

World Wetlands Day

February 2, 2003

No wetlands - No water!

**A Background Paper**

# World Wetlands Day 2003

## A Background Paper

### Theme 1

#### Freshwater – Is There Enough?

Available freshwater per capita is decreasing. In the 20th century, while the world's population tripled, freshwater withdrawals increased over six times, reflecting massive urbanisation, growing dependence on irrigated agriculture and rising standards of living.

Is there still enough for our needs? On a global scale, yes - we currently use 20% of the water in the world's rivers (not counting flood waters). But the situation varies significantly: in some arid regions, as much as 95% of the available water is already being used.

2.3 billion people currently live around rivers where there are frequent water shortages, and 1.7 billion of these people live in areas where water is scarce, undermining the capacity for local food production and economic development.

**1.1 billion people do not have access to safe drinking water.**

There is clearly not enough water in the right places. In addition, at least 1.1 billion people do not have access to safe drinking water and 3 million die each year, many of them children, from illnesses caused by contaminated water. So water quality is an equally challenging issue.

How do wetlands figure in all this? Capturing and holding rainfall and snowmelt, retaining sediments, and purifying water, wetlands play a vital role in the water cycle. Yet in the 20th century we destroyed 50% of the world's remaining wetlands, and we've physically modified others with dams and canals which have significantly fragmented and altered water flow in 60% of the world's largest rivers – often compromising the many valuable ecosystem functions upon which we depend.

In addition, our impressive increased food production in the past 50 years has often been at considerable cost to the health of wetlands and freshwater supply. Not only have we destroyed wetlands to make way for agriculture and placed increasing demands on freshwater – agriculture now claims 70% of global freshwater withdrawals – we have put further pressure on the remaining wetlands through the high levels of nitrogen, phosphorous, pesticides and sediment loads in surface and groundwaters from agricultural activities. While agriculture is the key source of pollutants in the developed world, human waste takes centre stage in many developing countries, where 90-95% of

sewage is dumped, untreated, into water systems. The net result is a serious reduction in both freshwater quantity **and** quality.

This situation will not improve with a projected 1.7 billion additional people on the planet in the next 20 years, most of whom will live in developing countries. Producing more grain, more livestock, more fish, with an already limited water supply, will be a challenge.

It is generally agreed today that the answer to providing more food from agriculture lies not in expanding agricultural areas that will require yet more water but in becoming more efficient with what we have – producing more “crop per drop” of water. Technological advances, such as double cropping, and improved plant breeding, irrigation efficiency and rainwater harvesting techniques, among others, all offer some hope of increased production in agricultural systems.

Fish provide 28% and 21% of animal protein in Asia and Africa, respectively. Globally, fish requirements for direct human consumption will double in the next ten years – yet we are already over-fishing most of our marine stocks, and future yields are unlikely to increase significantly. Inland fisheries are supplying an increasing amount of this fish – today they provide 12% of fish directly consumed by humans, and this proportion is rising – but there are clear signs of widespread unsustainable exploitation here, too. Over 90% of the marine fish catch is dependent on coastal waters for breeding and nursery areas, and the health of these wetland ecosystems is directly dependent upon what we do to our inland wetlands: too little water and too many pollutants in freshwater wetlands eventually degrade coastal wetlands as well. Indeed 80% of marine pollution originates from land-based sources. And although aquaculture in coastal and inland wetlands is increasing and replacing some of the losses from natural sources, without dramatic improvements in current practices, this may bring further degradation of wetland habitats through addition of pollutants, excess nutrients, etc.

Are there solutions? They lie in integrated water resource management strategies at the river basin level with full stakeholders’ participation. Solutions must also pay due regard to the use of improved technologies for more efficient use of water in agriculture, industry and home use, and to paying for the true value of water infrastructure and ecosystem protection, with the appropriate safety nets for the poor. But the world faces a triple challenge: achieving food security, water security, **and** ecosystem security. The Ramsar Convention believes that the source of freshwater, our wetland ecosystems, should be the **starting point** of all integrated water management strategies. Maintaining the health of wetlands to secure our sources of freshwater and much of our food is one of the fundamental keys to a sustainable planet.

**The world’s triple challenge: achieving food security, water security, and ecosystem security.**

[Read more about **ecosystem security**, an area frequently overlooked by water managers, in theme 2.]

