

Report
◆ **Living on the Edge** ◆
2011-2015



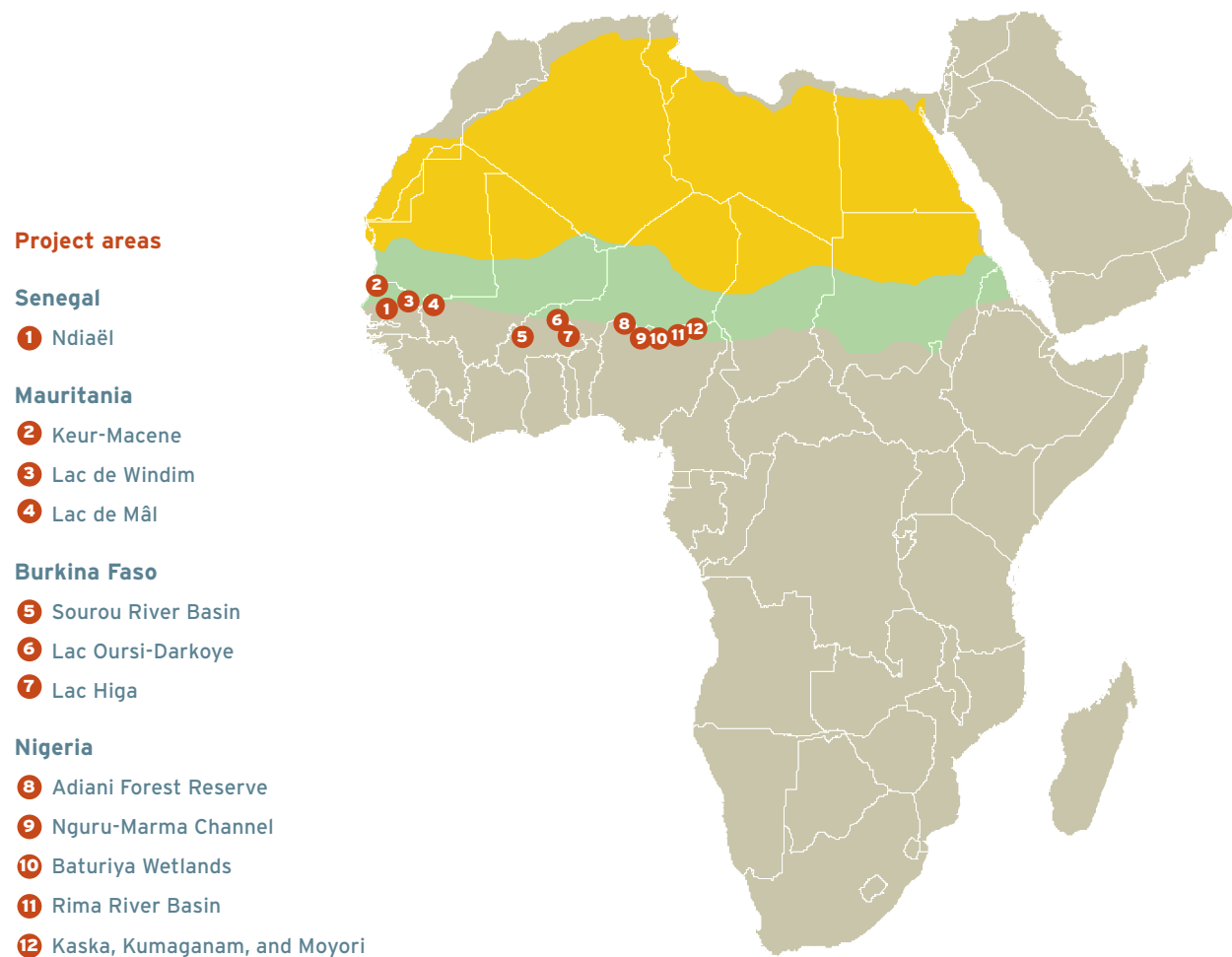
Vogelbescherming
NEDERLAND



Living on the Edge

Each year, some two billion birds from Europe make an incredible journey to Africa, with many overwintering in the Sahel region. Migratory birds overwintering in the Sahel face many challenges. The rising local population places more and more pressure on the land. Agricultural practices are intensifying, often at the cost of traditional land-use. Along with overgrazing, unsustainable logging, and fewer floodplains and riparian forests due to

the introduction of dams, this has led to a significant loss of biodiversity, and, in many cases, to increased rural poverty. Climate change also plays a role. The central theme of the Living on the Edge project is the common interest of birds and people. Sustainable land use has been encouraged, with the primary aims to deliver long-term benefits to the local people, and restore and protect the habitats of birds.



Project areas

Senegal

1 Ndiaël

Mauritania

2 Keur-Macene

3 Lac de Windim

4 Lac de Mâl

Burkina Faso

5 Sourou River Basin

6 Lac Oursi-Darkoye

7 Lac Higa

Nigeria

8 Adiani Forest Reserve

9 Nguru-Marma Channel

10 Baturiya Wetlands

11 Rima River Basin

12 Kaska, Kumaganam, and Moyori



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With thanks to:



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Project philosophy and objectives

This report contains the results of the Living on the Edge project. Between 2011 and 2015, a more sustainable land use was achieved in fourteen areas in four African countries, thereby improving the habitats for migratory birds and improving livelihoods for the rural population. Research has delivered new scientific findings, international policy advocacy has led to a new international policy framework on migratory birds, and awareness has been raised among a large audience about issues and solutions relating to migratory birds. Nature conservation in Africa works; it is not a luxury but a vital necessity. We are all interconnected by global issues and solutions, and that is what we demonstrated to the wider public – with birds as a beautiful metaphor.



Project objectives

Living on the Edge aims to restore natural habitats, promote ecological and sustainable land use in the Sahel region, and to stabilise or increase the populations of migratory birds in Europe. Birds and people have the resilience necessary to respond to climate change. In fourteen areas in four countries in the Sahel region, sustainable management and use of natural resources is restoring and protecting the habitat of migratory and non-migratory birds and improving the livelihoods of rural communities. The capacities for sustainable land use and bird conservation are strengthening, and there is an increased awareness of and support for bird conservation along the migration route. Land use and development policies in the East Atlantic migration route take nature into account.

Concrete objectives

1. Wetland and dryland migratory bird habitats are protected and, where necessary, restored. The number of migratory birds in the project areas increases. Sustainable land use decreases pressure on natural resources and improves the livelihoods of the local people and their capacity to adapt to climate change.



2. The capacity of National BirdLife partners, Local Conservation Groups (LCGs), and local communities to implement sustainable land use in combination with nature conservation is strengthened. Knowledge and methods are exchanged and experiences are widely shared and applied to other sites throughout the Sahel.

3. Awareness of and support for environmental restoration in relation to improved livelihoods in the Sahel is increased amongst people in the Netherlands and in the Sahel. There is increasing appreciation for migratory and non-migratory birds and their habitats.

4. Environmental conservation and restoration become part of international and national land-use national policies in the Sahel. Projects serve as a source of inspiration for development organisations, governments, and international NGOs.

To make a difference that extends beyond the area, successes and experiences need to be underpinned by sound science and to be shared with

a broad public, relevant stakeholders, and policymakers (BirdLife's 'local to global' approach). Programmes for research, communications, policy advocacy, and capacity building aim to achieve a 'multiplier effect' by:

- offering inspiring examples for the implementation of similar projects at other sites;

- conducting ecological and socio-geographical research;
- improving national and international policies;
- raising awareness and support for sustainable, nature-inclusive development;
- strengthening partner organisations' capacity for conservation, communications, and advocacy activities.



