

INSTITUTE OF CURRENT WORLD AFFAIRS

PJW-27
Shifting Sands

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Dear Peter,

Somalia is a country of austere beauty, sitting on the far eastern edge, the Horn, of Africa. An arid land, it has been inhabited for centuries by camels, goats, and wandering nomads, primarily ethnic Somalis.

Although life in Somalia is changing, today still almost half the country's human population, of approximately 6 million, are nomadic pastoralists. Livestock accounts for 40 percent of the gross national product, and 75 percent of the country's exports. Just over one-quarter of the people are settled in rural areas, primarily earning their livelihood as farmers, and the remaining quarter live in urban areas. The proportion of the population living in urban areas has doubled between 1960 and 1980. In addition, during the past decade the country has absorbed 700,000 refugees from Ethiopia (Bowen and Bird 1987, World Resources Institute 1987).

For centuries, aromatic gums, such as myrrh and frankincense, and resins have been important forest products, and even today constitute the third largest export. The country has never had massive forests, but rather has been covered primarily by bushland, thicket, shrubland, and grassland. Of the country's land area of 638,000 square kilometers, 13 percent of the land is considered suitable for cultivation: this land is primarily located along the valleys of the two major rivers, the Jubba and the Shabeelle. Over half (55 percent) is considered to be suitable for pastoralism, and the remainder is non-agricultural (Bowen and Bird 1987).

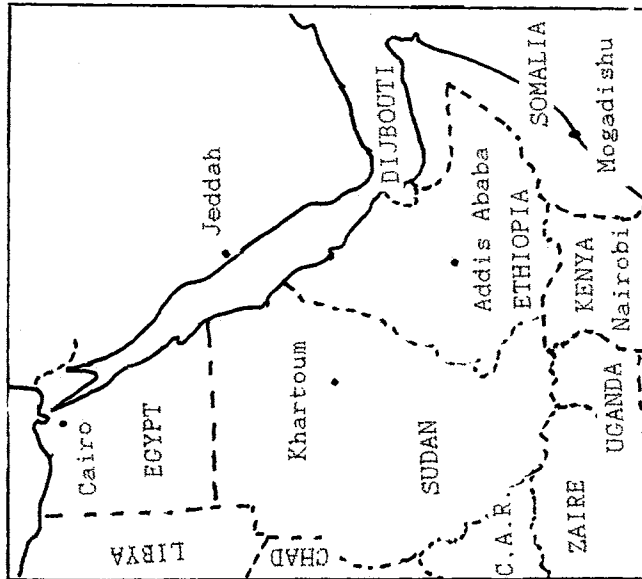
According to early European explorers, such as H.C.C. Swayne (1900, cited in Williams 1983), firewood has never been plentiful. Even at the turn of the century, firewood was seasonally scarce, and both trees and shrubs were used as sources of fuel.

What has changed in 87 years? The major changes have been increasing population densities -- of both people and animals, and the concentration of people in towns, particularly Mogadishu. With a population of one million, Mogadishu faces severe shortages in firewood and charcoal. Fuel is also in great demand in the vicinity of refugee camps, and severe deforestation has occurred around the camps.

As elsewhere in Africa, the commercialization of firewood and charcoal to meet urban demands has changed patterns of labor. Traditionally, women and girls would collect firewood for use in nomadic camps. Men would cut

