



# Igitabo Cya 1 Cy'ubuvumu Bw'ibanze



*Iki gitabo ngituye abavumu (aborozi b'inzuki) b'ejo hazaza. Ndashimira abavumu bose bo muri Afurika bamfashije kugirango iki gitabo kiboneke, by'umwihariko abo muri Koperative y'abavumu ya Nkhata-bay muri Malawi.*

**Umwanditsi: Pam Gregory**

thewaterloofoundation\*

Kwihaza bidutera Ishema  
[www.msaada.org](http://www.msaada.org)

Cyahinduwe mu Kinyarwanda  
Na Claudien Rudasingwa

Uwadufashije mu gukosora ni Gay  
Marris, UK National Bee Unit (Fera)  
[www.nationalbeeunit.com](http://www.nationalbeeunit.com)



# Uburyo bwo gukoresha iki gitabo



Ubu birazwi neza ko ubworozi bw'inzuki bushobora gutuma abantu batuye mu byaro bashobora kugira uburyo bwo kubona inyungu yiyongera kubyo bakora. Nyamara ubworozi bw'inzuki ntabwo igihe cyose bworoha. Inzuki ziraryana kandi akenshi ni ibintu biba utabyiteguye. Kugirango haboneke umusaruro w'ubuki hashingirwa ku bintu byinshi, birimo ikirere ndetse n'isoko ryiza. Ubuki buhenze bugomba kuba ari bwiza. Ibishashara nabyo bifite akamaro nubwo akenshi byangizwa.

Iki gitabo cy'ubuvumvu cyanditswe kugirango gikoreshwe n'abakoresha amahugurwa mu by'ubuvumvu muri Afurika yo muni y'Ubutayu bwa Sahara. Kigizwe ahanini n'amafoto y'amabara n'amagambo make. Iki gitabo kirimo uburyo bw'ibanze bukenewe mu gutangira umurimo w'ubuvumvu. Kandi kinatanga na bimwe mu bitekerezo bishya byo gufasha abavumvu kwikorera ibikoresho bakoresheje ibintu biboneka hafi yabo, batarinze gutegereza inkunga. Ndizera ko iki gitabo kizafasha abantu bagatangira korora inzuki bitabahenze, ndetse kikaba cyanabafasha kumenya gukoresha ibikoresho batari basanzwe bakoresha.

Amafoto arimo yerekana bumwe mu buryo bwinshi abantu bakoresha borora inzuki. Ibi bigamije gushishikariza abantu kugirana ibiganiro no kungurana ibitekerezo kubyo bagezeho kugirango bifashe abaturage kwikemurira ibibazo ku rwego rwabo. Iki gitabo kibanda ku mutiba wa kizungu ariko bumwe mu buryo bwinshi ndetse n'ibitekerezo bishobora gukoreshwa n'abavumvu bakoresha imitiba ya kinyarwanda n'imitiba ya kijyambere.

Ndizera ko abahugura bazashobora gusobanura ibi bitekerezo mu ndimi z'abahugurwa. Tubifashijwemo n'inkunga ya Waterloo Foundation, ikindi gitabo kirimo amafoto kizaboneka mu 2010. icyo gitabo kizaba kirimo uburyo bukoreshwa buteye imbere bufasha abantu kwikemurira ibibazo. Hari ikindi gitabo kitarimo amafoto kigenewe abahugura gisobanura ibibazo "Kuki" na "Gute". Uramutse ugikeneye wakwandikira Pam Gregory kuri e-mail ikurikira:

[pamgregory@phoncoop.coop](mailto:pamgregory@phoncoop.coop)

*Pam Gregory yoroye inzuki kuva muri 1974. Yakoreye Ikigo cy'Igihugu gishinzwe ubworozi bw'inzuki mu Bwongereza guhera muri 1976-2003. Afite impamyabushobozi mu buvumvu yabonye mu Bwongereza, akanagira n'indi y'ikigero cya kabiri cya kaminuza mw'iterambere ry'icyaro yakuye mu mahanga. Amaze imyaka 12 akorana n'aborozi b'inzuki bo muri Afurika yo muni y'ubutayu bwa Sahara.*

**Mbifurije gukora  
umurimo  
w'ubuvumvuneza.  
Pam Gregory  
Nyakanga 2009**

# Ubuzima bw'Uruyuki



**Uruyuki rutara ku rurabo**

Andi Amafoto yatanzwe na Margaret Cowley, Ged Marchall, Adrian Waring na Max Westby

**Inzuki ni udukoko two mu bwoko bw'inigwahabiri twororwa n'abantu. Iyo inzuki zose ziri mu muzinga zifatanya, zirushaho kororoka. Mu muzinga umwe habamo ubwoko butatu bw'inzuki, kandi buri bwoko bwose bukora umurimo wihariye.**



**Uru ruyuki ni umwamikazi. Mu muzinga habamo umwamikazi umwe gusa. Ni nyina w'inzuki ziba mu mutiba. Umurimo warwo ni ugutera amagi azavamo izindi nzuki. Rushobora gutera amagi 1000 buri muni mu bihe bimwe na bimwe by'umwaka.**

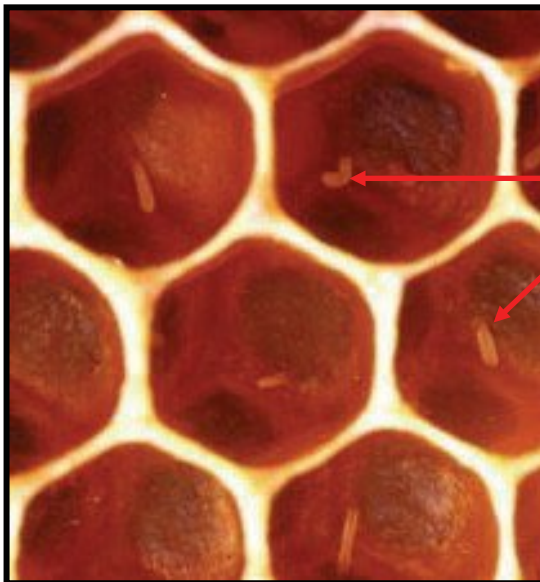


**Uru ni uruyuki rw'ikigabo. Umurimo warwo ni uguhura n'umwamikazi gusa kugirango zororoke. Mu mutiba hashobora kuba harimo inzuki z'ingabo nka 500 igihe hari ibiryo byinshi. Mu gihe cy'amapfa ziramena.**

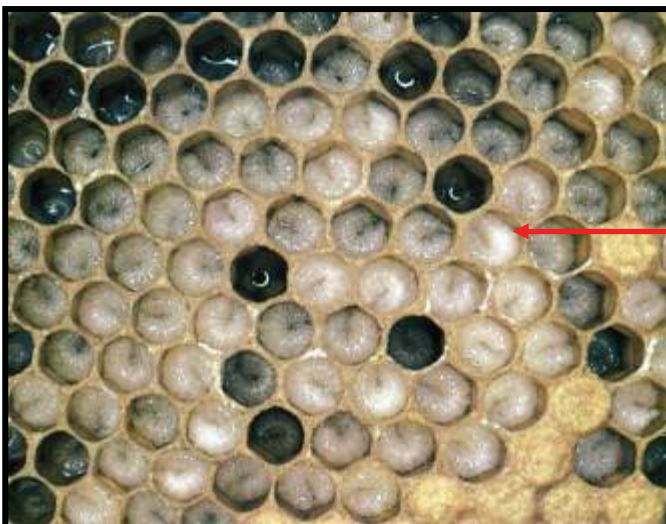


**Uru ni ruyuki rutara. Ni ikigore ariko ntirutera amagi. Nirwo rukora imirimo yose yo mu mutiba. Inzuki zitara zishobora kuba ari nka 40,000 mu gihe cyo gutara ubuki.**





Umwamikazi atera igi muri buri kumba k'ikimamara.



Amagi arameneka akavamo ibyana by'inzuki.

**Kugirango ibyana bikure bipfundikirirwa mu twumba duto tw'ibimamara.**



**Muri ka kumba k'ikimamara havukamo uruyuki rukora imirimo yo mu mutiba.**



**Inzuki zikora imirimo yo mu mutiba ziva mu mutiba zikajya gutara mu ndabyo, zigakusanya intangangabo n'amazi byo mu rurabo kugirango zikoremo ubuki. Uru ruyuki rurimo gukura amazi mu nturusu.**



**Inzuki zituma umusaruru w'imiwembe, ikawa, amacunga, amapera (imitini), n'izindi mbuto nyinshi wiyongera.**



**Uru ruyuki rukora imirimo yo mu mutiba rwakusanije intangangabo n'amazi by'ururabo. Rumwe muri izi nzuki ziri ku bwinjiriro bw'umutiba (intoboro) rwasohoye ururimi kugirango rwumve ko amazi y'ururabo aryoshye.**



**Inzuki zikora imirimo yo mu mutiba zibika intangangabo n'amazi by'ururabo mu bimamara.**

**Indabyo zigira intangangabo z'amabara atandukanye.**

**Inzuki zirimo gukubita amababa kugirango zitandukanye amazi n'intangangabo by'ururabo, zinakwirakwize impumuro.**



**Uru ruyuki rurimo gukwirakwiza impumuro ihamagarira izindi nzuki kurusanga.**

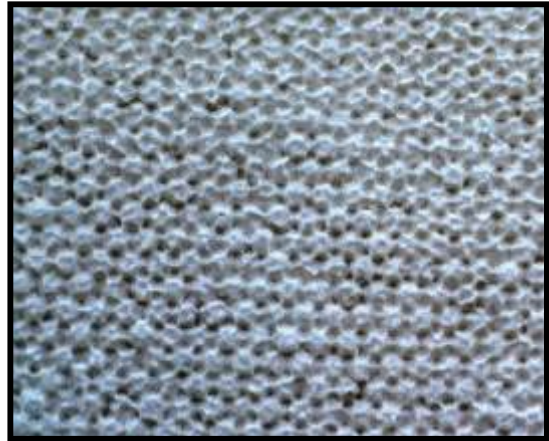
**Izi nzuki zikora imirimo yo mu mutiba zirimo gusangira ibiryo n'impumuro.**



