



**THINK NAMIBIA**  
Sustainable Forest  
Management

## SIMBAPIRA SOUSILI KUHAMENA KO:

# Etapekoyimeno ntani Etapukuruyimeno

*Sitambo sosimbapira esi yipo si gave nombudi kuhamena mawiza gomoNamibia, mulyo musinke gwa kara metapekoyimeno kumwe netapukuruyimeno moNamibia, ntani ngapi no vhura kuvareka proyeka zanyamoge zetapekoyimeno, nampili pevango lyenunu.*

## ETWAROMO

Sinzi somawiza gomoNamibia kwa ga rukisa asi mawiza gorukukutu maufwandi ga kara noyitji yokulitovayika kumwe noyitji yoyinunu, ntani wayi wounzi. Morwa sirongo saNamibia kwa kara noudigu worukukutu, mawiza/ egunda lyokupata yitji udigu unene kuligwana mosirongo. Mawiza gangesi kugagwana momavango gomasesu pepi nomukuro unene po koMuzogo gosirongo konomukunda.

Sinzi somawiza gomoNamibia kwa kara momaruhayirongo Zambezi, Kavango Upumezuva ntani nomoKavango Utokero. Ruhasirongo saZambezi kugwana murokwa gokusika pokatji konomilimeta 600mm ntani 700mm, ano kwa kara noyitjiyereko kusika 87 momasunda/hektera. MoKavango Upumezuva naKavango Utokero, omu mwa kara egunda lyenene lyoyitji mevhu lyaKalahari, murokwa gwamo kusika konomilimeta 500mm no- 600mm, kungungunikira yitji yokusika ko- 125, kwa mena mesunda/mohektera zimwe. Marudi goyitji kusika kontane (9) ya vhura kugava siviha sokusika ko- 90% segunda lyomoKavango ntani marudi goyimenwa yokulisiga-siga (yitji yomusika gokusika ko- 8 no- 15 m ngoso). Marudi gatatu goyitji kugazangura, morwa kwa kara noyipirangi yokupama (mulyo). Sitji sa hwa kurugana yipirangi moNamibia kwa kara soUguva (*Pterocarpus angolensis*), ntani hena Mukwa, Umbila, ndi Muninga.

Konda zene-zene ze teto yitji moNamibia morwa yipo va rugane unandima. Nokonda zimwe zezi asi mundiro gompire nago gumwe agu zonagura yitji yomowiza worukukutu; upyu womundiro kukara wounene posinema sorukukutu, ntani kukuzonagura yitji yoyinene. Muzangu goyipirangi kukara guna sesupa morwa kuteta yitji va hana kutapeka mo yikwawo; eyi yiyo ayi zonagura wiza moNamibia.

## YINKE ETAPEKOYIMENO NTANI ETAPUKURUYIMENO?

Etapekoyimeno ntani Etapukuruyimeno nayinye kwa kara nerwameno limwe tupu, lyokutapeka nokutapukurura yitji yi kare yoyinzi mevango yipo likare wiza/egunda. Mbunga za- FAO kwa fwaturura egunda asi, "evango lina lyamena yitji kupita noperesenta 10 ntani unene wokusika ko- 0.5 ha". Malisigo gononkango edi gaga asi, Etapekoyimeno kutanta asi kukuna/kutapeka yitji mevango mwa dira kumena rumwe, Etapukuruyimenwa kutanta asi kutapeka yitji yoyipe mevango lina lyasesupa yitji.

## MULYO MUSINKE GOKUTAPEKA YIMENWA?

Mavango gomawiza gomoNamibia kuna kusesupa. Sivaro sovantu aso kuligwederera, ano eyi kuninkisa vantu va tuture mapya gokulima kumwe nokuteta yitji va dikise ko mambo gawo, ntani epiro kukandana unangesefa wa hana paveta koyitji yoyipirangi ngwendi: Mauhahe (*Baikiaea plurijuga*), Mausivi (*Guibourtia coleosperma*), ntani Maugava (*Pterocarpus angolensis*), eyi yina kuninkisa mawiza gokuhupa ko nago ga kare mosiponga sosinene. Mokugweda ko, ukaro welisintompepo simwe sina kara soyiponga unene moNamibia, rambangako nomouzuni mudima. Rukukutu noupyu kuna kuzonagura mparukiso noukanguki wowiza ntani nokugava sinka moku takamesa wiza yipo asi yitji ya ha pwa, morwa mpephesereso kuna kusesupa.