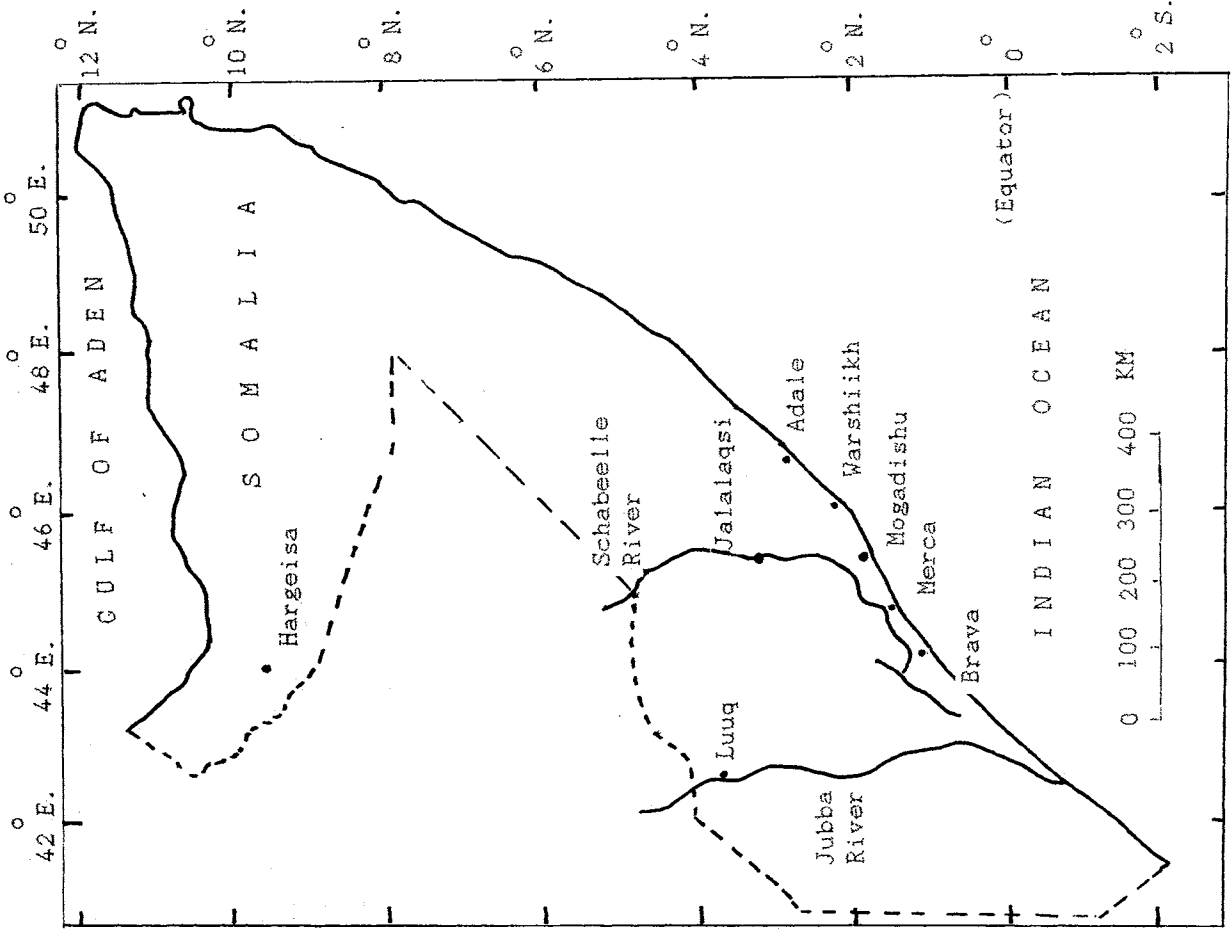
LOCATION OF SOMALIA

ON THE HORN OF AFRICA



Map adapted from:

Michelin Map 154: North-East Africa.
Paris: Michelin, 1982.



Map adapted from Bowen and Bird (1987).

wood for watch-fires at night, which were used to protect animals from predators, and people from surprise attacks by enemies (Williams 1983). Today, although women still collect firewood for their own use, men dominate the commercial firewood and charcoal markets.

The Somali people do not have traditions of planting trees. Under the colonial administrations by the Italians (in the south) and the British (in the north), some trees were planted for shade and windbreaks.

More tree-planting has occurred in the past twenty-five years, with interest increasing during the 1970s. A recent overview of forestry literature in Somalia identified over twenty forestry projects funded by outside donors since 1984, with project proposals for another twelve in preparation as of September 1987. Each year Somalia receives an average of US \$ 10 million in forestry-related assistance (Bowen and Bird 1987).

The Somali government stresses plantations, due to the urban demand for fuel. Although several projects have attempted to establish fuelwood plantations, such efforts have been unsuccessful. Rainfall is low and the costs of irrigation or watering are high. The growth rates of exotic species planted, such as Eucalyptus spp., have not been adequate to justify the economic investments. Indigenous species tried have proved to be even more slow-growing, though more drought-resistant.

General consensus is that while the fuelwood plantations have been failures, other tree-planting efforts have been more successful. These include planting trees to stabilize sand dunes, create windbreaks or shelterbelts, and household plantings of shade trees and fruit trees. Planting of agroforestry trees in fields is being introduced in the region around Luuq and elsewhere. Altogether, since 1952, between 4000 and 5000 hectares (ha) have been afforested in Somalia: 1500 ha of rain-fed plantations, 50 ha of irrigated plantations, 1600 ha of sand dunes, and 1000 ha of windbreaks (Bowen, in press, cited in Bowen and Bird 1987).

