

# Annexes

## Annex I List of contributing authors and organisations

| Name         | Institutional affiliation  | Country | Field of work         |
|--------------|--|---------|-----------------------|
| Jianguo Qu   | State Key Laboratory of Estuary & Coastal Research, East China Normal University, Shanghai, 200062 China   | China   | Environmental Science |
| Zhaoli Xu    | East China Sea Fisheries Research Institute, Chinese Academy of Fisheries Sciences, Shanghai, 200090 China | China   | Marine biology        |
| Qian Long    | Library of East China Normal University, Shanghai, 200062 China  | China   | Information Science   |
| Liang Wang   | School of Resources and Environment Science, East China Normal University, Shanghai, 200062 China          | China   | Ecology               |
| Xiaomin Shen | State Key Laboratory of Estuary & Coastal Research, East China Normal University, Shanghai, 200062 China   | China   | Fishery Resource      |
| Jing Zhang   | State Key Laboratory of Estuary & Coastal Research, East China Normal University, Shanghai, 200062 China   | China   | Chemical Oceanography |
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# Annex II

## Detailed scoring tables

### I: Freshwater shortage

| Environmental issues              | Score | Weight | Environmental concern | Weight averaged score |
|-----------------------------------|-------|--------|-----------------------|-----------------------|
| 1. Modification of stream flow    | 1     | 30     | Freshwater shortage   | 1.7                   |
| 2. Pollution of existing supplies | 2     | 40     |                       |                       |
| 3. Changes in the water table     | 2     | 30     |                       |                       |

| Criteria for Economics impacts                                     | Raw score                  | Score    | Weight % |
|--|----------------------------|----------|----------|
| Size of economic or public sectors affected                        | Very small  Very large     | N/A      | N/A      |
| Degree of impact (cost, output changes etc.)                       | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Economic impacts</b>                   |                            | <b>1</b> |          |
| Criteria for Health impacts  | Raw score                  | Score    | Weight % |
| Number of people affected  | Very small  Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Health impacts</b>                     |                            | <b>0</b> |          |
| Criteria for Other social and community impacts                    | Raw score                  | Score    | Weight % |
| Number and/or size of community affected                           | Very small  Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Other social and community impacts</b> |                            | <b>0</b> |          |

N/A = Not applied

### II: Pollution

| Environmental issues | Score | Weight | Environmental concern | Weight averaged score |
|----------------------|-------|--------|-----------------------|-----------------------|
| 4. Microbiological   | 1     | 10     | Pollution             | 1.7                   |
| 5. Eutrophication    | 3     | 35     |                       |                       |
| 6. Chemical          | 1     | 20     |                       |                       |
| 7. Suspended solids  | 1     | 10     |                       |                       |
| 8. Solid wastes      | 1     | 10     |                       |                       |
| 9. Thermal           | 1     | 5      |                       |                       |
| 10. Radionuclides    | N/A   | N/A    |                       |                       |
| 11. Spills           | 1     | 10     |                       |                       |

| Criteria for Economics impacts                                     | Raw score                  | Score    | Weight % |
|--|----------------------------|----------|----------|
| Size of economic or public sectors affected                        | Very small  Very large     | N/A      | N/A      |
| Degree of impact (cost, output changes etc.)                       | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Economic impacts</b>                   |                            | <b>1</b> |          |
| Criteria for Health impacts  | Raw score                  | Score    | Weight % |
| Number of people affected  | Very small  Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Health impacts</b>                     |                            | <b>1</b> |          |
| Criteria for Other social and community impacts                    | Raw score                  | Score    | Weight % |
| Number and/or size of community affected                           | Very small  Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A      | N/A      |
| <b>Weight average score for Other social and community impacts</b> |                            | <b>2</b> |          |

N/A = Not applied

### III: Habitat and community modification

| Environmental issues   | Score | Weight | Environmental concern              | Weight averaged score |
|--|-------|--------|------------------------------------|-----------------------|
| 12. Loss of ecosystems   | 2     | 60     | Habitat and community modification | 2                     |
| 13. Modification of ecosystems or ecotones, including community structure and/or species composition | 2     | 40     |                                    |                       |

| Criteria for Economics impacts                                     | Raw score                  | Score | Weight % |
|--|----------------------------|-------|----------|
| Size of economic or public sectors affected                        | Very small  Very large     | N/A   | N/A      |
| Degree of impact (cost, output changes etc.)                       | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Economic impacts</b>                   |                            |       | <b>1</b> |
| Criteria for Health impacts  | Raw score                  | Score | Weight % |
| Number of people affected  | Very small  Very large     | N/A   | N/A      |
| Degree of severity   | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Health impacts</b>                     |                            |       | <b>0</b> |
| Criteria for Other social and community impacts                    | Raw score                  | Score | Weight % |
| Number and/or size of community affected                           | Very small  Very large     | N/A   | N/A      |
| Degree of severity   | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Other social and community impacts</b> |                            |       | <b>2</b> |

