Energy Water and Sanitation Authority

Mukangoga agiye guteka amazi akoresheje ingufu za Biyogazi (Ifoto/Niyigena F.)

Ikwirakwizwa ry'ingufu za BIYOGAZI mu Rwanda rikorwa na EWSA

NIYIGENA FAUSTIN

Ikigo cy'igihugu gishinzwe ingufu, amazi n'isukura (EWSA) nicyo gikora imirimo yose yo gukwirakwiza ingufu z'umwuka wa Biyogazi mu gihugu aho giteganya ko mu mwaka wa 2017 kizaba kimaze kugeza ibigega bya Biyogazi ku miryango ibihumbi 100 (100,000) n'ibigo (institutions) ijana na mirongo itanu (150) mu gihe uhereye mu mwaka wa 1998 kugeza ubu [Kanama 2013], EWSA imaze kubaka ibigega bya Biyogazi mu ngo z'imiryango ikabakaba ibihumbi 3 n'ijana (3,100) n'ibigo mirongo itandatu n'umunani (68).

Ikwirakwizwa ry'ingufu za BIYOGAZI mu Rwanda rikorwa na EWSA

BIYOGAZI NI IKI?

Biyogazi ni ingufu z'umwuka zituruka ku icagagurwa ry'ibikomoka ku bimera cyangwa umwanda waba uw'amatungo cyangwa umusarane w'abantu biba biri ahantu habugenewe maze bigacagagurwa n'udukoko duto (bactéries/bacteria) tuba turi aho hantu habugenewe ibyo bimera cyangwa imyanda biba biri. Aho izo ngufu zikorerwa haba hubatswe ku buryo hadashobora kwinjirwa n'umwuka uturutse hanze (conditions anaérobiques/anaerobic conditions) waba uwa Oxygen (O2) cyangwa undi mwuka.

Ubushakashatsi bugaragaza ko ingufu za Biyogazi ziba zigizwe ahanini n'imyuka ibiri y'ingenzi ariyo umwuka wa metane (CH4) n'uwa (Co2) ku buryo invange y'iyo myuka yombi ishobora gucanwa igihe umwuka wa metane urenze urugero rwa 50%.

Urubuga rw'Abadage (www.biogas.de) ruvuga ko mu ngufu z'umwuka wa Biyogazi ziba zigizwe n'ijanisha rya 65 rya metane [65% of methane (CH4)] n'ijanisha rya 35 rya CO2 [35% of carbon dioxide (CO2)].

Itara ricanwa n'ingufu za Biyogazi (Ifoto/Niyigena F.)

Abana ba Mukarusine bitegereza uburyo mama wabo acana itara rya Biyogazi (Ifoto/Niyigena F.)

UKO UMWUKA W'INGUFU ZA BIYOGAZI UKORWA

Muri rusange hari uburyo butandukanye bwo gutunganya no kubika umwuka w'ingufu za Biyogazi ariko ubukoreshwa cyane hano mu Rwanda, ni uburyo bwo kuyitunganyiriza mu kigega gicukuye mu butaka akaba ari n'aho ituruka mu gihe cyo gukoreshwa.

Mu yandi magambo, icyo kigega cya Biyogazi ni cyo cyoherezwamo bwa bwoko butandukanye bw'imyanda twavuze haruguru, maze twa dukoko tuba turi muri iyo myanda tukayicagagura ari nako itanga Biyogazi.

Mu Rwanda izo ngufu z'umwuka wa Biyogazi ziguma muri icyo kigega ziba zakorewemo ndetse no mu gihe ziri gukoreshwa mu mirimo itandukanye irimo guteka, gucana amatara n'ibindi.

Imyanda yinjira muri icyo kigega inyuze mu ruvangiro rwabugenewe, yamara gukurwamo ingufu za Biyogazi ikongera yonyine ubwayo igasohokera mu nzira y'ahabugenewe. Hari ubundi buryo bwo gushyira imyanda mu kigega ikazanakurwamo, ariko ubumenyerewe nubw'imyanda yijyana mu kigega ikazanongera ikivanamo, cyangwa ikajyanwamo ariko ikivanamo.

