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The Japanese Archipelago and Nature

The Japanese Archipelago is an island chain spanning 3000km from north to south along the Japan Sea in the east of the Eurasian continent. It consists of four major islands of Hokkaido, Honshu, Shikoku, and Kyushu, with 6000 islands surrounding them.

The geography of Japan is diverse as seen in its high altitude mountain ranges exceeding 3000m in height, coastlines of over 30,000km, and hundreds of rivers and streams flow down the generally steep, eroded slopes.

Spanning subarctic to subtropical zones, climatic conditions are varied as well, influenced by seasonal monsoon winds, with distinct weather patterns for each season and average precipitation exceeding 1000mm per annum.

Forests cover over 25 million ha, or 67% of the total area of Japan, with most found in mountainous areas. The slopes of the mountains are generally steep and dissected by many ravines and gorges. Most plains and basins are small in size and scattered among hills or along the coasts. Many of them were shaped by the river sediments.

Land use is quite complex in Japan, due mainly to its topography. Most mountains and hilly areas are covered by forests with some parts converted to pastures and orchards. Flatlands including plateaus, terraces and plains are generally used for agricultural and residential purposes. Rice paddies dominate the plains except in sprawling urban areas.

In such a country where there is a rich growth of all forms of life, the Japanese have nurtured a culture to live in accordance with the changing seasons while they were forced to live while facing the natural disasters such as earthquakes and volcanic eruptions. However, instead of confronting nature, the Japanese acclimated to nature and cultivated wide-ranging knowledge, skill, arts, sensitivity, and a sense of beauty.

Japan's rich biodiversity has been shaped by the climate, intricate land use, diverse natural environment and traditional view of nature in each region where people live harmoniously with nature. Approximately 69,000 species have been identified in Japan including 160 species

of mammals, 700 species of birds, 30,000 species of insects and 7000 species of vascular plants as well as many endemics.

The population of Japan is 127.5 million, most of which is concentrated in the very small flatland areas. The average population density is 343 persons per km². Human intervention and the changing lifestyle induced by rapid urbanization during the high economic growth have increasingly exerted pressures on the natural landscape, as well as biosphere in Japan. As a result, many flora and fauna are faced with extinction.

Status of Wetlands in Japan

Because of the large amount of precipitation and the surrounding oceans, Japan is a country blessed with water. Consequently, within its small land area there are numerous marshlands, rivers, ponds and lakes, beaches, tidal flats, coral reefs, mangrove forests, seagrass/seaweed beds, rice paddies, reservoirs, springs, and underground water systems, which represent the myriad of wetland types supporting Japan's rich biodiversity.

Marshlands:

In the field of soil science, marshlands are known as peatlands. These can be classified into high moors which are rich in plant species such as sphagnum sustained only by nutrient-poor rainfall, low moors where reeds and sedge thrive enriched with trophic salts from rivers, and the intermediate moors characterized by colonies of plants such as *Moliniopsis japonica*.

As low moors tend to be directly impacted by human activity, those at lower altitudes in southern Honshu have long been converted into rice paddies and residential areas.

While they are found as far south as Yakushima Island, intermediate moors are generally distributed in cool temperate zones throughout Japan.

High moors are found extensively in the Chubu region of central Honshu and Hokkaido in the north, and provide important habitats for relict species of the Ice Age.

The largest marshland in Japan is Kushiro-shitsugen, a Ramsar site in Hokkaido, with an area of 18,000ha. There are many other marshlands designated as Ramsar

Status of Wetlands in Japan

sites such as Sarobetsu-geya, Kiritappu-shitugen, Bekambeushi-shitsugen, Utonai-ko, Uryunuma-shitsugen, Oze, Oku-Nikko-shitsugen, and Kuju Bogatsuru and Tedewara-shitsugen.

Rivers:

Japan has 109 principal river systems encompassing about 14,000 rivers and streams. Because Japan has many mountains, most rivers are short in length, and travel down steep inclines to the ocean. Heavy rainfalls in the upper reaches result in repeated sudden floods. Flood control is the greatest challenge in river basin management schemes.

Of the 113 major rivers in Japan, very few remain in their natural state, unmarked by dams, dikes, and sluices. Natural riverbanks have largely undergone artificial modification, resulting in the habitat loss for aquatic species every year. The Bekambeushi River in a Ramsar site in Hokkaido is one of the exceptional rivers retaining all of its natural riverbanks.

Freshwater Lakes:

Various types of lakes are scattered throughout the country. Some are in mountainous areas, while others lie in flatlands, and still others exist as lagoons in recessed coastlines.