**Izi nzuki zikora imirimo yo mu mutiba zirimo kubyina kugirango zerekane uburyohe n'aho amazi y'ururabo ayoherereye aherereye.**



**Inzuki zikora imirimo yo mu mutiba zapfundikiye ubu buki neza. Ni ubuki bwiza bugejeje igihe cyo guhakurwa.**



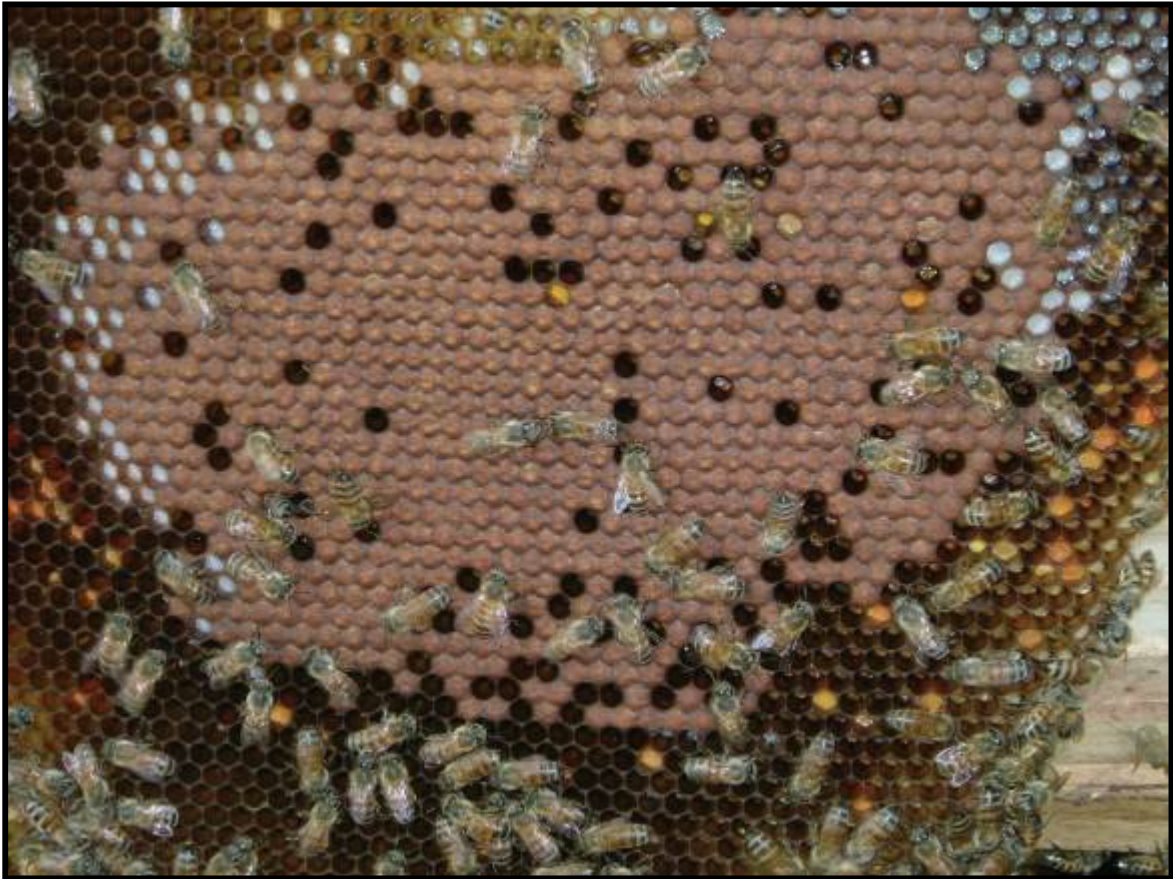
**Izi nzuki zikora imirimo yo mu mutiba zirimo kwinjiza inshumbu mu mutiba. Ni amazi afatiriye inzuki zikura mu biti. Inshumbu zikoreshwa mu gufatanisha ahantu hasadutse no gutuma umutiba uhora ufite isuku.**



**Uru ruyuki rurinze ubwinjiriro (intoboro). Iyo inzuki zirinze umutiba wazo zirarumana. Inzuki ntizihutira kurumana kuko iyo zirumanye zihita zipfa.**



**Inzuki zikora imirimo yo mu mutiba nizo zirumana gusa. Inzuki ntabwo zipfa kurumana keretse hari impamvu ibiziteye.**



**Ushobora kwerekana ibiri kuri iki kimamara?**

**Shaka:**

- **Inzuki zikora imirimo yo mu mutiba**
- **Inzuki zikora imirimo yo mu mutiba zikiri nto zipfundikiriye mu kimamara**
- **Ibyana by'inzuki biri mu twumba tw'ikimamara tudapfundikiye**
- **Utwumba tw'ikimamara turimo ubusa**
- **Utwumba duke tw'ikimamara turimo amazi y'indabyo aryohereye akiri mashya**
- **Utwumba tw'ikimamara turimo intangangabo z'ururabyo**



# Uburyo bwo Kwirinda Igihe Ukora mu Nzuki



**Salome wo muri Kenya, yambaye umwambaro yikoreye wambarwa mu gihe cyo guhakura**

Andi mafoto yatanzwe na Paul Latham



## Uruyuki rurarumana

Inzuki zirarumana kandi imbori zishobora kuba mbi cyane. Itondere inzuki kandi uzubahe igihe cyose.



### IBUKE

Buri rukora imirimo yo mu mutiba rugira urubori

Buri rubori rufite impumuro iburira izindi nzuki ko hari ikibazo

Impumuro ireshya izindi nzuki, zikaruma aho urundi rwarumye

Shyira umwotsi aho rwakurumye kugirango izindi zidahumurirwa

Hita ushinguza urubori mu mubiri wawe

## Imyambaro yo kwirinda

Buri gihe ambara imyambaro myiza yo kwirinda igutwikiriye umubiri wose. Iyi myambaro yambarwa mu gihe cyo guhakura, ikorwa mu bikoresho bidahenze biboneka mu buryo bworoshye:



**Niba udashoboye gukora uyu mwambaro, kora agatimba gacikiriritse, nkuko bigaragara mu gice gikurikira.**

**Ga zambarwa mu ntoki zikozwe muri kawucu**

**Ipantalo ifashe**

**Inkweto zikomeye**



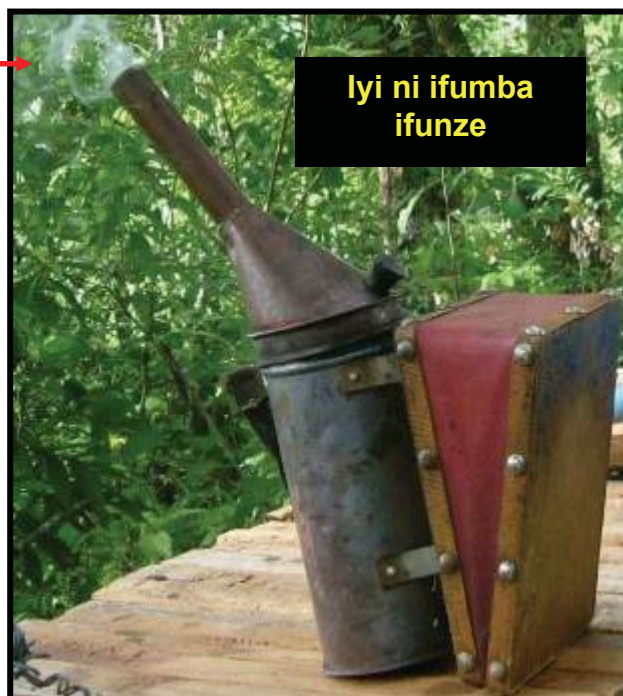
**Ambara imyenda itakwegereye cyane.**

**Girira isuku imyambaro wambara uhakura kugirango impumuro y'imbori itumvikanamo.**

## **Uburyo bwo guturisha inzuki kugirango zitakurya**

**Umwotsi ni uw'ingenzi kuko utuma inzuki zituza. Hariho uburyo bwinshi bwo gufuhherera inzuki umwotsi kandi hari n'ubwoko bwinshi bw'amafumba:**

**Umutekano mbere na mbere. Koresha umwotsi mwinshi kugirango uturisha inzuki.**





**Iyi fumba  
iciriritse ikozwe  
mu gikombe**

## **Ntugakore wenyine**

**Igihe cyose ugiye gukora mu nzuki gira undi muntu mujyana.  
Banza ugenzure ko imyambaro yawe iteguye.**



## **IBUKA**

- **Ntugapfe gupfundura umutiba nta mpamvu yumvikana**
- **Pfundura umutiba witonze**
- **Kora vuba vuba kandi nta rusaku**
- **Koresha umwotsi mwinshi**
- **Pfundura imitiba igihe hari ikirere gihehereye**
- **Akenshi bikorwa mu gitondo kare cyangwa nimugoroba**
- **Gufungura umutiba nimugoroba, bifasha inzuki kongera kwikusanya ijoro ryose**
- **Mbere na mbere umutekano**