## Focus on . . .

### **The challenge of shared river basins and other transboundary wetlands**

Shared river basins present water-management challenges in all parts of the world. An estimated 261 rivers in the world cross international borders; some of them cross multiple borders. In a recent study of Ramsar sites, 176 sites were located on transboundary wetlands, presenting management challenges to their sovereign states. Here are two contrasting examples of the problems and solutions:

The **Mekong** is the source of many environmental benefits to the 65 million people living in its basin. The river crosses the borders of Cambodia, China, Lao PDR, Myanmar, Thailand, and Viet Nam, making management of its waters an on-going challenge. The Mekong River Basin Commission (MRC) must balance the need for several dams along the river's length and its tributaries to supply electricity and agricultural water, with the many needs of people downstream who are directly dependent on the river for subsistence. Rice and fish are the basis of food security in the basin. Annual fish catches, estimated at 1.75 million tons, supplemented by significant aquaculture activities, provide a major source of protein and basic livelihood for people in the basin. Fish catches in the lower basin supply 40-60% of the animal protein consumed by the people and any serious changes in river flow through diversions or reductions in the silt load could wreak havoc upon the fishing as well as the agriculture in the delta, spelling disaster for the 30% of households living below the poverty line. The challenges are immense – not least because the MRC still does not include ALL basin countries – but so too are the social, environmental and economic costs of failure.

The **Morava-Dyje** floodplain, crossing the borders of Austria and the Czech and Slovak Republics, is one of the last regions in Europe where traditional land use has ensured flood control, secured a rich biodiversity, and produced meadows that act as huge nutrient sinks, removing high nitrogen levels from the water. Four NGOs have worked independently on these wetlands for many years in their own regions. But more recently they have worked collaboratively, restoring degraded habitats, using the natural resources of the land sustainably in traditional and extensive (non-intensive) farming practices, as well as informing and sensitising local people. Their successful efforts culminated in the signature, by the Ministries for the Environment of the three countries, of a Memorandum of Understanding to implement the Ramsar Convention in this transboundary area. The three countries will hold annual meetings to coordinate their efforts to achieve trilateral status for the existing Ramsar sites along the border area of the Morava and Dyje floodplains and to develop their management procedures according to Ramsar's *Guidelines for management planning for Ramsar sites and other wetlands*. This initiative now has the active support of local, national and regional authorities. For their successful collaborative work on this floodplain, the NGOs were winners of a Ramsar Wetland Conservation Award for 2002.

The Ramsar Bureau is helping and encouraging many countries in dealing with similar shared basin/transboundary Ramsar site issues in, for example, Lake Chad and the Niger River. The Bureau is also a partner in the EU Water Initiative launched at the World

Summit on Sustainable Development in August 2002, which includes a component on Integrated Water Resources Management (IWRM) with a focus on transboundary river basins.

### **Local involvement**

At the Laguna de la Cocha Ramsar site in Colombia, local communities have become significant players in developing a wetland management plan for the site. Working with the World Wide Fund for Nature, Colombia, the communities from the Quillacinga ethnic group attended workshops that led to a greater understanding of the richness, social and economic value – and vulnerability – of their local ecosystems. The management plan they have established encourages sustainable management of the area's natural resources and results in higher income levels for local farmers through more effective and diversified agricultural practices as well as the development of ecotourism.

### **Agricultural practices**

While intensifying agricultural practices and introducing greater efficiency in water use will provide more food in the decades to come, there are good reasons, in some cases, both in developing and developed countries, for moving away from intensive agricultural systems.

Just over 4% of **Switzerland's** population is engaged in agriculture, yet they manage almost 40% of the land area and supply two thirds of the food requirements of the country's 7 million people. In 1996, the Swiss people declared themselves in favour of a multifunctional agriculture that would help them move towards a sustainable Switzerland. Farming subsidies, now tied to ecological criteria, are encouraging an increasing number of farmers to switch to low intensity, organically-managed farms. With the elimination of mineral fertilisers and synthetic pesticides, water quality is not compromised as it is with more intensive systems. Consumers are already showing a preference for organically grown foods and many organic farmers in Switzerland encourage the introduction of an effective certification system to assist consumers, which, in turn, would encourage more farmers to move towards sustainability.

Using economic valuation techniques to compare the benefits in the Hadejia-Jama'are wetlands in northern **Nigeria** of using water for an irrigation project, rather than for maintaining the floodplain for traditional exploitation activities, came out clearly in favour of the floodplain. The water was valued at US\$ 43 per 1,000 cubic metres when it maintained the floodplain, supporting tens of thousands of people through fishing, agriculture, fodder production, and fuelwood. This dropped to US\$ 0.04 for water diverted from the floodplain to irrigate agriculture. Using such valuation techniques to properly assess the value of the goods and services from wetland ecosystems can lead to more effective decision-making on how we use our freshwater.

