



Brussels, 16 September 2013

**BILATERAL MEETING WITH CYPRUS**  
**IMPLEMENTATION OF THE WATER FRAMEWORK DIRECTIVE IN CYPRUS**

**16<sup>TH</sup> SEPTEMBER 2013 FROM 10.00 TO 17:30 H (APPROX)**

**AVENUE DE BEAULIEU 5, ROOM BU-5 0/B**

**BRUSSELS**

**FINAL MINUTES**

List of participants:

Commission	CYPRUS
Peter Gammeltoft	Kyriacos Kyrou
Jorge Rodriguez Romero	Panayiota Hadjigeorgiou
Lucia Bernal	
Helen Clayton	
Evdokia Achilleos	
Balázs Horváth	
Thomas Petitguyot	
Jacques Delsalle	
Kristine Dorosko	
Ioannis Kavvadas	
Giovanni Vallera	
Claire McCamphill	

Peter Gammeltoft welcomed the Cypriot delegation and thanked Cyprus for sending a detailed presentation in advance of the meeting. He also explained the objectives of the meeting and expected outcome. The questions addressed by Cyprus in writing at 16 September 2013 were discussed in the meeting and additional clarifications were

requested for certain issues. Below is a summary of (additional) Information<sup>1</sup> provided by CY, agreed action points, and questions that need to be answered by CY.<sup>2</sup> CY is expected to confirm all action points and answer the remaining questions in writing.

## **2. Delineation of WB and Characterisation of RB**

**2.1. Action Point:** COM requests that the reasoning and the methodology supporting the deletion of 62 river water bodies in the next cycle is clearly explained and justified in the 2<sup>nd</sup> RBMP, as well as the fact that these water bodies will remain under protection. This information should go into public consultation. CY will indicate the proportion of the overall RBD in surface that is concerned by this deletion.

### **Cyprus Answer:**

Action Point 2.1 is confirmed

**2.3. Action Point:** Even if the study for the reference conditions of lakes will not be finished in time for the 2<sup>nd</sup> cycle COM requests that the information from this study feeds into the second cycle as much as possible.

### **Cyprus Answer:**

Action Point 2.3 is confirmed

**2.5 Action Point:** Pressure identification and risk assessment required under article 5 should be improved in the 2<sup>nd</sup> RBMP, reflecting the knowledge gained during the 1<sup>st</sup> cycle and with clear criteria for the assessment of significance, especially on abstractions and quantitative pressure.

### **Cyprus Answer:**

Action Point 2.5 is confirmed

## **3a. Monitoring and assessment of ecological status**

**3.a.1 Information by CY:** Eels are the only indigenous fish species in Cyprus freshwaters, the others were introduced by humans and can mainly be found in the reservoirs. Eels are rare nowadays and satisfying drinking water needs has a priority over their recovery for CY. They have adapted to the environment and measures put in place would probably benefit other species more than eels. With regard to perennial rivers only Karkotis and Diarizos have fish and only for short segments. They have trout and other species that were introduced in the 20<sup>th</sup> century. CY has an arid environment and after 1970 there was significant reduction in rainfall (15 %) resulting in significant reduction in runoff and increase in groundwater abstraction for agriculture. This has highly affected the river flow regime and fish stocks.

### **Cyprus Answer:**

In addition the following Information is provided:

Only five native species are known to inhabit the island waters of Cyprus: a) Eel (*Anguilla Anguilla*); b) River Blenny (*Salaria fluviatilis*); and c) Three euryhaline fish of

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<sup>11</sup> Only information that was provided by CY additional to the written reply (..) is included here

<sup>2</sup> The numbering follows the numbering of the original questions

marine origin that are only found in the lower reaches of the rivers or in coastal wetlands (*Mugil cephalus*, *Atherina boyeri*, *Aphanius fasciatus*). The River Blenny was not located during the recent survey and may in fact be extinct since its lowland habitats are highly degraded by anthropogenic alteration and pressures. In addition to the above species, 12 alien species were recorded in the island stream waters of Cyprus, although most of these inhabited short river sections in the immediate vicinity of artificial reservoirs. A few more alien species are confirmed exclusively to the reservoirs. The native Eel is currently known to be distributed in approximately six river catchments of the island; however, it was documented in only three catchments during a 2011 field survey. This survey included most significant Cyprus rivers that feature at least some perennial flowing reaches; 81 lotic and wetland sites in Cyprus were sampled, and 42 of the 81 sites were found fishless. Naturalized Brown Trout (introduced in the 1940s) was confirmed as spawning in three separate river basins on this survey, while Rainbow Trout is being stocked in various perennial river reaches.

**Action point:** CY will explain in the 2<sup>nd</sup> RBMP why there are no indigenous fish in its freshwaters, taking into account historical information on ecology, climate and pressures. As fish is one very important biological quality element for river status classification under the WFD, data and explanations have to be clearly provided if this is proved not to be relevant for freshwaters in CY. This information has to be included in the RBMPs.

**Cyprus Answer:**

Action Point 3.a.1 is confirmed

**3.a.2. Information from CY:** With regard to the assessment of hydromorphological quality, data is currently being collected and the assessment will be performed between 2015 and 2017; the information will be available to be used in the 3<sup>rd</sup> cycle.

**Action point:** CY has to accelerate the development of the assessment methods so as to inform the elaboration of the 2<sup>nd</sup> RBMP.

Financial needs for developing data collection, methodology and skills to ensure a sound monitoring may be covered by EU funds. CY should express these needs in the Partnership Agreement currently under elaboration.

**Cyprus Answer:**

Action Point 3.a.2 is confirmed

**Follow-up Question:** Since when has the monitoring of hydromorphological quality elements been performed and which quality elements have been monitored?

