



## Using wetlands sustainably

**Wetlands contribute to the livelihoods of millions of people but are threatened due to population pressure, unsustainable agriculture, exploitation of resources and upstream diversions of water. IWMI works to increase knowledge on the global extent of wetlands, the natural services they provide and how they can be used sustainably to reduce poverty in local communities.**



### Key messages

- Wetlands contribute in diverse ways to the livelihoods of millions of people in Africa and Asia, and are of huge economic importance to the countries within these regions.
- The estimated global economic value of wetlands is US\$70 billion a year, of which 7.5% is generated in Africa and 53% in Asia.
- In many developing countries wetland agriculture is an important ecosystem service which is often overlooked and undervalued, and is a pathway out of poverty.
- Management approaches that incorporate appropriate sustainable water and agricultural practices can result in a net increase in the overall productivity of wetlands and their long-term economic value.

Wetlands, sites where water exists at or near the surface, cover at least 6% of the Earth. They contribute to the livelihoods of millions of people in Africa and Asia and are increasingly being used for agriculture as populations rise and upland areas become degraded. Despite the importance of wetlands in supporting rural communities, governments often view them as underexploited resources of water, land and trees or wastelands that hinder development. As a result, many are being lost. Those wetlands that are protected tend to be designated solely as nature sanctuaries, rather than valuable ecosystems that can also be used sustainably by communities. “There’s not enough information on how wetlands can be used in a sustainable way for agriculture,” explains Matthew McCartney, Hydrologist, IWMI, East Africa and Nile Basin office. “So there’s a gap in knowledge that IWMI is well placed to fill.”

## Expanding knowledge

IWMI research is focused on understanding how wetland agriculture can sustain livelihoods and reduce poverty. This requires insights into wetland functions, the way that wetlands are used by local communities and both the positive and negative impacts of wetland agriculture. In 2007, IWMI initiated a Global Wetland Inventory and Mapping programme which has contributed to international efforts to map and characterize wetlands. This work is now being developed further through participation in the wetlands theme of the Japan Aerospace Exploration Agency’s (JAXA) Kyoto and Carbon Initiative, which aims to provide information on wetlands of international importance. IWMI is also helping to establish a Global Wetlands Observing System.

Wetlands provide a diverse range of ‘services’. More than three billion people, around half the world’s population, obtain their basic water needs from inland freshwater wetlands. The same number of people rely on rice as their staple food, a crop grown largely in natural and artificial wetlands. In some parts of the world, such as the Kilombero wetland in Tanzania, almost the entire local population rely on wetland cultivation for their livelihoods. Fisheries are also an extremely

important source of protein and income in many wetlands. According to the Food and Agriculture Organization of the United Nations (FAO), the total catch from inland waters (rivers and wetlands) was 8.7 million metric tonnes in 2002. In addition to food, wetlands supply fiber, fuel and medicinal plants. They also help to reduce the damaging impacts of floods, control pollution and regulate the climate.