**Irrigated agriculture** covers only 17% of crop land but produces 40% of the world's crops; it has been an essential component of increased food production in recent decades. But it is generally water-inefficient, with huge losses through evaporation and significant

problems of soil salinisation, as well as over-pumping of groundwater, in China, Iran, Mexico, the Middle East, North Africa, Saudi Arabia and the USA.

Irrigation can certainly become more efficient. Using drip irrigation techniques, for example, can cut water use by 30-70% and increase yields by 20-90%. Researching drip irrigation techniques over the past 20 years has allowed Israel to double its food production without using more water. In Spain, the introduction of metering with an appropriate pricing system, along with a switch to drip irrigation, led to a considerable drop in the volume of water abstracted for agriculture from one aquifer. It has been found too that farmers themselves will improve their farming practices when low, subsidised prices for irrigated water are removed and replaced with realistic prices.

### **Efforts from the private sector**

Industry claims 20% of global withdrawals - could companies become more efficient in using water resources? Can the private sector help in other ways? A Danish electrical company and an Australian wine maker show the way.

A manufacturing facility of **Danfoss**, a manufacturer of pumps, valves and motors on an island in the Baltic Sea, was routinely withdrawing 2 million cubic metres of water from the sole aquifer supplying the needs of the company as well as the island's population of 50,000. Following the discovery that the aquifer was being overdrawn and saltwater intrusion becoming a real possibility, the company initiated a series of water-saving programmes and revised its waste-water treatment system. This eventually reduced the consumption to 0.4 million cubic metres, an 80% reduction in abstraction, improving freshwater reserves in the aquifer and removing the threat of saltwater intrusion.

A winner of one of the 2002 Ramsar Awards, the Australian wine company **Banrock Station** has undertaken ten years of effective rehabilitation and management practices, including energy and water efficient systems maintaining the vineyards, at their own complex of wetlands in the floodplain of the River Murray, in cooperation with an NGO, Wetland Care Australia. They offer an innovative marketing approach whereby a percentage of the revenue generated by sales in the countries where the wine is offered for sale is allocated to wetland conservation projects and activities in those countries. The company has announced that the cash prize from the Ramsar Award will be devoted to an ecotourism project in the Lake Nakuru Ramsar site in Kenya (further details on page 13; see also their Web site at <http://www.banrockstation.com.au/>).

### **Urban water use**

Domestic uses claim 10% of all water withdrawals. Can urban water users become less wasteful? There are many innovative techniques for improving the efficiency of water usage. Here is one such example.

The USA's Clean Water and Safe Drinking Water Acts have improved the quality of water available but resulted in a higher, more realistic price of water. It's clear from at least one survey that some sectors of the population DO change their water consumption patterns when faced with the real cost of their freshwater: a water metering device installed in

apartment blocks in the USA means that residents can be charged individually for precisely the amount of water they use. Surveys have shown that people consume 18-39% less water when they know they are paying for the volume of water they use each month. With less than 40% of the apartment blocks presently able to meter the water consumption in individual apartments, approximately 9.5 million cubic metres of water could be saved each day, saving owners and residents US\$4.6 billion annually, if all of the USA's 25 million apartment blocks could be metered in this way.

## Theme 2

### Water for Ecosystems?

Allocating freshwater to satisfy the needs of the three principal sectoral users - agriculture, industry and domestic uses - is an on-going challenge for water managers in most countries.

Wetland ecosystems have the dual capacity of being “water providers” AND “water users”. So why do they rarely appear as part of the allocation equation? Wetlands are critical components of the water cycle that delivers our freshwater, but they also **require** a certain amount of water if they are to maintain their structure and functions and continue to deliver the quantity and quality of water upon which we depend.

**Wetlands NEED water if they are to deliver the quality and quantity of water we depend on.**

A gradual shift in recent water management philosophy and practices is broadening the recognition that the water requirements of wetland ecosystems must be fully taken into account in any effective water management regime. Water managers should be assessing, in the first instance, the minimum water requirements to maintain the ecological functions of wetland ecosystems. What’s left after this

minimum has been assured can then be safely put to use for the sectoral users without any danger of compromising the natural resource base so vital for sustainable development.

