

Sustainable in Senegal: Profiles in Senegalese Regenerative Agriculture

El-Hadji Hane and Gora Ndiaye, regenerative ag education and entrepreneurship along the Petite Côte

Through local farmer organizing, commercial promotion of agroforestry and international connections, two college friends are nurturing sustainable initiatives along the tourist-impacted "Little Coast" of Senegal.

By Nathan C. McClintock



Where we are:



Best site for finding detailed maps of Senegal:

Multimap.com

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Where we've been:

[A rich slice of sustainability in Senegal:](#)

The Rodale Institute® showed this American agriculture student the critical need for soil innovative soil saving practices in West Africa.

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2006: On a map, Senegal's Petite Côte ("Little Coast") stretches southeast from Dakar, forming a smooth and subtle arc from the underside of the Cap-Vert peninsula to the dense dapple of islands in the mouth of the Sine-Saloum River delta. This 100-mile long smooth stretch of white sandy beach has attracted beachgoers and tourists since colonial days. Today, the beach town of Saly is home to a number of resorts such as Club Med, attracting European tourists and wealthy Dakar weekenders alike.

Intercropping cowpeas and millet on E-Hadji's farm.

The influx of tourism over the past decades has been, as always, a double-edged sword, providing economic opportunity for some of the region's local population while draining rural villages of a much-needed workforce. This out-migration of mostly young men from farm to city is commonplace not only in developing nations such as Senegal, but also in farming communities throughout the United States, and has been exacerbated by trade liberalization. The dismantling of many agricultural programs (such as subsidies, price supports, import tariffs, and ag extension programs) designed to support farmers has led to a rapid decline in the ability for a farmer to make a living. As cheap agricultural imports flood the markets of developing countries, selling prices drop, making farming even less profitable.

One of the central goals of sustainable agriculture is to revitalize rural areas, to protect rural livelihoods not only through environmentally sound techniques, but also by providing real economic opportunity for rural populations. Two men in Mbour, the economic center of the Petite Côte, are playing a central part in promoting this model of agricultural sustainability through their entrepreneurship and educational activities.

Fish-kill epiphany

Soft and red, hard and black *Getting up close and personal with local soils in Senegal's Peanut Basin with farmers who are managing them sustainably*

From dunghills to compost pits and back again – only better

How Senegalese farmers learned, practiced then radically adapted composting to fit their land, culture and settings.

Doudou Diallo, urban market gardener, Saint-Louis

Strong customer demand for his high-quality vegetables propels this intensive urban gardener to pursue organics even without a premium price.

Madame Sall: bissap juice and syrup entrepreneur, Dakar

Buying directly from farmers boosts the quality of her products and the consumer demand, but this home-scale beverage processor struggles to expand her place in the market.

Seydou Diémé: soil conservationist, Thiès

Water management is a key part of keeping farming viable for many communities in dryland areas of Senegal. With leadership and hard work a way forward is to build simple rock-lined ditches to slow runoff and restore viable farming areas.

Abderahmane Sow: agro-entrepreneur Belel, Matam region

Starting from scratch with curiosity and a knack for doing business, this new farmer wants to expand agricultural opportunity to help the next generation thrive on the fertile land along the inland Senegal River.

El-Hadji Hanne & Gora Ndiaye: regenerative ag extension & ornamental horticultural on the Petite Côte, Mbour

While university students in Dakar in the 80s, these two entrepreneurs became alarmed at the rate of pesticide use on the micro-farms. Today they work in a mix of endeavors to promote sustainable agriculture to interns from around the world.

Diabou Balde: An improved system of rice production, Manthiankaning, Kolda region

Intensive production pressure leaves little space for experiments, but

In the early 1980s, when they were university students in Dakar, Gora Ndiaye and El-Hadji Hane began gardening in the vacant lots that are home to the majority of Senegal's urban agriculture. Troubled by the excessive use of pesticides in the city's gardens, they formed AGRINAT, an organization promoting organic agriculture and pesticide awareness. El-Hadji remembers, "The turning point came one day when we found that all the fish and frogs in the spring were dead. Someone had mixed pesticide in the watering can, watered their plot, then dipped the can into the spring. If it could kill everything in the spring, imagine what it could do to the producers and the consumers!"

El-Hadji went on to study tropical agroecology in Montpellier, France. Well prepared to work for the government or an NGO, he decided instead to become a farmer. Rather than returning to his native Cassamance region (a part of southern Senegal marred for decades by a separatist rebellion), El-Hadji purchased 10 hectares of land for a good price in Ndiemene, 16 miles south of Mbour in 1993. "My family was furious. You don't go to school and then go back to the farm. But I farmed and sent my father money just as if I was working in an office."



“My family was furious. You don't go to school and then go back to the farm. Now my father is happy. He decided in the end that I'd made a good choice.”

