

**Implementation of the National Plan for
Approximation of Environmental Legislation**

A project for Albania funded by the European Union

Draft

**DCM on The Content, Development and Implementation of National
Water Strategies, of River Basin District Management Plans and of
Flood Risk Management Plans¹**

Draft 1

Version 1

30 July 2010

¹ This Decision transposes: Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy, as amended by Directive 2008/32/EC and Directive 2009/31/EC; Directive 2009/90/EC Laying Down Technical Specifications for Chemical Analysis and Monitoring of Water Status; Directive 2006/118/EC On the Protection of Groundwater Against pollution and Deterioration; and Directive 2007/60/EC On the Assessment and Management of Flood Risks



**REPUBLIC OF ALBANIA
COUNCIL OF MINISTERS**

DECISION

(Draft 1 Version 1 of 30 July 2010)

No. _____, date _____

**ON
The Content, Development and Implementation of National Water
Strategies, of River Basin District Management Plans and of Flood
Risk Management Plans²**

Pursuant to Article 100 of the Constitution and to Articles xxxx of the Law no ____, dated _____ "On Water Management", the Council of Ministers;

DECIDED:

² This Decision transposes: Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy, as amended by Directive 2008/32/EC and Directive 2009/31/EC; Directive 2009/90/EC Laying Down Technical Specifications for Chemical Analysis and Monitoring of Water Status; Directive 2006/118/EC On the Protection of Groundwater Against Pollution and Deterioration; and Directive 2007/60/EC On the Assessment and Management of Flood Risks

I. GENERAL

1. This Decision sets out the contents and the procedures for the development and implementation of:
 - (a) The National Water Strategy;
 - (b) River Basin District Management Plans; and
 - (c) Flood Risk Management Plans.

2. The National Water Strategy, the River Basin District Management Plans and the Flood Risk Management Plans shall take due account of:
 - (a) International legal acts signed and ratified by the Republic of Albania, and
 - (b) Policies and legislation adopted by the European Union, especially those in the field of water policy.

II. Definitions

3. For the purposes of this Decision, the following terms shall have the following meaning:
 - (a) “**Artificial water body**” means a body of surface water created by human activity (e.g. reservoirs, retention storages, canals, fish ponds, etc.).
 - (b) “**Aquifer**” means a subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater.
 - (c) “**Available groundwater resource**” means the long term annual average rate of overall recharge of the body of groundwater less the long-term annual rate of flow required to achieve the ecological quality objectives for associated surface waters to avoid any significant diminution in the ecological status of such waters and to avoid any significant damage to associated terrestrial eco-systems.
 - (d) “**Baseline level**” means the average value measured at least during the first period for which a representative period of monitoring data is available.
 - (e) “**Background level**” means the concentration of a substance or the value of an indicator in a body of groundwater corresponding to no, or only very minor, anthropogenic alterations to undisturbed conditions.
 - (f) “**Body of groundwater**” means a distinct volume of groundwater within an aquifer or aquifers.
 - (g) “**Body of surface water**” means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, transitional water or a stretch of coastal water.
 - (h) “**Coastal water**” means surface water on the landward side of a line, at

a distance of one nautical mile on the seaward side from the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.

- (i) “**Direct discharge to groundwater**” means the discharge of pollutants into groundwater without percolation through the soil or subsoil.
- (j) “**Ecological status**” is an expression of the quality of the structure and functioning of aquatic ecosystems associated with surface waters, classified in accordance with specific legal acts.
- (k) “**Emission controls**” means controls requiring a specific emission limitation, for example an environmental technical standard, or otherwise specifying limits or conditions on the effects, nature or other conditions which affect emissions.
- (l) “**Environmental water quality norm**” means the concentration of a particular pollutant or group of pollutants in water, sediment or biota which should not be exceeded in order to protect human health and the environment. Environmental quality norms shall be set out in specific legal acts.
- (m) “**Environmental technical norm**” has the meaning given to it by Article xxx of the Law on Environmental Protection.
- (n) “**Flood**” means the temporary covering by water of land not normally covered by water. This shall include floods from rivers, mountain torrents, ephemeral water courses, and floods from the sea in coastal areas, but excludes floods from sewerage systems.
- (o) “**Flood risk**” means the combination of the probability of a flood event and of the potential adverse consequences for human health, the environment, cultural heritage and economic activity associated with a flood event.
- (p) “**Good ecological potential**” means the ecological potential of a heavily modified body of water or an artificial water body when assessed as ‘good’ as set out in specific legal acts.
- (q) “**Good ecological status**” means the ecological status achieved by a body of surface water when assessed as ‘good’ as set out in specific legal acts.
- (r) “**Good groundwater chemical status**” means the chemical status of a body of groundwater when assessed as ‘good’ as set out in specific legal acts.
- (s) “**Good groundwater quantitative status**” means the quantitative status of a body of groundwater when assessed as ‘good’ as set out in specific legal acts.
- (t) “**Good groundwater status**” means the status achieved by a groundwater body when both its quantitative status and its chemical status are assessed as at least 'good' as set out in specific legal acts.
- (u) “**Good surface water chemical status**” means the chemical status required to meet the environmental objectives for surface waters as set out in specific legal acts.
- (v) “**Good surface water status**” means the status achieved by a surface water body when both its ecological status and its chemical status are assessed as at least 'good' as set out in specific legal acts.
- (w) “**Groundwater**” means all water which is below the surface of the

ground in the saturation zone and in direct contact with the ground or subsoil.

- (x) **“Groundwater quality norm”** means an environmental quality norm expressed as the concentration of a particular pollutant, group of pollutants or indicator of pollution in groundwater, which should not be exceeded in order to protect human health and the environment.
- (y) **“Groundwater status”** is the general expression of the status of a body of groundwater, determined by the poorer of its quantitative status and its chemical status.
- (z) **“Hazardous substances”** has the meaning given to it in the Law on Environmental Protection.
- (aa) **“Heavily modified water body”** means a body of surface water which as a result of physical alterations by human activity is substantially changed in character, as designated by the competent authority in accordance with the relevant legislation.
- (bb) **“Inland water”** means all standing or flowing water on the surface of the land, and all groundwater on the landward side of the baseline from which the breadth of territorial waters is measured.
- (cc) **“Input of pollutants into groundwater”** means the direct or indirect introduction of pollutants into groundwater as a result of human activity.
- (dd) **“Lake”** means a body of standing inland surface water.
- (ee) **“Law on Environmental Protection”** means Law No___, dated___ “On Environmental Protection”.
- (ff) **“Limit of detection”** means the output signal or concentration value above which it can be affirmed, with a stated level of confidence that a sample is different from a blank sample containing no determinand of interest.
- (gg) **“Limit of quantification”** means a stated multiple of the limit of detection at a concentration of the determinand that can reasonably be determined with an acceptable level of accuracy and precision. The limit of quantification can be calculated using an appropriate standard or sample, and may be obtained from the lowest calibration point on the calibration curve, excluding the blank.
- (hh) **“Pollutant”** means any substance liable to cause pollution, in particular those set out in specific legal acts.
- (ii) **“Polluter”** has the meaning given to it in the Law on Environmental Protection.
- (jj) **“Pollution”** means the direct or indirect introduction, as a result of human activity, of substances or heat into the air, water or land which may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems, which result in damage to property, or which impair or interfere with amenities and other legitimate uses of the environment.
- (kk) **“Priority substances”** means those substances, including “priority hazardous substances” listed in specific legal acts in accordance with Article xxx [Dir Art 16(2)] for which specific measures must be taken aimed at the cessation or phasing-out of discharges, emissions and losses.
- (ll) **“Quantitative status”** is an expression of the degree to which a body

- of groundwater is affected by direct and indirect abstractions.
- (mm) “**River**” means a body of inland water flowing for the most part on the surface of the land but which may flow underground for part of its course.
 - (nn) “**River basin**” means the area of land from which all surface run-off flows through a sequence of streams, rivers and, possibly, lakes into the river flowing into the sea at a single river mouth, estuary or delta.
 - (oo) “**River basin district**” means the area of land and sea, made up of one or more neighbouring river basins together with their associated groundwater and coastal waters, which is identified as the main unit for water management of river basins.
 - (pp) “**Significant and sustained upward trend**” means any statistically and environmentally significant increase of pollutant, group of pollutants, or indicator of pollution in groundwater for which trend reversal is identified as being necessary.
 - (qq) “**Sub-basin**” means the area of land from which all surface run-off flows through a series of streams, rivers and, possibly, lakes to a particular point in a water course (normally a lake or a river confluence).
 - (rr) “**Surface water**” means inland waters, except groundwater; transitional waters and coastal waters, except in respect of chemical status for which it shall also include territorial waters.
 - (ss) “**Surface water status**” is the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status.
 - (tt) “**Threshold value**” means a groundwater quality standard for particular pollutants, groups of pollutants or indicators of pollution in groundwater which have been identified as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk.
 - (uu) “**Uncertainty of measurement**” means a non-negative parameter characterizing the dispersion of the quantity values being attributed to a measurand, based on the information used.

NOTE – need to check all definitions against the draft Law on Water Management to avoid duplication

- 4. Any other term or expression used in this Decision shall have the meaning given to it by the Law “On Water Management”, unless otherwise specified.

PART 1 National Water Strategy

Chapter 1. Basic Principles

- 5. The National Water Strategy:
 - (a) is developed based on Articles xxx and xxx of the Law “On Water Management”; and

- (b) shall be subject to the strategic environmental assessment procedure as set out in other legislation.
- 6. The National Water Strategy is the basic long-term planning document for the integrated water management in the Republic of Albania.
- 7. Integrated water management presents a process which encourages coordinated development of water administration and water management and related resources for the purpose of achieving the highest economic and social well-being, in a uniform and acceptable manner without disrupting water-dependent eco-systems.

Chapter 2. Contents of the National Water Strategy

- 8. The National Water Strategy shall contain, as a minimum:
 - (a) principles and criteria for determining integrated water management;
 - (b) principles and objectives for preservation and improvement of water status as well as for water and water dependant ecosystems;
 - (c) obligations arising from international agreements;
 - (d) baseline information and evaluation of the condition of waters and water systems;
 - (e) base maps;
 - (f) base projections for the management of waters;
 - (g) base projections for planning for the development of water systems;
 - (h) plan of activities and measures for the implementation of objectives
 - (i) institutional arrangements for the implementation of objectives
 - (j) assessment of financial costs related to water management.
- 9. The National Water Strategy shall determine the priorities in integrated water management according to the identified objective parameters, adapted to present needs and economic potential, but which does not neglect the integral vision of the future development of the water system.
- 10. The National Water Strategy shall also include a non-technical summary of the information set out in Paragraphs 8 and 9 above. The non-technical summary shall contain key facts, assessments and proposals.

Chapter 3. Procedures for the development of the National Water Strategy

- 11. The National Water Strategy shall be prepared in accordance with Article xxx of the Law “On Water Management”.
- 12. The River Basin Councils and other institutions shall provide such information and assistance as is requested to develop the National Water Strategy.

13. At least two years before the beginning of the period to which the National Water Strategy refers the National Water Council shall prepare a timetable and work programme for the production of the National Water Strategy.
14. The timetable and the work programme referred to in Paragraph 13 shall be made available to the public.
15. A draft National Water Strategy shall be published at least 18 months before the beginning of the period to which the National Water Strategy refers.
16. The draft National Water Strategy referred to in Paragraph 15 shall be placed on the web site of the National Water Council and on the website of the Ministry.
17. The National Water Council shall send the draft National Water Strategy referred to in Paragraph 15 to the:
 - (a) Minister in charge of environment;
 - (b) Minister in charge of water;
 - (c) Minister in charge of forestry;
 - (d) Ministers in charge of the sea, tourism, transport and development
 - (e) Minister in charge of nature protection;
 - (f) Ministers in charge of the economy and energy;
 - (g) Minister in charge of health;
 - (h) National Environment Agency;
 - (i) Such other ministers and institutions as, in the opinion of National Water Council, are relevant.
18. The authorities referred to in Paragraph 17 may comment on the draft National Water Strategy. Such comments may be in writing or electronic and shall be addressed to the National Water Council. Such comments shall be made within a period of six months from the date the draft National Water Strategy is published.
19. The draft National Water Strategy referred to in Paragraph 15 shall be made available to the public.
20. Where a member of the public wishes to view the draft National Water Strategy, he shall be entitled to so free of charge. Where a member of the public wishes to obtain a copy of the draft National Water Strategy the National Water Council shall be entitled to charge reasonable costs for providing such a copy.
21. Any member of the public may comment on the draft National Water Strategy. Such comments may be in writing or electronic and shall be addressed to the National Water Council. Such comments shall be made within a period of six months from the date the draft National Water Strategy is published.
22. The National Water Council shall approve the finalised National Water Strategy in accordance with Article xxx of the Law “On Water Management”.

In preparing the finalised National Water Strategy the National Water Council shall take into account the comments received from the ministries and institutions referred to in Paragraph 17 and the comments received from the public pursuant to Paragraph 21.

Chapter 4. Review and revision of the National Water Strategy

23. The National Water Strategy shall be reviewed and, if necessary revised, in 2015 and thereafter every 15 years.
24. The provisions of Chapter 3 Part 1 of this Decision shall apply to any revision of the National Water Strategy.

Part 2 River Basin District Management Plans

Chapter 1. Characteristics of River Basin Districts

25. For each river basin district identified in Article xxx of the Law “On Water Management”, the relevant River Basin Council shall carry out an assessment of that river basin district pursuant to Article xxx of the Law “On Water Management”.
26. The assessment of a river basin district referred to in Paragraph 25 shall include:
 - (a) An analysis of its characteristics in accordance with the specifications set out in Annex I of this Decision; and
 - (b) A review of the impact of human activity on the status of surface waters and on groundwater.
27. The assessment of a river basin district referred to in Paragraph 25 shall also include an economic analysis of water use which shall contain sufficient information to:
 - (a) Make the relevant calculations necessary to take into account the principle of recovery of the costs of water services referred to in Article xxx of the Law “On Water Management”, taking account of the long term forecasts of supply and demand for water in the river basin district and, where necessary;
 - i. Estimates of the volume, prices and costs associated with water services, and
 - ii. Estimates of relevant investments including forecasts of such investments;
 - (b) Make assessments about the most cost-effective combination of measures in respect of water uses to be included in the programme of measures under Annex IV based on estimates of the potential costs of such measures.

28. The assessment of river basin districts referred to in Paragraph 25 shall be reviewed and, if necessary, updated by the end of 2013 and every six years thereafter.
29. The assessment of river basin districts referred to in Paragraph 25 and any review referred to in Paragraph 28 shall be approved by the National Water Council and shall be placed on the web site of the National Water Council and on the web site of the relevant River Basin Council.
30. The assessment of river basin districts referred to in Paragraph 25 and any review referred to in Paragraph 28 shall be made available to the public.

Chapter 2. River Basin District Management Plans

31. For each river basin district identified in Article xxx of the Law “On Water Management”, the relevant River Basin Council shall prepare a river basin district management plan pursuant to Article xxx of the Law “On Water Management”.
32. Where a river basin district forms part of an international river basin district the relevant River Basin Council shall use its best endeavours to co-ordinate with the relevant authorities in other States to produce a single international river basin district management plan pursuant to Article xxx of the Law “On Water Management”.
33. The river basin district management plan shall contain as a minimum the information set out in Annex II of this Decision.
34. River Basin District Management Plans shall be reviewed and, if necessary updated, by the end of 2015 and every six years thereafter.

Chapter 3. Procedures for the development of River Basin District Management Plans

35. Three years before the beginning of the period to which the River Basin District Management Plan, including any review referred to in Paragraph 34, refers the relevant River Basin Council shall, after approval from the National Water Council, publish a draft timetable and work programme for the production of the River Basin District Management Plan. The draft timetable and work programme shall, in particular, include clear deadlines, institutions and organisations to be consulted, indicative sources of funding and institutions and indicative organisation plan for implementation.
36. The draft timetable and work programme referred to in Paragraph 35 shall be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council.