Research and advocacy activities

LivingTrees

Research was conducted in the winters of 2007-2015 to assess how important the wintering grounds of the migratory birds are to their survival and to determine their preferred habitats. In the course of this research, no less than 308,000 individual trees and shrubs of 182 species were identified and measured and the birds present

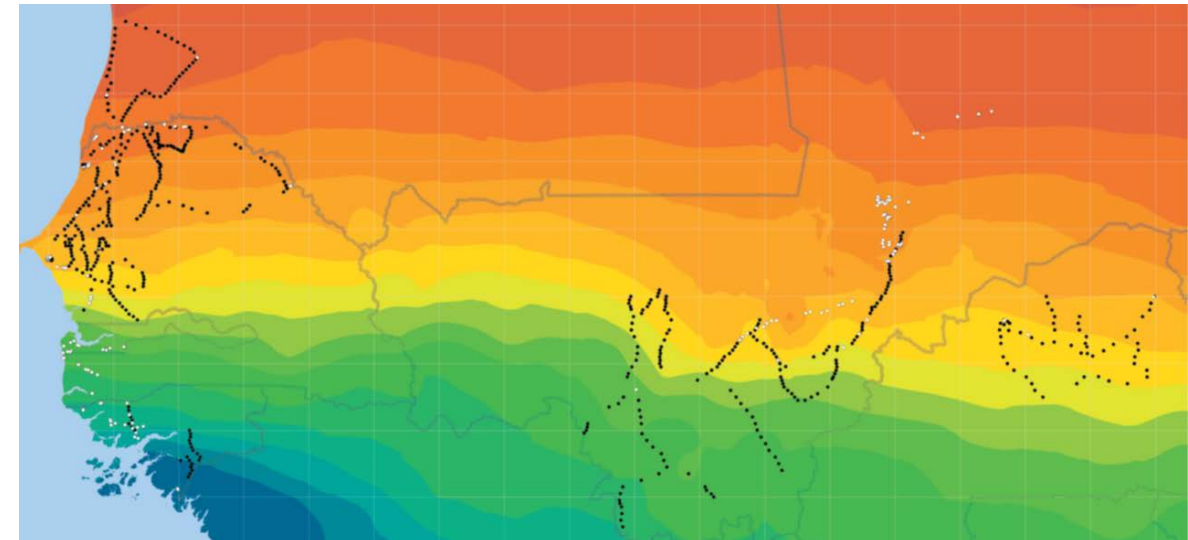
(59 species) were determined and counted. This facilitated the calculation of the density of tree-dwelling birds in the landscape (on average thirteen birds per hectare of canopy surface, with a maximum of 130 birds per hectare). Birds were found to be highly selective in their choice of tree species: more than 80% of all birds were found in only nine tree species and no birds were found in

65% of the tree species. Bird density was four times higher in acacias than in non-thorny species. Only *Salvadora persica* bushes, if carrying berries, showed even higher densities.

The bird densities were highest in the tree species from the drier zones of the Sahel. These seemingly contradictory results, with large numbers of birds found in areas that quickly turn from lush vegetation to dry and bare areas in the dry season, is known as Moreau's paradox. The proposed explanation for this paradox is that precisely because the Sahel is arid, with a single rainy season, the period just after the rains (when migratory birds arrive)

'During the fieldwork, we felt just like explorers; we were constantly discovering things no one knew.'

Leo Zwarts, LivingTrees researcher



LivingTrees fieldwork locations. Each dot represents a transect (research area) of 300 x 50 metres. (photo: Altenburg & Wymenga)

sees a sharp increase in plants and insects that can be exploited well into the dry season.

LivingTrees found an additional explanation for Moreau's paradox. Vegetation in the Sahel has always been subject to heavy grazing by large herbivores, and in the present-day, cattle have taken over the grazing role from the wild mammals. To withstand this grazing, many trees and shrubs developed thorns as a defence mechanism. Further south, in the more tropical zone of the Sahel, sleeping sickness has always suppressed the numbers of grazers. This zone is dominated by trees that use chemicals and high fibre content in their leaves to defend against insects, rather than thorns. Because trees cannot invest everything at once, thorny trees often host many insects and caterpillars. Consequently, the northern zone offers more food for insectivorous birds.

LivingTrees' research results provide entirely new scientific insights. We now know which tree species birds need, and which ones they avoid. These results provide very useful information for the numerous tree planting initiatives in the Sahel. The findings were published at the end of 2015 in the ornithological journal *Ardea*.

Socio-economic and organisational aspects of projects in Burkina Faso

For projects to be successful, an in-depth understanding is required of social, economic, and cultural aspects, the local playing field, power balances, and the interactions between the government, NGOs, community-based organisations, and the local people. The BirdLife approach - working with national partners who establish and support LCGs who then collaborate with the local population on important bird areas - provides a useful model to study these interactions. This approach, however, displays variations in success between and even within countries, depending on the local context. To better understand these aspects and variations and to

gain insight into the preconditions for successful projects, the African Studies Centre (Leiden, the Netherlands) set up a socio-geographical Ph.D. research project. This research project was carried out by Michiel van den Bergh, who submitted his thesis in January 2016. This research focused on two Living on the Edge project sites in Burkina Faso: Lac Higa and the Sourou River Valley. The people here typically have a positive attitude towards environmental conservation, particularly in relation to trees. They also value birds. Their attitudes are derived not so much from their involvement in nature, but from the importance of natural resources for subsistence, alternative resources in case of drought, and socio-cultural aspects. Research on local groups





and other actors provided additional insight into how they view each other and which mechanisms form the basis for decision making. That insight will be useful for even more effective cooperation with the LCGs. The cooperation between NATU-RAMA and the LCGs of Oursi and Higa scored well. However, there is room for improvement at Sourou. The results have also been discussed in several articles, including the journal Biodiversity.

Scoping study of best practices from other projects in the Sahel region

Many areas in the Sahel are teeming with projects and initiatives focused on agriculture, tree planting, re-generation, food security, etcetera. In order to obtain a better understanding of what works well in other projects, and of the playing field of potential actors with whom we can share our experiences, a scoping study was outsourced to Brouwer Consultancy, a consulting firm with extensive experience in the Sahel. The outcome of the study offers a

good look at approaches and success factors and at other organisations.

Though Living on the Edge appears to already be applying most of the recommendations, they can be particularly useful for designing follow-up work.

Pan-African Ornithological Conference (PAOC)

Once every four years, the PAOC brings together African and European ornithologists and bird conservationists. In 2012, this conference was held in Tanzania. For this occasion, a symposium entitled 'An innovative conservation approach



linking livelihood improvement and migratory bird conservation' was convened by Vogelbescherming, the RSPB, BirdLife, and the Africa Study Centre (AFS) with presentations on ongoing research under Living on the Edge.

In 2016, the PAOC will take place in Senegal. The results of the Living on the Edge research will be presented there, along with those of other current research projects on migratory birds.

Migratory Landbird Study Group

An important part of preparing the African-Eurasian Migratory Landbirds Action Plan (AEMLAP) was establishing what knowledge was necessary to effectively protect migratory birds and their habitats. The AEMLAP working group, led by Vogelbescherming and the RSPB, stressed the importance of greater synergy between ecological and socio-geographical research. The working group members also underlined the need for exchanges among students and scientists from Europe and Africa. The idea for an international scientific platform of researchers was formed, which was subsequently submitted by the RSPB and Vogelbescherming to European researchers during the European Ornithological Union Conference in 2013. On the spot, a core group of young, interested researchers formed the Migratory Landbird Study Group (MLSG). The RSPB and Vogelbescherming sit on the board and support the growth of the young organisation. MLSG was officially launched at a meeting held in Germany in March 2014.

'Every year, Burkina Faso receives many migratory birds that over-winter with us. We support this resolution and the development of the action plan.'

Germaine Ouédraogo, representative of the Burkina Faso Government, speaking to the CoP



Advocacy activities

Thanks to Living on the Edge, an international action plan has been developed for the conservation of migratory landbirds. It is one of three instruments aimed at migratory birds under the UN Convention for the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention). The 'African-Eurasian Migratory Landbirds Action Plan' (AEMLAP), covers all of Europe (including Greenland), Africa, and Western and Central Asia (including India), and more than four hundred species of migratory birds. It is an important complement to the two existing CMS bird instruments: the convention for waterbirds (AEWA) and the Memorandum of Understanding for birds of prey (BoP). Led by BirdLife, a team comprising various BirdLife partners, including Vogelbescherming, NATURAMA, and

the RSPB worked intensively on the lobbying for and the contents of this plan.

AEMLAP was accepted in 2014, and a new international policy framework for migratory birds became a reality. BirdLife currently helps national partners and their governments to refer to the agreements and initiatives set down in AEMLAP, for which Living on the Edge will continue to serve as a positive example.

Information about AEMLAP and an interview with coordinator Alex Ngari: <http://tinyurl.com/hmj37wh>

Founding of the MLSG: <http://tinyurl.com/z3m5vnf>

Migratory Landbird Study Group: www.migrantlandbirds.org

Field project Mauritania



Nature Mauritanie

Nature Mauritanie was founded in 2000. Its mission is to improve knowledge about, and conservation and sustainable use of the biodiversity of Mauritania's wetlands. Nature Mauritanie has developed and implemented various projects, supported by a wide range of donors and organisations, such as IUCN-NL, Wetlands International, and UNDP-GEF. The organisation was identified as a potential BirdLife partner in 2009. Since then, BirdLife has invested in strengthening Nature Mauritanie so the organisation can fulfil the requirements to be a BirdLife Partner. Living on the Edge has made valuable contributions to that process. During the project, Nature Mauritanie staff members participated in various national and international training sessions and exchanges. The second strategic plan (2014-2018) was set up. A close connection was formed with NATURAMA in Burkina Faso, the only other BirdLife partner in this part of francophone West Africa. The highlight was the official accession of Nature Mauritanie to the BirdLife partnership during the Council of the BirdLife Africa Partnership in October 2015 in Ghana.

www.natmau.mr



Project areas

The three project areas are located in southern and southwestern Mauritania and form part of the northern edge of the Senegal Delta, one of the five most important wetlands of the Sahel.