# Uburyo bwo Gukora Agatimba Gaciriritse



**Abavumvu b'I Gisoro mu Bugande bashoboye kwikorera udutimba**

Andi mafoto yatanzwe na Dan Ngirabakunzi

## UBURYO BWO GUKORA AGATIMBA GACIRIRITSE

**Biroroshye gukora agatimba gaciriritse mu rwego rwo kwirinda ko inzuki zikuruma mu maso no mu mutwe. Umufuka uvamo ibigori ni cyo gikoresho gikomeye kandi gihendutse wakoresha.**



**Kata umufuka mo inshuro ebyiri ukurikije uko uburebure bwawo. Noneho buri ruhande urukate mo uduce dutatu. Buri gace kazakoreshwa mu gukora buri ruhande rw'agatimba.**



**Ushobora gukora ingofero esheshatu mu mufuka umwe igihe uwukase witonze.**



**Aka kadeyi gafubuka mu buryo bworoshye. Niyo mpamvu impera zako zigomba gukubwa zikadodwa kugirango zibe zikomeye.**

**Mwitegereze uko impera z'umufuka zafubutse.**



**Doda buri gace kugirango ukore inguni.**



**Noneho shyiramo agace k'umwenda kabonerana. Inzitiramubu niyo ibikora neza.**

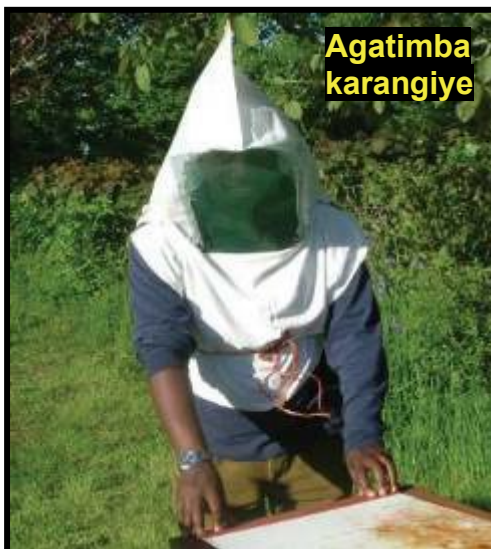




**Dore uko bigomba kumera:**



**Ungeraho umwenda cyangwa ikindi kintu gifite impande enye maze ukidodere ku ngofero imbere n'inyuma kugirango urinde igituza n'umugongo. Ungeraho indodo kugirango ufatanyirize hamwe impande ebyiri.**



**Igihe witegura gukora mu nzuki, ikintu cya mbere ubanza kwambara ni agatimba, maze ukagahambirira neza imbere y'umwenda ukomeye. Niba udafite umwambaro wabugenewe renza ikote ku gatimba kugirango umwambaro wawe ube wuzuye.**

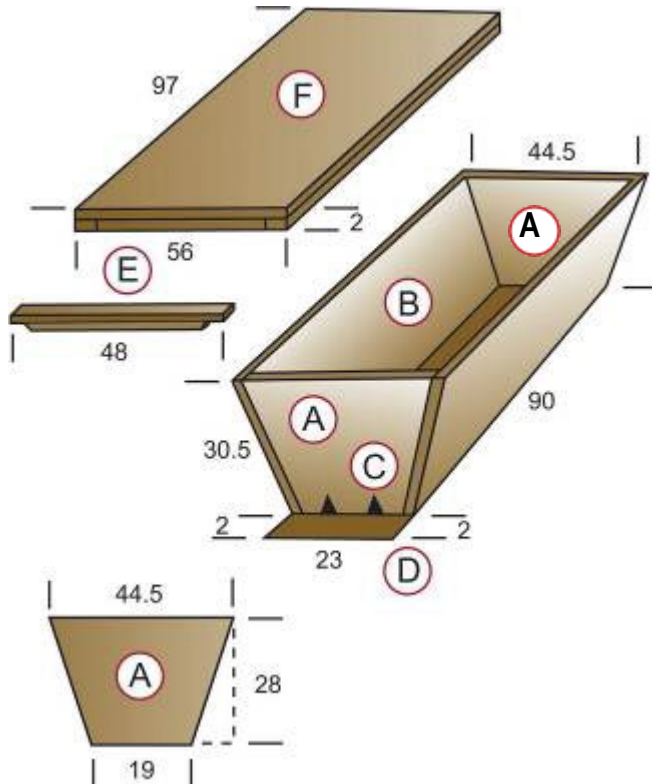
# Uburyo bwo Gukora Umutiba ufite Umupfundikizo w'imbaho



**Aba bagore bo mu Mushinga wa Nessuit (Rift Valley muri Kenya), barimo guhoma umutiba bakoresheje amase n'ibyondo**

Andi mafoto yatanzwe na Roy Dyche na Paul Latham

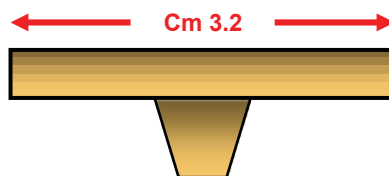
Iki gishushanyo kiragaragaza uko umutiba ugomba kuba ungana. Ibipimo by'ifatizo bifasha umuvumvu kwimurira ikimamara mu wundi mutiba. Ibi binamufasha gukora neza mu nzuki mu buryo bumworoheye ndetse bikanamworohera guhakura.



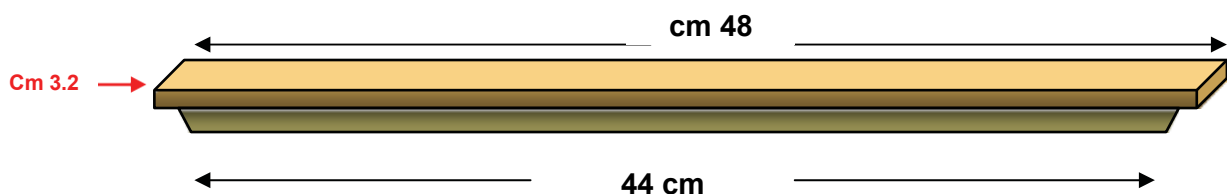
A – Umutwe w'inyuma  
 B – Urubaho rwo ku ruhande  
 C – Ubwinjiriro (*bukwiriye kuba butarengeje mm 8 z'uburebure*)  
 D – Akabaho inzuki zigwaho katarangeje cm 2 z'uburebure (si itegeko kugashyiraho)  
 E - Umupfundikizo  
 F – Igisenge  
*(Ibipimo byose biri imbere kugirango byorohe igihe habayeho guhinduranya ibikoresho bikoze umutiba)*

Ubusanzwe imbaho zikoze umupfundikizo ziba zifite ishusho ya paralelogarame. Ni **ngombwa** ko imbaho zikoze umupfundikizo ziba zifite **neza neza** cm 3.2 z'ubutambike:

**URUBAHO RUKOZE UMUPFUNDIKIZO URUREBEYE KU MUTWE WARWO**



**URUBAHO RUKOZE UMUPFUNDIKIZO URUREBEYE KU RUHANDE**





## 1. GUKORA UMUTIBA MU MBAHO

**Kata imbaho wateranije ukurikije ibipimo. Izi ni imbaho zo ku ruhande.**



**Urubaho rugomba gusenwa kugirango ruze kuringanira n'urundi neza.**



Teranya ibice bibiri by'imbaho ukoresheje imisumari kugirango ukore imitwe y'umutiba (umutwe w'imbere n'uw'inyuma). Kata ingofero z'imisumari (cyangwa uzikubitishe ibuye) kugirango impande ebyiri z'umusumari zibe zisongoye. Injiza umutwe w'umusumari usongoye mu rubaho rumwe n'undi mutwe mu rundi rubaho kugirango izo imbaho zombi zifatane.



Izi mbaho ebyiri zifataniye nizo zikora imitwe y'umutiba (uw'imbere n'uw'inyuma).





**Kata neza imbaho zikora imitwe ukurikije ibipimo.**



**Koresha igikoresho gifite ibyo bipimo kugirango gupima byorohe. icyo gishushanyo kiba gikozwe mu makarito. Iyo upimye uhereye hagati, ntagushidikanya imfuruka ziba ziringaniye neza.**



**Pfumura umwenge mu ishusho ya 'V' cyangwa upfumure imyenge (intoboro) (ifite umurambararo muto k'uw'ikaramu ya Bic) mu mutwe aho inzuki zinjirira. Ubwinjiriro bugomba kuba butarengeje mm 8 z'uburebure kugirango birinde ibikoko byatera umutiba.**





Umaze gukata imbaho, haba hasigaye guteranya umutiba. Kuri iyi foto imbaho ebyiri zo ku mpande zirimo guteranywa n'imitwe. Hanyuma hongerwaho akabaho inzuki zigwaho zinjira.



**Kubaka igisanduku cy'umutiba.**



**Hariho bamwe bakora imitiba ifite imitwe isumba imbaho zo ku mpande kugirango imbaho zikoze umupfundikizo zibone aho zijya.**



**Imbaho zikoze umupfundikizo zikwirwamo neza neza kuko imitwe iba ari miremire.**

**Abandi bashyira akabaho imbere mu mutiba kugirango imbaho zikoze umupfundikizo zihure neza neza n'impande.**



**Akabaho izindi zitambikwaho**

**Imbaho zitambikwa hejuru ziringaniye n'imbaho zo mpande**



## 2. GUKORA Umutiba MU BIKORESHO BIHENDUTSE KANDI BIBONEKA MU Buryo BWOROSHYE

**Si ngombwa ko imitiba igomba gukorwa mu biti bihenze gusa.** Ibikoreho byinshi biboneka mu buryo bworoshye, bishobora gukora umutiba neza. Uyu mutiba ukoze mu giti cy'umukindo wo mu bwoko bwa rafiya (raphia).