**Cyprus Answer:**

For Rivers:

Data corresponding to the quality element “quantity and dynamics of water flow” mentioned in Annex V 1.1.1. WFD is being collected at all river monitoring stations, either continuously or by regular spot measurements, since 2007 (many stations have much longer flow records though).

Data corresponding to the quality element “river continuity: mentioned in Annex V111 WFD is available i.e. there is a register of large structures in rivers (Dams) and a register for smaller structures (stream diversions) is in the final stages of compilation.

Hydromorphological data corresponding to the quality element “morphological conditions” mentioned in Annex V 1.1.1. WFD was collected since 2005 in the framework of various projects. The data was collected according to the CARAVAGGIO method (Buffagni et al., 2005) and all data collected is at reach scale.

For coastal waters:

In the absence of an assessment method for hydromorphological quality of coastal waters, Cyprus does not monitor hydromorphological quality elements. Nevertheless, some relative data do exist from various sources & coastal areas, but are not yet compiled under a specific framework.

**Follow-up question:** The COM would still need to know if the monitoring of hydromorphological quality elements for rivers described above will also include the reservoirs, which are currently classified as Heavily Modified Lakes.

**Cyprus Answer:**

Yes, the monitoring of hydromorphological quality elements for rivers described above will also include the reservoirs, which are currently classified as Heavily Modified Lakes.

**3a.3 Follow-up Question 1:** The explanation given by CY that no EQS for RBSPs were available apparently because "The elaboration of EQS for specific pollutants requires on one hand knowledge of anthropogenic activities related to discharges and on the other hand a significant amount of monitoring data" does not make sense, since only toxicological data are required to set an EQS. CY is asked to provide an alternative explanation for the absence of EQS.

**Cyprus Answer:**

1) The original question was “The number of identified River Basin Specific Pollutants (RBSPs) referred to on page 11 of the COM’s assessment report is relatively low. Has CY since identified additional substances? How has the impact analysis (cf certain Directives) been used to identify RBSPs?”

2) Cyprus answered “no EQS for specific pollutants were available”.

3) Cyprus believes that there was misunderstandings with its initial answer “During the elaboration of the management plan, no EQS for specific pollutants were available”. Cyprus would like to clarify that CY considers that the identified RBSPs are sufficient and that no additional substances have been identified since.

**COM observation:** COM accepts that CY considers the identified RBSPs to be sufficient for the time being. Providing that water bodies facing pressures are correctly identified and CY continues its precautionary approach to monitoring substances in those water bodies, it is to be hoped that additional RBSPs will be identified if necessary.

**Action point:** CY to continue its precautionary approach and to identify additional RBSPs if necessary.

**Cyprus Answer:**

CY will continue its precautionary approach and identify additional RBSPs if necessary.

**3a.3 Follow-up Question 2:** CY referred to using EQS from an old version of the Drinking Water Directive. This could mean among other things that risks to the environment were not assessed. Will EQS be established /reviewed for all the RBSPs identified by CY in the second RBMP and will the EQS be established according to the 2011 Technical Guidance Document on Deriving EQS? If possible please provide a list of the RBSPs and their EQS.

**Cyprus Answer:**

Cyprus considers to adjust the EQS used for Arsenic in rivers and to apply the EQS of the currently in force Drinking Water Directive.

For the other identified RBSPs, Cyprus considers the EQS applied for the 1<sup>st</sup> RBMP to be appropriate for the 2<sup>nd</sup> RBMP too.

Tables with the RBSPs can be found in Table 3.1-8 (Rivers) and in Chapter 3.1.2.2 (Lakes, reservoirs) in the “Report on the evaluation of the results of the monitoring programme for surface waters under Art. 8 WFD”, which is available (in Greek) at

<http://www.moa.gov.cy/moa/wdd/wdd.nsf/all/40F49A06EAC31529C225772900390C2B?opendocument>

**Follow-up question:** COM would still like to know whether CY has reviewed the EQS in the light of the 2011 COM guidance (thus taking into account the most sensitive end-points) and, if not, whether this will be done.

**Cyprus Answer:**

No such review based on Guidance Document No. 27 was carried out yet, and it is not planned.

**The COM notes the position taken by CY, but strongly advises CY to undertake a review of the RBSPs standards for the 2<sup>nd</sup> plans.**

**3a.6 -7Action Point:** CY is asked to be proactive for Intercalibration for phytoplankton in coastal water so that it can be completed in a timely manner.

**Cyprus Answer:**

Action Point 3.a.6 is confirmed

**3b. Monitoring and assessment of chemical status (surface waters)**

**3b.1 Follow-up Question:** Regarding the question "Have substances deposited from the atmosphere been considered?", the written reply stated that CY had not "because Cyprus has no heavy industry and its location is a long distance away from major industrial regions". Given that some substances (ubiquitous PBTs) can travel long distances, will CY consider such substances in its future monitoring programme? (One PBDE and some PAHs appear in the list of substances provided by CY but not other similar substances in the list of priority substances.)

**Cyprus Answer:**

The statement in Cyprus' written reply that “Cyprus has no heavy industry and its location is long distance away from major industrial regions” was based on the general results of monitoring of atmospheric pollution in Cyprus (including e.g. PAHs, heavy metals) which show that atmospheric pollution levels are very low (except for particle matter pollution [PM10, PM2.5] of local and north African [Sahara] provenience). Therefore, pollution of Cyprus' waters from substances transported to Cyprus through

the atmosphere is considered insignificant and no extra monitoring for such substances is planned.