Assessing the water needs for maintaining wetland ecosystems is a relatively new area of focus in wetland management, but there are tested tools and methodologies, both scientific and social, for such assessments, appropriate for different types of aquatic ecosystems. The methods range from quick, simple assessments to longer-term studies that may take one to two years to complete. The best techniques pay attention to the multiplicity of ecosystem functions, rather than focusing simply on water for birds or water for fish, so that water is allocated to maintain, for example, the physical structure of a river and floodplain, fish and bird diversity, water quality, recreational use, maintenance of fisheries that support rural livelihoods, etc. Individually, some of these functions have very significant economic and social implications, so maintaining certain flows at certain times of the year, to sustain fish populations or maintain a floodplain, for example, may be a critical matter for many rural communities, especially those in developing countries.

Efficient water allocation at the basin level requires not only such assessments as a starting point, but also the development of appropriate national policies, legal instruments and a decision-making framework to promote the allocation of water to wetlands with full involvement of all stakeholders in the process.

## Focus on . . .

### **The Ramsar Convention's management tools**

The Convention's *Guidelines for integrating wetland conservation and wise use into river basin management* not only recognise the need for integrated water resource management at the river basin level, they also identify the need to consider appropriate allocation of water to wetlands as an essential management procedure for ensuring that wetlands continue to function effectively. The guidelines highlight the need for developing river basin management authorities that include representatives of all stakeholders – water regulatory bodies, scientific institutions, local communities, farmers, NGOs and others – as well as the need to develop the appropriate policies and legislation for such management. They also emphasise the need to assess both current and potential future water supply and demand in order to meet both ecosystem and human requirements.

### **South Africa's National Water Act**

Recognition of the central role of ecosystems in water supply is reflected in South Africa's National Water Act (1998). A water-short country, South Africa has employed enlightened water policies in recent years using a decentralised approach to water management, encouraging the participation of local communities in decision-making, and introducing effective water pricing practices. What sets it apart from previous water policies – and the water policies of many other countries – is the guiding principle that the country must maintain the natural ecosystems that underpin its water resources. It explicitly recognises the need to protect “the quantity, quality, and reliability of water required to maintain the ecological functions on which humans depend”. To this end, the National Water Act requires that the amount of water required to sustain its freshwater ecosystems is maintained as an environmental “reserve”.

### **The EU Water Framework Directive**

The primary target of the European Union's Water Framework Directive is to achieve “good water status” for all surface and groundwaters within the European Union (EU), now comprising 15 sovereign states. The Directive's managerial approach is one of integrated water management at the river basin level, bringing about an overall coordination of water policy at the EU level. Effective water pricing and public participation are also fundamental elements of the Directive.

The Directive provides EU countries with a common set of objectives, principles, definitions and basic measures. Specific actions required are the responsibility, of course, of the appropriate authorities at Member State level (whether national, regional, local and/or basin), and the precise measures taken within any river basin will vary depending on natural, socio-economic and cultural factors.

## Theme 3

### Wetlands, Water and Poverty Eradication

1.3 billion people currently live in extreme poverty on \$1 a day or less, and a further 1.6 billion on less than \$2 a day. Understandably, poverty eradication was at the top of the agenda for the World Summit on Sustainable Development in Johannesburg in 2002, with a broad recognition by the international community that the ultimate goal is achieving sustainable development that allows ALL people to meet their needs without harming the environment.

**Wetlands and water play a vital role for the world's 800 million rural poor.**

Over 800 million of those living in extreme poverty reside in rural areas, and the majority of them are in South Asia and Sub-Saharan Africa. It is the rural poor who are directly dependent upon natural ecosystems, such as wetlands, for their survival, and while there is certainly poverty in urban areas, it is the rural poor who are the most vulnerable when ecosystems

become degraded. Indeed many now identify environmental degradation as a primary root **cause** of poverty and not simply a **consequence** of poverty.

Rural poverty is often rooted in a lack of access to, and control of, natural resources. 52% of the rural poor have landholdings too small to provide an adequate income and 25% are landless. A particular problem to be addressed relates to women: more than half the world's food is raised by women, and in rural areas of Africa, the Neotropics, and Asia this figure is closer to 80%, yet women often have no access to land ownership. Rural people have frequently shown themselves, however, to be able stewards of their natural environment under the right conditions, and there are many examples where security of tenure and control over natural resources have resulted in dramatic improvements in the health of ecosystems and a reduction in rural poverty.