37. The relevant River Basin Council shall send the draft timetable and work programme referred to in Paragraph 35 to:
- (a) Minister in charge of environment;
 - (b) Minister in charge of water;
 - (c) Minister in charge of forestry;
 - (d) Ministers in charge of the sea, tourism, transport and development
 - (e) Minister in charge of nature protection;
 - (f) Ministers in charge of the economy and energy;
 - (g) Minister in charge of health;
 - (h) National Environment Agency;
 - (i) National Water Council;
 - (j) Local government authorities in municipalities within the river basin district;
 - (k) Such other ministries and institutions as, in the opinion of the relevant River Basin Council, are relevant.
38. The authorities referred to in Paragraph 37 may comment on the draft timetable and work programme. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft timetable and work programme is published.
39. Any member of the public may comment on the draft timetable and work programme referred to in Paragraph 35. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft timetable and work programme is published.
40. The relevant River Basin Council shall, after its approval by the National Water Council, publish a final timetable and work programme at least two years before the beginning of the period to which the River Basin District Management Plan refers. In preparing the final timetable and work programme the relevant River Basin Council shall take into account any comments received from the ministries and institutions referred to in Paragraph 37 and the comments received from the public pursuant to Paragraph 39.
41. Two years before the beginning of the period to which the River Basin District Management Plan, including any review referred to in Paragraph 34 refers the relevant River Basin Council shall, after its approval by the National Water Council, publish a draft interim overview of the significant water management issues identified in the river basin district.
42. The draft interim overview of significant water management issues referred to in Paragraph 41 shall be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council.
43. The relevant River Basin Council shall send the draft interim overview of significant water management issues referred to in Paragraph 41 to the authorities referred to in Paragraph 37 above.

44. The authorities referred to in Paragraph 43 may comment on the draft interim overview of significant water management issues. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft interim overview of significant water management issues is published.
45. Any member of the public may comment on the draft interim overview of significant water management issues. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft interim overview of significant water management issues is published.
46. The relevant River Basin Council shall, after its approval by the National Water Council, publish a final interim overview of significant water management issues at least 18 months before the beginning of the period to which the River Basin District Management Plan refers. In preparing the final interim overview of significant water management issues the relevant River Basin Council shall take into account any comments received from the ministries and institutions referred to in Paragraph 43 and the comments received from the public pursuant to Paragraph 45.
47. One year before the beginning of the period to which the River Basin District Management Plan, including any review referred to in Paragraph 34, refers the relevant River Basin Council shall, after its approval by the National Water Council, publish a draft river basin district management plan for the river basin district.
48. The draft river basin district management plan referred to in Paragraph 47 shall be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council.
49. The draft river basin district management plan shall be subject to the strategic environmental assessment procedure as set out in other legislation.
50. The relevant River Basin Council shall send the draft river basin district management plan referred to in Paragraph 47 to the authorities referred to in Paragraph 37 above and to the relevant authorities in other States where the river basin district forms part of an international river basin district.
51. The authorities referred to in Paragraph 50 may comment on the draft river basin district management plan. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft river basin district management plan is published.
52. Any member of the public may comment on the draft river basin district management plan. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made

within a period of six months from the date the draft river basin district management plan is published.

53. Where a member of the public wishes to view any background documents and information used for the development of the draft river basin district management plan, he shall be entitled to do free of charge.
54. Where a member of the public wishes to make a photocopy of any background documents and information used for the development of the draft river basin district management plan, the relevant River Basin Council may charge a reasonable sum covering such photocopying expenses.
55. The relevant River Basin Council may organise public hearings on the draft river basin district management plan within the six month period referred to in Paragraph 52.
56. The relevant River Basin Council shall send the draft final river basin district management plan to the National Water Council at least 6 months before the beginning of the period to which the River Basin District Management Plan refers. In preparing the draft final river basin district management plan the relevant River Basin Council shall take into account:
 - (a) Any results and conclusions of any strategic environment assessment referred to in Paragraph 49,
 - (b) any comments received from the ministries and institutions referred to in Paragraph 50,
 - (c) any comments received from the relevant authorities of other States referred to in Paragraph 50,
 - (d) any comments received from the public pursuant to Paragraph 52, and
 - (e) any comments received at any public hearing organised pursuant to Paragraph 55.
57. The National Water Council shall approve the final River Basin District Management Plan in accordance with Article xxx of the Law “On Water Management”.

Chapter 4. Programmes of measures

58. The relevant River Basin Council shall establish a programme of measures for each river basin district in order to achieve the environmental objectives set out in Annex III of this Decision.
59. The programmes of measures referred to in Paragraph 58 shall take account of the results of the assessment required under Part 1, Chapter 1 above.
60. The programmes of measures referred to in Paragraph 58 shall include the basic measures specified in Annex IV Part 1 and, where necessary, such supplementary measures as specified in Annex IV Part 2.

61. The programmes of measures referred to in Paragraph 58 shall be established by the end of year [Directive date 2009 – 9 years after entry into force].
62. The programmes of measures referred to in Paragraph 58 shall be made operational by the end of year [Directive date 2012 – 12 years after entry into force].
63. The programmes of measures referred to in Paragraph 58 shall be reviewed, and if necessary updated, by the end of 2015 and every six years thereafter. Any new or revised measures established under an updated programme shall be made operational within three years of their establishment.
64. Without prejudice to the provisions of Paragraph 63, where the monitoring of water status under Part 4 of this Chapter or other data indicate that the environmental objectives set under Annex III for the body of water are unlikely to be achieved, additional measures shall be taken as necessary in order to achieve those environmental objectives.
65. Where the causes of the failure to achieve environmental objectives for a body of water referred to in Paragraph 64 are the result of natural causes or *force majeure* which are exceptional and which could not reasonably have been foreseen, in particular extreme floods and prolonged droughts, the relevant River Basin Council may determine that additional measures are not practicable, subject to paragraph 6 of Annex III.

Part 3 Classification of water bodies

66. The Government [National Water Council] shall classify the status of water bodies in accordance with the provisions of Annex V to this Decision and pursuant to Articles xxx and xx of the Law “On Water Management”.
67. The classification of water bodies referred to in Paragraph 66 shall be reviewed, and if necessary updated by the end of 2015 and every six years thereafter.

Part 4 Monitoring of water status

68. The relevant River Basin Council shall establish programmes for the monitoring of water status in order to establish a coherent and comprehensive overview of water status within each river basin district, pursuant to Article xxx of the Law “On Water Management”.
69. The monitoring programmes referred to in Paragraph 68 shall be approved by the National Water Council before being made operational.
70. The monitoring programmes referred to in Paragraph 68 shall be in accordance with the provisions of Annex V to this Decision.

71. The technical specifications and standardised methods for analysis and monitoring of water status shall be in accordance with the provisions of Annex VI to this Decision.
72. For surface waters the monitoring programmes referred to in Paragraph 68 shall cover:
- (a) The volume and level or rate of flow to the extent relevant for ecological and chemical status and ecological potential;
 - (b) The ecological status;
 - (c) The chemical status; and
 - (d) The ecological potential.
73. For groundwaters the monitoring programmes referred to in Paragraph 68 shall cover:
- (a) The chemical status; and
 - (b) The quantitative status.
74. For protected areas as specified in Article xxx of the Law “On Water Management” the monitoring programmes referred to in Paragraph 68 shall be supplemented by such specifications as are contained in the legislation establishing those protected areas.

Part 5 Identification of significant and sustained upward trends in groundwater pollution

75. The relevant River Basin Council shall identify any significant and sustained upward trend in concentrations of pollutants, groups of pollutants or indicators of pollution found in bodies or groups of bodies of groundwater identified as being at risk, taking into account the requirements of Annex VII of this Decision.
76. The relevant River Basin Council shall take measures in accordance with Part B of Annex VII of this Decision to reverse trends which present a significant risk of harm to the quality of aquatic ecosystems or terrestrial ecosystems, to human health, or to actual or potential legitimate uses of the water environment, through the programme of measures referred to in Annex IV of this Decision, in order progressively to reduce pollution and prevent deterioration of groundwater.
77. The River Basin District Management Plan shall summarise:
- (a) The way in which the trend assessment from individual monitoring points within a body or a group of bodies of groundwater has contributed to identifying, in accordance with Section 2.5 of Annex V to this Decision, that those bodies are subject to a significant and sustained upward trend in concentration of any pollutant or a reversal of that trend; and
 - (b) The reasons for the starting points defined for trend reversal in accordance with Part B of Annex VII to this Decision.
78. The relevant River Basin Council shall carry out additional trend assessments where necessary to assess the impacts of existing plumes of pollution in

bodies of groundwater that may threaten the achievement of the environmental objectives set out in Annex III of this Decision, and in particular those plumes resulting from point sources and from contaminated land.

79. The additional trend assessments referred to in Paragraph 78 shall verify that such plumes do not expand, do not deteriorate the chemical status of the body or group of bodies of groundwater, and do not present a risk for human health and the environment.
80. The results of the additional trend assessments referred to in Paragraph 78 shall be summarised in the River Basin District Management Plans.

Part 6 Flood Defence Plans

Chapter 1. Preliminary flood risk assessment

81. For each river basin district identified in Article xxx of the Law “On Water Management”, the relevant River Basin Council shall carry out a preliminary flood risk assessment based on available or readily derivable information, such as records and studies on long-term developments, and in particular the impacts of climate change on the occurrence of floods.
82. The preliminary flood risk assessment referred to in Paragraph 81 shall include, as a minimum:
 - (a) Maps of the river basin district on an appropriate scale including the borders of the river basins, any sub-basins and coastal areas, showing topography and land use;
 - (b) A description of any floods which have occurred in the past and which had significant adverse impacts on human health, the environment, cultural heritage and economic activity and for which the likelihood of similar future events is still relevant, including their flood extent and conveyance routes and an assessment of their adverse impacts;
 - (c) A description of any significant floods which have occurred in the past, where significant adverse consequences of similar future events may be envisaged;
 - (d) An assessment of the potential adverse consequences of future floods for human health, the environment, cultural heritage and economic activity, taking into account as far as possible issues such as:
 - i. topography,
 - ii. the position of water courses and their general hydrological and geo-morphological characteristics, including flood plains as natural retention areas,
 - iii. the effectiveness of existing man-made flood defence infrastructures,
 - iv. the position of populated areas,
 - v. the position and nature of areas of economic activity, and
 - vi. long-term developments including impacts of climate change on the occurrence of floods.

83. Where a river basin district forms part of an international river basin district, the relevant River Basin Council shall use its best endeavours to co-ordinate with the relevant authorities in other States, in particular as regards the exchange of relevant information.
84. The preliminary flood risk assessment referred to in Paragraph 81 shall be completed by *date* [Directive date 22 December 2011] at the latest.
85. The preliminary flood risk assessment shall be reviewed, and if necessary updated, by 22 December 2018 and every six years thereafter. Any such reviews shall take into account the likely impact of climate change on the occurrence of floods.
86. The preliminary flood risk assessment and any review referred to in Paragraph 85 shall, after approval by the National Water Council, be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council, and shall be made available to the public.
87. The National Water Council, acting on a proposal from the relevant River Basin Council and on the basis of the preliminary flood risk assessment or any review referred to in Paragraph 85, shall for each river basin district designate those areas where potential flood risks exist or may be likely to occur.
88. Where a river basin district forms part of an international river basin district, the National Water Council shall use its best endeavours to co-ordinate with the relevant authorities in other States on the designation of flood risk areas referred to in Paragraph 87.

Chapter 2. Flood hazard maps and flood risk maps

89. For each river basin district the relevant River Basin Council shall prepare flood hazard maps and flood risk maps, at the most appropriate scale, for the flood risk areas designated under Paragraph 87.
90. Where a flood risk area forms part of an international river basin district, the relevant River Basin Council shall exchange information with the relevant authorities in other States before preparing the flood hazard maps and flood risk maps referred to in Paragraph 89.
91. The flood hazard maps referred to in Paragraph 89 shall cover the geographical areas which could be flooded according to the following scenarios:
 - (a) Floods with a low probability, or extreme event scenarios;
 - (b) Floods with a medium probability (likely return period ≥ 100 years);
 - (c) Floods with a high probability, where appropriate.
92. For each scenario referred to in Paragraph 91 the following elements shall be shown:
 - (a) The flood extent;

- (b) Water depths or water level, as appropriate;
 - (c) The flow velocity or the relevant water flow, as appropriate.
93. The flood risk maps referred to in Paragraph 89 shall show the potential adverse consequences associated with the flood scenarios referred to in Paragraph 90 and expressed in the following terms:
- (a) The indicative number of inhabitants potentially affected;
 - (b) Type of economic activity of the area potentially affected;
 - (c) Installations which are subject to integrated environmental protection requirements as set out in other legislation, which may cause accidental pollution in case of flooding and potentially affected protected areas identified in Article xxx of the Law “On Water Management”;
 - (d) Any other relevant useful information, such as the indication of areas where floods with a high content of transported sediments and debris floods can occur, and information on other significant sources of pollution.
94. Where, in the opinion of the relevant River Basin Council, an adequate level of protection is in place for any coastal areas, the preparation of the flood hazard maps may be limited to the scenario referred to in Paragraph 91(a).
95. For areas where flooding is from groundwater sources, the preparation of the flood hazard maps may be limited to the scenario referred to in Paragraph 91(a).
96. The flood hazard maps and the flood risk maps referred to in Paragraph 89 shall be completed by *date* [Directive date - 22 December 2013] at the latest.
97. The flood hazard maps and the flood risk maps shall be reviewed, and if necessary updated, by 22 December 2019 and every six years thereafter. Any such reviews shall take into account the likely impact of climate change on the occurrence of floods.
98. The flood hazard maps and the flood risk maps and any review referred to in Paragraph 97 may be integrated into the assessment and reviews of the characteristics of river basin districts referred to in Part 2 Chapter 1 of this Decision. Where they are not so integrated, the development of the flood hazard maps and the flood risk maps and any review shall be coordinated with such assessment and reviews of the characteristics of river basin districts.
99. The flood hazard maps and the flood risk maps and any reviews shall, after approval by the National Water Council, be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council, and made available to the public.

Chapter 3. Flood Risk Management Plans

100. The National Water Council shall establish appropriate objectives for the management of flood risks for the flood risk areas designated under

Paragraph 87. These objectives shall focus on the reduction of potential adverse consequences of flooding for human health, the environment, cultural heritage and economic activity, and, if appropriate, on non-structural initiatives and/or on the reduction of the likelihood of flooding.

101. On the basis of the flood hazard maps and the flood risk maps and any reviews, the relevant River Basin Council shall prepare flood risk management plans co-ordinated at the level of the river basin district, for the flood risk areas designated under Paragraph 87, pursuant to Article xxx of the Law “On Water Management”.
102. The flood risk management plans shall include measures to achieve the objectives referred to in Paragraph 100, and shall include the components set out in Part 1 of Annex VIII of this Decision. The Plans shall address all aspects of flood risk management focusing on prevention, protection, preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the relevant river basin or sub-basin. Flood risk management plans may also include the promotion of sustainable land use practices, improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event.
103. The flood risk management plans shall take into account, as relevant:
 - (a) Costs and benefits;
 - (b) Flood extent and flood conveyance routes;
 - (c) Areas which have the potential to retain flood water, such as natural floodplains;
 - (d) The environmental objectives referred to in Annex III of this Decision;
 - (e) Soil and water management;
 - (f) Spatial planning;
 - (g) Land use;
 - (h) Nature conservation;
 - (i) Navigation; and
 - (j) Port infrastructure.
104. Where a river basin district forms part of an international river basin district the relevant River Basin Council shall use its best endeavours to co-ordinate with the relevant authorities in other States to produce one single international flood risk management plan, or a set of flood risk management plans co-ordinated at the level of the international river basin district. Where such plans are not produced the relevant River Basin Council shall produce flood risk management plans covering at least those parts of the international river basin district falling within the territory of the Republic of Albania as far as possible co-ordinated at the level of the international river basin district.
105. Where it is proposed to include measures in a flood risk management plan which, by their extent and impact, significantly increase flood risks upstream or downstream of other States in the same river basin or sub-basin, the relevant River Basin Council shall not include such measures in the flood risk management plan unless those measures have been co-ordinated and agreed upon by the States concerned.

106. The flood risk management plans shall be adopted by *date* [Directive date - 22 December 2015] at the latest.
107. The flood risk management plans shall be reviewed, and if necessary updated, by 22 December 2021 and every six years thereafter. Any such review shall include the components set out in Part 2 of Annex VIII of this Decision and shall take into account the likely impact of climate change on the occurrence of floods.

