

**REPUBULIKA Y'UBURUNDI
UBUSHIKIRANGANJI BW'AMAZI,
IBIDUKIKIJE, AMATONGO N'UGUTUNGANYA IBISAGARA**

**DUKINGIRE IBIKOKO BIFASHA MW'IRONDOKA
RY'IBITERWA VYO MU MASHAMBA CIMEZA BIKAGIRA
INKURIKIZI NZIZA KU NDIMO MU BURUNDI**



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**DUKINGIRE IBIKOKO BIFASHA MW'IRONDOKA RY'IBITERWA
BIKAGIRA INKURIKIZI NZIZA KU NDIMO MU BURUNDI**



**Institut National pour l'Environnement et
la Conservation de la Nature**

B.P. 2757 Bujumbura

Burundi

Tél . :(+257) 234304 / 22403031

E-mail : inecn.biodiv@cbinf.com

Site web : <http://bi.chm-cbd.net>

Document élaboré par

FOFO Alphonse et NZIGIDAHERA Benoît

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INTANGAMARARA

Uburundi ni igihugu kiri muri Afrika yo hagati gifisi uburinganire bw'ibirometero kwadarato 27834. Ni igihugu gitoya kigizwe n'intara kama 5 zirimwo amashamba kama n'indimiro. Mu Burundi, amashamba kama angana n'ihagitari 199063 n'ukuvuga ibice vy'ijana 7,15 harimwo ihagitari 113633 z'amashamba akingiwe ni ukuvuga ibice vy'ijana 4,08. Amashamba n'ibiti bijana n'indimo vyatewe bifise uburinganire bwababa ihagitari 155000 (ibice vy'ijana 5,56 vy'uburinganire bw'igihugu) harimwo ihagitari 95000 z'ibitara vya Leta (imikaratusi, pinusi) hamwe n'ihagitari zirenga gato 60000 z'ibiti bibana n'indimo hamwe n'ivyamwa. Ku mwaka, ibiti bingana 10000000 biraterwa mu bibanza vya Leta.

Amashamba kama n'ibitara vya Leta vyose bikikujwe n'indimo zitandukanye. Uburimyi ni umwuga wa mbere mu Burundi utunze ibice vy'ijana 93 vy'abanyagihugu kandi ukaba ugirirwa ku bice vy'ijana 50 vy'isi yose y'Uburundi. Uburimyi rero butanga ibice vy'ijana 95 vy'ibifungurwa. Ubu, umwimbu w'ibiterwa uri ku bice vy'ijana 90 vy'isi ndimwa (hafi ihagitari 1210000). Ibiterwa rero bigizwe n'ibitoki, ibijumbu, imyumbati, amateke, ibiraya, ibiharage, ubwishaza, ibigori, umuceri, ingano, amasaka, imboga nk'irengarenga, amashu n'ibindi, ivyamwa nk'imicungwe, amavoka, imyembe, ipapayi n'ibindi hamwe rero n'ibiterwa bivamwo amavuta nk'ivyema, isoya n'ibihofe. Igiterwa c'ikawa nico kizanira Uburundi amafaranga menshi y'agaciro (ibice vy'ijana 86). Ikawa itewe ka mahegitari yababa 84000.

Isi ndimwa isa rero nk'iyitacimbuka kubera uburinganire burimwamwo bugeze hafi ku nusu y'ihagitari; ako karima gatoya niko nyamukuru gatanga ubutunzi bw'uwukarima. Umwimbu waragabanutse cane gose. Hagati y'imyaka 1982 na 2007, naho uburyo n'uburinganire bw'isi ndimwa bwongerekanye ku bice vy'ijana 39, umwimbu waragabanutse cane. Umwimbu uvuye ku biterwa vy'intete bifise ivyamwa vy'imibimba biha akanovera isi kandi bitanga infungurwa ndemamubiri waragabanutse ku bice vy'ijana 43. Ibiterwa vy'intete vyaragabanutse ku bice vy'ijana 3. Ibiterwa biribwa amateke n'imizi hamwe n'ibitoke bisanzwe birinda ihindagurika ry'ibihe nivy vyaronse umwimbu ushimishije (Ubushikirangaji bw'uburimyi n'ubworozi, 2008).

Ibituma bizwi vyatumye umwimbu agabanuka ni nkibi :

- Igwirirana ry'abantu ritajana n'iyaguka ry'isi ndimwa ;
- Ihindagurika ry'ibihe ry'ibonekeje ukw'imyaka 2 iheze kuva 1997(ubukame bw'amazi, umwuzurira, isenyuka ry'imisozi, urubura n'ibindi);
- Igwirirana ry'ingwara ku bitungwa n'ibiterwa bimwe bimwe ngirakamaro (mozayike y'imyumbati, ibitoki, ibigori n'ibindi) ;
- Ingwano n'umutekano muke vyaragabanuye ubushozi n'uburyo bw'abarimyi kandi vyongera bihungabanya ibikorwa vyo mu mirima (gutera n'ukubagara ibiterwa) kubera baguma bahunga ;
- Kudohokerwa n'uburyo buke buhabwa inzego z'ubushakashatsi, z'ugukurikirana abarimyi, zo kugwiza n'ugutanga imbuto zirobanuye.

