World Wetlands Day 1999: background paper on the theme of "People and Wetlands"

People and Wetlands - the Vital Link

By Sandra Hails for the Ramsar Bureau

Arifin, fisherman from Rugemuk, Indonesia: "After the [mangrove] trees were cut we had to go very far out to sea to fish. The water came in closer to shore, and without protection our houses were blown away by the wind."

Ismail Serageldin, Vice-President of the World Bank: "Many of the wars of this century were about oil, but the wars of the next century will be about water".

Norman Myers, environmental writer and visionary: Environmental refugees displaced from their homes by drought, desertification, soil erosion and other environmental causes "may now number more than 25 million....out of all refugees totaling 43 million".

Wetlands Now - and in the Future

Since the dawn of human civilization people have been drawn to wetlands because of the goods (rich agricultural soil, timber for fuel and construction, fish, drinking water) and services (transport, water storage, storm protection, shoreline stabilization, erosion control, water purification, retention of pollutants, recreation) which they have to offer. Wetlands have been described as "the kidneys of the landscape" because of their water purifying roles and "biological supermarkets" because of their natural resources which humans exploit. Human dependence on water is absolute (as is all life) and, therefore, by extension, so is our dependence on wetlands.

In one of the first attempts to value the services provided by our global ecosystems, a group of researchers recently estimated a total value of US$33 trillion per year, services which have in the past been treated as ‘free’ because of the difficulties in assigning a market value to indirect values such as ‘storm protection’ or ‘groundwater recharge’. Of this total value, the goods and services supplied by wetland ecosystems (using the Ramsar definition of wetlands) were valued at $19 trillion, an impressive indication of their overall significance as a human support system. The discussion in the world of conservation following the publication of this data is testimony to the difficulties, even today, of assigning appropriate and meaningful values to the many indirect benefits to mankind of ecosystem services.

Writing in Nature in 1997, the group of geographers, economists and biologists who produced the estimate concluded: "Because ecosystem services are not fully ‘captured’ in commercial markets . . . they are often given too little weight in policy decisions. This neglect may ultimately compromise the sustainability of humans in the biosphere." Their words strike a harsh note of reality when we consider the effects of centuries of human use and abuse of wetlands on a global scale.

Just what does it take to put wetland conservation on the international social, economic and political agenda in the 21st century? The quotations above emphasize

that, to some extent at least, wetland conservation and water issues are already the focus of attention at both ends of the social scale, from the people who make decisions on multilateral funding of environmental projects to the subsistence fisherman who may have to deal on a daily basis with the effects of wetland loss and degradation. These have reached unsupportable levels during this century. The ingenuity and skill of humans have reshaped wetlands to suit our needs in so many dynamic ways, but too often it has resulted in the loss or impairment of wetland function. The global picture of the effects of wetland abuse and the long-term implications has loomed large in the minds of conservationists for many years but has failed to have much impact on the decision-makers for a variety of reasons, despite the overwhelming evidence that a heavy price both economically and socially is to be paid for our misdemeanors. It would seem that the following three dynamically interrelated effects of wetland losses may just do the trick in the next millenium: the global water crisis and the potential for a food crisis along with the effect of both of these on national and international security.

A global water crisis is effectively upon us. A UN assessment in 1997 of freshwater resources estimated that one third of the world's population is already living in countries experiencing moderate to high water stress (a reflection of the demand for freshwater in relation to water availability); UN projections estimate that by the year 2025 this proportion will have risen to two thirds unless there are some dramatic changes in the way freshwater supply and demand is managed. This diminished capacity to supply freshwater has focused attention on water stress as a serious impediment to development – perhaps, in the long-term, even human survival. While the severest effects will be felt in the arid and semi-arid regions of Africa, the Middle East and Central Asia, our global economy will ensure that the international community cannot ignore the long-term future for freshwater supplies. As ever, it will be the people at the bottom end of the social scale who will suffer the most, those who are least able to change the situation in which they find themselves.

