

Naylon J. + A. A. Jama

Sept. 16, 1983

MANAGEMENT PLAN
SUGULE RESERVE
HOBBIO DISTRICT

Background information

The Sugule Reserve is located on the Coastal Plain north of Hobbio. The south boundary is a line that begins at the coast of Hobbio, passes just south of the airport tower and extends on a line at 290° approximately 17 kilometers to the foot of the Gawan escarpment. The west boundary extends from this south boundary north along the foot of the escarpment approximately 25° , staying just east of the dwarf shrub grassland, to a point approximately 70 kilometers north east of the south boundary. The north boundary extends from the khalad well at the coast along a line of 290° approximately 30 kilometers to the west boundary. The east boundary of the Reserve is the Indian Ocean.

Presently the "eserve area is being use yearlong under a system of traditional nomadic migration. No area is given systematical planned rest; however, some of the area receives occational growing season rest.

Probably sheep are the animals kept in the largest numbers, with goats a close second in numbers. Cattle are kept in considerable numbers; however, it is said by these people that they would have more cattle except that many cattle are lost to disease. (which?)

Camels and donkeys are kept only for work stock for transporting water, food, house and household goods.

Numbers of livestock reported on the Reserve now are 14,572 sheep, 7,066 goats, and 554 cattle (numbers may not be reliable).

These are no people other than livestock owners using the area.

There are the large isolated, coastal dunes and also areas of bare rock which are not productive of forage and are not suitable range. The area taken up by this unsuitable range is approximately 200 square kilometers or 13 percent of the total reserve area. The suitable range of the reserve occupies approximately 1,250 square kilometers.

The present condition of the Sugule Reserve is fair to poor. Near Hobbio, where livestock are most concentrated for the longest periods, conditions are poor. This poor condition extends westward approximately seven kilometers and northward, from Hobbio, approximately 10 kilometers. At the northeast end of the reserve; the area approximately 56 kilometers north of Hobbio to the north boundary of the reserve, the range condition is good. The condition of the balance of the reserve area is between fair and poor. Although there are some areas where Aristida Kelleri plants dominate, in general the species composition can be rated fair. Plant vigor of forage plants over most of the reserve is less than satisfactory and is the basis for the low condition rating.

OBJECTIVES

The objective of the Sugule Reserve Management Plant is to improve the vigor of the desirable forage plants and thereby increase production in these plants. Presently the vigor of the forage plants, in all but very northern part of the reserve area, is poor and production in these plants is significantly less than the potential. The key plant species for livestock production are Leptothrium senegalense, Cenchrus ciliaris, Digitaria macroblephora, and Indigofera intricata. Current production (from data obtained from a first few samples) is estimated to be 120,000 kg/km.

It is estimated that forage production can be increased 20% within 16 years by managing livestock under a rest-rotation grazing system, providing additional water development are made.

Grazing Management .

A rest-rotation system of grazing management has been put into use on the Reserve. The reserve has been divided into strips with the long axis perpendicular to the coast (map). The strips are numbered from one to twelve beginning at Hobbio. The strip boundaries will be marked with stone monuments.

Strip 2 is being rested from July through December, 1983. Strip 7 is to be rested from July 1983 to the end of the gu season 1984. Strip 5 will be rested from beginning of gu season 1984 to end of gu season 1985. Hereafter the strips will be rested in groups of three through two gu seasons as follows:

Strip 3-6-9 from beginning gu 1986 to end of gu 1987									
"	1-4-10	"	"	"	1987	"	"	"	1988
"	2-8-12	"	"	"	1988	"	"	"	1989
"	5-7-11	"	"	"	1989	"	"	"	1990
"	3-6-9	"	"	"	1990	"	"	"	1991
"	1-4-10	"	"	"	1991	"	"	"	1992
"	2-8-12	"	"	"	1992	"	"	"	1993
"	5-7-11	"	"	"	1993	"	"	"	1994
"	3-6-9	"	"	"	1994	"	"	"	1995
"	1-4-10	"	"	"	1995	"	"	"	1996
"	2-8-12	"	"	"	1996	"	"	"	1997
"	5-7-11	"	"	"	1997	"	"	"	1998
"	3-6-9	"	"	"	1998	"	"	"	1999
"	1-4-10	"	"	"	1999	"	"	"	2000
"	2-8-12	"	"	"	2000	"	"	"	2001
"	5-7-11	"	"	"	2001	"	"	"	2002
" 3-6-9 from beginning gu 2002 to end of Der2002									
"	1-4-10	"	"	"	2003	"	"	"	2003
"	2-8-12	"	"	"	2004	"	"	"	2004
"	5-7-11	"	"	"	2005	"	"	"	2005