Murivyo bituma umwimbu ugabanuka, ntawuvuga ibura canke ihungabanywa ry'irondoka ry'ibiterwa riterwa n'ibikoko bifasha ivyo biterwa kurondoka ari naco gituma haboneka umwimbu mwiza. Turazi ko mu ntara kama nyinshi, twama twabonye ibiterwa vy'ibiharage, ubwishaza, isoya, ivyema eka n'ibindi bizana imibimba canke intete nkeya mugihe umurimyi we yibaza ko amashurwe azanwa n'imvura iyo yaguye.

Ntidusiba kubona imirima y'itomati, intore, imicungwe n'ivoca bizana, iyo amashurwe yari menshi kandi meza, ivyamwa bike canke bibumvye nabi bigatuma uburyohe bwavyo bugabanuka ari naho ivyo vyamwa bidaheza ngo bigurwe canke bihiganwe n'ibindi iyo bigeze mw'isoko. Ivyo vyerekeye nk'igiterwa c'ikawa aho umuntu atabona ivyamwa bitera imbere canke bibumvye nabi naho ata dukoko dutera ingwara twoba twayiteye.

Ivyo vyose tuvuze bifise uruhara mw'igabanuka ry'umwimbu w'ibiterwa mu gihe abarimyi bobo batamenye igituma. Rimwe na rimwe, abarimyi babiha insiguro zitarizo nk'ingwara z'ibiterwa, imvura nyinshi n'ibindi bakibagira cane cane ko igiterwa kitagendewe neza na vya bikoko bishasha ibiterwa kurondoka kidaheza ngo came canke kikama ivyamwa n'intete mbi cane.

I. IGWIRIRIRANA RY'IBITERWA KUBERA IBIKOKO BIBIFASHA KURONDOKA RISIGURA IKI ?

Kugira ikinyabuzima cose ntigihone, harimwo n'ibiterwa, hategerezwa kuba ibicamukako. Nta numwe atazi ko ibiterwa bitagendagenda ariko bikarondoka nka kurya kw'ibikoko bibigira kuko vyovyo bigendagenda. Ikibazo gihari ni ico kumenya ingene vyashoboye kuzibukira uwo mutego ?

Inzira ya mbere igiterwa gikoresha kugira ntigihone ni ukuzana intete. Izo ntete zirimwo inkuru zerekeye ihanahana ry'akamere nkomoko kugira nazo zishobore gutanga ibindi biterwa. Ishurwe ni igihimba c'igiterwa gikoreshwa mu gukora intete zaco. Mw'ishurwe, hariho ibihimba bigabo n'ibihimba bigore iyo bihuye haca haboneka intete. Izo ntete ntizishobora kuboneka ata tubuto twaguye hagati mw'ishurwe tuvuye ku yandi mashurwe yico giterwa.

Kugira utwo tubuto tumeze nk'ifi tuve kw'ishurwe tuja ku rindi, hategerezwa kuboneka ikintu kidutwara. Ico naco gishobora kuba umuyaga ukoreshe cane cane ku biterwa bitanga intete canke ivyakatsi bifise isage n'udushurwe dutoduto, amazi ku biterwa vyo mu mazi hamwe n'ibikoko rero. Ubwo buryo bwa nyuma nibwo burwiriye kandi bukeneye ibikoko mu gufasha ibiterwa kurondoka.