COM notes that the relevant pollution might not necessarily be evident in ground-level air monitoring. It is not for nothing that the COM has introduced provisions for substances behaving like uPBTs.

**Action point:** CY to consider such substances at least once in each RBMP cycle in the context of surveillance monitoring.

**Cyprus Answer:**

CY will try to consider more substances behaving like uPBTs at least once in the 2nd cycle in the context of surveillance monitoring.

**The COM reminds CY that compliance with monitoring requirements of WFD as regards surveillance and operational monitoring for Priority Substances posing a potential risk to water bodies will be assessed in the 2<sup>nd</sup> plans.**

**Observation:** It would be helpful if CY could list the priority substances it is monitoring separately from the other chemicals it is monitoring, and indicate CAS numbers where possible, or at least the number of the priority substance that appears in the EQS Directive.

**Cyprus Answer:**

Observation is noted

**Action point:** CY to act on this observation for the 2<sup>nd</sup> RBMP.**Cyprus Answer:**

CY will list the priority substances it is monitoring separately from the other chemicals it is monitoring, and indicate CAS numbers where possible, or at least the number of the priority substance that appears in the EQS Directive.

**3b.3 Follow-up Question:** CY mentioned that several substances had been discarded in the past based on the inadequate sensitivity of the analytical methods, and reported that substances 7, 14, 17, 26, and 31 would be measured in 2014 and 24, 25 and 27 in 2015. CY is asked to confirm that these numbers are correct and that they correspond to the substance numbers in the EQS Directive.

**Cyprus Answer:**

The numbers are correct.

**Action Point:** CY to clarify in the next RBMP when referring to unknown status, what the reason is. If the Best Available Techniques (BAT) are not sufficiently sensitive, "discarding" the affected substances in the assessment will in future (under the new EQS Directive) be allowed, but should be declared. If the concentrations are unknown for another reason, the status should be considered unknown with regard to those substances. There should be transparency in the reporting regarding the basis of the assessment in the RBMPs.

**Cyprus Answer:**

Action Point 3.b.3 is confirmed

**3b.6 Follow-up Question:** CY is asked to clarify, in relation to its answer that it applies the EQS laid down in Part A of Annex I to the Directive 2008/105/EC for hexachlorobenzene, hexachlorobutadiene and mercury, how its assessment of compliance would change if it established, for those substances, water EQS providing an equivalent level of protection to the biota EQS in Article 3(2)(a), as required by footnote 9 in Annex I.

**Cyprus Answer:**

Inland waters:

Cyprus does not have the necessary data to answer the question.

**Follow-up question:** COM would like to know what data are missing: water monitoring data or an equivalently protective EQS with which to compare them?

**Cyprus Answer:**

Water monitoring data with reasonably low LoQ is only recently available (though we do not know whether our current LoQ is low enough), equivalently protective EQS is not available at all.

**The COM notes that comparison of CYs monitoring data with equivalently protective EQS derived by another Member State should be carried out and requests that CY provides a report on this comparison and if necessary indicating any technical constraints due to LoQ.**

Coastal waters:

In the coastal waters of Cyprus, hexachlorobenzene, hexachlorobutadiene, and mercury are monitored in biota (fish *Mullus barbatus*), following the option of article 3(2)(a) of the Directive 2008/105/EC.

**Clarification regarding chemical monitoring:** CY asked whether priority substances not found in CY waters need to be further monitored. The COM replied that if they are not found or discharged despite adequate methods being used, CY could lower the monitoring frequency to once every six years. The COM noted that CY should take into account the fact that some EQS in the new EQS Directive are stricter than in Directive 2008/105/EC, and that biota monitoring could allow the detection of substances not detected in water. The CY staff working on the monitoring program are welcome to contact the COM for clarification if necessary.

**3c. Groundwater monitoring and status assessment**

**3c1.**

**Follow-up Question:** Does CY foresee that the planned 10% increase by the end of 2014 in Groundwater monitoring is sufficient to address adequately the GW status? Please justify and give details.

**Cyprus Answer:**

Most of the inadequacy on evaluating with confidence the GW status was primarily due to the short time series CY had on GW quality and secondly due to the areal coverage of the monitoring points. When the evaluation of the GW status was carried out in 2010, CY had 6 to 8 samples from each monitoring point. The short time series (6-8 readings

for each chemical element) did not give CY an acceptable statistical confidence. At present, the time series had increased (almost doubled) with the addition of extra 6 readings from each GW quality monitoring point which definitely will improve the statistical confidence on the evaluation of the GW quality status.

**Definitely the planned 10% increase by the end of 2014 in Groundwater monitoring points will greatly improve the areal coverage within a GW body which will result to an increase in statistical confidence, especially in water quality and on the evaluation of GW status.** Everyone acknowledges that GW monitoring network is dynamic and its revision and improvement is a continuous process.

**Action Point:** Adequate GW monitoring is essential for the 2<sup>nd</sup> cycle. Water is a key resource for CY and key constraint on Economic activity and the adequate resources should be allocated.

**Cyprus Answer:**

Action Point 3.c.1 is confirmed

**3c.2 Action Point:** It is important that CY continuous to monitor for pesticides in the 2<sup>nd</sup> cycle.

**Cyprus Answer:**

Action Point 3.c.2 is confirmed

**3.c3-4**

**Action Point:** The establishment of a methodology for assessing and reversing trends of groundwater pollution is a requirement of the directive and is expected for the 2<sup>nd</sup> cycle. Even though the process needs long time series of monitoring data, it is required that the monitoring and the methodology for its assessment is in place.

**Cyprus Answer:**

Action Point 3.c.3-4 is confirmed

**Follow-up Question:** CY to send more information on what is the state of developing methodology of trend reversals and to what extend the (increased) monitoring will provide sufficient data for this.