N/A = Not applied

### IV: Unsustainable exploitation of fish and other living resources

| Environmental issues   | Score | Weight % | Environmental concern              | Weight averaged score |
|--|-------|----------|------------------------------------|-----------------------|
| 14. Overexploitation   | 3     | 60       | Unsustainable exploitation of fish | 2.4                   |
| 15. Excessive by-catch and discards                            | N/A   | 10       |                                    |                       |
| 16. Destructive fishing practices                              | 3     | 10       |                                    |                       |
| 17. Decreased viability of stock through pollution and disease | 2     | 20       |                                    |                       |
| 18. Impact on biological and genetic diversity                 | 1     | 10       |                                    |                       |

| Criteria for Economics impacts                                     | Raw score                  | Score | Weight % |
|--|----------------------------|-------|----------|
| Size of economic or public sectors affected                        | Very small  Very large     | N/A   | N/A      |
| Degree of impact (cost, output changes etc.)                       | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Economic impacts</b>                   |                            |       | <b>2</b> |
| Criteria for Health impacts  | Raw score                  | Score | Weight % |
| Number of people affected  | Very small  Very large     | N/A   | N/A      |
| Degree of severity   | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Health impacts</b>                     |                            |       | <b>1</b> |
| Criteria for Other social and community impacts                    | Raw score                  | Score | Weight % |
| Number and/or size of community affected                           | Very small  Very large     | N/A   | N/A      |
| Degree of severity   | Minimum  Severe            | N/A   | N/A      |
| Frequency/Duration   | Occasion/Short  Continuous | N/A   | N/A      |
| <b>Weight average score for Other social and community impacts</b> |                            |       | <b>0</b> |

N/A = Not applied

## V: Global change

| Environmental issues  | Score | Weight | Environmental concern | Weight averaged score |
|---|-------|--------|-----------------------|-----------------------|
| 19. Changes in the hydrological cycle                       | 1     | 50     | Global change         | 0.5                   |
| 20. Sea level change  | 0     | 50     |                       |                       |
| 21. Increased UV-B radiation as a result of ozone depletion | N/A   | N/A    |                       |                       |
| 22. Changes in ocean CO <sub>2</sub> source/sink function   | N/A   | N/A    |                       |                       |

| Criteria for Economics impacts                                     | Raw score                          | Score    | Weight % |
|--|------------------------------------|----------|----------|
| Size of economic or public sectors affected                        | Very small  1  2  3 Very large     | N/A      | N/A      |
| Degree of impact (cost, output changes etc.)                       | Minimum  1  2  3 Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  1  2  3 Continuous | N/A      | N/A      |
| <b>Weight average score for Economic impacts</b>                   |                                    | <b>0</b> |          |
| Criteria for Health impacts  | Raw score                          | Score    | Weight % |
| Number of people affected  | Very small  1  2  3 Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  1  2  3 Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  1  2  3 Continuous | N/A      | N/A      |
| <b>Weight average score for Health impacts</b>                     |                                    | <b>0</b> |          |
| Criteria for Other social and community impacts                    | Raw score                          | Score    | Weight % |
| Number and/or size of community affected                           | Very small  1  2  3 Very large     | N/A      | N/A      |
| Degree of severity   | Minimum  1  2  3 Severe            | N/A      | N/A      |
| Frequency/Duration   | Occasion/Short  1  2  3 Continuous | N/A      | N/A      |
| <b>Weight average score for Other social and community impacts</b> |                                    | <b>1</b> |          |

N/A = Not applied

## Comparative environmental and socio-economic impacts of each GIWA concern

| Concern   | Types of impacts    |            |                |            |                    |            |                            |            | Overall score |
|---|---------------------|------------|----------------|------------|--------------------|------------|----------------------------|------------|---------------|
|   | Environmental score |            | Economic score |            | Human health score |            | Social and community score |            |               |
|   | Present (a)         | Future (b) | Present (a)    | Future (b) | Present (a)        | Future (b) | Present (a)                | Future (b) |               |
| Freshwater shortage   | 1.7                 | 2          | 1              | 1          | 0                  | 0          | 0                          | 1          | 0.84          |
| Pollution   | 1.7                 | 2          | 1              | 1          | 1                  | 1          | 2                          | 1          | 1.34          |
| Habitat and community modification                            | 2                   | 3          | 1              | 0          | 0                  | 0          | 2                          | 1          | 1.12          |
| Unsustainable exploitation of fish and other living resources | 2.4                 | 3          | 2              | 0          | 1                  | 0          | 0                          | 1          | 1.18          |
| Global change   | 0.5                 | 1          | 0              | 0          | 0                  | 0          | 1                          | 1          | 0.44          |

## Weight averaged environmental and socio-economic impacts of each GIWA concern

| Present (%) (i) | Future (%) (j) | Total (%) |
|-----------------|----------------|-----------|
| 60              | 40             | 100       |

| Environmental (k) | Economic (l) | Health (m) | Other Social and Community impacts (n) | Total (%) |
|-------------------|--------------|------------|--|-----------|
| 40                | 20           | 20         | 20                                     | 100       |

| Concern   | Types of Impacts                             |   |   |   |                                    | Rank |
|---|--|---|---|---|------------------------------------|------|
|   | Time Weight Averaged Environmental Score (o) | Time Weight Averaged Economic Score (p) | Time Weight Averaged Human Health Score (q) | Time Weight Averaged Social & Community Score (r) | Time Weight Averaged Overall Score |      |
|   | $(a)x(i)+(b)x(j)$                            | $(c)x(i)+(d)x(j)$                       | $(e)x(i)+(f)x(j)$                           | $(g)x(i)+(h)x(j)$                                 | $(o)x(k)+(p)x(l)+(q)x(m)+(r)x(n)$  |      |
| Freshwater shortage   | 1.82   | 1                                       | 0   | 0.4   | 1.01                               | 4    |
| Pollution   | 1.82   | 1                                       | 1   | 1.6   | 1.45                               | 2    |
| Habitat and community modification                            | 2.40   | 0.6                                     | 0   | 1.6   | 1.40                               | 3    |
| Unsustainable exploitation of fish and other living resources | 2.84   | 1.2                                     | 0.6   | 0.4   | 1.58                               | 1    |
| Global change   | 0.70   | 0                                       | 0   | 1   | 0.48                               | 5    |