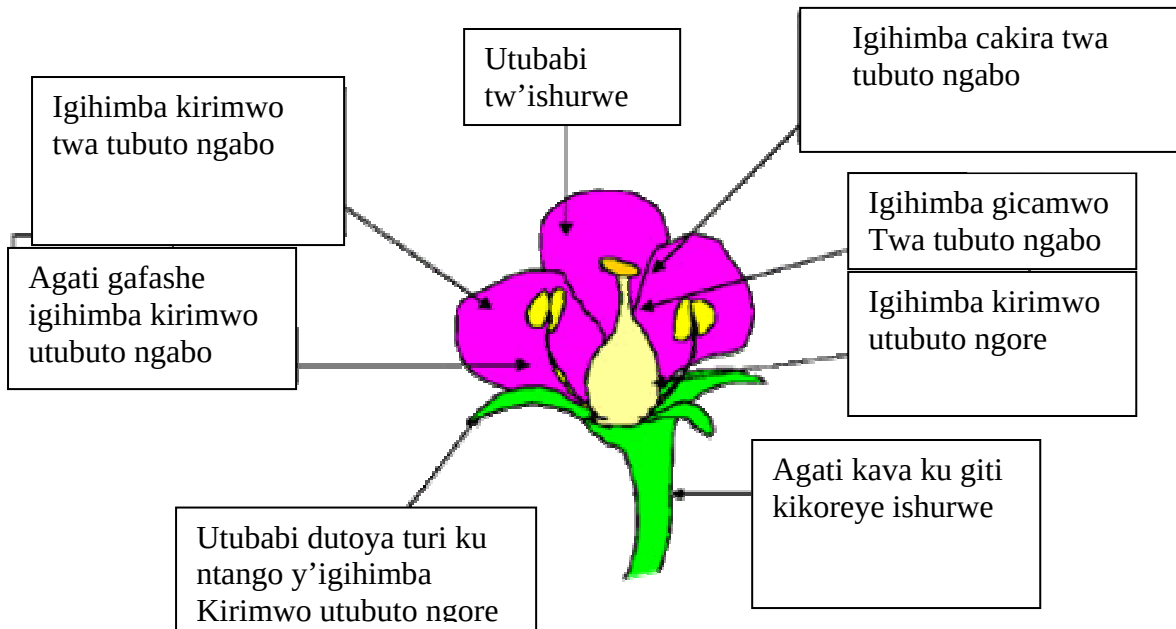
Hariho rero ibikoko bifasha ibiterwa kurondoka. ***Ni ukuvuga ko irondoka ry'ibiterwa riva kuri twa tubuto tuvuye ku gihimba c'ikigabo ry'ishurwe tukagenda ku gihimba c'ikigore c'irindi shurwe.*** Utwo tubuto duca tugenda muco twokwita irigi ry'ishurwe aho duhura uduhimba dutoya twerekana akamere nkomoko k'igiterwa bigaca bizovamwo intete zituma havamwo ibindi biterwa.

Iryo rondoka riba iyo ibikoko biriko birondera ivyo birya, bitororokanya twa tubuto n'ubuki vyo mu mashurwe hanyuma twa tubuto tugahoma ku mubiri wavyo. Iyo rero igikoko kigiye ku rindi shurwe, twa tubuto turashobora kugwa muri rya shurwe tugaca duhura na twa tugi hanyuma ishurwe rikaba rizovamwo intete.

Ku biterwa, atakuraba ikibifasha kurondoka, irondoka rya vyo rishobora kugirwa mu nzira 2 : irondoka ry'ishurwe rivuye kuri twa tubuto tw'ishurwe ry'ico giterwa nyene canke irondoka ry'ishurwe rivuye kuri twa tubuto tw'ishurwe ry'ikindi giterwa (igicapo ca 1).

Iyo hatabonetse ibibifasha kurondoka, igiterwa ntigihaze ngo kironduke. Birashika ko umuntu ashobora gufasha ibiterwa kurondoka naho bidashemeye kuko atari akazi kiwe ka misi yose. Bivuye kukugene twa tubuto duhuye n'utugi tw'ishurwe, hashobora kuboneka ibi bikwirikira :

- irondoka ryiza ry'ishurwe hagaca haboneka umwimbu w'intete, imbuto canke ivyamwa vyiza;
- irondoka ridashemeye ry'igiterwa hagaca haboneka ivyamwa n'intete bibumvye nabi;
- Iyo twa tubuto tudahuye na twa tugi tw'ishurwe, nta vyamwa canke intete biboneka (igicapo ca 2);



Kurondoka kw'igiterwa gifashijwe n'ibikoko



Igicapo 1



Igicapo 2

Igicapo 1: Utubutwo tuvuye ku gihimba ngabo c'ishurwe rya mbere twashizwe ku gihimba ngore tw'ishurwe rya kabiri



Igicapo ca 2: Iyo irondoka ry'ibiterwa ritagenze neza, ivyamwa vy'itomatati bikura bibumvye nabi

II. AKAMARO K'IBIKOKO BIFASHA IBITERWA KURONDOKA

Ibikoko bifasha ibiterwa kurondoka, cane cane tumwe duto duto tutagira amagufa kandi tuguruka, bifise uruhara ntangere kandi rukomeye mw'irondoka ry'ibiterwa vyo mu mashamba n'indimo kuko bituma bikora neza kandi bikaramba. Irondoka ry'amashurwe rero ni ntangere kugire abuzima bushobohe hano kw'isi.

Ivyo bikoko rero birakenewe kugire ubuzima bw'ibiterwa burame kuko arivyo bibeshejeho abantu bo kw'isi tutibagiye n'abarundi. Hambavu y'irondoka ry'ibiterwa isinzi, inzuki n'utundi dukoko tuguruka (amavubi, ibinyugunyugu, imibu, isazi, ikondera n'ibindi) bifise uruhara ntangere mu gukingira ibinyabuzima vy'ishamba hamwe no kubungabunga akamere nkomoko.

