

Technical and Institutional Recommendations

Kees Bons
 Team Leader
 WL | Delft Hydraulics

 (National Conference
 Lefkosia 5 December 2007)



Institutional Recommendations

- *It is recommended that an integrated approach is followed towards the philosophy of the Water Framework Directive as a whole.*
- *It is important that water monitoring be based on the philosophy that WDD has been following for the past 40 years, i.e. of integrating surface and ground water. In view of the tasks in the near future also integration between inland and coastal waters and management is needed.*
- *It is recommended to seriously consider allowing the emergence and involvement of accredited private labs, while limiting the public lab facility to one or a few well coordinated labs with reference functions.*
- *Common QA/QC procedures should be established to ensure the quality of the sampling activities of a monitoring program, including care to preserve sample integrity.*
- *It is advised to concentrate all knowledge on biological aspects in one Agency, creating a centre of knowledge.*

Institutional Recommendations

- *Beneficiary Agencies are recommended to establish single coordinators who will act on behalf of all three Agencies in the fields of biological monitoring (rivers, lakes and coast); Laboratory analysis; and physio chemical monitoring.*
- *Acquisition of additional personnel is a crucial point, especially in the WDD, SGL and DFMR, both for overcoming the shortcomings of the present situation, but also for covering the monitoring requirements of the WFD. Special attention is required for the hiring of biologists.*
- *A common sampling report is advised for every monitoring program to be prepared including a complete documentation of the sampling performed and any field observations likely to be significant for the assessments of the monitoring results.*
- *Dissemination of the data should be considered an integral part of the monitoring cycle.*

Low or no-flow rivers

- In the framework of WFD article 3 implementation, Cyprus has declared to EU a quite extensive river network, including many river branches with very limited flow. This led to a great number of RWBs in the framework of WFD article 5 implementation, many of which function mainly as rivulets.
- In the operational programme a number of rivers with small, intermittent flow were included because point sources of pollution were located in the proximity of those.
- It is expected that it will not be possible to collect through the monitoring programme enough, reliable and statistically significant data.
- It is recommended that the whole river network is reassessed at the end of 2008, so that the RWBs with no flow for more than 8 months on average per year are exempted for WFD implementation. In cases where priority and other substances have been recorded through monitoring, surface monitoring stations should be replaced by groundwater monitoring stations using the same chemical parameters as the surface ones.

Dams-reservoirs as LWBS

- In Cyprus there are heavily modified fresh water bodies (HMWBs) such as the reservoirs, and artificial water bodies (AWBs) and the storage basins. Of them, 11 deep reservoirs and one shallow storage basin have been designated as WFD water bodies following the provisions of article 5. Normal operation could lead to unwarranted low quality results in the reservoirs and rivers downstream.
- This special situation was anticipated with an “open minded” approach in the framework of the project and all RWBs downstream of dams were grouped for quality classification reasons with the relevant upstream RWBs of the same river.
- This approach might require some further action on behalf of Cyprus authorities in future steps of WFD implementation, such as the management plan. Based on the certain fact of scarcity of water resources in Cyprus, combined with the impact of climate change and the desertification and flood risks, it is recommended that the Cypriot authorities take action towards the exemption of the specific lake and river water bodies from WFD or the postponement of WFD implementation for them, at least for the first management period (up to 2015).

Database operation

The database of Cymos is actually the heart of the system. It is the treasure to be guarded as it contains valuable data. Users tend to be somewhat more focused on the application(s) working on the database rather than on the database itself, the long recommended database manager could restore the balance.

The Cymos database is an open system and the Cymos application is not the only window through which the data in the database can be accessed and used. Accessing the database from other applications is easy and equally safe as from the Cymos application since permissions and constraints are all implemented on the database level. It is thus recommended to develop custom applications on the Cymos database. By doing so the active user community may grow which will increase the systems viability.

It is also recommended to give 'advanced users' the opportunity and the tools (like SQL Management Studio, MsAccess and alike) to explore and use the database outside the Cymos application(s). In this way the organisation becomes self supporting and ad-hoc questions on data can be quickly answered.

Database operation

- Arrangements for a local technical support are a must, 'advanced users' should be the first line of support. They should know enough to handle day to day questions. It is considered more efficient to be helped by a colleague who understands the local setting.
- For Cymos to survive over time it is imperative to have a Database Administrator (DBA) for maintenance, arranging backup and restore, analyze database performance and take pre-emptive measures when necessary and such tasks. The DBA function should be redundantly available so that at any (office) hour someone is available.

Additional monitoring needs

- The current project provided for the WFD article 8 monitoring needs, focusing on the relevant requirements towards EU.
- It is clear that the water monitoring needs of Cyprus go beyond this level, especially in specific aspects such as groundwater, and that the “new” WFD monitoring programmes should be viewed as part of a concerted monitoring action.
- In this respect we highly recommend the securing of resources for the continuation and even expansion of previous monitoring activities related to the general water policy of Cyprus.

Future WFD activities

The overall objective of this project was to ensure that Cyprus will meet the obligations and requirements of the WFD with respect to the establishment of water monitoring programmes and integrated databases for the implementation of Article 8 of the WFD. The results of this project will significantly contribute to the implementation of Article 11 (Programme of measures for achieving the environmental objectives of the WRD cost-effectively) and Article 13 (River Basin Management Plans for each River Basin District, including the designation of Heavily Modified Water Bodies) of the WFD. Both of these activities must be completed by 2009 according to the time schedule of the WFD.

In connection with the implementation of the WFD it is necessary to agree on new procedures for co-ordination of the water quality planning and management. In order to preserve the constructive relationship between the politicians, population and water managers, integrated water management is required. Furthermore, in order to control and implement sustainable regulations to combat pollution, regional and basin-wide planning is essential.

Future WFD activities

Now that the current and the reference status of the water bodies within a river basin are defined and the monitoring for it has started, measures to improve the status of the water bodies that do not yet have a good status have to be defined and implemented. Before carrying out measures, an analysis on the effects of measures and the costs of these measures is desired.

It is recommended to establish a well documented list of measures that are assessed in respect of their effectiveness towards the identified objectives, their costs, the ease of implementation, their social acceptance etc. This will prevent that efforts are repeated for different sub-catchments, and will allow quick development of different options or scenarios for management.

The role of consultants ?

There is a tendency to tender the complete implementation of articles of WFD to consultants.

However, it is impossible to let consultants solve the political issues between institutes, or between stakeholders in the planning proces.

Only a very active government involvement and participation will ensure a succesful WFD implementation in Cyprus.

Congratulations !

- With the monitoring programme and database you have a valuable resource
- Use it to its optimum
- Share data
- Publish data
- Base decisions on the data
- Only then is it worth the money !