Ministry of Lands and Resettlement

RAPID SURVEY OF FARMS IN KAVANGO

Windhoek
August 2013

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Disclaimer

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The report was produced for the MLR by Dr. John Mendelsohn (RAISON).

Abbreviations

KfW	Kreditanstalt für Wiederaufbau
MLR	Ministry of Lands and Resettlement
SSCF	Small-Scale Commercial Farm
NDC	Namibia Development Corporation

1. Introduction

Information was collected during May, June and July 2013 for the Ministry of Lands & Resettlement's Accompanying Measure project for farms in Kavango.

Only incidental data were assembled for farms in the Hambukushu area because the MLR required most focus on farms in the other four traditional authority areas of Mbunza, Ukwangali, Shambyu and Gciriku. The most comprehensive information was provided for farms in the Shambyu area. Relatively complete information was obtained for the Ukwangali and Mbunza farms, while that for Gciriku was only moderately complete. Despite the missing information, the data are useful in reflecting circumstances which – in any event – are changing rapidly.

The report below provides a summary of the main findings, while all raw data are provided in a number of files which are listed in Appendix 1, which also describes their contents.

Figure 1: Farm sign - example

2. Sources of information and approach to the study

The main sources of information are listed in Appendix 2. In addition, much information was drawn from work over the past 15 years for the compilation of various books, and for land use planning, the compilation of the Road Map for the Accompanying Measure project, investigations on options for the management and use of farms in Kavango, and studies of land management by traditional authorities.

Most informants consulted between May and July 2013 were based in Kavango, which was visited on three occasions. One person from, and familiar with each of the traditional authority areas was engaged to collect data on each farm. These people were Mr Alfons Siyere (Shambyu), Mr Josef Kandjimi (Ukangali), Mr Dagbert Mukoya (Mbunza) and Mr Robert Mupiri (Gciriku). Additional data on farms in the Gciriku area were collected by MLR staff in Rundu.

3. Land uses

The following map shows the major categories and areas of land uses in Kavango. Two conservancies (Muduva Nyangana and George Mukoya) are also community forests. Most state land consists of townlands, quarantine farms, national parks, irrigation farms, the Alex Murandi Livestock Farm, the Hamoye State Forest and the Kavango Cattle Ranch.

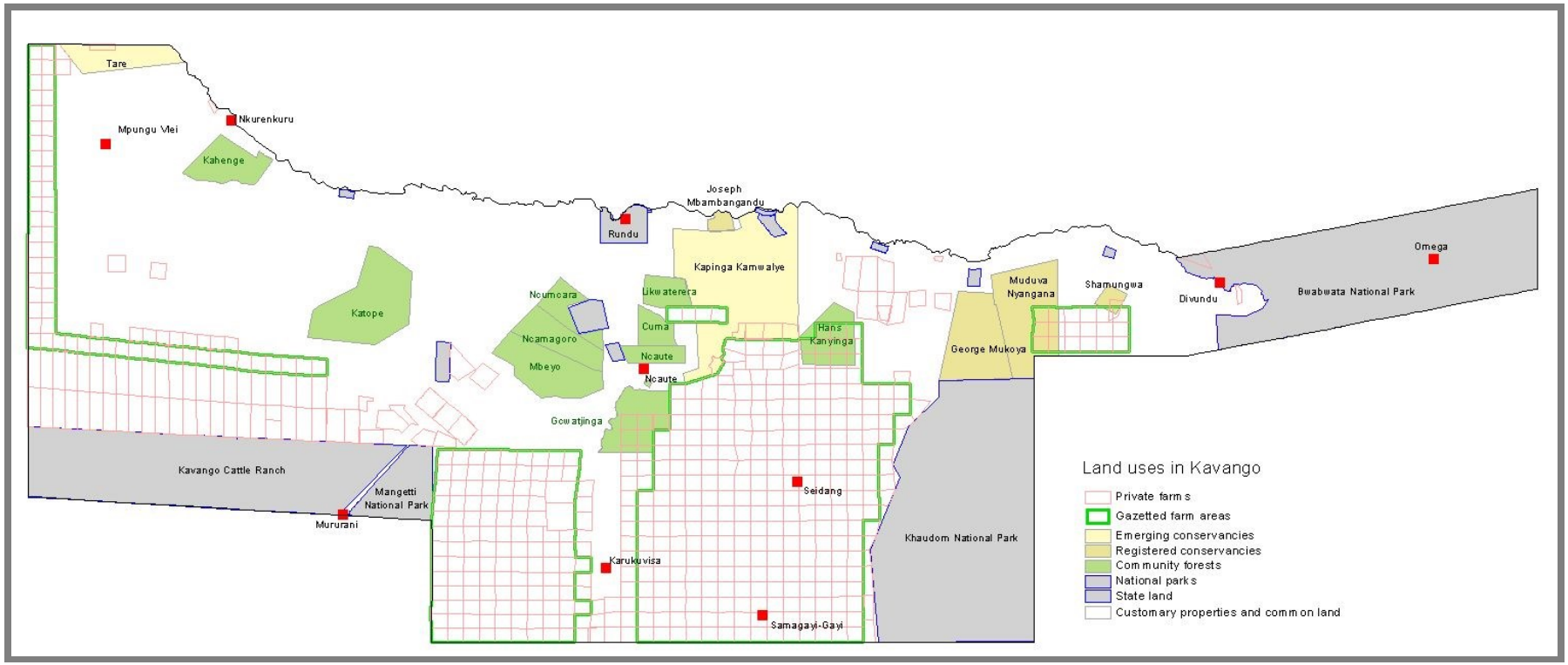

Figure 2: Land uses in Kavango

4. Basic statistics

As of mid-2013, about 622 farms have been allocated by traditional authorities, covering 45% of communal land in Kavango. Of the 622 farms:

- 610 farms have been mapped to varying degrees of accuracy, the source and level of accuracy being annotated in the field 'mapping source' in the GIS shape file of farm boundaries (*final Kavango farm shapes*).
- 4 farms are along the Okavango River and intended for irrigated farming.
- One farm (Mankupi) is used as a resettlement area for San people.
- Allocations for three farms in designated agricultural areas have been withdrawn by traditional authorities because the farms are occupied by substantial numbers of local residents.
- 470 farms are in designated agricultural areas; 94 (20%) of these farms do not have leaseholds.
- 152 farms are outside designated agricultural areas,110 (72%) of which do not have leaseholds
- 421 farms have leaseholds varying in duration between 25 and 99 years.

Of 372 farms for which both the names of the leaseholder and occupant were recorded, 320 (86%) farms were occupied by the leaseholder and 50 (14%) were occupied by different people.