Water and wetlands play a vital role for the rural poor in terms of health, livelihood and economic growth. Local communities, local and national governments as well as the international community, can provide a variety of solutions to relieve the poor of the burden of poverty and move towards sustainable lifestyles.

### **Trade in wetland products**

Globalisation of trade in agricultural products, fisheries and other natural resources has often prevented rural communities from developing trading initiatives to market wetland products - a great disadvantage for the rural poor in developing countries.

Promoting sustainable trade in wetland products is a way to alleviate poverty and conserve wetlands, and this is an initiative currently under development within the Ramsar Bureau. The Bureau is supporting Bolsa Amazonia in a project, funded by the European Union and implemented by the Brazilian NGO POEMA, which is successfully promoting the sustainable trade of more than 55 products from the Amazon forest, including the export of Brazil nuts, vegetable oils and resins, fruit pulps and natural dyes to Europe, Australia and the USA. The direct beneficiaries are the people living in and around the rainforest, including small producers engaged in the sustainable use of biodiversity, as well as rural cooperatives and micro enterprises.

Bolsa Amazonia has successfully developed new products and technologies for processing abundant local natural resources such as coconut fibres, which are now being processed in four rural factories managed by local communities to make truck seats for the Daimler-Chrysler company in Brazil.

The Bureau is also taking the lead in the creation of a new sustainable trade facilitation scheme in Indonesia (perhaps to be called Bolsa Nusantara), and the UK Department for International Development (DFID - Indonesia Forestry Multistakeholder Programme) has expressed its commitment to funding this initiative. The Bureau has also begun work in the Okavango Ramsar site (Botswana) and has signed a Memorandum of Cooperation with the Secretariat of the UN Conference on Trade and Development (UNCTAD) in relation with its BIOTRADE Initiative. Preliminary discussions are taking place with the Cuban authorities to establish links between Bolsa Amazonia and the sustainable trade of wetland products in Cuba. Finally the Bureau is also discussing the possibility of using funds from a debt-for-nature swap between Peru and Germany, through the Peruvian Environmental Fund PROFONANPE, to set up such a programme in Peru.

### **South Africa, unemployment and invasive species**

A remarkable programme in South Africa is restoring wetlands, bringing employment to local people, and ridding the country of some unwanted inhabitants - invasive species. Alien plant species in South Africa, imported for aesthetic and economic reasons, have wreaked havoc on the country's ecosystems, obstructing rivers, exacerbating the risks of wildfires and floods, and reducing the country's biodiversity by eliminating local species. They have also reduced the available water in this water-stressed country, consuming 3.3 billion cubic metres of water each year that would otherwise flow into rivers - an amount close to that used by people and industries in South Africa's major urban and industrial centres. A partial solution to this problem is the *Working for Water* programme launched in 1995 by the South African government. It offers employment to up to 42,000 people, more

than 50% of them women, and has cleared in excess of 450,000 ha of infested land. The programme concentrates on alien species that grow only in mountainous areas because of their high water demand, and because it is these very areas that provide 49% of the total annual freshwater runoff for the country.

Clearing a dense stand of pines and wattles from 500m of riverbank in one area resulted in a 120% increase in stream flow. More modest increases of 44% have been recorded in other areas - vital water for a country that relies on 1.3Mha of irrigated land to produce 25% of the nation's agricultural output. An added bonus is that the cleared wood is turned into saleable products such as fuelwood, furniture and toys. Overall, the project is restoring an ecosystem, increasing water supply, and alleviating poverty.

### **Managing for food production, rural people AND the environment**

A study in Thailand has demonstrated that growing two rice crops per year produced additional rice for export but required dam-building and irrigation systems as well as fertilisers and pesticides. In contrast, traditional wet season, rain-fed rice production produced less rice but allowed farmers to harvest fish, shrimp and crabs and exploit wetland plant products such as bamboo shoots and mushrooms. In the multi-production system, two-thirds of the income came from direct harvesting in wetlands and one third from rice cultivation. The average income from this multi-production system was substantially higher than the double-cropping system - US\$ 2,500-2,950 as opposed to US\$ 865-1,296 per family per year - a significant difference that could do much to relieve rural poverty, produce a range of wetland products to sustain humans, and maintain a healthier wetland ecosystem.