## Annex III

# List of laws and regulations related to water

- 1. 1974 UNEP Regional Seas Programme, UNEP**, established in 1974, is a global program for the sustainable management of coastal and marine environment areas on a regional basis.
- 2. 1979 Rules of the People's Republic of China governing vessels of foreign nationality**, came into force on Sept. 18, 1979, safeguard ports and coastal waters, ensure the safety of navigation and prevent the pollution of waters.
- 3. 1983 Regulations of the People's Republic of China on the prevention of vessel-induced sea pollution**, came into effect in 1983, aim to protect marine environment.
- 4. 1985 Regulations of the People's Republic of China on control over dumping of wastes in the seawater**, come into effect on Mar 6, 1985, control dumping of waste.
- 5. 1990 Regulations of the People's Republic of China on the prevention of pollution damage to the marine environment by land-sourced pollutants**, came into effect on June 22, 1990, focus on strengthening the supervision and administration of land pollution sources and preventing pollution damage to the marine environment by land-sourced pollutants.
- 6. 1991 Law of the People's Republic of China on Water and Soil Conservation**, came into force on June 29, 1991, supports the decrease of land-based pollution of the marine zone.
- 7. 1992 Law of the People's Republic of China on the Territorial Sea and the Contiguous zone**, came into effect on Feb. 25, 2002, defines and protect territorial sea and contiguous zone of the People's Republic of China.
- 8. 1992 Maritime Code of the People's Republic of China**, came into force on Nov. 7, 1992, governs commercial transactions to do with shipping and navigation.
- 9. 1992 North Pacific Marine Science Organization (PICES)**, established in 1992 with Canada, People's Republic of China, Japan, Republic of Korea, Russian Federation, and the United States of America, is an intergovernmental scientific organisation to advance scientific knowledge about the ocean environment.
- 10. 1996 Decision of the Standing Committee of the National People's Congress on approval of the United Nations Convention on the Law of the Sea**, approved by the Standing Committee of the National People's Congress on 15 May 1996, is a full adoption of UNCLOS treaty norms by China, including particularly the concept of the 200 nm EEZ and a Continental Shelf generally limited to 200 nm.
- 11. 1996 Decision of the State Council on several issues concerning environmental protection**, came into force on Aug. 3, 1996, aims at strengthening the prevention and control of water pollution in rivers, lakes, reservoirs and coastal waters.
- 12. 1998 People's Republic of China Exclusive Economic Zone and Continental Shelf Law**, came into effect on 26 June 1998, defines the EEZ and the continental shelf of PRC China and specifies the jurisdictional powers that China will be exercised in these maritime areas.
- 13. 1998 Seawater Quality Standard of the People's Republic of China**, came into force on July 1, 1998, classifies seawater quality into four grades, and gives quality standards for each grade of seawater.
- 14. 1999 Wetland Biodiversity Conservation and Sustainable Use Programme, People's Republic of China**, issued by the State Council on Jan. 1, 1999, provides the foundation for the conservation and better management of the wetland resources in China.
- 15. 2002 Administration Law on the Use of Ocean Space of the People's Republic of China**, came into effect on Jan. 1, 2002, promotes the rational development and sustainable use of ocean space.
- 16. Economic and Social Commission for Asia and the Pacific (ESCAP), UN**, addresses various issues about water.
- 17. Large Marine Ecosystem Project**, The Large Marine Ecosystem Project is a global effort initiated by the World Conservation Union (IUCN), the Intergovernmental Oceanographic Commission of UNESCO (IOC), other United Nations agencies, and the US National Oceanic and Atmospheric Administration (NOAA). The project aims to improve the long-term sustainability of resources and environment of the Large Marine Ecosystems (LMEs) worldwide.
- 18. Nautilus Institute for Security and Sustainable Development**, is a policy-oriented research and consulting organisation which promotes international cooperation for security and ecologically sustainable development including the marine environment

