



THINK NAMIBIA
Sustainable Forest
Management

MBAPIRA YAMAPUKURURO KUHAMENA:

Unandima Walikwatakano

Shitambo shambapira yino shakutapa mapukururo kuhamena unandima walikwatakano wiya, vimenwa, vimuna ntani namauwa oghe ghuyita muNamibia.

LITWAROMO

MuNamibia, kwapura unene muunandima wakulima mbuto yarudi rumwe palivango limwe ovi kurenkita vanandima va hepe shinene po, palikutjindjo lyaukaro wampepo.

Unandima walipakerero kughupa po kulima mbuto yimwe palivango limwe mu rundurukire kundjenditito yakukeverera mukupakerera vitondo, vimenwa navikorama. Unandima pakererero kwausheteka pakutikilira mo kumaruha ghakukushuva -shuva muudjuni namaruha peke kumbindakano yaAfrika Ucuma. Mbanga yaudjuni kuna kungungunyikira vantu va kutika kubiliuna muudjuni kwarughanitanga unandima wakupakerera kulima mbuto, kuweka vikorama nakutapeka vitondo.

NKE VINA KUTANTA UNANDIMA PAKERERO?

Lifwatururo

Unandima pakerero kukwatakana unandima (mbuto, vimuna) nawiya. Eyi ndjenditito yokuvhonga vitondo mukatji kambuto vi tape mauwa ghomayingi kuvimenwa, kurenkita nka vi kuyende naukaro wampepo mukukura nawa shivhulite unandima wakulima mbuto yakukufana palivango limwe. Vitondo ko vyene kuyitita po runone yira nyango, vipirangi ndi mboreka. Omo vyawapera vitondo kuvitura mumuyaro kutunda mukuro vi yende urundu kurenkera vi wane nawa shite shaliyuva.

Unandima pakerero kwakushuvira pantambo ne namandimi ghamwe:

- **Muwina-wina:** Lipakerero lyaunandima navitondo kapishi shininke shauntjitwe ngoli shakutulita po vantu.
- **Likupakerero:** Mbuto, vitondo navikorama kuvipakerera vi kare mpompa yimwe. Ovi kuwapukurura muyangu nalivhu mukatji kamarunone.
- **Likuhamitiro mo:** Unandima pakerero kuyitita po mauwa mukatji kambuto, vitondo navikorama. Shihonena: vitondo kutapa uturo kuvikorama, vikorama kukeverera uli ndi vimbumburu.
- **Munda yalikeverero:** Unandima walikupakerero shininke shakukarerera po mukuyita muyangu, litakamito lyavirughana yira kuherera, kukandana po uli, kugaununa mbuto nakutura mo rutoko mukurenkitira shirughana shaunandima pakerero u tikilire mo.

MARUHA GHAUNANDIMA PAKERERO

Unandima wavitondo nambuto

Ruha runo ndo rwakukuna mbuto mukatji kavitondo shingi shambuto kuyikuna mukatji kavitondo, ndjenditito yino kuvatera vitondo nambuto vi kuvatere mukukukwatita vi kare kumwe momo vyawapera pauntjitwe.

Unandima wavitondo navimuna

Ruha runo ndo rwakupakerera kumwe vitondo navimuna, vitondo navishwa kukura vi yite mboreka kuvimuna ndi nyango navikwamakara vi tape nkodo kulivhu. Vimuna kwavi wekeranga vi tape nyama, mauta; ushi ndi mashini. Ruha runo ndo rwayititango po mboreka yakuvimuna muNamibia mbudi yakuweda ko kuyiwana kuhura.

Runo ndo ruha rokuhova rwayitita nga po mboreka yakukulita navimwe vyakukukuta vi yitite po unankondo navikwamboreka, muhekitera shivhulite vyakutunda kumushoni. Ovi kusheshupita kurughanita mboreka yakuweda ko rutoko rwakurukira.