There is the potential for a food crisis because of the vital role of water, both freshwater and marine, in the provision of the world's food. All land-based agricultural production depends, of course, on water, but with the current emphasis on irrigated agriculture (40% of agricultural output), with its heavy water demand, the long-term implications of reduced per capita water availability on food security are obvious. However, the role of aquatic ecosystems in world food supply goes much further. The marine fish catch, which supplies 20% of the animal protein consumed globally, is highly dependent on coastal wetlands which provide nursery and spawning grounds for marine fish. Although freshwater lakes and rivers provide only 6% of the world's fish catch, the health of freshwater ecosystems is vital to the health of coastal ecosystems since all freshwater flows inexorably to the sea carrying with it the waste from human activity inland - agricultural, industrial and domestic pollutants as well as excessive sediment loads all end up in coastal ecosystems and impair their biological functions.

Mangrove Destruction for Commercial Shrimp Farms in Indonesia

At the personal level, loss of wetland functions can cause the loss of an essential food supply. To Arifin, a shrimp fisherman living in Rugemuk, Indonesia, the loss of the mangroves, when commercial shrimp farmers moved in, not only destroyed the natural ecological processes of the coastal wetland, it threatened his very existence, leaving him and the rest of shrimp fisherman barely able to scrape a living. In the mid-1980s commercial shrimp developers felled the mangroves and replaced them with shrimp ponds. "The water came in closer to shore, and without protection [from the mangroves] our houses were blown away by the wind," Arifin said. He added, "after the trees were cut we had to go very far out to sea to fish, even 20-30 kilometres".

National and international security is under threat through refugee and conflict issues that many believe are partly the result of the scarcity of renewable resources. Jeff McNeely of IUCN warns: "Environmental scarcities often produce insidious and cumulative social effects, such as large migrations, political changes and economic disruption that in turn lead to ethnic strife, civil war, and insurgency". Refugees escaping from their countries or migrating to other parts of their own countries because of environmental problems (such as drought, desertification, soil erosion) are now so numerous as to merit a separate identity as environmental refugees as distinct from economic, political or ethnic refugees. Total numbers of all types of refugees in 1994 numbered an estimated 43 million; three out of five were considered as environmental refugees. While water cannot be identified as the sole cause of this environmental insecurity, it certainly plays a significant role.

The natural world knows no political boundaries - as global water stress increases, it is inevitable that countries which 'share' rivers, particularly those in water-stressed areas, will be forced to divide up an effectively shrinking supply of freshwater. According to UNEP some 300 major rivers flow through more than one country and some flow through several. Population increases and the negative effects of global warming on river flow in certain regions have already forced this issue to the forefront of political agendas, and this situation can only deteriorate in the decades to come. A clear indication of the high profile water issues are beginning to play on the international scene is the recent statement by Queen Noor of Jordan: "We in Jordan made equitable water sharing a cornerstone of our 1994 peace accord with Israel". There are many other countries facing similar situations - a recent publication cited unresolved international water disputes in the mid-1990s over 26 rivers and a lake system involving 35 different countries (some of them involved in more than one dispute). The Vice-President of the World Bank, Ismail Seageldin, recently put this situation in very blunt terms when he warned that "many of the wars of this century were about oil, but the wars of the next century will be about water".

Making People Part of the Solution to the Wetland Crisis

Changing attitudes

The aim of many conservation and development organizations, especially in the last decade, has been to change those attitudes that have led to the undervaluing of wetlands and their subsequent abuse. The conservation community itself has changed its vision and there has been a general move away from linking conservation solely with the need for protected areas which keep wildlife in and people out, to a more pragmatic approach which recognizes the need to build on the close relationship between people and their natural environment. This is particularly true with wetlands where it is frankly unrealistic to suggest that all wetlands should be protected from human influences. This is recognized by the Convention on Wetlands (popularly known as the Ramsar Convention), an intergovernmental treaty concerned with wetland conservation. Indeed, becoming a signatory to the Convention on Wetlands is not a commitment to "protect" wetlands but rather to "wisely use" wetlands. The Convention defines the wise use of wetlands as "their sustainable utilization for the benefit of mankind in a way compatible with the maintenance of the natural properties of the ecosystem".

