

**Photo Guide to estimate Forage Availability
in Namibian Rangelands
Rukwangali Version**

Mugavi gomunene
goyimaliva



Vakwatesiko vamwe hena woyimaliva



Vatulisi moyirugana



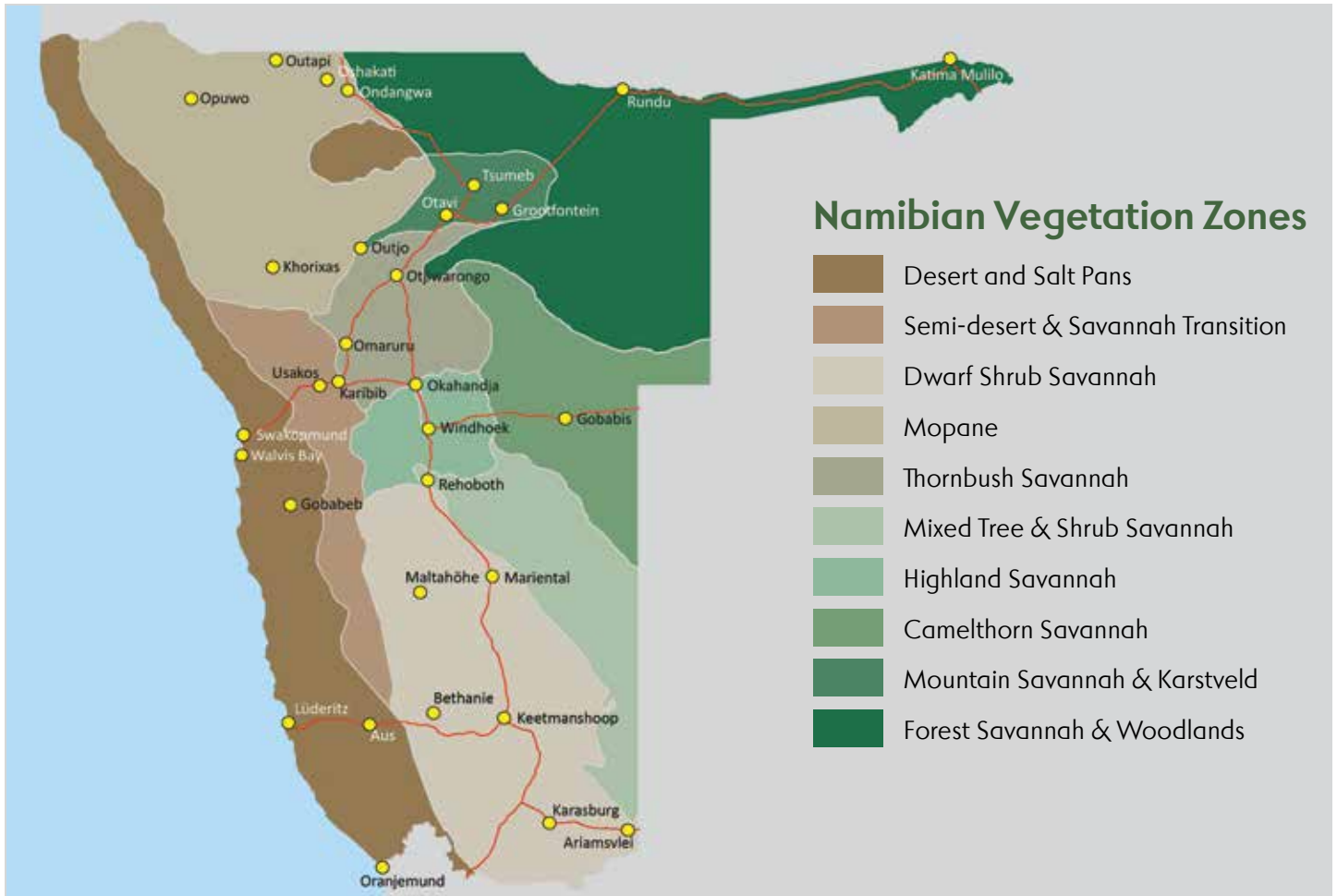
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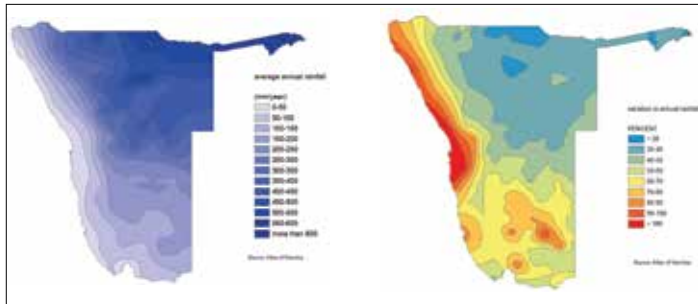


Namibian Vegetation Zones

- Desert and Salt Pans
- Semi-desert & Savannah Transition
- Dwarf Shrub Savannah
- Mopane
- Thornbush Savannah
- Mixed Tree & Shrub Savannah
- Highland Savannah
- Camelthorn Savannah
- Mountain Savannah & Karstveld
- Forest Savannah & Woodlands