Unandima wavitondo, vimuna nambuto

Ruha runo kupakerera maundimi naghantje matatu vitondo, mbuto, vimuna. Ruha runo kwakufana yira unandima wakuweka vitondo nambuto rwaro nka kuvhatera unene vitondo vyashakara naruhepo rwandya. Vyavyo kuvatera nkarapamwe yi rwanite po maudio ghalikutjindjo lyampepo. Vantu vakutika milliuna 320 muAfrika kwawanenanga mauwa wodimutondo, navikuni kuunandima wakulima vitondo, vimuna nambuto.

Vikunino vyokumandi

Vikuninoghona vyakumandi ndo ruha rumwe naro rwaunandima pakerero oru va yanguranga maruha matatu vitondo, mbuto, vimuna. Oru ndo ruha rumwe omo va kalikoro varughanenanga ndya musikuninoghona shamwenya lipata. Vakalipata kutakamita nakukunga ndya vitondoghona navikwa vishwa mumwaka nauntje papepi namundi. Vino kwakushuvira paruha nounene oku shakarera shipata nakuva wekeranga vimuna, vitondo nambuto. Vanafarama vavangi kwarughanitanga uyivi wapampo kuhamena mukutovorora vitondo nantjitwe.

Unandima woyitji
nonombuto

Unandima wavitondo
navimuna



MAUWA GHAUNANDIMA PAKERERO

Makonakono kwanegheda ashi unandima wakulima kupakerera, kuyita muyangu kupitakana undimi wakulima mbuto yimwe tupu palivango limwe tupu.

Mauwa ghaviyera mo

- Viyeramo vyamulipata:** Vanandima kuwana viyera mo pakughulita muyangu wakuweda ko.
- Liweko lyavimuna:** Unandima pakero kurenkita vimuna vi wane ndya daukanguki dadiwa dambiriha mukurenkita shivaro shikuwederere.
- Viyeramo vyakuweda ko:** Vatungi mo mumpongatano kutameka kuwana mo viyeramo vyakuweda ko kutundilira muyangu peke,yira vishongaura, maghadi, nyango naushi.

Mauwa ghonkarapamwe

- Likuwederero lyondya:** Mulyo wandya yira lividi nanyango kukuwederera.
- Kuvhukita ghukanguki:** Vitondo vyaviyengi kuyima nyango kukara navitamine yayingi ndi yamaghadi yira vikwavava, mauge/ maughongo namaguni.
- Kuwapukurura mparukito:** Kukara namuyangu wauyengi mu ghulite kuwapukurura mparukito mudimukunda dakumambo.
- Kuyika kuwapukurura likuyendo kumwe nalikutjindjo lyaukaro wampepo:** Kuwederera ghukanguki walivhu namparukito muNamibia kuukaro wampepo yantulilira.

Mauwa ghantjitwe

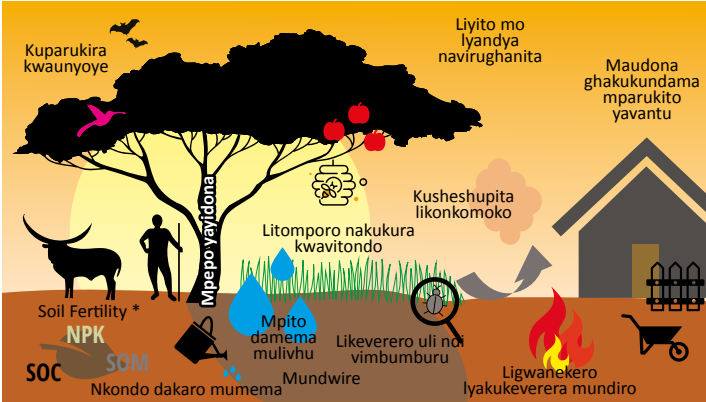
- Liwapukururo lyolivhu:** Kuwederera maruha ghalivhu mukukwata nawa mema.
- Likandano likonkomoko lyolivhu:** Ndandani davitondo kuvatera livhu likwate mema mukurenkera lyashakonkomoka.
- Kuwederera munku waudona:** Yakara namulyo waunene mukuwederera mpepo yavitondo, mukukuvatera muudito ghamakushinto mpepo, nakushuva livango lyaanandima li tape muyangu wakuyera mo.
- Kuwederera ghupungwiro na lipopero ntjitwe kumpepo yayidona (carbon dioxide):** Yayo kusheshupita mpepo yayidona nalipopero ghuyenyu kuntjitwe nakutapa livhu lyolingi kughunandima.