After spending several days in Mogadishu, talking with numerous people about forest development efforts, I was anxious into the field. In the capitol, it was difficult to get much concrete information on actual project activities. Somalia suffers from incredible communication and transportation problems. NRA headquarters only learns of on-the-ground efforts when a regional representative comes into Mogadishu, or more rarely, headquarters staff make it out to the field. [Extension officers have such a difficult time of performing their work in the field, due to fuel shortages, that NRA is thinking of assigning them camels.]

Learning that a trip up the coast to Adale was being planned for a visiting journalist, James Wilde, I asked if I might come along. Ali Haji Warsame, head of the Anti-Desertification Unit of the National Range Agency (NRA), a NRA driver, Wilde, and I set off in a small four-wheel drive jeep.

We left Mogadishu around 8 AM. Driving out the cool, tree-shaded streets, we passed the National Theatre and a wide variety of shops and large houses. Soon we had left the tarmac, and were on a rough dirt road, passing through a neighborhood of small, rough concrete houses with corrugated metal roofs, interspersed with small round traditional huts.

On the outskirts of town, I noticed a tall square pyramid, with a door on the side facing the road, and two men on top, shoveling what looked to be fine particles of sand. What was it, I asked? A limestone kiln. Nearby was a truck piled high with firewood, perhaps for firing the limestone.

As we left Mogadishu, the road had become loose sand. The vegetation consisted of low bushes, with grasses and forbs underneath. Although sand was visible between the plants, the vegetative cover was fairly continuous. The land presented a sharp contrast with what I'd seen in Burkina Faso and elsewhere in the West African Sahel, where often the land was totally denuded between scattered clumps of shrubs. As we drove on, we came to areas that had been fenced, with cut thorn branches, to demarcate ownership, vis-a-vis grazing and wood gathering rights.

Off to the distance, towards the sea, we saw a sand dune. Why the difference? Probably, Ali Haji explained, the family who had been in the area had overcut the woody vegetation and overgrazed their livestock. Sand dunes could also be caused by shifting cultivation.

According to Ali Haji, three types of sand dunes can be found in Somalia. Along the coastal areas, two types exist -- barcan dunes and elongated dunes. Barcan dunes are small patches, round or oval in shape, perhaps 1 hectare in size. Elongated dunes are shaped by the two major winds -- the northeast winds, which blow from December to March, and the southwest winds, which blow from June to August. A 1984 inventory had estimated that, along Somalia's 3250-kilometer (2178-mile) coastline, approximately 500,000 hectares of coastal sand dunes exist. Ali Haji believes that undoubtedly the coastal dunes have since increased. The extent of third type of dune, found inland along the Jubba and Shabeelle rivers, has not yet been inventoried.

As we drove up the coast, we passed the town of Warshiikh. From a distance, we could see the cluster of buildings, including a brightly-painted mosque. Three silhouetted figures were standing on the beach, with the surf crashing behind. The sea was a mixture of blues -- azure, turquoise, royal.

North of town we passed five men in a pick-up truck. The man in the back reached under a burlap tarp and pulled out a large, 3-foot-long, fish to show us. They were en route to Mogadishu to sell their load of fish. Although historically Somali nomads just ate the milk and meat of their livestock, in recent years Somalis have developed a taste for fish. (This was encouraged some years ago, when the government permitted butchers to slaughter and sell meat only two days a week, and fish on a third.)

The landscape by now had become quite sparse -- with very low bushes, or just grasses. We had seen several groups of people and animals from a distance -- nomadic families moving with their houses on top of their donkeys or camels, accompanied by sheep and goats. Some people, here along the coast where more water exists, have cattle. Tsetse flies, however, remain a major deterrent to increased cattle raising, despite efforts of several projects to eradicate them.

After we had been driving for almost three hours, we came to a nomadic camp. Ali Haji decided to stop. One man, Abdullah Haji, was singled out for an interview. Wilde and I asked questions, while Ali Haji served as our translator.

Abdullah explained that this was a seasonal camp where they come with their sheep and goats. When the rainy season begins, they move about 15 kilometers (10 miles) inland, so their animals can graze on the new grasses. When they move, they load up their donkeys -- the trip takes only five or six hours. Roughly two hundred people live in the region, of whom about fifty live in this particular camp. Another camp is located nearby.

