Water Governance Benchmarking Criteria

Click on each red number in order to link to the corresponding paragraph.
Click again on the red number in order to return to criteria page.
Numbers found next to an article or item title correspond to the entire article or item.
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A. GOVERNANCE FUNCTIONS

1. Organizing and building capacity in the water sector
- 1.1 Creating and modifying an organizational structure
- 1.2 Assigning roles and responsibilities 1, 2
- 1.3 Setting national water policy
- 1.4 Establishing linkages among sub-sectors, levels, and national sub-regions 3
- 1.5 Establishing linkages with neighboring riparian countries
- 1.6 Building public and political awareness of water sector issues
- 1.7 Securing and allocating funding for the sector
- 1.8 Developing and utilizing well-trained water sector professionals

2. Planning strategically
- 2.1 Collecting, managing, storing and utilizing water-relevant data 4, 5, 6, 7, 8, 9
- 2.2 Projecting future supply and demand for water
- 2.3 Designing strategies for matching expected long-term water supply an demand and dealing with shortfalls (including drought mitigation strategies)
- 2.4 Developing planning and management tools to support decision making

3. Allocating water
- 3.1 Awarding and recording water rights and corollary responsibilities
- 3.2 Establishing water and water rights transfer mechanisms
- 3.3 Adjudicating disputes
- 3.4 Assessing and managing third party impacts of water and water rights transactions

4. Developing and managing water resources
- 4.1 Constructing public infrastructure and authorizing private infrastructure development
- 4.2 Forecasting seasonal supply and demand and matching the two
- 4.3 Operating and maintaining public infrastructure according to established plans and strategic priorities
- 4.4 Applying incentives and sanctions to achieve long and short term supply/demand matching (including water pricing)
- 4.5 Forecasting and managing floods and flood impacts

5. Regulating water resources and services
- 5.1 Issuing and monitoring operating concessions to water service providers
- 5.2 Enforcing withdrawal limits associated with water rights
- 5.3 Regulating water quality in waterways, water bodies, and aquifers (including enforcement) 10, 11, 12, 13, 14, 15
- 5.4 Protecting aquatic ecosystems
- 5.5 Monitoring and enforcing water service standards

B. GOVERNANCE PROCESS CHARACTERISTICS

1. **Transparency.** 16

2. **Participation.**

3. **Accountability and Integrity**.

4. **Rule of law.** 17, 18

5. **Coherency and Integration.**

6. **Responsiveness.**

C. CROSS CUTTING CATEGORIES

1. **Water Sources**
   - 1.1 Surface water
   - 1.2 Groundwater
   - 1.3 Derivative water (reclaimed, reused, desalinated)

2. **Water Uses**
   - 2.1 Irrigation
   - 2.2 Municipal
   - 2.3 Industrial
   - 2.4 Environmental
   - 2.5 Hydropower
   - 2.6 Fisheries, navigation, recreation 19, 20, 21, 22, 23, 24, 25, 26, 27
   - 2.7 Other uses (including social, esthetic, and religious uses)

Order of the Minister for Land Use Planning, Water and the Environment No. n° 2028-03 of 10 Ramadan 1424 (5 November 2003) establishing the quality standards for fish farming waters 19

The Minister for Land Use Planning, Water and the Environment

In view of Decree n° 2-97-787 of 6 Chaoual 1418 (4 February 1998) relative to water quality standards and the inventory of the degree of pollution of waters; 4, 10, 17

After obtaining the opinions of the government authorities responsible for waters, forests and health, 3

Hereby orders:

Article 1: Pursuant to articles 1 and 2 of the above-cited Decree no. 2-97-787, the quality standards for fish farming waters are established in the table attached to this Order. 11, 18, 20

Article 2: For the intents and purposes of this Order, the following terms shall be understood as defined below: 21

Fish farming waters: all running or stagnant waters in which fish and mollusks live or could live, divided into the categories of cold and warm waters;

Cold waters: the fish farming waters in which cold water fish live or could live, such as the species of the Salmonidae family: trout, salmon, grayling, whitefish, etc.;

Warm waters: fish farming waters in which fish other than Salmonidae live or could live: carp, pikes, perches, pikeperches, black bass, eels, shad, etc.