Ruha runo kuna kanegheda mauwa ghaunandima pakero kehe uno:

Marudi ghaunandima pakero				
MAUWA	V-M	V-V	V-V-V	S-S
Kuyitita po dimuyangu dakushuva-shuva yira ndya, vikwalividi,nyango, mboreka ntani ndya dangombe, makara, vipirangi ntani mahako ghakukukuta mukuwederera nkondo dalivhu	X	X	X	X
Kuwapukurura nakuwederera muyangu wavimenwa navimuna uvhuke nakuyita viyeramo kuvanandima.	X	X	X	
Kuvhukita nkondo dandya davimuna pakutapera ndya davimuna.	X	X	X	X
Ndjenditito yayiwa yakuvyukuruka lirughanito nkondo dalivhu. Kuvatera nka mukughupa po mughuro wamutondo narutoko rwakurukira.	X		X	X
Kuwapeka likutjindjo lyaukaro wampepo nakuwederera muyangu, mavango ghava nafarama mukughupa po likonkomoko lyolivhu lyapantunda lyashakombanita mulyo.	X	X	X	X
Kuwapukurura ukaro wampepo nakuwederera nkondo dalivhu	X	X	X	X
Kusheshupita maudito mavango ghakukungira wiya ntani namawiya mukuwana ndya davimuna, vikuni navipirangi.	X	X	X	
Kuwederera mukurughanita livango limwe mukukuna po marudi ghombuto nokuwana po ndya davimuna.		X		
Kuweverera mpepo nadimundwire davimuna mposhi vi kasheshupite mfa davimuna.		X		X

* U-VM: Unadima wavitondo nambuto; U-VV: unandima wavitondo navimuna; U-V-V-M: Unandima wavitondo; vimuna nambuto; SS: Shikuninoghona shamumundi

Shitafura 1: Makushuvo ghamaauwa ghaunandima pakero



* Unankondo walivhu mukuvatera shimenwa shi kure shi tape muyangu wauwamukuvatera shimenwa shi kure

Shifanekwatjangwa 2: Unandima pakero ndjenditito yakuwederera nakulimburukwa kulikutjindjo lyaukaro mpepo kumbindakano yaAfrika (Sheppard, 2020)

WENI TU TULITA PO UNANDIMA PAKERERO?

Kudimburura maghano ghakuwapera

Tu upe shihonena mushirongo shaOmusati mvhura yi sheshu ano muyangu nagho ghusheshu ovi kuvhukita mpumbwe davikunino. Mpo vina karere hepero vaNamibia mukukuhamitira muunandima wakukeverera mposhi vanandima va wane muyangu djuni.

Kurughanita unandima pakero kusheshupita po ruhepo nakuvhukita muyangu kuvandimi. Maruha matatu oghe u vhura kutikita mo mukurughana matokoro:

- Mulyo walivhu:** Dimburura mbuto navitondo vimwe mulivango lyoye ovyo u vhura kuwederera mulivhu lyoye.
- Mulyo nampumbwe doye:** Ntjene una pumbwa ndya davimuna konakona ntjeneshi kuvhura u kune ndya wedoko davimuna.
- Likaro po lyamarunone:** Yira livhu, virughana, ruvede ntani vimaliva.

Kuyika ndi kufanayika unandima pakero

Konakona uyivi wapantateko nandjenditito, rambangako narudi rwaunandima pakero va rughanitanga polyo livango; ovi kwavi nkondopeka mukudimburura rudi rwaunandima pakero a vhura kurughanena polyo livango. Shihonena uhoro sitondo shauhoro kuwederera nkondo kulivhu li kanguke.