Ushobora gukora imitwe y'umutiba ikase neza ukoresheje ibisigazwa by'imbaho (ibiparara), maze impande n'urubaho inzuki zigwaho ukabikoreho ibiti biboneka mu bidukikije. Uyu mutiba ukozwe mu biti bigororotse.





**Uyu mutiba witwa "Grande ruche" wo muri Congo ukoranywe ubuhanga hadakoreshejwe imisumari cyangwa imbaho. Ibikoresho byoroshye bifatanishwa uduti dusongoye.**



**Ibyuho biri muri uyu mutiba ukozwe mu migano, bigomba gupfukanwa ubwitonzi hakoreshejwe ibikoresho bikwirwaho bibuza ibikoko kwinjira.**



**Uyu mutiba wakorewe mu Bugande ukozwe mu ngeri z'ibiti bihomeshejwe icyondo, ivu n'amase.**



**Uyu mutiba ukomeye wakorewe i Bugande ubohesheje imbingo.**



**Imbere h'uyu mutiba no mu mpande zawo hagomba kuba hahomeshejwe icyondo kugirango hekuzamo urumuri no kugirango imiswa n'ibindi bikoko bye kwinjira.**





**Si ngombwa ko igisenge kiba gikoze mu bikoresho bihenze, gipfa kuba kirinda imvura ngo itagwa mu mutiba. Iki gisenge gitwikiriye ishashi.**



**Iki gisenge gikozwe mu ikadire hamwe n'ibice bibiri by'umugano bigiye bigerekeraniye. Mo hagati harimo ishashi ituma amazi atinjira mu mutiba. Hejuru naho hatwikirijwe shitingi.**





**Iki gisenge gisakaye nk'amazu ya cyera. Gifite imitwe ikomeye irinda inzoka cyangwa ibindi bikoko ngo bitinjira, kinafite imikondo ituma umutiba uterurika ku buryo bworoshye.**



**Igisenge cy'umutiba gishobora gukorwa mu migano isatuye-nk'uko igisenge cy'iyi nzu yo muri Kenya kimeze.**



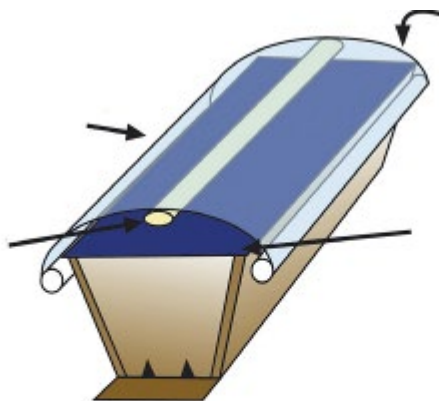
**Umugano usaturwamo ibice bibiri maze bikagerekeranywa gutya-nk'uko ibati rigunnye. Twikiriza umugano ishashi kugirango umutiba urusheho kugira umutekano.**



**Igisenge giciriritse gishobora gukorwa hakoreshejwe pulasitiki ngari n'ibiti bibiri bicengezwa mu mpande. Uburemere bwabyo butsingira iyo shashi bukayikomeza.**

**4.** Twikiriza amakoma cyangwa ibindi byatsi

**2.** Umugano uri hejuru ya shitingi wo kuyitsindagira kugirango amazi atembere ku gisenge gicuritse

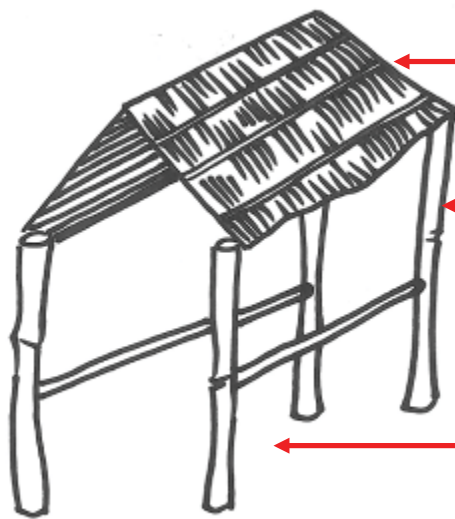


**3.** Shitingi hamwe n'ibiti bikomeza impande

**1.** Shitingi itwikiriye imbaho zikoze umupfundikizo w'umutiba



**Niba gukora igisenge gifatana n'umutiba bidashoboka, iki gisenge gisakaye gishobora kurinda imitiba ntigerweho n'izuba hamwe n'imvura.**



**Igisenge gisakaje imikindo gitwikiriye igitereko cy'imitiba**

**Ibiti by'imigano bifashe igitereko cy'imitiba**

**Umutiba ushyirwa aho utwikiriwe**

**Uyu mutiba ukoze mu biti wuzuye ushyirwa mu gitereko cyawo gikozwe mu biti birebire bihambirijwe insinga. Ibi bituma imitiba imanikwa mu buryo bworoshye bikanarinda ko ibikoresho biwukoze byoroshye byangirika. Kwimura imitiba uyiterura mu gitereko cyayo, bituma kugabanya inzuki byoroha.**

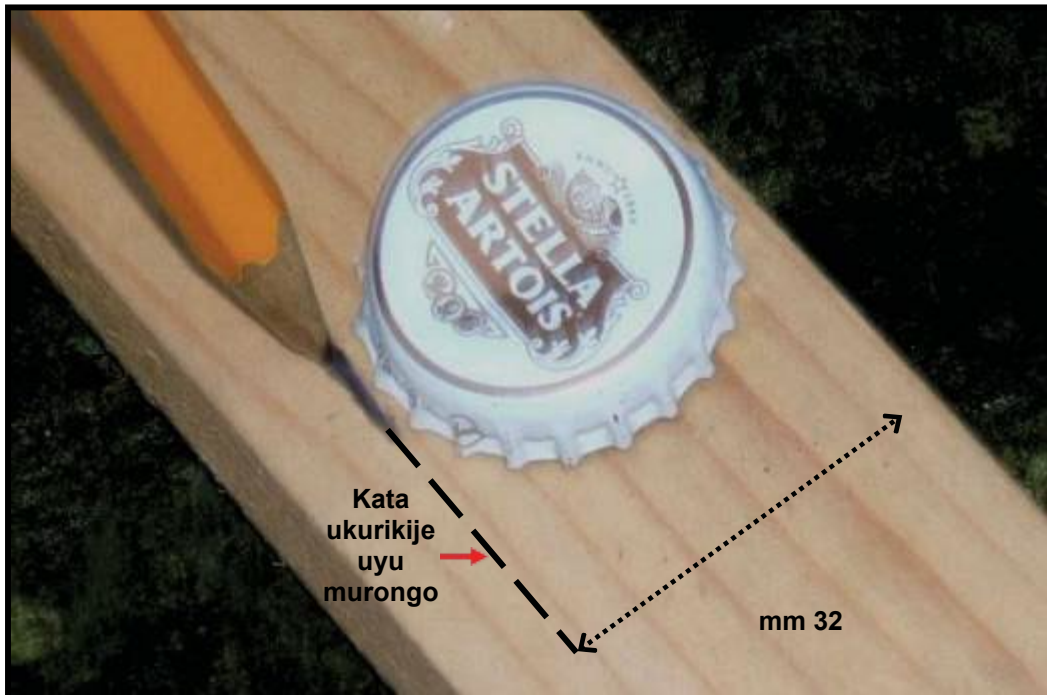


**Insinga zimanitse umutiba.**

**Ikadire ikozwe mu biti bihambiraniye hamwe niyo iterekwamo umutiba.**

### 3. GUKORA URUBAHO RWO HEJURU

Gukata urubaho rw'umutambiko ikimamara gifataho nicyo gice gikomera kandi kinahenda mu gihe ukora umutiba. Ni ngombwa ko izo mbaho ziba zifite mm 32 cyangwa 33 (cm 3.2 cyangwa 3.3) z'ubugari. Gupima ubugari bw'imbaho zitambikwa hejuru hakoresha umupfundikizo w'icupa cyangwa ibuye ry'iradiyo rya volute 9 ryarangije gukoreshwa (amabuye afite impande enye niyo akoreshwa gusa).



Imbaho nyinshi zitambikwa hejuru zikatwa mu mpande. Nyamara, abantu benshi bakoresha neza imbaho zitambikwa hejuru ziciriritse, bazikoze mu bikoresho biborohera kuboneka kandi byoroshye gukatwa aho gukoresha imbaho zihenze. Uyu mutambiko ikimamara gifataho ukoze mu giti cy'umukindo wo mu bwoko bwa rafiya (raphia).