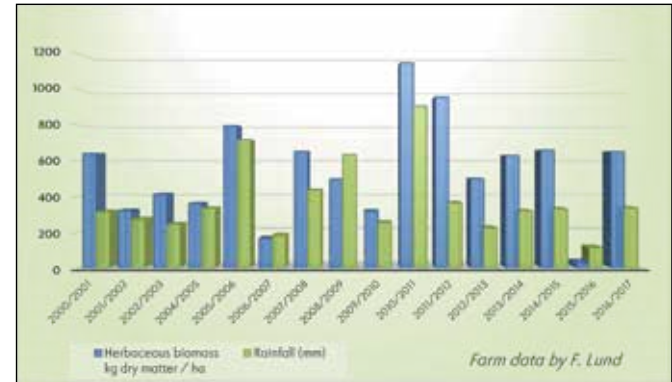
Ntundiliro

Projeka ndi sirugana “soKukulika noKukonakona muzangu gevhu lyomalisiro nongendeseso zerondoro lyokulivinduka kovanafarama woyimuna moNamibia” kwa zi tulisire negano lyokuwatesa ko egendeso lyevhu lyomalisiro pokugava koruha oru yiruganeso yokunomenesesa evhu lyomalisiro va hamesera koukonentu wokunomena pasinano pangendeseso zokukonakona evhu ndi epya lyongandi. Projeka kwa gwene yimaliva kupitira mombatero zoyimaliva zonoperesenda 80% zokutunda kelikwamo lyoumurongo lyo- EDF ava tambura asi “Etamburoko lyElisinto lyoMukarompemo noMbatero, rambanga ko noYikwamarutjeno”, nombatero hena zopayimaliva zokutunda koAgribank, nekElidikwamo lyo-GEF lyoNombaterogona doYimaliva ntan Agra Ltd. Mbyukiso ezi zoMafano zoKungungunika Ekaropo lyoMalisiro goYimuna pofarama ndi evega lyokulisira kuna kara simwe soyitundwamo yoprojeka ezi.



Efano 1: Malisiyo gomurokwa moNamibia

Namibia kuna kara sirongo sorukukutu unene moHarufamburundu zaAfrika sa kara nomalisigo gokuzeruka unene gomurokwa. Mefano 1 kalita zina kara korwarumoho kuna kulikida unakatji womurokwa ogu gwa hwa kutunda kombindakanotokero kuza komuzogopumezuva, siruwo oso kalita zina kara korwarulyo kuna kulikida malisiyo gomurokwa moyinema yomurokwa. Kuna kuyindindira asi, with climate ckumwe nelisinto lyomukarompemo, malisiyo aga naga monekerera unene.

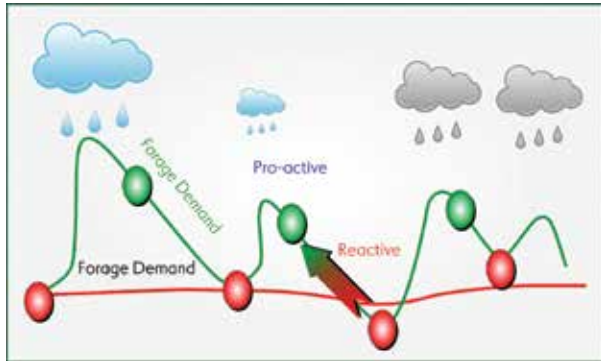


Efano 2: Malisiyo momuzangu gowayi mwaza nomvhura kugafanekesa nomurokwa gopofarama Kamombonde Ost

Ekaropo lyoyihwa yomahako kehagero lyosinema somvhura kwa liza unene kumwe nomurokwa ntani nkarero zevhu lyomalisiro. Mapukururo mEfano 2 kuna kulikida malisiyo gomanene mekaropo lyoyihwa yomahako pokatji koyinema yomurokwa mosiruwo sokutundilira melima 2001 dogoro 2016 pofarama zoMugolikadi Lund momukunda gwaOmaruru, kutunda

kokuzeruka kokupitakana potona zimwe mesunda (mohektara) mosinema so-2010/11 dogoro kousesu unene mo- 2015/16. Eyi kuna kulikida asi ekaropo lyonondya doyimuna kurunduruka-runduruka unene ano kutupu yininke ngwendi asi ekarereropo lyomuzangu nkenye apa. Yipo nye, udigu ou vana tarere vanafarama woyimuna moNamibia kuna kara evhuro lyokuvhura kuyerekesa sivaro soyimuna komakaropo aga gokulisiga-siga gomalisiro nkenye apa.

Eganompango lya hepa nye kukara asi va hetakanese mpumbwe zomalisiro kumwe nekaropo lyago. Nsene mpumbwe zomalisiro kuna kuliza kumwe nekaropo lyago, kapi va hepa kugwanekera nomaudigu gongandi. Ano nye, nsene mvhura nsesu mosinema sokukwama ko, nosivaro sooso soyimuna, mpumbwe zomalisiro tazi kara ngorooro, siruwo oso ekaropo lyomalisiro tali sesupa, nokutwaredesa kousesu womalisiro.