EWSA igaragaza ko kimwe mu byiza byo gukoresha Biyogazi ni uko usibye ingufu za gazi itanga, ibisigazwa by'imyanda yavuyemo biba bitakitwa imyanda kuko biba byahindutse ifumbire nziza kurusha izindi zose nk'uko byagaragajwe n'ubushakashatsi bwakozwe na EWSA ifatanyije n'ishuri rikuru ry'ubuhinzi n'ubworozi rya Busogo (ISAIE Busogo).

Iyo Biyogazi imaze gukorwa na twa dukoko mu kigega, isunika imyanda ikirimo gazi ikajya mu gice cy'ikigega cyabugenewe, naho, imyanda yashizemo gazi igasohoka yerekeza hanze nk'uko byavuzwe haruguru.

Mu gihe gazi iri gukoreshwa [wenda n'umuntu ucanye itara cyangwa utetse ibyo kurya], ya myanda iba yagiye mu cyumba cyabugenewe ikirimo gazi ihita igaruka igafata umwanya wa ya gazi iri gukoreshwa.

Ahubatswe ikigega gitunganyirizwamo ingufu za Biyogazi (Ifoto/Niyigena F.)

Akimanizanye asuka amaganga mu kagega gato kabugenewe kanyuzwamo ibyoherezwa mu kigega cya Biyogazi (Ifoto/Niyigena F.)

AMATEKA Y'IKORESHWA RYA BIYOGAZI KU ISI YOSE ARIKO BY'UMWIHARIKO MU RWANDA

Nk'uko bigaragazwa n'urubuga interineti rwa kaminuza ya Adelaide (www.adelaide.edu.eu) ingufu za Biyogazi zaba zarantangiye gukoreshwa mu kinyejana cya 10 mbere ya Yezu Kristu (10 century BC) mu bwami bwitwaga Assyria bwabayeho hagata y'imyaka ya 2400 kugeza mu 612 mbere ya Yezu Kristu n'aho ubwami bwa Persia buyikoresha mu kinyejana cya 16 mbere ya Yezu. Ubu bwami bukaba bwarakoreshaga iyi gazi mu rwego rwo gushyushya amazi yo gukaraba.

Ikigo cy'igihugu gishinzwe ingufu, amazi n'isukura (EWSA) kigaragaza ko uko imyaka yagiye ihita indi igataha ndetse ari nako tekinoloji yagendaga itera imbere; abantu batangiye gushakashaka uburyo bwose bavumbura umuti w'ikibazo cy'iyangirika ry'ibidukikije ahanini bitewe n'itemwa ry'ibiti abantu batemagura bashakisha ibicanwa nk'inkwi cyangwa amakara.

By'umwihariko mu Rwanda, EWSA igaragaza ko nyuma ya Jenoside yakorewe abatutsi n'intambara yo kuyihagarika mu mwaka wa 1994, ibiti byinshi mu byarangijwe cyane kuko byatemaguwe. Ikindi kibazo cyari icy'imfungwa nyinshi zari zifungiye mu magereza atandukanye bigatera ibura ry'inkwi zihagije zo kubatekera ndetse n'uko imisarane yuzuraga buri munsi muri gereza hamwe n'umunuko ukabije wateraga abaturage baturiye hafi bigatuma binubira amagereza.

Ibi bibazo byose byigaragazaga cyane cyane muri za gereza zo mu Rwanda; byatumye hatangira gutekerezwa uburyo byakemurwa bigashira hakaboneka umuti w'ibicanwa muri za gereza.

Bigeze mu mwaka wa 1998, ishuri rikuru rya Kigali ry'ikoranabuhanga na tekinoloji (KIST) ryagize igitekerezo cyo gushakisha uburyo bakora ingufu za Biyogazi zo gufasha gukemura ibyo bibazo byari muri za gereza.