**Uru rubaho ntirufite inguni. Rurarambuye.**



**Ibiti, imigano cyangwa ibindi bikoresho bikwiriye, bikatanwa ubwitonzi kandi bigakatwa neza.**



**Urubaho ibimamara bifataho rutonyangirizwaho amazi ya buji ikoze mu bishashara.**



**Itegereze iyi foto. Ushobora kubiganiraho n'abandi bavumvu. Iyi mitambiko iri ku mutiba ikozwe mu migano, iriho amavuta y'ibishashara; iki ni igitekerezo cyiza nawe ubwawe wagerageza. Ariko kandi, bizagora umuvumvu igihe inzuki zizashyira ikimamara ku mutambiko kandi izo mbaho zidakase neza.**





**Imbaho zitambikwa ku mutiba zikase nabi nizo zituma ibibazo byinshi bishobora kuvuka igihe ukoresha imitiba itambikwaho imbaho hejuru.**

**Iyo utubaho cyangwa amarati atambikwa ku mutiba akaswe neza akanashyirwaho amavuta y'ibishashara neza, inzuki zubaka ikimamara kuri buri rati itambikwa ku mutiba. Ibi bifasha umuvumvu gusarura mu buryo bumworoheye no kwimura ibimamara abivana mu mutiba umwe abishyira mu wundi kugirango akore neza mu nzuki kimwe niyo akora mu mitiba ya kizungu (imitiba y'amakadire).**



# Uburyo bwo Gutegura Neza aho Imitiba Yegekwa



**Igisambu cyiza cyagitsemo inzuki muri Malawi**



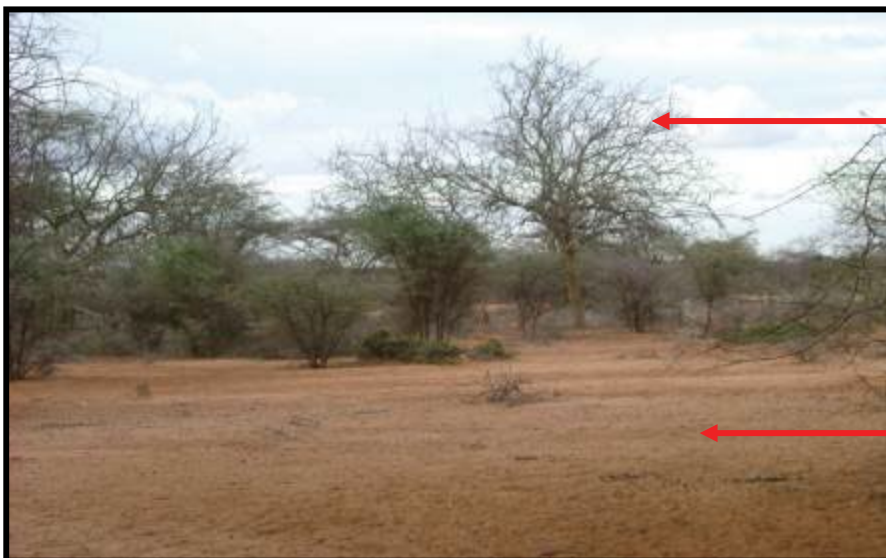
**Kugirango ubone ubuki bwiza, ugomba kubanza kwegeka neza. Aho imitima yegekwa ni ahantu hashyirwa imitiba.**



**Dore inzira bicamo mu gutegura neza aho imitima yegekwa:**

**1. Hitamo ahantu:**

- **Hakorohera kugera;**
- **Kure y'abantu n'urusaku, kandi hatagerwa n'abajura;**
- **Inzuki zishobora kubona amazi hafi;**
- **Hafi y'indabyo, n'ibiti byera indabyo;**
- **Hatagera izuba n'imiyaga bikaze;**
- **Hashobora kuba hadakorerwa ibindi bikorwa bifite akamaro nk'ubuhinzi.**



**Ibiti byinshi bitanga ubwugamo bikanamanikwa mo imitiba.**

**Ibiti bya gasiha ni byo biti byiza ku nzuki**

**Ubutaka bubi si bwiza ku bindi bikorwa**

## 2. Tegura aho imitiba yegekwa:

- Ukuraho inzitizi n'ibimera bizengurutse imitiba kugirango uhagere bikoroheye;
- Uharinda abahasura utifuza nk'abajura n'inyamaswa nini;
- Uhatera ibiti bitanga amazi aryohereye kugirango inzuki zibone icyo zirya.



Abashinzwe  
guhugura ba  
SBDARA  
barimo gutunganya  
ahazegukwa imitiba

Guharura aho  
hantu  
bizanafasha  
kwirukana  
ibikoko nka  
nyamabumba,  
ibikeri  
n'imiserebanya.

## 3. Tereka imitiba:

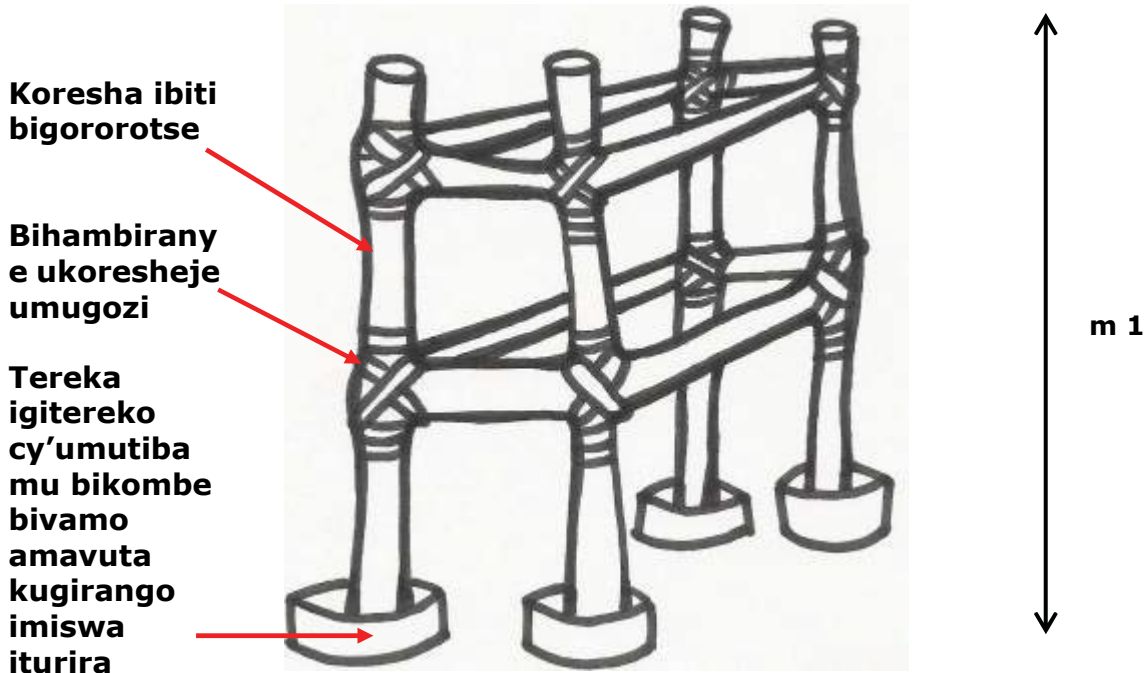
- Ku buryo iba iringaniye;
- Abantu bamwe bakoresha ibitereko. Abandi bakoresha insinga kugirango bamanike imitiba;
- Ibiti biterekwaho imitiba bigomba kuba bifite byibura metero imwe y'uburebure;
- Ibyo bitereko bigomba gukorwa mu biti bikomeye kugirango bimare igihe;
- Ibiti bibisi ntibishobora kubora – koresha ubwoko bw'ibiti bizahita bimera igihe bizaba bishinze mu butaka;
- Amaguru y'ibitereko agomba kuba asize amavuta (girise) cyangwa agaterekwa mu bikombe bivamo amavuta kugirango imiswa iturira ikajya mu mutiba.



Igiti  
giterekwamo  
umutiba  
kigira metero  
imwe uvuye  
ku butaka.  
Urabona ko  
kigarukira  
aho inkokora  
y'umuntu  
igera



## Igitereko cy'umutiba giciriritse:



- Koresha insinga kugirango umanike umutiba kugirango utuyongwe tutawutera;
- Insinga zimanika umutiba ziwufasha gutendera kugirango ibikoko bye kwinjira maze bikarya ubuki;
- Insinga zigomba kuba zisize amavuta (girise) kugirango imiswa itahegera;
- Manika imitiba byibuze muri metero 1 uvuye ku butaka.



- Siga umwanya uhagije hagati y'imitiba kugirango bikorohere kwisanzura ukora mu nzuki udakubaganiye inzuki ziri mu yindi mitiba;
- Ugomba gukora ku buryo ubwinjiriro bw'inzuki budategana n'inzira abantu baturukamo;
- Ntukwiriye kurenza imitiba 10 aho yegekwa.



#### 4. Koresha "igitegesho" kugirango ureshye inzuki:

- Imitiba igomba kuba isukuye inarimo igitegesho kiza kirehereza inzuki kwinjira mu mutiba;
- Nyanyagiza ibishashara byinshi imbere mu mutiba no ku bwinjiriro bwawo;
- Urubaho rutambikwa ku mutiba rusizwe ho ibishashara nirwo rureshya inzuki neza. Ikindi ni uko inzuki zikunda cyane ibimamara birimo ibyana by'inzuki;
- Inzuki zikunda ibibabi bimwe na bimwe, cyane cyane iyo bihumuramo indimu; nabyo bikoreshwa nk'ibyunganira igitegesho. Ibindi bitegesho bikora neza byifashishwa ni urwagwa cyangwa inzoga, ifu y'imyumbati cyangwa iy'ibigori, cyangwa ibikonko.





### 5. Buri gihe jya ugenzura ko inzuki zinjiye mu mitiba:

- Niba nta nzuki zirimo genzura ko imitiba irimo isuku, yumutse kandi ko nta bikoko nk'imiswa, imbeba n'ibitagangurirwa byaba byinjijemo;
- Ongeramo ibindi bishashara niba ari ngombwa;
- Igihe cyiza inzuki zinjira mu mitiba ari nyinshi ni igihe ziba zimuka cyangwa zigendagenda hirya no hino;
- Ganira n'aborozi b'inzuki babihugukiye kugirango umenye igihe cyiza cyo gutega inzuki nyinshi icyo ari cyo.