Chapter 4. Procedures for the development of Flood Risk Management Plans

108. The flood risk management plans and their subsequent reviews may be integrated into the relevant river basin district management plan and their subsequent reviews. Where the flood risk management plans are not so integrated they shall be carried out in co-ordination with the river basin district management plan and their subsequent reviews, and the provisions of Paragraphs 109 to 117 below shall apply.
109. One year before the beginning of the period to which the flood risk management plan, including any review referred to in Paragraph 107 refers, the relevant River Basin Council shall, after approval from the National Water Council, publish a draft flood risk management plan.
110. The draft flood risk management plan referred to in Paragraph 109 shall be placed on the web site of the relevant River Basin Council and on the web site of the National Water Council.
111. The draft flood risk management plan shall be subject to the strategic environmental assessment procedure as set out in other legislation.
112. The relevant River Basin Council shall send the draft risk management defence plan to the authorities referred to in Paragraph 37 above and to the relevant authorities in other States where the relevant river basin district forms part of an international river basin district.
113. The authorities referred to in Paragraph 112 may comment on the draft flood risk management plan. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft flood risk management plan is published.
114. Any member of the public may comment on the draft flood risk management plan. Such comments may be in writing or electronic and shall be addressed to the relevant River Basin Council. Such comments shall be made within a period of six months from the date the draft flood risk management plan is published.

115. The relevant River Basin Council may organise public hearings on the draft flood risk management plan within the six month period referred to in Paragraph 52.
116. The relevant River Basin Council shall send the draft final flood risk management plan to the National Water Council at least 6 months before the beginning of the period to which the flood risk management plan refers. In preparing the draft final flood risk management plan the relevant River Basin Council shall take into account:
- (k) Any results and conclusions of the strategic environment assessment referred to in Paragraph 111,
 - (l) any comments received from the ministries and institutions referred to in Paragraph 112,
 - (m) any comments received from the relevant authorities of other States referred to in Paragraph 112,
 - (n) any comments received from the public pursuant to Paragraph 114, and
 - (o) any comments received at any public hearing organised pursuant to Paragraph 115.
117. The National Water Council shall approve the final flood risk management in accordance with Article xxx of the Law “On Water Management”.

Part 7 Repeals and final provisions

To be discussed:

Is there any legislation that needs to be repealed/amended?

Is there a National Water Strategy that should be deemed to be a strategy made under this Decision?

Are there any RBDMPs that should be deemed to be plans under this Decision?

Is there any legislation (decisions) on water classification? Do we need to say anything about existing bodies of water already classified, and how that relates to this new classification?

118. This Decision enters into force 15 days after publication in the Official Journal.

PRIME MINISTER

SALI BERISHA

Annexes

| | |
|------------|---|
| Annex I | Characteristics of water body types |
| Annex II | Minimum contents of River Basin District Management Plans |
| Annex III | Environmental objectives |
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| Annex V | Classification of status of water bodies |
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| Annex VII | Identification and reversal of significant and sustained upward trends in groundwater pollution |
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ANNEX I: Characteristics of water body types

1 SURFACE WATERS

1.1. Characterisation of surface water body types

The River Basin Council shall identify the location and boundaries of bodies of surface water and shall carry out an initial characterisation of all such bodies in accordance with the following methodology. The River Basin Council may group surface water bodies together for the purposes of this initial characterisation.

- (i) The surface water bodies within the river basin district shall be identified as falling within either one of the following surface water categories - rivers, lakes, transitional waters or coastal waters - or as artificial surface water bodies or heavily modified surface water bodies.
- (ii) For each surface water category, the relevant surface water bodies within the river basin district shall be differentiated according to type. These types are those defined using the system identified in section 1.2 below.
- (iii) The surface water bodies within the river basin district shall first be differentiated by the relevant ecoregions in accordance with the geographical areas identified in section 1.2. For rivers and lakes, all such waters are identified as 'Hellenic Western Balkan' eco-region in accordance with Map A of Annex XI of the Water Framework Directive (Directive 2000/60/EC). For transitional waters and coastal waters, all such waters are identified as 'Mediterranean Sea' eco-region in accordance with Map B of Annex XI of the Water Framework Directive. The water bodies within each eco-region shall then be differentiated by surface water body types according to the descriptors set out in the tables set out in Section 1.2 below.
- (iv) For artificial and heavily modified surface water bodies the differentiation shall be undertaken in accordance with the descriptors for whichever of the surface water categories most closely resembles the heavily modified or artificial water body concerned.
- (v) The River Basin Council shall prepare a map or maps in GIS format of the geographical location of the surface water body types so differentiated.

1.2. Eco-regions and surface water body types

1.2.1. Rivers

| Fixed typology | Descriptors |
|----------------|---|
| Eco-region | Hellenic Western Balkan |
| Type | Altitude typology high: >800 m mid- altitude: 200 to 800 m lowland: <200 m |
| | Size typology based on catchment area small: 10 to 100 km ² medium: >100 to 1 000 km ² large: >1 000 to 10000 km ² very large: >10 000 km ² |
| | Geology Calcareous Siliceous Organic |

1.2.2. Lakes

| Fixed typology | Descriptors |
|----------------|--|
| Eco-region | Hellenic Western Balkan |
| Type | Altitude typology: high: >800 m mid- altitude: 200 to 800 m lowland: <200 m |
| | Depth typology based on mean depth: <3m 3 to 15 m >15 m |
| | Size typology based on surface area: 0,5 to 1 km ² 1 to 10 km ² 10 to 100 km ² >100 km ² |
| | Geology: Calcareous Siliceous Organic |

1.2.3. Transitional Waters

| Fixed typology | Descriptors |
|----------------|---|
| Eco-region | Mediterranean Sea |
| Type | Based on mean annual salinity <0,5 %: freshwater 0,5 to <5 %: oligohaline 5 to <18 %: mesohaline 18 to <30%: polyhaline 30 to <40%: euhaline |
| | Based on mean tidal range <2 m: microtidal 2 to 4 m: mesotidal > 4 m: macrotidal |

1.2.4. Coastal Waters

| | |
|----------------|--|
| Fixed typology | Descriptors |
| Eco-region | Mediterranean Sea |
| Type | Based on mean annual salinity: <0,5 %: freshwater 0,5 to <5 %: oligohaline 5 to <18 %: mesohaline 18 to <30%: polyhaline 30 to <40%: euhaline |
| | Based on mean depth: shallow waters: <30 m intermediate: (30 to 200 m) deep: >200 m |

1.3 Establishment of type-specific reference conditions for surface water body types

- (i) For each surface water body type characterised in accordance with section 1.1, type-specific hydromorphological and physicochemical conditions shall be established representing the values of the hydromorphological and physicochemical quality elements specified in point 1.1 in Annex V for that surface water body type at high ecological status as defined in the relevant table in point 1.2 in Annex V. Type-specific biological reference conditions shall be established, representing the values of the biological quality elements specified in point 1.1 in Annex V for that surface water body type at high ecological status as defined in the relevant table in section 1.2 in Annex V.
- (ii) In applying the procedures set out in this section to heavily modified or artificial surface water bodies references to high ecological status shall be construed as references to maximum ecological potential as defined in table 1.2.5 of Annex V. The values for maximum ecological potential for a water body shall be reviewed every six years.
- (iii) Type-specific conditions for the purposes of points (i) and (ii) and type-specific biological reference conditions may be either spatially based or based on modelling, or may be derived using a combination of these methods. Where it is not possible to use these methods, the National Water Council may use expert judgement to establish such conditions. In defining high ecological status in respect of concentrations of specific synthetic pollutants, the detection limits are those which can be achieved in accordance with the available techniques at the time when the type-specific conditions are to be established.
- (iv) For spatially based type-specific biological reference conditions, the National Water Council shall develop a reference network for each surface water body type. The network shall contain a sufficient number of sites of high status to provide a sufficient level of confidence about the values for the reference conditions, given the variability in the values of the quality elements corresponding to high ecological status for that surface water body type and the modelling techniques which are to be applied under paragraph (v).

- (v) Type-specific biological reference conditions based on modelling may be derived using either predictive models or hindcasting methods. The methods shall use historical, palaeological and other available data and shall provide a sufficient level of confidence about the values for the reference conditions to ensure that the conditions so derived are consistent and valid for each surface water body type.
- (vi) Where it is not possible to establish reliable type-specific reference conditions for a quality element in a surface water body type due to high degrees of natural variability in that element, not just as a result of seasonal variations, then that element may be excluded from the assessment of ecological status for that surface water type. In such circumstances the River Basin Council shall state the reasons for this exclusion in the river basin district management plan.

1.4. Identification of Pressures

The River Basin Council shall collect and maintain information on the type and magnitude of the significant anthropogenic pressures to which the surface water bodies in each river basin district are liable to be subject, in particular the following:

- (a) Estimation and identification of significant point source pollution from urban, industrial, agricultural and other installations and activities, based, *inter alia*, on information gathered concerning:

- (i) Urban waste water treatment plants;
- (ii) Installations subject to separate legislation on integrated pollution prevention and control;

and for the purposes of the initial river basin district management plan:

- (iii) The discharge of dangerous substances to water;
- (iv) The quality of surface waters used for the abstraction of drinking water;
- (v) The quality of bathing waters;
- (vi) The quality of waters used for shellfish waters.

- (b) Estimation and identification of significant diffuse source pollution, in particular by substances defined in Article xxx of the Law "On Water Management", from urban, industrial, agricultural and other installations and activities; based, *inter alia*, on information gathered under:

- (i) Measures taken to protect waters against nitrate pollution from agricultural sources;
- (ii) Measures taken to protect groundwaters and the environment from the potentially dangerous effects of any plant protection product or of residue of any active substance;
- (iii) Measures taken to protect groundwaters and the environment from the potentially dangerous effects of any biocide;

and for the purposes of the first river basin district management plan:

- (vii) The discharge of dangerous substances to water;
- (viii) The quality of surface waters used for the abstraction of drinking water;
- (ix) The quality of bathing waters;

- (x) The quality of waters used for shellfish waters.
- (c) Estimation and identification of significant water abstraction for urban, industrial, agricultural and other uses, including seasonal variations and total annual demand, and of loss of water in distribution systems.
- (d) Estimation and identification of the impact of significant water flow regulation, including water transfer and diversion, on overall flow characteristics and water balances.
- (e) Identification of significant morphological alterations to water bodies.
- (f) Estimation and identification of other significant anthropogenic impacts on the status of surface waters.
- (g) Estimation of land use patterns, including identification of the main urban, industrial and agricultural areas and, where relevant, fisheries and forests.

1.5. Assessment of Impact

- i. The River Basin Council shall carry out an assessment of the susceptibility of the surface water status of bodies to the pressures identified above.
- ii. The River Basin Council shall use the information collected above, and any other relevant information including existing environmental monitoring data, to carry out an assessment of the likelihood that surface waters bodies within the river basin district will fail to meet the environmental quality objectives set for the bodies under Annex III of this Decision. The River Basin Council may utilise modelling techniques to assist in such an assessment.
- iii. For those bodies identified as being at risk of failing the environmental quality objectives, further characterisation shall, where relevant, be carried out to optimise the design of both the monitoring programmes and the programmes of measures required under Annex IV of this Decision.

2. GROUND WATERS

2.1. Initial characterisation

The River Basin Council shall carry out an initial characterisation of all groundwater bodies to assess their uses and the degree to which they are at risk of failing to meet the objectives for each groundwater body under Annex III of this Decision. The River Basin Council may group groundwater bodies together for the purposes of this initial characterisation. This analysis may employ existing hydrological, geological, pedological, land use, discharge, abstraction and other data but shall identify:

- (a) the location and boundaries of the groundwater body or bodies,
- (b) the pressures to which the groundwater body or bodies are liable to be subject including:
 - i. diffuse sources of pollution
 - ii. point sources of pollution
 - iii. abstraction
 - iv. artificial recharge,
- (c) the general character of the overlying strata in the catchment area from which the groundwater body receives its recharge,
- (d) those groundwater bodies for which there are directly dependent surface water ecosystems or terrestrial ecosystems.

2.2. Further characterisation

Following this initial characterisation, the River Basin Council shall carry out further characterisation of those groundwater bodies or groups of bodies which have been identified as being at risk in order to establish a more precise assessment of the significance of such risk and identification of any measures to be required under Annex IV of this Decision. Accordingly, this characterisation shall include relevant information on the impact of human activity and, where relevant, information on:

- (a) geological characteristics of the groundwater body including the extent and type of geological units,
- (b) hydrogeological characteristics of the groundwater body including hydraulic conductivity, porosity and confinement,
- (c) characteristics of the superficial deposits and soils in the catchment from which the groundwater body receives its recharge, including the thickness, porosity, hydraulic conductivity, and absorptive properties of the deposits and soils,
- (d) stratification characteristics of the groundwater within the groundwater body,
- (e) an inventory of associated surface systems, including terrestrial ecosystems and bodies of surface water, with which the groundwater body is dynamically linked,
- (f) estimates of the directions and rates of exchange of water between the groundwater body and associated surface systems,
- (g) sufficient data to calculate the long term annual average rate of overall recharge,
- (h) characterisation of the chemical composition of the groundwater, including specification of the contributions from human activity. The River Basin Council may use typologies for groundwater

characterisation when establishing natural background levels for these bodies of groundwater.

2.3. Review of the impact of human activity on groundwaters

For those bodies of groundwater which cross the boundary between the Republic of Albania and one or more States or are identified following the initial characterisation undertaken in accordance with paragraph 2.1 as being at risk of failing to meet the objectives set for each body under Annex III of this Decision, the following information shall, where relevant, be collected and maintained for each groundwater body:

- (a) the location of points in the groundwater body used for the abstraction of water with the exception of:
 - points for the abstraction of water providing less than an average of 10 m³ per day, or,
 - points for the abstraction of water intended for human consumption providing less than an average of 10 m³ per day or serving less than 50 persons,
- (b) the annual average rates of abstraction from such points,
- (c) the chemical composition of water abstracted from the groundwater body,
- (d) the location of points in the groundwater body into which water is directly discharged,
- (e) the rates of discharge at such points,
- (f) the chemical composition of discharges to the groundwater body, and
- (g) land use in the catchment or catchments from which the groundwater body receives its recharge, including pollutant inputs and anthropogenic alterations to the recharge characteristics such as rainwater and run-off diversion through land sealing, artificial recharge, damming or drainage.

2.4. Review of the impact of changes in groundwater levels

The River Basin Council shall also identify those bodies of groundwater for which lower objectives are to be specified under Annex III of this Decision including as a result of consideration of the effects of the status of the body on:

- (i) surface water and associated terrestrial ecosystems;
- (ii) water regulation, flood protection and land drainage;
- (iii) human development.

2.5. Review of the impact of pollution on groundwater quality

The River Basin Council shall identify those bodies of groundwater for which lower objectives are to be specified under Annex III of this Decision where, as a result of the impact of human activity, as determined in accordance with Paragraph 25 to this Decision, the body of groundwater is so polluted that achieving good groundwater chemical status is infeasible or disproportionately expensive.

Annex II : Minimum Contents of River Basin District Management Plans

A. River Basin District Management Plans shall cover the following elements:

1. A general description of the characteristics of the river basin district required under Paragraph 25 and Annex I.

This shall include:

- 1.1. For surface waters:

- mapping of the location and boundaries of water bodies,
- mapping of the eco-regions and surface water body types within the river basin,
- identification of reference conditions for the surface water body types;

- 1.2. For groundwaters:

- mapping of the location and boundaries of groundwater bodies;
- a list of relevant threshold values, including any changes to the list from previous versions of the river basin district management plan;
- a summary of the assessment of groundwater chemical status;
- an explanation as to the manner in which exceedances of groundwater quality standards or threshold values at individual monitoring points have been taken into account;
- a summary of the way in which threshold values were established. In particular this will include, where feasible;

- (a) information on the number of bodies or groups of bodies of groundwater characterised as being at risk and on the pollutants and indicators of pollution which contribute to this classification, including the observed concentrations/ values;
- (b) information on each of the bodies of groundwater characterised as being at risk, in particular the size of the bodies, the relationship between the bodies of groundwater and the associated surface waters and directly dependent terrestrial ecosystems, and, in the case of naturally-occurring substances, the natural background levels in the bodies of groundwater;
- (c) the threshold values, whether they apply at the national level, at the level of the river basin district or the part of the international river basin district falling within the territory of Albania, or at the level of a body or a group of bodies of groundwater;
- (d) the relationship between the threshold values and:
 - (i) in the case of naturally-occurring substances, the observed background levels,
 - (ii) the environmental quality objectives and other standards for water protection that exist at national, Community or international level, and
 - (iii) any relevant information concerning the toxicology, eco-toxicology, persistence, bioaccumulation potential, and dispersion tendency of the pollutants.