This will allow four cycles periods of rest of approximately 16 months for each strip. Then after the year 2002 the periods of rest will be approximately six months (fig 2). It is believed that the vigor of the forage plants will be good after four cycles of rest-rotation management, and the good vigor can be maintained thereafter with a shorter period of rest. If the vigor condition begins to decline with this shorter period of rest the period should again extend to include two gu seasons.

Range Improvements

There are 14 existing wells along the coast in this reserve. Most of these are within the south half of the reserve area. There is only one existing well on the west side of the reserve. Additional water sites must be provided for proper management of the reserve.

The water improvements should be made as follows:

Priority	Type of improvement	Location
1	Burkett	35 kilometers north of Hobbio
2	Surface tank near west side	12 " " " "
3	" " " " "	19 " " " "
4	" " " " "	23 " " " "
5	" " " " "	40 " " " "
6	" " " " "	45 " " " "
7	" " " " "	48 " " " "
8	Trail to El Cadico	40 " " " "
9	Trail to El Khalad	52 " " " "
10	Improve dug well El Dheer	48° 26'E - 5° 26'N
11	New dug well	48° 31'E - 5° 31'N
12	" " "	48° 30'E - 5° 36'N
13	" " "	48° 35'E - 5° 37'N
14	" " "	48° 35'E - 5° 53'N

Other sites will be located as needed to provide adequate water.

Monitoring Studies

Two monitoring sites have been established in the reserve area at key sites, one near Hobbio and one near El Cadur. These permanently located sampling sites will be used to evaluate trend on the reserve area over an extended period.

For evaluating the effects of rest on the forage vegetation of a management strip additional sampling of temporary sites will be done after each growing season for the first twelve years after management has been imposed. The District Range Personnel of Hobbio will carry out the sampling tasks on the Sugule reserve starting after the Deyr rains, 1983. Project Ecological Team Personnel will assist in these studies as feasible.

The additional samples will be taken using the same techniques as are required for the permanent monitoring sites but these will not be established as permanent sites. The areas to be sampled will be chosen, each sampling period, taking into account accessibility rainfall, use pattern of livestock and similarity of other parts of the unit.

The units will be evaluated at the end of each gu season to determine condition of the range. When condition throughout all the reserve becomes good probably by the gu season of year 2002, a shorter resting period covering only two growing seasons, approximately six months, may be initiated.

Monitoring studies may then be made after each cycle is completed; that is each four year. If a resting period of only two growing seasons, eg., a gu and a Deyr, is not sufficient to maintain plant vigor and good range condition the resting period should again be made to include two gu seasons.

The Socio-economic Team and the Non-Formal Education Team will monitor other livestock production factors within the reserve.

Agreement

A livestock and Range Association was organized for the Sugule Reserve in July 1983. The association includes all livestock operators (approximately 127) traditionally grazing their livestock within the reserve area as their Dagan. A committee of seven members were selected by the pastoralist to represent the association in management of the reserve negotiations with NRA and other associations. The committee has selected the Association Committee Chairman to represent them on the Hobbio District Committee. This latter committee includes the District Commissioner as Chairman the District Range Officer and other association representatives from the Hobbio District.

The association committee will work with their members to see that livestock do not graze the strips during the scheduled rest period. The association will provide the necessary guards to keep the livestock out of the resting areas, and to alert the committee and the District Range Officer when violations occur. When feasible Range guards will be compensated for their work with WFP rations. Approximately twelve guards will be required for the Sugule Reserve.

Maintenance of watering facilities and other improvements is the responsibility of the association. Technical assistance to the association will be provided by the District Range Officer.

The association committee will be responsible for allocation of numbers and types of livestock among the association members, and other temporary users of the reserve. The allocated numbers will be based on current number owned by members and other criteria to be defined. These original numbers will be the basis for any future adjustment of livestock numbers.