Efano 3: Elikido pafaneko lyetokoro lyokulivinduka

Kuna kara nye nomulyo kutokora pehagero lyosinema somurokwa asi malisiro gokuhura kupi gana kara ko hena

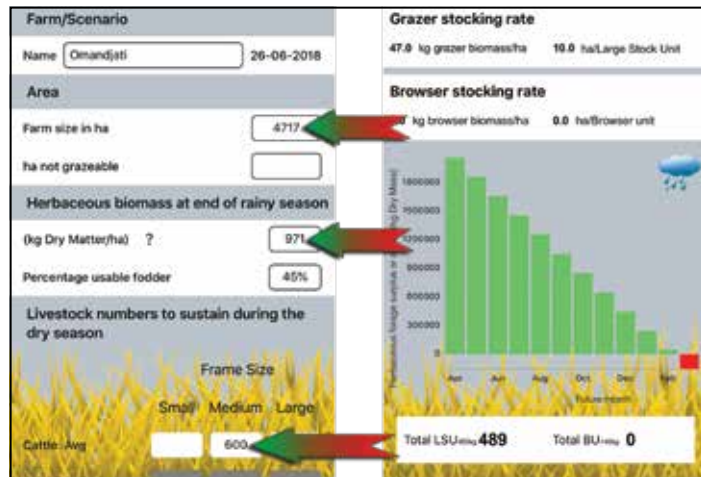
nsene gana gwanene nokuvhura kukasika dogoro kosinema sokukwama ko sokuhokera wayi/yimeno. Nsene malisiro kapi gana gwanene, etokoro lyokulivinduka lyokusesupika yimuna lya hepa kukara po mokukandana po usesu womalisiro, si vhlise kundindira siruwo sosire, nsene yimuna yina kara monkarero zondona ndi yi tameka kufaafa.

Kwa kara ko nongendeseso dokulisiga-siga noyiruganeso yokungungunika ekaropo lyomalisiro. Nongendeseso domontenta kuhamena mo makondjo gomanene pokufaneka mafano pomavega gokulisiga-siga mwaza farama, kukukitika nokuviha wayi nomahako, ano pwangesi kungungunika muzangu mwankenye esunda/hektara. Vanafarama wovanzi eyi kuyimona ngwendi kugusa siruwo sosinene mokuyirugana.

Yipo nye Mbyukisofano esi zEkaropo lyoNondya doYimuna kuna kugava nkedi zongenderera zokugwana engunguniko lyewa, pwa hana hepero zokupongaika wayi nomahako. Kwankenye rudi rowayi noyihaperera moNamibia, kugava ko muzumo gomafano gokulisiga-siga kumwe nekaropo lyomalisiro gokulisiga-siga mwaza mavega, kutameka nefano #1 lina kara nomalisiro gomasesu unene nokuhagera kevega eli lina kara nomalisiro gokuzeruka. Pokuruganesa efanombyukiso eli, sivaro sosinene somavega mwaza farama ndi evega lyomalisiro kuvhura kugafanekesa noureru kefano lyokuwaperana unene mombyukiso ezi, mokuvhura kuvarura ekaropo lyopokatji lyomalisiro mevega lyongandi mofarama. Mafanombyukiso kuliza kumwe nomavega gongandi, va hepa nye kuhorowora muzumo gouhunga.

Sinene tupu vana dililike muzangu gonondya doyimuna mohektara, kuvhura nye kungungunika ekaropo nalinye lyomalisiro kufanekesa kounene wosiunda, nokuvarura nsene asi naga gwanena. Mokurerupika yininke, siruganeso so

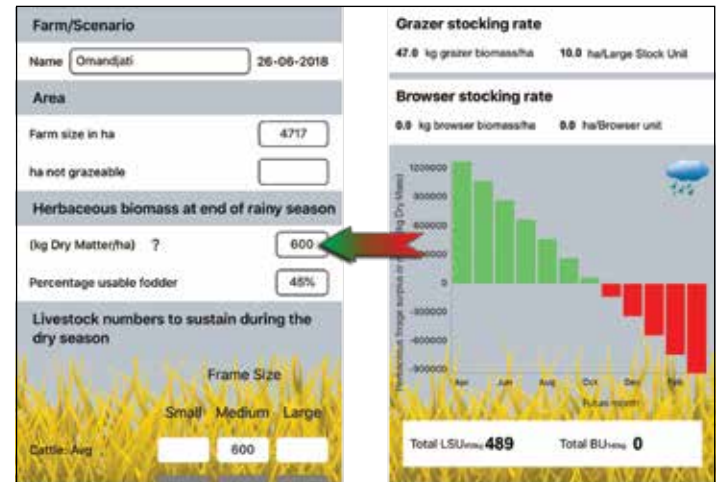
Rangeland Fodder Flow App (fkoyiruganeso yoAndroid no-iOS) kwa si tulisa po ngosiruganeso sokugweda ko sokugwana mawokowoko. Siruganeso esi kupulisira vanafarama va ngungunike nsene asi malisiro aga gana kara pofarama ndi komavega gapeke kuvhura ngaga kare ntaka kumwe nosivaro soyimuna noyikorama yomowiza eyi yina kara ko, ntani kuvhura kusiruganesa mokungungunika nonkarero dokulisiga-siga, ngamoomu tupu vana yi likida moMafano 4 - 6. (Didilika asi mafano kwa ga fanekere mokuruganesa siruganeso ndi efano lyo- iOS, nsene kuruganesa siruganeso soAndroid efano tali moneka mwapeke, nye kulikida mapukururo gokulifana.)