II.1. Akamaro k'ubutunzi

Kugwanya inzara (igicapo 3), ubudasa bw'iribwa, gufungurira abantu, ubuzima bwiza n'ibiciro vy'ibiribwa ni bimwe bimwe bishoboka kubera ibikoko bifasha ibiterwa kurondoka. Iryo fasha rirakenewe kugire haboneke intete n'ivyamwa ku biterwa. Abanyagihugu baraha intete z'ibiterwa bimwe bimwe kugire bazifungure (ibiterwa vy'intete bifise ivyamwa vy'imibimba biha akanovera isi n'ibiterwa vy'intete cane cane) hamwe n'ivyamwa birimwo imbuto (imyembe, amavoka, itomati, intore n'ibindi). Izo ntete, birazwi, zirakenewe kugire zize zitange ibindi biterwa kandi zigatuma baryohora ubwoko mu migambi yo kurobanura imbuto.

Ugufasha kw'ibikoko mu kurondoka kw'ibiterwa birakenewe kugire haboneke umwimbu mwiza w'ibiterwa kandi biratuma hiyongera uburyo bwo kubaho ku barimi benshi bo kw'isi. Icirwa cakoze mu bihugu birenga 200 carerekanye akamaro ntangere k'ibikoko bifasha ibiterwa kurondoka haba mu kugwiza umwimbu w'ibiterwa canke mu gufungura kwacu. Turavye ico cirwa, 3/4 c'ibiterwa, ni ukuvuga igice kinini c'ibiterwa vy'ivyamwa, imboga n'ibifise intete zivamwo amavuta hamwe n'ibice vy'ijana 35 vy'umwimbu wose w'ibiterwa kw'isi yose bishoboka kubera ibikoko bifasha ibiterwa kurondoka, cane cane inzuki. Mu gihe ibiterwa vy'intete (ingano, ibigori, umuceri n'ibindi) bidakeneye cane gose ivyo bikoko, ibiterwa bimwe bimwe vyo mu mahinguriro nk'ikawa n'ipampa bibikenera imisi yose (<http://www.inra.fr/presse>, consulté le 10 Oct. 2010).

Ku bwa rya shirahamwe mpuzamakungu riraba ivy'uburimi n'ugufungura, ibice vy'ijana 70 y'ubwoko bw'ibiterwa bafungura kw'isi birondoka kubera inzuki, cane cane inzuki zo mw'ishamba. Ubundi bwoko bwinshi bw'ibikoko, amavubi, isazi, amakondera n'ibindi, hamwe n'ibikoko vyonsa (agahungarema) n'inyoni birafasha mw'irondoka ry'ibiterwa birimye. Ubushakashatsi bwa vuba ku giterwa c'ikawa muri Costa Rica, inzuki z'ishamba zatumye umwimbu w'ikawa wongerekana ku bice vy'ijana 20 (Pesson na Louveau, 1984).

Ikorwa ry'ubuki rivuye ku bikoko bifasha ibiterwa kurondoka rirerekana uruhara ku mibereho y'inzuki n'aho ziba. Isuzumwa ryagizwe n'igihugu c'Ubufaransa rirerekana ko gukora Kg 1 c'ubuki, inzuki ziba zagendeye amashurwe angana 1000000. Ivyo vyerekana igitigiri c'ibiterwa bitegerezwa kubaho kubera inzuki zibigendera zije kudaha ubuki bwo mw'ishurwe. Ni no kebera ako kamaro, umuntu yateje imbere ubworozi bw'inzuki. Twese turazi neza ko ubworozi bw'inzuki budashoboka ata biterwa vy'amashurwe bihari.



Igicapo ca 3: Ivyamwa n’imboga vyinshi bikomoka mw’irondoka ry’ibiterwa kubera ibioko hanyuma ubworozi bw’inzuki bikomoka mu muruhara inzuki zifise mu gufasha iterwa kurondoka

II.2. Imigenderanire iri hagati y'amashamba kama n'indimo

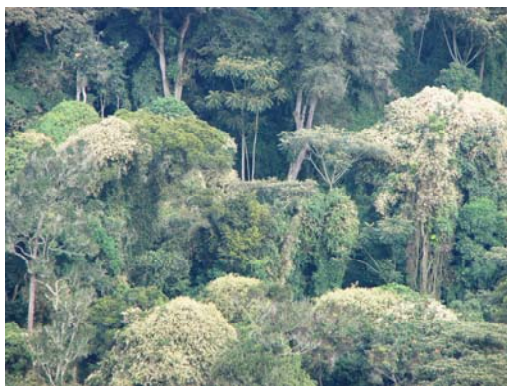
Ubwoko bwinshi bw'ibikoko bifasha ibiterwa kurondoka burafasha mw'irondoka ry'ibiterwa vyo ma mashamba kama n'indimo (igicapo ca 4). Kuri bene ivyo biterwa, ibikoko bibifasha kurondoka bikenewe nka kurya umuco, impwemu n'amazi bikenerwa. Ku rundi ruhande, ibiterwa bica biha ivyo bikoko ubiki, twa tubuto turi ku mashurwe canke ntibibiha na kimwe.