## Annex IV

# List of laws and regulations related to environmental protection

- 1. The Water Act of People's Republic of China**, approved by the Standing Committee of National People's Congress and issued by the president of People's Republic of China; a law for management, utilization and protection of water resources.
- 2. 1982 The Marine Environment Protection Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Aug. 23, 1982; a law especially for marine environment protection.
- 3. 1983 The Marine Petroleum Exploitation and the Environment Protection Regulation of People's Republic of China**, issued by the State Council on Dec. 29, 1983; a detailed and supplementary rule for the Marine Environment Protection Act.
- 4. 1983 The Regulation for Preventing Marine Pollution from Ship, People's Republic of China**, issued by the State Council on Dec. 29, 1983; a detailed rule for the Marine Environment Protection Act.
- 5. 1984 The Water Pollution Control Act of People's Republic of China**, approved by the Standing Committee of National People's Congress and issued by the president of People's Republic of China on May 1, 1984; a law dealing with inland water pollution control.
- 6. 1985 The Marine Waste Disposal Management Regulation of People's Republic of China**, issued by the State Council on March 6, 1985; a detailed rule for implementing the Marine Environment Protection Act.
- 7. 1988 The Wild Animal Conservation Act of People's Republic of China**, approved by the National People's Congress on Nov 8, 1988; the first law in China dealing with wild animal conservation.
- 8. 1989 The Environment Protection Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Dec. 26, 1989; a basic law for comprehensive environment protection.
- 9. 1990 The Regulation for Controlling Marine Pollution by Inland Pollutants, People's Republic of China**, issued by the State Council on June 22, 1990; a detailed rule for the Marine Environment Protection Act.
- 10. 1990 The Regulation for Preventing Marine Pollution from Coastal Construction, People's Republic of China**, issued by the State Council on May 25, 1990; a detailed rule for the Marine Environment Protection Act.

- 11. Mineral Resources Law of the People's Republic of China**, covers the development of the mining industry and promotes the exploration, development, utilization and protection of mineral resources in the present and the long term.

# Annex V

## List of laws and regulations related to fisheries

1. **The Water Act of People's Republic of China**, approved by the Standing Committee of National People's Congress and issued by the president of People's Republic of China; a law for management, utilization and protection of water resources.
2. **1953 The Charter of the Ship Inspection Bureau of People's Republic of China**, approved by the State Council on Oct. 7, 1963; a rule suitable to all kinds of ships except military ship, sport boat, tourism boat and small wooden boat.
3. **1982 The Marine Environment Protection Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Aug. 23, 1982; a law especially for marine environment protection.
4. **1982 The Food Hygiene Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Nov. 19, 1982; a law preventing unhealthy food from endangering people's health.
5. **1983 The Marine Petroleum Exploitation and the Environment Protection Regulation of People's Republic of China**, issued by the State Council on Dec. 29, 1983; a detailed and supplementary rules for the Marine Environment Protection Act.
6. **1983 The Regulation for Preventing Marine Pollution from Ship, People's Republic of China**, issued by the State Council on Dec. 29, 1983; a detailed rules for the Marine Environment Protection Act.
7. **The Export Food Hygiene Management Regulation of People's Republic of China**, issued by the State Commodity Inspection Bureau and the Ministry of Health on July 16, 1984; a law to guarantee the quality of exported food.
8. **1984 The Water Pollution Control Act of People's Republic of China**, approved by the Standing Committee of National People's Congress and issued by the president of People's Republic of China on May 1, 1984; a law dealing with inland water pollution control.
9. **1985 The Fishing Vessel Registration Charter, People's Republic of China**, issued by the Ministry of Agriculture on Nov. 9, 1985; a detailed rule for both domestic and foreign fishing vessels.
10. **1985 The Marine Waste Disposal Management Regulation of People's Republic of China**, issued by the State Council on March 6, 1985; a detailed rule for implementing the Marine Environment Protection Act.
11. **1986 The Fishery Act of People's Republic of China**, approved by the Standing Committee of National People's Congress and issued by the president of People's Republic of China on Jan. 20, 1986; a basic law dealing with national principle for fishery management including aquaculture, fishing and fishery resource enhancement, utilization and conservation.
12. **1987 The Detailed Rule for Implementing The Fishery Act of People's Republic of China**, approved by the State Council and issued by the Ministry of Agriculture on Oct. 19, 1987; a supplementary regulation for The Fishery Act of People's Republic of China.
13. **1988 The Wild Animal Conservation Act of People's Republic of China**, approved by the National People's Congress on Nov. 8, 1988; the first law in China dealing with wild animal conservation.
14. **1989 The Environment Protection Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Dec. 26, 1989; a basic law for comprehensive environment protection.
15. **1989 Regulations on fishing license management**, aimed to protect and rationally utilize fishery resources, regulate fishing intensity, maintain production order and safeguard the legitimate rights and interests of fishing operators whilst promoting fishery development.
16. **1990 The Regulation for Controlling Marine Pollution by Inland Pollutants, People's Republic of China**, issued by the State Council on June 22, 1990; a detailed rule for the Marine Environment Protection Act.
17. **1990 The Regulation for Preventing Marine Pollution from Coastal Construction, People's Republic of China**, issued by the State Council on May 25, 1990; a detailed rule for the Marine Environment Protection Act.
18. **1990 The Regulation on Making and Clearing Fishing Port, People's Republic of China**, issued by the Ministry of Agriculture on Jan. 26, 1990; a detailed rule for the management of fishing vessels.
19. **1991 The Animal and Plant Import & Export Quarantine Act of People's Republic of China**, approved by the Standing Committee of National People's Congress on Oct. 31, 1991; a law preventing animal and plant disease and pest infection.
20. **1993 Regulations of the People's Republic of China for the implementation of wild aquatic animal protection**, Oct 1993; aimed at the management and conservation of wild aquatic animal resources.