2. A summary of significant pressures and impact of human activity on the status of surface water and groundwater, including:

- estimation of point source pollution,
- estimation of diffuse source pollution, including a summary of land use,
- estimation of pressures on the quantitative status of water including abstractions,
- analysis of other impacts of human activity on the status of water;

3. Identification and mapping of protected areas as required by Article xxxxx of the Law "On Water Management";

4. A map of the monitoring networks established for the purposes of Part 4 and Annex V of this Decision, and a presentation in map form of the results of the monitoring programmes carried out under those provisions for the status of:
 - 4.1. Surface water (ecological and chemical);
 - 4.2. Groundwater (chemical and quantitative);
 - 4.3. Protected areas;
5. A list of the environmental objectives established under Annex III for surface waters, groundwaters and protected areas, including in particular identification of instances where use has been made of paragraphs (4), (5), (6) and (7), and the associated information required under that Annex;
6. A summary of the economic analysis of water use as required by Paragraph 27;
7. A summary of the programme or programmes of measures adopted under Annex IV, including the ways in which the objectives established under Annex III are thereby to be achieved;
 - 7.1. A summary of the measures required to implement the legislation for the protection of water;
 - 7.2. A report on the practical steps and measures taken to apply the principle of recovery of the costs of water use in accordance with Article xxxx of the Law "On Water Management";
 - 7.3. A summary of the measures taken to meet the requirements of Articles xxxxx of the Law "On Water Management" on water used for the abstraction of drinking water;
 - 7.4. A summary of the controls on abstraction and impoundment of water, including reference to the registers and identifications of the cases where exemptions have been made under Annex IV (3)(e);
 - 7.5. A summary of the controls adopted for point source discharges and other activities with an impact on the status of water in accordance with the provisions of Annex IV (3)(g) and 11(3)(i);
 - 7.6. An identification of the cases where direct discharges to groundwater have been authorised in accordance with the provisions of Annex IV (3)(j);
 - 7.7. A summary of the measures taken against pollution of water by priority substances as defined in Article xxx of the Law "On Water Management";
 - 7.8. A summary of the measures taken to prevent or reduce the impact of accidental pollution incidents;
 - 7.9. A summary of the measures taken under Annex IV(5) for bodies of water which are unlikely to achieve the objectives set out under Annex III;
 - 7.10. Details of the supplementary measures identified as necessary in order to meet the environmental objectives established;
 - 7.11. Details of the measures taken to avoid increase in pollution of marine waters in accordance with Annex IV (6);
8. A register of any more detailed programmes and management plans for the river basin district dealing with particular sub-basins, sectors, issues or water types, together with a summary of their contents;
9. A summary of the public information and consultation measures taken, their results and the changes to the plan made as a consequence;
10. A list of the relevant competent authorities for water management;
11. The contact points and procedures for obtaining the background documentation and information referred to in Part 2 Chapter 3 of this Decision, and in particular details of the control measures adopted in accordance with Annex IV(3)(g) and (3)(i) and of the actual monitoring data gathered in accordance with Part 4 and Annex V.

B. The first update of the River Basin District Management Plan and all subsequent updates shall also include:

1. A summary of any changes or updates since the publication of the previous version of the River Basin District Management Plan, including a summary of the reviews to be carried out under Annex III (4), (5), (6) and (7);
2. An assessment of the progress made towards the achievement of the environmental objectives, including presentation of the monitoring results for the period of the previous plan in map form, and an explanation for any environmental objectives which have not been reached;

3. A summary of, and an explanation for, any measures foreseen in the earlier version of the river basin district management plan which have not been undertaken;
4. A summary of any additional interim measures adopted under Annex IV(5) since the publication of the previous version of the River Basin District Management Plan.

Annex III Environmental Objectives

1. In making operational the programmes of measures specified in the River Basin District Management Plans, the relevant River Basin Council shall:-

(a) for surface waters:

- (i) implement the necessary measures to prevent deterioration of the status of all bodies of surface water, subject to the application of paragraphs 6 and 7 and without prejudice to paragraph 8;
- (ii) protect, enhance and restore all bodies of surface water, subject to the application of subparagraph (iii) for artificial and heavily modified bodies of water, with the aim of achieving good surface water status at the latest by the end of 2015, in accordance with the provisions laid down in Annex V, subject to the application of extensions determined in accordance with paragraph 4 and to the application of paragraphs 5, 6 and 7 without prejudice to paragraph 8;
- (iii) protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential and good surface water chemical status at the latest by the end of 2015, in accordance with the provisions laid down in Annex V, subject to the application of extensions determined in accordance with paragraph 4 and to the application of paragraphs 5, 6 and 7 without prejudice to paragraph 8;
- (iv) implement the necessary measures with the aim of progressively reducing pollution from priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances.

(b) for groundwater:

- (i) implement the measures necessary to prevent or limit the input of pollutants into groundwater and to prevent the deterioration of the status of all bodies of groundwater, subject to the application of paragraphs 6 and 7 and without prejudice to paragraph 8 and subject to the restrictions on direct discharges of pollutants into groundwater as set out in Annex IV(3)(j);
- (ii) protect, enhance and restore all bodies of groundwater, ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater status at the latest by the end of 2015, in accordance with the provisions laid down in Annex V, subject to the application of extensions determined in accordance with paragraph 4 and to the application of paragraphs 5, 6 and 7 without prejudice to paragraph 8 and subject to the restrictions on direct discharges of pollutants into groundwater as set out in Annex IV(3)(j);
- (iii) implement the measures necessary to reverse any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order progressively to reduce pollution of groundwater.

(c) for protected areas:

(i) achieve compliance with any standards and objectives at the latest by the end of 2015, unless otherwise specified in the legislation under which the individual protected areas have been established.

2. Where more than one of the objectives under paragraph 1 relates to a given body of water, the most stringent shall apply.

3. The relevant River Basin Council may designate a body of surface water as artificial or heavily modified, when:-

(a) the changes to the hydromorphological characteristics of that body which would be necessary for achieving good ecological status would have significant adverse effects on:

(i) the wider environment;

(ii) navigation, including port facilities, or recreation;

(iii) activities for the purposes of which water is stored, such as drinking-water supply, power generation or irrigation;

(iv) water regulation, flood protection, land drainage; or

(v) other equally important sustainable human development activities.

(b) the beneficial objectives served by the artificial or modified characteristics of the water body cannot, for reasons of technical feasibility or disproportionate costs, reasonably be achieved by other means, which are a significantly better environmental option.

(c) Such designation and the reasons for it shall be specifically mentioned in the river basin district management plans and reviewed every six years.

4. The deadlines established under paragraph 1 may be extended for the purposes of phased achievement of the objectives for bodies of water, provided that no further deterioration occurs in the status of the affected body of water when all of the following conditions are met:

(a) The relevant River Basin Council determine that all necessary improvements in the status of bodies of water cannot reasonably be achieved within the timescales set out in that paragraph for at least one of the following reasons:

(i) the scale of improvements required can only be achieved in phases exceeding the timescale, for reasons of technical feasibility;

- (ii) completing the improvements within the timescale would be disproportionately expensive;
 - (iii) natural conditions do not allow timely improvement in the status of the body of water.
- (b) Extension of the deadline, and the reasons for it, are specifically set out and explained in the river basin district management plan.
- (c) Extensions shall be limited to a maximum of two further updates of the river basin district management plan except in cases where the natural conditions are such that the objectives cannot be achieved within this period.
- (d) A summary of the programme of measures required under Paragraph 58 which are envisaged as necessary to bring the bodies of water progressively to the required status by the extended deadline, the reasons for any significant delay in making these measures operational, and the expected timetable for their implementation are set out in the river basin district management plan. A review of these measures and a summary of any additional measures shall be included in the updates of the river basin district management plan.

5. The relevant River Basin Council may aim to achieve less stringent environmental objectives than those required under paragraph 1 for specific bodies of water when they are so affected by human activity, as determined in accordance with Paragraph 25, or their natural condition is such that the achievement of these objectives would be infeasible or disproportionately expensive, and all the following conditions are met:

- (a) the environmental and socioeconomic needs served by such human activity cannot be achieved by other means, which are a significantly better environmental option not entailing disproportionate costs;
- (b) The relevant River Basin Council ensure,
 - (i) 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,
 - (ii) 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 district management plan and those objectives are reviewed every six years.

6. Temporary deterioration in the status of bodies of water shall not be in breach of the requirements of this Decision if this is the result of circumstances of natural cause or *force majeure* which are exceptional or could not reasonably have been foreseen, in particular extreme floods and prolonged droughts, or the result of circumstances due to accidents which could not reasonably have been foreseen, when all of the following conditions have been met:

(a) all practicable steps are taken to prevent further deterioration in status and in order not to compromise the achievement of the objectives of the Law “On Water Management” and of this Decision in other bodies of water not affected by those circumstances;

(b) the conditions under which circumstances that are exceptional or that could not reasonably have been foreseen may be declared, including the adoption of the appropriate indicators, are stated in the river basin district management plan;

(c) the measures to be taken under such exceptional circumstances are included in the programme of measures and will not compromise the recovery of the quality of the body of water once the circumstances are over;

(d) the effects of the circumstances that are exceptional or that could not reasonably have been foreseen are reviewed annually and, subject to the reasons set out in paragraph 4(a), all practicable measures are taken with the aim of restoring the body of water to its status prior to the effects of those circumstances as soon as reasonably practicable, and

(e) a summary of the effects of the circumstances and of such measures taken or to be taken in accordance with paragraphs 6(a) and 6(d) are included in the next update of the river basin district management plan.

7. There shall not be a breach of this Decision when:

(a) failure to achieve good groundwater status, good ecological status or, where relevant, good ecological potential or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body or alterations to the level of bodies of groundwater, or

(b) failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities

and all the following conditions are met:

(i) all practicable steps are taken to mitigate the adverse impact on the status of the body of water;

(ii) the reasons for those modifications or alterations are specifically set out and explained in the river basin district management plan and the objectives are reviewed every six years;

(iii) the reasons for those modifications are of overriding public interest and/or the benefits to the environment and to society of achieving the objectives set out in paragraph 1 are outweighed by the benefits of the new modifications or alterations to human health, to the maintenance of human safety or to sustainable development, and

(iv) the beneficial objectives served by those modifications or alterations of the water body cannot for reasons of technical feasibility or disproportionate cost be achieved by other means, which are a significantly better environmental option.

8. The relevant River Basin Council shall ensure that the application of paragraphs 3, 4, 5, 6 and 7 does not permanently exclude or compromise the achievement of the objectives of this Decision in other bodies of water within the same river basin district and is consistent with the implementation of other environmental legislation.

Annex IV Programme of measures

Part 1 Basic measures

Basic measures are the minimum requirements to be complied with and shall consist of:

1. Those measures required to implement legislation on the protection of water, including measures required under legislation:
 - (a) On drinking water
 - (b) On bathing waters
 - (c) On the discharge of dangerous substances to water
 - (d) On integrated pollution prevention and control
 - (e) On the control of major-accident hazards involving dangerous substances
 - (f) On urban waste water treatment
 - (g) On sewage sludge
 - (h) On the protection of waters against pollution caused by nitrates from agricultural sources
 - (i) On plant protection products
 - (j) On the protection of wild birds
 - (k) On the protection of habitats
 - (l) On environmental impact assessment
2. Those measures necessary for the purposes of implementing the principle of recovery of costs for water services pursuant to Article xxx of the Law “On Water Management”.
3. Those measures necessary to promote an efficient and sustainable water use in order to avoid compromising the attainment of the environmental objectives specified in Annex III

of this Decision.

4. Those measures necessary to protect all bodies of water used for the abstraction of drinking water providing more than 10m³ a day as an average or serving more than 50 persons, and all bodies of water intended for such future use.
5. Those measures necessary to safeguard water quality in order to reduce the level of purification treatment required for the production of drinking water.
6. Controls over the abstraction of fresh surface water and groundwater, and impoundment of fresh surface water
7. Controls over artificial recharge or augmentation of groundwater bodies.
8. Controls over point source discharges liable to cause pollution.
9. Controls over diffuse sources liable to cause pollution
10. Controls over any other significant adverse impacts on the status of water identified under Chapter 2 Part1 and Annex I of this Decision, in particular measures to ensure that the hydro-morphological conditions of the bodies of water are consistent with the achievement of the required ecological status or good ecological potential for bodies of water designated as artificial or heavily modified.
11. A prohibition of direct discharges of pollutants into water subject to the following provisions:
 - (a) The National Environment Agency, upon agreement of the relevant River Basin Council, may authorise re-injection into the same aquifer of water used for geothermal purposes
 - (b) Provided that such discharges do not compromise the attainment of the environmental objectives established for that particular body of groundwater, the National Environment Agency, upon agreement of the relevant River Basin Council may authorise, subject to specified conditions;
 - i. injection of water containing substances resulting from the operations for exploration and extraction of hydrocarbons or mining activities, and injection of water for technical reasons, into geological formations from which hydrocarbons or other substances have been extracted or into geological formations which for natural reasons are permanently unsuitable for other purposes. Such injections shall not contain substances other than those resulting from the above operations,

- ii. re-injection of pumped groundwater from mines and quarries or associated with the construction or maintenance of civil engineering works,
 - iii. injection of natural gas or liquefied petroleum gas (LPG) for storage purposes into geological formations which for natural reasons are permanently unsuitable for other purposes,
 - iv. injection of carbon dioxide streams for storage purposes into geological formations which for natural reasons are permanently unsuitable for other purposes, provided that such injection is in accordance with the specific legislation on the geological storage of carbon dioxide,
 - v. injection of natural gas or liquefied petroleum gas (LPG) for storage purposes into other geological formations where there is an overriding need for security of gas supply, and where the injection is such as to prevent any present or future danger of deterioration in the quality of any receiving groundwater,
 - vi. construction, civil engineering and building works and similar activities on, or in the ground which come into contact with groundwater,
 - vii. discharges of small quantities of substances for scientific purposes for characterisation, protection or remediation of water bodies limited to the amount strictly necessary for the purposes concerned.
12. Measures to eliminate pollution of surface waters by priority substances as defined in Article xxx of the Law “On Water Management” and to progressively reduce pollution of other substances which would otherwise prevent the attainment of the environmental objectives for the bodies of water as set out in Annex III of this Decision.
 13. Any measures required to prevent significant losses of pollutants from technical installations, and to prevent and/or to reduce the impact of accidental pollution incidents for example as a result of floods, including through systems to detect or give warning of such events including, in the case of accidents which could not reasonably have been foreseen, all appropriate measures to reduce the risk to aquatic ecosystems.
 14. Measures necessary to prevent inputs into groundwater of any hazardous substances.
 15. Measures necessary to limit inputs of non-hazardous pollutants which are considered to present an existing or potential risk of pollution of groundwater, so as to ensure that such inputs do not cause deterioration or significant and sustained upward trends in the concentrations of pollutants in groundwater. Such measures shall take account, at least, of established best practice, including the Best Environmental Practice and Best Available Techniques.

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16. The National Environment Agency, upon agreement of the relevant River Basin Council, may exempt from the measures listed in paragraphs 14 and 15 above inputs of pollutants that are:
- i. considered by the relevant River Basin Council to be of a quantity and concentration so small as to obviate any present or future danger of deterioration in the quality of the receiving groundwater;
 - ii. the consequences of accidents or exceptional circumstances of natural cause that could not reasonably have been foreseen, avoided or mitigated;
 - iii. the result of artificial recharge or augmentation of bodies of groundwater authorised in accordance with paragraph 11 above;
 - iv. in the view of the relevant River Basin Council incapable, for technical reasons, of being prevented or limited without using:
 1. measures that would increase risks to human health or to the quality of the environment as a whole; or
 2. disproportionately costly measures to remove quantities of pollutants from, or otherwise control their percolation in, contaminated ground or subsoil; or
 - v. the result of interventions in surface waters for the purposes, amongst others, of mitigating the effects of floods and droughts, and for the management of waters and waterways, including at international level. Such activities, including cutting, dredging, relocation and deposition of sediments in surface water, shall be conducted in accordance with general binding rules, and, where applicable, with permits and authorisations issued on the basis of such rules, developed by the Ministry for that purpose, provided that such inputs do not compromise the achievement of the environmental objectives established for the water bodies concerned in accordance with Annex III.