Biwa-ko, a lake in Shiga Prefecture, is Japan's largest lake with an area of 67,000ha. Other freshwater lakes designated as Ramsar sites include Kutcharo-ko, Miyajima-numa, Onuma, Utonai-ko, Akan-ko, Izu-numa and Uchi-numa, Kabukuri-numa, Sakata, Katano-kamoike, and Imuta-ike. They provide important habitats for ducks, geese, swans, and other waterfowl, as well as freshwater fishes, plants, and aquatic insects such as dragonflies.

In addition to freshwater lakes, irrigation pools and reservoirs for rice paddies in Japan have played an important role as habitats for wildlife including migratory water birds.

Rice Paddies:

Rice paddies cover 2.6 million ha out of Japan's total land area of the 38 million ha. From ancient days, the Japanese have earned their livelihoods by rice production. Rice paddies and their interconnected channels and reservoirs, as well

as the managed broad-leaved deciduous forests in the surrounding hills form the unique, secondary natural environments found everywhere in Japan. This sort of secondary natural environment is a rich repository of biodiversity and has been maintained by moderate human disturbances such as the undergrowth clearing and pond dredging that have been conducted in people's daily lives. However, this balance has been lost because of the changing lifestyle.

Rice paddies are the grounds for food production as well as the important stopover sites and feeding grounds for migratory birds such as shorebirds and other waterfowl. In addition, rice paddies provide habitats for innumerable aquatic



species such as fish and insects. Rice paddies are included as some of the Ramsar sites in Japan, such as Kabukuri-numa and the surrounding rice paddies, Katano-kamoike, and the Lower Maruyama River and the surrounding rice paddies. There are numbers of Ramsar sites such as Miyajima-numa, Izu-numa and Uchi-numa, Sakata, Nakaumi, and Shinji-ko, that consist of a complex wetland ecosystem with the rice paddies around them.

In 2010, Japan and Korea jointly proposed at COP10 a draft resolution on enhancing biodiversity in rice paddies as wetland systems, which was adopted unanimously as the Resolution X.31. (See Appendix 1)

Groundwater Systems:

The Ramsar Convention now recognizes subterranean karst topography formed by limestone and underground hydrological systems as a wetland type. Japan's largest karst topography, the Akiyoshidai Groundwater System, with three subterranean caves, is designated as a Ramsar site.

Coastlines:

Japan consists of over 6000 islands and the total length of the coast line is 32,800km, of which 53.1% is natural and 33.0% artificial. Approximately 1300km of natural coastline has disappeared due to artificial modification in the 20 years following 1978. In the main islands of Hokkaido, Honshu, Shikoku and Kyushu, natural coast line covers only 42.3%.

The Ramsar sites along the coastline includes Miyajima, a well conserved natural coast and forest in the back, and Yakushima Nagata-hama, a natural sand beach which is the largest nesting habitat for the Loggerhead Sea Turtle in the Northern Pacific region.

Brackish Lakes:

There are numbers of coastal lagoons in Japan and most of them are brackish lakes linked to the sea. Often being the final depository of organic trophic materials from rivers, these lakes are shallow, with a complex ecosystem combining freshwater and saline environments. These combined characteristics create a highly productive ecosystem that abounds with marine resources that support fishing industries. The

Ramsar sites in Japan include those brackish lakes such as Akkeshi-ko, Furen-ko and Shunkuni-tai, Tofutsu-ko, Mikata-goko, Nakaumi, and Shinji-ko.

Seagrass/Seaweed Beds:

Seagrass/Seaweed beds refer to coastal waters where vast communities of seagrass such as Eelgrass and seaweed such as Kelp thrive. These areas provide oxygen for marine organisms, purify water and stabilize the sea-bottom environment. In addition, they are important for providing not only food sources, but also places for nesting, growth, and hiding for countless species including fish and sea turtles. Seagrass/Seaweed beds have been excellent fishing grounds for Japanese people for a long period of time.

According to the Survey on Marine Organisms Environment (Seagrass/Seaweed) in 1994, Japan has 200,000ha of Seagrass/Seaweed beds (counting those exceeding 1ha in area) within the waters shallower than 20m. Compared to the 1978 survey, 6400 ha of Seagrass/Seaweed beds was lost by land reclama-

tion and other factors caused by degradation of surrounding environment. As these trends are still continuing today, their conservation is a pressing issue. In addition, there are many reports that a number of Seagrass/Seaweed beds have been damaged by the Tohoku earthquake and tsunami in 2011.