Amashamba y'indimo arahungabana gusumba amashamba kama, ni naco gisigura uguhobahoba kw'ayo. Ivyo vyibonekeza mu kutarinda ibiza vy'ivyaduka bivuye hanze yayo ari naco gituma hakwiye kwama hafashwe ingingo zo kuyakingira kugire arambe, ico nico kiranga amashamba kama.

Ikindi naco, mu ndimo, ibiterwa bavyimbura iyo vyeze ata na kimwe gisigaye. Ivyo vyerekeye ibiharage, itomati n'ibindi. Ibindi navyo bizana amashurwe rimwe mu mwaka nk'ikawa n'ibiterwa vy'ivyamwa nk'imyembe, amavoka n'ibindi. Inyuma y'amashurwe n'iyimbura, ibikoko bitegerezwa kurondera ahandi bikura ubuki canke twa tubuto vyo mwishurwe. Muri ico gihe vyikora ku biterwa vyo mu birare na cane cane mu mashamba kama yegereye indimiro.

Mu mashamba kama, harimwo ubwoko budasa bw'ibiterwa ariko bifashwa kurondoka n'ubwoko bwinshi bw'ibikoko, bisigura ko ubwoko bwose bushobora kworoherwa. Kandi, mu mashamba kama niho ivyo bikoko biba kandi birondokera.

Mu Burundi, vyaribonekeje ko ubwoko 32 bw'inzuki babusanze ku mashurwe y'ibiterwa vyo mu mashamba n'ibirimwa.



Ishamba rya Kibira



Umurima w'ibiharage

Igicapo ca 4: Ibikoko bisanzwe bifasha ibiterwa kurondoka biragenda bigaruka mu mashamba no mu ndimiro kugire bibifashe kurondoka.

III. UBUDASA BW'IBIKOKO BIFASHA IBITERWA KURONDOKA MU BURUNDI

III.1. Udukoko tuguruka kandi ata magufa dufise

Ku biterwa bimwe bimwe, ukurondoka kwa vyo guterwa n'utubuto two ku mashurwa twazanywe n'ibikoko bitandukanye bishobaro gufasha ibiterwa kurondoka, udukoko tuguruka ariko ata magufa dufise tukaza imbere y'ibindi. Kanatsinda, umurwi w'inzuki ni wo munini kandi ugizwe n'ubwoko bw'inshi bufasha ibiterwa kurondoka. Utwo dukoko tuguruka kandi ata magufa dufise ni nk'inzuki, amavubi, ibinyugunyugu, isazi, ikondera n'ibindi. Ibiterwa navyo vyacye birondera ibihimba vy'amashurwe, rimwe na rimwe bitandukanye nk'amabara asa neza cane n'akamoto gatandukanye kugire bikwege ibikoko.

- **Irondoka ry'ibiterwa rifashwa n'inzuki**

Mu Burundi, ubwoko burenga 100 bw'inzuki burazwi kandi bugendera amashurwe kugire bufashe ibiterwa kurondoka (igicapo ca 5). Ubwoko burenga 80 bw'inzuki bwavuye mu mashamba kama ku biterwa vy'ubwoko 63 mu gihe ubwoko bw'inzuki burenga 45 babusanze ku bwoko bw'ibiterwa ndimwa 10 gusa.

Inzuki nyororano (ubwoko *Apis mellifera*) nizo zirwiriye. Ubwoko bw'impura (*Meliponula ogouensis*) nabwo nyene buragwiriye kandi bufise uruhara nta ngere mu gufasha kurondoka ubwoko bwinshi bw'ibiterwa vyo mu mashamba n'indimo. Igiharage cagendewe n'ubwoko burenga 19 bw'inzuki mu gihe imvunderi zikenewe mu gufasha kurondoka ubwoko bwinshi bw'ibiterwa cane cane buri mu mugwi w'ibiterwa vy'intete bifise ivyamwa vy'imibimba biha akanovera isi.



Igicapo ca 5: Uburorero bw'inzuki zifasha kurondoka ibiterwa vyo mu mashamba n'indimo

- **Irondoka ry'ibiterwa rifashwa n'ikondera, ibinyugunyugu, isazi n'amavubi**

Turetse inzuki, udukoko dufasha ibiterwa kurondoka turabisanga no mu yindi mirwi y'udukoko tuguruka kandi ata magufa dufise (igicapo ca 6). Ikondera ziragendera amashurwe kandi ziguma zikenewe mu gufasha ibiterwa kurondoka. Ibinyugunyugu birakerebutse cane mu gihe c'umutaga kuko bigendera amashurwe atari make y'ibiterwa vy'ishamba. Iyo bihagaze kutuguru vyatwo twonze cane, umutumba wavyo ntushobora gufasha ibiterwa kurondoka kandi nta n'ibihimba bidasanzwe bifise mu kwegeranya two tubuto two kw'ishurwe. Ibinyugunyugu bigenda ijoro bifasha ibiterwa kurondoka mw'ijoro.