Muvishorokwa vimwe vanandima vamwe va tura mo mashungido kuhamena unandima pakero va hana kughayara oshi, shihonena shaliweko lyangombe mumafuva ghamauge/maughongo. Muvishorokwa vimwe kukengurura mukuyitita po ndjenditito shi vhlute kutulita po ndjenditito yayipe. Ndjenditito yapampo ureru kuyiyika kuukaro wapampo mpili momu vyakarashi kuvhura kuvinkondopeka vanafaramaghona kuvhura kukuhamitira mukuwapukurura ndjenditito eyi yina karo po shi vhlute kuyita po nkedi oyo va dira kuyiva.

Mukuyika nakufaneka ndjenditito yaunandima pakero namukurughana mukutovorora nakutura mumpompa vinakugwanitapo vitatu. Vyavyo mbyovino vina kukwamo ko:

- Vitondo namaghowa –** Tovorora vitondo navishwa vyakuyita po nyango; ndya davimuna, vikuni, vipirangi, mundwire ntani navimwe nka ngoweyo. Shihonena mahako ghakukukuta kuvitondo vyamandjembere navyo kuyitita po nyango yakukukuta ndi kuyirughana vikunwa vyakupira ushatu, mahako kugharughanita kunda dangombe ano shitondo kuvikuni ndi virughanita.
- Mbuto ndi ndya davimuna -** Tovorora ndanda, ntanga, ndandani, vikwalividi namema ghakushetekera, rutoko rwakurukira oro rwapumbo mundwire wakutundilira kuvitondo, ntjeneshi hepero kurughanita ndya dangombe odo dakaro namaulitiro vikwamakunde ndi rudi rwamakunde, ndjo mbuto yimwe yakukuna mpili parukukutu yayo kukara tupu makwedi maviri kare kau yangura mbyo vyakarera muNamibia ureru mukudi kuna.
- Vikorama -** Ndjo ndjenditito yimwe yaunandima pakero vinakugwanita po ovyo u tikita mo mukuwana maulitiro ghamuyangu va hora (shihonena nyama ndi mauta) mulikukwatakano nandjenditito dimwe.

Litulito po unandima pakerero

Liwapayiko livango kutwara kurudi rwaunandima pakerero oro una kurughana. Kuvhura vi kare vikorama (shihonena kuwapayika makwina gha kukuna mbuto ndi kuherera kukundurukida u popere unantjiitwe u yite mbuto) ndi kuvhura u rugthane virughana yira kukenita livango kutura ndarate, ntekeru ntani narutoko.



Lifano 1: Mbuto davitondo

Mbuto davitondo kuvhura u di ghure kumaulitiro ghapapepi ndi kuvanafaramaghona kutwara tupu ashi weni una vi shanene. Mbuto dimwe kuvhura kukadi shimba kuvitondo vyamuwiya. Mbuto davitondo yira maguni (*Strychnos cocculoides*) namatu kudi wana kuvitondo vimwe ndi viunyavyo.

Mbuto dakupama nadi damurukukutu kudi tovorora kutwara kughuyivi nakumapukururo ashi mbuto munke u rughanita.

Vimuna kuvhura kuvi ura pamaraka ndi kufandisa ndi kuvakamaparambo ngoli vi kare vina kanguka, kuvhura va vi ure. Vyavyo nka vina hepa kuvi tura mundjugho dadiwa nakuvi pa ndya dadikanguki mposhi vi kure nawa.



Lifano 2: Uguni (Kwavipulitira: Fruitpedia)

Kuyendita unandima pakerero

Mukurenka unandima pakerero u kutompoke pana hepa kukara likeverero.