# Annex VI

## Other laws and regulations

- 1. 1979 Regulations on the Protection and Breeding of Aquatic Resources**, made public in Feb 1979.
- 2. 1979 The Law on Environmental Protection of the People's Republic of China (trial implementation)** in Sep 1979.
- 3. 1983 Circular of the State Council on Strict Protection of Valued and Rare Wild Animals** in 1983.
- 4. 1984 Forest Law of the People's Republic of China**, passed by the Seventh Session of the standing Committee of the Sixth National People's Congress on Sep 20, 1984, with a view to protecting, nurturing and rationally utilizing the forest resources.
- 5. 1985 The Law on Grasslands of the People's Republic of China** in June 1985.
- 6. 1986 The Law on Land Management of the People's Republic of China** in June 1986.
- 7. 1987 The Check-list for the Protection of Key Wild Animals"** in 1987.
- 8. 1988 The Law on the Protection of Wild Animals of the People's Republic of China** issued in Nov 1988.
- 9. 1992 The Enforcement Regulations on the Protection of Terrestrial Wild Animals in the People's Republic of China** in Feb 1992.
- 10. 2003 Measures regarding the Grant of State-Owned Land Use Rights by means of Negotiation**, approved by Ministry of Land and Resource on Aug 1, 2003; provided for new minimum pricing standards with respect to granting land use rights through negotiation with relevant government departments.
- 11. 2004 The Port Law of the People's Republic of China**, issued by Standing Committee of the National People's Congress on Jan 1, 2004; establishes the regime for planning, construction, operation and supervision of China's sea and river ports.

# Annex VII

## Records of main economic freshwater species in the estuary areas of the East China Sea

| Species   | Species   |
|---|---|
| <i>Coilia mystus</i> (Linnaeus)                             | <i>Hemibarbus longirostris</i> (Regan)                        |
| <i>Coilia ectenes</i> (Jordan et Seale)                     | <i>Belligobio nummifer</i> (Boulenger)                        |
| <i>Salmo gairdneri</i> (Richardson)                         | <i>Hemibarbus labea</i> (Pallas)                              |
| <i>Protosalanx hyalocranius</i> (Abbott)                    | <i>Pseudorasbora parva</i> (Temminck et Schlegel)             |
| <i>Anguilla japonica</i> (Temminck et Schlegel)             | <i>Sarcocheilichthys sinensis</i> (Bleeker)                   |
| <i>Elopichthys bambusa</i> (Richardson)                     | <i>Pseudogobio vaillanti</i> (Sauvage)                        |
| <i>Squaliobarbus curriculus</i> (Richardson)                | <i>Coreius heterodon</i> (Bleeker)                            |
| <i>Aphyocypris chinensis</i> (Günther)                      | <i>Abbottina rivularis</i> (Basilewsky)                       |
| <i>Mylopharyngodon piceus</i> (Richardson)                  | <i>Saurogobio dabryi</i> (Bleeker)                            |
| <i>Ctenopharyngodon idellus</i> (Cuvier et Valenciennes)    | <i>Saurogobio dumerili</i> (Bleeker)                          |
| <i>Plagiognathops microlepis</i> (Bleeker)                  | <i>Spinibarbus hollandi</i> (Oshima)                          |
| <i>Xenocypris argentea</i> (Günther)                        | <i>Acrossocheilus (Lissocheilichthys) wenchowensis</i> (Wang) |
| <i>Distocheodon tumirostris</i> (Peters)                    | <i>Cyprinus carpio</i> (Linnaeus)                             |
| <i>Pseudobrama simony</i> (Bleeker)                         | <i>Carassius auratus</i> (Linnaeus)                           |
| <i>Aristichthys nobilis</i> (Bleeker)                       | <i>Misgurnus anguillicaudatus</i> (Cantor)                    |
| <i>Hypophthalmichthys molitrix</i> (Cuvier et Valenciennes) | <i>Silurus asotus</i> Linnaeus                                |
| <i>Rhodeus sinensis</i> (Günther)                           | <i>Pelteobagrus fulvidraco</i> (Richardson)                   |
| <i>Toxabramis swinhonis</i> (Günther)                       | <i>Glyptothorax fukiensis</i> (Rendahl)                       |
| <i>Hemiculter leucisculus</i> (Basilewsky)                  | <i>Oryzias latipes</i> (Temminck et Schlegel)                 |
| <i>Culter erythropterus</i> (Basilewsky)                    | <i>Mugil cephalus</i> (Linnaeus)                              |
| <i>Pseudolaubuca sinensis</i> (Bleeker)                     | <i>Liza hematocheila</i> (Temminck et Schlegel)               |
| <i>Megalobrama amblycephala</i> (Yih)                       | <i>Monopterus albus</i> (Zuiew)                               |
| <i>Megalobrama terminalis</i> (Richardson)                  | <i>Siniperca chuatsi</i> (Basilewsky)                         |
| <i>Sinibrama macrops</i> (Günther)                          | <i>Siniperca undulata</i> (Fang et Chong)                     |
| <i>Erythroculter ilishaeformis</i> (Bleeker)                | <i>Odontobutis obscura</i> (Temminck et Schlegel)             |
| <i>Erythroculter mongolicus</i> (Basilewsky)                | <i>Ctenogobius giurinus</i> (Rutter)                          |
| <i>Parabramis pekinensis</i> (Basilewsky)                   | <i>Boleophthalmus pectinirostris</i> (Linnaeus)               |
| <i>Hemibarbus maculatus</i> (Bleeker)                       | <i>Channa argus</i> (Cantor)                                  |