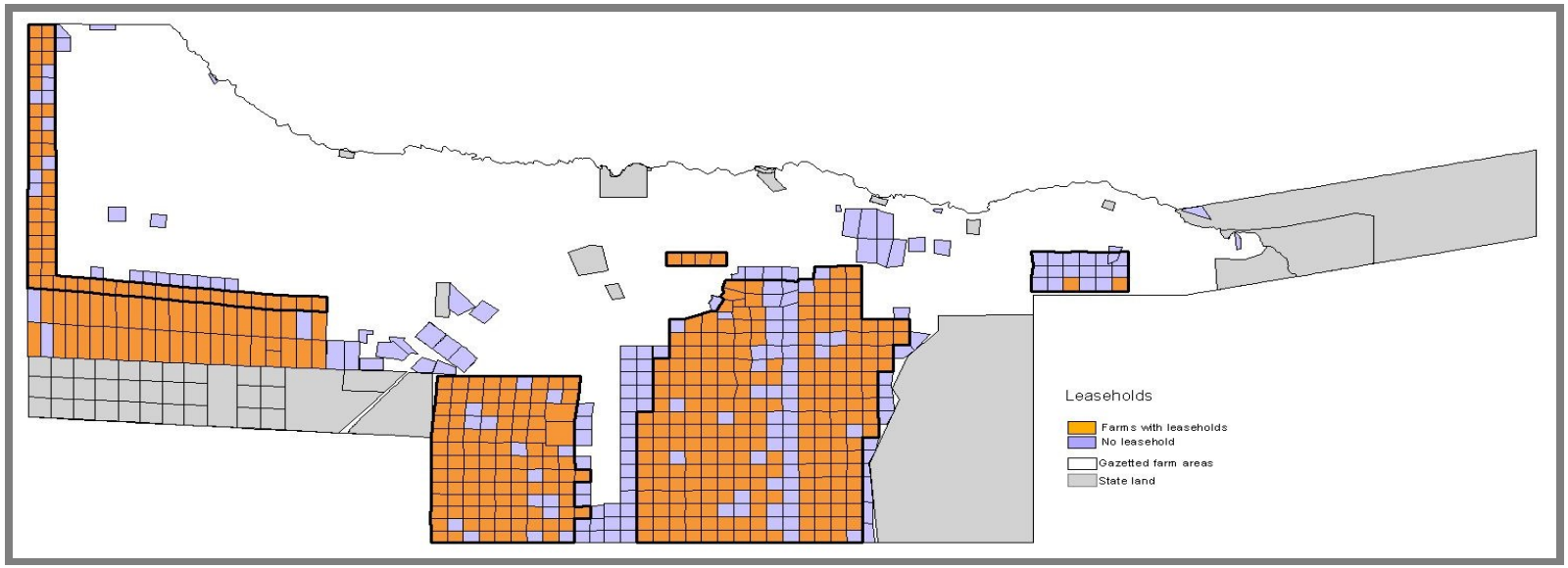

Figure 3: Leasehold farms in Kavango

5. Traditional authorities

The following table shows the number of farms in each traditional authority area, and inside and outside designated agricultural areas. Forty-two farms are in a zone over which allocation authority is disputed by the Gciriku and Shambyu traditional authorities. Most farms in this area are, however, occupied by owners to whom allocation has been given by the Shambyu Traditional Authority.

Table 1: Number of farms in each traditional area, and inside and outside designated agricultural areas

Traditional authority area	In designated zones	Outside designated zones	Total
Hambukushu	18	3	**21**
Ukwangali	60	82	**142**
Mbunza	115	11	**126**
Shambyu	139	30	**169**
Gciriku	98	24	**122**
Shambyu/Gciriku	40	2	**42**
Total	*470*	*152*	***622***

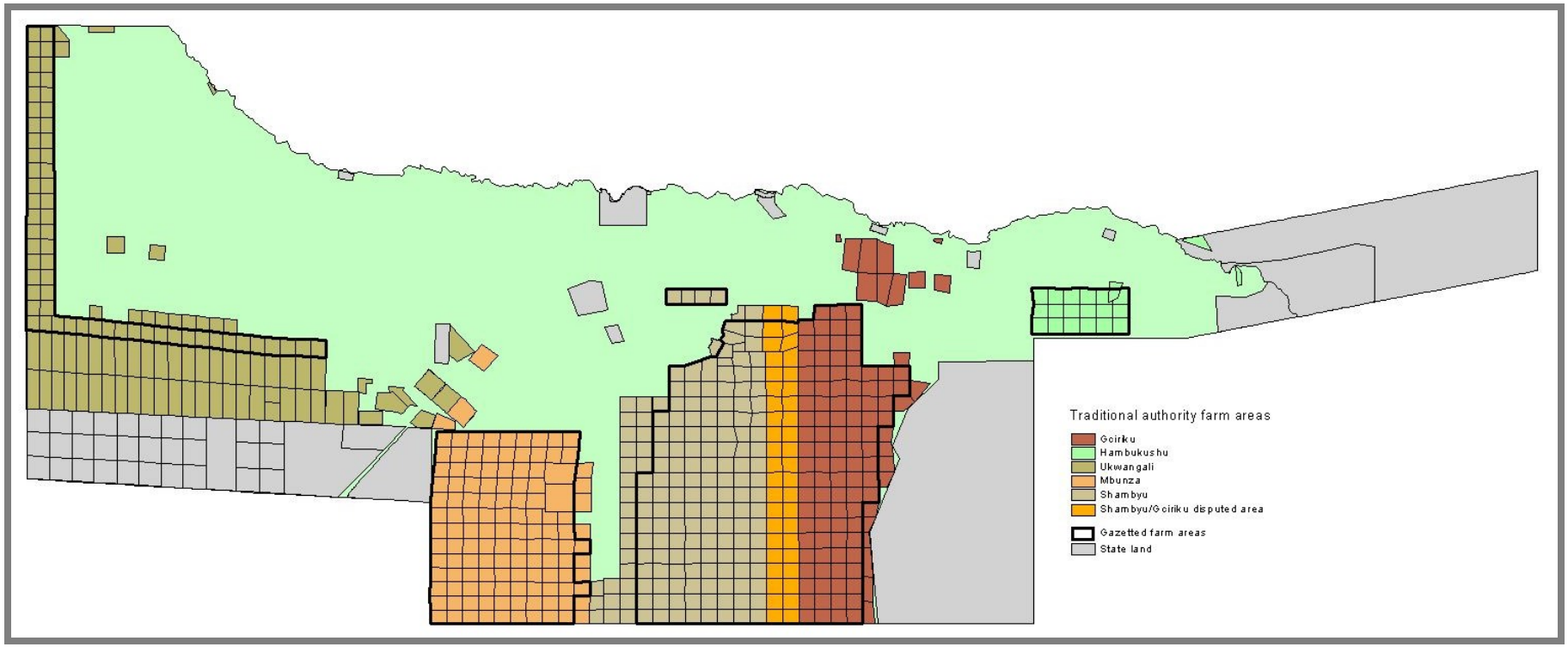

Figure 4: The distribution of the farms, traditional authority areas and designated agricultural zones are shown in this map

6. History of farm development

The following provides a summary of circumstances, processes and events that have led to the establishment of SSCF's in Kavango, which has been ongoing over several decades.

The first group of farms were established and allocated by the previous Administration between 1976 and 1985 in different traditional authority areas. Boreholes were installed and at least some of the farms were fenced. None of the farms were formally surveyed or have been registered as properties. Of the 36 farms shown in the 1992 map in Appendix 2, only about 20 were actually established.