**Cyprus Answer:**

CY will develop a methodology on trend assessment and on trend reversal which will be in place by the end of 2014. **Definitely the planned 10% increase by the end of 2014 in Groundwater monitoring points will provide more data for this. Regarding the adequacy of the data from the increased monitoring, this will be assessed on the way and the monitoring network will be adjusted accordingly.**

**3c5-8**

**Action Points:** It is important that CY establishes adequate methodologies for the status assessment of GW bodies in the 2<sup>nd</sup> cycle including groundwater dependent terrestrial ecosystems and quantitative aspects in the action plan. The work done in CIS for these issues needs to be followed. CY will send further information on groundwater dependent terrestrial ecosystems.

**Cyprus Answer:**

Action Points 3.c.5-8 is confirmed and additional Information is given as follows:

By the end of 2014 CY plans to have in place methodologies for the status assessment of GW bodies which will be utilised in the 2<sup>nd</sup> cycle evaluation.

Regarding information on groundwater dependent terrestrial ecosystems (GWDTE), in Cyprus there is only one GWDTE which is lowland marsh (Phasouri Marshes) containing fresh and brackish water changing with the seasons. No systematic measurements take place in order to particularly measure whether the GWDTE is of good or poor quality or condition apart from some general measurements of the Department of Fisheries and Marine Research (DFMR) on physical parameters. DFMR only collects monthly information, when there is water in the relevant GWDTE, on Water Temperature, pH, Salinity and Depth and some observation notes taken on specific dates. In the surrounding area there are three boreholes which are included in the WFD Quality Network (within a distance of 1.5 to 2 Kms from Fasouri Marsh):

CY-9-SMS3-OMS3 – Akrotiri/observation

CY-9-SMS4-OMS4 – Akrotiri/irrigation

CY-9-SMS5-OMS5 – Asomatos/irrigation

Sampling takes place twice per year for analyses and the following physical parameters are also measured on-site: Temperature/ oxygen/ conductivity, pH

And the following parameters are analysed: VOCs+metals+organochlorines and PCBs, Organophosphorous, triazines, Alachlor+analyses of F, Cl, SO<sub>4</sub>, NO<sub>3</sub>, B, Fe, Cu, and K.

**A Phasouri Marshes management plan is planned to be developed within the next couple of years.**

#### **4. Heavily Modified Water Bodies (HMWBs) designation and Good Ecological Potential**

**4.1 Action point:** For the designation of HMWBs in the next cycle CY should note that this is not just a statement of modification. A process needs to be followed including assess of modification and whether there is change and whether it can be restored. In the case of dams this might be a relatively easy assessment. For water bodies **downstream** of the dam it is important to consider ecological flow; if not possible CY needs to assess why this E-Flow is not possible. The designation as a HMWB doesn't prevent from implementing mitigation measures, as these are required to achieve good ecological potential. The designation of HMWBs should be reviewed by CY for 2<sup>nd</sup> RBMP with a focus on water bodies downstream of dams. Dammed rivers should be designated as HMWB rivers (and not lakes).

##### **Cyprus Answer:**

Action Point 4.1 is confirmed

**4.5 Action Point:** CY has indicated that the study for developing of a methodology for defining Good Ecological Potential is envisaged in the future, as that such a methodology will only be available for the 3<sup>rd</sup> cycle. COM indicates that this will be too late, and CY has to accelerate the development the assessment methods so to inform the elaboration of the 2nd RBMP.

##### **Cyprus Answer:**

Action Point 4.5 is confirmed

### **5. Objectives and Exemptions**

**5.3 Action Point:** In the 2<sup>nd</sup> RBMP CY should to include justifications on concrete terms of exemptions at WB level. Need to have concrete /detailed justification for each water body. Information needs to be clearer and sufficient.

**Cyprus Answer:**

Action Point 5.3 is confirmed

## 5.4

**Cyprus clarification:**

The statement in Cyprus' written reply on paragraph 5.4 that "No exemption under Article 4.5 was included in CY RBMP" is not correct and this should be revised to read as follows:

One GWB, that is, CY\_1 Kokkinochoria has been exempted in CY RBMP according to Article 4.5 WFD. Documentation can be found in Annex I RBMP, Chapter 7.3, Table 7.3-7 and Figure 7.3-7 and in Annex VII-Report on Water Policy of the RBMP, Chapter 3.2.1., which is available (in Greek) at

[http://www.moa.gov.cy/moa/wdd/Wdd.nsf/guide\\_gr/guide\\_gr?OpenDocument](http://www.moa.gov.cy/moa/wdd/Wdd.nsf/guide_gr/guide_gr?OpenDocument)

In short, the reasoning for the use of Article 4.5 WFD is as follows:

The area of Groundwater Body CY1 has been heavily cultivated and the aquifer over-pumped for more than 60 years. Recharge of the groundwater body depends solely on precipitation and return irrigation as no major rivers run across it nor do they discharge in its area. Consequently, there is no surplus of water and therefore desalination is used to cover the needs for potable water and surface water is diverted from the southwest part of the island to meet the agricultural needs. The semiarid conditions that prevail in this area (with extremely high evaporation rates and very low annual precipitation; the mean annual precipitation is <300mm), inhibit groundwater recharge. In addition, there is no flushing of the aquifer and therefore no dilution of the accumulated nitrates in groundwater as seawater intrusion occurs along the south/southeast part of the aquifer. Also the geological formations are not favorable for recharging.