## MAUWA MUSINKE GETAPEKO YIMENWA?

(NTANI KUMWE TUPU NETAPURURO YIMENWA)

- Kugava muzangu gomowiza gomuwa, vanamukunda kugwana ko nondya doyimuna, enyango, yitare, ntani marunone gamwe gomulyo gokuvhura kuruganesa vantu. Sivaro sovanamukunda sokusika ko- 71% sonomukunda domoNamibia kwa huguvara moyitji yomanyango eyi ava pili kurugana yipirangi (Non-timber Forest Products - NTFPs) yipo va paruke.
- Kukandana ekonkomoko evhu morwa yitji kukondera ekundungompepo, yipo zipepe nakauke mokuninkira asi za ha zerura si evhu. Ano nondandani nado kukwatakana evhu likare kumwe yipo asi lya ha lihanauka poruveze roruhanzo.
- Yitji kuwapeka ukarowevhu; yihako yokukukumuka kugwira pevhu kumwe nokupaka mboresa mevhu, yimwe yomulyo kevhu. Yigwedako, nomundwire doytitji nado kupopera mokupopera evhu yipo asi lya ha zumbanesa si mema gomanzi.
- Kukwafa nokuvatera mokusesupika elisintompepo morwa yitji kukandana upyu wonohonga dezuvha, kusesupika upyu, morwa yiyo yelike ya kara nompepo va hunga. Egunda kugava yininke yoyinzi omu muna kwatere mema ntani ukarompepo yipo maremo ga litunge, ukaro woutenda, ezeroso mema, kupungura, ntani kugwederera mema gemevhu.
- Kwa kara nomulyo gokukandana po epyapyaro evhu kumwe noukarompepo. Yitji kukwafa mokuruganesa nohonga dezuvha mokurugana nondya edi nayi paruka. Kutota po wiza woupe kumwe nokuretesa po mpepo zokuhesereso zompe momavango.
- Kuvatera mokugwederera epopero lyoyikorama. Nsene wiza vana u zonagura, kusanseka asi maparu goyikorama nago tava ga zonagura. Etapeko yimenwa kuvatera yipo asi kukare wiza wokugwanena yikorama yi kare mo nokuparuka. Yikorama kuzumbanesa mauturo gayo morwa yiviyauka yovantu ayi ninkisa yikorama yi tjwayukire kevango peke lyepe. Mokonda zimwe zeezi asi etapeko yimeno kugava epopero koyikorama yomowiza.
- Yitji yiyo ntambo zomuhowo mokupopera evango lya kara norukukutu nokupopera asi mwa ha horoka mburundu norukukutu. Etetoyitji kumwe nezonaguro evango kuzonagwisa muzangu gemevango, maukanguki govantu, kumwe noyikorama ntani yiviyauka yoyikwaeparu ngwendi vadinguli.
- Wiza ruha rumwe aru gava mema, kutura kumwe nokukwafa mvhura ziroke ntani kuvatera mema ga pupire momadiva kumwe nomonomukuro, mavango aga ga kara mepopero morwa kukara nomema gomawa.

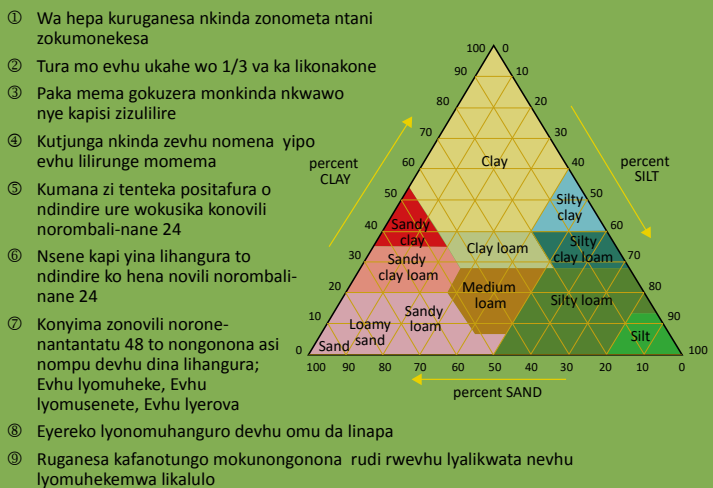
# ENONGONONO LYEVANGO LYOKURUGANENA ETAPEKOYIMENO

Mparukiso zoyitji nde unene; kukwata nomvhura dokusika 100 yipo sitji sosikurona ngasi pinganene po nsene sitji sina vana si tete po. Mulyo unene asi epulisiro lyokuyukilira likare po ntani nokulikwama, yipo nye asi sirugana setapeko yimeno sa hepa kusirugna mevango eli vana horowora. Nokonda dimwe dontsitwe dimwe adi vhuru kufwaturura nkarero zowiza, muna kwatere ukarompepo, evhu, yimenwa, ntani yiviyauka yovantu. Nokonda dangesi nado yido dimwe adi gava mayereko asi marudi musinke goyitji nava vhura kutapeka mevango ntani nkeditapekesoke nava ruganesa.