Lac du Mâl

Lac de Mâl is located in the depression of Wadi Guéllouâr near the villages of Mâl and Jadida. Though shallow, this is a permanent lake; the water surface area of the lake varies from 5,250 hectares at the end of the rainy season to 870 hectares by the end of the dry season. The site is arid, with annual rainfall varying between 100 and 200 mm. The local population consists mainly of nomadic cattle herders, but the community also has farmers and fishermen. As many as 40,000 waterbirds were counted in the recent past (especially Northern Pintails and Garganey), and the riparian trees and shrubs offers the first suitable habitat for songbirds after crossing the Sahara. Farmers use the dense aquatic vegetation in the shallow areas of the lake as cattle fodder. Overgrazing and unsustainable fuel wood harvesting

degrade the riparian vegetation and increase the mobility of sand dunes. The fishing practices are not likely to be sustainable.

Lac de Windim

This lake is located near the Senegal River and covers an area of 1,240 hectares. Windim and Dabane are the main villages, and annual rainfall amounts to between 250 and 350 mm. The local population mainly live from subsistence farming (for personal use) and cattle herding. As a result of higher rainfall, the vegetation in this area is better developed in comparison with Lac de Mâl. Owing to its proximity to the Senegal River, there are well-developed riparian forests with acacias.

Keur Macène

This area is a natural depression with several small lakes to the north of the Senegal River. Keur-Macene, Boynayé, Avoundé, and Dara are the main villages. The area land use is characterised by agricultural and livestock-keeping practices, with annual rainfall of around 250 mm. The nature value of the area has been degraded by



the large-scale cultivation of sugarcane. With its close proximity to the coast, Keur-Macene is an important host for gulls (particularly Slender-Billed Gull), terns (Royal and Little), Great White Pelicans, Collared Pratincoles, and waders. The relatively salty soil limits the agricultural value of the land.

Activities with an impact on bird habitat restoration

Local Conservation Groups

A Local Conservation Group (LCG) has been established in all three areas. Because the local population's land use is partly nomadic, membership in the LCGs in Mauritania is relatively low compared to the other project countries: nine members per group. When forming these groups, special attention was paid to representing young people in the area. The LCGs received training in communications as well as setting up sustainable economic initiatives. Several people were trained in the identification and monitoring of

birds to allow for the following of birds as an indicator of ecological recovery.

Natural Resource Management Plans

In collaboration with the LCGs, Nature Mauritanie organised exchanges with the local population on the use of natural resources. Challenges to livelihoods were discussed and, where possible, linked to the ecological degradation in the area. As the local people are still largely nomadic, the exchanges have yet to translate into formalised plans on paper. However, activities have been developed that are inclusive of the local government. The biggest progress towards a formal management plan have been made in Lac de Mâl. A local committee was established, consisting of the mayor and representatives of land-user groups (cattle herders, farmers, fishermen, women, and young people), and it is chaired by the Chef d'Arrondissement. Elaborating a formal plan is part of the process to achieve protected status for Lac de Mâl.

Restoration and conservation of natural vegetation

The effectiveness of preventing overgrazing and the mobility of sand dunes was tested on 13.5 hectares of land. The vegetation development on the shores around the wetlands was monitored, where cattle is concentrated. The vegetation recovered rapidly at the shore sites. Additional trees were planted in all the areas. In Windim, a tree nursery produced a thousand seedlings of native tree species, 80% of which survived after planting. After a year, the tree saplings and the herbaceous ground cover were well developed. This growth demonstrated that the grazing is an important factor in environmental degradation and that the vegetation recovery is genuine. The LCG dispatched local volunteers to monitor and protect the saplings. At Keur-Macene, an area with high potential for nature to regenerate has been protected.

Discussions were also organised to address issues of land ownership, which is an important subject - and often a source of conflict - in areas with nomadic land use. The discussions focused on making agreements on land access and usage.

Bird numbers

The initial bird monitoring focused on waterbirds, as they are easier for novice counters to identify and count than landbirds (mainly small, tree-dwelling songbirds). Counts were performed for every year of the project. These were the first regular counts to be conducted in these areas; the data has since been included in the international

waterbird census coordinated by Wetlands International. Although it was not always possible to establish a causal relationship between the completed projects and the count data, it is encouraging to see the rising numbers in Lac de Mâl, the most important site. These recent numbers approach estimates from the past (1980s and 1990s). Now that the waterbird monitoring is operational, future investments will have to be made in monitoring landbirds.

At Lac Windim, few birds were counted due to the lack of water in recent winters. There was an adverse impact on bird numbers in Keur-Macene by the sugar cane cultivation and related water supply.



Activities to improve livelihoods

The livelihood programme in Mauritania reached eight thousand people in total. Both the introduction of new, alternative sources of income

and the improvement of existing ones have increased local income and decreased dependence on natural resources. The LCGs received training on project management, finances, and administration.



‘By connecting nature conservation and support of rural livelihoods, BirdLife partners ensure lasting results.’

Bernd de Bruijn, Living on the Edge project manager

Vegetable gardens

Vegetable gardens were planted and nurtured in four communities (Windim, Dara, Mâle, and Dabane). The people in these communities were provided with training and materials (water pump, storage tank, fencing, seeds, etc.). A portion of the harvest was reserved for local consumption, the remainder sold at market. One of the market-garden cooperatives consists of as many as 80 women. In Windim, the annual income per person increased from €390 (2012) to €500 (2014).

Poultry farming

Poultry farms were installed at five villages (Boynayé, Mâle, Windim, Avoundé, and Jadida). By the end of the project, all poultry farms were performing well and earning considerable income; €156 was earned for the month of March in Jadida. This welcome income appeared to provide an attractive alternative to hunting birds.

Textile dyeing

Women’s textile dyeing cooperatives have been set up in both Windim

and Boynayé. The households of more than 50 women are already benefiting from this work. The fabric is sold at markets, both locally and across the border in Senegal.

Fishing

To encourage sustainable fishing, fish processing and storage was improved at all three sites (Lac de Mâl, Lac de Windim, and Keur-Macene). In addition, training sessions were provided on sustainable fishing, the importance of birds as an indicator for healthy wetlands, and business administration. Thirty people participated per site. The fishing cooperatives received 50 metal drying racks (to replace wooden ones), equipment, storage in Mâle, and improvements to the fish market. In Mâle, where fishing is an important economic sector, a committee for fisheries was established under the supervision of the local government.

Cattle fodder

After the rainy season, when the migratory birds arrive, neither birds nor cows or goats lack food. But by the end of the dry season, when the migratory birds need to increase their fat reserves for their journey home, the herbaceous ground cover is gone and many trees have lost their leaves. The cattle herders then cut branches off of the leaf-bearing trees for cattle fodder. In order to address this problem, 25 farmers in Keur-Macene underwent training on the collection and storage of hay and harvest remains. This proved an acceptable alternative for farmers, since the leaf-bearing trees provide shade for livestock and help improve the quality of the soil. Youth in Win-



dim and Mâle received training on beekeeping to test the feasibility of this as an alternative source of income.

Awareness: activities and target groups

Nature Mauritanie has developed various communications activities. To that end, Nature Mauritanie has taken journalists to the project areas, and they produced two short films on the issues and projects. The director of Nature Mauritanie was featured in a national television programme, where he talked about sustainable land use. Several publications have been distributed, including a brochure with highlights of Living on the Edge, a guide for sustainable fisheries, 3,500 leaf-

lets about the project in French and Arabic, stickers, and nineteen information boards. A ‘cleaning day’ was organised at Lac de Mâl that involved local people with collecting waste from around the lake. The annual World Migratory Bird Day was celebrated with campaigns and activities.

National policy advocacy

In Mauritania, the process of influencing the government is not straightforward for civil-society organisations. Nevertheless, Nature Mauritanie’s advocacy efforts have led to the inclusion of the sustainable use of natural resources in the planning process. The importance of wetlands seems to be considered more often than before the

project started. Relations with the Mauritanian Ministry of Environment and the local authorities have strengthened. A huge achievement is that the minister is considering designating Lake Mâl as a protected area. Another milestone is the start of the drafting of a code of conduct for the sustainable use of natural resources. In 2014, Nature Mauritanie organised a national workshop on degradation and desertification, which was attended by NGO and governmental representatives. This event took place close to one of the sites, allowing the journalists present to also interview the locals. Nature Mauritanie managed to connect the project with the national issues of food security, climate change, and desertification.