Composite sample: any intermittent or continuous mixture in suitable proportions of at least three (3) samples or parts of samples per day, and of which the average value of the desired parameter can be obtained.

Article 3: Water is declared of fish farming quality if samples of the said water taken at regular intervals and in the same sampling location show parameter values compliant with the quality standards for fish farming waters for at least: 5, 12, 22

- 95% of the measurements of all the parameters;

- 90% of the measurements of a given parameter;

- if the measured values that do not comply with the fish farming water quality standards do not exceed the 50% limit, except for the temperature, pH, dissolved oxygen and the bacteriological parameters. 13, 23

Article 4: The minimum number of samples on the basis of which water is declared apt for fish farming is 12 per year at the rate of one sampling per month. 6, 24

Article 5: All samples on the basis of which the water is declared apt for fish farming must be 24-

hour composite samples. 7

Article 6: Samples collected at the time of floods, accidental pollution incidents or natural disasters are not considered for the purpose of assessing the overall quality of fish farming waters. 8

Article 7: In case of need, the hydrological basin agency involved may propose, for the setting of quality standards for fish farming waters, more severe values than those stipulated in this Order. 1, 14, 25

Article 8: The parameters indicating the quality of fish farming water are measured according to standardized methods. 26

Article 9: The basin agency is responsible for applying this Order. 2

Article 10: This Order is published in the *Bulletin Officiel* (Official state gazette). 16

Rabat, 10 Ramadan 1424 (24 November 2003).
Mohamed El Yazghi

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Fish Farming Water Quality Grid 9, 15, 27

Parameter		Limit values	
		Cold waters	Warm waters
1	Temperature (°C)	5 < T < 20	8 < T < 30
2	pH	5 to 9	5 to 9
3	Dissolved oxygen (mgO_2/l)	>5	>3
4	Suspended solids	< 25	< 50
5	COD (mgO_2/l)	< 20	< 30
6	BOD_5 (mgO_2/l)	<3	<6
7	Free chlorine	< 0.02	< 0.02
8	Conductivity (s/cm)	< 350	< 3000
9	Non-ionized ammonia (mg/l NH_3)	< 0.025	< 0.025
10	Ammonia (mg/l NH^{4+})	< 0.50	< 1
11	Nitrite (mg/l NO_2-)	< 0.5	< 0.5
12	Detergents (mg/l)	< 0.5	< 0.5
13	Sulphates (mg/l)	< 200	< 200
14	Dissolved or emulsified hydrocarbons (g/l)	< 10	< 10
15	Polycyclic aromatic hydrocarbons (g/l)	< 0.2	< 0.2
16	Phenols (g/l) in the absence of chlorination	<1	< 1
17	Cyanides (g/l CN)	< 50	< 50
18	Silver (g/l Ag)	<3	<3
19	Fluorides (mg/l F)	< 0.7	< 0.7
20	Pesticides (g/l)	< 0.1 per individualized substance < 0.5 in total	< 0.1 per individualized substance < 0.5 in total

	Heavy metals		
21	Selenium (g/l Se)	< 10	< 10
22	Barium (mg/l)	< 1	< 1
23	Boron (mg/l B)	< 2	< 2
24	Manganese (mg/l)	< 0.1	< 0.1
25	Mercury (g/l Hg)	< 1	< 1
26	Lead (g/l Pb)	< 20	< 20
27	Arsenic (g/l As)	< 50	< 50
28	Total chromium (g/l Cr)	< 50	< 50
29	Cadmium (g/l Cd)	< 5	< 5
30	Copper (a) (g/l Cu)	< 40	< 40
31	Zinc (a) (mg/l Zn)	< 1.3	< 1.3
	Bacteriological		
32	Fecal coliforms / 100 ml	< 2000	< 2000

(a): For a hardness > 100 mg/l Ca CO_3