In fact, some fine wetlands owe their existence entirely to the intervention of man and his 'wise use' activities. For example, the El Balsar de Huanchaco wetlands in Peru date back 1,500 years through the traditional management activities of the indigenous people. To grow a reed called totora, which is used in making small fishing boats, the people created "pozas", man-made depressions which fill from natural spring water and are slightly brackish because of their proximity to the coast. The benefits to the local people are obvious but there are other benefits which are more far-reaching: these artificial wetlands are important stopover

places for migratory birds, so they have a role in conserving biodiversity, and they have an economic role as a tourist attraction. Removing the human influence would eventually lead to the destruction of this wetland and the loss of the biodiversity they maintain - as well as a loss of the cultural traditions of the local people.

How to achieve the balance between human exploitation and maintaining ecological character of a wetland ecosystem is an on-going challenge. A key thrust at the moment is recognizing that local communities closely linked to wetlands have a key role as stakeholders which needs to be acknowledged at the level of local and national governments. After all there can be no better guardians of our wetlands than the people who stand to lose their livelihood should the ecosystem be destroyed. This approach has been placed more firmly on the conservation agenda since the Earth Summit in Rio de Janeiro in 1992.

"Environmental issues are best handled with the participation of all concerned citizens" [Agenda 21: Principle 10]

Agenda 21 was the global plan for sustainable development agreed upon by the leaders of 179 countries, in Rio de Janeiro at the Earth Summit in 1992.

Two examples from opposite ends of the world show just how essential this is. Conflicts between managers and local people in Belize and India were eventually solved through participatory management processes which identified them as key stakeholders and allowed them to play a significant role in managing their wetlands. The Belize Audubon Society, an NGO which manages Crooked Tree Wildlife Sanctuary in Belize, and the people of Crooked Tree Village situated right in the middle of the sanctuary found themselves in perpetual conflict. Situated 32 miles north of Belize City, the sanctuary is a wetland made up of lagoons, marshlands and waterways, with an interesting repertoire of plants and animals. Crooked Tree Village was first settled as a logging camp in the 1750s and there are currently 600 permanent residents of Creole or Afro-European descent whose subsistence activities include farming, hunting, fishing, livestock raising, and logging and charcoal production. It is these activities that have lead to the conflict with the managers of the sanctuary.

Keoladeo National Park, a freshwater marsh in India, was partly man-made in the late 1850s as a duck shooting reserve for the Maharajah of Bharatpur and subsequently has became internationally renowned for the diversity of its waterbirds (350 species of birds visit the area, including the spectacular Siberian crane). Surrounded by nine villages with a total of 15,000 people, the area has supplied these communities with grazing for their buffaloes, fodder for their cattle, and timber for fuel for many years. However, when the area was declared a National Park, in recognition of its value as a wildlife reserve, legal factors excluded people from the Park. This led to angry, hostile confrontations between the government managers and the local people - resulting in the loss of several lives. Some of the villagers went one step further, releasing old or sick cattle into the reserve (which do not graze in the same way as buffalo) and creating serious ecological problems. An equally negative effect was the cessation of buffalo grazing, which further altered the ecology of the wetland and reduced its suitability for bird life: grazing by buffaloes, which controlled the growth of water weeds, was a key factor in maintaining the ecological character of the wetland!