Field project Burkina Faso



NATURAMA

NATURAMA was founded in 1990 when a group of people managed to save 200 hectares of forest near Ouagadougou from urban expansion. The organisation has eighteen permanent staff and the association has several hundred members. NATURAMA enjoys a strong reputation in Burkina because of its good connections with the government, its concrete, results-oriented conservation work, and its effective communication. NATURAMA designed teaching materials for nature and environmental education that were included in the national curriculum. The organisation collects information about birds for international conventions (e.g. Ramsar), and it is a regular member of national delegations, such as the UNFCCC. NATURAMA also manages one of the national parks with a mandate from the government.

Vogelbescherming has collaborated with NATURAMA since 2005. Because NATURAMA is the only well-established BirdLife partner in francophone West Africa, it serves as a mentor for Nature Mauritanie.

www.naturama.bf



Project areas

Sourou

Sourou is an Important Bird Area (IBA); it is a river valley on the border with Mali. The total area of the site is 20,926 hectares. The annual rainfall ranges between 450 and 950 mm. The valley consists of wide, overflowing marsh banks and acacia woodlands. Large parts of the area are dominated by agriculture, where only trees of economic value are saved. In 2009, one of the satellite-tagged Purple Herons ('Lena') made a stopover in Sourou: direct evidence of the importance of this area for migratory birds from the Netherlands. NATURAMA has been active in Sourou for some years, and it has established a Local Conservation Group. There is significant pressure on natural resources in the region. Major concerns include the loss of riparian forests due to agricultural intensification, firewood harvesting, the smoking of fish, and unsustainable fishing.

Oursi

The Oursi area consists mainly of seasonal lakes, acacia forests, semi-desert, and sand dunes. Lake Oursi (covering 1,595 hectares) is the only lake to hold water year-round. The total area (Oursi-Darkoye) comprises 45,000 hectares.

The population practices cattle herding (partly nomadic), agriculture (millet and tobacco), and fishing. It is an arid region with an average annual rainfall of 376 mm. Lake Oursi has abundant aquatic vegetation that attracts large numbers of waterbirds, including the rare Black Crowned Crane. Acacia forests are highly diverse and are an important wintering area for European Turtle Doves.

As a result of excessive wood harvesting, part of the acacia forest around the largest lake has disappeared, leading to encroachment of sand dunes. This visible deterioration made the people realise that something had to change. NATURAMA provided help to numerous initiatives for alternative and sustainable land use. Living on the Edge has scaled-up this work.

Higa

Lake Higa, in the east of Burkina Faso, strongly resembles Oursi in terms of land use and ecology. Rainfall varies between 400 and 600 mm. The lake is one of the few wetlands in the wider area that holds water year-round. Land use has decreased the vegetation in the area, which causes increased erosion, resulting in increased siltation of the lake.



Activities that impact bird habit restoration

Local Conservation Groups

In each of the three areas, an LCG ranging from 60 to 120 members was in place at the start of the project, albeit with a varying degree of capacity. During the project, a full-time coordinator was deployed to each of the sites. The LCG in Sourou was not functioning optimally. This was related to different perceptions of ownership within the group, the fact that the group consists of people from two different communities, and the relatively high average age of the group members. The geography (river valley rather than a lake) may also have played a role. As a result, the effectiveness of activities was not always optimal. NATURAMA is working to address this. The LCGs benefitted substantially from the exchange visits to each other's areas.

Natural Resource Management Plans

A draft management plan for Higa was completed in 2014, but still requires improvement. The management plan for Oursi, which was already in place at the start of the project, was updated in 2013. In Sourou, there has been no formal process towards a manage-

ment plan due to the inconsistency of the interests of user groups in the river valley. Here the approach was to work with land user groups separately. Examples include the agreement on the use of fishing nets with larger mesh size (so small fish can escape) and the women's groups that produce and sell efficient wood stoves.

Restoration and conservation of natural vegetation

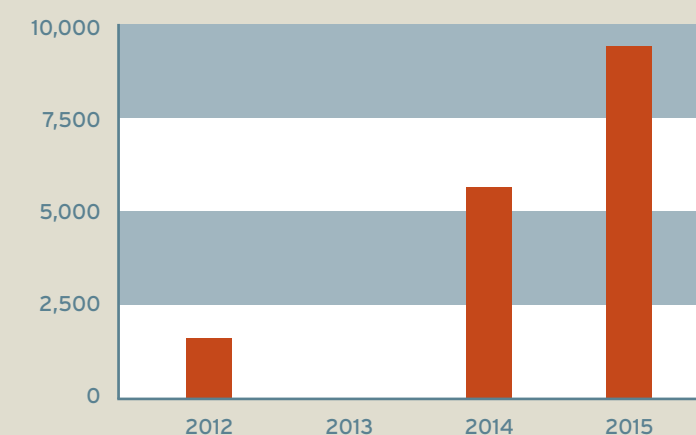
An impressive total of 119,764 trees have been planted at all three sites, both in common land areas and on-farm. A total of about 100 hectares of vegetation has been restored. This often involved degraded ripar-

ian zones, where trees have disappeared as a result of unsustainable wood cutting and overgrazing. The average survival rate of seedlings was 75% in Oursi, but only 44% in Higa and 28% in Sourou. The low rates are the result of inadequate protection of seedlings against livestock, which ultimately reflects a lack of awareness or ownership of the people. (Planting on-farm was much more successful in this regard.) This was an opportunity to exchange experiences and to formulate best practices; a number of locations were subsequently replanted with seedlings from the tree nurseries and better protected.

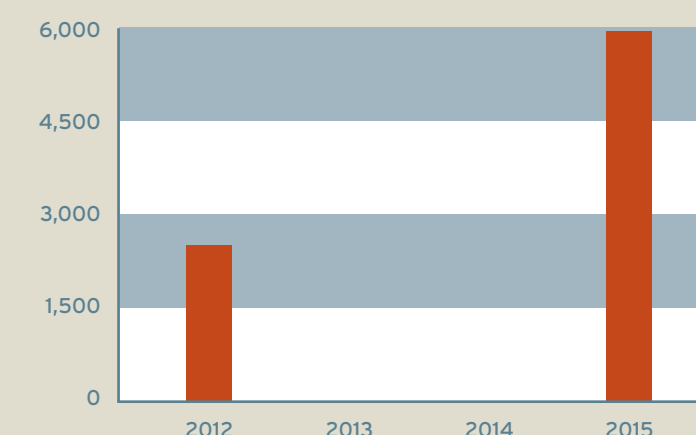
A total area of sixty hectares (fifty in Higa and ten in Oursi) consisting of bare, eroded land has been restored through a specialized ploughing technique. The degradation of these types of areas is a result of trees dying during droughts, after which the topsoil erodes, leaving



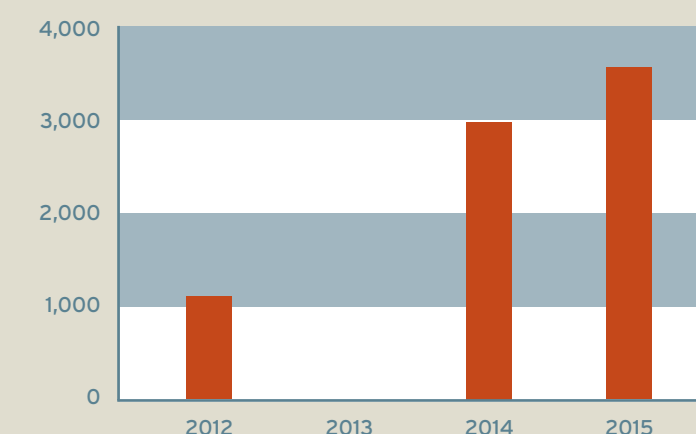
Higa landbirds 2012-2015



Oursi landbirds 2012-2015



Sourou landbirds 2012-2015



These graphs show the development of the numbers of landbirds observed in the three project areas

only a hard, laterite crust which prevents vegetation from germinating, and rainwater runs off. Ploughing the crust increscent shapes breaks the crust and allows rainwater to penetrate into the ground. After a single rainy season, there is grass cover and 50-cm-tall saplings. After three years, woodland savannah will have returned. This technique is being successfully applied on a larger scale by the Flemish NGO [Entrepreneurs Without Frontiers](#) (OZG), who shared its expertise with NATURAMA.