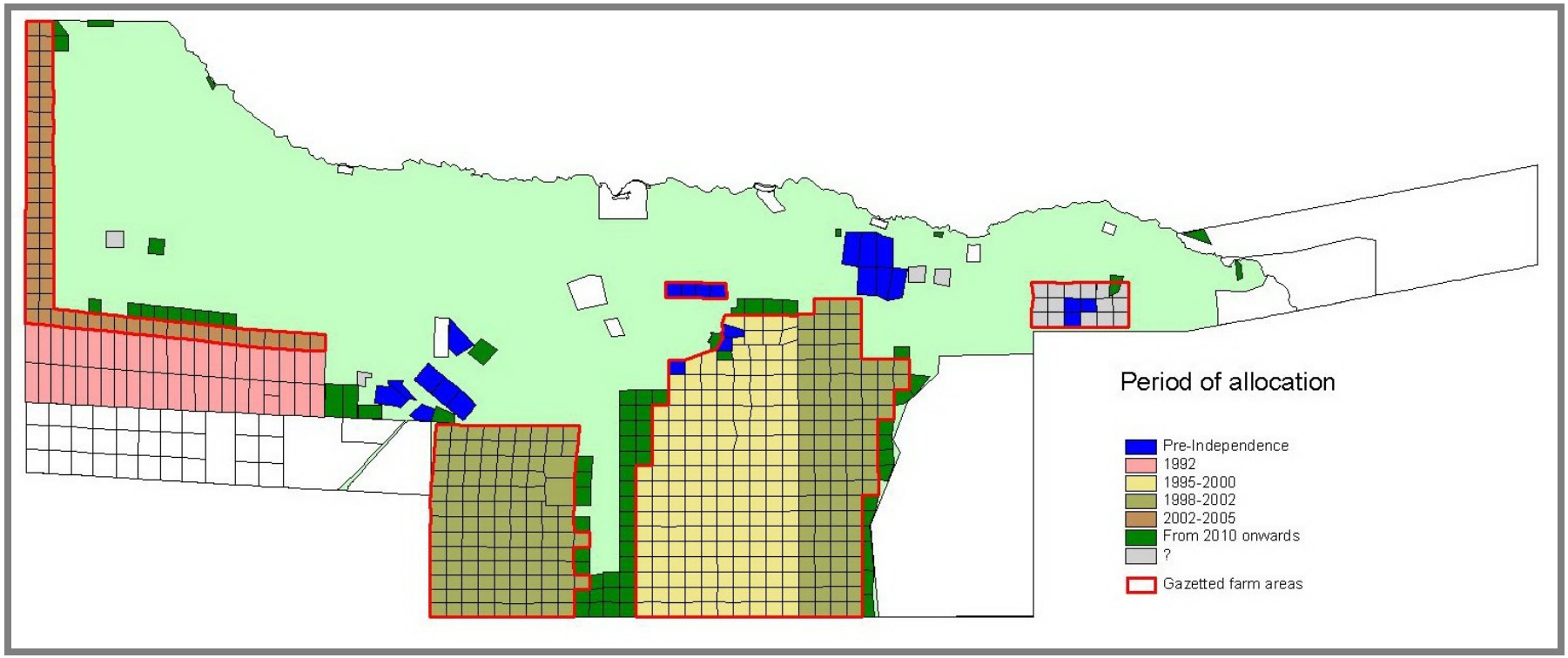

Figure 5: Period of farm allocation

When the Mangetti Kavango Cattle Ranch was planned in the late 1980s it was agreed with the Ukwangali Traditional Authority to establish the 44 Mangetti farms as compensation for getting the Traditional Authority's agreement to use the area for what is now the Namibia Development Corporation's (NDC) Kavango Cattle Ranch.[1] The 44 Mangetti farms were allocated between 1990 and 1995 and boreholes and associated water supply infrastructure were installed on approximately 14 of the farms.

It is frequently and widely reported that during a meeting in 1992 with Kavango chiefs, the then MLR Minister (Marco Hausiku) encouraged that more SSCFs be allocated, and most of the SSCFs allocated in recent years owe their existence to decisions made at that meeting. The Shambyu Traditional Authority went ahead and by 1995 had already planned most of farms shown in the map as having been allocated between 1995 and 2000. The development of equivalent farms followed in the Gciriku and Mbunza area between 1998 and 2002, and then in the Ukwangali area from 2002 to 2005. Much of the planning of the farms in the Shambyu, Gciriku, Mbunza and Ukwangali areas was done by Land & Farming Committees. These were later disbanded or, in the case of the Shambyu area, transformed into the Shakambu Farmers Association.

The large blocks in which these new farms have been allocated were designated as agricultural areas in Government Gazette No. 3479, August 2005 for the Shambyu area and in Government Gazette No. 3878, July 2007 for the Hambukushu, Mbunza, Ukwangali and Gciriku areas. The farms were surveyed by the MLR at the same time and the first leaseholds were issued in 2005.

Over the past three years, at least 86 new farms have been planned and allocated by the traditional authorities, or acquired less formally by individuals. There have also been many recent changes to the allocation of farms established earlier as a result of people swapping farms between themselves and also the death of people to whom the farms were originally allocated. Such changes are seen by comparing the names of leaseholder over the farms and their current occupants in the file '*final table of farm information.xls*'.

In parallel with the planning and allocation of farms by the previous Administration and traditional authorities over the past decades, at least dozens of local residents established their own cattle posts south of the Okavango River, and many of these cattle posts continue to be called 'farms', for example Kutjimpuka Farm, Mauturo Farm, Kanano Farm, Konkenda Farm, and Nyera Nzinze Farm. They differ in several respects from the demarcated, allocated farms on which this report focuses. For instance, few have established boundaries, none have registered land rights, and all were established by local residents with substantial holdings of cattle for which they required grazing. Few of these farmers have been offered demarcated formal farms.

[1] It was also agreed that the then Bantu Investment Corporation (BIC) would pay the Ukwangali Traditional Authority an annual lease fee of R30,000 for the use of the land for Cattle Ranch. The payment was discontinued after Independence.

7. Residents in farm areas

The majority of SSCF owners live in Rundu or elsewhere in Namibia, and only very few are known to live on their SSCF units. Farmers were asked how many families were resident on their farms, as given in the field '*No of people*' in the table '*Final table of farm information.xls*'. A total of 1,786 people were thus reported on the farms. The distribution of farms with these people and the households mapped in '*Houses in farms*' are shown here:

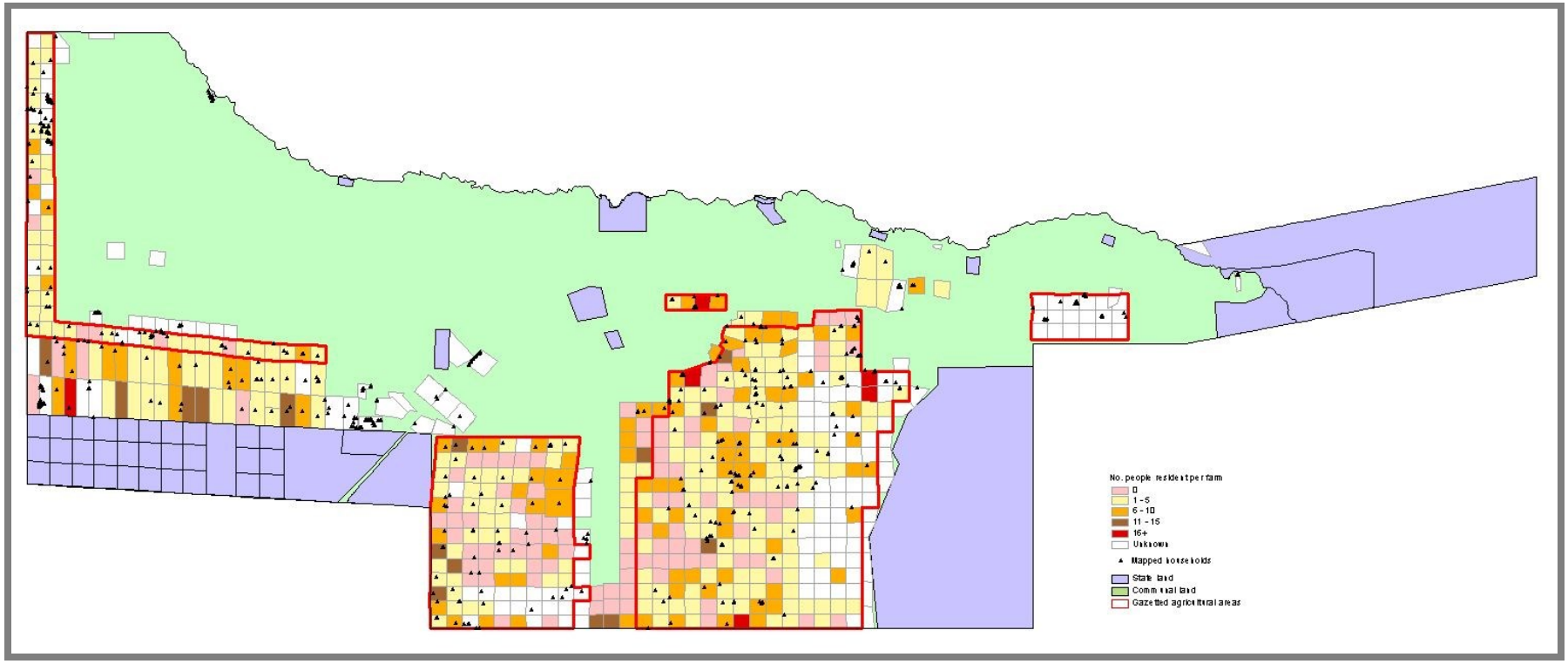

Figure 6: Number of people resident in the Kavango farm areas

8. Farm sizes per occupant

The following table provides a summary of farm areas used by each *occupant*, since 12 people have leaseholds over more than one surveyed farm. Most of these farms are in Gciriku area.

Table 2: Farm area size used by occupant

Area (hectares)	Number	Percentage
More than 7,500	3	1%
5,000-7,500	58	12%
3,000-5,000	21	5%
2,000-3,000	382	79%
Less than 1,000	15	3%

At least 32 other farms that are adjacent to each other are run jointly by close family members to form effectively larger farm units. These are not included in the table above.