Iki gitekerezo cya KIST cyari kigamije gushakira igisubizo gereza ya Cyangugu (ubu yitwa Gereza ya Rusizi) kuko ariyo yari ifite ikibazo kinini. Muri icyo gihe gereza ya Rusizi yari igeze aho umwanda uva mu misarane y'imbere muri gereza ukamanuka mu ngo z'abaturage inyuma ya gereza ndetse no mu mihanda ituranye n'iyi gereza.

Iyi gereza ya Rusizi akaba ariyo ya mbere yubakiwe ikigega cya Biyogazi mu mwaka wa 1998 kandi yakemuye ikibazo cy'ibicanwa n'umunuko byariho icyo gihe.

Nyuma yo kubona ko bitanze umusaruro

mwiza muri gereza ya Rusizi, igitekerezo cyaje no kumanurwa kigezwa no ku rwego rw'amashuri kuko amwe muri yo nayo yari afite ikibazo cy'ibicanwa n'umwanda nk'icy'amagereza. Icyo gihe amashuri yari abikeneye yasabye KIST ikabafasha kubaka ibigega bya Biyogazi ku bigo by'amashuri yabo.

UBUSHAKASHATSI KU BICANWA BIKORESHWA MU RWANDA

Mu kwezi kwa Mata 2000, KIST yakoze ubushakashatsi bwo kumenya ubwoko n'ingano y'ibicanwa bikoreshwa mu Rwanda.

Ubu bushakashatsi bwakozwe n'abarimu bafatanyije n'abanyeshuri bigishaga mu ishami rya "Civil Engineering and Environmental Technology" barimo Eng. Kayumba Timothy wari umwe mu bagenzuzi (supervisor) b'abandi bakoraga ubushakashatsi; ubu akaba ariwe muyobozi ushinzwe porogaramu ya Biyogazi muri EWSA.

Ubu bushakashatsi bwakorewe mu bice by'ibyari Bugesera, Butare, Kigali Ngali, Ruhengeri, Gisenyi na Kigali y'Umujyi habazwa abantu batandukanye bo mu ngo ibihumbi bine na magana atatu na mirongo itandatu n'eshanu (4,365) n'ibigo magana inani na mirongo inani na bitandatu (886). Abanyeshuri bari mirongo irindwi na bane (74) barimo abagenzuzi batandatu (6) n'ababazaga ibibazo mirongo itandatu n'umunani (68).

Ibyavuye muri ubwo bushakashatsi bwagaragaje ko impuzandengo (average) y'inkwi umuturage ukoresha inkwi nke akoresha ibiro 12 (kg 12) ku munsi z'ibiti akenshi ibiti bikoreshwa akaba ari iby'inturusu. Ikindi cyavuye muri ubu bushakashatsi ni uko iryo temwa ry'ibiti ryangiza ubutaka bungana na m3 33 500 buri mwaka.

EWSA igaragaza ko ubu bushakashatsi bwagaragaje ko muri rusange mu Rwanda hakoreshwa ibicanwa byinshi biturutse ku biti (inkwi n'amakara) nyuma y'aho ababajijwe bose bagaragaje ubwoko n'ingano z'ibicanwa bakoresha buri munsi.

Mu magambo make ubu bushakashatsi bwagaragaje ko n'abaturage ku giti cyabo bafite ikibazo kinini cy'ibicanwa bituma nabo batangira gutekerezwaho dore ko bamwe muri bo bari bafite amatungo y'inka zashoboraga kubaha amata ariko n'amase yazo akifashishwa mu kubaha Biyogazi.

"Iyo abaturage bakoresha ingufu za Biyogazi ikomoka ku mase bigabanya itemagurwa ry'ibiti, ibisigazwa by'ayo mase bigatanga ifumbire nziza ndetse iruta iy'imvaruganda, rikagabanya umwanya w'abagore n'abana bamaraga mu mashyamba no mu bihuru bari gushaka inkwi zo gutekesha bityo umwanya bakaba bawukoresha mu bindi ndetse abana bakabona umwanya uhagije wo gusubira mu masomo bize ku ishuri dore ko noneho baba banafite amatara ababoneshereza neza kubera gukoresha Biyogazi badakomeje gukoresha udutadowa tunafite ingaruka mbi mu buzima bw'umuntu no kwangiza ibidukikije."

