. EU Member States can amend their operational monitoring programmes during the duration of a River Basin Management Plan where an impact is found not to be significant or the relevant pressure is removed, and the ecological status is no longer less than good.

The selection of parameters for the operational monitoring is individual for a particular sampling site that represents an affected water body. The **sampling frequency** is not constant as this monitoring is expected to be operational only for a limited time. Therefore, the overall outgoing information from an operational monitoring on a basin-wide level will be variable in time and space and its structure would not fit very well with the proposed frame for the surveillance TNMN focused on the long-term perspectives.

Another issue of concern is the **number of sampling points**. Operational monitoring has to be undertaken for **all** water bodies that have been identified as being at risk of failing the relevant environmental objectives under Article 4 (review of the environmental impact of human activities (Annex II) and/or from the results of the surveillance monitoring). Monitoring must also be carried out for all bodies into which priority substances are discharged. Even

though the Directive allows similar water bodies to be grouped and representatively monitored, the number of sites will be much higher than that for the surveillance monitoring (provided all water bodies covered in the Roof report 2004 should be included). At this point the cost/benefit factor arises as well.

### 4.3.3. Combining the needs of operational and surveillance monitoring

The above mentioned problems of setting up the basin-wide operational monitoring, however, cannot hide the obvious fact that the elaboration of the Danube RBMP will require a comprehensive monitoring information on water bodies being at risk of failure to meet the environmental objectives. Therefore, joint monitoring activities under the ICPDR should be able to bring together such aggregate information on the results of operational monitoring in water bodies relevant for the basin-wide scale (the Danube and its tributaries with a catchment size of > 4 000 km²). The question to be solved is how to combine the results from the surveillance and the operational monitoring under the umbrella of TNMN.

The Interim Report on Upgrade of TNMN in response to WFD implementation prepared by the Secretariat in cooperation with the MLIM EG for the 7th ICPDR Ordinary Meeting suggested for the operational monitoring that if pressures which impact the status of water bodies in a negative way are identified or if measures to improve the status were taken, the function of a TNMN surveillance monitoring site could be extended into the status of an operational site of basin wide importance. In this case the monitoring programme would be adapted for these specific sites related to relevant/sensitive parameters (not all quality parameters would be collected/assessed). If a surveillance site is extended to the function of an operational site, the frequency of selected quality parameters will increase whereas the other parameters will be collected in the set frequency of a TNMN surveillance site. As soon as the concerned water body is not at risk anymore or if certain measures improved the status, the sampling site would regain the status of a surveillance monitoring site providing again long term data.

This originally suggested approach would be restrictive for the selection of sampling sites for the operational monitoring as only those being in the surveillance part of TNMN would be available. This methodology would probably not provide information on all sites as necessary for demonstration of the status of water bodies relevant for the basin-wide overview. On the other hand if the number of TNMN surveillance sites should be adjusted in accordance to the requirements for the operational monitoring it would result to a superfluous information flow with a very poor cost/benefit ratio.

To avoid such complicated set-up it is recommended that the operational monitoring should be a separate part of the TNMN. Selection of monitoring sites, determinands and frequencies would be done at the national level in line with the information requirements for a particular water body (depending on relevant pressures). For selection of the sites for the operational monitoring incorporation of the intercalibration sites should be considered. TNMN Data Centre (SHMU in Bratislava) would then collect the water quality information from the countries and would prepare a separate report focussed on fulfilling the WFD environmental objectives (a kind of operational monitoring roof report). The information collected from countries could be grouped according to the identified pressures (e.g., hydromorphological alterations) to keep the compatibility with the Roof report 2004. The methodology for sample collection and analysis as well as the reporting format for the presentation of the results of the operational monitoring should be agreed by the MLIM EG.

### *4.4. Monitoring strategy for coastal waters*

The Danube River Basin District includes the Black Sea coastal waters along the Romanian and partly the Ukrainian coast (up to the hydrological boundaries of the Danube River Basin). The Romanian coastal waters are delineated at 1 nautical mile from the baseline, which is defined along 9 points within the territorial sea of Romania as laid down in the Romanian Law No. 17/1990, modified by Romanian Law No. 36/2002. The Ukrainian coastal waters are not defined by Ukrainian law. For WFD implementation the coastal waters are defined in line with Art. 2.7 WFD at 1 nautical mile from the baseline. The issue of monitoring of coastal waters has already been discussed by the ICPDR monitoring experts and it was agreed that this part of the TNMN would be performed by Romania. For the time being four sampling points were proposed to the coastal TNMN.

WFD Guidance Document on Transitional and Coastal Water stresses the need of establishing surveillance monitoring programmes to provide information for supplementing and validating the impact assessment procedure detailed in Annex II. It is also pointed out that in the marine environment there is a lack of biological and chemical data for high status sites as the focus for monitoring programmes has historically been centred on polluted areas. Therefore, in line with the major objective of TNMN, the coastal monitoring should primarily focus on providing overview information on long-term changes of the coastal waters of the Danube River Basin District.

For those coastal waters, which have been identified as being at risk of failing to meet their environmental objectives under Article 4 of WFD an operational monitoring has to be carried out. This monitoring will be organized by Romania at the national level in line with their obligations towards WFD. Information on the results of the operational coastal monitoring in Romania will be aggregated with the results of the TNMN operational monitoring.

### *4.5. Groundwater monitoring strategy*

To achieve a compliance with the requirements of WFD towards monitoring of groundwaters the ICPDR initiated establishment of a drafting group on transboundary groundwater monitoring to contribute to the monitoring report of the MLIM EG. This drafting group should consist of the already nominated groundwater experts and should propose a basin-wide groundwater monitoring strategy for the Danube catchment.

### *4.6. Monitoring strategy for protected areas*

It has been agreed that the ECO EG will give support to identify the monitoring needs of the relevant Community legislation so that these can be harmonised with those of the WFD. This will be a joint exercise of MLIM and ECO EG.