9. Ages and gender

Among 337 farm owners there were 81 (22%) women and 294 (78%) men. Forty-one percent of the farm owners are less than 50 years old, another 41% being between 51 and 70 years, and 8% being older than 70.

Table 3: Age and gender

Age group	Number	Percentage
Older than 70	32	8%
61-70	71	19%
51-60	122	32%
41-50	100	27%
Less than 41	52	14%
TOTAL	377	100%

10.Provision of water

No information was available on the supply of water on 131 farms, but it can be assumed that most of them do not have water. Of the remaining 489 farms, 51% have no water, 27% have water from boreholes that have been privately installed, 21% have water from boreholes provided by government and donors that is either for the exclusive use of a farm (19%) or shared between two farms (2%), and 6 farms have two or more boreholes provided by government and the farm owners. Twenty government boreholes with associated pumps and water tanks established in the early 1990s as water supplies for emergency grazing during drought have been enclosed and taken over by farmers in the Mbunza area.

Table 4: Provision of water

Source	Number	Percentage
None	250	51%
Private	132	27%
GRN	92	19%
GRN and private	6	1%
Shared	9	2%
TOTAL	**489**	**100%**
Unknown	131	21%

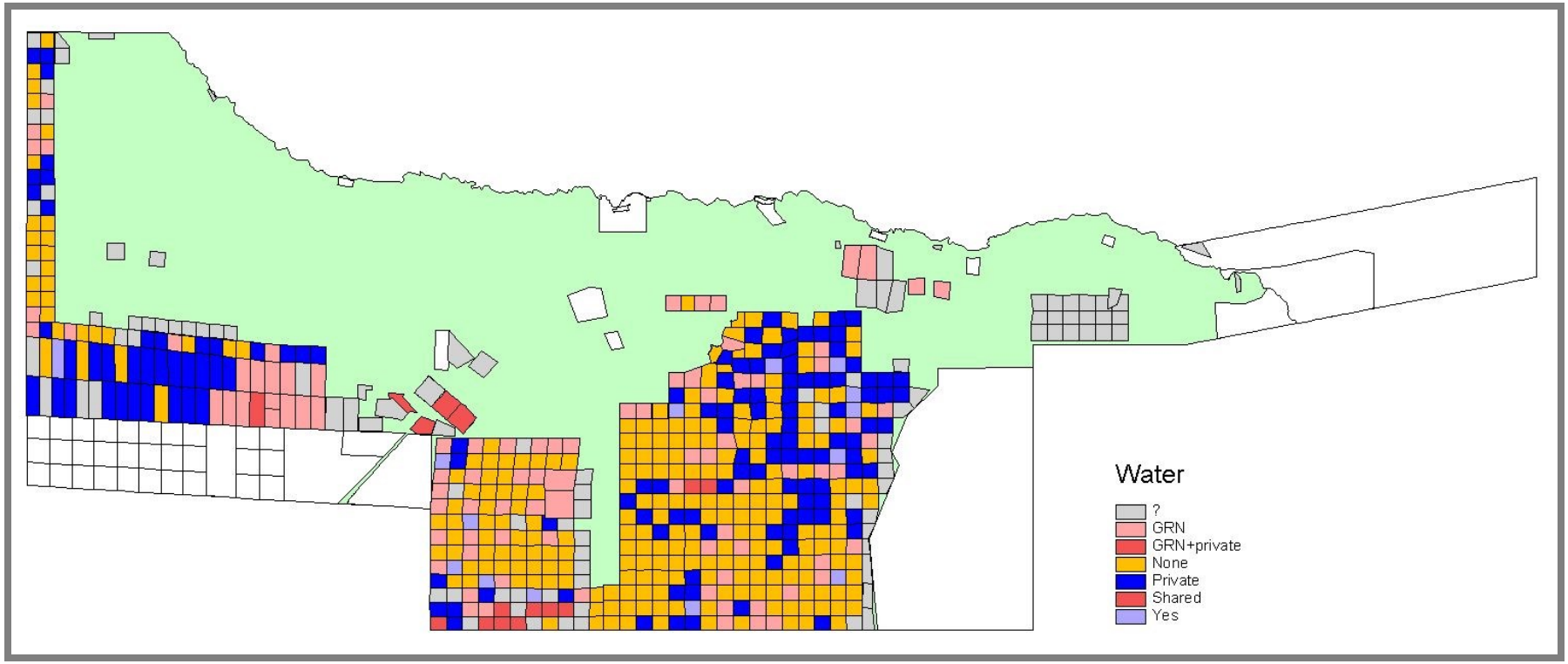

Figure 7: Water accessibility and source

11.Fencing

Of 481 farms for which information on perimeter fencing was available, more than two-thirds (69%) are not fenced. Another 29% have their boundaries fully fenced, and 2% of the farms are partially fenced. The great majority of fenced farms were fenced by their owners.

Table 5: Fencing perimeters

Type	Number	Percentage
Fenced	140	29%
Not fenced	333	69%
Partly fenced	8	2%
TOTAL	**481**	**100%**
Unknown	141	23%

Figure 8: Fencing perimeters within the farms

12.Road network

The map below shows the existing network of official, those that are planned into the farming areas, and major access tracks into the farming areas. Many other smaller tracks exist but have not been mapped. The planned roads must be gazetted and proclaimed after they will be build when priorities and available of fund allow.

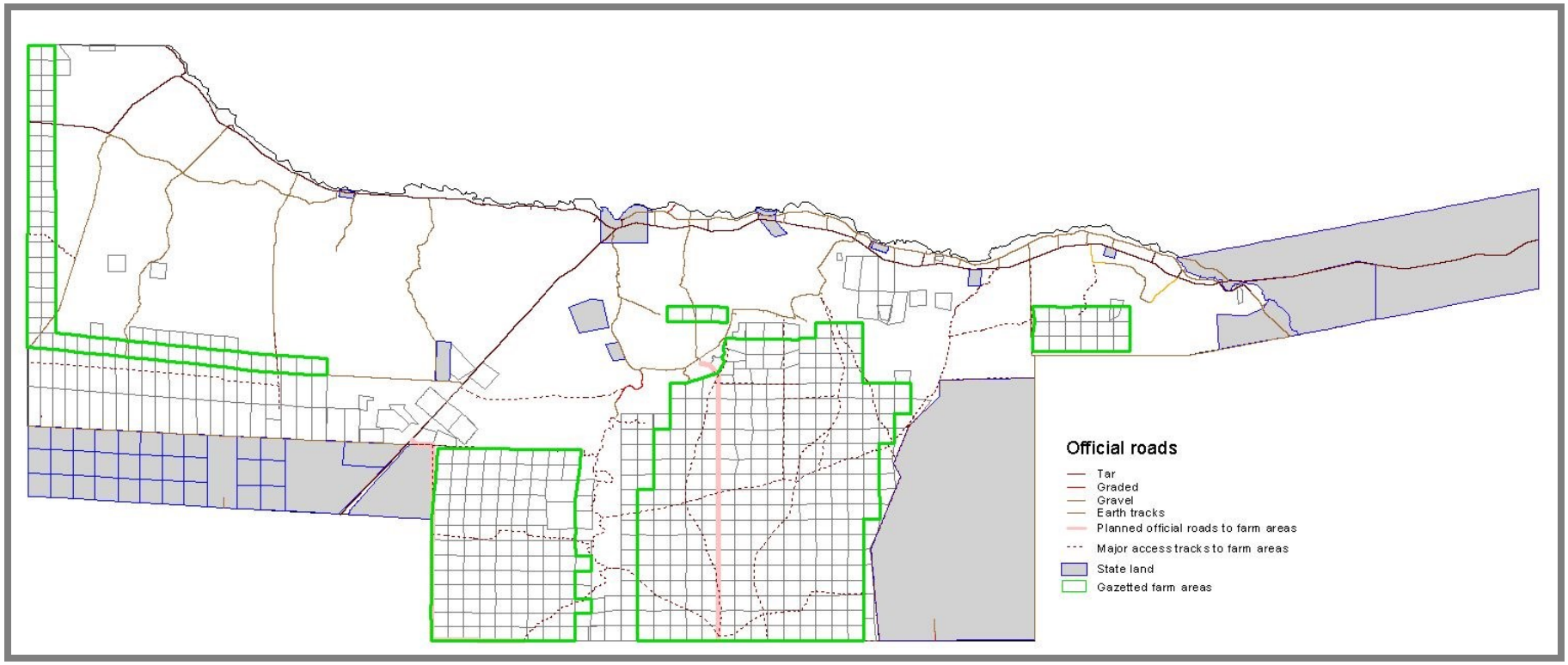

Figure 9: Road network in Kavango

13. Livestock ownership and sales

A total of 32,003 cattle were reported as being owned on 458 farms in 2012; and a total of 35,754 on 434 farms in 2013.