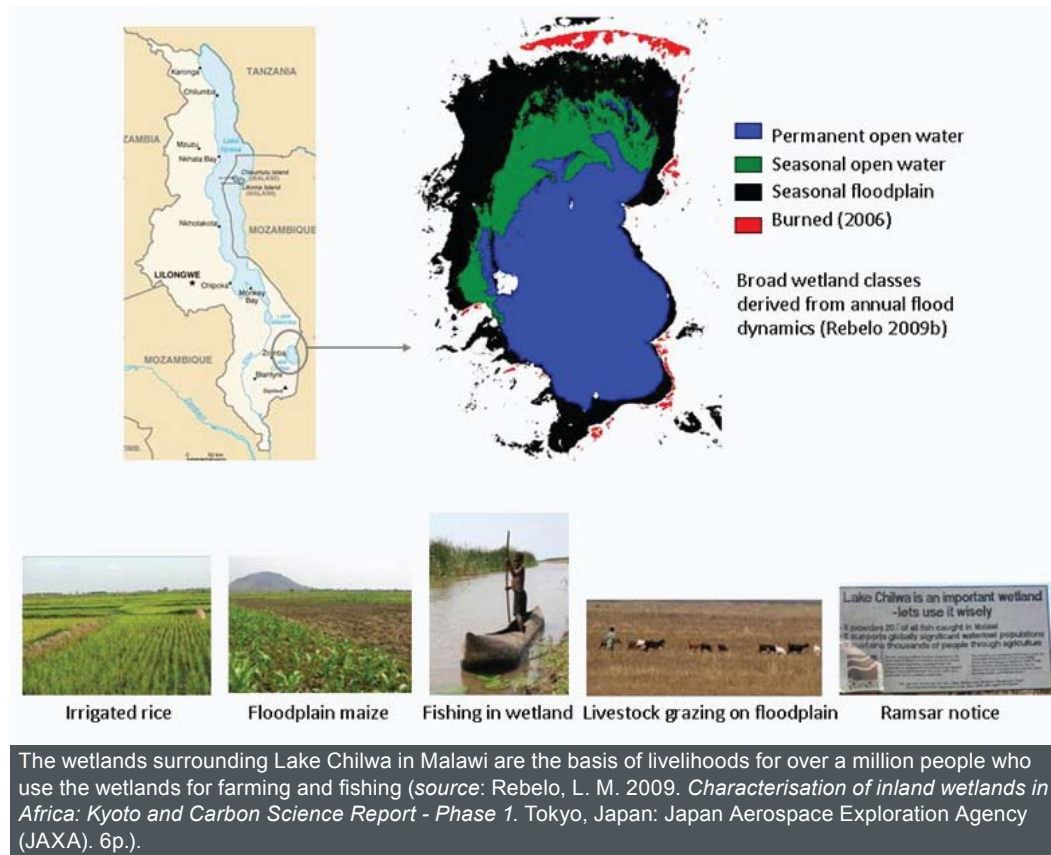
## A fine balance

Although unmanaged agriculture has the potential to destroy wetland ecosystems, appropriate small-scale farming can be sustainable with negligible impacts on other ecosystem services. It is now understood that a minimum of 131 million hectares (mha) of wetlands occur in Africa and 286 mha in Asia. Although only a small area of these wetlands maybe suitable for agriculture,



Photo Credit: Sanjiv De Silva

Cattle are an indispensable element of a livelihood strategy for most rural dwellers. In many regions, herds could not survive without access to wetlands during the dry season.



to put the figures in context, they compare to 12 mha of irrigated land in Africa and 194 mha in Asia. IWMI scientists have been assessing the potential of wetlands to support agriculture by analyzing biophysical and socioeconomic aspects of wetland use. Studies conducted have demonstrated the large contribution wetland agriculture makes to livelihoods and the potential to lift households out of poverty in both Africa and Asia. For example, cultivation in the 1 square kilometer (km<sup>2</sup>) GaMampa wetland in South Africa yields an estimated annual gross value of US\$36,788 to the community living in its vicinity. However, when a wetland is used for agriculture there are inevitable trade-offs with other ecosystem services. It is important that these trade-offs are properly weighed against the benefits derived from agriculture.

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IWMI’s most recent research in wetland ecosystems has focused on analyzing the links between wetlands and rural livelihoods. For example, the 2,248 km<sup>2</sup> Lake Chilwa wetland in Malawi is an important source of livelihood for over 77,000 people, while some three million people in Cambodia depend on the Tonle Sap wetland area for their well-being. However, many of the world’s wetlands are threatened. Degradation of wetlands and the consequent loss of ecosystem services often increases poverty. In sub-Saharan Africa, IWMI researchers found that of the 143 sites listed, by the Ramsar Convention on Wetlands, as Wetlands of International Importance, 93% support some form of fisheries or agricultural activity but 71% are threatened by those activities. Finding ways to effectively manage wetlands to support

essential ecosystem services and local livelihoods is an important goal for the future. “It’s not practical to have a detailed management plan for every wetland but you can educate people so they value wetlands and manage them in a way that balances the needs of the environment and agriculture,” says McCartney.

## Influencing policy

The Ramsar Convention on Wetlands is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Since 2005, IWMI has been one of five International Organization Partners (IOPs) of the Convention, with representation on its Science and Technical Review Panel. Through this role IWMI highlights issues of importance and increases the Convention’s focus on the links between wetlands, livelihoods, poverty and agriculture. At the 2008 Convention of Parties, IWMI scientists contributed directly to a number of resolutions including those relating to the links between wetlands and human health, biofuels, poverty reduction, biogeographic regionalization and biodiversity in rice paddies. These

resolutions have the potential to influence policies and strategies implemented in the 159 signatory countries.

## Donors and partners

IWMI works with a wide range of international and national partners, ranging from NGOs to government ministries, including the Food and Agriculture Organization of the United Nations (FAO); International Union for Conservation of Nature (IUCN); Wetlands International; National Environmental Council of Zambia; Eduardo Mondlane University, Mozambique; University of Zimbabwe; Environmental Affairs Department of Malawi; University of Malawi, Swaziland National Trust Commission; Zambia Agriculture Research Institute; University of KwaZulu-Natal, South Africa; Association for Water and Rural Development (AWARD), South Africa; Mondi Wetlands, South Africa; Ministry of Forestry and Land Reclamation, Lesotho; Agricultural Research Council of Zimbabwe; Japan Aerospace Exploration Agency (JAXA); and the Ramsar Secretariat.

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