Isazi, cane cane izifise umutumba ufise ubwoya, zirafasha cane mu gutwara twa tubuto two ku mashurwe. Ubwoko bwo mu muryango wa Syrphidae ni bwo basanga ku biterwa vy'ishamba n'ivyo mu ndimo kandi Uburundi burafise ubwoko butari buke. Amavubi ni udukoko dukenewe mu gufasha ibiterwa kurondoka.



Igicapo ca 6: Uturorero tw'ubwoko tuguruka kandi atamagufa dufise atari inzuki ariko dufasha ibiterwa kurondoka : a :ikondera, b: ibinyugunyugu, c: isazi, d: amavubi

III.2. Ibindi bikoko bifasha ibiterwa kurondoka

Hambavu y'udkoko tuguruka kandi ata magufa dufise, hariho ibindi bikoko, bini na bito, bifasha amashurwe kurondoka (igicapo ca 7). Ivyo na vyo ni nk'ivyonsa nk'agahungarema aho igikorwa co gufasha ibiterwa kurondoka kiba mw'ijoro ku biterwa bimwe bimwe bifise amashurwe yagutse, asa neza kandi amota ari vyo bituma biyatora neza bitagoranye, hamwe n'ibikoko bishobora kugendesha amaguru 2 nk'inkoto canke inkende. Ibindi bikoko ni nk'inyoni zifise umunwa muremure usongoye zikinjira mw'ishurwe kugire zivome ubuki, iyo umutwe ukoze kuri twa duhimba ngabo tw'ishurwe, twa tubuto two kw'ishurwe duca dufata ku moya hanyuma tukozoja mu rindi shurwe rikwirikira.



a



b

Igicapo ca 7: Ibikoko vyonsa n'inyoni bifasha ibiterwa kurondoka: a: inkoto zirafasha ibiterwa kurondoka mu gihe ziza zirasimbira mu mashami y'ibiti; b: inyoni zinunuza ubuki mu mashurwe maremare.

IV. IKINGIRWA RY'IBIKOKO BIFASHA IBITERWA KURONDOKA MU BURUNDI

IV.1. Ibibangamira ibikoko bifasha ibiterwa kurondoka

Ibituma ivyo bikoko bifasha ibiterwa kurondoka bihona canke bigabanuka biva ku bintu vyinshi. Akarorero twotanga ni ugutema amashamba, gutera ibiti bitari kavukira kaho hantu, imiriro ya nyakanga, ikoreshwa ry'imiti yica ivyatsi n'ibikoko.

- ***Guhonya no kurimagura amashamba***

Mu gihe basambuye aho vya bikoko bifasha ibiterwa kurondoka bisanzwe biba, ubuzima bwavuye ntibubabura bugishoboka. Mu Burundi, intara kama yo hagati mu gihugu igizwe n'imisozi idahanamye cane igizwe n'ibice vy'ijana 52 vy'igihugu cose, nta mashamba kama akihavugwa. Vyongeye, intara kama yo Mumirwa ifise amashamba kama mu gice c'ubumanuko gusa. Muri izo ntara zose, ibiterwa biramba n'ibitara vy'ikawa n'ibitoke hamwe n'ibiterwa vy'umwumbati ntibishora kubika umwaka wose ibikoko bibifasha kurondoka. Muri iki gihe, uguhonya amashamba birabandanya mu bibanza bikingiwe bisanzwe ari vyo bikirimwo amashamba n'ibisanze birimwo ibiti.

- ***Ikoreshwa ry'imiti ihonya ivyatsi n'ibikoko mu mirima***

Mu Burundi, ikoreshwa mu burumyi ry'imiti yica ibinyabuzima nti bikiri ikinyegezwa. Iyo miti iguma ari uburozi haba ku nzuki canke ku bini bikoko bifasha ibiterwa kurondoka. Mu gihe bariko barakoresha iyo miti, umuyaga ushobora kuyihindukiriza mu mashamba ari hambavu y'iyi mirima hanyuma ibikoko bifasha ibiterwa kurondoka bikahasinzikarira. Rimwe na rimwe, iyo miti bayisuka ubwo nyene ku mashurwe y'ibiterwa ngo bice udukoko dutera ingwara ariko n'ibikoko bifasha ibiterwa kurondoka na vyo nyene ntibisigara inyuma..