The exemptions provided for in points (i) to (v) may be used only where the relevant River Basin Council has established that efficient monitoring of the bodies of groundwater concerned, in accordance with point 2.4.2 of Annex V, or other appropriate monitoring, is being carried out.

17. The National Environment Agency and the relevant River Basin Council shall keep an inventory of the exemptions referred to in paragraph 16.
18. Inputs of pollutants from diffuse sources of pollution having an impact on the groundwater chemical status shall be taken into account whenever technically possible.

Part 2 Supplementary measures

Supplementary measures are those measures designed and implemented in addition to the basic measures with the aim of achieving the environmental objectives established pursuant to Annex III.

The following is a non-exclusive list of supplementary measures that may be adopted within each river basin district:

1. emission controls
2. codes of good practice

3. recreation and restoration of wetlands areas
4. abstraction controls
5. demand management measures, including, promotion of adapted agricultural production such as low water requiring crops in areas affected by drought
6. efficiency and re-use measures, including, promotion of water-efficient technologies in industry and water-saving irrigation techniques
7. construction projects
8. desalination plants
9. rehabilitation projects
10. artificial recharge of aquifers
11. educational projects
12. research, development and demonstration projects
13. other relevant measures in order to provide for additional protection or improvement of waters
14. other relevant measures for the implementation of relevant international agreements.

Annex V: Water Status; Classification and Monitoring

1. SURFACE WATER STATUS
 - 1.1. Quality elements for the classification of ecological status
 - 1.1.1. Rivers
 - 1.1.2. Lakes
 - 1.1.3. Transitional waters
 - 1.1.4. Coastal waters
 - 1.1.5. Artificial and heavily modified surface water bodies
 - 1.2. Normative definitions of ecological status classifications
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 - 1.2.2. Definitions for high, good and moderate ecological status in lakes
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 - 1.3.1. Design of surveillance monitoring
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 - 1.3.4. Frequency of monitoring
 - 1.3.5. Additional monitoring requirements for protected areas
 - 1.3.6. Standards for monitoring of quality elements
 - 1.4. Classification and presentation of ecological status
 - 1.4.1. Comparability of biological monitoring results
 - 1.4.2. Presentation of monitoring results and classification of ecological status and ecological potential
 - 1.4.3. Presentation of monitoring results and classification of chemical status
2. GROUNDWATER
 - 2.1. Groundwater quantitative status
 - 2.1.1. Parameter for the classification of quantitative status
 - 2.1.2. Definition of quantitative status
 - 2.2. Monitoring of groundwater quantitative status
 - 2.2.1. Groundwater level monitoring network
 - 2.2.2. Density of monitoring sites
 - 2.2.3. Monitoring frequency

- 2.2.4. Interpretation and presentation of groundwater quantitative status
- 2.3. Groundwater chemical status
 - 2.3.1. Parameters for the determination of groundwater chemical status
 - 2.3.2. Definition of good groundwater chemical status
- 2.4. Monitoring of groundwater chemical status
 - 2.4.1. Groundwater monitoring network
 - 2.4.2. Surveillance monitoring
 - 2.4.3. Operational monitoring
 - 2.4.4. Identification of trends in pollutants
 - 2.4.5. Interpretation and presentation of groundwater chemical status
- 2.5. Presentation of groundwater status

1. SURFACE WATER STATUS

1.1. Quality elements for the classification of ecological status

1.1.1. Rivers

(a) Biological elements

Composition and abundance of aquatic flora

Composition and abundance of benthic invertebrate fauna

Composition, abundance and age structure of fish fauna

(b) Hydromorphological elements supporting the biological elements

Hydrological regime

quantity and dynamics of water flow

connection to groundwater bodies

River continuity

Morphological conditions

river depth and width variation

structure and substrate of the river bed

structure of the riparian zone

(c) Chemical and physico-chemical elements supporting the biological elements

(i) General

Thermal conditions

Oxygenation conditions

Salinity

Acidification status

Nutrient conditions

(ii) Specific pollutants

Pollution by all priority substances identified as being discharged into the body of water

Pollution by other substances identified as being discharged in significant quantities into the body of water

1.1.2. Lakes

(a) Biological elements

Composition, abundance and biomass of phytoplankton

Composition and abundance of other aquatic flora

Composition and abundance of benthic invertebrate fauna

Composition, abundance and age structure of fish fauna

(b) Hydromorphological elements supporting the biological elements

Hydrological regime

quantity and dynamics of water flow

residence time

connection to the groundwater body

Morphological conditions

lake depth variation

quantity, structure and substrate of the lake bed

structure of the lake shore

(c) Chemical and physico-chemical elements supporting the biological elements

(i) General

Transparency

Thermal conditions

Oxygenation conditions

Salinity

Acidification status

Nutrient conditions

(ii) Specific pollutants

Pollution by all priority substances identified as being discharged into the body of water

Pollution by other substances identified as being discharged in significant quantities into the body of water

1.1.3. Transitional waters

(a) Biological elements

Composition, abundance and biomass of phytoplankton

Composition and abundance of other aquatic flora

Composition and abundance of benthic invertebrate fauna

Composition and abundance of fish fauna

(b) Hydro-morphological elements supporting the biological elements

Morphological conditions

depth variation

quantity, structure and substrate of the bed

structure of the intertidal zone

Tidal regime

freshwater flow

wave exposure

(c) Chemical and physico-chemical elements supporting the biological elements

(i) General

Transparency

Thermal conditions

Oxygenation conditions

Salinity

Nutrient conditions

(ii) Specific pollutants

Pollution by all priority substances identified as being discharged into the body of water

Pollution by other substances identified as being discharged in significant quantities into the body of water

1.1.4. Coastal waters

(a) Biological elements

Composition, abundance and biomass of phytoplankton

Composition and abundance of other aquatic flora

Composition and abundance of benthic invertebrate fauna

(b) Hydromorphological elements supporting the biological elements

Morphological conditions

depth variation

structure and substrate of the coastal bed

structure of the intertidal zone

Tidal regime

direction of dominant currents

wave exposure

(c) Chemical and physico-chemical elements supporting the biological elements

(i) General

Transparency

Thermal conditions

Oxygenation conditions

Salinity

Nutrient conditions

(ii) Specific pollutants

Pollution by all priority substances identified as being discharged into the body of water

Pollution by other substances identified as being discharged in significant quantities into the body of water

1.1.5. Artificial and heavily modified surface water bodies

The quality elements applicable to artificial and heavily modified surface water bodies shall be those applicable to whichever of the four natural surface water categories above most closely resembles the heavily modified or artificial water body concerned.

1.2. Normative definitions of ecological status classifications

Table 1.2. General definition for rivers, lakes, transitional waters and coastal waters

The following text provides a general definition of ecological quality. For the purposes of classification the values for the quality elements of ecological status for each surface water category are those given in tables 1.2.1 to 1.2.4 below.

| Element | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|---------|---|---|---|--|--|
| General | <p>There are no, or only very minor, anthropogenic alterations to the values of the physico-chemical and hydromorphological quality elements for the surface water body type from those normally associated with that type under undisturbed conditions.</p> <p>The values of the biological quality elements for the surface water body reflect those normally associated with that type under undisturbed conditions, and show no, or only very minor, evidence of distortion.</p> <p>These are the type-specific conditions and communities.</p> | <p>The values of the biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions.</p> | <p>The values of the biological quality elements for the surface water body type deviate moderately from those normally associated with the surface water body type under undisturbed conditions. The values show moderate signs of distortion resulting from human activity and are significantly more disturbed than under conditions of good status.</p> | <p>Waters showing evidence of major alterations to the values of the biological quality elements for the surface water body type and in which the relevant biological communities deviate substantially from those normally associated with the surface water body type under undisturbed conditions, shall be classified as poor.</p> | <p>Waters showing evidence of severe alterations to the values of the biological quality elements for the surface water body type and in which large portions of the relevant biological communities normally associated with the surface water body type under undisturbed conditions are absent, shall be classified as bad.</p> |

Table 1.2.1 Definitions for high, good, moderate, poor and bad ecological status in rivers

1.2.1.1 Biological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|------------------------------|---|---|--|-------------|------------|
| Phytoplankton | <p>The taxonomic composition of phytoplankton corresponds totally or nearly totally to undisturbed conditions. The average phytoplankton abundance is wholly consistent with the type-specific physico-chemical conditions and is not such as to significantly alter the type-specific transparency conditions. Planktonic blooms occur at a frequency and intensity which is consistent with the type-specific physico-chemical conditions</p> | <p>There are slight changes in the composition and abundance of planktonic taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of algae resulting in undesirable disturbances to the balance of organisms present in the water body or to the physico-chemical quality of the water or sediment. A slight increase in the frequency and intensity of the type-specific planktonic blooms may occur.</p> | <p>The composition of planktonic taxa differs moderately from the type-specific communities. Abundance is moderately disturbed and may be such as to produce a significant undesirable disturbance in the values of other biological and physico-chemical quality elements. A moderate increase in the frequency and intensity of planktonic blooms may occur. Persistent blooms may occur during summer months.</p> | | |
| Macrophytes and phytobenthos | <p>The taxonomic composition corresponds totally or nearly totally to undisturbed conditions. There are no detectable changes in the average macrophytic and the average phytobenthic abundance.</p> | <p>There are slight changes in the composition and abundance of macrophytic and phytobenthic taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of phytobenthos or higher forms of plant life resulting in undesirable disturbances to the balance of organisms present in the water body or to the</p> | <p>The composition of macrophytic and phytobenthic taxa differs moderately from the type-specific community and is significantly more distorted than at good status. Moderate changes in the average macrophytic and the average phytobenthic abundance are evident. The phytobenthic community may be interfered with and, in some areas, displaced by bacterial</p> | | |

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| | | physico-chemical quality of the water or sediment. The phytobenthic community is not adversely affected by bacterial tufts and coats present due to anthropogenic activity. | tufts and coats present as a result of anthropogenic activities. | | |
| Benthic invertebrate fauna | The taxonomic composition and abundance correspond totally or nearly totally to undisturbed conditions. The ratio of disturbance sensitive taxa to insensitive taxa shows no signs of alteration from undisturbed levels. The level of diversity of invertebrate taxa shows no sign of alteration from undisturbed levels. | There are slight changes in the composition and abundance of invertebrate taxa from the type-specific communities. The ratio of disturbance-sensitive taxa to insensitive taxa shows slight alteration from type-specific levels. The level of diversity of invertebrate taxa shows slight signs of alteration from type-specific levels. | The composition and abundance of invertebrate taxa differ moderately from the type-specific communities. Major taxonomic groups of the type-specific community are absent. The ratio of disturbance-sensitive taxa to insensitive taxa, and the level of diversity, are substantially lower than the type-specific level and significantly lower than for good status. | | |
| Fish fauna | Species composition and abundance correspond totally or nearly totally to undisturbed conditions. All the type-specific disturbance-sensitive species are present. The age structures of the fish communities show little sign of anthropogenic disturbance and are not indicative of a failure in the reproduction or development of any particular species. | There are slight changes in species composition and abundance from the type-specific communities attributable to anthropogenic impacts on physico-chemical and hydromorphological quality elements. The age structures of the fish communities show signs of disturbance attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements, and, in a few | The composition and abundance of fish species differ moderately from the type-specific communities attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements. The age structure of the fish communities shows major signs of anthropogenic disturbance, to the extent that a moderate proportion of the type specific species are absent or of very low abundance. | | |

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| | | instances, are indicative of a failure in the reproduction or development of a particular species, to the extent that some age classes may be missing. | | | |
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1.2.1.2 Hydromorphological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------------|--|---|---|-------------|------------|
| Hydrological regime | The quantity and dynamics of flow, and the resultant connection to groundwaters, reflect totally, or nearly totally, undisturbed conditions | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| River continuity | The continuity of the river is not disturbed by anthropogenic activities and allows undisturbed migration of aquatic organisms and sediment transport | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| Morphological conditions | Channel patterns, width and depth variations, flow velocities, substrate conditions and both the structure and condition of the riparian zones correspond totally or nearly totally to undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

1.2.1.3 Physio-chemical elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|-----------------------------------|---|--|--|-------------|------------|
| General conditions | <p>The values of the physico-chemical elements correspond totally or nearly totally to undisturbed conditions.</p> <p>Nutrient concentrations remain within the range normally associated with undisturbed conditions. Levels of salinity, pH, oxygen balance, acid neutralising capacity and temperature do not show signs of anthropogenic disturbance and remain within the range normally associated with undisturbed conditions.</p> | <p>Temperature, oxygen balance, pH, acid neutralising capacity and salinity do not reach levels outside the range established so as to ensure the functioning of the type specific ecosystem and the achievement of the values specified above for the biological quality elements. Nutrient concentrations do not exceed the levels established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements.</p> | <p>Conditions consistent with the achievement of the values specified above for the biological quality elements.</p> | | |
| Specific synthetic pollutants | <p>Concentrations close to zero and at least below the limits of detection of the most advanced analytical techniques in general use.</p> | <p>Concentrations not in excess of the environmental quality norms</p> | <p>Conditions consistent with the achievement of the values specified above for the biological quality elements</p> | | |
| Specific non-synthetic pollutants | <p>Concentrations remain within the range normally associated with undisturbed conditions (background levels).</p> | <p>Concentrations not in excess of the environmental quality norms</p> | <p>Conditions consistent with the achievement of the values specified above for the biological quality elements</p> | | |

Table 1.2.2 Definitions for high, good, moderate, poor and bad ecological status in lakes

1.2.2.1 Biological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|------------------------------|--|--|---|-------------|------------|
| Phytoplankton | <p>The taxonomic composition and abundance of phytoplankton correspond totally or nearly totally to undisturbed conditions. The average phytoplankton biomass is consistent with the type-specific physico-chemical conditions and is not such as to significantly alter the type-specific transparency conditions. Planktonic blooms occur at a frequency and intensity which is consistent with the type specific physico-chemical conditions.</p> | <p>There are slight changes in the composition and abundance of planktonic taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of algae resulting in undesirable disturbance to the balance of organisms present in the water body or to the physico-chemical quality of the water or sediment. A slight increase in the frequency and intensity of the type specific planktonic blooms may occur.</p> | <p>The composition and abundance of planktonic taxa differ moderately from the type-specific communities. Biomass is moderately disturbed and may be such as to produce a significant undesirable disturbance in the condition of other biological quality elements and the physico-chemical quality of the water or sediment. A moderate increase in the frequency and intensity of planktonic blooms may occur. Persistent blooms may occur during summer months.</p> | | |
| Macrophytes and phytobenthos | <p>The taxonomic composition corresponds totally or nearly totally to undisturbed conditions. There are no detectable changes in the average macrophytic and the average phytobenthic abundance.</p> | <p>There are slight changes in the composition and abundance of macrophytic and phytobenthic taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of phytobenthos or higher forms of plant life resulting in undesirable disturbance to the balance of organisms present in the water body or to the physico-chemical quality of the water.</p> | <p>The composition of macrophytic and phytobenthic taxa differ moderately from the type-specific communities and are significantly more distorted than those observed at good quality. Moderate changes in the average macrophytic and the average phytobenthic abundance are evident. The phytobenthic community may be interfered with, and, in some</p> | | |

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|----------------------------|--|---|---|--|--|
| | | The phytobenthic community is not adversely affected by bacterial tufts and coats present due to anthropogenic activity. | areas, displaced by bacterial tufts and coats present as a result of anthropogenic activities. | | |
| Benthic invertebrate fauna | <p>The taxonomic composition and abundance correspond totally or nearly totally to the undisturbed conditions.</p> <p>The ratio of disturbance sensitive taxa to insensitive taxa shows no signs of alteration from undisturbed levels.</p> <p>The level of diversity of invertebrate taxa shows no sign of alteration from undisturbed levels.</p> | <p>There are slight changes in the composition and abundance of invertebrate taxa compared to the type-specific communities.</p> <p>The ratio of disturbance sensitive taxa to insensitive taxa shows slight signs of alteration from type-specific levels.</p> <p>The level of diversity of invertebrate taxa shows slight signs of alteration from type-specific levels</p> | <p>The composition and abundance of invertebrate taxa differ moderately from the type-specific conditions. Major taxonomic groups of the type-specific community are absent.</p> <p>The ratio of disturbance sensitive to insensitive taxa, and the level of diversity, are substantially lower than the type-specific level and significantly lower than for good status.</p> | | |
| Fish fauna | <p>Species composition and abundance correspond totally or nearly totally to undisturbed conditions.</p> <p>All the type-specific sensitive species are present.</p> <p>The age structures of the fish communities show little sign of anthropogenic disturbance and are not indicative of a failure in the reproduction or development of a particular species.</p> | <p>There are slight changes in species composition and abundance from the type-specific communities attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements.</p> <p>The age structures of the fish communities show signs of disturbance attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements, and, in a few instances, are indicative of a failure in the reproduction or</p> | <p>The composition and abundance of fish species differ moderately from the type-specific communities attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements.</p> <p>The age structure of the fish communities shows major signs of disturbance, attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements, to the extent that a moderate proportion of the type</p> | | |