### 6. Sukura aho imitima yegekwa unaharinde:

- Ukuraho ibyatsi n'ibindi biti byegereye imitiba;
- Niba bishoboka, kora uruzitiro rw'aho imitima yegekwa utera ibiti bishobora kumera bikenerwa n'inzuki.



Aha hantu hegetse imitiba nta musaruro uzahava kuko nta biti bihari byo gutanga ubwugamo cyangwa ibiryo by'inzuki. Muri iyi mitiba nta numwe winjiye n'inzuki. Nta biti, nta nzuki-nta buki, nta na mafaranga.



# Uburyo bwo Gukora mu Nzuki



**Abavumvu bo muri Nigeria barimo kugenzura umutiba utambikwaho imbaho**

Andi mashusho yatanzwe na Mike Brown, Brian Durk na Claire Waring



## **GUTEGURA GAHUNDA Y'IMIRIMO**

**Sura aho imitiba yegetse kenshi. Kora ikintu kimwe igihe uhasuye, kandi ugire gahunda y'akazi ikwiranye n'ibihe by'umwaka. Dore ingero za gahunda y'imirimo:**

- 1. Sukura hafi y'imitiba unagenzure ko yinjiwe kandi ifite umutekano.**
  
- 2. Genzura imbere mu mitiba kugirango urebe niba:**
  - **Inzuki zubaka neza ibimamara (ikimamara kimwe ku rubaho rw'umutambiko)**
  - **Umwamikazi akora umurimo we neza;**
  - **Hari amazi yinjyemo;**
  - **Hari ibyinjiyemo nk'imiswa, nyamabumba cyangwa ibitagangurirwa;**
  - **Hari indwara zatuma inzuki zangirika.**
  
- 3. Guhakura ubuki:**
  - **Hakura ubuki bweze gusa;**
  - **Ntugasarure ibimamara birimo ibyana;**
  - **Ntukice inzuki;**
  - **Siga ubuki buke mu mutiba kugirango inzuki zibone ibyo zirya.**
  
- 4. Nyuma yo guhakura:**
  - **Kuramo ibimamara bishaje, birimo ubusa;**
  - **Ongera utunganye ibimamara kugirango he kugira ibyuhu biba hagati y'ibimamara;**
  - **Sigira inzuki ubuki buke;**
  - **Gaburira inzuki niba bishoboka cyangwa niba ari ngombwa.**
  
- 5. Igihe inzuki zamennye:**
  - **Hakura ibimamara byose kugirango uvanemo ibishashara;**
  - **Sukura imitiba ukuremo imyanda n'ubuvungukira;**
  - **Koresha umuriro witonze wice udukoko n'indwara biri mu mitiba;**
  - **Ongera ushyire amavuta y'ibishashata ku mbaho z'umutambiko maze wongere uzishyire imbere mu mutiba usa neza.**

## IKI GICE KIZAGUFASHA KUGENZURA UMUTIBA MU MUTEKANO UNASOBANUKIRWE IBYO UBONA

### 1. Ambara imyenda igukingira.

Koresha bote zikoze muri kawucu cyangwa ishashi zihambiriye ku birenge ku tugombambare



Agatimba

Umwambaro w'inyuma

Ga zambarwa mu ntoki

Ipantalo

### 2. Ugomba kugenzura ko ibikoresho byawe byose biteguye. Nibyiza kuba uri kumwe n'inshuti yawe igufasha.



Indobo y'ubuki

Ga zambarwa mu ntoki zikoze muri pulasitiki

Umuhoro, icyuma cyegura ikadire n'icyuma gikata ibimamara

Ifumba



3. Cana ifumba kugirango haboneke umwotsi mwiza mwinshi. Ibigorigori, ubwatsi bwumye n'ibiti byaboze byose bitanga umwotsi mwiza.



Ushobora gukora ifumba idahenze mu gikombe kinini gipfumuye mu ndiba.

4. Fuhirira umwotsi neza ku bwinjiriro maze utegereze ko inzuki zituza.



5. Fuhirira umwotsi neza munsu y'umupfundikizo w'umutiba maze uwukureho.



6. **Genzura ahari inzuki ukomanga ku mbaho z'umutambiko. Ahari urusaku rurangirira herekana igice kirimo ubusa.**



7. **Kuraho urubaho rwa mbere ruriho ubusa witonze.**



8. **Oroshya ikimamara gikurikira witonze kugirango kize kuvaho mu buryo bworoshye.**





**9. Egura buri kimamara witonze ukigenzure.**



**Hano abavumvu barimo kugenzura umurimo w'inzuki zikora imirimo yo mu mutiba n'umwamikazi kugirango barebe ko umuzinga urimo gukura neza.**

**10. Kuraho ikimamara kimwe uko weguye.**



**11. Itegereze uburyo imiterere y'iki kimamara cy'umutiba wa kinyarwanda imeze nk'iy'ikimamara cy'umutiba wa kizungu.**



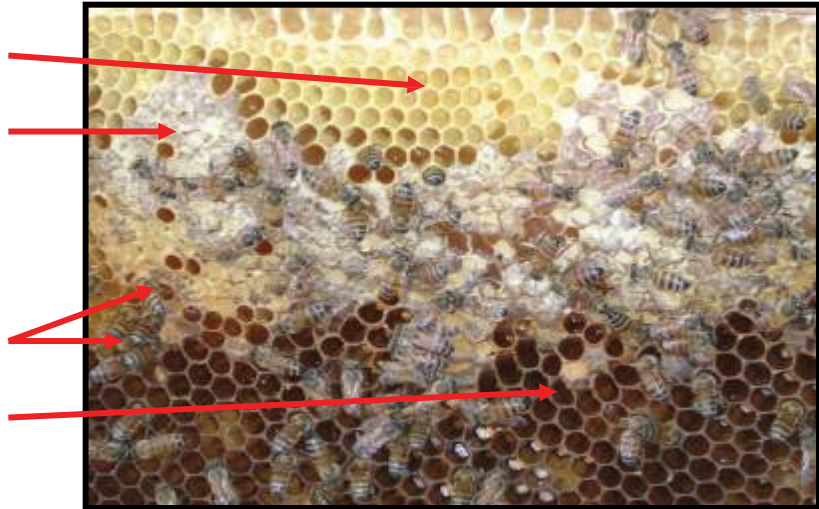
**12. Izi nzuki zikora imirimo yo mu mutiba zirimo gushyira ubuki n'intangangabo z'indabyo.**

