

“Preliminary results show that clumps of four to eight small trees can have an important impact on temperature,” Professor Peiry said in an interview. “The transpiration of the trees creates a microclimate that moderates daily temperature extremes.”

“The trees also have an important role in slowing the soil erosion caused by the wind, reducing the dust, and acting like a large rough doormat, halting the sand-laden winds from the Sahara,” he added.

Wildlife is responding to the changes. “Migratory birds are reappearing,” Mr. Boetsch said.

The project uses eight groundwater pumping stations built in 1954, before Senegal achieved its independence from France in 1960. The pumps fill giant basins that provide water for animals, tree nurseries and gardens where fruit and vegetables are grown.

Widou has one of the pumping stations, serving nomads and herders who bring as many 25,000 animals a day — cattle, goats, donkeys and horses — from more than 10 miles around to drink at the basin. A drip-irrigated garden covering 7.5 hectares, or nearly 20 acres, is supplied with seeds by Colonel Sarr’s agency. About 250 women spend a half a day each tending the garden and learning about horticulture. They grow onions, carrots, potatoes, eggplants, tomatoes, lettuce, tamarind, guava, watermelon and many other fruits and vegetables, taking the produce home to enrich their families’ traditional diet of milk and millet.

Colonel Sarr said he was looking forward to trying one of the first mangos from young trees in the garden.

“In another garden, 30 kilometers away, the first honey will be gathered next year,” he said. “This is just the beginning,” he added. “The gardens could cover 50 hectares in the future.”