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| | | development of a particular species, to the extent that some age classes may be missing. | specific species are absent or of very low abundance. | | |
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1.2.2.2 Hydromorphological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------------|--|---|---|-------------|------------|
| Hydrological regime | The quantity and dynamics of flow, level, residence time, and the resultant connection to groundwaters, reflect totally or nearly totally undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| Morphological conditions | Lake depth variation, quantity and structure of the substrate, and both the structure and condition of the lake shore zone correspond totally or nearly totally to undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |

1.2.2.3 Physico-chemical quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------|---|---|---|-------------|------------|
| General conditions | The values of the physico-chemical elements correspond totally or nearly totally to undisturbed conditions. | Temperature, oxygen balance, pH, acid neutralising capacity, transparency and salinity do not reach levels outside the range established so as to | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

| | | | | | |
|-----------------------------------|---|---|--|--|--|
| | Nutrient concentrations remain within the range normally associated with undisturbed conditions. Levels of salinity, pH, oxygen balance, acid neutralising capacity, transparency and temperature do not show signs of anthropogenic disturbance and remain within the range normally associated with undisturbed conditions. | ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. Nutrient concentrations do not exceed the levels established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. | | | |
| Specific synthetic pollutants | Concentrations close to zero and at least below the limits of detection of the most advanced analytical techniques in general use. | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |
| Specific non-synthetic pollutants | Concentrations remain within the range normally associated with undisturbed conditions (background levels). | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |

Table 1.2.3 Definitions for high, good, moderate, poor and bad ecological status in transitional waters

1.2.3.1 Biological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|---------------|--|---|---|-------------|------------|
| Phytoplankton | The composition and abundance of the phytoplanktonic taxa are consistent with undisturbed conditions. The average phytoplankton | There are slight changes in the composition and abundance of phytoplanktonic taxa. There are slight changes in biomass compared to the | The composition and abundance of phytoplanktonic taxa differ moderately from type-specific conditions. Biomass is moderately | | |

| | | | | | |
|-------------|---|--|---|--|--|
| | <p>biomass is consistent with the type-specific physico-chemical conditions and is not such as to significantly alter the type-specific transparency conditions. Planktonic blooms occur at a frequency and intensity which is consistent with the type specific physico-chemical conditions.</p> | <p>type-specific conditions. Such changes do not indicate any accelerated growth of algae resulting in undesirable disturbance to the balance of organisms present in the water body or to the physico-chemical quality of the water. A slight increase in the frequency and intensity of the type specific planktonic blooms may occur.</p> | <p>disturbed and may be such as to produce a significant undesirable disturbance in the condition of other biological quality elements. A moderate increase in the frequency and intensity of planktonic blooms may occur. Persistent blooms may occur during summer months.</p> | | |
| Macroalgae | <p>The composition of macroalgal taxa is consistent with undisturbed conditions. There are no detectable changes in macroalgal cover due to anthropogenic activities.</p> | <p>There are slight changes in the composition and abundance of macroalgal taxa compared to the type-specific communities. Such changes do not indicate any accelerated growth of phytobenthos or higher forms of plant life resulting in undesirable disturbance to the balance of organisms present in the water body or to the physico-chemical quality of the water.</p> | <p>The composition of macroalgal taxa differs moderately from type-specific conditions and is significantly more distorted than at good quality. Moderate changes in the average macroalgal abundance are evident and may be such as to result in an undesirable disturbance to the balance of organisms present in the water body.</p> | | |
| Angiosperms | <p>The taxonomic composition corresponds totally or nearly totally to undisturbed conditions. There are no detectable changes in angiosperm abundance due to anthropogenic activities.</p> | <p>There are slight changes in the composition of angiosperm taxa compared to the type-specific communities. Angiosperm abundance shows slight signs of disturbance.</p> | <p>The composition of the angiosperm taxa differs moderately from the type-specific communities and is significantly more distorted than at good quality. There are moderate distortions in the abundance of angiosperm taxa.</p> | | |

| | | | | | |
|----------------------------|---|---|---|--|--|
| Benthic invertebrate fauna | The level of diversity and abundance of invertebrate taxa is within the range normally associated with undisturbed conditions. All the disturbance-sensitive taxa associated with undisturbed conditions are present. | The level of diversity and abundance of invertebrate taxa is slightly outside the range associated with the type-specific conditions. Most of the sensitive taxa of the type-specific communities are present. | The level of diversity and abundance of invertebrate taxa is moderately outside the range associated with the type-specific conditions. Taxa indicative of pollution are present. Many of the sensitive taxa of the type-specific communities are absent. | | |
| Fish fauna | Species composition and abundance is consistent with undisturbed conditions. | The abundance of the disturbance-sensitive species shows slight signs of distortion from type-specific conditions attributable to anthropogenic impacts on physico-chemical or hydromorphological quality elements. | A moderate proportion of the type-specific disturbance-sensitive species are absent as a result of anthropogenic impacts on physicochemical or hydromorphological quality elements. | | |

1.2.3.2 Hydromorphological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------------|--|---|---|-------------|------------|
| Tidal regime | The freshwater flow regime corresponds totally or nearly totally to undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| Morphological conditions | Depth variations, substrate conditions, and both the structure and condition of the intertidal zones correspond totally or nearly totally to undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

1.2.3.3 Physico-chemical quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|-----------------------------------|---|---|---|-------------|------------|
| General conditions | Physico-chemical elements correspond totally or nearly totally to undisturbed conditions. Nutrient concentrations remain within the range normally associated with undisturbed conditions. Temperature, oxygen balance and transparency do not show signs of anthropogenic disturbance and remain within the range normally associated with undisturbed conditions. | Temperature, oxygenation conditions and transparency do not reach levels outside the ranges established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. Nutrient concentrations do not exceed the levels established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| Specific synthetic pollutants | Concentrations close to zero and at least below the limits of detection of the most advanced analytical techniques in general use. | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |
| Specific non-synthetic pollutants | Concentrations remain within the range normally associated with undisturbed conditions (background levels). | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |

Table 1.2.4 Definitions for high, good, moderate, poor and bad ecological status in coastal waters

1.2.4.1 Biological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|----------|-------------|-------------|-----------------|-------------|------------|
|----------|-------------|-------------|-----------------|-------------|------------|

| | | | | | |
|----------------------------|--|--|--|--|--|
| Phytoplankton | <p>The composition and abundance of phytoplanktonic taxa are consistent with undisturbed conditions.</p> <p>The average phytoplankton biomass is consistent with the type-specific physico-chemical conditions and is not such as to significantly alter the type-specific transparency conditions. Planktonic blooms occur at a frequency and intensity which is consistent with the type specific physico-chemical conditions.</p> | <p>The composition and abundance of phytoplanktonic taxa show slight signs of disturbance. There are slight changes in biomass compared to type-specific conditions. Such changes do not indicate any accelerated growth of algae resulting in undesirable disturbance to the balance of organisms present in the water body or to the quality of the water.</p> <p>A slight increase in the frequency and intensity of the type-specific planktonic blooms may occur.</p> | <p>The composition and abundance of planktonic taxa show signs of moderate disturbance.</p> <p>Algal biomass is substantially outside the range associated with type-specific conditions, and is such as to impact upon other biological quality elements.</p> <p>A moderate increase in the frequency and intensity of planktonic blooms may occur. Persistent blooms may occur during summer months.</p> | | |
| Macroalgae and angiosperms | <p>All disturbance-sensitive macroalgal and angiosperm taxa associated with undisturbed conditions are present.</p> <p>The levels of macroalgal cover and angiosperm abundance are consistent with undisturbed conditions.</p> | <p>Most disturbance-sensitive macroalgal and angiosperm taxa associated with undisturbed conditions are present.</p> <p>The level of macroalgal cover and angiosperm abundance show slight signs of disturbance.</p> | <p>A moderate number of the disturbance-sensitive macroalgal and angiosperm taxa associated with undisturbed conditions are absent.</p> <p>Macroalgal cover and angiosperm abundance is moderately disturbed and may be such as to result in an undesirable disturbance to the balance of organisms present in the water body.</p> | | |
| Benthic invertebrate fauna | <p>The level of diversity and abundance of invertebrate taxa is within the range normally associated with undisturbed conditions.</p> <p>All the disturbance-sensitive taxa associated with undisturbed conditions are</p> | <p>The level of diversity and abundance of invertebrate taxa is slightly outside the range associated with the type-specific conditions.</p> <p>Most of the sensitive taxa of the type-specific communities are present.</p> | <p>The level of diversity and abundance of invertebrate taxa is moderately outside the range associated with the type-specific conditions.</p> <p>Taxa indicative of pollution are present.</p> <p>Many of the sensitive taxa of</p> | | |

| | | | | | |
|--|----------|--|---|--|--|
| | present. | | the type-specific communities are absent. | | |
|--|----------|--|---|--|--|

1.2.4.2 Hydromorphological quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------------|--|---|---|-------------|------------|
| Tidal regime | The freshwater flow regime and the direction and speed of dominant currents correspond totally or nearly totally to undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |
| Morphological conditions | The depth variation, structure and substrate of the coastal bed, and both the structure and condition of the inter-tidal zones correspond totally or nearly totally to the undisturbed conditions. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

1.2.4.3 Physico-chemical quality elements

| Elements | High Status | Good Status | Moderate Status | Poor Status | Bad Status |
|--------------------|--|---|---|-------------|------------|
| General conditions | The physico-chemical elements correspond totally or nearly totally to undisturbed conditions. Nutrient concentrations remain within the range normally associated with undisturbed conditions. Temperature, oxygen balance and transparency do | Temperature, oxygenation conditions and transparency do not reach levels outside the ranges established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

| | | | | | |
|-----------------------------------|--|--|--|--|--|
| | not show signs of anthropogenic disturbance and remain within the ranges normally associated with undisturbed conditions. | Nutrient concentrations do not exceed the levels established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. | | | |
| Specific synthetic pollutants | Concentrations close to zero and at least below the limits of detection of the most advanced analytical techniques in general use. | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |
| Specific non-synthetic pollutants | Concentrations remain within the range normally associated with undisturbed conditions (background levels). | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |

Table 1.2.5 Definitions for maximum, good, moderate, poor and bad ecological potential for heavily modified or artificial water bodies

| Elements | Maximum ecological potential | Good ecological potential | Moderate ecological potential | Poor ecological potential | Bad ecological potential |
|-----------------------------|---|---|--|---------------------------|--------------------------|
| Biological quality elements | The values of the relevant biological quality elements reflect, as far as possible, those associated with the closest comparable surface water body type, given the physical conditions which result from the artificial or heavily modified characteristics of the water body. | There are slight changes in the values of the relevant biological quality elements as compared to the values found at maximum ecological potential. | There are moderate changes in the values of the relevant biological quality elements as compared to the values found at maximum ecological potential. These values are significantly more distorted than those found under good quality. | | |

| | | | | | |
|-----------------------------|---|--|---|--|--|
| Hydromorphological elements | The hydromorphological conditions are consistent with the only impacts on the surface water body being those resulting from the artificial or heavily modified characteristics of the water body once all mitigation measures have been taken to ensure the best approximation to ecological continuum, in particular with respect to migration of fauna and appropriate spawning and breeding grounds. | Conditions consistent with the achievement of the values specified above for the biological quality elements | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |
| Physico-chemical elements | | | | | |
| General conditions | Physico-chemical elements correspond totally or nearly totally to the undisturbed conditions associated with the surface water body type most closely comparable to the artificial or heavily modified body concerned. Nutrient concentrations remain within the range normally associated with such undisturbed conditions. The levels of temperature, oxygen balance and pH are consistent with those found in the most closely comparable surface water body types under undisturbed conditions. | The values for physico-chemical elements are within the ranges established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. Temperature and pH do not reach levels outside the ranges established so as to ensure the functioning of the ecosystem and the achievement of the values specified above for the biological quality elements. Nutrient concentrations do not exceed the levels established so as to ensure the functioning of the ecosystem and the | Conditions consistent with the achievement of the values specified above for the biological quality elements. | | |

| | | | | | |
|-----------------------------------|---|--|--|--|--|
| | | achievement of the values specified above for the biological quality elements. | | | |
| Specific synthetic pollutants | Concentrations close to zero and at least below the limits of detection of the most advanced analytical techniques in general use. | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |
| Specific non-synthetic pollutants | Concentrations remain within the range normally associated with the undisturbed conditions found in the surface water body type most closely comparable to the artificial or heavily modified body concerned (background levels). | Concentrations not in excess of the environmental quality norms | Conditions consistent with the achievement of the values specified above for the biological quality elements | | |

1.3. Monitoring of ecological status and chemical status for surface waters

The surface water monitoring network shall be established in accordance with the requirements of Part 4 of this Decision. The monitoring network shall be designed so as to provide a coherent and comprehensive overview of ecological and chemical status within each river basin and shall permit classification of water bodies into five classes consistent with the normative definitions in section 1.2. The relevant River Basin Council shall provide a map or maps showing the surface water monitoring network in the river basin district management plan.

On the basis of the characterisation and impact assessment carried out in accordance with Part 2, Chapter 1 and Annex I, the relevant River Basin Council shall for each period to which a river basin district management plan applies, establish a surveillance monitoring programme and an operational monitoring programme. The relevant River Basin Council may also need in some cases to establish programmes of investigative monitoring.

The relevant River Basin Council shall monitor parameters which are indicative of the status of each relevant quality element. In selecting parameters for biological quality elements the relevant River Basin Council shall identify the appropriate taxonomic level required to achieve adequate confidence and precision in the classification of the quality elements. Estimates of the level of confidence and precision of the results provided by the monitoring programmes shall be given in the plan.

1.3.1. Design of surveillance monitoring

Objective

The relevant River Basin Council shall establish surveillance monitoring programmes to provide information for:

- supplementing and validating the impact assessment procedure detailed in Annex I,
- 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 shall be reviewed and used, in combination with the impact assessment procedure described in Annex I, to determine requirements for monitoring programmes in the current and subsequent river basin district management plans.

Selection of monitoring points

Surveillance monitoring shall be carried out of sufficient surface water bodies to provide an assessment of the overall surface water status within each catchment or sub-catchments within the river basin district. In selecting these bodies the relevant River Basin Council shall ensure that, where appropriate, monitoring is carried out at points where:

- the rate of water flow is significant within the river basin district as a whole; including points on large rivers where the catchment area is greater than 2 500 km²,
- the volume of water present is significant within the river basin district, including large lakes and reservoirs,
- significant bodies of water cross a State boundary, and

at such other sites as are required to estimate the pollutant load which is transferred across State boundaries, and which is transferred into the marine environment.

Selection of quality elements

Surveillance monitoring shall be carried out for each monitoring site for a period of one year during the period covered by a river basin district management plan for:

- parameters indicative of all biological quality elements,
- parameters indicative of all hydromorphological quality elements,
- parameters indicative of all general physico-chemical quality elements,
- priority list pollutants which are discharged into the river basin or sub-basin, and

- other pollutants discharged in significant quantities in the river basin or sub-basin,

unless the previous surveillance monitoring exercise showed that the body concerned reached good status and there is no evidence from the review of impact of human activity in Annex I that the impacts on the body have changed. In these cases, surveillance monitoring shall be carried out once every three river basin district management plans.

1.3.2. Design of operational monitoring

Operational monitoring shall be undertaken in order 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.

The programme may be amended during the period of the river basin district management plan in the light of information obtained as part of the requirements of Annex I or as part of this Annex, in particular to allow a reduction in frequency where an impact is found not to be significant or the relevant pressure is removed.