The camp consisted of 16 small round huts, made of a framework of bent poles tied together, covered with woven mats and other scraps. The huts are designed to be easily taken apart, moved, and reassembled, much like a tent. Traditionally, making, assembling, and repairing huts has been women's work. The women have to travel about 20 kilometers (13 miles) inland to find the materials for weaving the mats, which comprise the walls of the huts. Next to some huts were bits of fencing, made of dead bushes, as animal enclosures. Some bits of cloth, probably the laundry, were lying on the fences in the sun. To get wood, for fencing or fuel, women and youths travel 15-20 kilometers (10-13 miles), bringing the loads home on their donkeys.

Several fishing nets, with red and white float balls, were lying on the ground nearby. Abdullah explained that they had been fishing for a long time...his father and grandfather had fished.

When asked, Abdullah, 35, said that during his lifetime, especially in recent years, there had been less rain, more drought and famine. When he was young, however, they had usually received regular, heavy rains. As the forage and animal production are lessening from year to year, they are worried. What did he expect would happen? He replied that they were expecting no hope of avoiding disaster: "We are thinking Allah, we are begging from Allah".

Ali Haji asked Abdullah what the people could do. Abdullah offered no answers. Ali then asked if perhaps people had caused the problem -- with increasing numbers of people and animals, increasing cutting of wood. Abdullah at first replied that he can try to change, try to cut less wood. Wilde remarked that Abdullah didn't seem convinced. Ali talked with him further. Abdullah explained that, after all, he is primarily a fisherman and not really responsible for the problem. It is others, he says, who cut wood for sale in Mogadishu, who are responsible.

Our driver had been itching to move on. As we were about to leave, however, a bystander mentioned that ^aour left rear tire seemed soft. As the driver changed the tire, everyone in the camp assembled around to watch.

One young woman, a baby in her arms, remarked to me, "Bambino". I had Ali Haji ask about her children. The baby, a boy, is two months old, and she has one other child. Ali Haji explained that she is yet young -- early twenties, I estimated. How many children does she expect? Twelve, she replied, and burst out laughing. Whether she was serious or joking was unclear. Perhaps she will change her mind, I remarked.

Ali Haji seized upon my comment and ask if she could change her mind and stop with only two children? Only if she had no further contact with her husband, she replied. Ali Haji told her that medicines are available, which permit you to have contact with your husband, yet have no more children. She looked dubious, then answered that these medicines are not available here.

We drove off from the camp, discussing how the children in this particular camp had appeared well-nourished. In general, however, it is difficult to convince people to have fewer children when many children die young. Infant mortality has been decreasing, but is still high in Somalia. [According to United Nations Population Division figures, for 1985-90 infant mortality is estimated to be 149 infant deaths per thousand live births, and estimated life expectancy at birth is 41.9 years (World Resources Institute 1987). Nonetheless, the population of Somalia is growing at an estimated rate of 3.19 percent per year (Bowen and Bird 1987).]

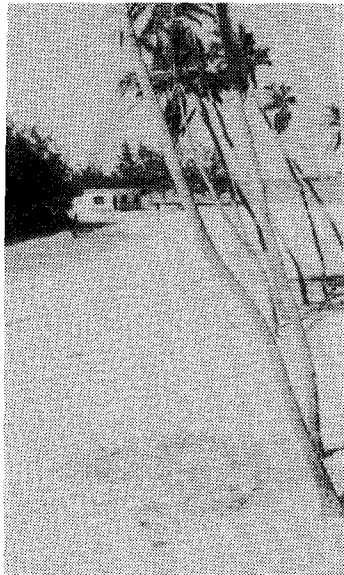
We noticed how sparse the vegetation had become. The ground had a very low cover of vegetation, dark olive-green and grey. Can anything live here or is it hopeless? To answer our question, we soon saw a herd of cattle, and then some wildlife. A mother warthog and two young were lounging in the road, but ran off startled as our vehicle approached. Farther on, we saw two jackals, some gazelle, and many birds.

Half an hour later, we drove by a watering hole. Seven young men and two young women were there with their donkeys. One woman was crouched near the ground, washing laundry with water she poured from a plastic jerry can. The men demonstrated how water is retrieved from the hand-dug well using a soft-sided bucket and rope. Their water jugs appear to be either made of clay, or covered with clay, and encased in a woven straw outer cover. They come 7 kilometers to get water. They make the trip, they told us, whenever they need water -- sometimes every two days, sometimes every five.