Bird numbers

The British BirdLife Partner the RSPB provided ecological monitoring training in Burkina Faso for the Nigerian partner Nigerian Conservation Foundation (NCF), NATURAMA, and Nature Mauritanie. Apart from training, this provided an opportunity for exchange of experiences between the partners. Bird counts were conducted several times a year that consisted of counts of waterbirds and transect counts of landbirds.

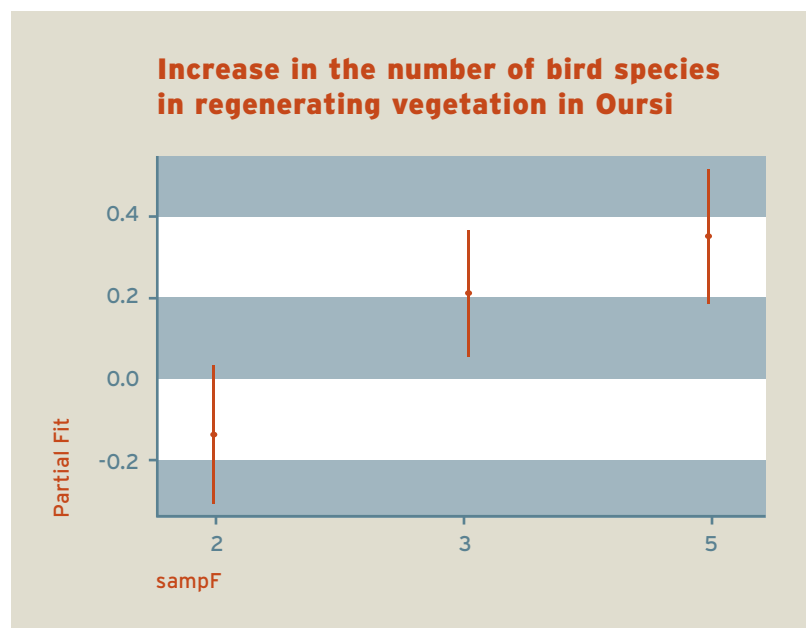
Waterbird numbers vary with rainfall and lake extent. For the relatively short period, the waterbirds do not show any clear trends. Landbirds demonstrate an upward trend in all three areas, but these should be considered over a longer period in order to draw conclusions about a relationship with the interventions. The count data show that Oursi, and to a lesser extent Higa, accommodate significant numbers of the endangered European Turtle Dove. In Sourou, large numbers of Yellow Wagtails overwinter.



In Oursi, a causal relationship was found between landbirds and vegetation recovery, even within the short time span of the project. Here the species diversity of migratory birds increased significantly over a period of five years, along with with vegetation recovery (see figure).

In Oursi, the main threat is the extraction of firewood, in Higa it is grazing, and at Sourou it is agricultural intensification in addition to the extraction of firewood and grazing. Although the time span is too short to deduct trends, it is interesting to note that this pressure was constant or slightly decreasing in Oursi, the site of the longest NATURAMA intervention, while showing variation (or even an increase) at Sourou and Higa. This underlines the importance of long-term involvement at the site level.

During fieldwork at Oursi, different songbirds were caught that carried European rings: Sedge Warblers from Germany and Italy and a Eurasian Reed Warbler from Spain.



Activities to improve livelihoods

Efficient wood stoves

The production and distribution of 5,060 fuel-efficient wood stoves proved very successful in Burkina. The ovens are made of local materials (clay, straw, and manure), and the technique was easily mastered. Around a hundred kilos less firewood was used per household per year, and the cooking time per meal decreased by an hour.

NATURAMA created a publication on best practices for fuel-efficient stoves. In addition, training sessions on how to make the stoves was combined with raising awareness about the sustainable use of natural resources.

Organic manure

The use of organic manure increases the productivity of arable and vegetable production and reduces

the use of fertilisers and pesticides. In Sourou, this improved the yield, sometimes spectacularly by a factor of two or three. There were fewer weeds, as well as significant savings on pesticides.

Alternative cattle fodder

NATURAMA developed alternatives to cutting branches and grazing of livestock in vulnerable areas in the dry season. Production of hay, collection of harvest remains, and storage took place in Oursi and Higa. 19,040 kg of cattle fodder was produced, enough to sustain 163 head of cattle over the entire dry season.

Tree nurseries

The sale of seedlings from the Oursi nursery resulted in a net income of €2,666 for the LCG.

Boreholes

In order to decrease the dependency on rainfall for watering the vegetable gardens and cattle, four boreholes were sunk. These were situated outside the acacia woodlands of the riparian zone, to reduce the grazing pressure on the lake shores.

Sustainable fishing

In Sourou, nets with larger mesh size were introduced to maintain healthy fish stocks and to spare small fish. The LCG monitors the use of these nets.

Awareness: activities and target groups

At the beginning of the project, NATURAMA organised an official launch event at each of the three project areas. These were attended



by a total of 217 people (of which only nineteen were women - these kinds of formal meetings are still a male prerogative), with representatives of local authorities, NGOs, institutions, locals, and the press and media. The launch in Sourou was attended by delegations from

Vogelbescherming and the National Postcode Lottery. A report of the events was widely covered in newspapers, on the radio (in French and local languages), and even national television. Later in the year, field visits to the project areas were organised for local authorities.





‘The boreholes are an oasis of hope. Before they were installed, the women and children were sometimes forced to walk for kilometres to find water.’

**Madame Fadimata (50),
Gonadaouri, Oursi**

In 2013, 1,500 posters and 1,000 project folders were created and distributed. The international World Migratory Bird Day was celebrated with activities for pupils, and it received extensive media coverage. Two local radio stations provided regular broadcasts in four programmes.

In 2014, NATURAMA organised awareness events in 30 villages around Oursi and Sourou, which were attended by 1,984 people (1,110 men and 874 women). The broader public was engaged through various conferences (302 attendees, including 70 women). In four schools, a story contest with migratory birds as a theme was organised for pupils. There were 120 pupils participating from forms 4 and 5.

An educational programme on migratory birds was developed for primary schools in Ouagadougou and Twijzel (Friesland, the Netherlands), and exchanges took place between the classes involved. In Burkina Faso, ten teachers and 144 pupils participated. This project is covered more extensively under ‘Visibility in The Netherlands’.

Annex 1 contains an overview of the visibility in Burkina Faso.



National policy advocacy

NATURAMA has been a serious partner of the government for years. NATURAMA is also active in national networks such as the IUCN Regional Committee, the National Ramsar Committee, and CONEDD (national decision making on the strategy for sustainable development).

During the Living on the Edge project, NATURAMA took part in several national workshops and meetings to raise awareness of sustainable land use. Among other activities to raise awareness, NATURAMA visited a working session with parliamentarians on the new environmental legislation and a workshop

on the launch of the national REDD strategy (reducing greenhouse gas emissions).

In 2014, NATURAMA organised its third National Nature Congress, which takes place every five years. This time the theme was ‘A green economy; climate adaptation and sustainable development in Burkina Faso’. Several recommendations came from the congress: creation of an authority for the mining industry, a platform for NGOs, the mining sector, and the government, evaluation of ecosystem services, and the structural sharing of experiences and best practices.



Field project Nigeria



Nigeria Conservation Foundation

Nigeria is a large and densely populated country, where natural habitat is disappearing at an astonishing pace. Founded in 1980, **NCF** has eleven project offices in addition to its headquarters. NCF has approximately six thousand members and hundred staff including volunteers. From the start,, NCF has had significant input on national policies in Nigeria, such as the Nature Conservation Strategy, the Endangered Species Act, and the Forestry Act. In 2002, NCF initiated the Niger-Delta Conservation and Sustainable Development Project, which was a starting point for discussions about oil and gas extraction. NCF has always had a strong relationship with the scientific community; the organisation works closely with the APLORI Ornithological Institute, and administering a fund for research scholarships. There is great attention being paid to schools, including annual competitions for World Environment Day. NCF is supported by the RSPB, the British BirdLife partner.

www.ncfnigeria.org



Project areas

All areas are situated in the north of Nigeria, on the edge of the Sahara.

Nguru-Marma wetlands

This area is part of the famous Hadejia-Nguru Wetlands, one of the five most important wetlands in the Sahel region. In winter, there are huge numbers of Garganey, Northern Pintail, Ruff, and White Stork. The Nguru-Marma Wetlands, 60 km in length, include temporary and permanent lakes, were among the first Nigerian wetlands to receive Ramsar status. The area is of great economic importance for fisheries, agriculture, and livestock farming. A serious threat is the reduction of water dynamics due to dams and water extraction, which allows an invasive Cattail species (Typha) to overgrow the wetlands. As a result, wetlands are longer navigable,

waterbirds disappear, and villages and fields are faced with flooding. Around 700,000 people depend on the wetlands for their livelihoods. Conflicts often arise over access to these natural resources.