Efano 4: Nkarero 1 zosivarwiso sokumuna yimuna

Efano 4 kuna kulikida yitundwamo yomofarama zounene wokusika konohektara 4 717 ntani ekaropo lyomalisiro lyokusika

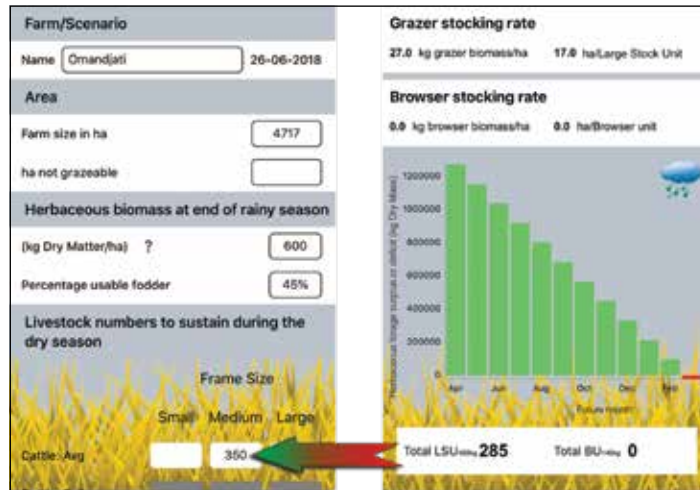
ko- 971 kg/ha, nonongombe defano lyounakatji wo-600. Sifanekeso esi kuna kulikida asi farama zangesi nasi kara nomalisiro gana gwanene dogoro mwaMurongankuru (Februari) elima lyokukwama ko. Kutanta asi kapisi hepero munafarama ogu kusesupika sivaro soyimuna yendi.



Efano 5: Nkarero 2 zosivarwiso sokumuna yimuna

Nkarero 2 mEfano 5 kuna kulikida yitundwamo yofarama zoozo, nsene ekaropo lyomalisiro li sesupa kutunda ko- 971 kg/ha dogoro ko- 600 kg/ha tupu. Mononkarero dangesi, usesu womalisiro kuvhura ngau kare ko kutunda mwaSikukutu (Oktoba) kuza komeho. Pokusesupika sivaro soyimuna dogoro 350, ngwendi moomu vana yi likida mEfano 6, ehetakano pokatji kekaropo lyomalisiro nompumbwe zago kuliretesa po

ano malisiro naga gwanena dogoro mwaMurongankuru elima lyokukwama ko.