The long period of intense cultivation coupled with the negligible intrusion along with the low permeability of the soils in the aquifer, prohibit the relatively fast rehabilitation of the aquifer and the decrease of the nitrates concentration in groundwater. It is therefore not anticipated to reach environmental objectives by 2027, for this groundwater body.

**Action Point 5.4: CY to reassess the application of the Article 4.5 for the 2nd cycle in this particular case, so, that the conditions of the above mentioned article are met: (a) the environmental and socioeconomic needs served by such human activity cannot be achieved by other means..**

**(b) Member States ensure,**

- for surface water, the highest ecological and chemical status possible is achieved, given impacts that could not reasonably have been avoided due to the nature of the human activity or pollution,**
- for groundwater, the least possible changes to good groundwater status, given impacts that could not reasonably have been avoided due to the nature of the human activity or pollution;**

(c) no further deterioration occurs in the status of the affected body of water;  
(d) the establishment of less stringent environmental objectives, and the reasons for it, are specifically mentioned in the river basin management plan required under Article 13 and those objectives are reviewed every six years.

**Cyprus Answer:**

Action point 5.4 is confirmed.

**5.5 -5.9**

**Additional information provided during the meeting by CY**

- It was clarified that the Cha-potami dam is an old (20 + years) dam that was illegally constructed instead of pond. An EIA on the options related to the dam indicated that it was preferable to keep and reinforce than to restore the river. An article 4-7 assessment for the modifications required will follow the EIA.
- For the Souskious dam, the article 4.7 assessment is planned by December 2013. Both the Souskious and Episkopi dams are planned for the 2<sup>nd</sup> cycle.
- There was no article 4.7 for the Kannaviou dam, as the relevant river was not designated as a water body for the 1<sup>st</sup> cycle. (The dam construction had started in 2000 and completed in 2006).
- For Idalion dam an Art 4.7 will be included in the 2<sup>nd</sup> RBMP, if the EIA is positive for construction.
- The Soleas dam is an off stream dam filled with water through a diversion weir on Kargotis river and article 4.7 was not applied because the weir was considered small to change the water body status.

**Follow-up Questions:**

1) Can you provide further clarifications in relation to some of the dams, with regards to:

a). What methodology was followed for the Soleas dam to assess that the water status was not affected by physical modifications and what measures are in place to ensure no deterioration of status?

**Cyprus Answer:**

Soleas Dam is an off stream storage dam with a capacity of 4.5 MCM. In winter, water is diverted from a diversion weir, built on Kargotis river, and stored in Soleas dam, to be used in summer when crops needs are higher. After the operation of Soleas dam, the existing irrigation practice through open concrete channels will be canceled and replaced by improved irrigation systems.

Prior to Solea Dam, abstractions from Kargotis river were based on pre-existing irrigation water rights and not according to the actual crops' needs. Open channels were used for irrigation, while flooding fields for creating and maintaining moisture in the soil

during dry season was a common practice, which led to wastage of water. However, with the operation of Soleas dam, the diverted water will be fully utilized and also improved irrigation systems will be installed, which will result in substantial water savings. In this manner and since there will be no significant increase in irrigated land; the impact on downstream water body is expected to be low.

For Soleas dam an Environmental Impact Assessment was carried out in 2006 and a permit was given by the Cyprus Environmental Committee, in 2007. According to the environmental permit, the duration of the flow downstream will not be reduced after the construction of the weir. Impact on hydrology of the downstream reach is mitigated by the fact that the diversion weir has replaced other diversions that existed under the previous water rights. The diversion and storage of large quantities of water during the winter months is supposed to have a positive impact compared with the previous practice according to which diversions for irrigation were used from February onwards.

According to EIA, measures to ensure no deterioration of the status include:

- a) Determination of the limits of the minimum desired flows which will be allowed to flow downstream of the diversion weir, as well as the critical threshold below of which no flow is diverted. Both desired flows and critical thresholds should be such as to ensure the maintenance and preservation of other water uses downstream in the first case and the preservation of the environment in the second case.
- b) Close monitoring of water quantities abstracted in the region.
- c) Close monitoring of the quality of water in frequent intervals throughout the year downstream and upstream of the diversion weir.
- d) Reduction of permits for drilling new wells for expansion of the irrigated areas.

b) Please verify that dam Palaiochoriou (as mentioned in the Annex II of the RBMP pg 452-454) is indeed the Miliouri dam in Peristora river, and according the CY reply has been removed from the planning (as the AA EI indicated significant negative impacts for habitats and species).

**Cyprus Answer:**

It is verified that Palaiochoriou dam is indeed the Millouri dam in Peristerona river which has been removed from the planning.

**Action Point:** CY needs to inform the Commission on the outcome of pending EIAs / Appropriate Assessment of Environmental Implications (AAEI) of dams (Idalion, Episkopi, Souskious) and article 4.7 assessment and applied methodology as soon as they are finalized.

**Cyprus Answer:**

Noted

**Follow up question:** It is not clear what "noted", does CY confirm this action point?

**Cyprus Answer:**

It is confirmed that CY will inform the Commission on the outcome of pending EIAs and article 4.7 assessments and applied methodology as soon as they are finalized.

Information with regard to **Souskiou Dam** is given below:

The proposed Dam near Souskiou village was examined and analysed under the provisions of Article 4.7 of the Directive 2000/60/EC and under the provisions of Article 6.3 of the Directive 92/43/EEC, since it is within an SCI and SPA Natura 2000 area, as well as upstream of an SPA area.

The aim of this Dam, with a capacity of 225.000 m<sup>3</sup>, is to increase the recharge of the aquifer in order to cover the present and estimated future drinking water needs of the local communities, averting any influence on the quantitative and qualitative status of the groundwater body. Currently the drinking water demand is exclusively covered by groundwater supply.