Selection of monitoring sites

Operational monitoring shall be carried out for all those bodies of water which on the basis of either the impact assessment carried out in accordance with Annex I or surveillance monitoring are identified as being at risk of failing to meet their environmental objectives under Annex III and for those bodies of water into which priority list substances are discharged. Monitoring points shall be selected for priority list substances as specified in the legislation laying down the relevant environmental quality standard. In all other cases, including for priority list substances where no specific guidance is given in such legislation, monitoring points shall be selected as follows:

- for bodies at risk from significant point source pressures, sufficient monitoring points within each body in order to assess the magnitude and impact of the point source. Where a body is subject to a number of point source pressures monitoring points may be selected to assess the magnitude and impact of these pressures as a whole,
- for bodies at risk from significant diffuse source pressures, sufficient monitoring points within a selection of the bodies in order to assess the magnitude and impact of the diffuse source pressures. The selection of bodies shall be made such that they

are representative of the relative risks of the occurrence of the diffuse source pressures, and of the relative risks of the failure to achieve good surface water status,

- for bodies at risk from significant hydromorphological pressure, sufficient monitoring points within a selection of the bodies in order to assess the magnitude and impact of the hydromorphological pressures. The selection of bodies shall be indicative of the overall impact of the hydromorphological pressure to which all the bodies are subject.

Selection of quality elements

In order to assess the magnitude of the pressure to which bodies of surface water are subject the relevant River Basin Council shall monitor for those quality elements which are indicative of the pressures to which the body or bodies are subject. In order to assess the impact of these pressures, the relevant River Basin Council shall monitor as relevant:

- parameters indicative of the biological quality element, or elements, most sensitive to the pressures to which the water bodies are subject,
- all priority substances discharged, and other pollutants discharged in significant quantities,
- parameters indicative of the hydromorphological quality element most sensitive to the pressure identified.

1.3.3. Design of investigative monitoring

Objective

Investigative monitoring shall be carried out:

- where the reason for any exceedances is unknown,
- where surveillance monitoring indicates that the objectives set out in Annex III for a body of water are not likely to be achieved and operational monitoring has not already been established, in order to ascertain the causes of a water body or water bodies failing to achieve the environmental objectives, or
- to ascertain the magnitude and impacts of accidental pollution,

and shall inform the establishment of a programme of measures for the achievement of the environmental objectives and specific measures necessary to remedy the effects of accidental pollution.

1.3.4. Frequency of monitoring

For the surveillance monitoring period, the frequencies for monitoring parameters indicative of physico-chemical quality elements given below should be applied unless greater intervals would be justified on the basis of technical knowledge and expert judgement. For biological or hydromorphological quality elements monitoring shall be carried out at least once during the surveillance monitoring period.

For operational monitoring, the frequency of monitoring required for any parameter shall be determined by the relevant River Basin Council so as to provide sufficient data for a reliable assessment of the status of the relevant quality element. As a guideline, monitoring should take place at intervals not exceeding those shown in the table below unless greater intervals would be justified on the basis of technical knowledge and expert judgement.

Frequencies shall be chosen so as to achieve an acceptable level of confidence and precision. Estimates of the confidence and precision attained by the monitoring system used shall be stated in the river basin district management plan.

Monitoring frequencies shall be selected which take account of the variability in parameters resulting from both natural and anthropogenic conditions. The times at which monitoring is undertaken shall be selected so as to minimise the impact of seasonal variation on the results, and thus ensure that the results reflect changes in the water body as a result of changes due to anthropogenic pressure. Additional monitoring during different seasons of the same year shall be carried out, where necessary, to achieve this objective.

| Quality element | Rivers | Lakes | Transitional waters | Coastal waters |
|---------------------------|------------|----------|---------------------|----------------|
| Biological | | | | |
| Phytoplankton | 6 months | 6 months | 6 months | 6 months |
| Other aquatic flora | 3 years | 3 years | 3 years | 3 years |
| Macro invertebrates | 3 years | 3 years | 3 years | 3 years |
| Fish | 3 years | 3 years | 3 years | |
| Hydromorphological | | | | |
| Continuity | 6 years | | | |
| Hydrology | continuous | 1 month | | |
| Morphology | 6 years | 6 years | 6 years | 6 years |
| Physio-chemical | | | | |
| Thermal conditions | 3 months | 3 months | 3 months | 3 months |
| Oxygenation | 3 months | 3 months | 3 months | 3 months |
| Salinity | 3 months | 3 months | 3 months | |

| | | | | |
|----------------------|----------|----------|----------|----------|
| Nutrient status | 3 months | 3 months | 3 months | 3 months |
| Acidification status | 3 months | 3 months | | |
| Other pollutants | 3 months | 3 months | 3 months | 3 months |
| Priority substances | 1 month | 1 month | 1 month | 1 month |

1.3.5. Additional monitoring requirements for protected areas

The monitoring programmes required above shall be supplemented in order to fulfil the following requirements:

Drinking water abstraction points

Bodies of surface water which are designated for the abstraction of water intended for human consumption or which are intended for such future use and which provide more than 100 m³ a day as an average shall be designated as monitoring sites and shall be subject to such additional monitoring as may be necessary to meet the legislation regulating such waters. Such bodies shall be monitored for all priority substances discharged and all other substances discharged in significant quantities which could affect the status of the body of water and which are controlled under the legislation on the quality of drinking water. Monitoring shall be carried out in accordance with the frequencies set out in the table below:

| Community served | Frequency |
|------------------|--------------|
| <10000 | 4 per year |
| 10000 to 30000 | 8 per year |
| >30000 | 12 per year. |

Habitat and species protection areas

Bodies of water forming these areas shall be included within the operational monitoring programme referred to above where, on the basis of the impact assessment and the surveillance monitoring, they are identified as being at risk of failing to meet their environmental objectives under Annex III. Monitoring shall be carried out to assess the magnitude and impact of all relevant significant pressures on these bodies and, where necessary, to assess changes in the status of such bodies resulting from the programmes of measures. Monitoring shall continue until the areas satisfy the water-related requirements of the legislation under which they are designated and meet their objectives under Annex III.

1.4. Classification and presentation of ecological status

1.4.1. Comparability of biological monitoring results

The relevant River Basin Council shall establish monitoring systems for the purpose of estimating the values of the biological quality elements specified for each surface water category or for heavily modified and artificial bodies of surface water. In applying the procedure set out below to heavily modified or artificial water bodies, references to ecological status should be construed as references to ecological potential. Such systems may utilise particular species or groups of species which are representative of the quality element as a whole.

In order to ensure comparability of such monitoring systems, the results of the systems shall be expressed as ecological quality ratios for the purposes of classification of ecological status. These ratios shall represent the relationship between the values of the biological parameters observed for a given body of surface water and the values for these parameters in the reference conditions applicable to that body. The ratio shall be expressed as a numerical value between zero and one, with high ecological status represented by values close to one and bad ecological status by values close to zero.

The ecological quality ratio scale for the monitoring system for each surface water category shall be divided into five classes ranging from high to bad ecological status, as defined in Section 1.2, by assigning a numerical value to each of the boundaries between the classes.

1.4.2. Presentation of monitoring results and classification of ecological status and ecological potential

For surface water categories, the ecological status classification for the body of water shall be represented by the lower of the values for the biological and physico-chemical monitoring results for the relevant quality elements classified in accordance with the first column of the table set out below. The relevant River Basin Council shall provide a map for each river basin district illustrating the classification of the ecological status for each body of water, colour-coded in accordance with the second column of the table set out below to reflect the ecological status classification of the body of water:

| Ecological status classification | Colour code |
|----------------------------------|-------------|
| High | Blue |
| Good | Green |
| Moderate | Yellow |

| | |
|------|--------|
| Poor | Orange |
| Bad | Red |

For heavily modified and artificial water bodies, the ecological potential classification for the body of water shall be represented by the lower of the values for the biological and physico-chemical monitoring results for the relevant quality elements classified in accordance with the first column of the table set out below. The relevant River Basin Council shall provide a map for each river basin district illustrating the classification of the ecological potential for each body of water, colour-coded, in respect of artificial water bodies in accordance with the second column of the table set out below, and in respect of heavily modified water bodies in accordance with the third column of that table:

| Ecological potential classification | Colour code | |
|-------------------------------------|-------------------------------------|------------------------------------|
| | Artificial Water Bodies | Heavily Modified |
| Good and above | Equal green and light grey stripes | Equal green and dark grey stripes |
| Moderate | Equal yellow and light grey stripes | Equal yellow and dark grey stripes |
| Poor | Equal orange and light grey stripes | Equal orange and dark grey stripes |
| Bad | Equal red and light grey stripes | Equal red and dark grey stripes |

The relevant River Basin Council shall also indicate, by a black dot on the map, those bodies of water where failure to achieve good status or good ecological potential is due to non-compliance with one or more environmental quality standards which have been established for that body of water in respect of specific synthetic and non-synthetic pollutants.

1.4.3. Presentation of monitoring results and classification of chemical status

Where a body of water achieves compliance with all the environmental quality norms established in legislation setting environmental quality norms it shall be recorded as achieving good chemical status. If not, the body shall be recorded as failing to achieve good chemical status.

The relevant River Basin Council shall provide a map for each river basin district illustrating chemical status for each body of water, colour-coded in accordance with the second column of the table set out below to reflect the chemical status classification of the body of water:

| | |
|--------------------------------|-------------|
| Chemical status classification | Colour code |
| Good | Blue |
| Failing to achieve good | Red |

2. GROUNDWATER

2.1. Groundwater quantitative status

2.1.1. Parameter for the classification of quantitative status

Groundwater level regime

2.1.2 Definition of quantitative status

| | |
|-------------------|--|
| Elements | Good status |
| Groundwater level | <p>The level of groundwater in the groundwater body is such that the available groundwater resource is not exceeded by the long-term annual average rate of abstraction.</p> <p>Accordingly, the level of groundwater is not subject to anthropogenic alterations such as would result in:</p> <ul style="list-style-type: none"> • failure to achieve the environmental objectives specified under Annex III for associated surface waters, • any significant diminution in the status of such waters, • any significant damage to terrestrial ecosystems which depend directly on the groundwater body, <p>and alterations to flow direction resulting from level changes may occur temporarily, or continuously in a spatially limited area, but such reversals do not cause saltwater or other intrusion, and do not indicate a sustained and clearly identified anthropogenically induced trend in flow direction likely to result in such intrusions.</p> |

2.2. Monitoring of groundwater quantitative status

2.2.1. Groundwater level monitoring network

The groundwater monitoring network shall be established in accordance with the requirements of Part 4 and legislation regulating bodies of water which are designated for the abstraction of water intended for human consumption or which are intended for such future use. The monitoring network shall be designed so as to provide a reliable assessment of the quantitative status of all groundwater bodies or groups of bodies including assessment of the available groundwater resource. The relevant River Basin Council shall provide a map or maps showing the groundwater monitoring network in the river basin district management plan.

2.2.2. Density of monitoring sites

The network shall include sufficient representative monitoring points to estimate the groundwater level in each groundwater body or group of bodies taking into account short and long-term variations in recharge and in particular:

- for groundwater bodies identified as being at risk of failing to achieve environmental objectives under Annex III, ensure sufficient density of monitoring points to assess the impact of abstractions and discharges on the groundwater level,
- for groundwater bodies within which groundwater flows across a State boundary, ensure sufficient monitoring points are provided to estimate the direction and rate of groundwater flow across the State boundary.

2.2.3. Monitoring frequency

The frequency of observations shall be sufficient to allow assessment of the quantitative status of each groundwater body or group of bodies taking into account short and long-term variations in recharge. In particular:

- for groundwater bodies identified as being at risk of failing to achieve environmental objectives under Annex III, ensure sufficient frequency of measurement to assess the impact of abstractions and discharges on the groundwater level,
- for groundwater bodies within which groundwater flows across a State boundary, ensure sufficient frequency of measurement to estimate the direction and rate of groundwater flow across the State boundary.

2.2.4. Interpretation and presentation of groundwater quantitative status

The results obtained from the monitoring network for a groundwater body or group of bodies shall be used to assess the quantitative status of that body or those bodies. Subject to point 2.5 the relevant River Basin Council shall provide a map of the resulting assessment of groundwater quantitative status, colour-coded in accordance with the following regime:

| | |
|------|-------|
| Good | Green |
| Poor | Red |

2.3. Groundwater chemical status

2.3.1. Parameters for the determination of groundwater chemical status

(a) Conductivity

(b) Concentrations of pollutants

| Pollutant | Quality Norm |
|--|---|
| Nitrates | 50mg/l |
| Active substances in pesticides, including their relevant metabolites, degradation and reaction products | 0.1µg/l 0.5µg/l (total) Where total means the sum of all individual pesticides detected and quantified in the monitoring procedure, including their relevant metabolites, degradation and reaction products |

The Council of Ministers, acting on a proposal from the National Water Council, shall establish in separate legislation threshold values for pollutants, groups of pollutants and indicators of pollution which have

been identified by the River Basin Councils as contributing to the characterisation of bodies or groups of bodies of groundwater as being at risk. Threshold values will be established in such a way that, should the monitoring results at a representative monitoring point exceed the thresholds, this will indicate a risk that one or more of the conditions for good groundwater chemical status are not being met.

When establishing threshold values, the following shall be taken into account:

1. the determination of the threshold values should be based on:
 - a. the extent of interactions between groundwater and associated aquatic and dependent terrestrial ecosystems
 - b. the interference with actual or potential legitimate uses or functions of groundwater
 - c. all pollutants which characterise bodies of groundwater as being at risk
 - d. hydro-geological characteristics including information on background levels and water balance.
2. the determination of threshold values should also take account of the origins of the pollutants, their possible natural occurrence, their toxicology and dispersion tendency, their persistence and their bio-accumulation potential.
3. wherever elevated background levels of substances or ions or their indicators occur due to natural hydro-geological reasons, these background levels in the relevant body of groundwater shall be taken into account when establishing threshold values.
4. the determination of threshold values should be supported by a control mechanism for the data collected, based on an evaluation of data quality, analytical considerations, and background levels for substances which may occur both naturally and as a result of human activities.
5. The threshold values applicable to good chemical status shall be based on the protection of the body of groundwater in accordance with points 1-3 above, having particular regard to its impact on, and interrelationship

with, associated surface waters and directly dependent terrestrial ecosystems and wetlands and shall, inter alia, take into account human toxicology and ecotoxicology knowledge.

At a minimum the following pollutants shall be considered when establishing threshold values:

1. Substances or ions or indicators which may occur both naturally and/or as a result of human activities, including: arsenic, cadmium, lead, mercury, ammonium, chloride, sulphate.
2. Man-made synthetic substances, including: trichloroethylene, tetrachloroethylene
3. Parameters indicative of saline or other intrusions, including: conductivity.

Threshold values may be established at the national level, river basin district level, or at the level of a body or a group of bodies of groundwater. For bodies of groundwater shared with another State and for bodies of groundwater within which groundwater flows across the national boundary, the Council of Ministers shall endeavour to establish threshold values in co-ordination with the other States concerned in accordance with Article xxx of the Law “On Water Management”.

The list of threshold values shall be amended whenever new information on pollutants, groups of pollutants or indicators of pollution indicates that a threshold value should be set for an additional substance, that an existing threshold value should be amended, or that a threshold value previously removed from the list should be re-inserted, in order to protect human health and the environment. Threshold values can be removed from the list when the body of groundwater concerned is no longer at risk from the corresponding pollutants, groups of pollutants, or indicators of pollution.

Any such changes to the list of threshold values shall be reported in the context of the periodic review of the River Basin District Management Plans.