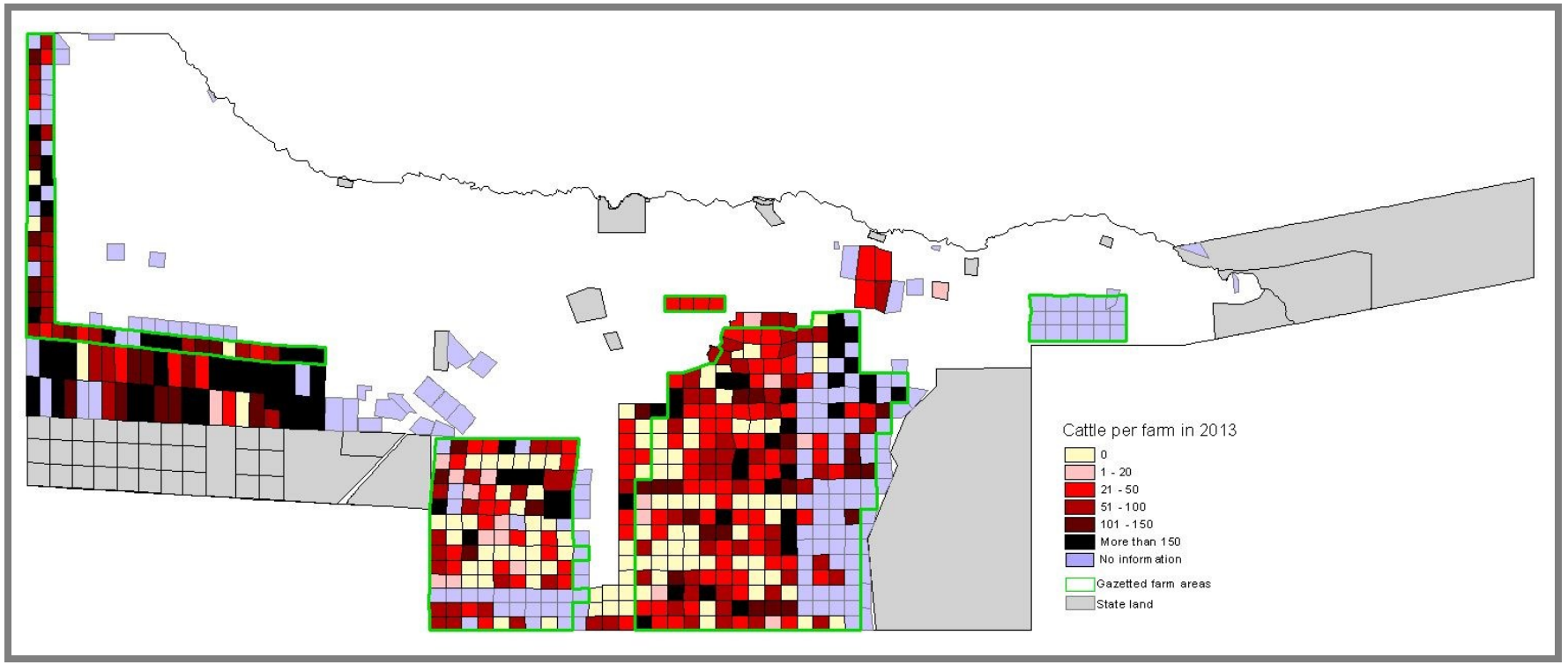

Figure 10: Number of cattle owned per farm

Of 270 farmers with cattle and who also reported sales figures, 114 sold no cattle. In total, off-take across the region was 6% in 2012. The highest off-take was in the Ukwangali area and the lowest in Mbunza.

Table 6: Cattle sales in 2012

AREA	Cattle in 2012	Cattle sold in 2012	Percentage off-take
Gciriku	5,789	302	**5%**
Shambyu	10,273	445	**4%**
Mbunza	4,388	105	**2%**
Ukwangali	12,635	1,165	**9%**
TOTAL	**33,085**	**2,017**	**6%**

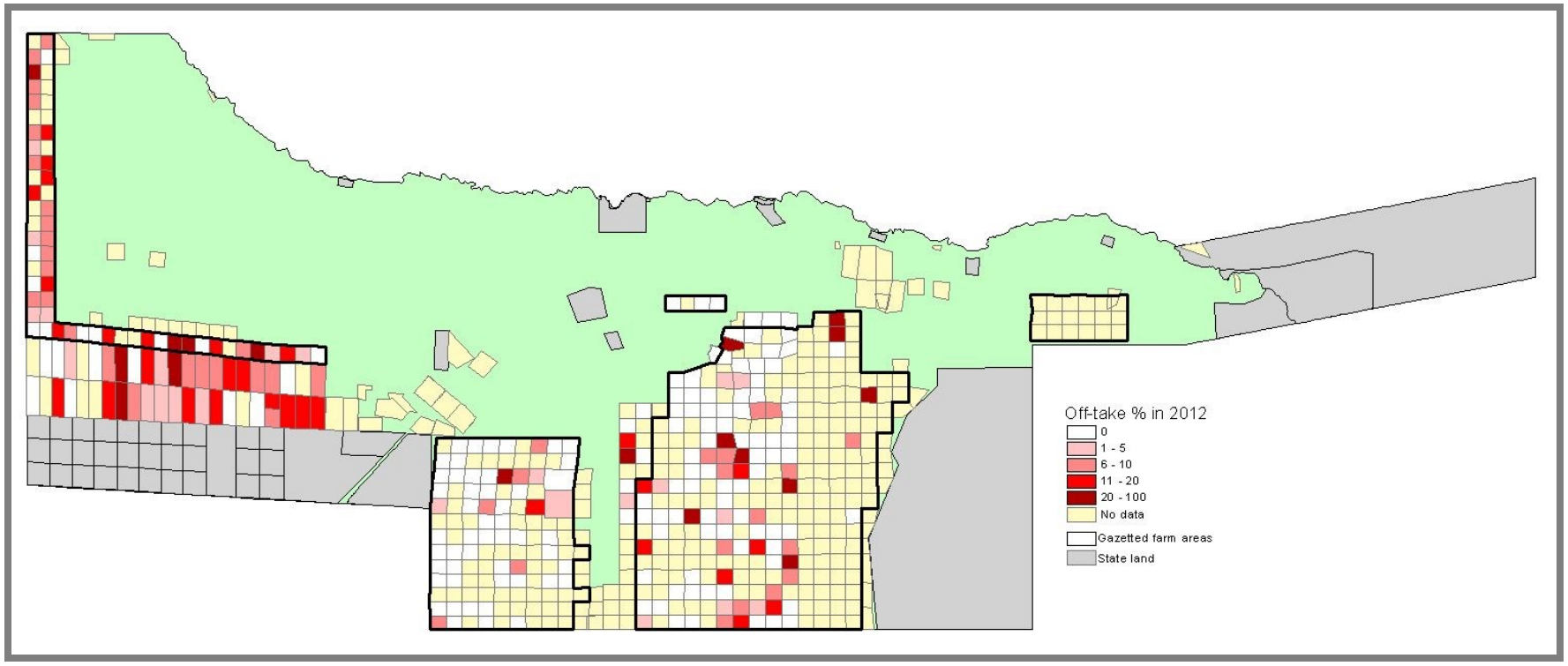

Figure 11: Off-take percentage performed in 2013

Compared with many areas along the Okavango River, cattle densities (or stocking rates) are low in most of the farm areas:

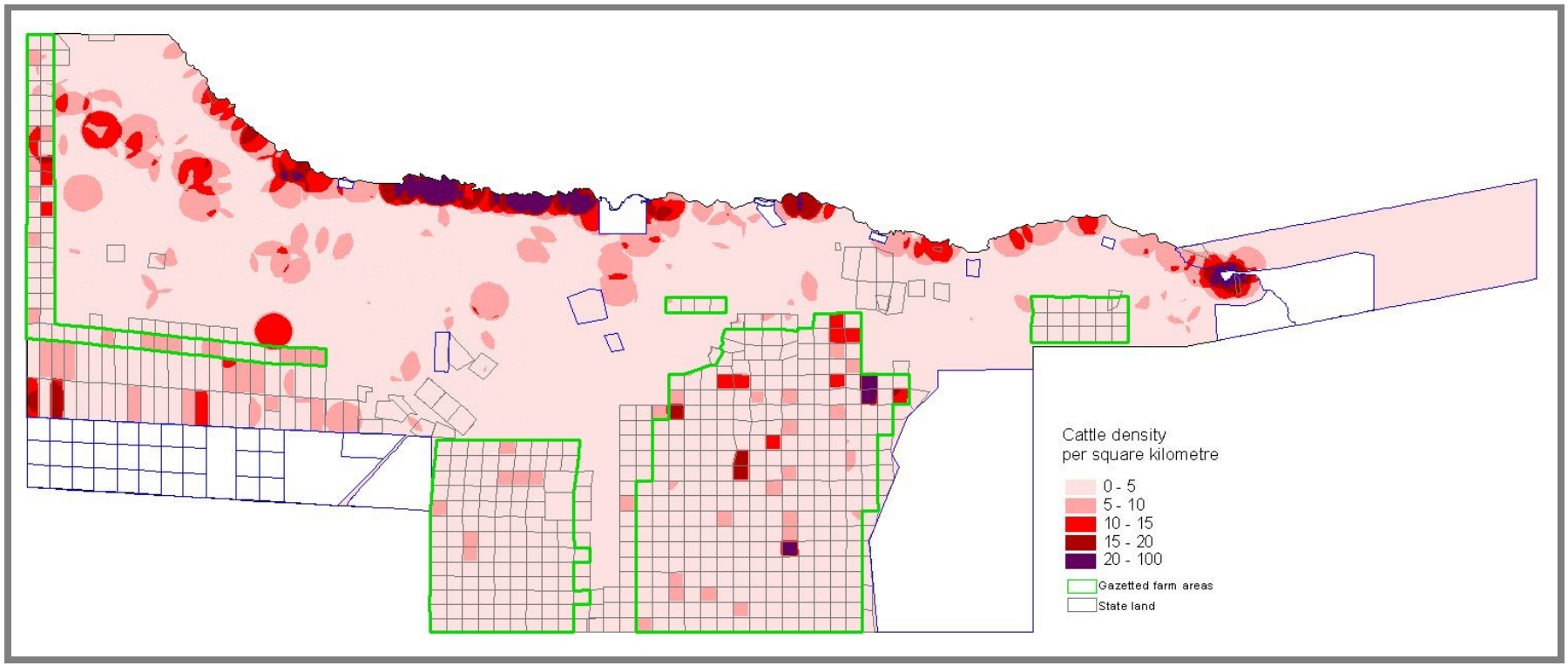

Figure 12: Cattle density per square kilometers

Goats: a total of 11,443 goats were reported in 2012 and 13,369 goats in 2013. Two farms also reported having small numbers of sheep.

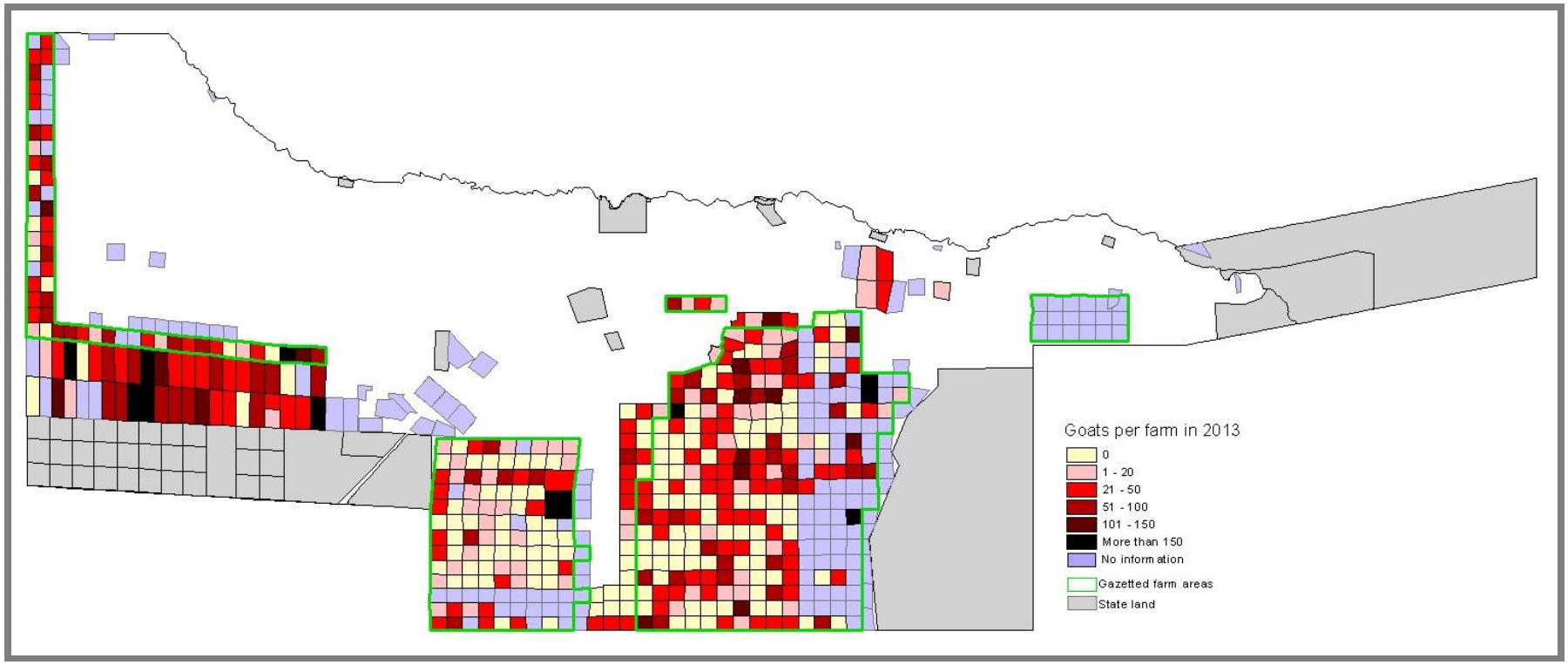

Figure 13: Number of goats per farm in 2013

14.Fire and wildlife

Large areas of Kavango and areas covered by farms burn each year. Most of the fires occur in July, August and September.
The map below shows the number of years that different areas burnt between 1989 and 2010.[2]

Several conclusions can be made regarding fires. First, while burning is widespread and frequent in Kavango, some areas burn much more often than others. Those that burn seldom are in areas where little grass fuel is available, in particular heavily grazed areas along the Okavango River and the road between Mururani and Rundu. There is also little grass and burning in the Kavango Cattle Ranch which has become densely covered by bush.

Within the area of large farm development, fires are particularly prevalent in a zone that covers many Gciriku and Shambyu farms. Indeed, farms in that zone probably lost much of their grazing to fire during most years between 1989 and 2010.

A reduction in burning, especially of intense hot fires will lead to bush encroachment and a loss of grazing if rangelands are not well managed, as has happened on the Kavango Cattle Ranch and on many commercial, freehold farms elsewhere in Namibia.

The only information on wildlife conflicts in the farming areas is anecdotal, from which a number of general conclusions can be drawn. Most conflicts occur west of Khaudom National Park, north of the Kavango Cattle Ranch and east of the Mangetti National Park. Damage caused by elephants to water installations occurs and is likely to become more frequent as more boreholes and water tanks and troughs are installed. Lions and Spotted Hyenas are present in Khaudom as well as endangered African Wild Dogs, which also occur in small numbers on farms in the Mangetti area. Leopards are widespread in small numbers.