For both Crooked Tree and Keoladeo a successful solution was achieved through a participatory management process, an increasingly popular tool in wetland conservation. Using facilitators/ mediators, this procedure ensures that the needs of all stakeholders are taken into account through a process of dialogue and conflict resolution, and that everyone benefits in some respect. It engenders mutual respect amongst stakeholders and a new

awareness of the conservation issues at stake, and it identifies the role of each stakeholder in maintaining the ecological integrity of the ecosystem. The outcome in both Crooked Tree Sanctuary and Keoladeo National Park has been a clear understanding of all perspectives and a comprehensive management plan involving all the stakeholders.

Local communities can sometimes take the lead role in wetland conservation given even modest financial support. Eight communities in the Lower Volta Delta have SFr40,000 to help them rehabilitate their mangrove wetlands. The serious degradation of their mangrove forests over a 17-year period – a degradation to which they themselves had contributed – forces the womenfolk of the communities to walk several kilometres every day to collect freshwater supplies for domestic use and firewood. Working with a local NGO to coordinate activities, the villagers have taken the initiative and will provide all the necessary labour for the work. The SFR40,000 Ramsar Small Grants Fund, a modest sum on the grand scale of environmental conservation, paid for 20,000 mangrove seedlings, 3,000 cashew seedlings (which will become a cash crop for the communities), other tree seedlings to produce woodlots for firewood, 32 digging tools and a 120 pairs of rubber boots. They will be restoring the mangroves to a functional wetland and at the same time developing management plans for the use of the mangroves which will give them a sustainable lifestyle.

Urban responsibilities in wetland issues

Focusing on rural communities that are directly involved in wetlands is clearly an important direction for conservation. But what about the urban dweller? By the turn of the century, half the world's population will live in cities, a total of around 3 billion people. They live on only 2% of the world's surface yet they consume over 75% of the world's resources. What is their role in wetland conservation? Because they're so far removed from wetlands, it's easy to exclude them from the whole conservation equation or to regard them solely as the tourists who visit a wetland nature reserve, boosting the local economy. But their role should be much greater.

The Danish municipality of Albertslund has shown how to stimulate local involvement in environmental protection and sustainable development within an urban environment in a rich, developed country. Albertslund was built in the 1960s as an alternative to the densely populated City of Copenhagen 20 kilometres away, and it now has a population of 30,000. Closure of their water aquifers and importation of drinking water are indicative of non-sustainable lifestyles through industrial pollution and ineffective waste disposal. Although there was a relatively high awareness of environmental issues, the citizens also believed that if they paid high taxes, then it was the government's responsibility to care for the environment. Using two approaches, a top-down approach from the municipal authorities and a bottom-up approach from a group of ordinary citizens and grassroots organizations, the community has begun to tackle the problem of excessive resource use. Together the two groups have produced some annual goals for all citizens to reduce water, heat and electricity use, to adopt the most efficient technologies available, and to evolve a new approach to waste sorting, composting and recycling. While it will always be difficult to assess the direct effects on the environment of such changing patterns of consumption and waste disposal, the links between this, sustainable living, and healthier ecosystems are not difficult to see. There is an urgent need for more urban people to accept responsibility and play their role in the development of environmentally sustainable practices within their own environment.

If we dig a little deeper, the effect of urban dwellers on the natural environment extends well beyond the urban world. For the people of Ao Goong on Phuket Island in southern Thailand, the arrival of commercial shrimp ponds on their doorstep has damaged their coconut trees, polluted their freshwater wells and killed the wild shrimps which were their livelihood. The high consumption of natural resources – such as shrimps and salmon – by urban dwellers is precisely what encourages this kind of commercial venture driving a thriving international trade in aquaculture products. Arguably a good thing for the global economy, it is certainly

not always so positive in its environmental effects, and it is certainly rarely beneficial for rural communities. The farming of shrimps and salmon are perhaps the two most resource-intensive food production systems known. As the people of Ao Goong have learned, they can degrade wetland environments in a number of ways: their high waste production pollutes aquatic ecosystems; the escape of domesticated varieties (in the case of salmon) has had negative effects on wild populations; the demand for cage space (in the case of shrimps) has been the major factor in the loss of mangrove ecosystems in tropical Asia, Latin America, and, increasingly, Africa as well.