2.3.2. Definition of good groundwater chemical status

A body or a group of bodies of groundwater shall be considered to be of good chemical status when:

(a) the threshold values set in accordance with paragraph 2.3.1 above are not exceeded at any monitoring point in that body or group of bodies of groundwater, or

(b) the relevant monitoring demonstrates that the conditions set out in the table below are being met: or

| Elements | Good status |
|--------------|---|
| General | <p>The chemical composition of the groundwater body is such that the concentrations of pollutants:</p> <ul style="list-style-type: none"> • as specified below, do not exhibit the effects of saline or other intrusions • do not exceed the applicable quality norms applicable under other legislation • are not such as would result in failure to achieve the environmental objectives specified under Annex III for associated surface waters nor any significant diminution of the ecological or chemical quality of such bodies nor in any significant damage to terrestrial ecosystems which depend directly on the groundwater body |
| Conductivity | Changes in conductivity are not indicative of saline or other intrusion into the groundwater body |

(c) the value for a groundwater quality norm or threshold value is exceeded at one or more monitoring points but an appropriate investigation in accordance with paragraph 2.3.3 confirms that:

- (i) on the basis of the assessment referred to in point 3 of paragraph 2.3.3, the concentrations of pollutants exceeding the groundwater quality standards or threshold values are not considered to present a significant environmental risk, taking into account, where appropriate, the extent of the body of groundwater which is affected;
- (ii) the other conditions for good groundwater chemical status set out in Table 2.3.2 in Annex V are being met, in accordance with point 4 of paragraph 2.3.3;
- (iii) for bodies of groundwater used or intended for future use for the abstraction of water intended for human consumption and identified in accordance with Article xxx of the Law “On Water Management”, the requirements of Article xxx of the Law “On

Water Management” are being met, in accordance with point 4 of paragraph 2.3.3;

- (iv) the ability of the body of groundwater or of any of the bodies in the group of bodies of groundwater to support human uses has not been significantly impaired by pollution.

If a body of groundwater is classified as being of good chemical status, the relevant River Basin Council shall take such measures as may be necessary to protect aquatic ecosystems, terrestrial ecosystems and human uses of groundwater dependent on the part of the body of groundwater represented by the monitoring point or points at which the value for a groundwater quality norm or the threshold value has been exceeded.

2.3.3 Assessment of groundwater chemical status

1. The assessment procedure for determining the chemical status of a body or a group of bodies of groundwater shall be carried out in relation to all bodies or groups of bodies of groundwater characterised as being at risk and in relation to each of the pollutants which contribute to the body or group of bodies of groundwater being so characterised.
2. In undertaking any investigations referred to in paragraph 2.3.2 (c) above, the relevant River Basin Council shall take into account:
 - (a) the information collected as part of the characterisation to be carried out in accordance with Paragraph 25 and with sections 2.1, 2.2 and 2.3 of Annex I;
 - (b) the results of the groundwater monitoring network obtained in accordance with section 2.4 below; and
 - (c) any other relevant information including a comparison of the annual arithmetic mean concentration of the relevant pollutants at a monitoring point with the groundwater quality norms set out in section 2.3.2 and any threshold values established.
3. For the purposes of investigating whether the conditions for good groundwater chemical status referred to in section 2.3.2(c)(i) and (iv) above are met, the relevant River Basin Council shall, where relevant and necessary, and on the basis of appropriate aggregations of the monitoring results, supported where necessary by concentration estimations based on a conceptual model of the body or group of bodies of groundwater, estimate the extent of the body of groundwater having an annual arithmetic mean concentration of a pollutant higher than a groundwater quality norm or a threshold value.
4. For the purposes of investigating whether the conditions for good groundwater chemical status referred to in section 2.3.2 (c)(ii) and (iii) above are met, the relevant River Basin Council shall, where relevant and necessary, and on the basis of relevant monitoring results and of a suitable conceptual model of the body of groundwater, assess:
 - (a) the impact of the pollutants in the body of groundwater;

- (b) the amounts and the concentrations of the pollutants being, or likely to be, transferred from the body of groundwater to the associated surface waters or directly dependent terrestrial ecosystems;
 - (c) the likely impact of the amounts and concentrations of the pollutants transferred to the associated surface waters and directly dependent terrestrial ecosystems;
 - (d) the extent of any saline or other intrusions into the body of groundwater; and
 - (e) the risk from pollutants in the body of groundwater to the quality of water abstracted, or intended to be abstracted, from the body of groundwater for human consumption.
5. The relevant River Basin Council shall present the groundwater chemical status of a body or a group of bodies of groundwater on maps in accordance with Sections 2.4.5 and 2.5 below. In addition, the relevant River Basin Council will indicate on these maps all monitoring points where groundwater quality norms and/or threshold values are exceeded, where relevant and feasible.
 6. The relevant River Basin District Management Plan shall include a summary of the assessment of groundwater chemical status. This summary shall include an explanation as to the manner in which exceedances of groundwater quality norms or threshold values at individual monitoring points have been taken into account in the final assessment.

2.4. Monitoring of groundwater chemical status

2.4.1. Groundwater monitoring network

The groundwater monitoring network shall be established in accordance with the requirements of Part 4 and legislation regulating bodies of water which are designated for the abstraction of water intended for human consumption or which are intended for such future use. The monitoring network shall be designed so as to provide a coherent and comprehensive overview of groundwater chemical status within each river basin to provide representative monitoring data and to detect the presence of long-term anthropogenically induced upward trends in pollutants.

On the basis of the characterisation and impact assessment carried out in accordance with Part 2 Chapter 1 and Annex I, the relevant River Basin Council shall for each period to which a river basin district management plan applies, establish a surveillance monitoring programme. The results of this programme shall be used to establish an operational monitoring programme to be applied for the remaining period of the plan.

Estimates of the level of confidence and precision of the results provided by the monitoring programmes shall be given in the plan.

2.4.2. Surveillance monitoring

Objective

Surveillance monitoring shall be carried out in order to:

- supplement and validate the impact assessment procedure,
- provide information for use in the assessment of long term trends both as a result of changes in natural conditions and through anthropogenic activity.

Selection of monitoring sites

Sufficient monitoring sites shall be selected for each of the following:

- bodies identified as being at risk following the characterisation exercise undertaken in accordance with Annex I,
- bodies which cross a State boundary.

Selection of parameters

The following set of core parameters shall be monitored in all the selected groundwater bodies:

- oxygen content
- pH value
- conductivity
- nitrate
- ammonium

Bodies which are identified in accordance with Annex I as being at significant risk of failing to achieve good status shall also be monitored for those parameters which are indicative of the impact of these pressures.

Trans-boundary water bodies shall also be monitored for those parameters which are relevant for the protection of all of the uses supported by the groundwater flow.

2.4.3. Operational monitoring

Objective

Operational monitoring shall be undertaken in the periods between surveillance monitoring programmes in order to:

- establish the chemical status of all groundwater bodies or groups of bodies determined as being at risk,
- establish the presence of any long term anthropogenically induced upward trend in the concentration of any pollutant.

Selection of monitoring sites

Operational monitoring shall be carried out for all those groundwater bodies or groups of bodies which on the basis of both the impact assessment carried out in accordance with Annex I and surveillance monitoring are identified as being at risk of failing to meet objectives under Annex III. The selection of monitoring sites shall also reflect an assessment of how representative monitoring data from that site is of the quality of the relevant groundwater body or bodies.

Frequency of monitoring

Operational monitoring shall be carried out for the periods between surveillance monitoring programmes at a frequency sufficient to detect the impacts of relevant pressures but at a minimum of once per annum.

2.4.4. Identification of trends in pollutants

The relevant River Basin Council shall use data from both surveillance and operational monitoring in the identification of long term anthropogenically induced upward trends in pollutant concentrations and the reversal of such trends. The base year or period from which trend identification is to be calculated shall be identified. The calculation of trends shall be undertaken for a body or, where appropriate, group of bodies of groundwater. Reversal of a trend shall be demonstrated statistically and the level of confidence associated with the identification stated.

2.4.5. Interpretation and presentation of groundwater chemical status

In assessing status, the results of individual monitoring points within a groundwater body shall be aggregated for the body as a whole. For good status to be achieved for a groundwater body, for those chemical parameters for which environmental quality norms have been set in other legislation:

- the mean value of the results of monitoring at each point in the groundwater body or group of bodies shall be calculated, and
- these mean values shall be used to demonstrate compliance with good groundwater chemical status.

Subject to point 2.5, the relevant River Basin Council shall provide a map of groundwater chemical status, colour-coded as indicated below:

| | |
|------|-------|
| Good | Green |
| Poor | Red |

The relevant River Basin Council shall also indicate by a black dot on the map, those groundwater bodies which are subject to a significant and sustained upward trend in the concentrations of any pollutant resulting from the impact of human activity. Reversal of a trend shall be indicated by a blue dot on the map.

These maps shall be included in the River Basin District Management Plan.

2.5. Presentation of Groundwater Status

The relevant River Basin Council shall provide in the River Basin District Management Plan a map showing for each groundwater body or groups of groundwater bodies both the quantitative status and the chemical status of that body or group of bodies, colour-coded in accordance with the requirements of points 2.2.4 and 2.4.5. The relevant River Basin Council may choose not to provide separate maps under points 2.2.4 and 2.4.5 but shall in that case also provide an indication in accordance with the requirements of point 2.4.5 on the map required under this point, of those bodies which are subject to a significant and sustained upward trend in the concentration of any pollutant or any reversal in such a trend.

Annex VI. Technical specifications for chemical analysis and monitoring of water status

1. This Annex lays down technical specifications for chemical analysis and monitoring of water status in accordance with this Decision and with the Law “On Water Management”. It establishes the minimum performance criteria for methods of analysis to be applied when monitoring water status, sediment and biota, as well as the rules for demonstrating the quality of analytical results.

Method of analysis

2. All methods of analysis, including laboratory, field or on-line methods, used for the purposes of chemical monitoring programmes are validated and documented in accordance with EN ISO/IEC-17025 standard or other equivalent standards accepted at international level.

Minimum performance criteria for methods of analysis

3. The minimum performance criteria for all methods of analysis applied shall be based on an uncertainty of measurement of 50% or below ($k = 2$) estimated at the level of relevant environmental quality norms and a limit of quantification equal or below a value of 30 % of the relevant environmental quality norms.
4. In the absence of a relevant environmental quality norm for a given parameter, or in the absence of method of analysis meeting the minimum performance criteria set out in paragraph 3, that monitoring shall be carried out using best available techniques not entailing excessive costs.

Calculation of mean values

5. Where the amounts of physico-chemical or chemical measurands in a given sample are below the limit of quantification, the measurement results shall be set to half of the value of the limit of quantification concerned for the calculation of mean values.
6. Where a calculated mean value of the measurement results referred to paragraph 5 is below the limits of quantification, the value shall be referred to as ‘less than limit of quantification’.
7. Paragraph 5 shall not apply to measurands that are total sums of a given group of physico-chemical parameters or chemical measurands, including their relevant metabolites, degradation and reaction products. In those cases, results below the limit of quantification of the individual substances shall be set to zero.

Quality assurance and control

8. Laboratories or parties contracted by laboratories shall apply quality management system practices in accordance with EN ISO/IEC-17025 or other equivalent standards accepted at international level.
9. Laboratories or parties contracted by laboratories shall demonstrate their competences in analysing relevant physico-chemical or chemical measurands by:
 - a. Participation in proficiency testing programmes covering the methods of analysis referred to in Paragraph 2 of measurands at levels of concentrations that are representative of the chemical monitoring programmes;

- b. Analysis of available reference materials that are representative of collected samples which contain appropriate levels of concentrations in relation to relevant environmental quality norms referred to in Paragraph 3.
10. The proficiency testing programmes referred to in Paragraph 9(a) shall be organised by accredited organisations or internationally or nationally recognised organisations which meet the requirements of ISO/IEC guide 43-1 or of other equivalent standards accepted at international level.
 11. The results of participation in the programmes referred to in Paragraph 10 shall be evaluated on the basis of the scoring systems set out in ISO/IEC guide 43-1 or in the ISO-13528 standard or in other equivalent standards accepted at international level.

Annex VII. Identification and reversal of significant and sustained upward trends in groundwater pollution

Part A

Identification of significant and sustained upward trends

The relevant River Basin Council shall identify significant and sustained upward trends in all bodies or groups of bodies of groundwater that are characterised as being at risk in accordance with Annex I of this Decision, taking into account the following requirements:

- 1) in accordance with Section 2.4 of Annex V to this Decision, the monitoring programme will be so designed as to detect significant and sustained upward trends in concentrations of the pollutants identified pursuant to Section 2.4 of Annex V to this Decision;
- 2) the procedure for the identification of significant and sustained upward trends will be based on the following elements:
 - (a) monitoring frequencies and monitoring locations will be selected such as are sufficient to:
 - (i) provide the information necessary to ensure that such upward trends can be distinguished from natural variation with an adequate level of confidence and precision;
 - (ii) enable such upward trends to be identified in sufficient time to allow measures to be implemented in order to prevent, or at least mitigate as far as practicable, environmentally significant detrimental changes in groundwater quality. This identification will be carried out for the first time by 2015, if possible, and will take into account existing data, in the context of the report on trend identification within the first river basin district management plan, and at least every six years thereafter;
 - (iii) take into account the physical and chemical temporal characteristics of the body of groundwater, including groundwater flow conditions and recharge rates and percolation time through soil or subsoil;
 - (b) the methods of monitoring and analysis used will conform to international quality control principles, including, if relevant, CEN or national standardised methods, to ensure equivalent scientific quality and comparability of the data provided;
 - (c) the assessment will be based on a statistical method, such as regression analysis, for trend analysis in time series of individual monitoring points;

- (d) in order to avoid bias in trend identification, all measurements below the quantification limit will be set to half of the value of the highest quantification limit occurring in time series, except for total pesticides;
- 3) the identification of significant and sustained upward trends in the concentrations of substances which occur both naturally and as a result of human activities will consider the baseline levels and, where such data are available, the data collected before the start of the monitoring programme in order to report on trend identification within the first river basin district management plan.

Part B

Starting points for trend reversals

The relevant River Basin Council shall reverse identified significant and sustained upward trends, in accordance with Part 5 of this Decision, taking into account the following requirements:

- 1) the starting point for implementing measures to reverse significant and sustained upward trends will be when the concentration of the pollutant reaches 75 % of the parametric values of the groundwater quality norms set out in Section 2.4 of Annex V to this Decision and of the threshold values established therein, unless:
 - (a) an earlier starting point is required to enable trend reversal measures to prevent most cost-effectively, or at least mitigate as far as possible, any environmentally significant detrimental changes in groundwater quality;
 - (b) a different starting point is justified where the detection limit does not allow for establishing the presence of a trend at 75 % of the parametric values; or
 - (c) the rate of increase and the reversibility of the trend are such that a later starting point for trend reversal measures would still enable such measures to prevent most cost-effectively, or at least mitigate as far as possible, any environmentally significant detrimental changes in groundwater quality. Such later starting point may not lead to any delay in achieving the deadline for the environmental objectives.
- 2) once a starting point has been established for a body of groundwater characterised as being at risk in accordance with Section 2.4.4 of Annex V and pursuant to point 1 above, it will not be changed during the six-year cycle of the river basin district management plan;
- 3) trend reversals will be demonstrated, taking into account relevant monitoring provisions contained in Part A, point 2.

Annex VIII. Flood Risk Management Plans

Part 1 Flood Risk Management Plans

1. Components of the first flood risk management plan:
 - (a) The conclusions of the preliminary flood risk assessment in the form of a summary map of the river basin district delineating the areas designated by Paragraph 87 where potential flood risks exist or may be likely to occur, and which are the subject of that flood risk management plan;
 - (b) Flood hazard maps and flood risk maps and the conclusions that can be drawn from those maps;
 - (c) A description of the appropriate objectives for the management of flood risks establish pursuant to Paragraph 100;
 - (d) A summary of the measures and their prioritisation aiming to achieve the appropriate objectives for the management of flood risks, including any flood related measures taken under other legislation, including
 - i. The Law “On Water Management”
 - ii. The Law “On Environmental Impact Assessment”
 - iii. The Law “On Strategic Environmental Assessment”
 - iv. The Law “On Control of major accident hazards involving dangerous substances”.
 - (e) Where available, for international river basin districts or sub-districts, a description of the methodology, defined by the States concerned, of cost-benefit analysis used to assess measures with trans-national effects.
2. Description of the implementation of the flood risk management plan
 - (a) A description of the prioritisation and the way in which progress in implementing the flood risk management plan will be monitored;
 - (b) A summary of the public information and consultation measures/actions taken;
 - (c) A list of the relevant authorities and, as appropriate, a description of the co-ordination process within any international river basin district and of the co-ordination with the river basin district management plans.

Part 2 Components of any subsequent update of Flood Risk Management Plans

1. Any changes or updates since the publication of the previous version of the flood risk management plan, including a summary of the reviews carried out pursuant to Paragraphs 85, 97 and 107.
2. An assessment of the progress made towards the achievement of the appropriate objectives for the management of flood risks establish pursuant to Paragraph 100.
3. A description of, and an explanation for, any measures foreseen in the earlier version of the flood risk management plan which were planned to be undertaken and have not been taken forward.
4. A description of any additional measures since the publication of the previous version of the flood risk management plan.