Particularly large Eelgrass beds remain in Notsuke-wan, a Ramsar site in Hokkaido.



Tidal flats:

In the Seashore Survey of 1998, 49,380ha of tidal flats (exceeding 100m in width and 1ha in area) were identified. When tidal flats are exposed and submerged repeatedly, rich nutritious sediments from the river and sea are deposited there to build up a rich community of microorganisms and benthos. The water purification function of these organisms attracts people's attention these days. Tidal flats are indispensable habitat for shorebirds for feeding and resting as well.

Due to scarcities in flatlands, tidal flats tend to become the targets in various development projects in Japan, and consequently 6000ha of tidal flats disappeared in the twenty years following 1978. Some of the existing tidal flats are under the threat of development even now. The Ramsar sites of Yatsu-higata, Fujimae-higata, Arao-higata, Manko, Yonaha-wan, and Nagura Amparu are valuable examples of tidal flats that have been preserved.

Mangrove Forests:

According to the Seashore Survey (1998), out of 2670ha of mangrove forests in Japan, over 95% are found in Okinawa Prefecture. Although most are small in scale, there are a few which exceed 100ha in area. Out of over 100 species of mangrove plant in the world, 7 species belonging to 4 families have been identified in Japan. The mangrove forests are found in Manko, and Nagura Amparu, Ramsar sites in Okinawa.

Coral Reefs:

The total area of reef-building corals in Japan is approximately 35,350ha, most of which are located south of the Tokara Archipelago in the Nansei Islands, Kagoshima Prefecture. The species diversity of reef-building corals found there is among the most outstanding in the world. Kushimoto Coral Communities with a unique high latitude coral community, and Kerama-shoto Coral Reef with a magnificent coral community are the Ramsar sites with coral reefs in Japan.

Ramsar Sites in Japan

When Japan became a contracting party to the Ramsar Convention in 1980,

Kushiro-shitsugen became Japan's first Ramsar site. In 1993, Kushiro City hosted the Fifth Meeting of the Conference of the Contracting Parties (COP5) to the Ramsar Convention, greatly raising awareness of the objectives of the Ramsar Convention in Japan and the rest of Asia. The number of Ramsar sites in Japan gradually increased thereafter, to reach 13 at COP8.

These numbers would soon multiply: in November 2005 at COP9, Japan added 20 more wetlands. This was achieved in response to the global objective set at COP7 in 1999 to double the number of the 1000 Ramsar sites by 2005.

In the Third National Biodiversity Strategy of Japan established in 2007, Japan set an objective to increase 10 other Ramsar sites by COP11. In response to the objective, 4 new wetlands were designated as Ramsar sites in October 2008 at COP10. In 2010, Japan selected 172 wetlands that satisfy the criteria for wetlands of international importance identified by the Annex II to the Resolution VIII.13 of the Ramsar Convention. (See Appendix 4) Out of the selected candidate wetlands, 9 wetlands were designated as new Ramsar sites at COP 11 in July 2012, counting 46 sites in Japan in total.

When designating wetlands as Ramsar sites, Japan sees the followings as prerequisites.

1. Meet the international criteria set by the Ramsar Convention
2. Ensure long-term conservation of the site through na-

tional legislation of laws such as the Natural Parks Law and Wildlife Protection and Hunting Law. 3. Gain consent and support of the local communities.

Wetlands are classified into 42 types by the Annex I to the Resolution VIII.13 of the Ramsar Convention (See Appendix 3) The wetlands designated as Ramsar sites in Japan also include various types of wetlands such as marshlands, lakes, rice paddies, salt marshes, tidal flats, seagrass/seaweed beds, sand beaches, mangrove forests, coral reefs and groundwater systems, reflecting the diversity of Japan's wetlands.

The Conservation and Wise Use of Wetlands

Defining wetlands in the broadest of terms, the Ramsar Convention strives not only for their conservation, but for their wise use as well. The 'wise use' of wetlands is defined as "sustainable utilization for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem." In Japan where people have been fostering a culture to coexist with nature instead of controlling it, there are a number of examples of wise use practiced by people for a long period of time. Rice cultivation in paddies is a form of wetland management. Domestic use of reed and lotus plants that have a function to prevent eutrophication in lakes and marshes, and local rules for hunting and fishing are other examples of wise use. It often is important for the promotion of wise use in each region to review these regional cultures and traditions.