**Intangangabo z'indabyo**

**Inzuki zikora imirimo yo mu mutiba**

**Ubuki budapfundikiye**

**Ubuki bupfundikiye**



**13. Izi nzuki zirimo kubaka ikimamara gishya.**

**Inzuki zirimo gukora igishashara**

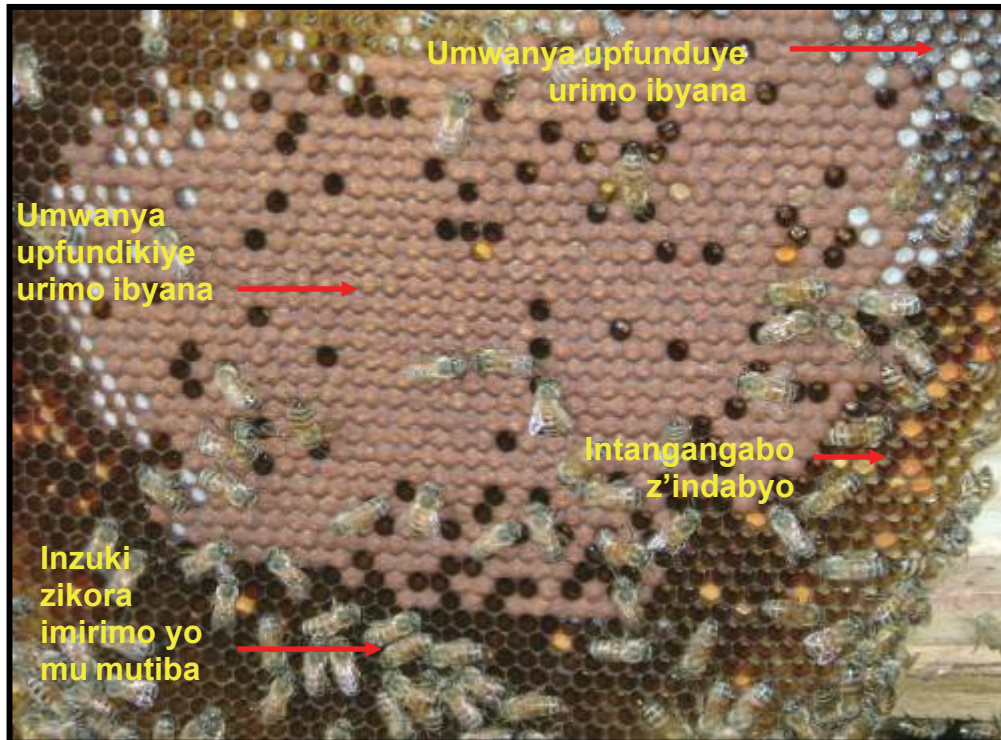


**14. Uyu mutiba urimo inzuki nyinshi kandi ukeneye guhakurwa.**

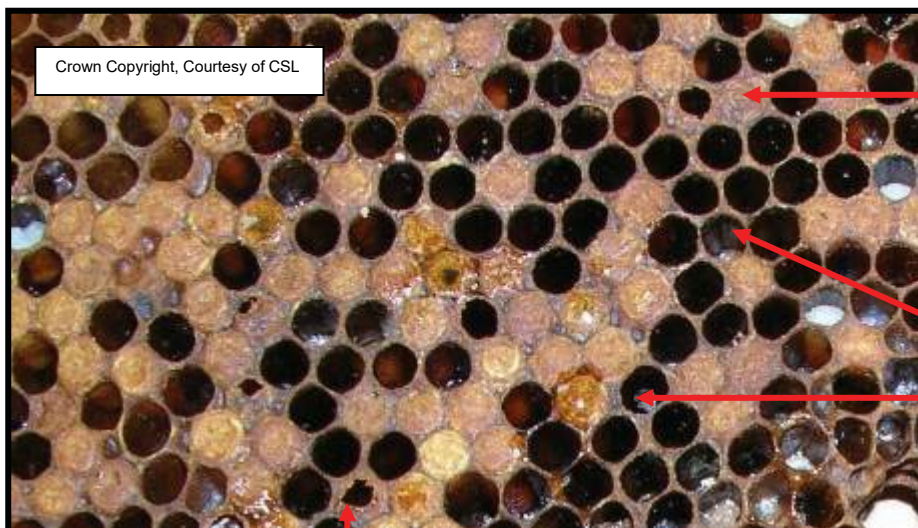




15. Izi nzuki zikora imirimo yo mu mutiba zirimo kugenzura inzuki z'ibyana. Ushobora kugaragaza ahari ibyana by'inzuki bipfundikiye, ibidapfundikiye, inzuki zikora imirimo yo mu mutiba n'amazi y'indabyo kuri iyi foto?



16. Izi nzuki zifite indwara mbi kandi zigomba gutsembwaho habayeho gutwika ikimamara.



Akumba k'ikimamara kijimye, gapfundikiye

Umwanya w'aho ibyana biri utaringaniye

Inzuki zapfunduye utwumba tw'ikimamara twinjiwemo n'indwara

# Uburyo bwo Guhakura Ubuki Bwiza



Andi mashusho yatanzwe na Len Dixon na National Bee Unit  
(Fera)



**Umusaruro w'ubuki bwiza ugira agaciro. Ubuki bumeze neza bubikika neza kandi bukagurishwa ku giciro cyiza. Birashoboka guhakura inshuro nyinshi mu mwaka umwe. Igihe cyo guhakura ubuki gihinduka bitewe n'ahantu. Ushaka kubimenya, wabaza abavumvu nibo babikubwira.**



Crown Copyright, Courtesy of CSL

**Uyu mutiba wuzuye ubuki kandi ukeneye guhakurwa. Nyamara, kuko imbaho z'umutambiko ziteye nabi bituma ibimamara bifatana bikagora kubihakura. "Gufatana kw'ibimamara" bituma umutiba ufite imitambiko y'imbaho uhinduka umutiba wo mu bwoko bwa gakondo uhenze.**



**Iyo ikimamara kimwe kiri ku rubaho rw'umutambiko bituma guhakura byoroha.**



**Ikimamara  
cyiza**

**Kugirango uhakure ufite umutekano kandi mu buryo bukoroheye, fatanya n'inshuti.**



**Ibi nibyo bikoresho ukenera igihe ugiye guhakura.**



**Ga z'intoki zikoze  
muri pukasitike,  
umuhoro, icyuma  
cyegura ikadire  
n'icyuma gikata  
ibimamara**

**Indobo  
y'ubuki**

**Ifumba**



**Fuhirira umwotsi ku mutiba kugirango inzuki zituze. Ubusanzwe ubuki buba buri kure y'ubwinjiriro bw'umutiba. Hano ubwinjiriro buri ku mutwe w'imbere, ni ukuvuga ko ubuki bwinsi buba buri ku ruhande rw'inyuma rw'umutiba.**



**Genzura aho inzuki ziri maze ufungure umutiba gahoro gahoro witonze.**



**Hungura inzuki ziri ku kimamara gahoro gahoro uzisubiza mu mutiba. Ushobora gukoresha uburoso bukoze mu mababa y'inkoko cyangwa ubukoze mu byatsi.**



**Toranya gusa ibimamara bipfundikiyemo ubuki abe aribyo uhakura. Ni byiza guhakura mu mafu ya nimugoroba, kugirango inzuki zakubaganiwe zongere zisuganye ijoro ryose zisubire mu mutiba. Igihe uhakura nijoro biragora kumenya ko ubuki ari bwiza.**



**Guhakura imvura ihise byongera amazi mu buki bigatuma butaryoha.**



**Kata ikimamara ukivane ku rubaho gifasheho ugishyire mu ndobo isukuye. Ugomba gusubizaho umupfundikizo ukimara gukatira ikimamara mu ndobo kugirango inzuki zitinjiramo.**



**Icyuma gikata ikimamara ku rubaho rw'umuta mbiko**

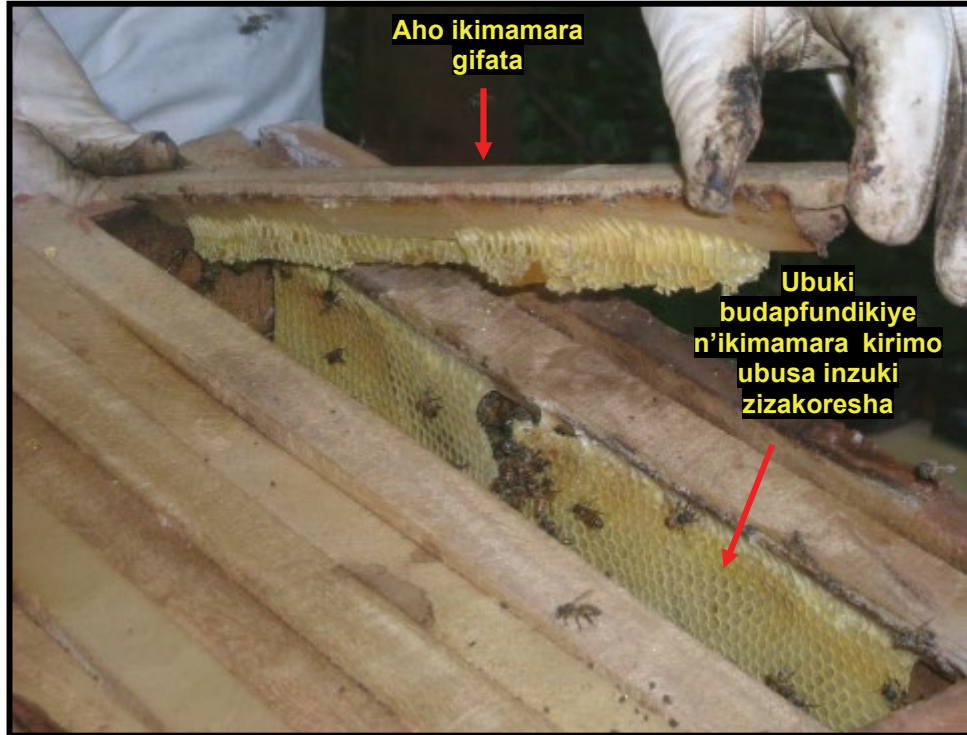
**Urubaho rw'umuta mbiko ikimamara gifataho**

**Indobo**

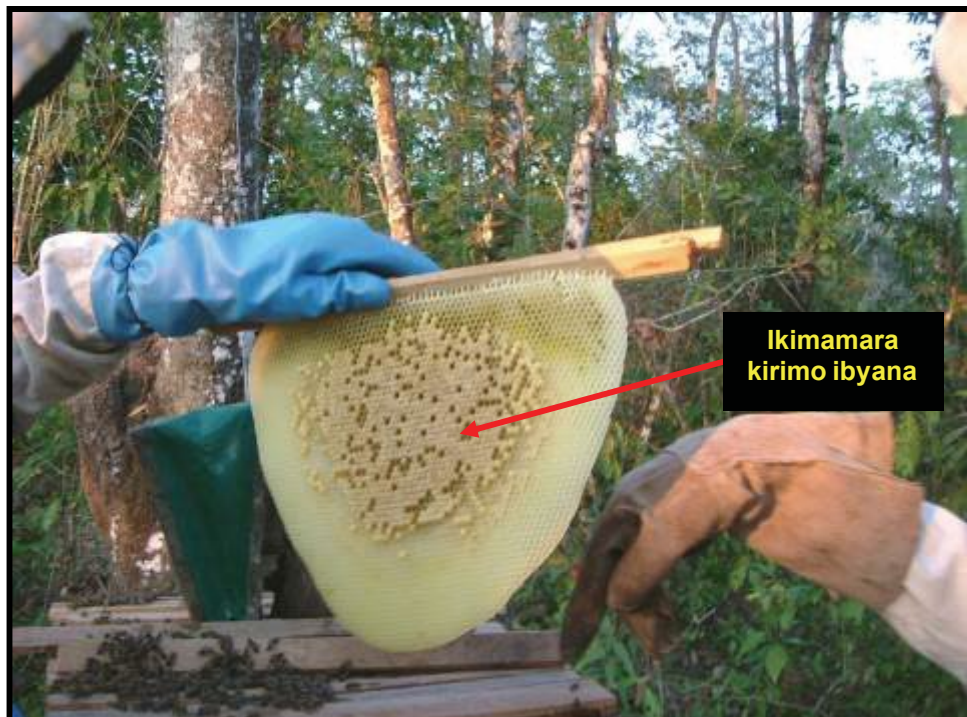
**Kugirango inzuki ze kujya ku buki, hakenewe indobo isukuye ifite umupfundikizo mwiza; kandi bigabanya ubukonje mu buki.**