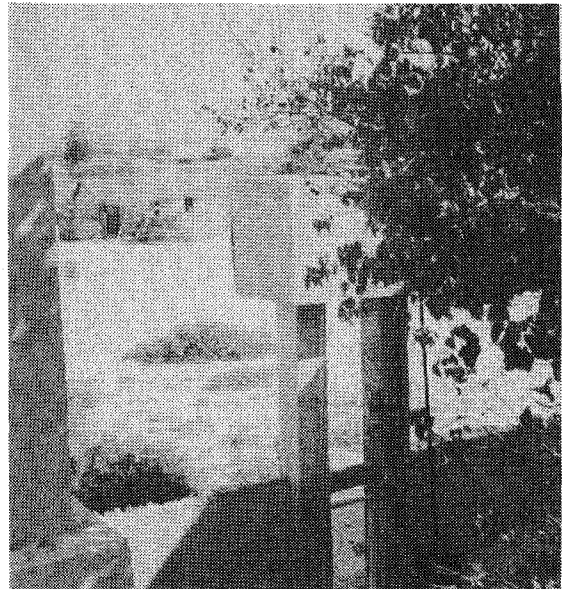
Back in the vehicle, we traveled on. Finally, on the horizon, we saw some tall trees -- the town of Adale, our destination. Coming into the town, we passed several concrete buildings. The first, Ali Haji explained, was a fish processing plant built when the Russians were here, but no longer used. Some other buildings were built by the government during the bad drought in 1974 as "settlements" for nomads who had lost most of their livestock. The government brought some people to Adale, to try to earn their livelihoods fishing. After the rains returned and their flocks increased, however, many preferred to return to their nomadic, pastoral lifestyles.



We passed a cluster of trees and parked in front of a two-story, pastel-painted concrete compound -- the government rest-house. Here we met Abdirahman Mohamed Ali, project manager for the Adale Sand Dune Fixation Project, who briefed us on the project.



Views of
Adale
from the
government
rest-house



The sand dune fixation project in Adale is financed by the United Arab Fund to the equivalent of US\$ 400,000. The project is being implemented by the United Nations Sahelian Office (UNSO), in conjunction with the National Range Agency. The project began in 1985, intended for three years. Due to a slow start and delayed arrival of vehicles and tools, however, the money will probably stretch to extend the project through 1989.

The project has three main objectives. First, the project aims to protect the town of Adale from moving sand through the creation of shelterbelts. Second, the project seeks to stabilize sand dunes that threaten the roads to the villages. Third, the project has established a tree nursery, to provide seedlings for the first two objectives, as well as additional species for amenity (shade) plantings in town. The nursery is designed to produce 260,000 seedlings per year (130,000 per season).

The nursery is located nearby, protected by a two-hectare shelterbelt. The trees, planted a year and a half earlier, are already at least 15 feet tall. This shelterbelt, Abdirahman says, will protect an area of 1 kilometer (0.6 miles) in distance.

The nursery beds are outlined with concrete blocks, sitting on what looks to be pure sand. Approximately half the beds are presently in use, with seedlings growing in plastic bags. Nearby is a pile of clay, which has been trucked a distance of 120 kilometers (80 miles). The clay is mixed with sand and locally-available animal manure to make the potting mixture for the tree seedlings.

The nursery production focuses on to Casaurina equistefolia, used for shelterbelt plantings, and Prosopis juliflora, used for sand dune fixation plantings. Five other species have also been grown for amenity plantings.

The seedlings are grown in the nursery for 3-4 months, where they are watered each morning and evening. After outplanting, the Casaurina are watered daily for the first six months, then every other day between 6 months and a year. After that period of time, the roots are deep enough to reach the shallow water table, and no further supplementary watering is necessary.



Ali Haji Warsame is on the right, next to Abdirahman Mohamed Ali and other colleagues, at the Adale project nursery, in front of a shelterbelt.

After leaving the nursery, we visit three other shelterbelt sites. One area had previously been heavily degraded, very dusty, the former site of a well for animal watering. The trees planted here were a year old, varying from two to five feet in height. Another area, southwest of the town, had been planted two weeks earlier with 870 Casaurina. The water level in the well was only about three feet below the surface of the ground.