Policy for Wetland Conservation:

Japan's national policy on wetlands is described in National Biodiversity Strategy of Japan 2010 (established in 2010). In order to conserve the unique ecological character of wetlands while achieving consensus of the society, it directs us to promote conservation in a big picture encompassing the river basin and coastal areas, using various measures such as grasping the ecological changes and conservation status through monitoring, expanding protected areas, implementing nature restoration projects and networking the wetlands.

Status of Wetlands in Japan

Laws for the Conservation of the Natural Environment:

Legislation for nature conservation and the protection of wildlife in Japan include the Basic Environmental Law, Basic Act on Biodiversity, Nature Conservation Law, Natural Parks Law, Law for the Protection of Cultural Properties, Wildlife Protection and Hunting Law, Law for Conservation of Endangered Species of Wild Fauna and Flora, Law for the Promotion of Nature Restoration, and the Invasive Alien Species Act. Some of the laws regulate the development and exploitation of resources to protect specific species and/or specific areas, and some of them are aimed at restoration of lost natural environments. Many wetlands and the countless species inhabiting them are covered in these laws.

Stakeholder Participation:

In Japan, local governments are the administration bodies working closely together regarding wetlands and their surrounding catchments. They are responsible for implementing wetland management policies through various public services. These activities are supplemented by the establishment of prefectural wildlife protection areas, nature conservation areas, and natural parks, as well as the independent formulation of prefectural environmental legislation and projects for wetland conservation.

There is also a network called "Meeting of Japanese Municipalities Involved with Wetlands Designated under the Ramsar Convention" that encourages information exchange and project cooperation. Regular meetings are organized to promote grass root wetland conservation activities striving for appropriate management of these sites.

Conservation and wise use of wetlands may not be achieved without the understanding and participation of the local people who are most familiar with the wetlands. In many Ramsar sites in Japan, there are numbers of examples of cooperation and collaboration involving many stakeholders promoting local level activities.

International Cooperation

International cooperation such as sharing experiences and technologies is vital to meet the goals of wetland conservation

and wise use. Acknowledging this, the international community has high expectations for Japan, a developed country in Asia, to work towards its realization. To meet these expectations, Japan is actively engaged in a variety of international cooperation such as those described below.

Financial Assistance and Technology Transfer for the Conservation of Wetlands:

Japan International Cooperation Agency (JICA) invites trainees from developing countries to Japan for study courses for the conservation and wise use of wetlands, conservation of coral reefs and conservation of mangroves. In addition, technology transfer projects including wetland conservation are underway in Iran and Uganda. Japan also supports the various wetlands conservation programmes in the Asian region by contributing voluntarily to the Ramsar Small Grants Fund.



Wetland Surveys and Information Exchanges:

The Ministry of the Environment organized surveys and workshops in Myanmar in order to compile a national wetland inventory, which subsequently led to Myanmar's entry into the Ramsar Convention. In addition, the Ministry supported the designations of Ramsar Sites in Thailand, Malaysia, Vietnam and Cambodia.

The Ministry also supports the "Asian Wetland Symposium", which has been held regularly inviting scientists, specialists, administrative bodies and NGOs for wetland management in Asia. Japan proposed at COP 9 a draft resolution on encouragements and instructions to promote regional scientific and technical fora such as the "Asian Wetland Symposium" and it was adopted as the Resolution IX.19. (See Appendix 2)

Twinning arrangement between Wetland Sites:

In order to promote information exchange and awareness-raising activities for the conservation and wise use of wetlands between Japan and other countries, twinning arrangements have been established. The existing arrangements are linking Kushiro-shitsugen, Kiritappu-shitsugen, Akkeshi-ko and Bekambeushi-shitsugen to Hunter Estuary Wetlands of New South Wales, Australia, Yatsu-higata to Boondall Wetland in Queensland, Australia, and Fujimae-higata to the wetlands in Geelong, Victoria, Australia.

Bilateral Agreements for Migratory Birds:

Japan supports migratory bird protection and has bilateral conventions/agreements with the United States, Russia, Australia and China. Actions have been taken to ban migratory bird hunting, promote information exchange, establish sanctuaries, secure measures for the conservation of habitats, as well as to conduct joint surveys. The Japan-Korea Environment Protection and Cooperation Agreement was signed, whereupon joint surveys and meetings have been organized for the protection of migratory birds.

The Partnership for the East Asian-Australasian Flyway:

There are nine main flyways for migratory birds in the world. Japan belongs to the East-Asian Australasian Flyway which is crucial to more than 50 million migratory waterfowl such as shorebirds, cranes, swans, ducks and geese, including 28 worldwide endangered species. In addition, in Honshu, Shikoku, and Kyushu, migratory birds account for 60 percent of the bird species recorded, and as much as 80 percent in Hokkaido and Ryukyu islands. This indicates that the Japanese Archipelago is an important place for migratory birds.