El-Hadji also chose this region because the problems affecting Senegalese agriculture were more “visible” here than in the lush south—soil degradation, outmigration, infrequent and variable rainfall. Working with local farmers and women's groups, El-Hadji has addressed these issues by promoting regenerative ag techniques such as cover cropping with pigeon pea (*Cajanus cajan*, called poix d'Angole in Senegal), alley cropping with agroforestry species like the N-fixing *Luceana* in their millet fields and vegetable gardens. He has also helped the farmers' groups organize and sell their produce in Mbour and Dakar, where the high quality of their organic onions is becoming famous.

Most importantly, El-Hadji has helped the local population take responsibility of stewardship of their land. “They realize that thirty years ago this was all forest with lots of wild animals. Now people are starting to understand that the environment is being degraded, that they must take charge of it. If someone else does it for them, it won't last. Now they say, “We must do this ourselves.”

The activities of the farmers' groups, as well as El-Hadji's prominent role in IFOAM (the International Federation of Organic Agriculture Movements) www.ifoam.org, have attracted visitors from around the world. Every year, El-Hadji hosts several European interns on his farm. “Now my father is happy. The farm is always full of interns from Europe—toubabs [foreigners]. He's happy that my name is well-known. He decided in the end that I'd made a good choice.”

Planting palms for sustainability

Up the road off of a sandy street in a residential neighborhood of Mbour, El-Hadji's old partner Gora Ndiaye is surrounded by thousands of baby coconut palms in the nursery of his business,

improvements from increased spacing win respect for new method.

New interest in old crops, Tambacounda and Thies regions

Kekouta Camara of Touba Fall and Abdoulaye Niang of Keur Banda identify traditional crops that enhance biodiversity, reduce weather risk, extend crop rotations and attract high-value export buyers.

Fatou Kane, Ndeye Diop and Awa Mbaye: livestock fattening, Thiawène, Diourbel

Village women's group pioneers and teaches how "kept" sheep and goats can improve soil, boost yields and provide strong income in dry Diourbel region.

Milk and yogurt production, Ourossogui, Matam

Fulani women learn holistic cooperative development and enterprise skills to generate value-added revenue, and to inspire other small-scale farmers in the region -- including their daughters -- with options for economic development.

Khadija Niakh: thriving with peppers, seeds and leaves in Koumpentoum, Tambacounda region

Training in organic agriculture helps woman develop family enterprise that features income streams from integrated and biodiverse micro-agroforestry kitchen garden.

the Association des Jardins d'Afrique (AJA). Tiny palm shoots sprout from coconuts half-buried in the sandy soil. While Gora's gruff personality markedly contrasts that of the effusive El-Hadji, he shares the vision of enhancing the sustainability of Senegalese agriculture and making agriculture profitable for the local population.



Gora's work revolves around promoting the integration of palm trees into both the natural and agricultural ecosystems of the Petite Côte. "Legumes fix nitrogen in the soil. By integrating trees and agriculture, we can create a microclimate that is favorable to the growth of legumes. The coconut palm helps to do this."

Gora promotes the integration of trees into the natural and agricultural ecosystems—including coconuts.

In 1994 Gora began the first phase of his project, working with farmers to integrate palms into their gardens. He quickly realized that he needed some technical assistance when many of their young Grand West African palms were ravaged by beetles and a fungus. Gora met a palm specialist from Benin who invited him to his country to learn more. Both in Benin and in Côte d'Ivoire, Gora learned new germination methods and identified resistant varieties of palm that he has since used in Senegal, improving his production 100-fold.

The AJA has been selling coconut, oil, and date palms, as well as the related rônier (*Barassus aethiapum Mart.*) to customers from their nursery since. Selling for about US\$10, the young trees are a good source of revenue, particularly in this tourist-intensive zone where there is a strong demand from hotel and home owners. The pricey trees are still a bargain, Gora maintains: "Coconut palms may take four years to fully develop, but they will produce for fifty years."

In addition to selling palms, Ndiaye through the AJA has been involved with dune stabilization along the Petite Côte. In 2001 they received a \$50,000 grant from the UNDP to train the local population to grow palms as a means of stopping dune erosion. The organization also purchased a nine-acre plot an hour's drive south in the village of Samba Dia, where they continue to experiment with palm varieties and integration with field



"Legumes fix nitrogen in the soil."

crops.

While Gora Ndiaye and El-Hadji Hane have taken different paths towards promoting sustainable agriculture, education is central to both of their activities. Both are

proud of their successes, but are also well aware of the resource and economic obstacles that lay ahead, such as lack of water or a lack of an organic marketing infrastructure. Nevertheless, their deep-seated belief in promoting a socially-equitable and environmentally sound agriculture keeps them both motivated. "We just want to interest people in what we're doing," El-Hadji says. "The first step is to show them that we must approach things in a holistic fashion." 

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Nathan McClintock holds an M.S. in sustainable agriculture from North Carolina State University. He assisted a farmers' group Nepal in its transition to organic last summer before starting his PhD in agroecological geography at UC- Berkeley.

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