Mukarusine yenda gutereka isafuriya ku mashyiga ya Biyogazi (Ifoto/Niyigena F.)

Gutekesha Biyogazi birinda abagore imbyiro zizanwa no gutekesha inkwi cyangwa amakara (Ifoto/Niyigena F.)

Izo nka 2 zigomba kuba zororerwa mu kiraro kugira ngo zikoreshwe mu gutanga Biyogazi (Ifoto/Niyigena F.)

UBURYO BIYOGAZI YAJE NO GUTANGIRA KUBAKIRWA ABATURAGE

KIST yari ifite ishami rishinzwe kwiga tekinoloji shya zitandukanye (Innovations program) akaba ari naryo ryigirwagamwo ibya Biyogazi kuva mu ntangiriro yayo kugeza ubwo itangiye kubakirwa amagereza n'ibigo by'amashuri.

Ahagana muri 2008 Leta yaje kubona ko ubwo bushakashatsi bwa KIST buri gutanga umusaruro mwiza maze binyuze muri Minisiteri ifite ingufu mu nshingano zayo (MININFRA) ifata icyo gitekerezo igishyira muri gahunda zayo ariko n'ubundi bikomeza gukorera muri KIST ahashyizwe gahunda yihariye y'igihugu ishinzwe gukwirakwiza Biyogazi mu baturage (NDBP – National Domestic Biogas Program).

Ikigo cy'igihugu gishinzwe ingufu, amazi n'isukura (EWSA) nicyo gishyira mu bikorwa imirimo yose ijyanye n'ingufu za Biyogazi kuko MININFRA ari urwego rwa Leta ahanini rushinzwe gushyiraho amategeko n'igenamigambi.

Tekinoloji ya Biyogazi mu ngo ntabwo yari nshya ku isi ariko yari nshya mu Rwanda. Ibi bikaba byaratumye u Rwanda rwigira ku gihugu cya Nepal cyari gisanzwe gifite iyi gahunda ya Biyogazi ariko u Rwanda, nk'igihugu cyizi icyo gishaka kugeza ku Banyarwanda, rwashyizeho uburyo bubereye Abanyarwanda bwo gukoresha Biyogazi mu ngo.

Mu gihe muri za gereza no mu bigo by'amashuri Biyogazi ikoreshwayo ikurwa mu mwanda wo mu misarani yabo, mu ngo z'abaturage ho Biyogazi ikurwa ahanini ku mase y'inka zabo kuko ikintu (condition) cya mbere gisabwa umuturage ni ukuba atunze nibura inka ebyiri (2) kandi zubakiwe mu kiraro.

Nyuma yo guhugura abatekinisiye bo gufasha muri iyi gahunda yo gukwirakwiza Biyogazi mu ngo, mu mwaka wa 2009 kugeza 2010, EWSA yaje gushaka muri buri Murenge umuturage w'umuhinzi mworozi w'icyitegerezo (best farmer) maze uwo muhinzi mworozi yubakirwa ikigega cya Biyogazi mu rwego rwo kubera urugero abandi batuye uwo Murenge.

EWSA igaragaza ko aba borozi bubakiwe ibigega bya Biyogazi batanze ikiguzi gito cyane kuko byari mu rwego rwo gushishikariza abandi kubyitabira. "Uwo muturage yabaga afite icyo kigega ariko afite n'ubushobozi bwo gusobanurira abandi ibyiza bya Biyogazi."

Kugeza ubu [2013] EWSA ifite abatekinisiye bashinzwe ibya Biyogazi mu gihugu cyose aho muri buri Turere tubiri (2) hakurikiranwa n'umutekinisiye umwe (1) ariko hakaba hari n'abandi bahuguwe bagahita bashinga amakampani y'ubukangurangamba kw'ikoreshwa rya Biyogazi.