Workers had put pieces of plastic as physical barriers against the sand, in front of a couple of seedlings. Abdirahman wasn't convinced that precaution was necessary, as Casaurina is a hardy species that grows well despite the wind and the sand. This species has been used in Somalia for shelterbelts for 50-60 years, since the Italians introduced it to protect banana plantations in the southern agricultural valleys.

The oldest shelterbelt was in the center of the town, planted by the NRA in 1982, prior to the project. The area was well-shaded, cooler than the outside area. The shelterbelt was surrounded by barbed and brush fencing, with a pair of wooden doors for a gate. Inside the gate was a pillar, adorned with the picture of the country's president. The shady grove serves as a place for receiving official guests, or just a cool place for people to relax on a hot day. It also serves as the project's seed orchard, and poles for the local fishing industry have been cut from the trees. Otherwise, the only management has been some branch cutting and cleaning of the plantation.

Abdirahman said that altogether, the town currently has less than ten hectares of shelterbelts. If the town were to have 50-80 hectares, however, then it might be feasible to manage the plantations, by trimming the trees, to meet firewood needs for the town's population of a couple thousand people.

We then went on to see their work in sand dune fixation. The sand dunes were not as huge as elsewhere in the country, but impressive nonetheless. The dunes we saw were 15-25 feet in height. Dead brush, cut and transported from a location 25 kilometers away, had been placed around the base, and up the crest, of a couple of dunes.



Sand dune outside of Adale.

Behind this "mechanical" barrier, the project work crews had planted one or two rows of Prosopis juliflora. The first site had trees planted this June, the second site, trees planted a year earlier. Since these trees receive no additional watering after outplanting, they have to be planted in June, at the beginning of the rainy season. This species has a low, spreading growth pattern, good for fixing the dune surface. The older trees had crowns 3-4 feet in diameter.



Prosopis juliflora, planted inside the cut brush at the base of the dune

Currently, the project employs about 100 laborers, 80 percent of whom are women. Workers are primarily paid with food rations provided by the World Food Program (WFP). Sometimes, when the project needs extra labor, as during the rainy season, local authorities recruit voluntary, self-help labor. Generally, Abdirahman explained, people work first for themselves, such as going fishing in the mornings. As the cooler morning hours are when the project needs laborers, the project must pay to attract workers.

The project manager considers nursery work and tree watering to be women's work, whereas cutting brush and planting trees on the dune are men's

work. But, due to a shortage of male laborers, they had had to recruit some women to work on the dune activities.

This situation seems generally true for forestry projects in Somalia. Most forestry projects use WFP food rations to pay workers, and most employed workers are women (cf. Blumgart et al. 1985). Two factors seem to be involved. First, food-for-work jobs are generally offered first to poorer families -- which typically include women-headed households (widows, divorced women, or women in polygynous marriages). Second, the payment is primarily food rations, with only a token cash payment. Men prefer to work at jobs that pay more.

Despite the high traditional involvement of women in forest resource use and their prepondance as laborers on forestry projects, little attention has yet been paid to how women's participation in forestry activities might be enhanced. It is known that women generally are the ones who plant trees around the household compounds, particularly for shade. In the Luuq region, where agroforestry is being promoted, women have been enthusiastic about tree-planting in the fields, although the decision-making generally remains under the control of the male farmers (Kassimani, personal communication).

To date, only one project has specifically focused on the issue. This project, implemented by OEF International in Hargeisa, had worked with both NRA and the Somali Women's Democratic Organization (SWDO), which is the women's branch of the national political party. Apparently the relationship between NRA and SWDO was difficult. Women extension agents were trained by the project, and a nursery was established as an income-generating activity for women (Lewis and Ibrahim 1987; Lewis, personal communication).

It is not clear, however, if any activities have continued since outside funding for the project ended in July 1987, and the material property went to NRA. The nursery has been unable to sell enough trees to cover its operating costs. Some women extensionists have subsequently been hired by a nearby CARE project. Oxfam also hopes to develop commercial tree nurseries as income-generating activities with women (Ibrahim, personal communication).