## Annex VIII

### Records of main economic fishes in the East China Sea

| Species  | North of East China Sea |          | South of East China Sea |          | Taiwan Strait | Korea | Japan |
|--|-------------------------|----------|-------------------------|----------|---------------|-------|-------|
|  | Pelagic sea             | Offshore | Pelagic Sea             | Offshore |               |       |       |
| <i>Raja kenoei</i> (Müller et Helle, 1841)                     | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Raja parosa</i> (Günther, 1874)                             | √                       | √        |                         | √        |               | √     | √     |
| <i>Sardinella zunasi</i> (Bleeker, 1854)                       | √                       |          | √                       |          | √             |       | √     |
| <i>Sardinella lemuru</i> (Bleeker, 1853)                       | √                       |          |                         |          | √             |       | √     |
| <i>Ilisha elongata</i> (Bennett, 1830)                         | √                       |          | √                       |          | √             | √     | √     |
| <i>Coilia ectenes</i> (Jordan et Seale, 1905)                  | √                       | √        |                         |          |               | √     | √     |
| <i>Coilia mystus</i> (Linnaeus, 1758)                          | √                       | √        |                         |          |               | √     | √     |
| <i>Engraulis japonicus</i> (Temminck et Schlegel, 1846)        | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Setipinna taty</i> (Valenciennes, 1848)                     | √                       | √        | √                       |          | √             | √     | √     |
| <i>Argentina semifasciata</i> (Kishinouye, 1904)               |                         | √        |                         | √        |               |       | √     |
| <i>Saurida elongata</i> (Temminck et Schlegel, 1846)           | √                       | √        | √                       | √        |               | √     | √     |
| <i>Saurida undosquamis</i> (Richardson, 1848)                  | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Saurida wanieso</i> (Shindo et Yamada, 1972)                | √                       | √        | √                       | √        |               |       |       |
| <i>Synodus macrops</i> (Tanaka, 1917)                          | √                       | √        | √                       | √        |               |       | √     |
| <i>Trachinocephalus myops</i> (Bloch et Schneider, 1801)       | √                       |          | √                       | √        | √             | √     | √     |
| <i>Saurida sp.</i>   |                         | √        | √                       | √        | √             |       | √     |
| <i>Harpadon nehereus</i> (Hamilton, 1822)                      | √                       | √        | √                       | √        | √             | √     |       |
| <i>Alloconger anagoides</i> (Bleeker, 1864)                    | √                       | √        | √                       | √        | √             |       | √     |
| <i>Anago anago</i> (Temminck et Schlegel, 1846)                | √                       | √        | √                       | √        | √             |       | √     |
| <i>Conger myriaster</i> (Brevoort, 1856)                       | √                       | √        | √                       |          |               | √     | √     |
| <i>Rhynchoconger ectenurus</i> (Jordan et Richardson, 1909)    | √                       | √        | √                       | √        |               |       | √     |
| <i>Rhynchocymba sivicola</i> (Matsubara et Ochiai, 1951)       | √                       | √        | √                       | √        |               |       | √     |
| <i>Muraenesox cinereus</i> (Forskål, 1755)                     | √                       | √        | √                       |          | √             | √     | √     |
| <i>Gymnothorax reticularis</i> (Bloch, 1795)                   | √                       | √        | √                       | √        | √             |       | √     |
| <i>Ariosoma shiroanago shiroanago</i> (Asano, 1958)            | √                       | √        | √                       | √        |               |       | √     |
| <i>Dysomma anguillare</i> (Barnard, 1923)                      | √                       | √        | √                       | √        | √             |       | √     |
| <i>Ophichthus apicalis</i> (Bennett, 1830)                     | √                       | √        | √                       | √        | √             |       |       |
| <i>Bregmaceros maccllelandi</i> (Thompson, 1940)               | √                       | √        | √                       | √        | √             |       |       |
| <i>Coelorhynchus multispinulosus</i> (Katayama, 1942)          | √                       | √        | √                       | √        |               |       | √     |
| <i>Neobythites sivicola</i> (Jordan et Snyder, 1901)           | √                       | √        | √                       | √        |               |       | √     |
| <i>Fistularia petimba</i> (Lacépède, 1803)                     | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Sphyaena japonica</i> (Cuvier et Valenciennes, 1829)        | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Sphyaena pinguis</i> (Günther, 1874)                        | √                       | √        | √                       | √        | √             | √     | √     |
| <i>Eleutheronema tetradactylum</i> (Shaw, 1804)                | √                       | √        |                         |          | √             | √     | √     |
| <i>Doederleinia berycoides</i> (Hilgendorf, 1878)              | √                       | √        |                         | √        |               | √     | √     |
| <i>Synagrops japonicus</i> (Steindachner et Döderlein, 1884)   | √                       | √        | √                       | √        | √             |       |       |
| <i>Cookeolus boops</i> (Cuvier, 1829)                          | √                       | √        | √                       | √        |               |       | √     |
| <i>Priacanthus macracanthus</i> (Cuvier et Valenciennes, 1829) | √                       | √        | √                       | √        | √             | √     | √     |