Baturiya wetland

This area consists of small lakes and floodplains that are flooded by the Kafin Hausa River. It is very rich in vegetation and fauna, especially waterbirds. Ten thousand people live in the surrounding villages, for whom the wetlands are their source of livelihood (farming and fisheries).

Adiani Forest Reserve

This area covers a total land area of 132 hectares and is part of the Hadejia-Nguru Wetlands complex. It consists of upland bush savannah and lower lying floodplains with acacia forests.

‘Approximately 1.5 million farmers and fishermen depend on the Hadejia-Nguru Wetlands for their livelihoods.’

Mohammed Boyi, NCF

Kaska, Kumaganam en Moyori

These villages are located 35-45 km north of the Hadejia-Nguru Wetlands, near the border with Niger. The environment consists of bush savannah, open woodland, grassland, fields, and sand dunes. Previously these habitats were important for landbirds such as Northern Wheatears, Woodchat Shrikes, and Common Whitethroats, but the habitat has been greatly degraded. Drought, desertification due to excessive wood harvesting and uncontrolled hunting are the largest threats. Poverty and conflicts, a lack of knowledge about environmental aspects and the shortage of water are major socio-economic challenges. Locally, the sand dunes - sometimes as high as 12 metres - have significantly altered the lives of the local people in many ways. There is less space for grazing ar-

eas and agriculture, and the number of livestock has decreased from 30 to 7-10 animals per household. In addition, the sand dunes have affected the groundwater levels, and alternative water sources need to be sought.

Rima River Valley

This area, near the Rijiyen Dono village, lies in northwestern Nigeria. It is in the catchment area of the Shagari River, one of the major tributaries of the Sokoto-Rima River. The beautiful vegetation with riparian forests is threatened by excessive wood cutting.

Activities impacting bird habitat restoration

Local Conservation Groups

Three existing and six new LCGs were formally registered in 2011, all having between 150 to 200 members. The LCGs were trained in environmental monitoring and the sustainable use of natural resources.

Natural Resource Management Plans

In 2013, the development of a participatory management plan started in Adiani and Baturiya, in cooperation with the Ministry of Environment of Jigawa and the local government of Guri. People in Rijiyen Dono, Kumaganam, Kaska, and Moyori have agreed to form a community-based organisation.

Restoration and conservation of natural vegetation

In Nguru-Marma, an impressive 20 km of invasive Typha were cleared. When the plant is cut off below wa-



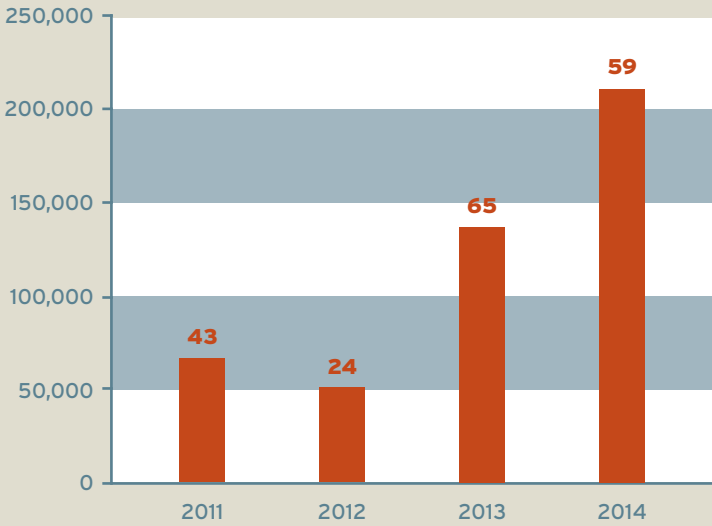
ter level, it does not grow back. The water storage capacity increased again, as a result of which some ten thousand people in eight villages no longer suffer from flooding. Fishing income increased spectacularly (from €9-13 to €34-43 per day), and there were fewer conflicts between farmers and nomadic cattle herders in the area.

To restore the natural vegetation in drier habitats, nurseries have been set up and seedlings planted, and areas have been temporarily protected from grazing. NCF, together with the state forestry service, provided training on managing tree nurseries. When planting acacia trees, fruiting tree species were added that are of economic importance for the local population. In total, 20,500 seedlings were planted and 10,000 trees were sown on a total surface area of 26 hectares. Near Maja, a three-km cattle route was established and an area of eight km² that is protected from grazing, to allow vegetation to recover. In Kaska, wild antelopes were spotted for the first time in a very long time.

Bird numbers

The waterbird numbers have increased spectacularly. Not only Afrotropical White-faced Whistling Duck increased, there were also large numbers of Garganey (over 44,000) and Ruff (over 27,000).

Increase in waterbird numbers in Hadeija Nguru and number of species



Activities to improve livelihoods

Poultry farming and hunters' cooperatives

A total of six hunter cooperatives have been established. These groups have been taught about sustainable hunting. Thirty hunters were trained in poultry farming, and this has reduced the hunting pressure on the waterbirds. Altogether, 1,400 chickens were divided between seven collectives. The sale of chickens, eggs, and organic manure produced €300 in monthly income.

Beekeeping

Traditional harvesting of honey from wild bees' nests results in the felling of trees and bush fires caused by nest fumigation. Beehives do not

need to be fumigated. Interested farmers received beekeeping training and were given hives, protective gear, and beekeeping equipment. A single hive can yield 48 litres of honey and €105 in income. Ultimately, 175 sets containing beehives and beekeeping equipment were distributed to seven villages.

Wood stoves

Training on the production and use of fuel-efficient wood stoves was provided to 60 women. These women are now producing stoves for sale on the market and training others. This project benefited an estimated nine hundred women. Mats, hats, and ropes made from dead palm leaves generate an alternative source of income. A total of 36 women were trained in six

villages, who subsequently taught the craft to others in their community. The well-being of people who participated in these activities improved, as reflected by hire purchases of bicycles, motorcycles, sewing machines, and cattle.

Awareness: activities and target groups

In addition to producing three thousand leaflets (in Hausa) and the newsletter 'The Sahel News', NCF has published regular articles in the national daily newspapers National Mirror, Daily Independent, and Environ News (online) and conducted national and local radio broadcasts for various channels (NTA Damburu, Freedom, and Birniwa). NCF also created a twenty-minute documentary.



‘We can only protect nature by taking livelihoods seriously, and we can only combat poverty by caring for our environment.’

Georges Oueda, former head of Conservation of NATURAMA († 2012).

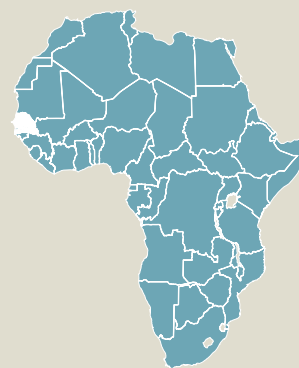
World Wetlands Day and World Migratory Bird Day are celebrated annually, with activities such as a bird excursion to Nguru for 30 secondary school pupils. Approximately seven thousand people participated in the events.

For more information on visibility in Nigeria, see Annex 1.

National policy advocacy

NCF contributed to the National Action Plan for Biodiversity, in which the government outlines the international obligations of the Convention on Biodiversity (CBD). Important partnerships emerged: with the Chad Basin Commission to link conservation with better food security and climate adaptation and with the Niger Basin Commission to strengthen the involvement in national and international meetings. In 2015, NCF was invited by the Hadejia Tumaare Yobe Trust Fund to share its experiences with Living on the Edge and the BirdLife approach. NCF has advised on the national development of the Great Green Wall programme and the national implementation of the Ramsar Convention on Wetlands.

Field project Senegal



Association Inter-Villageoise de Ndiaël

At the start of the project, which focused on restoring the vast Ndiaël floodplain, there was no national BirdLife partner organisation in Senegal. The field project was initiated by the International Programme of the Dutch governmental Land and Water Management Authority and Altenburg & Wymenga ecological consultants, in collaboration with Wetlands International. In the absence of a BirdLife Partner, the project was managed by Altenburg & Wymenga, in collaboration with the Dakar Office of Wetlands International and the local Association Inter-Villageoise (AIV).