- ***Imiriro ya nyakanga***

Mu Burundi, imiriro ya nyakanga iribonekeza mu mashamba yose ku mwaka ku mwaka. Amashamba, ibisanze birimwo ibiti n'imyunga vyama vyaturike mu gihe c'ici barondera uburagiro bw'ibitungwa canke kubera ububisha gusa. Ici ni igihe kitameza neza kubera ubukene bw'amashurwe. Iyo miriro ya nyakanga rero iza kwunyura ibisanzwe bihuha hanyuma ubuzima bwa vya bikoko bifasha ibiterwa kurondoka bukabangamirwa.

- ***Umurima w'ibiterwa vy'ubwoko bumwe***

Mu ndimiro zigizwe n'ibiterwa vy'ubwoko bumwe gusa nk'imirima y'ibikaju, ibitoke, ibigazi n'icayi, hariho igabanuka ry'amashurwe na vya bikoko bifasha ibiterwa kurondoka. Hambavu yaho, uburumyi bw'ibiterwa vy'ubwoko bumwe burakenye uburaro bw'ivyo bikoko. Izo ngorane zikongerezwa cane cane n'ubuhinga buke bujanye no kurima neza, nk'ubukene bw'ivyatsi ku mbibe z'imirima n'ikoreshwa rya ya miti yica ibikoko n'ivyatsi muri iyi mirima.

- ***Iterwa ry'ibikoko bifasha ibiterwa kurondoka bidakomoka aho babiteye***

Ibinyabuzima kavamahanga vyaratewe mu bibanza bidakomokamwo. Ingaruka zikomeye zijanye n'iryo terwa ry'ibikoko kavamahanga ni ihiganwa n'ibindi bikoko bisanzeho mu kurondera aho biba hamwe na twa tubuto two ku mashurwe tutibagiye kuzana udukoko dutera ingwara.

Irekurwa mu gahinga riturutse ku mpanuka ry'inzuki zo muri Tanzaniya (*Apis mellifera scutellata*) rirerekana ingorane zijanye nizo nzuki kavamahanga. Imirwi y'inzuki zo muri Afrika ishika 26 yavuye muri Burezile mu mwaka wa 1927 hanyuma kubera irekurwa zaryo mu gahinga, izo nzuki zaciye zivyarana n'inzuki zikora ubuki z'i Buraya, haca haboneka ibivyarwa bizwi kw'izina ry'inzuki nyafrika canke inzuki nyicanyi kuko zikara cane gusumba inzuki z'i Buraya. Kugira bagwanye igwirirana zaryo mu maja ruguru y'isi, igihugu ca Canada caciye gishinga itegeko ribuza ku zinjiza mu gihugu mu 1927.

- ***Ibiterwa kavamahanga***

Izanwa ry'ibiterwa bitari kavukire kaho babiteye birashobora gutera ingorane ibikoko kavukire kuko bishobora gutera ibibanza binini hanyuma bigahindura imitumba kama n'ibinyabuzima vy'ivyatsi bihasanze, hanyuma ibikoko navyo bigaca bibura ico birya.

Akororero ni nk'ibitara vy'imikaratusi na pinusi bigize hanini amashamba yatewe mu Burundi.

- ***Ihindagurika ry'ibihe***

Ihindagurika ry'ibihe rirashobora guhindura ingene ubwoko bw'ivyatsi busanzagiye hirya no hino kw'isi hamwe no kunyarutsa canke gutevya kuzana amashurwe, ivyo bigatuma haba ingorane kuri vya bikoko bifasha ibiterwa kurondoka n'uguhindagura kamere k'amashamba n'indimo. Ubuzima bw'ibikoko bifasha ibiterwa kurondoka hamwe n'ubundi bwoko bwinshi bufatiye ku gihe c'amashurwe y'ibiterwa. Ihinduka mu bigize ibiterwa vy'ahantu canke mu gihe c'amashurwe birafise ingaruka kuri vya bikoko bifasha ibiterwa kurondoka. Ingaruka zifatiye kw'ihindagurika ry'ibihe kuri ivyo bikoko nti zizwi neza, mugabo birashoboka ko ihindagurika mu bigize amashurwe n'ingene ibiterwa bisanzagiye hirya no hino kw'isi bifise ico bihindura kuri ivyo bikoko bifasha ibiterwa kurondoka.

- ***Ibikomoka ku kinyabuzima gihinduwe muri kamere nkomoko kaco***

Kuva mu ntango z'imyaka ya 1990, harabonetse hongera haramenyekana mu burimyi ibiterwa bihinduwe kamera kavyo. Mu Burundi, ntutuzi ubwoko bwa bene ivyo biterwa vyoba biriho ariko turazi neza ko bene ivyo biterwa bihari.

Ibiterwa binguwe kamere kavyo bifise uduhimba turimwo imfungurwa ndemamubiri zica udukoko tuguruka kandi tudafise amagufa bigaca bituma havuka ikibazo co kumenya ingaruka za twa tubuto two ku mashurwe y'ibiterwa ku bikoko bifasha ibiterwa kurondoka. Ibindi biteye amakenga ni ingaruka zindi yizo mfungurwa ndemamubiri ku ngene inzuki zikora ubuki zibayeho n'iyononekara ry'ubuki. Ingaruka z'ibiterwa bihinduwe kamere kavyo kuri vya bikoko bifasha ibiterwa kurondoka ntiziramenyekana neza.