[2] The data in the map were compiled from analyses of satellite imagery by Sally Archibald and Alex Verlinden.

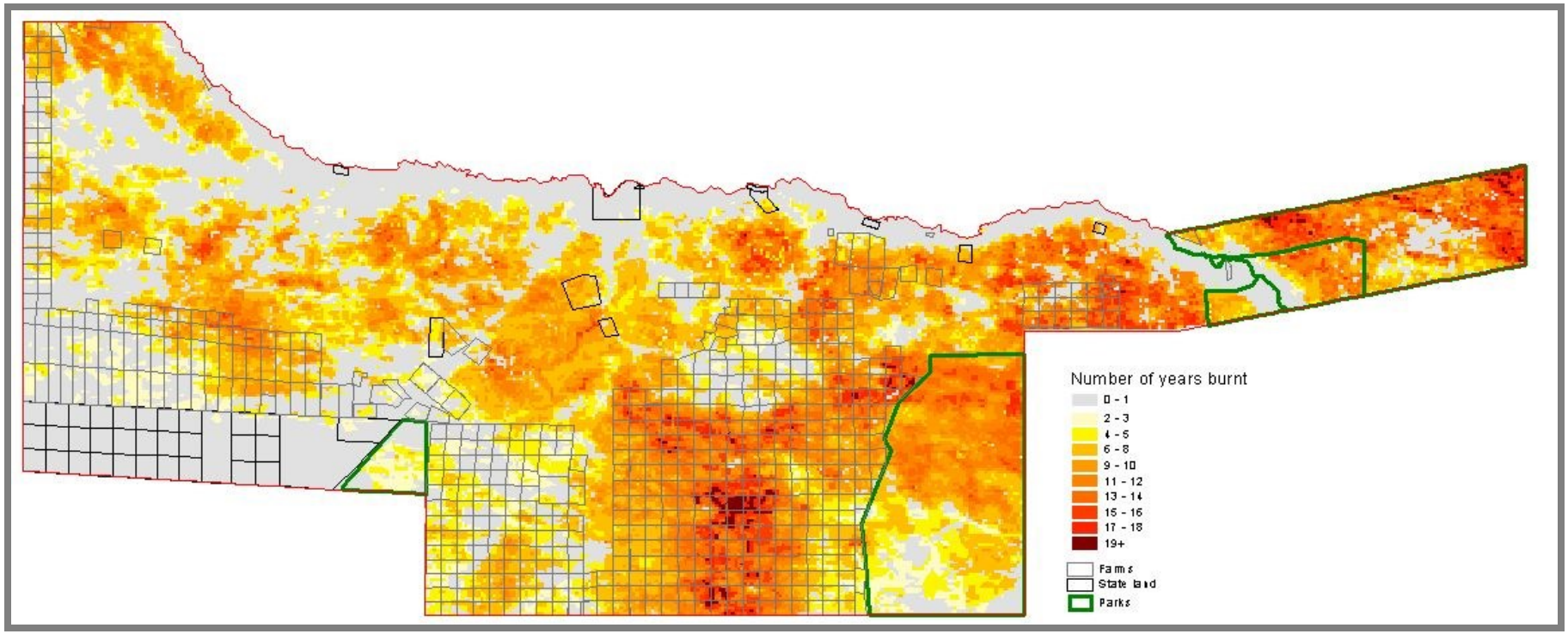

Figure 14: Number of years burnt in different areas between 1989 and 2010

15. Appendix 1. List of data files compiled during this survey

Final Kavango farm shapes - ArcView shape file

FARM_NUM	Unique farm number used to join this file with the table of farm information (*Final table of farm information)*
AREA	Traditional authority area
ZONE	Inside or outside designated agricultural area
MAPPING_SO	Source of mapped boundaries

Final table of farm information - Excel table

AREA	Traditional authority area
ZONE	Inside or outside designated agricultural area
YEAR_OF_AL	Period of allocation
FARM_NO	Unique farm number used to join this table with the ArcView file of farm boundaries (final Kavango farm shapes)
FARM SIZE	Area calculated from the boundaries in final Kavango farm shapes
FARM_NAME	Name of farm provided by the farm owner
LEASE HOLDER	Name of the leaseholder
OCCUPANT	Name of the occupant or user of the farm
BOREHOLE	Information on the presence or absence of boreholes and who funded the borehole
PERIMETER_FENCED	Information on whether the farm has a perimeter fence or not
CATTLE_2012	Number of cattle on the farm in 2012 from information supplied by the farm owner or Veterinary Services
GOATS_2012	Number of goats on the farm in 2012 from information supplied by the farm owner or Veterinary Services
CATTLE_SOLD	Number of cattle sold from the farm in 2012 as supplied by the farm owner
cattle 2013	Number of cattle on the farm in 2013 as supplied by the farm owner
GOATS_2013	Number of goats on the farm in 2013 as supplied by the farm owner

NO__PEOPLE	Number of people living on the farm in 2013 as supplied by the farm owner
HECTARES__	Number of hectares cultivated in 2013 as supplied by the farm owner
COMMENTS	Various comments about lease applications and allocations
SHARED_1	The farm number of any neighbouring farm with which the farm is shared
APPLICANTI	The name of the lease applicant as compiled previously by the MLR in Rundu and Martin Muller
SEX	The sex of the lease applicant as compiled previously by the MLR in Rundu and Martin Muller
POSTALADRE	The postal address of the lease applicant as compiled previously by the MLR in Rundu and Martin Muller
POSTADRCIT	The name city used in the postal address of the lease applicant as compiled previously by the MLR in Rundu and Martin Muller
RESIDENTIA	The residential address of the lease applicant as compiled previously by the MLR in Rundu and Martin Muller
CERTIFICAT	The number of the lease certificate for the farm compiled previously by the MLR in Rundu and Martin Muller
PERIOD	The number of years for lease as compiled previously by the MLR in Rundu and Martin Muller
DATEAWARDE	The date on which the lease was awarded as compiled previously by the MLR in Rundu and Martin Muller

All crushpen co-ordinates – Excel table; consists of three sheets:

Sheet 1. 2012 crushpens: crushpens used during the 2012 vaccination campaign that could be placed geographically

AREA	Veterinary district within Kavango
CRUSHPEN_Name	Name used by Veterinary Services
cattle 2012	Number of cattle recorded in 2012
goats 2012	Number of goats recorded in 2012
Map name	Name used by Veterinary Services but in lower case for map annotation

Source of co-ordinates	Source of co-ordinates
X_COORD	Geographic longitude
Y_COORD	Geographic latitude

Sheet 2. No co-ordinates: crushpens used during the 2012 vaccination campaign that could not be placed geographically

Area	Veterinary district within Kavango
CRUSHPEN NAME	Name used by Veterinary Services
Farm_name	Possible name of farm
Farm_owner	Possible farm owner
Notes	Notes

Sheet 3. Other crushpen coordinates: crushpens and their locations mapped by Veterinary Services using GPS and from other sources

AREA	Veterinary district within Kavango
CRUSHPEN_NAME	Name used by Veterinary Services
COMMENT	Source of co-ordinates
X_COORD	Geographic longitude
Y_COORD	Geographic latitude

Kavango borehole and fencing data for SSCFs. Excel file of information from the Department of Water Affairs (DWA) database and from the MLR on recent borehole and fencing development. There are three sheets:

Sheet 1: Data from DWA database

SOURCE	Source of data
FARM_NUM	Unique farm number used to join this table with other data
BHNO	DWA code number
DRILL_DATE	Date of drilling
LAT	Geographic latitude
LONG	Geographic longitude
COLLAR	Collar depth in metres
DEPTH	Depth of borehole
DIAM	Diameter of hole
YIELD	Yield in cubic metres per hour
LEVEL	Level of water
STRKE	Strike level of water

TDS	Total dissolved solids in milligrams per litre
SO4	Sulphates in milligrams per litre
NO3	Nitrates in milligrams per litre
F	Flourides in milligrams per litre

Sheet 2: GRN-KfW BOREHOLE INFORMATION

Source	Source of information
Name	Name of beneficiary
Farm number	Unique farm number used to join this table with other data
Latitude	Geographic latitude
Longitude	Geographic longitude
Borehole information	Nature of borehole installation

Sheet 3: Fence information

Source	Source of information
Name	Name of beneficiary
Farm number	Unique farm number used to join this table with other data
Fencing development	Nature of fencing

Kavango boreholes from GRN. ArcView shape file of locations of all boreholes in the Department of Water Affairs (DWA) database and from a survey by Lux Development in 1995

Kavango roads and tracks. ArcView shape file of official roads compiled for the Roads Authority by GeoCarta, and major unofficial roads from various sources. The field 'Official" indicates if the polyline is for an official road (Yes) or not (No).