What can the urban dweller do to alleviate this problem? Changing behaviour patterns may help. Anne Platt McGinn, researcher and writer on environmental issues, sees a role for the consumer in alleviating environmental abuse, predicting that "consumers of fish will be more likely to believe that how fish are raised is an important ecological and ethical issue. It is consumer awareness, more than government regulations, that originally gave impetus to the development of such vital movements as . . . the demand for dolphin-free tuna. Such awareness could eventually put a damper on the huge profits now flowing into unsustainable shrimp – or salmon – producing operations". McGinn clearly sees a role for the informed consumer in diminishing wetland abuses.

Raising awareness at all levels

Public awareness of wetland issues is indeed a key tool in wetland conservation and must be part of any attempt to change attitudes and behaviour patterns. Environmental NGOs have long recognized that the public can be a powerful ally - and a formidable foe - for governments and politicians. Claude Martin , Director General of WWF International, commenting on the need to mobilize the public to push for immediate action on the state of the environment, said: "Politicians . . . never move unless there's public pressure". Mário Soares, Chairman of the Independent World Commission on Oceans, echoed these comments, stating that "substantial change can only be brought about through world public opinion and pressure on governments". But before mobilization of the public must come sensitization through education and the raising of public awareness on environmental matters. With 28% of the world's population today falling within the 10-24 year-old age group (this percentage is even higher in the developing world), there is an enormous target group - they will be the general public in the 21st century and some of them will be the new the environmental and developmental decision-makers. This sensitization can be accomplished in many ways.

Rick Pedolsky is director of the Water Planet, a state-of-the-art multimedia, interactive program (Web site http://www.waterplanet.se). Pedolsky sees the dwindling freshwater resources as more of a people crisis than a water crisis. In a recent interview, he said that "everything, from population and development to pollution and food distribution, is directly linked to water and, frequently, its scarcity. Our goal is to develop different mediums to get the information on water out there and make it as entertaining as everything else coming to the consumer. In the works so far are interactive web sites, a proposed IMAX film, a ride simulator that allows people to travel hydrologic cycles from rain to drain, and informal learning centers to be set up in museums, aquariums and zoos all over the world". He describes his target audience as "the real decision-makers: young people and their families all around the world who every day have to make concrete and practical decisions about what to buy, what to consume, how to dispose, how to travel, etc.". After all, the most important and far-reaching decisions on a sustainable future lie in their hands.

Taking this approach a step further, Nicholas Sonntag, Executive Director of the Stockholm Environment Institute, lamented what he saw as conservationists' "inability to really engage the media as a partner [in achieving sustainable development]. . . . I've always been concerned and frustrated by our inability to capitalize on the strength of the media to communicate the need for a change to the broader public. Looking to the future, he adds "I

would love to see entertainment visionaries like Steven Spielberg getting involved in helping to bring these issues out to the public. . . . One thing people have in common is the desire to be entertained. If that entertainment can be educational without being sterile, things would quickly start to change."

So the future for wetlands is in the hands of all people, not just those who hold the power at government level. Everyone must take responsibility for the state of the environment. The link between people and wetlands is thousands of years old – as old as the human species itself. As we move towards the 21st century, it remains to be seen whether the current efforts to bring ordinary people into the mainstream of wetland conservation can play a significant role in rescuing the world's wetlands from the ravages of human mismanagement.

At its 7th Conference of the Parties in May 1999, the Convention on Wetlands will be playing its role in highlighting the importance of people in the wetland conservation and sustainable use equation. The Conference will be asked to approve many new guidelines for the wise use of wetlands which will clearly identify the need to bring all sectors of society that have a direct or indirect relationship to wetlands into the mainstream of their conservation. The guidelines will strongly encourage the recognition of the role of all stakeholders and encourage their empowerment.