

Supporting Biodiversity

Rather than hunt migratory and often endangered species of water birds and animals, the communities can now focus on livelihood activities. In providing predictive information on the flood, the OPIDIN's findings are supporting the wise use of wetlands resources thus ensuring its sustained biodiversity even as food and economic security is achieved.

The OPIDIN has been developed by Wetlands International in Mali in alliance with Royal Haskoning and Altenburg & Wymenga Ecological Consultants. Wetlands International is building the capacity of the Malian government and local partners to ensure timely delivery of the OPIDIN's findings. With the successful launch of the OPIDIN in the central Inner Niger Delta, Wetlands International hopes to extend its use to other regions of the Inner Niger Delta.



Wetlands International Africa

sustaining and restoring wetlands and their resources for people and biodiversity.
www.afrique.wetlands.org

OPIDIN

Supporting Freshwater Biodiversity in Africa's Inner Niger Delta



2010 is the International year of biodiversity.

Freshwater biodiversity is a valuable natural resource. Fresh water makes up only 0.01% of the World's water and approximately 0.8% of the Earth's surface, yet this tiny fraction of global water supports at least 100,000 species. Water is life; it holds together the earth's ecosystems while providing numerous economic and livelihood benefits.

In the heart of West Africa, the Niger River flows over 4,180 km before discharging its waters into the Atlantic Ocean. This fresh water river basin covers 9 African countries; Guinea, Mali, Niger, Benin, Nigeria, Burkina Faso, Cote d'Ivoire, Cameroon and Chad.

Inner Niger Delta

During the rainy season that starts in August of each year, the Niger River's waters flood the 3,000 hectare wetland of the Inner Niger Delta in Mali. The result is a region of braided streams, marshes, and lakes the size of Belgium; the seasonal floods make the Delta extremely productive for both fishing and agriculture. It directly supports the livelihoods of more than a million people and is a habitat for nearly 4 million water birds and a large range of water dependent plant and animal species.



The Inner Niger Delta lies in the semi-arid parts of the Sahara desert, and when not flooded is hot and dry with temperatures rising well past 40 degrees Celsius. In the wet season, the Niger River's banks overflow naturally irrigating the land and providing a breeding stronghold for endangered Sahelian subspecies that occur here because of the delta's unique wetlands.

Over the years, a combination of inadequate flooding information, impacts of climate change and unsustainable administrative practices has become a major challenge to the delta. Wetlands International has developed a tool that enables wise use of the delta's flood waters and as a consequence maintains the delicate balance of its biodiversity.

The OPIDIN

OPIDIN (Outil de Prediction des Inondations dans Le Delta Interieur Du Niger) is a predictive model that forecasts the high and low periods of flooding within the Inner Niger Delta. Using a digital flooding model based on a combination of Landsat satellite images and over 55 years of data, the OPIDIN is able to accurately describe the flooding and de-flooding processes between the Diafarabé and Akka regions in Mali. Within the same flooding cycle, the OPIDIN can determine the peak flood level, when this peak will be reached, which areas shall experience this peak and at what time the flooding will have declined to a certain level.

Sustaining Livelihoods

The OPIDIN's ability to predict the peaks and lows of the flood is revolutionizing life for central Inner Niger Delta communities. For the first time fishermen can determine the number of boats and fishnets to purchase for the high fishing season, farmers can accurately identify where and when to plant their rice, maize and millet, while the pastoralists are now able to steer their flock to the most fertile pasture. The greater the predictive capacity, the better its effects on the ecosystem's biodiversity and human activities.

Before the OPIDIN, fishermen wasted resources on unnecessary equipment, farmers lost their crop to excessive or insufficient flood waters, and pastoralists watched their flock starve while awaiting the recession of the flood waters or drown while attempting to cross the overflowing rivers.

**According to 2010 OPIDIN predictions,
this year's flood will peak at 521 cm at Akka on
November 24**