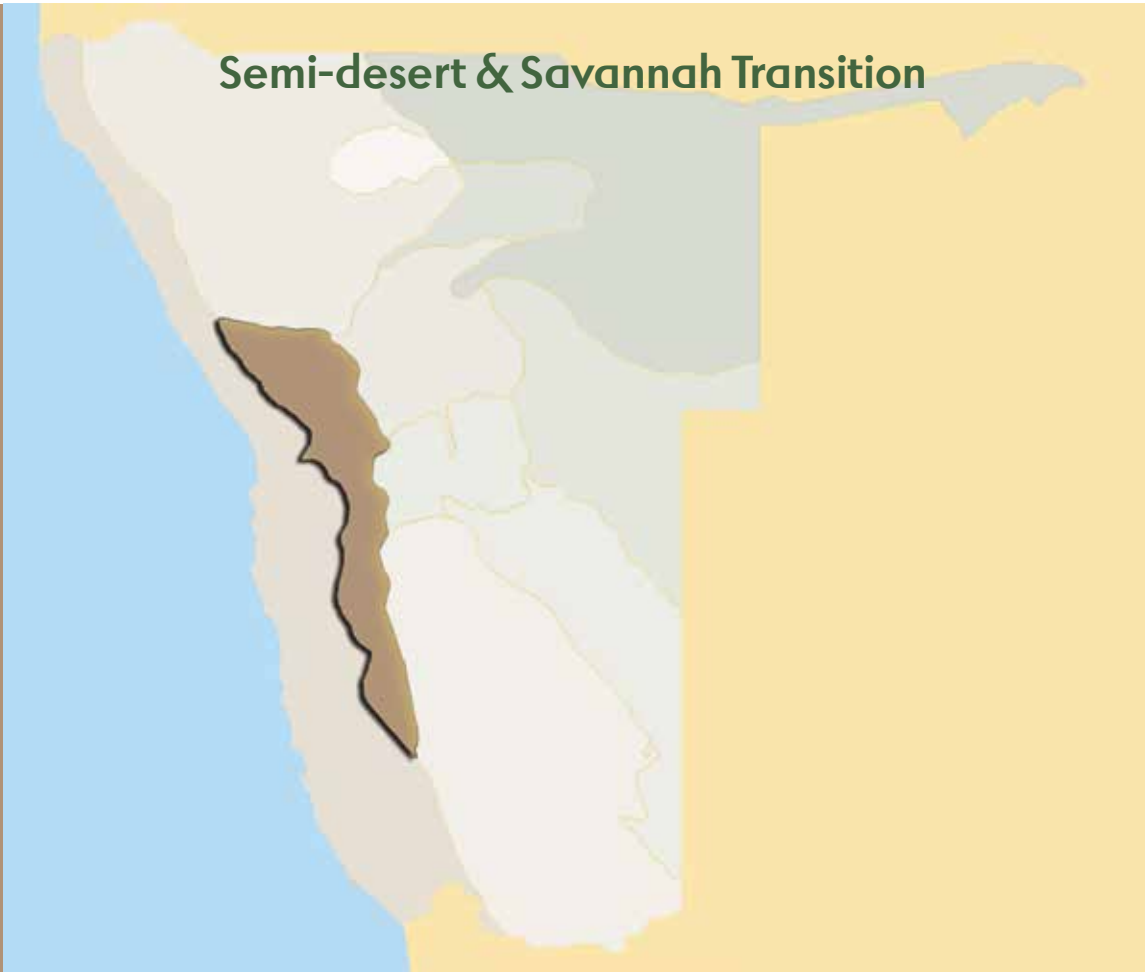


Efano 6: Nkarero 2 zosivarwiso sokumuna yimuna (nkedi peke)

Mosihonena esi ose tatu ruganesa mutungofano gomununu, gopokatji nogu gomunene mokuvarura mpumbwe zomalisiro. Rudi ronongombe odo dina kukwama ko kuna kara ngombyukiso tupu, (koneke asi mwankenye rudi ronongombe kuvhura kukara mo malisigo momutungofano):

- Mutungofano gomununu, ngwe.a. Nguni/Sanga
- Mutungofano gopokatji, ngwe.a. Afrikaner, Bonsmara, Beefmaster
- Mutungofano gomunene, ngwe.a. Simmentaler, Simbra, Brahman.