Ndjira dakuverera dakuyivikwa:

- Litakamito lyambutoghona yamahako ghavitondo, ndjira yimwe yakukulita vitondo pakuvi tura palidi lyashitondoghona.
- Kuherera ndi kudura ndi kupatura ndi lirughanito virwenge.
- Kupopera uli nakudika ndundu di kundurukide shimenwa (shihonena vikwamaguni).
- Kurera vimuna mulyo ntjene u takamita vitondo navishwa.
- Rutoko navihako navitondo vyakukukuta kuvhura kuvi rughanita vi wapeke livhu.
- Kutekera vimenwa shinene po ntjeneshi kundereko mvhura.
- Vimenwa vyakutongama kuvi patura ntjeneshi vyapata unene mukondashi kuvhura vi pire kukura nawa vi tike pantambo yakuwapera.
- Kugaununa vitondo mukupulitira vitondo vi kare namadi ghamanene.
- Vitondo vyakupata kuvhura kuvi teta vi vyuke palivhu mukurenkerashi vi kure nawa naruede.
- Liyanguro lyamuyangu, wakutulika muutenda kutjilitira ashi muyangu wa sha djonauka.

LIGHANO KWANAMIBIA

Vitondo vino kuvhura vi rugthane nawa kuunandima pakerero muNamibia uge/ ughongo, ughuva, uhywe, unkudi, mupapama, uparara naupeke.

Muteruteru nauntu mulyo unene. Uginda ntjo shitondo shimwe shakukura unene kuvitondo vyapampo shakara nomahako omo sha tapa nga nkondo kuvimuna paruviri. Kuugongo kuwana ko maghadi navitondo vimwe vyamuwiya kutapa maghadi nanyango.

Muntjuti naumbundje vitondo vyayiviko mukutapa nkondo kuvimenwa.



Lifano 3: Ughuva (Kwavipulitira: C. Mannheimer)

MUKUHULITA

Lighayarero lyashivaro sharudi shaNamibia, kwahuguvara muunandima wakulima. Omo va huguvara murokwa wamhvura ntani nakuyangura mema.

Mukunkondopeka kuyitita po ndjenditito yaunandima pakerero mushirongo, tuna hepa kukwama ndjenditito yakulima mposhi tu wane mauwa ghapaparu ntani navikwantjitwe mukuyangura vitundwamo vyavingi. Vino mbyo vina kuneghedo likushuvo lyapakatji kalikungowiya naunandima wakulima mbuto dakukufana. Vanandima kughayarera va wane muyangu waunene nalikuwederero lyamuyangu palivango limwe. Unandima keverero wapumbwa likuturo mo naruede rwarungi nakupungulita mo, ovi kuvhura vi tjindje mparukito yaVanamibia, navanafaramaghona nampongatano pakarughoghona.

LITOROKO LYANKANGO

Linkondopeko mbuto [Crop resilience]:

Kutwika kutapa mbatere yamuyangu wandya ntjeshi apa kara maudito gharukukutu ndi murokwa wausheshu.

Ghunantjitwe [Ecosystem]:

Livango omo ya kara ntjitwe yakukushu-shuva.

Ndya davimuna [Forage]:

Ndya davimuna navikorama yira mushoni, vipeshaura vyankambe nangombe.

Kukuhamitira [Intervention]:

Kukuhamitira mushirughana shangandi.

Ukarompepoghona [Micro-climate]:

Ukarompepo pamavango ghomadidi oko va shweneka, sinene po ntjene mavango ghakushu naukarompepo kumavango ghakundurukido polyo livango.

Unandima wakulima mbuto yimwe [Monoculture]:

Kulima mbuto yimwe palivango limwe mwaka namwaka.

Vikwa maremo [Precipitation]:

Mvhura, ndau, lime ovi vyawerango palivhu vi gcughuruke.

Likonkomoko lyalivhu [Soil erosion]:

Litindiko livhu lyapantunda kunkondo dakutundilira kuvishorokwa vyantulilira.

Mafanowapeko livango [Topography]:

Liwapayiko nakufaneka omo lyafana livango pakare novyo va weda ko.

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