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| <i>Acropoma japonicum</i> (Günther, 1859)                  | √ | √ | √ | √ | √ | √ | √ |
| <i>Apogon lineatus</i> (Temminck et Schlegel, 1842)        | √ | √ | √ | √ | √ | √ | √ |
| <i>Branchiostegus japonicus</i> (Houttuyn, 1782)           |   | √ | √ | √ |   | √ | √ |
| <i>Caranx equula</i> (Temminck et Schlegel, 1842)          |   | √ | √ | √ | √ | √ | √ |
| <i>Decapterus maruelsi</i> (Temminck et Schlegel, 1842)    | √ | √ | √ | √ | √ | √ | √ |
| <i>Selar crumenophthalmus</i> (Bloch, 1793)                | √ | √ | √ | √ | √ | √ | √ |
| <i>Trachurus japonicus</i> (Temminck et Schlegel, 1842)    | √ | √ | √ | √ | √ | √ | √ |
| <i>Seriola aureovittata</i> (Temminck et Schlegel, 1845)   |   | √ |   | √ |   |   | √ |
| <i>Argyrosomus argentatus</i> (Houttuyn, 1782)             | √ | √ | √ | √ | √ | √ | √ |
| <i>Nibea albiflora</i> (Richardson, 1846)                  | √ | √ | √ |   |   | √ | √ |
| <i>Collichthys lucidus</i> (Richardson, 1844)              | √ | √ |   |   |   | √ | √ |
| <i>Collichthys niveatus</i> (Jordan et Starks, 1906)       | √ | √ |   |   |   | √ |   |
| <i>Miichthys miuy</i> (Basilewsky, 1855)                   | √ | √ | √ |   |   | √ |   |
| <i>Larimichthys crocea</i> (Richardson, 1846)              | √ |   | √ |   | √ | √ |   |
| <i>Larimichthys polactis</i> (Bleeker, 1877)               | √ | √ | √ |   | √ | √ |   |
| <i>Pagrosomus major</i> (Temminck et Schlegel, 1843)       |   | √ |   | √ | √ | √ | √ |
| <i>Erynnis cardinals</i> (Lacépède, 1802)                  | √ |   | √ |   | √ |   | √ |
| <i>Sparus macrocephalus</i> (Basilewsky, 1855)             | √ |   |   |   |   | √ | √ |
| <i>Dentex tumifrons</i> (Temminck et Schlegel, 1842)       |   | √ | √ | √ |   | √ | √ |
| <i>Banjus banjos</i> (Richardson, 1846)                    |   | √ | √ | √ |   |   | √ |
| <i>Haplogenyus mucronatus</i> (Eyedoux et Souleyet, 1841)  | √ | √ | √ |   | √ | √ | √ |
| <i>Upeneus bensasi</i> (Temminck et Schlegel, 1842)        | √ | √ | √ | √ | √ | √ | √ |
| <i>Parapercis sexfasciata</i> (Temminck et Schlegel, 1843) | √ | √ | √ | √ | √ |   | √ |
| <i>Gnathagnus elongatus</i> (Temminck et Schlegel, 1846)   | √ | √ |   | √ |   | √ | √ |
| <i>Uranoscopus japonicus</i> (Houttuyn, 1782)              | √ | √ | √ | √ |   |   | √ |
| <i>Champsodon capensis</i> (Regan, 1908)                   | √ | √ | √ | √ | √ |   | √ |
| <i>Callionymus beniteguri</i> (Jordan et Snyder, 1900)     | √ | √ |   | √ |   |   | √ |
| <i>Callionymus kaianus</i> (Günther, 1880)                 | √ | √ | √ | √ | √ |   | √ |
| <i>Callionymus virgis</i> (Jordan et Fowler, 1903)         | √ | √ | √ | √ | √ |   | √ |
| <i>Calliurichthys doryssus</i> (Jordan et Fowler, 1903)    |   | √ | √ | √ |   | √ | √ |
| <i>Callionymus richardsoni</i> (Bleeker, 1854)             |   | √ | √ | √ |   |   | √ |
| <i>Trichiurus lepturus</i> (Linnaeus, 1758)                | √ | √ | √ | √ | √ | √ | √ |
| <i>Scomber japonicus</i> (Houttuyn, 1782)                  | √ | √ | √ | √ | √ | √ | √ |
| <i>Scomberomorus nipponius</i> (Cuvier, 1831)              | √ | √ | √ | √ | √ | √ | √ |
| <i>Sarda orientalis</i> (Temminck et Schlegel, 1844)       | √ |   | √ | √ |   |   | √ |
| <i>Pampus argenteus</i> (Euphrasen, 1788)                  | √ | √ | √ | √ | √ | √ | √ |
| <i>Pampus cinereus</i> (Bloch, 1793)                       | √ | √ | √ | √ | √ |   | √ |
| <i>Psenopsis anomala</i> (Temminck et Schlegel, 1844)      | √ | √ | √ | √ | √ |   | √ |
| <i>Cubiceps squameiceps</i> (Lloyd, 1909)                  |   | √ |   | √ |   |   | √ |
| <i>Amblychaeturichthys hexanema</i> (Bleeker, 1853)        | √ | √ | √ |   |   | √ | √ |
| <i>Chaeturichthys stigmatias</i> (Richardson, 1844)        | √ | √ | √ | √ |   |   | √ |
| <i>Odontamblyopus rubicundus</i> (Hamilton, 1822)          | √ | √ |   |   |   |   | √ |

