

SENEGAL

ST. LOUIS: A CITY LABORATORY OF CLIMATE CHANGE

by Bruno Zanzottera





Senegal, Parc National de la Langue de Barbarie – Moussa Niang, an ornithologist responsible for the ecological services of the Parc National de la Langue de Barbarie, and some students from the University of St. Louis are counting tern and seagull nests on the sand strip between the ocean and the lagoon formed by the shifting bed of the Senegal River..



Senegal, Parc National de la Languette de Barbarie – Women at work in the salt flats around the village of Mouit within the Parc National de la Languette de Barbarie. Salt is one of the region's resources and is collected by women a few days a year, with a portion used for the needs of the entire community.

Squeezed between the Senegal River and the Atlantic Ocean, the historic city of St. Louis and the surrounding region are the areas of Africa most threatened by rising sea levels.

"Our land is a laboratory for climate change," says Mustafa Diang, an elderly fisherman and representative of the fishermen's union of St. Louis and the Langu de Barbarie. You can't blame him; the Langu de Barbarie, a strip of land between the Senegal River and the Atlantic Ocean, is occupied in its northern part by fishing districts with the highest population density in all of Senegal, and in its southern part by the national park of the same name, which is dotted with several villages. This is a particularly fragile area that's subjected, on the one hand, to the threat of the Atlantic waves that, due to rising sea levels in recent years, have destroyed several houses, a school, and a mosque, and submerged entire villages, and, on the other, to the flooding of the river that already 20 years ago had inundated the city of St. Louis (a UNESCO World Heritage Site since 2000). And it's for these reasons that in 2008 the UN 'Habitat' report identified St. Louis and the surrounding area as the place in Africa "most threatened by rising sea levels caused by climate change." Since then, the area has

been continuously monitored by geologists from Dakar University. An embankment has been built to protect the houses at greatest risk, but more than 300 families have already been evacuated and relocated to camps and new settlements under construction about ten kilometers inland. Other projects, such as the construction of a canal to drain the river waters into the sea, have proved counterproductive and led to the disappearance of entire villages under the floodwaters. In all this, the forecasts for the future, despite a momentary receding of the water, are far from optimistic. Studies by the Ministry of the Environment predict a serious risk of evacuation for a large part of the population of St. Louis and the villages along the Langu de Barbarie, as well as a threat to the fauna in the national park.

As if that were not enough, fishing has also collapsed, and today the majority of the inhabitants of the Langu de Barbarie, consisting of fishermen and women who process and sell the fish, are facing a double challenge.



Senegal, St. Louis – Arrival of a pirogue from fishing on the beach of Guett Ndar, the fishing district of St. Louis, today at risk of flooding due to rising ocean levels. Today, for various reasons, fishing has significantly declined and many fishermen are forced to venture as far as Mauritania or south towards Gambia and Guinea to find more quantities of fish.



Senegal, Parc National de la Langue de Barbarie – Some women from the village of Mboumbaye, located within the Parc National de la Langue de Barbarie, are gathering oysters and other mollusks that have begun to populate the lagoon formed by the shifting course of the Senegal River, which has brought much more saltwater into it, making cultivation impossible but creating this new activity.



Senegal, Djougup – Mahamadou Thiam, spokesperson for the displaced residents of the Guett Ndar district, photographed in front of the new housing in the Djougup settlement where the displaced residents who had their homes destroyed by the sea have been relocated.



Senegal, St. Louis – Kobe, a young PhD student from Dakar University, is conducting geological surveys to monitor sea level rise along the Langue de Barbarie, the narrow strip of land located between the ocean and the Senegal River.



Senegal, Parc National de la Langue de Barbarie - Women from the village of Mouit within the Parc National de la Langue de Barbarie work the fish at night, cooking and salting it and then selling it in regional markets. Because of the shortage of fish, most of the village fishermen have moved to Gambia or Guinea and the women who have remained in the village have to buy fish in St. Louis.



Senegal, St. Louis region - Ahmed Sene Djane former chief of the village of Doum Baba Djeye, which was completely submerged by the floodwaters after a canal was opened to drain the waters of the Senegal River which threatened to flood the city of St. Louis. Here he is photographed in front of a school wall, the only building that was not submerged because it was at a higher point than the rest of the village.



Senegal, St. Louis region - Ahmed Sene Djane former chief of the village of Doum Baba Djeye which was completely submerged by the floodwaters after a canal was opened to drain the waters of the Senegal River which threatened to flood the city of St. Louis. He is working in his cabbage field. In the northern part of the Langu de Barbarie cultivation is still possible, while in the territories further south the ingress of salt water has made it practically impossible.



Senegal, St Louis - Fatou Binetou Sarr, president of the Women Fish Processors. She started this work at the age of 7 and complains of a sharp decline in the catch and also in the species of fish found, which are now less valuable than in the past. .