### **East Calcutta Wetlands - employment, food production and water purification**

Recently designated a Ramsar site, the East Calcutta Wetlands in India represent a prime example of human-made wetlands providing multiple benefits and reducing poverty. The 12,500 hectare wetland area purifies the domestic waste of Calcutta, a city of 10 million inhabitants, and produces 11,000 tonnes of fish and 55,000 tonnes of vegetables per year, as well as providing clean water for irrigating paddy fields. In addition to the environmental and economic benefits from this natural wastewater treatment system, a major benefit in terms of poverty alleviation is the direct employment of 50,000 people in "farming" the wetlands and the indirect employment of a further 50,000. It's estimated the wetlands produce enough fish and vegetables to feed 500,000 people each day.

Special focus on . . .

## **Ecotourism and sustainable livelihoods of local communities**

Ecotourism is a small sub-section of the tourism industry catering for tourists who wish to visit natural areas to observe wildlife, natural landscapes and traditional cultures. Its potential as a tool for contributing to sustainable livelihoods of local communities and for conservation of natural environments was recognised internationally when the UN declared 2002 as the International Year of Ecotourism.

Receipts from international tourism reached US\$ 476 billion in 2000, involving over 698 million tourist arrivals (a 28-fold increase since 1950). It's the main source of foreign currency in 38% of all countries and one of the top five export categories in 83% of all countries, providing jobs for many millions of people. In some small island states in the

**Ecotourism is “environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features – both past and present) that promotes conservation, has low negative visitor impacts, and provides for beneficially active socio-economic involvement of local people” (from IUCN- The World Conservation Union).**

Caribbean and the Pacific tourism brings in over 40% of GDP. The industry is one of the fastest growing globally, and ecotourism is the fastest growing sector within the industry: spending is increasing by 20% per year – almost 5 times the rate of the rest of the tourism trade. It's also gaining recognition as an effective development alternative: the Nature Conservancy in the USA has reported that 36 of its 60 local NGO affiliates in Latin America have requested assistance with ecotourism feasibility studies.

Typically, ecotourists come in small numbers, stay longer (thus generating more income than other tourists), and have less impact on the local community, its culture, and the environment. Local communities may provide guided visits, accommodation, food, vehicle rentals, taxis, recreation (such as boats, horses, bikes), crafts, etc., resulting in valuable income. Additionally, ecotourism encourages local communities working with tourists to develop a sense of pride in their environment, thus encouraging responsible stewardship of their resources, and it does a great deal to demonstrate the economic value of natural ecosystems to national governments.

Developing ecotourism in such a way that it benefits both the environment **and** local communities is challenging. Typically, many developing countries regard any kind of tourism as a foreign exchange earner rather than as a tool to achieve broader socio-economic objectives – such as supporting rural economies and alleviating poverty. As much as 50% of tourism earnings may “leak” out of developing countries through foreign-owned businesses or payments for imported goods and skilled labour, and what does remain often does not benefit local communities.

With no internationally accepted definition of ecotourism, labelling an initiative as “ecotourism” can be good for business but not necessarily for the environment or local communities. The IUCN definition (see box) is useful in this respect, clearly identifying the socio-economic involvement of local communities. So too are guidelines specifically

focused on ecotourism rather than on the broader issues associated with sustainable tourism, such as the guidelines for community-based ecotourism published in 2001 by the World Wide Fund for Nature.

An on-going ecotourism project at the **Parc National Banc d'Arguin** Ramsar site in Mauritania is a good example of serious efforts to involve local people so that they benefit economically. With a well-defined ecotourism strategy founded upon a feasibility study, three important aims at Banc d'Arguin have been to ensure (a) that the local community are involved as local operators of ecotourist facilities in partnership with travel agencies both national and foreign, with funds made available to enable local people in several villages to develop facilities, and that they are also included in management decisions on ecotourism within the park; (b) that ecotourists leave with a good understanding of the wetland conservation issues within the park, and more broadly within the country; and (c) that visitors and operators of facilities follow a code of conduct that takes account of local customs and minimises their impact on the natural environment.

**Lake Nakuru National Park**, a Ramsar site, is currently developing a project along similar lines. Although a "mass tourism" industry is well developed here, with the park receiving an average of 140,000 visitors per year, it brings with it constant threats to the wetland ecosystem upon which it depends. The park authority's project aims to diversify the tourism industry through the development of ecotourism. Currently at the planning stage, the project has two major aims: to bring socio-economic benefits to local communities and actively involve them in conservation within the park; and to introduce a form of tourism that reduces the human impact on the wetland ecosystem.

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