Semi-desert & Savannah Transition





Semi-desert & Savannah Transition

Nomora zEfano 1

100 Kg zowayi woukukutu / hektara





Semi-desert & Savannah Transition

Nomora zEfano 2

227 Kg zowayi woukukutu / hektara



Semi-desert & Savannah Transition

Nomora zEfanu 3

284 Kg zowayi woukukutu / hektara





Semi-desert & Savannah Transition

Nomora zEfanu 4

343 Kg zowayi woukukutu / hektara



Semi-desert & Savannah Transition

Nomora zEfano 5

523 Kg zowayi woukukutu / hektara





Semi-desert & Savannah Transition

Nomora zEfano 6

554 Kg zowayi woukukutu / hektara



Semi-desert & Savannah Transition

Nomora zEfano 7

645 Kg zowayi woukukutu / hektara





Semi-desert & Savannah Transition

Nomora zEfano 8

1265 Kg zowayi woukukutu / hektara



Semi-desert & Savannah Transition

Nomora zEfano 9

1372 Kg zowayi woukukutu / hektara





Semi-desert & Savannah Transition

Nomora zEfano 10

2244 Kg zowayi woukukutu / hektara

Dwarf Shrub Savannah





Dwarf Shrub Savannah

Nomora zEfano 1

10 Kg zowayi woukukutu / hektara



Dwarf Shrub Savannah

Nomora zEfano 2

100 Kg zowayi woukukutu / hektara





Dwarf Shrub Savannah

Nomora zEfan0 3

330 Kg zowayi woukukutu / hektara



Dwarf Shrub Savannah

Nomora zEfano 4

430 Kg zowayi woukukutu / hektara





Dwarf Shrub Savannah

Nomora zEfano 5

750 Kg zowayi woukukutu / hektara



Dwarf Shrub Savannah

Nomora zEfano 6

800 Kg zowayi woukukutu / hektara



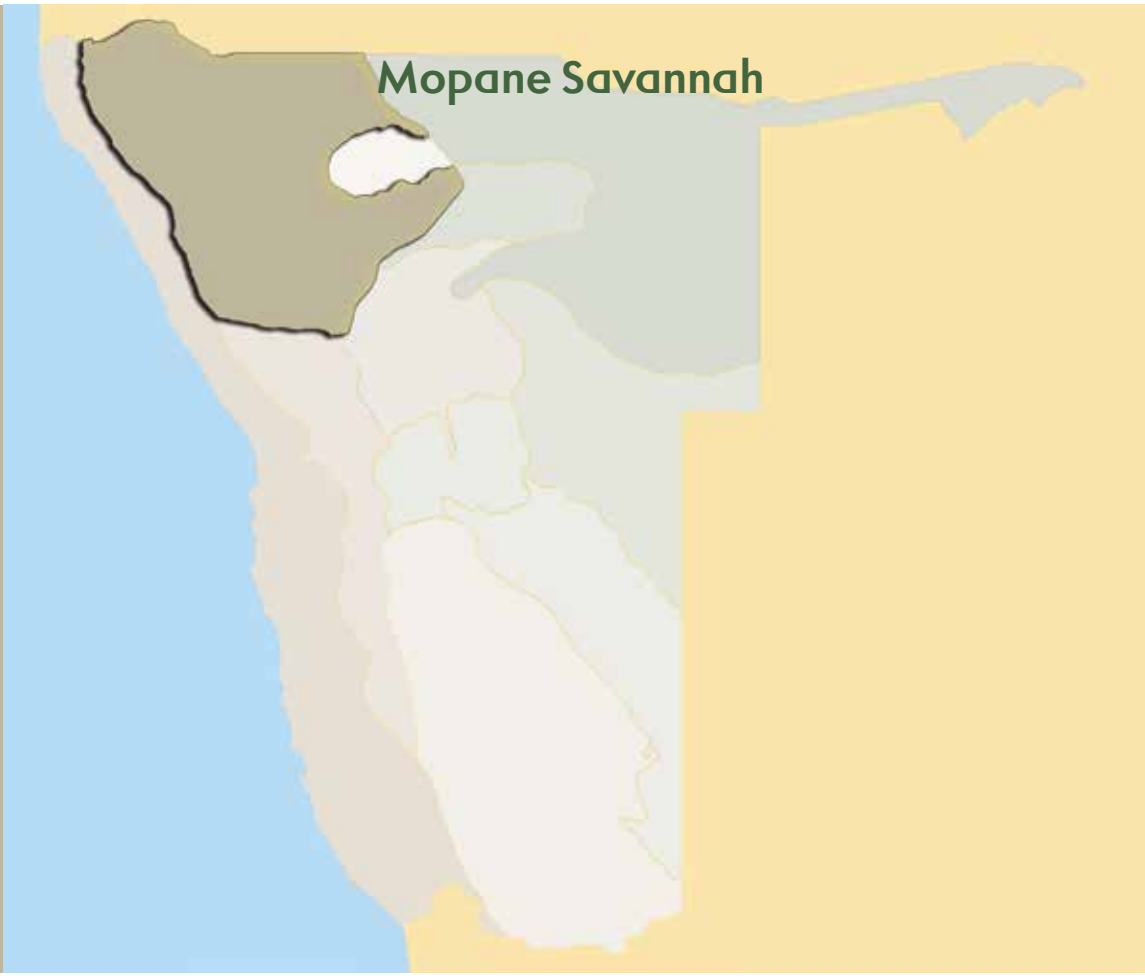


Dwarf Shrub Savannah

Nomora zEfano 7

950 Kg zowayi woukukutu / hektara

Mopane Savannah





Mopane Savannah

Nomora zEfano 1

81 Kg zowayi woukukutu / hektara



Mopane Savannah

Nomora zEfano 2

145 Kg zowayi woukukutu / hektara





Mopane Savannah

Nomora zEfano 3

302 Kg zowayi woukukutu / hektara



Mopane Savannah

Nomora zEfano 4

578 Kg zowayi woukukutu / hektara





Mopane Savannah

Nomora zEfano 5

774 Kg zowayi woukukutu / hektarai



Mopane Savannah

Nomora zEfano 6

906 Kg zowayi woukukutu / hektara





Mopane Savannah

Nomora zEfano 7

1022 Kg zowayi woukukutu / hektara



Mopane Savannah

Nomora zEfano 8

2285 Kg zowayi woukukutu / hektara



Thornbush Savannah





Thornbush Savannah

Nomora zEfanu 1

30 Kg zowayi woukukutu / hektara



Thornbush Savannah

Nomora zEfano 2

141 Kg zowayi woukukutu / hektara



Thornbush Savannah

Nomora zEfano 3

190 Kg zowayi woukukutu / hektara





Thornbush Savannah

Nomora zEfano 4

300 Kg zowayi woukukutu / hektara