IV.2. Gukingira ibikoko bifasha ibiterwa kurondoka

Gukingira ibikoko bifasha ibiterwa kurondoka mu mashamba kama canke indimiro bisigura gukingira urufatangane rukomeye y'ibiterwa n'ivyo bikoko, bigatuma ibiterwa birondoka atangorane nimwe. Gukingira ivyo bikoko ni ikintu gihambaye ku biterwa bitandukanye kandi iyo bitabonetse haca haba ikibazo ku vyerekeye ibifungurwa, uburimyi bujanye n'urudandaza hamwe no k'ubuzima bw'ubwoko bwinshi bw'ibiterwa vyo mu mashamba kama. Kugira ngo amagara y'abantu abe meza, bafungure kandi bongerereze uburyo bwo kubaho bw'abarimyi basanzwe bakenye, birakenewe gukingira no kugwiza umwimbu w'ibiterwa babicishije mu gukingira no gutunganya neza ibikoko bifasha ibiterwa kurondoka.

Kw'isi yose, cane cane mu Burundi, ubumenyi kuri ivyo bikoko bifasha ibiterwa kurondoka ntibungana rimwe na rimwe mbere ntibubaho. Abanyagihugu barabuze inkuru ku bikenewe mw'irondoka ry'ibiterwa, ku bikoko nyamukuru bifasha ibiterwa kurondoka hamwe n'inyifato yavyo.

Kuri vyo rero, ivyokorwa mu gukingira ibikoko bifasha ibiterwa kurondoka vyoba ibi bikwirikira :

- Kwigisha abanyagihugu agaciro nyako k'irondoka ry'ibiterwa kugire bongerezwe ubumenyi bwabo kubijanye n'igikorwa c'ibikoko bifasha ibiterwa kurondoka mu buzima bw'amashamba kama n'indimiro ; iryo yigishwa ryokorwa bakoresheje amaradiyo, amareresi, udutabo, amakoraniro, ibicapo n'ibindi ariko cane cane bagashiraho uturere kama duto duto dukingiwe tw'akarorero (imirima iranga ibinyabuzima, ibibanza vy'ubushakashatsi mu burimyi) ;
- Gucagura no gukoresha gake kabaho imiti yica udukoko n'ivyatsi mu gihe c'amashurwe ;
- Kwongereza uburyo bwo kudaha bwa twa dukoko tuguruka kandi tudafise amagufa, cane cane inzuki, mu gutera mu matongo uduti duto na binini bitanga ubuki mu mashurwe ;
- Kureka ibiti vy'ishamba bikazana amashurwe kuko arivyo bituma ibikoko bifasha ibiterwa kurondoka bibaho kandi bifise navyo ivyo vyipfuza mu kurondera aho biba, ico birya no mu kurondoka ;
- Gurondera ibiterwa bishobora guha vya bikoko bifasha ibiterwa kurondoka ico birya n'aho biba (ikirare co kwororeramwo inzuki, kudatema inkengera z'imirima n'ibarabara...) ;
- Gutegegekanya « imihora » ifatanya ibibanza kama bikingiwe canke bitarimye bifatanye n'indimo ;
- Gukingira n'ukurondera ibibanza kama ibikoko bifasha ibiterwa kurondoka vyohungiramwo ;
- Gushiraho ingingo zofasha abarimyi gukoresha ubuhinga bw'ubahiriza irondoka ry'ibiterwa ;
- Gukomeza uburyo bwo gukingira no gukoresha neza ibikoko bifasha ibiterwa kurondoka na cane cane, kwiga indondabinyabuzima rya vyo ;
- Gushira ku rutonde rw'ivyigwa mu manama irondoka ry'ibiterwa kubera ibikoko bifasha ibiterwa kurondoka kugira bizotinde vyinjizwe mu migambi y'ibisata birabwa nico kibazo nk'ivyo mu Bushikirangaji bw'uburimyi n'ibidukikije ;
- Gusubira kwihweza imigambi y'uburimyi n'amatongo, kurondera no guha agaciro uburimyi bufatiye ku biterwa kama vyoba inkomoko y'ibifungurwa n'irondoka z'ivyo bikoko bifasha ibiterwa kurondoka ;
- Guteza imbere inyigisho n'uguhimiriza abarimyi, abigisha b'indimo, abigisha bo mu mashure y'isumbuye yigisha ivy'uburimyi, abatowe ku mitumba n'abandi kw'isano riri hagati y' « uburimyi-ibinyabuzima » ;
- Gushiraho ingingo zifasha amashamba kurinda ihindagurika ry'ibihe.

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