In the evaluation of the proposed Dam under Article 4.7 of the Directive 2000/60/EC and the methodology set in Guidance Document No. 20, it was concluded that the Dam will not cause any deterioration of the quantitative and/or qualitative status of the groundwater body, but instead it will contribute to the maintenance of its good overall status. Concerning the river water body, this is characterized as a HMWB due to the Arminou dam located around 20 km upstream the proposed Dam. In the 1<sup>st</sup> RBMP this river water body had been categorized in “good and above” ecological potential. Due to the small capacity of the proposed Dam, as well as based on the terms of the Project Environmental Permit concerning the need of ecological flow, it was concluded that the proposed dam will not result in failure of the river water body to achieve good ecological potential. Thus, the use of setting exceptions under Article 4.7 was not required.

In the evaluation of the proposed Dam under Article 6.3 of the Directive 92/43/EEC, it was concluded that the Dam is likely to have impacts on the relevant SCI and SPA Natura 2000 sites. These impacts concern mainly the following: The proposed location and area of the reservoir (106.393 m<sup>2</sup>) will affect mainly the target species of *Burhinus oediconemus* (4-6 pairs) that nest in that area, *Coracias garrulus* (2-4 pairs and one nest) and *Sylvia melanothorax* (around 8 pairs). The proposed dam is of small capacity to create impacts on the species and habitats downstream of the dam whilst ecological flow will be provided. However, when the cumulative impacts from other projects and activities in the area were evaluated (existing Arminou Dam upstream, over - grazing, existing wind farm), then it was decided that the proposed Dam, through the river water retention and regulation, may create one additional impact that cumulatively may possibly have significant effects on the downstream Natura 2000 sites. For this reason, alternative solutions to cover the drinking water demand of the local communities were examined. These were evaluated as technically and/or economically worse than the proposed Dam or unfeasible. The provision of drinking water was evaluated as an “imperative reason of overriding public interest”. For this reason, compensation measures will be discussed with the relevant national authorities (Environment Department and Game Fund) and according to these discussions the Commission will be informed accordingly.

**COM comment: the construction of a dam involves a significant change in the ecology and morphology of the water body. It transforms a river lotic ecosystem into a reservoir type lentic ecosystem. Therefore, it always involves a deterioration of certain quality elements included in the WFD ecological assessment. The fact that the river is currently heavily modified due to the hydrological alteration caused by a**

**dam upstream does not mean that there will not be further deterioration due to the new modification. The modified water body should achieve good ecological potential, but this will necessarily be different from the current condition, as there will be a new reservoir. Therefore, COM thinks the dam should be subject to an article 4(7) assessment.**

**Action Point: CY to confirm that that a complete assessment checking the fulfilment of article 4.7 conditions will be performed**

**Cyprus Answer:**

An article 4(7) assessment study has been performed for the Souskiou Dam. Its main conclusions were the following:

- The purpose of Souskiou Dam is to enhance local aquifer recharge via retaining peak winter flows and gradually releasing them downstream. The Dam's capacity of 225.000m<sup>3</sup> is very small compared to the average annual river runoff of 8.100.000m<sup>3</sup>, which occurs mainly and on average from December to April each year.
- According to the revised Article 5 implemented for the 2<sup>nd</sup> RBMP cycle, this Heavily Modified River Water Body has been characterised as an "Intermittent stream" type.
- The Reservoir's characteristics are as follows: A 180m long gabion dam wall will be constructed across the Dhiarizos river with a maximum height of 6m, that will produce a shallow reservoir basin of 225.000m<sup>3</sup> with a surface area when full of ~106.000 m<sup>2</sup>.
- The purpose of the dam is to improve the current aquifer recharge scheme that is in place and is used for providing water for domestic purposes via pumping groundwater. Currently, without the dam, it is estimated that on an annual basis a quantity of 900.000m<sup>3</sup> out of the flowing 8.100.000m<sup>3</sup> are being naturally recharged to the local aquifer, while around 1.300.000m<sup>3</sup> are pumped from the aquifer for domestic purposes. It is estimated that this demand will reach about 2 million m<sup>3</sup> in 2020. With the operation of Souskiou recharge dam, the competent authority estimates that on a normal hydrological year the aquifer will be recharged with an additional 1.500.000m<sup>3</sup>. This enhanced aquifer recharge scheme was considered necessary in order to meet the aforementioned growing domestic demand, in a techno-economic study performed by the Water Development Department, which is the competent authority. In this study alternative solutions were examined and the most promising ones analyzed, including the do nothing scenario. The study concluded that none of these could be technically and economically justified as feasible. The options analyzed and the main reasons making each non feasible, according the previous study, are as follows:
  - a. Transfer of water with a new pipeline from the closest Water Treatment Plant (Asprogkremos WTP) – currently the WTP works at almost its full capacity – upgrading the plant and building a 6 km pipeline with

associated pumping stations. Estimated a capital cost € 9,5 million and annual operational cost of € 382.000.