## Kukonakona evango

Mounzi womauzera na gwana kuhamena ukaro wevango, kuvatera unene mokudivilisa asi rudi musinke rositji no vhura kutapeka mo. Didilika oyo yina kukwama ko moruveze rokurugana makonakono:

- **Ukarompepo:** Upyu, mvhura, ekwatakanomema nompepo, ntani mpepo. Makwafo gamwe kugagwana ko: [www.climate-data.org](http://www.climate-data.org)
- **Evhu:** Kugava mayereko marudi gevhu. Simbangu konhi kuna kugava makonakonogona goJar kuhamena eruganeso evhu.



Ruhafano 1: Eyereko konakono lyeruganeso evhu monkinda (Jar) (<http://greengardensgroup.com/how-site-evaluation-whats-my-soil-type>)

- **Emoneko lyevhu/ evango:** Ukaro wevhu kwa kara mokeruka ndi pevhu unene kukwama mulyo gwalyo (mboresa).
- **Ukaro womema:** Ukonentu wokudiva ukali womema mevhu lina mulyo unene. Nsene nyamoge novamusinda zoge momavango geni gonofarama kwa kara nonombora domema kusanseka asi evhu olyo lya kara nomema gomanzi.
- **Nokonda dimwe doBiyotiki:** Litaba za kale ni sebeliso cwanoñu faa ya maubu (kana limunanu za mwa hae za fula mwa sibaka? taba ye ikona ku ekeza butata kwaku simulula likota zenca ni macacani).

## Kuhorowora evango lyokutapeka yimeno

Mokuhorowora evango lyokutapeka yitji kwasesupa morwa mavango gena ava dili kuruganena unandima newekero unandima woyimuna.

Nsene evango lina vana lihorowora, mereka/madidiliko gonomurudi wa hepa kugarugana yipo asi vanomeni wonongombe va kare vana pukurukwa nokukeverera nongombe da ha za si mevango lina. Nsene asi yimuna kuna kuwiza mevango lina kumwe nokuzonagura yimeno yina, murudi gondarate kuvhura kugutulisa po yipo zi kondere yimuna. Emangondarate ndiro unene makura ntudi kuzimanga ko nokonda asi zi popere yimenwa yina. Murudi gondarate kuvhura kugurugana hena ngwendi kohambo yipo o popere yimeno. Nkediopero zimwe zeezi asi mokuruganesa yitjipopero yipo o vhure kupopera yitjigona koyimuna noyikorama. Nsene asi etapekoyitji lina yuka yitji kukura nawa ntani kurepa, ndarate zina kuvhura kuzigusa ko yipo va ka zi ruganeso kwayimwe peke.



Efano 1: Uvhungu-vhungu megunda lyoyitji komuzogo gwaNamibia (Roburq, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons)

## Kuhorowora marudi goyitji

Nsene mauzera gokuyuka nagene gana gwana po kuhamena rupe rwevhu lina no vhura kukatapekera, ntambo zokukwama ko zokunongonona asi rudi royitji noyitjigona musinke no vhura kukuna mevango lina. Sitambo sesi asi o gwane nawa-nawa asi rudi musinke rositji rokuvhura kumena mevango, eyi nayi paruka noukanguki, yi gave muzangu gomuwa, ntani yi sikise mo situmbukira setapeko (si kare nye asi yitji yomuzangu gomaholi, nondya, nayimwe ngoso).

Etarururo lya hepa kukara po mokutarurura simpe evango nevhu lina mokuyereka ehoroworo lyevango lina, sionena evhu kumwe noukaro wevango.