Japan is one of the leading countries in the Partnership for the East Asian-Australasian Flyway (EAAFP) along with Australia and Korea, and promoting the water bird conservation based on this partnership.

Appendix 1: Resolution X.31 Enhancing biodiversity in rice paddies as wetland systems

1. RECOGNIZING that rice is grown in at least 114 countries worldwide and, as the staple diet for over half the world's population, has contributed to about 20% of the total calorie supply in the world;

2. AWARE of recent concern over global food supplies and costs and the need for increasing food production, and ALSO AWARE that Resolution X.23 on Wetlands and human health and well-being highlights the interdependencies between human health, food security, poverty reduction and sustainable wetland management and calls for Contracting Parties to "strengthen collaboration and seek new partnerships between the sectors concerned with wetland conservation, water, health, food security and poverty reduction";

3. RECOGNIZING that rice paddies (flooded and irrigated fields in which rice is grown), a typical agricultural landscape for a significant proportion of world rice cultivation, have provided large areas of open water for centuries in regions with a variety of rice-growing cultures, and, in addition to producing rice, also provide other animal and/or plant food sources and medicinal plants, thus acting as wetland systems and helping to sustain livelihoods and human well-being in these regions;

4. NOTING that rice paddies in many parts of the world support important wetland biodiversity, such as reptiles, amphibians, fish, crustaceans, insects and molluscs, and play a significant role in waterbird flyways and the conservation of waterbird populations;

5. FURTHER RECOGNIZING that aquatic biodiversity associated with rice paddies can make an important contribution to the nutrition, health and well-being of rural populations;

6. RECOGNIZING ALSO that in some particular regions, it is important that irrigated rice paddies remain connected to surrounding natural/semi-natural habitat, in particular to wetlands, for the sake of biodiversity;

7. RECALLING that "rice fields" are included in the Ramsar Classification System for Wetland Type as a human-made wetland ("Type 3 Irrigated land; includes irrigation channels and rice fields") and thus, where appropriate, may be designated as, or included in, Wetlands of International Importance (Ramsar sites), and that at least 100 designated Ramsar sites around the world include rice field habitats that play important ecological roles and support a range of biodiversity, including supporting internationally important populations of breeding and non-breeding resident and migratory waterbirds;

8. NOTING that some sites associated with rice paddies are or could be included in the Globally Important Agricultural Heritage Systems (GIAHS) Programme, which was initiated by the Food and Agriculture Organization of the United Nations (FAO) and promotes the dynamic conservation of areas important for indigenous techniques and cultural and biodiversity values, and RECOGNIZING that such sites could provide examples of wetland wise use;

9. CONCERNED about current and potential threats to the role of rice paddies as sustainable wetland systems, as well as about the potential and current impacts to the surrounding environment, caused by factors such as inappropriate agricultural practices relating to water management and change of natural flow, as well as introduction of new taxa, including invasive alien species, use of high levels of harmful agricultural chemicals, and the impact of inappropriate conversion of rice paddies to other land uses;

10. NOTING that some water management approaches, such as flooding of rice paddies when they are not in use for rice production, have been adopted in order to provide suitable habitat for some fauna, including migratory waterbirds, and to control weeds and pest insects;

11. ALSO CONCERNED that inappropriate conversion of wetland to paddy field may have potential negative impacts on local biodiversity and related ecosystem services, and AFFIRMING that this Resolution is not to be used to justify conversion of existing natural wetlands into human-made wetlands, nor to justify inappropriate conversion of land to human-made wetlands;

12. ALSO AFFIRMING that the focus of this Resolution is specifically on the maintenance and enhancement of the ecological and cultural role and value of appropriate rice paddies as wetland systems, consistent and in harmony with the Convention, internationally agreed development goals, and other relevant international obligations;

13. RECALLING that Resolution VIII.34 (2002) highlighted, inter alia, the importance of ensuring that agricultural practices are compatible with wetland conservation objectives and that sustainable agriculture supports some important wetland ecosystems, and AWARE of the work currently being undertaken in response to Resolution VIII.34 by the Scientific and Technical Review Panel (STRP) and the Guidance on Agriculture-Wetlands Interactions (GAWI) initiative with the FAO, Wageningen University and Research Centre, the International Water Management Institute

(IWMI), Wetland Action, and Wetlands International, including the preparation of a framework for guidance related to interactions between wetlands and agriculture; and