NI IBIKI BISABWA UMUTURAGE WIFUZA KUBAKIRWA IKIGEGA CYA BIYOGAZI?

Igisabwa cya mbere ni kuba umuturage afite nibura inka 2 kandi zubakiwe ikiraro ndetse ashobora kubona amazi yo kuvanga amase kandi by'umwihariko akaba yifuza kubakirwa ikigega cya Biyogazi kuko mu kucyubaka nawe ashyiramo uruhare rwe rw'amafaranga.

Bigitangira mu myaka ya za 2009, igiciro cyo kubaka ikigega gifite ubunini bwa m3 6 cyubakwaga ku kiguzi cy'amafaranga ibihumbi magana inani (Rwf 800,000) naho icya m3 4 gifite ikiguzi cy'amafaranga ibihumbi magana atandatu na mirongo itanu (Rwf 650,000).

Umuyobozi w'ishami rishinzwe Biyogazi muri EWSA avuga ko ibi biciro bitari bibereye buri muturage muri iyo myaka. Eng Thimothy Kayumba agira ati: "Dufatiye urugero ku kigega cya m3 6, igiciro cy'ikigega cya Biyogazi ntabwo cyari cyoroheye buri muturage wese n'ubwo Leta yamutangiraga ibihumbi magana atatu na cumi (Rwf 310,000), Banki y'abaturage ikamuguriza ibihumbi magana atatu (Rwf 300,000) nawe akitangira andi asigaye ahwanye n'ibihumbi magana abiri (Rwf 200,000). Ibi rero ntibyoroheraga buri wese."

Icyakora kugeza uyu munsi EWSA yamanuye ibi biciro k'umuturage ushobora kwibonera amatafari ahiye, akaba afite inka 3 kandi ashobora kubona n'amazi; yubakirwa ikigega cya m3 6 ku mafaranga ibihumbi magana atandatu na mirongo itanu (Rwf 650,000) n'aho ufite inka 2 we yubakirwa ikigega cy'ubunini bwa m3 4 gifite ikiguzi cy'amafaranga ibihumbi magana atanu na mirongo itanu (Rwf 550,000).

Kugeza ubu EWSA yamaze kuvugana n'Uturere twose ku buryo mu Mirenge imwe n'imwe ubu umuturage wese ukeneye kubakirwa Biyogazi ashobora koroherezwa kubona inguzanyo mu Murenge Sacco azishyura buhoro buhoro.

"Umuturage wubakiwe ikigega cya Biyogazi itangwa n'amase y'inka 2, agirwa inama yo gukoresha amatara akura ingufu ku mirasire y'isuba (solar panel) naho ufite ikigega cya Biyogazi itangwa n'inka zirenze 2 we akemerwa kuyikoresha mu guteka no gucana amatara."

ESE ABO EWSA IMAZE KUBAKIRA IBIGEGA BYA BIYOGAZI BANGANA BATE KUGEZA UBU?

Nkuko twabivuze tugitangira, uhereye mu mwaka wa 1998 kugeza ubu [2013], EWSA imaze kubaka ibigega bya Biyogazi mu ngo z'imiryango ikabakaba ibihumbi 3 n'ijana (3,100) n'ibigo (institutions) mirongo itandatu n'umunani (68).

Ikwirakwizwa ry'ingufu za BIYOGAZI mu Rwanda rikorwa na EWSA

Ibi bigo 68 birimo ibigo by'amashuri n'amagereza. By'umwihariko EWSA yishimira ko amagereza 11 kuri 14 ari mu gihugu cyose yamaze kubakirwa ibigega bya Biyogazi.

INGAMBA EWSA IFITE ZO GUKOMEZA GUKWIRAKWIZA BIYOGAZI MU GIHUGU CYOSE

EWSA ifite viziyo yo kuzaba mu mwaka wa 2017 yamaze kubakira ibigega bya Biyogazi ingo z'imiryango ingana n'ibihumbi 100 (100,000) hamwe n'ibigo 150.