Overall, I wondered about the impact of the sand-dune fixation project in Adale. In some respects, it seems quite modest. For US\$ 400,000, project staff have established a nursery and 5-6 hectares of shelterbelts, and anticipate fixing 50 hectares of dunes. The project has one 6-ton truck and one pick-up truck, and expects to receive a tractor shortly. Money has been spent for plastic sacks (seedling pots), barbed wire fencing, seeds, and other supplies. As they have to go 125 kilometers for clay (for potting soil) and 25 kilometers for cut brush (for mechanical fixation of the dunes), fuel costs mount up. The project also provides employment for 100 people.

fixation

Altogether, sand dune_Ais currently being undertaken at 15 sites in the country. At the moment, three of these projects have outside funding, while the remainder are being undertaken by the NRA itself. Several are projects that have been "handed over" to NRA from their previous outside sponsors. NRA's own funding, however, is quite limited, so some sites have fairly minimal activities. For example, the sand-dune fixation activities in Jalalaqsi (Zoliner 1986) have stopped since USAID funding, and AFRICARE - implementation, of the project ended in July 1987. NRA is hoping, however, that the Ministry of Finance will release more funding in 1988.

With 500,000 hectares of coastal dunes and an unknown area of inland dunes, will Somalia be able to make a dent in the situation? In some specific locations, probably yes. Overall, maybe not. The Somalia government has decided it must focus its efforts on those areas that are most critical -- especially fixing sand dunes in the south, which threaten the country's agricultural lands.

Ali Haji had mentioned earlier that it has been estimated that for every tree planted in Somalia, one thousand trees are destroyed -- by people cutting them for wood and charcoal, or clearing land, or by animals grazing. The government's biggest challenge, then, is to reduce the loss of existing vegetation. I asked Ali Haji how many new hectares of sand dunes were created yearly, in comparison with the number fixed. No one has yet assessed that, he replied.

Coupled with this problem is the need to motivate people to do things for themselves. For generations, resource problems have been dealt with by families and clans. More recently, however, people have come to expect that the national government will control resource issues. Now it is important for people to understand their own role in this process.

Only within the past decade have nongovernmental organizations begun to work in Somalia. The majority are outside, or international, voluntary agencies, working primarily with refugee populations. Recently, however, indigenous Somali NGOs have begun to appear. One Somalia NGO has been working on tree-planting activities for about five years, and two other NGOs, interested in environmental issues, are being established.

After our tour of the project, we had lunch at a local restaurant -- rice with a tomato-based sauce, spaghetti, boiled goat, camel's milk. It was my first experience with camel's milk -- thick, with lumps of cream, with an overriding smoky taste. (I did not, I confess, particularly care for the taste of camels' milk, but decided that I could, if the situation ever arose, learn to like it.) We relaxed back at the rest-house a bit, while the driver got gasoline and the tire repaired.

On our trip back to Mogadishu, we took a different route, that went more inland. The vegetation was considerably higher, with small trees and shrubs six to eight feet tall. We passed many people with animals, some taking herds to Mogadishu to sell. One man wanted to sell his camel for 60,000 Somali shillings (US\$ 400). My companions in the car felt that this was an incredible price and doubted that he would get it -- the average price for a camel was more like 8,000 shillings (\$ 50). Even if the camel was a special ceremonial camel, they said, his price was unlikely.

After nightfall, we came to a checkpoint where two large trucks had been stopped for transporting illegal loads of firewood. The wood had been cut from live trees, whereas the truck drivers only had permits for dead wood and branches. NRA had set up two checkpoints on the outskirts of Mogadishu to reduce illegal wood cutting. Ali Haji said that the wood would be seized by the government, and given to a NRA work camp or a boarding high school.

Our trip back took us about four hours. We arrived in town about 8:15 PM, having traveled a total distance of less than 200 miles over a nine-hour period, but exhausted from the bumpy sand roads.

When we had driven north along the coast, we saw a shimmering lake ahead on the horizon -- a mirage. After spending a week in Somalia, I wondered if my understanding of Somali forestry efforts was also a mirage -- real, but an illusion, that would quickly slip away. The facts, the impressions, seem to vary so much, depending upon with whom you consult.

I decided that the only way to really understand what seems to be happening is to actually get out in the field and look. To get out in the field takes time, patience, and perserverance. Next time I visit Somalia, I hope to spend more time in the field, and perhaps even visiting a project by riding one of Somalia's magnificent camels.

Sincerely,

Paula J. Williams

Paula J. Williams
Forest and Society Fellow

Many people shared their knowledge of Somali forest development with me, in particular Frank Catania, Roderick Bowen, Mohamed Ali Kassimani, and Ali Haji Warsame. I appreciate their efforts in helping me begin to understand the forestry constraints and challenges facing Somalia.

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