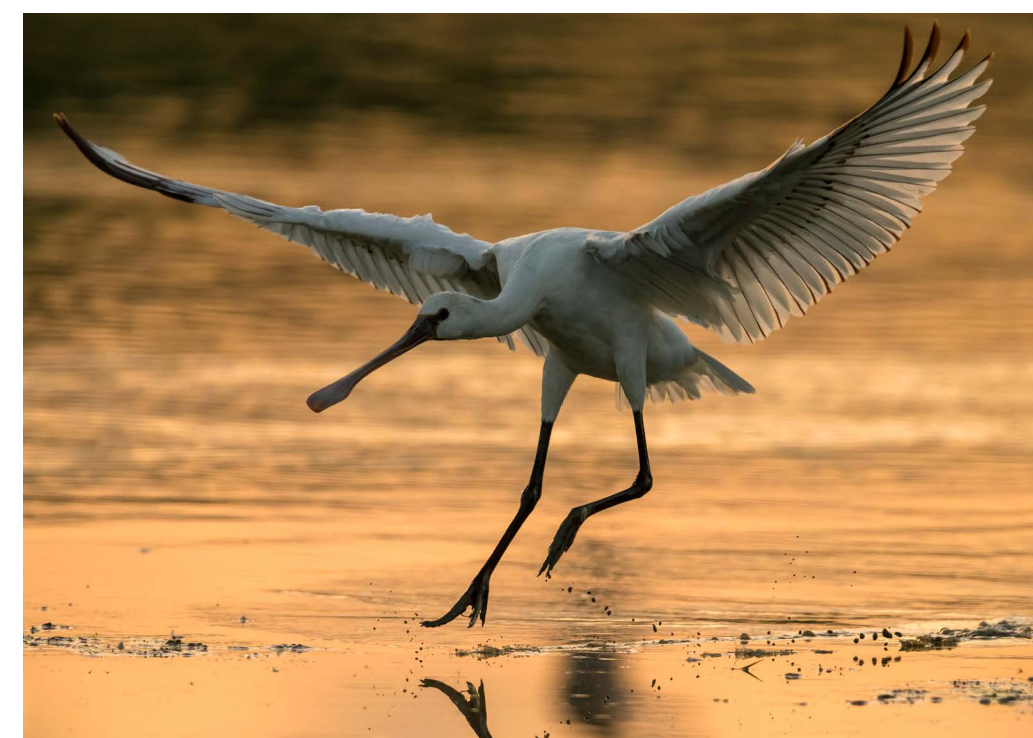
Thanks to its efforts and success, AIV, was granted the triennial AEWA Award. Besides the grant of US \$5,000, this international recognition is a tremendous boost to the status of the AIV.

Project area

Ndiaël floodplain

The Ndiaël floodplain area (52,000 hectares) is part of the vast Senegal Delta, one of the five most important wetlands in the Sahel, as well as a UNESCO Man and Biosphere Reserve. The majority of the population of 21,000 are Peul (nomadic cattle herders) and Wolof (farmers and fishermen). In the 1960s, the water supply was cut off by infrastructure developments and water supply to sugar cane plantations. The opportunities for fishing, grazing and access to water for the local population, as well as habitat for wildlife and birds, virtually disappeared for 40 years. As the only Western African wetland, the Ndiaël appeared on the Montreux Record, a blacklist of wetlands-at-risk of the international Ramsar

Convention. In 2012, the Senegalese government granted permission for an Italian-Israeli-Senegalese company (Senhuile/Senethanol) to start large-scale cultivation of bio-fuels on an area of 20,000 hectares in the buffer zone of the reserve. The protected reserve status was altered by government to allow this development to go ahead. The local resistance was considerable, but the company promised jobs, schools and hospitals, and managed to break local opposition. Now that the project has started, and issues of water distribution remain unresolved, the local population is beginning to doubt the promises made by the company. Living on the Edge and the strengthening of AIV have had a positive impact on the discussions and outcomes.



Activities impacting bird habitat restoration

Discussions were organized to create a water supply from the nearby lake of Guiers and a small-scale test flooding was realized. Interestingly, the Senhuile/Senethanol company offered to deploy their equipment for the excavation work. Ultimately, the work was finalized ahead of schedule.

After a rain-induced flood in 2010, the first test flooding occurred in 2012 (1,589 hectares), followed by a larger one in 2013 (2,750 hectares). For the first time in decades, water

flowed into the Ndiaël once more! Both vegetation and birds responded immediately.

Bird numbers

Waterbird counts in 2013 showed very high numbers. Five species passed the international criterion of 1% of their flyway population, which serves as threshold for designation as a wetland of international importance (including Spoonbills and Black Storks). 10,000 Ruff and 5,800 Garganey were counted. Members of AIV received three training sessions in bird and vegetation monitoring.

Restoration and conservation of natural vegetation

AIV has also worked on restoring the natural vegetation. Both planting trees (13 hectares) and the promotion of natural regeneration (511 hectares) resulted in increases in tree cover. The tree planting became a local event, involving around 300 people.

Natural Resource Management Plans

Agreement was reached on a new management plan. The AIV made sure to point out the importance of nature and the local population.

Activities to improve livelihoods

Microcredit

AIV has set up microcredits for tree nurseries, vegetable cultivation, and livestock farming. More than five hundred households in total have benefitted from these initiatives. The eventual number of people who will benefit from the restoration of floodplains (fisheries, grazing lands, and farming) is obviously much higher. The AIV and the village committees are ensuring that these activities take place in a sustainable way.

Ecotourism

To encourage ecotourism, a bird observation point has been built that offers spectacular views over the floodplain. Investments have also been made in the necessary infrastructure. The local population cleared invasive Typha from 6.5 km of a closed water supply.

An entire village imprisoned

Not long after the village's water supply was cut off in the sixties, villagers took action and breached the dike. The authorities came to arrest those responsible, but nobody was willing to reveal their names. Then the police arrested all male villagers and put them in prison. The women were not to be outdone, and they marched to the police station to demand the release of the men - successfully! One of the arrested men was the father of Amadou Sow, president of the AIV. For him, the return of the flooding, and the granting of the AEWA Award, are therefore also of great personal significance.



‘We are very pleased. We have waited and worked for 40 years, and now our efforts are bearing fruit - also for our children and grandchildren.’

Babacar Diagne, AIV Ndiaël

Awareness: activities and target groups

In a YouTube video, Babacar Diagne of AIV speak about the successes and challenges of restoring the Ndiaël floodplain: <http://tinyurl.com/zqahgwu>

A field visit was made together with a journalist, as well as a visit to Senhuile to place the problems and the future management of land and water on the agenda. <http://tinyurl.com/zqahgwu>

AIV organised a number of meetings to raise awareness among the local population on sustainable land use, especially in relation to wood harvesting.

Vogelbescherming assisted in the production of a mini-documentary about Senhuile and the issue of land grabbing in the Sahel.

National policy advocacy

During the whole project, AIV and A&W invested in informing and involving research and management institutions to align current and future management planning. Thanks to Living on the Edge, it was not as easy for Senhuile to ignore the importance of nature and people. The granting of the AEWA Award made the situation of the Ndiaël floodplain visible to a large international audience. Vogelbescherming and Wetlands International made an appeal during the presentation of the award for all parties involved to work together to achieve a full recovery of the Ndiaël.



Visibility in the Netherlands

Living on the Edge documentary

On 4 and 11 June 2013, the two-part documentary 'Living on the Edge', produced by Vogelbescherming, was broadcast on Vroege Vogels TV on VARA national television. This attracted 229,243 and 314,302 viewers respectively. The documentary shows the relationship between birds and humans, and the habitats they share, in images. Both parts were combined into one film, and voiceovers were translated into English and French. In the Netherlands, the film featured at the Nature Film Festival in Cinemec Ede

(2014), where Vogelbescherming staff provided introductory presentations, and at the Wildlife Film Festival in Rotterdam (2015). Vogelbescherming also organised five locations throughout the country to show the film to an audience of a few hundred VBN members.

www.vogelbescherming.nl/documentaire

Migratory birds at school

Designer Marisa Stoffers and Vogelbescherming created 'The incredible journey', an educational package on the Common Redstart for forms

7 and 8 of primary school (10-12 years). This package filled an entire week of classes and combined the subject of bird migration with maths, topography, language, and nature. It was tested at a primary school in Twijzel, Friesland, in the Drents-Friese Wold, which is an important nesting area of the Common Redstart. The programme consists of a general introduction to bird migration, with questions like 'What routes do birds take? How do they find their way and what dangers do they encounter?' The children followed a travel diary of a Common Redstart, named Douwe, and drew his journey on the map. The classes also went into the field to see the habitat of the Common Redstart. They also marked important trees and shrubs, to help farmers in the management of hedgerows. The week ended with making a Redstart mask and baking Common Redstart biscuits. A number of children were followed by the camera, also after school, which provided an impression of their daily lives. The week proved very successful for both pupils and teachers, and the package was offered in 2014 to 101 schools in the region.