14. NOTING that information and products related to rice paddy farming are available through the work and publications of the Organization for Economic Cooperation and Development (OECD) on agriculture and biodiversity, including agri-biodiversity indicators; that information on wetland, water and rice farming is available in the Comprehensive Assessment of Water Management in Agriculture (CA); and that the analyses of distribution and representativeness of Ramsar wetland types, currently being undertaken by the IWMI for the STRP, include, inter alia, rice paddies as human-made wetlands;

THE CONFERENCE OF THE CONTRACTING PARTIES

15. ENCOURAGES Contracting Parties to promote further research on flora, fauna and ecological functions in rice paddies and on the cultures that have evolved within rice-farming communities that have maintained the ecological value of rice paddies as wetland systems, in order to identify sustainable rice paddy farming practices that reinforce wetland conservation objectives and provide ecosystem services such as groundwater recharge, climate moderation, flood and erosion control, landslide prevention, provision of plant and/or animal food resources and medicinal plants, and the conservation of biodiversity;

16. INVITES Contracting Parties to consider offering recognition and/or protection to such sites through, for example, their designation as Wetlands of International Importance and through mechanisms such as the FAO Globally Important Agricultural Heritage Systems Programme, and FURTHER INVITES Contracting Parties to disseminate and exchange information on these practices and sites amongst governments, farmers and conservation agencies, in order to support improvement of sustainable rice farming practices and water management;

17. ENCOURAGES Contracting Parties to:

- identify challenges and opportunities associated with managing rice paddies as wetland systems in the context of the wise use of wetlands, also paying attention to the concept of connectivity between rice paddies, natural wetlands and river basins, as well as to the promotion of sustainable agricultural practices, and furthermore to encourage conservation authorities to collaborate with agriculture authorities and those agencies responsible for rice production and disease prevention to identify and actively promote planning, farming practices, and water management in rice paddies that serve to enhance the natural biodiversity, ecosystem services, and sustainability of rice paddies, while also contributing to improved nutrition, health and well-being of farming household members and surrounding community members and to the conservation of waterbird populations;
- ensure that such planning, farming practices, and water management are implemented wherever applicable, making appropriate use of the Ramsar guidance on wetlands and river basin management adopted in COP10 Resolution X.19 so as to ensure that river basin processes and possible upstream and downstream effects of rice paddy farming are considered, while being conscious of the need for food production and the interests of local communities;
- ensure that planning, farming practices, and water management associated with rice paddies do not lead to loss of existing natural biodiversity and ecosystem services through inappropriate conversion of natural wetlands or other habitats to human-made wetlands; and
- consistent with the measures identified above, seek appropriate environmentally sustainable ways of minimising risks to human health associated with waterborne diseases, disease vectors (including Highly Pathogenic Avian Influenza), and excessive and inappropriate use of agricultural chemicals in rice paddies; and

18. REQUESTS the Scientific and Technical Review Panel, working with other interested organizations, to:

- prepare a technical report on the role of rice paddy in supporting the conservation of wetland biodiversity and the delivery of wetland ecosystem services, taking into account differences in the ways in which rice fields are managed, considering also the work of the GAWI partnership; and
- review, disseminate, and exchange available guidance and information related to rice paddy planning, management practices and training on sustainable rice farming that protect or enhance wetland biodiversity and ecosystem services while also supporting essential food production, in collaboration especially with FAO, IWMI, the International Rice Research Institute (IRRI), the Africa Rice Centre (WARDA), the GAWI partnership, and others.

Appendix 2: Resolution IX.19 The importance of regional wetland symposia in effectively implementing the Ramsar Convention

1. TAKING INTO ACCOUNT the need for the establishment of appropriate regional frameworks for fostering international cooperation amongst Contracting Parties and other organizations and stakeholders, in accordance with the Guidelines for international cooperation under the Ramsar Convention (Resolution VII.19);

2. RECOGNIZING the critical role of regional cooperation for promoting the aims and objectives of the Convention, as reiterated by the Regional initiatives for the further implementation of the Convention (Resolution VIII.30) and the establishment of regional initiatives in the framework of the Convention (Resolution IX.7);

3. CONSIDERING that such regional cooperation can be achieved through closer partnership between and among governmental and non-governmental sectors and scientific, technical and policy-making sectors in different regions of the world;

4. RECOGNIZING that the participation of local communities and indigenous peoples is essential for the conservation and wise use of wetlands, as embodied in the Guidelines for establishing and strengthening local communities' and indigenous people's participation in the management of wetlands (Resolution VII.8) and Resolution VIII.36;