## YITJI YOKUVHURA KUTAPURURA KOMUZOGO GWANAMIBIA:

UWONGO (*Sclerocarya birrea*)

USIVI (*Guibourtia coleosperma*)

UVHUNGU-VHUNGU (*Kigelia africana*)

UHAHE (*Baikiaea plurijuga*)

UNYANDI (*Diospyros mespiliformis*)

USIMBA (*Dialium englerianum*)

MUKOTO-KOTO (*Acacia galpinii*)

MUPUPU (*Combretum collinum*)

## YITJI YOKUVHURA KUTAPEKA/ KUKUNA MEVHU/ MEVANGO LYOMUROKWA GOMUSESU:

MUSU (*Acacia erioloba*)

MUTERU-TERU (*Maerua schinzii*)

KANONGOVANDU (*Olea europea*)

WILD EBONY (*Euclea pseudobenensis*)

MUPARARA (*Peltophorum africanum*)

JACKET PLUM (*Pappea capensis*)

# NGAPI AVA RUGANA ETAPEKOYIMENO/ ETAPUKURUROYIMENO

Ewapayiko lyevango lyokukuna yitji lya hepa kulirugana noruveze yipo kukuna va kurugane pwa hana maranga gongandi nsene mbuto zina moneka.

Yitambo yomulyo no vhura kunomena pokuwapayika evango lyokukuna yitji:



Wa hepa kugusa ndi kulima ko yimenwa ya kara pepi nevango olo no ya vhura kukuna yitji yina.



Wa hepa kuwapeka evango lina nga livhura kugwana mema posiruwo somurokwa. Likare evango lina nali vhura kupa yimenwa ruveze yi kure ya ha kara si mevango lina lyokusikama mema unene. Sihonena wa hepa kunomena asi evhu kapi lina dumikwa koyitji.



Wa hepa kupakera mbili eharawo lyonondandani doymenwa, omu muna kwatere evhu lina gwanene mokukara nondandani. Pevhu lyoudigu kumena wa hepa kuligusa po.



Wa hepa kukuna pevango lina lya hana siponga somundiro ndi uli woyimbumburu ngwendi yikoramagona ntani nompuku, wa hepa kuyikandana.



Efano 2: Sipoperotji (Kwa si pulisira: W. Hager/ Shutterstock.com)

Nsene asi erongikido lyevango lina pu, kuvareka tupu kukuna. Sinene po yiwa kuyirugana mokuyikuna moyimbangu ntani kuyitapurura. Yimenwa yimwe kuvhura kuyiranda komavhangokunino yitji ndi kuvhura o kune nyamoge nombuto ozo wa gwana. Nsene asi ove kwa hara kuranda mbuto, wa hepa kuranda zonkanguki kovantu vena va kara menomeno nosinka sombuto; sihonena, sitji senyango sa kara nenyango lyenene alyo hena etovara, ndi sitji soyipirangi sosire aso hena sokuyukilira. Ewapeko nepakerombili lyombuto kukwafa mbuto zimene nawa; sihonena kuzaveka mbuto zositji somaguni gomowiza (*Strychnos cocculoides*) momema zi rare mo masiku nagenye yipo asi nga zi mene usimbu. Emeno lyombuto zoUsimba (*Dialium englerianum*) kuvhura kuligwederera no-68% nsene ono zi zaveke momena.

Vanalirongi kwa gava maumbangi kuhamena etapukururo yimenwa asi nkedi zongwa kuzikwama mokutulisa po egunda mosirongo sorukukutu saNamibia. Mbuto wa hepa kuzidumika nevhu kuninkira asi zi gwane mpito zokumena ntani zi hesere.

## Nonkedigwedoko dokukwama pokukuna:



Epopero yikunwa koyikoramagona kukara hepero nsene kuna kuyikuna metara-tara lyoyitjikunino.



Ruveze rokukuna ndi rokutapeka kukwama sinema somvhura, sinene po nsene evhu lina gwanene sitoswa (sokusika 20cm). Ndi nsene ngoso kutekera kwa hepa kuhoroka mokwedi kokuhoverera pokumana kukuna.

Ko yi li yimbangu yokukunina momaraka (Market), ayo kuvatera kukuna kurerupe ntani simenwa kuparuka nawa, sinene po nsene kuna kuyirugana poruveze rorukukutu. Mokugwana sihonena kuvhura kukwama ko [www.groasis.com](http://www.groasis.com)

## EHAGESO

Eteto yitji ntani ezonaguro evango moNamibia kuna kuresesa po ezumbaneso ruhansitwe, mauwa nonombatero momaparu govantu ntani ezokomeho lyoyikwaeparu.