Thornbush Savannah

Nomora zEfano 5

511 Kg zowayi woukukutu / hektara





Thornbush Savannah

Nomora zEfono 6

900 Kg zowayi woukukutu / hektara



Thornbush Savannah

Nomora zEfan0 7

1000 Kg zowayi woukukutu / hektara





Thornbush Savannah

Nomora zEfanu 8

1203 Kg zowayi woukukutu / hektara



Thornbush Savannah

Nomora zEfono 9

1950 Kg zowayi woukukutu / hektara





Thornbush Savannah

Nomora zEfanu 10

2200 Kg zowayi woukukutu / hektara

Mixed Tree & Shrub Savannah





Mixed Tree & Shrub Savannah

Nomora zEfano 1

192 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfano 2

302 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfano 3

412 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfanu 4

618 Kg zowayi woukukutu / hektara





Mixed Tree & Shrub Savannah

Nomora zEfano 5

690 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfano 6

832 Kg zowayi woukukutu / hektara





Mixed Tree & Shrub Savannah

Nomora zEfanu 7

1032 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfano 8

1132 Kg zowayi woukukutu / hektara





Mixed Tree & Shrub Savannah

Nomora zEfano 9

1367 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfano 10

1459 Kg zowayi woukukutu / hektara





Mixed Tree & Shrub Savannah

Nomora zEfano 11

1466 Kg zowayi woukukutu / hektara



Mixed Tree & Shrub Savannah

Nomora zEfanu 12

2021 Kg zowayi woukukutu / hektara



Highland Savannah





Highland Savannah

Nomora zEfano 1

240 Kg zowayi woukukutu / hektara





Highland Savannah

Nomora zEfano 2

290 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfano 3

390 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfono 4

480 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfano 5

650 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfano 6

730 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfanu 7

816 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfano 8

982 Kg zowayi woukukutu / hektara



Highland Savannah

Nomora zEfano 9

1100 Kg zowayi woukukutu / hektara





Highland Savannah

Nomora zEfano 10

1500 Kg zowayi woukukutu / hektara

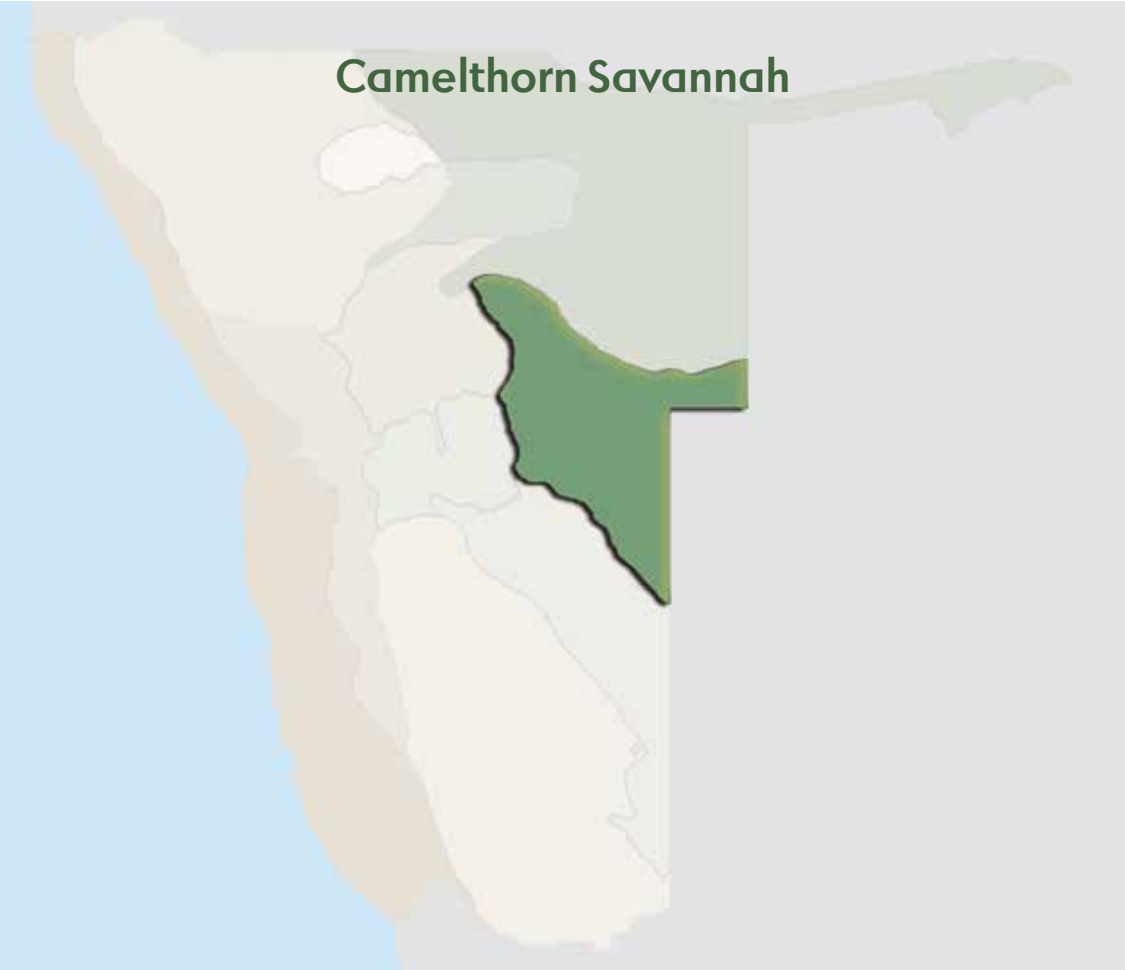


Highland Savannah

Nomora zEfano 11

2150 Kg zowayi woukukutu / hektara

Camelthorn Savannah





Camelthorn Savannah

Nomora zEfano 1

80 Kg zowayi woukukutu / hektara





melthorn Savannah

Nomora zEfano 2

246 Kg zowayi woukukutu / hektara



Camelthorn Savannah

Nomora zEfano 3