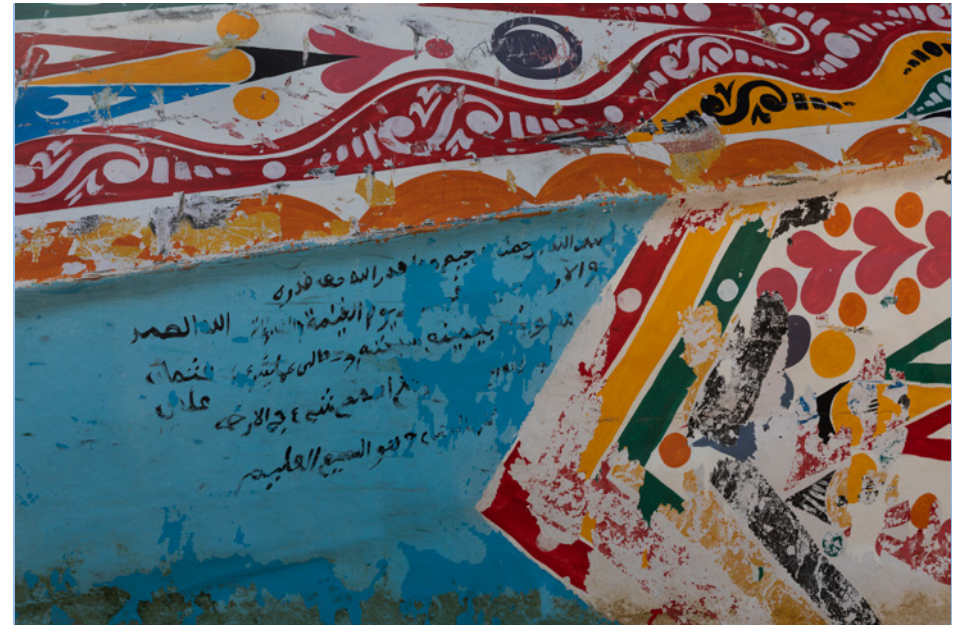
Senegal, St. Louis - Khalifa Gaye, a former fisherman and resident of the Ngokhou district in St. Louis, which borders Mauritania. His house was destroyed by the sea and his family was allocated housing in the new settlement of Djougoup, partly still under construction, some ten kilometres inland. Here he is photographed at the site of his old home.



Senegal, St. Louis region - The walls of a house in the village of Pilote, on the edge of the Parc National de la Langue de Barbarie, destroyed by the sea, have become a blackboard for children's drawings. This village and several others that once stood along the mouth of the Senegal River, after the opening of the canal built to drain the waters from St. Louis, found themselves exposed to the fury of the sea and several houses were destroyed.



Senegal, Parc National de la Langue de Barbarie - Some gendarmes in front of a hijacked pirogue, which was carrying illegal immigrants to the Canary Islands. Due to climate change that is leading to coastal erosion and a shortage of fish, many people see clandestine emigration as their only chance for a better future.



Senegal, Parc National de la Langue de Barbarie - Some sentences from the Koran written on the side of a pirogue that was carrying illegal immigrants to the Canary Islands and was seized by the police. Due to climate change that is leading to coastal erosion and a shortage of fish, many people see clandestine emigration as their only chance for a better future.



Senegal, Parc National de la Langue de Barbarie - A few specimens of filaos, a species of exotic pine, with their aerial roots due to coastal erosion. These pines, together with mangroves, are planted by the inhabitants to create a barrier against sea erosion.



Senegal, St. Louis region - Fishermen's pirogues at the mouth of the Senegal River at the point where they can enter the sea. The mouth used to be much further south, but the construction of a canal to drain the river waters that risked flooding the city of St. Louis, moved it further north. The canal, which was initially only 4 m. wide, quickly widened, however, leaving several villages on the river exposed to the fury of the ocean, which submerged some of them, and is constantly shifting.



Senegal, Parc National de la Langue de Barbarie - Souleyman Ba, lighthouse keeper at Tassinere at the entrance to the Parc National de la Langue de Barbarie. The lighthouse, built by the French in colonial times, once stood on the edge of the Senegal River estuary. Today, due to the shifting of the river bed, it is located on the edge of a closed lagoon, far from the passage of pirogues.



Senegal, Parc National de la Langue de Barbarie – A woman from the village of Mboumbaye, located within the Parc National de la Langue de Barbarie, is gathering oysters and other mollusks that have begun to populate the lagoon formed by the shifting course of the Senegal River, which has brought much more saltwater into it, making cultivation impossible but creating this new activity.

Senegal, Djougup - Geumehalla Wad, who had her house destroyed by the sea in the Guett Ndar neighbourhood of St. Louis, today still lives in a plastic tent while waiting for a new home to be assigned to her in the settlement of Djougup.





Senegal, St. Louis – In the fishing district of Guet Ndar, the place with the highest population density in all of Senegal and now at great risk of flooding due to climate change, many of the transports of people and goods are carried out using carts.



Senegal, St. Louis region - Almata Diagne has started a cultivation of oysters that have begun to populate the bottom of the Senegal River due to the increasing salinity of the water. While all the other women in the villages harvest them by fishing at low tide, she got the idea of cultivating them by watching documentaries on television about cultivations in Europe.