5. ALSO RECOGNIZING that the Asian Wetland Symposia (AWS) held in 1992 (Japan), 2001 (Malay-

sia), and 2005 (India) and organized through the leadership of the Ramsar Center Japan (RCJ), a non-governmental organization (NGO) based in Japan, have contributed substantially to enhancing effective regional cooperation and networking in Asia;

6. UNDERSTANDING that these Symposia provide a single platform for discussions among various sectors including, inter alia, national and local governments, NGOs, scientific experts, the private sector, and local and indigenous peoples engaged in wetland management, and that their recommendations embodied in the Recommendation of the Asian Wetland Symposium (1992), the Penang Statement (2001) and the Chilika Statement (2005) have been reported to Ramsar COP5, COP8 and COP9 respectively;

7. MINDFUL that the Asian Wetland Symposia, and a series of local workshops organized by the Ramsar Centre Japan, have been successful in the Asian region in promoting public awareness of the aims and objectives of the Ramsar Convention, and accession thereto; have encouraged Contracting Parties to identify and designate Ramsar sites; and have promoted participation of local communities and indigenous peoples in the management of wetlands in the context of attaining sustainable development including economic growth and poverty reduction;

8. RECOGNIZING that Ramsar Regional Meetings and Conferences of the Contracting Parties

(COPs) focus increasingly on policy and administrative issues, so that the Asian Wetland Symposium series provides an increasingly valuable complementary forum for the discussion of scientific and technical issues and priorities for the conservation and wise use of wetlands in the Asia region;

9. ALSO RECOGNIZING that financial support for the Asian Wetland Symposium series has come from a wide variety of donors, including central and local governments, business entities, academic institutions, international organizations including UN bodies, and international NGOs, and that these contributions have been invaluable to securing the continuity of the Asian Wetland Symposia, as well as the series of local workshops, leading to the establishment of effective, diverse and vibrant networks on wetland conservation and wise use in the Asian region; and

10. NOTING that the fifth meeting of a biennial International Symposium on Wetlands was held in Zapata Swamp, Cuba, with the participation of scientists and wetland managers of different countries from the Americas region;

THE CONFERENCE OF THE CONTRACTING PARTIES

11. ENCOURAGES all Contracting Parties and non-Contracting Parties in the Asia Region to give full recognition to the Asian Wetland Symposium (AWS) as an effective forum for information exchange and as a source of good practical advice for the conservation and wise use of wetlands in Asia;

12. ENDORSES the continuation of the periodic Asian Wetland Symposia;

13. REQUESTS Contracting Parties, in cooperation with the Ramsar Secretariat and international NGOs, to facilitate the support to and participation in the Asian Wetland Symposia by a wide range of stakeholders, including but not limited to local governments, NGOs, the private sector, and local communities, noting that this will not have any financial implications for the Convention's core budget;

14. REQUESTS the Ramsar Secretariat and the Standing Committee to encourage and develop linkages between Ramsar Regional Meetings, including subregional meetings, and such regional wetland fora, so as to ensure that the outcomes of the fora are made fully available to Contracting Parties and governments in support of their implementation of the Convention through exchange of experiences and innovative practices discussed at such fora; and

15. RECOMMENDS that Contracting Parties, international NGOs, and other relevant scientific and technical organizations consider the usefulness of establishing similar periodic regional scientific and technical fora where they do not already exist, drawing on the experiences of the Asian Wetland Symposia, as a means of increasing scientific and technical support for the implementation of the Convention including, inter alia, any regional initiatives established under the Convention.

Appendix 3: Ramsar Classification System for Wetland Type

The codes are based upon the Ramsar Classification System for Wetland Type as approved by Recommendation 4.7 and amended by Resolutions VI.5 and VII.11 of the Conference of the Contracting Parties. The categories listed herein are intended to provide only a very broad framework to aid rapid identification of the main wetland habitats represented at each site.

To assist in identification of the correct Wetland Types to list in section 19 of the RIS, the Secretariat has provided below a tabulations for Marine/Coastal Wetlands and Inland Wetlands of some of the characteristics of each Wetland Type.

Marine/Coastal Wetlands

A Permanent shallow marine waters in most cases less than six metres deep at low tide; includes sea bays and straits.

B Marine subtidal aquatic beds; includes kelp beds, sea-grass beds, tropical marine meadows.

C Coral reefs.

D Rocky marine shores; includes rocky offshore islands, sea cliffs.