287 Kg zowayi woukukutu / hektara





Camelthorn Savannah

Nomora zEfano 4

620 Kg zowayi woukukutu / hektara



Camelthorn Savannah

Nomora zEfano 5

824 Kg zowayi woukukutu / hektara





Camelthorn Savannah

Nomora zEfano 6

1009 Kg zowayi woukukutu / hektara



Camelthorn Savannah

Nomora zEfanu 7

1297 Kg zowayi woukukutu / hektara





Camelthorn Savannah

Nomora zEfano 8

1430 Kg zowayi woukukutu / hektara



Camelthorn Savannah

Nomora zEfano 9

1900 Kg zowayi woukukutu / hektara



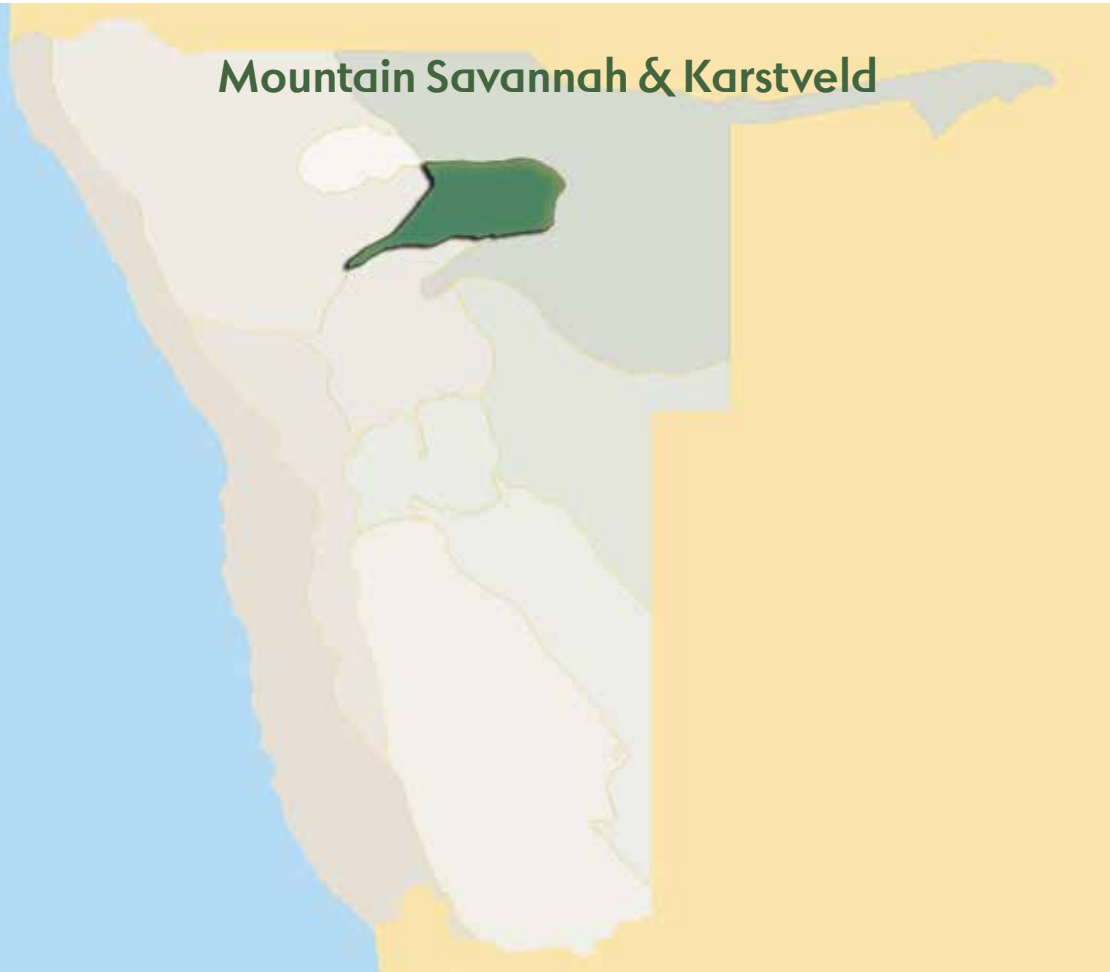


Camelthorn Savannah

Nomora zEfano 10

2523 Kg zowayi woukukutu / hektara

Mountain Savannah & Karstveld





Mountain Savannah & Karstveld

Nomora zEfono 1

36 Kg zowayi woukukutu / hektara



Mountain Savannah & Karstveld

Nomora zEfono 2

213 Kg zowayi woukukutu / hektara





Mountain Savannah & Karstveld

Nomora zEfano 3

539 Kg zowayi woukukutu / hektara



Mountain Savannah & Karstveld

Nomora zEfano 4

723 Kg zowayi woukukutu / hektara





Mountain Savannah & Karstveld

Nomora zEfano 5

749Kg zowayi woukukutu / hektara



Mountain Savannah & Karstveld

Nomora zEfano 6

1092 Kg zowayi woukukutu / hektara





Mountain Savannah & Karstveld

Nomora zEfano 7

1279Kg zowayi woukukutu / hektara



Mountain Savannah & Karstveld

Nomora zEfano 8

1662 Kg zowayi woukukutu / hektara



The image is a map of South Africa with various biomes represented by different colors. The Forest Savanna & Woodlands biome is highlighted in a dark green color, covering a significant portion of the eastern and southern coastal regions. The rest of the map is divided into several other biomes in shades of light green, yellow, and tan. The text 'Forest Savanna & Woodlands' is centered over the dark green area.

Forest Savanna & Woodlands



Forest Savannah & Woodlands

Nomora zEfano 1

35 Kg zowayi woukukutu / hektara





Forest Savannah & Woodlands

Nomora zEfano 2

397 Kg zowayi woukukutu / hektara



Forest Savannah & Woodlands

Nomora zEfono 3

591 Kg zowayi woukukutu / hektara





Forest Savannah & Woodlands

Nomora zEfano 4

974 Kg zowayi woukukutu / hektara



Forest Savannah & Woodlands

Nomora zEfono 5

1205 Kg zowayi woukukutu / hektara





Forest Savannah & Woodlands

Nomora zEfano 6

1404 Kg zowayi woukukutu / hektara



Forest Savannah & Woodlands

Nomora zEfono 7

1809 Kg zowayi woukukutu / hektara





Forest Savannah & Woodlands

Nomora zEfano 8

2921 Kg zowayi woukukutu / hektara