Senegal, St. Louis - The school in the fishing district of Guett Ndar destroyed, like many other houses, by the waves of the Atlantic. An inscription 'Clean is good, but not dirty is better' remained on the walls, a warning to the inhabitants of the densely populated neighbourhood who use the beach as a dumping ground.



Senegal, St. Louis – A boy tries to recover iron rods from the walls of a dancing hall in the fishing district of Guett Ndar destroyed by the fury of the sea and now abandoned.



Senegal, St. Louis - The women of the Guett Ndar fishermen's district are waiting for the arrival of the fishermen's pirogues. While the fishermen are all male, the work of cooking, salting and marketing the fish is a female task.



Senegal, Parc National de la Langue de Barbarie - Women at work in the salt pans around the village of Mouit in the Parc National de la Langue de Barbarie. Salt is one of the riches of the region and is harvested by the women a few days a year and some used for the needs of the whole community.



Senegal, St. Louis – Overview of the fishing district of Guett Ndar. In the foreground, the embankment built to protect the houses from the rising sea waters, in the background, the historic core of the city founded by the French on an island in the river.



Senegal, St. Louis - Mustafa Diang in charge of the St. Louis fishermen's union. The union is fighting to move the limit of approach to the coast for large fishing boats from 6 to 12 nautical miles, because it holds them responsible for the impoverishment of the seas. Because of the fishing crisis 3 of his sons emigrated illegally and are now in Spain.



Senegal, Parc National de la Langue de Barbarie - A slipper brought from the sea onto the beach of the village of Mouit. The inhabitants of St. Louis, and in particular of the overcrowded fishing district of Guett Ndar, use the beach as a dumping ground and all the rubbish is then carried by the sea to the various surrounding beaches.



Senegal, Parc National de la Langue de Barbarie - A cloth washed up on the beach by the sea seems to take the shape of a person, as a reminder that due to climate change that is leading to coastal erosion and fish shortages, many Senegalese see clandestine emigration as the only chance for a better future.

Senegal, St. Louis - A boy at work splitting and salting fish in the fishing district of Guett Ndar, in the thin strip of land of the Langue de Barbarie between the ocean and the Senegal River.





Senegal, St. Louis - Pirogues in front of houses in the historic part of St. Louis located on an island at the mouth of the Senegal River.



Senegal, St. Louis region - The dam built on the Senegal River some twenty kilometres upstream from the city of St. Louis to prevent the salty water from penetrating the river and damaging crops. Due to the heavy rains that had disproportionately raised the level of the river some years ago, the authorities were forced to open the sluice gates with the waters that risked completely flooding the city of St. Louis, so a canal was subsequently built at the mouth of the river, which led to a series of other problems.



Senegal, Parc National de la Langue de Barbarie – Women at work in the salt flats around the village of Mouit within the Parc National de la Langue de Barbarie. Salt is one of the region's resources and is collected by women a few days a year, with a portion used for the needs of the entire community.



Senegal, Parc National de la Langue de Barbarie - A grey-headed gull hatching while Moussa Niang, the ornithologist in charge of ecological services at the Parc Nationale de la Langue de Barbarie and some students from St. Louis University are counting tern and gull nests on the île aux oiseaux, a small island in the park where various species of terns and gulls nest.



Senegal, Parc National de la Langue de Barbarie – Some a woman from the village of Mboumbaye, located within the Parc National de la Langue de Barbarie, is gathering oysters and other mollusks that have begun to populate the lagoon formed by the shifting course of the Senegal River, which has brought much more saltwater into it, making cultivation impossible but creating this new activity.



Senegal, Parc National de la Langue de Barbarie – Shellfish gathered by the women of the village of Mboumbaye located within the Parc National de la Langue de Barbarie. Oysters and other shellfish began to populate the lagoon formed when the course of the Senegal River shifted, bringing more salt water into it, making cultivation impossible, but creating this new activity.



Senegal, St. Louis - A young boy from the fishing district of Guett Ndar shows a miniature dugout he built himself. Everyone in the neighbourhood lives from fishing and the boys start going out in dugouts with the fishermen from the age of eight. In the foreground, the embankment built to protect the houses from the rising sea waters,



Senegal, Parc National de la Langue de Barbarie - Young mangroves planted by the park authorities to try to slow down the advancing ocean waters.



Senegal, Djougup - The family of Mahmadou Thiam, spokesman for the displaced people from the Guett Ndar neighbourhood, moved to their new home in the settlement of Djougup, where the displaced people whose homes were destroyed by the sea in the Guett Ndar neighbourhood of St.Louis were relocated.



Senegal, Parc National de la Langue de Barbarie - Terns and seagulls fly around a fishermen's boat in the lagoon of the Parc National de la Langue de Barbarie. Because of the scarcity of fish, many fishermen from the villages south of St Louis migrate to the southern region of Casamance or to Guinea and return to the village only a few days a year on the occasion of major religious festivals.

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