**Hakura buri kimamara kugeza ubwo ugera ku bimamara birimo ibyana. Ntukureho umwanya ikimamara gifataho kugirano inzuki zongere zubake ikimamara gishya. Ugomba gusigira inzuki ubuki bucye kugirango zibone icyo zirya atari ibyo inzuki zishobora kumena cyangwa zigapfa.**



**Niba wifuza kurinda ubuzima bw'inzuki, ntugomba guhakura ibimamara birimo ibyana.**







# Uburyo bwo Gukura Ubuki Bwiza mu Bimamara



**Brington Chitenje agemura ubuki NHPC muri Koperetive y'ubuki ahitwa Nkhata Bay. Hasi hari ubuki bw'I Bugande bwatoranijwe.**



Andi mashusho yatanzwe na National Bee Unit (Fera)



**Igihe urimo gukura ubuki mu bimamara, ukwiriye kuba ufite indobo ebyiri, umwenda ukamuza ufite isuku, uri n'ahantu inzuki zitagera.**

**Umwenda wo kuyunguruz**



**Buri kintu kigomba kuba gisukuye, cyane cyane intoki.**

**Ubuki buca muri wa mwenda usukuye ukabuyungurura. Igishashara gisigara mu mwenda.**

**Ikimamara**



**Ikimamara gikatemo uduce twinshi kugirango ubone uko ukuramo ubuki.**



**Noneho uyungururire mu yindi ndobo iriho umwenda usukuye.**



**Indobo iratwikiriye, igisigaye ni uko ubuki hafi ya bwose bukamuka bugashiramo. Ibitonyanga by'ubuki bisigaye mu mwenda bishobora kuvamo ari uko uwukamuye ukoresheje intoki. Ibiti bitandukanye bitanga ubuki bw'amabara atandukanye n'uburyohe butandukanye. Si byiza kuvanga ubuki butandukanyije uburyohe.**



**Abantu bafite imitiba myinshi bashobora gukura ubuki mu bimamara bakoresheje imashini ikamura ubuki.**

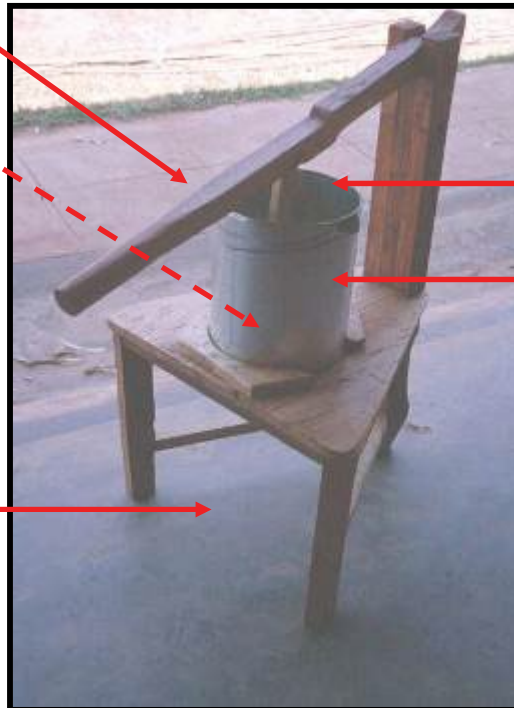


**Iyindi mashini ihendutse umuntu yakwifashisha ishobora gukorwa mu buryo bukurikira.**

**Icyo umuntu afata akamura**

**Igiti kiri imbere kimeze nk'uruziga nicyo gikamura**

**Indobo irimo ubusa ishyirwa hano kugirango ijyemo ubuki**



**Indobo y'icyuma ifite impande zigororotse inafite imyenge mu ndiba**

**Ishashi irimo ubuki ishyirwamo hano, muni y'igiti gikamura**

**Indobo y'icyuma ifite impande zigororotse ifite imyenge mu ndiba. Indobo ishyirwa muni kugirango ubuki bujyemo. Hari igiti gikoze nk'uruziga gikamura. Ikimamara gikamurwa gishyirwa mu mwenda cyangwa ishashi kigakamurwa gishyirwa muni y'igikamuzo. Icyo umuntu afata gikoreshwa bagikoresha bagitsindagira ku ishashi irimo ikimamara kugirango ubuki buvemo.**

# Uburyo bwo Gutunganya Ibishashara



**Ibishashara byamaze gutunganywa  
byo muri Malawi**



**Ibikoresho bikoze mu  
bishashara byakorewe i  
Bugande, byakozwe na  
Hives Save Lives Africa**



**Igishashara gifite agaciro; gishobora gukorwamo ibikoresho bitandukanye. Ntibigomba kujugunywa rero.**



**Tandukanya amavuta yavuye mu bimamara byahakuwemo ubuki n'ibimamara byijimye cyangwa ibishaje birimo inzuki z'ibyana (ibyana by'inzuki bitaravuka).**



**Ikimamara gisukuye cyahakuwe nicyo kivamo amavuta y'ibishashara.**



Fata ibimamara bimanyaguye ubyoze mu mazi bishiremo umwanda n'ubuki. Bishyire mu mufuka usa neza maze ubihambire n'umugozi. Shyushya amazi menshi mu isafuriya, umufuka urimo ibishashara uwutsindagire mu mazi urengerwe.



Tsindagira umufuka urengerwe n'amazi

Umufuka

Isafuriya yuzuye amazi asyushye

Komeza ucanire amazi witonze ariko ntatabure. Komeza utsindagire umufuka kugeza ubwo ikimamara gishonga. Umushonge w'ikimamara uzanyura mu ndodo z'umufuka hanyuma urerembe hejuru y'amazi.



Kamura umufuka kugirango umushonge w'ibimamara uvemo

Umushonge w'ibimamara unyura mu mufuka ukagwa mu mazi

Kamura umushonge w'ikimamara usigaye mu mufuka ukoresheje inkoni ebyiri kandi uwuzengurutse. Itonde kuko umufuka ushyushye. Uwo mushonge w'ibimamara ureremba ku mazi urisuganya ugakomera uko amazi agenda ahora.



**Umushonge w'ibimamara ukomeye ugomba kongera ugatunganywa kugirango umwanda ukirimo ushiremo:**



**Fata uwo mushonge w'igishashara wahoze usa nabi uwumanyaguremo uduce duto.**





**Fata igishashara gikasemo uduce ukiyengeshe ugishyize mu isafuriya iteretse mu yindi irimo amazi abira.**



**Isafuriya  
y'inyuma  
yuzuye  
amazi**

**muriro**

**Isafuriya y'imbere  
irimo ibishashara  
bitunganiye**



**amazi yatabuye**

**igishashara kirimo  
kuyenga**

**Canira kugeza ubwo igishashara kiyenga. Kuri iyi ifoto, reba umwanda wavuye mu gishashara uri mu ndiba y'isafuriya.**

**Imyanda  
iri mu  
ndiba  
y'isafuriya**



**Igishashara cyayenze gisuke ukinyujije mu kintu kiyungurura kugirango imyanda ivemo. Igice cy'umwenda gisukuye nicyo cyiza.**



**Igikoresho gikoze muri pulasitiki gishobora gutuma igishashara kigira ishusho nziza bitewe nuko giteye. Siga isabune icyo gikoresho neza kugirango igishashara cyatunganijwe kidafataho kimaze guhora.**



**Gusiga isabune imbere muri icyo gikoresho bituma igishashara cyatunganijwe kidafatamo**



**Igishashara cyatunganijwe gihorera mu gikoresho cyashyizwemo kandi gikurwamo igihe kimaze kwiyegegeranya gikomeye. Umwanda usigara inyuma ku mwenda. Umwenda ushobora kumeswa ukongera ugakoreshwa.**



**Sukura buri gikoresho umaze gukoresha.**

**Ibishashara byatunganirijwe kugurishwa. Hari ibipima ikilo n'ibipima Inusu. (byatunganijwe na NHPC, Malawi).**





## UBUNDI BURYO BWO GUTUNGANYA IBISHASHARA

1. Uburyo bwo gutunganya ibishashara ukoresheje izuba: ubushyuhe bw'izuba bushobora gukoreshwa mu gushongesha ibishashara. Igishashara gishyirwa mu mufuka uyungurura ugaterekwa ku kintu kimeze nk'ipurato y'icyuma mu isanduku itwikirije ikirahuri maze kigashyirwa ku zuba. Igishashara cyayenze kinyura mu munwa w'icyuma kigatembera mu gikoresho washyizeho. Hagomba kubaho kwitonda kugirango igishashara kidashyuha kikarenga urugero, kigahinduka umukara cyangwa kigashirira.



Isanduka  
y'ibiti ikozwe  
mu bikoresho  
byasagutse

Ibati rikurura  
ubushyuhe

Ikirahuri  
cyangwa  
ishashi  
itwikira  
kugirango  
ubushyuhe  
bwiyoungere

Umufuka  
uyungurura  
wuzuyemo  
ibishashara

Aho  
ibishashara  
byayenze  
binyura bijya  
mu gikoresho  
cyateganijwe

Ibishashara  
byiteranyiriza  
mu gikoresho  
cyateganijwe

2. Uburyo bwo gutunganya ibishashara ukoresheje umwotsi: Ibishashara kandi bishobora gusukurwa hakoreshejwe umwotsi. Umufuka w'ibishashara cyangwa ibimamara umanikwa hejuru y'igikoresho cy'icyuma ukanagana hejuru y'amazi arimo kubira. Ibishashara byayenze bitonyanga biva mu ishashi bigwa mu gikoresho cyataganijwe kujyamo. Itondere kugirango amazi adakama agashiramo.