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| <i>Ctenotrypauchen chinensis</i> (Steindachner, 1867)             | √ | √ |   |   |   |   |   |
| <i>Sebastiscus marmoratus</i> (Cuiver et Valenciennes, 1829)      | √ | √ | √ | √ |   | √ | √ |
| <i>Scorpaena neglecta</i> (Temminck et Schlegel, 1848)            | √ | √ | √ | √ |   | √ | √ |
| <i>Minous monodactylus</i> (Bloch et Schneider, 1801)             | √ | √ | √ | √ |   | √ | √ |
| <i>Chelidonichthys spinosus</i> (McClelland, 1844)                | √ | √ |   | √ |   | √ | √ |
| <i>Lepidotrigla abyssalis</i> (Jordan et Starks, 1902)            |   | √ | √ | √ |   |   | √ |
| <i>Lepidotrigla alata</i> (Houttuyn, 1782)                        | √ | √ | √ | √ | √ | √ | √ |
| <i>Lepidotrigla guentheri</i> (Hilgendorf, 1879)                  | √ | √ | √ | √ |   | √ | √ |
| <i>Lepidotrigla japonica</i> (Bleeker, 1857)                      | √ | √ | √ | √ |   | √ | √ |
| <i>Lepidotrigla kishinouyei</i> (Snyder, 1911)                    | √ | √ | √ | √ |   |   | √ |
| <i>Lepidotrigla micropterus</i> (Günther, 1873)                   | √ | √ | √ | √ |   | √ | √ |
| <i>Pterygotrigla hemisticta</i> (Temminck et Schlegel, 1850)      |   | √ | √ | √ |   |   | √ |
| <i>Erisphex pottii</i> (Steindachner, 1897)                       | √ | √ | √ | √ |   |   | √ |
| <i>Bembras japonicus</i> (Cuiver et Valenciennes, 1829)           |   | √ | √ | √ |   | √ | √ |
| <i>Onigocia spinosus</i> (Temminck et Schlegel, 1843)             | √ | √ | √ | √ |   | √ | √ |
| <i>Platycephalus indicus</i> (Linnaeus, 1758)                     | √ | √ |   | √ |   | √ | √ |
| <i>Pseudorhombus arsius</i> (Hamilton, 1822)                      | √ | √ |   | √ |   |   | √ |
| <i>Pseudorhombus pentophthalmus</i> (Günther, 1862)               | √ | √ | √ | √ |   | √ | √ |
| <i>Pseudorhombus quinquecellatus</i> (Weber et de Beaufert, 1929) | √ | √ | √ | √ |   |   |   |
| <i>Arnoglossus tenuis</i> (Günther, 1880)                         | √ | √ | √ | √ |   |   | √ |
| <i>Arnoglossus yamanakai</i> (Fukui, Yamada and Ozawa, 1988)      | √ | √ | √ | √ |   |   | √ |
| <i>Pleuronichthys cornutus</i> (Temminck et Schlegel, 1846)       | √ | √ | √ | √ | √ | √ | √ |
| <i>Cynoglossus abbreviatus</i> (Gray, 1832)                       | √ | √ |   | √ |   |   |   |
| <i>Cynoglossus Kapsii</i> (Bleeker, 1851)                         |   |   | √ | √ |   |   |   |
| <i>Cynoglossus gracilis</i> (Günther, 1873)                       | √ | √ | √ |   |   | √ |   |
| <i>Cynoglossus interruptus</i> (Günther, 1879)                    | √ | √ | √ |   |   | √ | √ |
| <i>Cynoglossus oligolepis</i> (Bleeker, 1854)                     | √ | √ | √ |   |   |   |   |
| <i>Triacanthodes anomalus</i> (Temminck et Schlegel, 1847)        |   | √ | √ | √ |   |   | √ |
| <i>Aluterus monoceros</i> (Linnaeus, 1758)                        | √ | √ |   |   |   | √ | √ |
| <i>Thamnaconus septentrionalis</i> (Günther, 1874)                | √ | √ | √ | √ |   | √ | √ |
| <i>Thamnaconus hypargyreus</i> (Cope, 1871)                       | √ | √ | √ | √ | √ |   | √ |
| <i>Takifugu xanthopterus</i> (Temminck et Schlegel, 1847)         | √ | √ | √ |   |   | √ | √ |
| <i>Lophiomus setigerus</i> (Vahl, 1797)                           | √ | √ | √ | √ |   | √ | √ |
| <i>Lophius litulon</i> (Jordan, 1902)                             | √ | √ | √ | √ | √ | √ | √ |
| <i>Malthopsis luteus</i> (Alcock, 1891)                           |   | √ | √ | √ |   |   |   |

# Annex IX

## Environmental quality standards for surface water

### **National Standards of the People's Republic of China (GHZB1-1999)**

This standard is applicable to the surface water bodies of rivers, lakes and reservoirs within the territory of the People's Republic of China.

The water bodies are divided into five classes according to the utilization purposes and protection objectives:

- Class I is mainly applicable to the water from sources, and the national nature reserves.
- Class II is mainly applicable to first class of protected areas for centralized sources of drinking water, the protected areas for rare fishes, and the spawning fields of fishes and shrimps.
- Class III is mainly applicable to second class of protected areas for centralized sources of drinking water, protected areas for the common fishes and swimming areas.
- Class IV is mainly applicable to the water areas for industrial use and entertainment which is not directly touched by human bodies.
- Class V is mainly applicable to the water bodies for agricultural use and landscape requirement.
- The water bodies with various functions are classified based on the highest function.