It is recommended that some reserve use fee established which will cover use of range and use of water. A significant part of such fee should be returned and be available to the association committee for operating the expenses of the reserve.

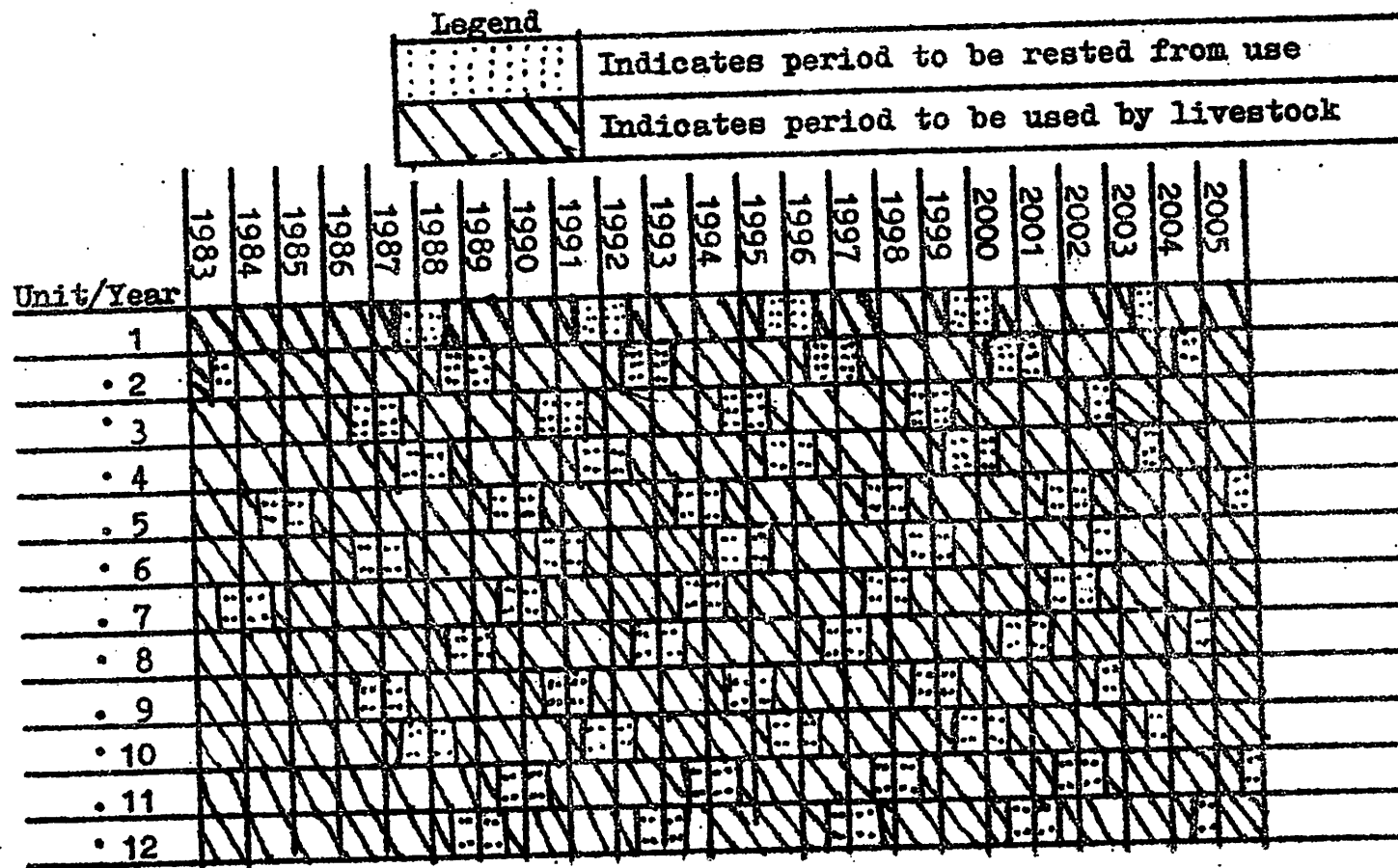


Figure 2.

Use-rest schedule for Sugule Reserve. Rest Period includes two gu seasons and one Der season, approximately from April through July of the following year until the year 2002. During the years 2003, 2004, and 2005 the resting period will include one gu and one Der season.