E Sand, shingle or pebble shores; includes sand bars, spits and sandy islets; includes dune systems and humid dune slacks.

F Estuarine waters; permanent water of estuaries and estuarine systems of deltas.

G Intertidal mud, sand or salt flats.

H Intertidal marshes; includes salt marshes, salt meadows, saltings, raised salt marshes; includes tidal brackish and freshwater marshes.

I Intertidal forested wetlands; includes mangrove swamps, nipah swamps and tidal freshwater swamp forests.

J Coastal brackish/saline lagoons; brackish to saline lagoons with at least one relatively narrow connection to the sea.

K Coastal freshwater lagoons; includes freshwater delta lagoons.

Zk(a) Karst and other subterranean hydrological systems, marine/coastal

Inland Wetlands

L Permanent inland deltas.

M Permanent rivers/streams/creeks; includes waterfalls.

N Seasonal/intermittent/irregular rivers/streams/creeks.

O Permanent freshwater lakes (over 8 ha); includes large oxbow lakes.

P Seasonal/intermittent freshwater lakes (over 8 ha); includes floodplain lakes.

Q Permanent saline/brackish/alkaline lakes.

R Seasonal/intermittent saline/brackish/alkaline lakes and flats.

Sp Permanent saline/brackish/alkaline marshes/pools.

Ss Seasonal/intermittent saline/brackish/alkaline marshes/pools.

Tp Permanent freshwater marshes/pools; ponds (below 8 ha), marshes and swamps on inorganic soils; with emergent vegetation water-logged for at least most of the growing season.

Ts Seasonal/intermittent freshwater marshes/pools on inorganic soils; includes sloughs, potholes, seasonally flooded meadows, sedge marshes.

U Non-forested peatlands; includes shrub or open bogs, swamps, fens.

Va Alpine wetlands; includes alpine meadows, temporary waters from snowmelt.

Vt Tundra wetlands; includes tundra pools, temporary waters from snowmelt.

W Shrub-dominated wetlands; shrub swamps, shrub-dominated freshwater marshes, shrub carr, alder thicket on inorganic soils.

Xf Freshwater, tree-dominated wetlands; includes freshwater swamp forests, seasonally flooded forests, wooded swamps on inorganic soils.

Xp Forested peatlands; peat swamp forests.

Y Freshwater springs; oases.

Zg Geothermal wetlands

Zk(b) Karst and other subterranean hydrological systems, inland

Note: "floodplain" is a broad term used to refer to one or more wetland types, which may include examples from the R, Ss, Ts, W, Xf, Xp, or other wetland types. Some examples of floodplain wetlands are seasonally inundated grassland (including natural wet meadows), shrublands, woodlands and forests. Floodplain wetlands are not listed as a specific wetland type herein.

Human-made wetlands

1 Aquaculture (e.g., fish/shrimp) ponds

2 Ponds; includes farm ponds, stock ponds, small tanks; (generally below 8 ha).

3 Irrigated land; includes irrigation channels and rice fields.

4 Seasonally flooded agricultural land (including intensively managed or grazed wet meadow or pasture).

5 Salt exploitation sites; salt pans, salines, etc.

6 Water storage areas; reservoirs/barrages/dams/impoundments (generally over 8 ha).

7 Excavations; gravel/brick/clay pits; borrow pits, mining pools.

8 Wastewater treatment areas; sewage farms, settling ponds, oxidation basins, etc.

9 Canals and drainage channels, ditches.

Zk(c) Karst and other subterranean hydrological systems, human-made

Appendix 4: Criteria for Identifying Wetlands of International Importance

Adopted by the 7th (1999) and 9th (2005) Meetings of the Conference of the Contracting Parties, superseding earlier Criteria adopted by the 4th and 6th Meetings of the COP (1990 and 1996), to guide implementation of Article 2.1 on designation of Ramsar sites.

Group A of the Criteria. Sites containing representative, rare or unique wetland types

Criterion 1: A wetland should be considered internationally important if it contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.

Group B of the Criteria. Sites of international importance for conserving biological diversity

Criteria based on species and ecological communities

Criterion 2: A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities.

Criterion 3: A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of

a particular biogeographic region.

Criterion 4: A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions.

Specific criteria based on waterbirds

Criterion 5: A wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds.

Criterion 6: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Specific criteria based on fish

Criterion 7: A wetland should be considered internationally important if it supports a significant proportion of indige-

nous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity.

Criterion 8: A wetland should be considered internationally important if it is an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

Specific criteria based on other taxa

Criterion 9: A wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of wetland-dependent non-avian animal species.