Houses in farms. ArcView shape file of points mapped as households by the Namibia Statistics Agency (NSA) in 2010 and by RAISON during an aerial survey in 2008. The average household size recorded by the NSA was 7 people.

Kavango state land. ArcView shape file of boundaries of townlands, state farms, national parks and one state forest.

Kavango conservancies and community forests ArcView shape file of boundaries of community forests and conservancies with fields indicating if they are registered or not ('Status') and the month and year they were gazetted ('month-reg' and year_reg').

Fire frequency from 1989-2010. ArcView shape file with a field indicating the number of years that each grid cell of 1 square kilometre burnt between 1989 and 2010 (inclusive)

Cattle density 2012. ArcView shape file of density as the number of cattle per square kilometre, as estimated in 2102 from figures collected from the owners of large farms and from the vaccination campaign figures of the Directorate of Veterinary Services. Densities on the farms were estimated by dividing the number of animals by the farm size, while the vaccination numbers recorded at crushpens as points were used to estimate densities spread around 10 kilometres from each crushpen using a kernel method in ArcView's Spatial Analyst extension.

Goat density 2012. ArcView shape file of density as the number of goats per square kilometre, as estimated in 2102 from figures collected from the owners of large farms and from the vaccination campaign figures of the Directorate of Veterinary Services. Densities on the farms were estimated by dividing the number of animals by the farm size, while the vaccination numbers recorded at crushpens as points were used to estimate densities spread around 10 kilometres from each crushpen using a kernel method in ArcView's Spatial Analyst extension.

16. Appendix 2. Major sources of information used during this study.

People interviewed

Alfons Siyere (farmer and chairman of Shakambu Farmers' Association)
Toini Angola (MLR planner, Rundu)

Apollo Kanyinga (MLR deputy director and farmer)
Alex Endunde (farmer)

Bertus Kruger (Agra consultant)

Staff of Rural Water Supply in Rundu: Mr Neromba and Mr Moses Mpareke (also a farmer)
Thomas Ngoma (farmer and ex-Chairman of Land Board)
Josef Kandjimi (farmer and chairman of Ukwangali Traditional Authority Council)
Wynand and Pieter Peypers (farmers)

Robert Mupiri (farmer)

Leevi Kamalanga (farmer)

Terence Mutaba (Roads Authority, Rundu)

Piet Horn (retired official of Ministry of Agriculture)
John Mutorwa (farmer and Minister of Agriculture, Water & Forestry)

Mattias Metz (GIS technician)

Daleen Brand (planner)

Ignatius Shixwameni (farmer and Member of Parliament)
Martin Muller (ex-consultant to MLR)

Alfred Sikopo (MLR director)

Hannes von Wiellich (farmer)

Heinrich Pielok (CBRLM team leader)

Uzo Okafor (Surveyor General, MLR)

Dana Beukes (Deeds Registrar, MLR)

Herman Strydom (land surveyor)

Maarit Thiem (Legal Assistance Centre)

Lara Diez (Nyae Naye Development Foundation)

Dorothy Wamunyima (consultant)

Anna Marais (Veterinary Services, Windhoek)

Sources of digital data

Sally Archibald (CSIR, South Africa)
Directorate of Rural Water Supply, Windhoek
Namibia Statistics Agency, Windhoek
MLR (Rundu)

GeoCarta, Windhoek

Alex Verlindern (Polytechnic)

Rundu Veterinary Services

RAISON, Windhoek

Environmental Information Services (the-eis.com)

17.Appendix 3. Scanned map of farms that had been planned for private use by 1992.

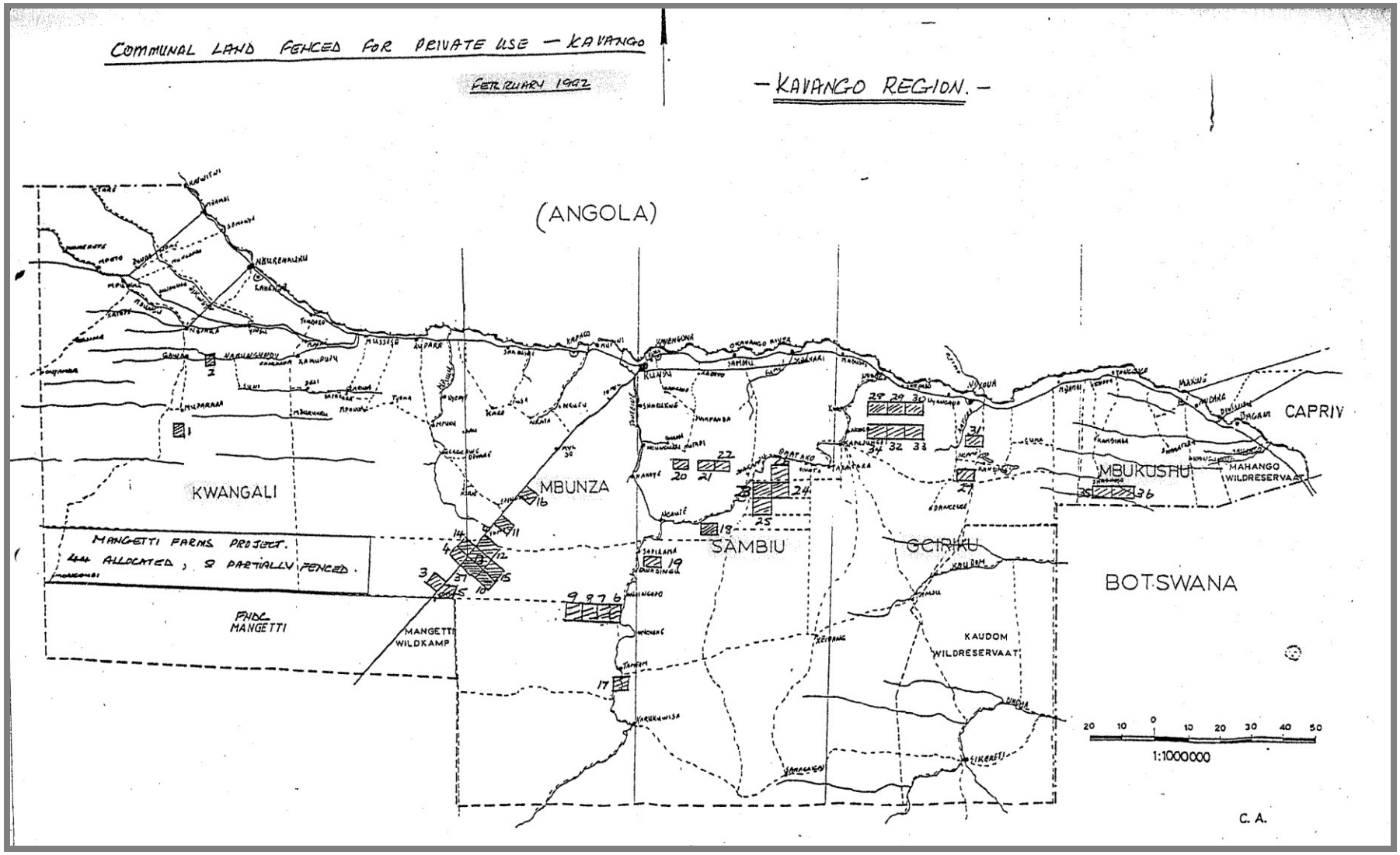

Figure 15: Farms that has been planned for private use by 1992 (The map was produced by the Rundu office of the then Ministry of Agriculture.)