- b. Transfer of water from the closest Sea Water Desalination Plant (Paphos SWDP).Capital Cost €15million, Operational Cost € 3,8million annually. New Pipeline through a Natura 2000 Site. Please note that the desalination Contract has now expired.
  - c. Transfer of water from Arminou Dam upstream – Arminou Dam is situated 20km upstream of the examined Souskiou Damsite. There will be a need for installing rapid sand filters downstream of the Dam, and to build a 19km pipeline, most of it within the Natura 2000 site. Capital Cost €5,9million, Operational Cost € 493.000 annually.
  - d. Transfer of water from the closest aquifer (Cha Potami) – Not enough yield to meet the demand
- The reservoir will be storing water during peak river flows and water will be retained as a result of the gabion dam wall. It is estimated that it takes only one day of peak flows to fill up completely. Spillway features for safe overflows are provided. The recharge target is set at 1.5million m<sup>3</sup>, (6.7 times the capacity of the reservoir), which represents 18,5% of the annual flow.
  - A very important condition of the EIA decision to grant consent for constructing the dam is that water will be stored in the reservoir only during peak flows, thus safeguarding that low flows will be passing through the dam via a discharge culvert and a butterfly valve which will be constantly opened to provide for low flow releases, and peak flow interventions, ensuring in parallel river continuity
  - Fish are not accounted in the classification of the ecological status of the river water bodies as it was not possible as yet to establish an assessment method for this Biological Quality Element for Cyprus Rivers. However, eels are known to exist in the river and an eel passage structure is to be incorporated in the dam design, which together with the low flow releases from the discharge pipeline settles their migration needs either upstream or downstream of the dam. Furthermore, and as it is known that eels migrate during flood flows, special consideration will be given at the spillway structure to accommodate for this issue as well, during the detail design stage.
  - The water retained in the reservoir will be gradually recharging the local aquifer directly from the impounded river pervious bed or via low flow releases from the discharge culvert. The retention time of water in the 225.000m<sup>3</sup> reservoir will be short and subject to the duration of the rainfall - runoff events upstream of the dam.

According to the above, and having in mind the current flow regime and the infiltration capacity of the river bed, the following can be concluded:

- Due to the character (recharge and no storage) and the small size of the dam, the effects on the river lotic ecosystem are not considered to be significant. A

transformation to a lentic ecosystem will take part only to the river stretch that falls within the reservoir bed, which is about 500m in length. This is similar to small impoundments due to small hydroelectric power dams that exist in other MS. These, in general, are not treated as separate WBs with separate WFD objectives; rather they are examined whether they affect the character and objectives of the relevant river WB. After studying the potential changes and impacts on the hydromorphology of the associated river WB, Souskiou dam falls within this strategy. It is not regarded as a separate water body (with other WFD objectives) rather it is examined on how it will affect the associate river WB objectives. Based on the analysis of the attached “Article 4(7) assessment study”, it was concluded that it will not contribute to failure to achieve WFD objectives.

- The river’s lotic ecosystem will not be significantly deteriorated (besides the part that falls within the reservoir bed) because with the proposed reservoir operation schedule the impact on the river’s flow regime will be minimal, and limited to flood flow periods in winter. Thus, the changes to the physical characteristics of the surface river water body and the groundwater body as part of the new modifications are not deemed to be sufficient to result in failure to achieve good groundwater status and good ecological potential or to deteriorate their current status.
- In addition, as already Cyprus has informed the COM, the proposed dam was also examined under Article 6.3 of the Directive 92/43/EEC for its possible significant impacts on the habitats and the species. In this respect, it was concluded that the dam could impact the relevant SCI and SPA Natura 2000 sites, not due to changes in the flow regime, but due to the loss of the *Burhinus oedicephalus* habitat that exists in the basin of the impoundment, for which enriching measures in other habitats are envisaged as mitigation measures that will compensate for the non reversible habitat loss and due to cumulative effects with other projects and activities that exist in the area (Arminou Dam, overgrazing, wind farm).
- Having in mind all of the above, it was concluded that the use of setting exceptions under Article 4.7 is not required.

**The COM will assess the reply and send questions at later stage if necessary.**

## **6a. Program of measures (agriculture)**

### **6.a.1 –2**

**Significant effort is needed in the second cycle RBMPs to address both quality and quantity pressures from the agricultural sector. This requires basic measures (controls) to be in place and where these are not sufficient to allow the achievement of good status, supplementary measures must be developed and put in place.**

CY is exporting crops with a high embedded water content and serious consideration needs to be given to how farmers could switch towards alternative less water intensive agricultural products like aromatic and medicinal crops that can grow on poor soil conditions and require less water. Projects to address real and perceived barriers to exploiting these opportunities should be considered as a genuine adaptation opportunity.

CY must as a matter of urgency address illegal abstraction and at least enforce the existing law, identifying illegal boreholes and ensure all abstractions are metered.

Non implementation of the law on abstraction will be a barrier to potential EU funds that could otherwise help the agricultural sector.

**Action Points:** CY needs to provide an action plan within three months for the agriculture sector setting out:

- what basic measures i.e. mandatory requirements for farmers will be required in the second cycle to address nutrients (both for livestock and horticulture) and abstraction pressures.

- what supplementary measures will be financed through Rural development programmes.

- **when enforcement of** basic measures will be enforced (both nutrient and abstraction controls)

**Cyprus Answer:**

Action Point 6.a.1-2 is confirmed

**6b. Program of measures - Chemical Pollution**

**Action Point:** CY to explain in its next RBMP, when the monitoring frequency is less than 12 times per year, why a lower frequency (e.g. 4, 6 or 9) is justified.

**Cyprus Answer:**

Action Point 6b is confirmed

**6c. Program of measures - Hydromorphology**

**Action Point:** Hydromorphological measures in the 2<sup>nd</sup> RBMP should be based on all available information from studies. A more ambitious programme for hydromorphological measures as compared to the 1<sup>st</sup> cycle is expected.

**Cyprus Answer:**

Action Point 6c is confirmed

**6d. Program of measures - Groundwater**

**Action Point:** Enforcement of the "Integrated Water Management Law" is crucial for groundwater status improvement. Reasoning of socio economic factors for not achieving objectives cannot be a justification; socioeconomic situation will be worse if this groundwater problem is not addressed. In addition to the enforcement of the law other actions such as change of crops, cropping patterns need to be considered. CY should consider how EU funding opportunities can support these actions.