Etampeko yitji mulyo unene moku ka gwederera yitji eyi yina kulihora mokuyiteta kumwe nokuyiruganesa vana kutengwidira mo yimwe. Nsene va yi rugana monaruwa nomafaneko gokuyuka nevango lyewa, ntani yimenwa yomarutu gomakukutu moNamibia kuvhura kuyitura ngesefa ntani nokuyiruganesa yi tjindje mparukiso zovantu konompumbwe domomaparu gawo vana kuzonagura uwa wonsitwe.

Nampili ngomu asi kukuna moyimbangu yizo nkedi zina kuhoroka ntani zokutapeka ndi kutapurura, kukuna mbuto zositji pakuyukilira ngendeseso zimwe zina kuyuma sinene asi ono kwama nkedi zongwa mokukuna.



## MAFWATURURONKANGO

### Etapeko yimeno [Afforestation]:

Nkedi zokukuna yitji yoyinzi pevango lya kara noyitji yoyisesu ndi lya pira kukara rumwe noyitji.

### Mparunsitwe [Biotic]:

Eparu lyoyinamwenyo moruhansitwe; Sihonena yinamwenyo ngwendi yimenwa ntani yikorama.

### Esesupompepo [Carbon sink]:

Egunda, Efuta, ndi nkaransitwe kugwanekera noudigu mokugwana mpepo zokuheseresesa.

### Malitjindjo ukarompepo [Climate change]:

Ukarompepo kulitjindja u kare namopeke sivhulise mwina wa hwa kukara, eyi kuyiretesa po yiviyauka yovantu mokuteta yitji nokuhwika mudirowo.

### Ekungowiza [Community forestry]:

Sihorokwa asi vhuru kuhameseramo vanamukunda moyiviyauka yekungowiza.

### Etetoyitji [Deforestation]:

Nkedi zokuzonagura wiza mokuteta yitji.

### Egunda lyorukukutu [Dry forest]:

Egunda lina ali mene marudi goyitji yina ayi vhuru kuparuka mevhu lyorukukutu ntani kumena kulitovayika moruhansitwe.

### Etapa [Hardpan]:

Evhu lina lyendanda ali kwata mema ntani yimeno kupwaga mo noudigu morwa evhu ekukutu mokutauka.

### Elitaurontanga [Nicking]:

Kutauka ntanga zi vareke kumena konyima zokuzikuna pwa hana maranga gongandi.

### Etapururo yimeno [Reforestation]:

Kutapeka yimeno mevango lina lya kara nare yitji yipo yi ligwederere.

### Emoneko lyoyimenwa [Topography]:

Kumena nonkareso zoyitji megundapita yitjigona neyi yoyinene.

## MAUMBANGI

De Cauwer, V., 2020. The timber harvest peak of 2018 in Namibia. *Roan News*, Namibian Environment & Wildlife Society.

De Cauwer, V., M. Chaka, P.M. Chimwamurombe, D. George, H. Ham, H. Heita, T. Makoi, G. Mashungwa, B. Reinhold-Hurek, & S. Tshwenyane, 2018. Artificial and assisted natural regeneration of socio-economically important southern African tree species. *Biodiversity & ecology*, 6, pp. 324–331.

De Cauwer, V., N. Knox, R. Kobue-Lekalake, J. Lepetu, M. Ompelege, S. Naidoo, A. Nott, D. Parduhn, P. Sichone, S. Tshwenyane, Y. Elizabeth, & R. Revermann, 2018. Woodland resources and management in southern Africa. *Climate change and adaptive land management in southern Africa – assessments, changes, challenges, and solutions*, pp. 296–308.

Duan, J. & D. Abduwali, 2021. Basic theory and methods of afforestation. In A. C. Goncalves (ed), *Silviculture IntechOpen*. Viewed 12 May 2017, <<https://www.intechopen.com/books/silviculture/basic-theory-and-methods-of-afforestation>>

FAO, 1989. Arid zone forestry: A guide for field technicians. *FAO conservation guide 20*. FAO, Rome.

FAO, 2020. Global forest resources assessment 2020. *Report Namibia Food and Agriculture Organization of the United Nations*. Viewed 14 May 2021, <<http://www.fao.org/3/cb0038en/cb0038en.pdf>>

Irish, J., 2020. List of Namibian species with legal status. *Namibia biodiversity database*. Viewed 27 June 2021, <<http://biodiversity.org.na/legalspp.php>>

Thomas, I. & M. Chakanga, 2002. The role of planted forests and trees outside forests in sustainable forest management. *The Republic of Namibia country study report: Food and agriculture*.

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