Together with NATURAMA, a French version of the educational package was made and adapted to the context of Burkina Faso. A school in Ouagadougou received a similar project week. Again, the children went into the field, to the city park of Ouagadougou, where several Common Redstarts winter every year. At the end of this week, the children waved the Common Redstarts off, for their return to the

'Living on the Edge is a fantastic project! With colleagues from Europe and Africa, we are working towards a sustainable future for birds and people in the Sahel.'

Thandiwe Chikomo, head of West Africa Secretariat, BirdLife International



Netherlands. As in the Netherlands, some children starred in filming here; video from both countries was merged into a mini-documentary and released in Dutch, English, and French.

www.vogelbescherming.nl/ongelooflijkeis

The project ended spectacularly in an exchange via Skype between the two school classes from the Netherlands and Burkina Faso. The pupils literally looked inside one another's classrooms and asked each other questions about the curriculum, as well as about everyday life. Local and national press attended the Skype meeting in both countries.

Experience the Spring Junior

In 2013, a staggering 1.1 million unique visitors followed the fate of eight bird species in 'Beleef de Lente'. Three long-distance migratory birds were followed: a Common Swift, a Stork, and - especially for Living on the Edge's educational project for schools - a Common Redstart. Many schools followed Beleef de Lente in the classroom. The Common Redstart also appeared in 2014 for the cameras.

A summary of publicity in the Netherlands can be found in Annex 1.



Impact and follow-up

It is extremely important that the results obtained are sustainable and will lead to follow-up activities. Living on the Edge has maximised this sustainability with a focus on local and national capacity building, dissemination and sharing of knowledge and best practices, and contributions to better policy at the local, national, and international levels. Often, the project also built on existing initiatives of national BirdLife partners, strengthening and scaling up what was already there.

The BirdLife International partnership guarantees long-term cooperation between partners focused on cross-border projects, capacity building, and fundraising. Living on the Edge has been an important inspiration for the creation of a joint flyway strategy within BirdLife: the East Atlantic Flyway Initiative. Living on the Edge has become one of the showpieces of BirdLife, exemplifying BirdLife's approach. Living on the Edge attracted the attention of other donors. Vogelbescherming was invited to submit proposals to an exclusive fund for similar work in Burkina Faso. The Flemish BirdLife partner Natuurpunt offered to raise funds amongst its members, and Vogelbescherming received several spontaneous donations from its members.

Due to its importance for migratory birds, Senegal has been involved in another BirdLife Project: Conservation of Coastal Migratory Birds (CMB), a programme from Mauritania to Sierra Leone, that aims to protect important coastal areas and strengthen the national capacity of NGOs. Nature, Conservation et Développement (NCD) was spotted as a potential BirdLife Partner, while Living on the Edge was already ongoing. Therefore, NCD has not been part of the implementation of Living on the Edge, although the organisation participated in project partner exchanges and workshops.

The most important results:

- More than 150,000 trees planted
- More than 3,200 hectares of habitat restored
- 5,115 fuel-efficient stoves in use
- Eleven new LCGs founded
- Three national BirdLife partners strengthened
- 30 km of wetland cleared of invasive Typha
- A better livelihood for an estimated 20,000 people
- - 175 beehives
- - nine poultry farms
- - four tree nurseries
- - five vegetable farms
- - eight boreholes
- - three fish processing units
- - two textile dyeing cooperatives
- - six cooperatives for sustainable hunting
- More than 1,800 people trained
- A target group of several hundred thousand people reached
- Contributing to an international convention
- Helping to set up an international scientific platform
- Three scientific articles published (with more planned)
- The total surface of improved habitat benefits tens of thousands of birds, with some areas already having a measurable effect.

The external evaluation shares the positive consideration of the project and makes recommendations for further improvements in sustainability, searching particularly for connections to developmental and other initiatives. This corresponds well with the future strategy of Vogelbescherming and BirdLife. The BirdLife East Atlantic Flyway Initiative includes conservation priorities, capacity needs, and fundraising goals, including those for Living on the Edge Partners and the wider region. Vogelbescherming is already working on finding additional financing, particularly for Burkina Faso. Supported by the RSPB, NCF is busy fundraising and expanding its activities in northern Nigeria. In Senegal, a follow-up project (without the involvement of VBN) has already begun.

Vogelbescherming has successfully secured additional funds from its members, both to support Living on the Edge and as co-funding for continued work. Part of it will be used for the accessible publication of scientific findings and best practices aimed at specific target groups. Within BirdLife, Living on the Edge has contributed to improved coordination of conservation projects along the migration route. The four-year project has been completed, but the results will continue to have impact through subsequent projects, policy changes, and awareness campaigns.

With thanks to all our partners!



Idrissa Zeba, NATURAMA



Adama Nana with the NATURAMA team



Ellen van Buuren and
Bernd de Bruijn, VBN



Mohammed Boyi, NCF



AEM LAP working group, Ghana 2012



Visit to Burkina Faso National
Postcode Lottery



Babacar Diagne AIV
Ndiel



Technical Advisory Panel



Start of Living on the Edge,
workshop group photo



Georges Oueda,
NATURAMA †2012



AIV Ndiel waterbird counters



Workshop 2014 Dakar



Thandiwe Chikomo,
BirdLife



Anke van Bruggen,
Vogelbescherming



Final workshop, Ghana 2015



Danaë Sheehan, RSPB



Prudence Tankoano and the Sourou
team, NATURAMA



Houseini, Oursi,
Burkina Faso



BirdLife partners at CMS CoP 2011



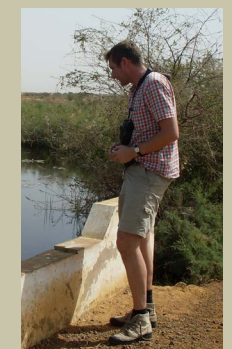
Amadou SOW AIV Ndiel



Mohammed Boyi and
Adedamola Odegunsan



Djibril Diallo and
Bechir Ndiath, Nature
Mauritanie



Daan Bos,
Altenburg &
Wymenga

Annex 1

Visibility in Africa

Visibility in Nigeria

- www.livingontheedgegenigeria.blogspot.com
- <http://tinyurl.com/dailyindependent>
- <http://tinyurl.com/nationalmirror>
- <http://tinyurl.com/pcq4ttl>
- <http://tinyurl.com/nq88gq7>
- <http://tinyurl.com/zqahgwu>

Visibility in Burkina Faso:

- <http://tinyurl.com/burkina24>
- <http://tinyurl.com/lefaso>
- <http://www.lefaso.net/spip.php?article54154&rubrique4>
- allAfrica.com: Afrique: Protégeons les ois

Visibility in the Netherlands

- *Vogels (Vogelbescherming Nederland members magazine), edition 4/2011* - Living on the Edge, vogelbescherming in de Sahel (bird conservation in the Sahel)
- *Vogels, edition 2/2012* - Living on the Edge: initial results
- *Vogels, edition 2/2012* - Living on the Edge: hoe vogels beschermen Nigeria helpt (How protecting birds helps Nigeria)
- *Vogels, edition 1/2013* - Beleef de Lente weer: Common Redstart
- *Vogels, edition 2/2013* - Living on the Edge in French
- *Vogels, edition 3/2013* - Kippen maken eind aan jacht op trekvogels (Chickens put an end to hunting of migratory birds)
- *Vogels, edition 5/2013* - Foreword by Fred Wouters: Living on the Edge - Toekomst voor vogels en mensen in de Sahel (The future for birds and people in the Sahel)
- *Vogels, edition 3/2015* - Acacia naast Shea moet trekvogels helpen (Acacia next to Shea would help migratory birds): Living on the Edge research
- *Vogelsnieuws, Edition 1/2013* - Vogels kunnen in de Sahel niet zonder bomen (Birds cannot do without trees in the Sahel)
- *TV item Fryslân, 24/04/2013* - Readsturt op webcam te volgen <http://tinyurl.com/hnfjuhk>
- *Radio and TV item on Omrop Fryslân, 8/10/2013* - Leswike oer trekfûgels <http://tinyurl.com/j5rzhda>
- *VARAgids, edition 22/2013* - Trek & trace: Living on the Edge (Reijnen, J.)
- *Radio Noord-Holland, 4/6/2013* - Interview with Michiel van den Bergh documentary about the Living on the Edge documentary
- *Radio 1, Vroege Vogels (Early Birds), 04/06/2013* - Interview with Michiel van den Bergh about the Living on the Edge documentary
- Teaching package on the Common Redstart: <http://tinyurl.com/j68fuhm>
- Video about logging: <http://tinyurl.com/jc7llne>
- Video about overgrazing: <http://tinyurl.com/zwms9x8>
- Video about overfishing: <http://tinyurl.com/jt3mtuh>

Living on the Edge expenses for 2011-2015