**Cyprus Answer:**

Action Point 6d is confirmed

**6e. Program of measures –Urban Waste Water Treatment**

**Action Point:** CY to implement UWWTD measures using proper EU funding and to have compliance with UWWTD by the 2<sup>nd</sup> cycle.

**Cyprus Answer:**

Action Point 6e is difficult but CY will make every effort to implement all UWWTD measures using EU funds so as to have compliance with UWWD by the 2<sup>nd</sup> cycle.

**6f. Measures in Protected areas**

**Action Point:** Water requirements for Natura 2000 need to be considered in second RBMP and addressed with specific measures.

**Cyprus Answer:**

Action Point 6f is confirmed

**6f. Financing of PoM**

**Action Point: For the latest** of measures there is no mention of EU funds, all measures are reported as being financed from National sources. CY to check if this is a reporting issue or if indeed there is no EU funding used for the 1<sup>st</sup> Program of Measures. CY to further consider and pursue funding of POMS (for 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> cycle) through the next Partnership Agreement for 2014-20 that is currently being drafted between Cyprus and the Commission.

**Cyprus Answer:**

Action Point 6f is confirmed, every effort is made to implement some of the PoM through EU funds in the period 2014-2020.

**7. Climate Change Adaptation, Water Scarcity and Droughts and Flood Risk Management****Action Points:**

- CY will reply provide more information (in written) on further measures taken in other sectors to address water quantity pressures that were taken after the RBMP was reported.

**Cyprus Answer:**

Further measures taken to address water quantity pressures that are taken after the RBMP was reported are:

The Sewerage Board of Limassol and Amathounda has already implement Sustainable Urban Drainage Systems (SUDS), along with more measures to reduce flows such as: Creation of earthen ditches/ canals; Use of ponds for retention or delay of water flow (Polemida pond (300,000m<sup>3</sup>), Agia Fila pond (90,000m<sup>3</sup>), Vathia pond (60,000m<sup>3</sup>) and Akrotiri pond (100,000m<sup>3</sup>)

The Sewerage Board of Paphos is already progressing with plans for the reuse of storm water run-off through the construction of retention pond in a new large scale development and the construction of absorption pits.

Peyeia Municipality is successfully implementing measures for the reuse of storm water run-off, such as the construction of boreholes for groundwater storage and reuse. There is also a storm water run off retention pond.

Paralimni lake is a classic example where storm water reuse is fully exploited. It has the ability to retain urban storm water, controls the flow, enriches groundwater and saves water. It combines the philosophy of SUDS/ and the rainwater harvesting. An existing canal connects the lake to a reservoir after passing through many agricultural fields. This canal serves as flood protection measure (controlling the water level in the lake), as

ground water discharge system (through a number of boreholes along its path), as irrigation canal and as a water conveyor.

- CY needs further develop sector integration of water resource protection for the 2<sup>nd</sup> cycle.

- CY needs to promote measures that promote resilience to Climate Change in the 2<sup>nd</sup> cycle.

**Cyprus Answer:**

Action Points 7 are confirmed

**8. Economic Analysis and Art 9**

**Action Points:**

- CY to include more water demand decreasing measures in the second cycle and focus on changing behaviour rather infrastructure.

**Cyprus Answer:**

Action point is confirmed

- **CY to** consider relation between calculation of ERC and the financing of POMS

- CY to provide to COM information on adoption of planned legislative proposals related to inclusion of ERC to CR, setting up water pricing for self-abstraction, resolving problem of illegal abstraction, and implementation of PPP in relation to point and diffuse pollution. CY to notify the Commission on whether and when these are voted by parliament.

**Cyprus Answer:**

The legislative proposals (regulations on water pricing policies according to Art 9) were approved by the Council of Ministers in July 2011 and sent to the Parliament to be voted according to the National Law (The Water Protection and Management Law 13(I)/2004 which is the adoption of WFD to the National legislation). At present, they are being discussed by the Parliament competent committees. CY hopes to be voted as soon as possible.

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The legislative proposals (regulations on water pricing policies according to Art 9) introducing ERC to CR titled “Οι περί Τιμολόγησης και Μηχανισμών Ανάκτησης του Κόστους των Υπηρεσιών Νερού Κανονισμοί Κ.Δ.Π. 128/2014” (The Pricing and Cost Recovery of Water Services Regulations Κ.Δ.Π.128/2014) have been voted by the Parliament and published in 28/2/2014. The Regulations set up water pricing including ERC for the supply of drinking and irrigation supply as well as for self-abstraction.

**Final remarks**

At the end CY asked the Commission to take to consideration that CY joined in 2004 and a lot of adjustments need to be made for the new elements by WFD and other environmental regulation.

It was agreed that the Commission would send the summary of the points discussed, agreed action points, and questions that need further answers. COM explained the further steps when COM and CY have agreed on the actions following the meeting, the Action Plan will be reviewed accordingly and then COM will assess if this is sufficient or not. The Action Plan should include the requested action plan on Agriculture related measures. The Action Plan summary must be CY commitment.

Kyriakos Kyrou said CY understands that the main issues are the restoration of the aquifers, pricing policy and monitoring improvement. Once the regulation has been approved they will be able to move forward. Also improvement in monitoring will be done and CY is committed to this.

Peter Gammeltoft explained that the COM understands the time needed for restoration, but is important not to postpone action and to try and make better use of EU funds to support the implementation of WFD and POMs.

At the end of the meeting Peter Gammeltoft thanked CY for the good preparation to the meeting and the useful and transparent information prepared for the meeting.