EWSA yizera ko ibi bizashoboka kuko benshi mu Banyarwanda bamaze gusobanukirwa ibyiza byo gukoresha ingufu zitangwa na Biyogazi ndetse na gahunda ya Gira Inka yatangijwe na perezida Paul Kagame muri 2006 ikaba igikomeje bityo bigatuma umubare utari muto w'Abanyarwanda ukomeza kugenda utunga inka.

Mu ngengo y'imari y'umwaka wa 2013/14 yatangiye gukoreshwa kuya 01 Nyakanga, EWSA iteganya kubakira ibigega bya Biyogazi ingo z'abaturage bangana n'igihumbi na magana atanu (1,500) hamwe n'ibigo 15 birimo gereza 3 zisigaye zitarubakirwa ariko Gereza ya Kigali (izwi ku izina rya 1930) yo ikaba itazubikirwa kuko biteganyijwe ko izimurirwa i Butamwa bityo hakaba hazubakirwa gereza 2 kuri 3 zisigaye.

ESE EWSA YABA IFITE IMBOGAMIZI MURI IYI GAHUNDA YA BIYOGAZI?

Iki gikorwa cyo gukoresha Biyogazi kishimirwa na buri wese ndetse n'imyanzuro y'umwiherero w'abayobozi bakuru ikaba ikishimira ariko nanone hakibazwa impamvu iki gikorwa kitagera kuri buri wese.

EWSA igaragaza ko imbogamizi ya mbere yigaragaza ari uko rwa ruhare rusabwa umuturage rukiri hejuru kuburyo atari buri muturage wese uhita arubona.

Mu ngamba EWSA ifite ni uko itazigera yirengagiza iki kibazo kigaragazwa n'abaturage akaba ariyo mpamvu ikomeza kugenda ishakisha abaterankunga ariko nanone EWSA igashyigikira ko umuturage nawe agira agomba kugaragaza uruhare rwe kugira ngo yumve ko ikintu ari icye bityo agire umwete wo kucyitaho bitavaho afata ikigega nabi kikangirika.

Ku ruhande rw'ikigo cya EWSA, imbogamizi ikomeye bafite ari uko iyi gahunda ya Biyogazi igifite abakozi bake. Iyo akaba ari nayo mpamvu umutekenisiye umwe akurikirana Uturere tubiri mu gihe abayobozi b'utwo Turere bo baba bifuza ko buri Karere kagira umutekinisiye wa EWSA ushinzwe ibya Biyogazi.

KU NGO ZISAGA IBIHUMBI 3 EWSA IMAZE KUGEZAHO BIYOGAZI KUVA MURI 2009, UMUNYAMAKURU W'IKINYAMAKURU IZUBA RIRASHE YASUYE IMIRYANGO 3 MAZE IMWEREKA IKORESHWA RYA BIYOGAZI MU NGO ZABO NDETSE BANAMUSOBANURIRA ICYO KUYIKORESHA BIMAZE GUHINDURA MU BUZIMA BWABO BWA BURI MUNSI.

Ibisigazwa byavuyemo Biyogazi bisohokera mu nzira (umuyoboro) wabugenewe (Ifoto/Niyigena F.)

Akimanizanye asuka amase mu ruvangire rwa bugenewe (Ifoto/Niyigena F.)

Mukandinda yerekana uburyo akusanyiriza hamwe amaganga y'inka yoroye (Ifoto/Niyigena F.)

Akimanizanye arimo avanga amase n'amaganga n'amazi mu kagega rwa bugenewe (Ifoto/Niyigena F.)

Abo basuwe ni Mukarusine Vérène ufite ikigega cya m3 10 kuva mu mwaka wa 2009 na Mukandinda Bonifrida ufite ikigega cya m3 6 kuva mu mwaka wa 2011 bo mu Karere ka Gasabo mu Mujyi wa Kigali hamwe na Akimanizanye Venancie ufite ikigaga cya m3 8 kuva mu mwaka wa 2011 wo mu Karere ka Bugesera mu Ntara y'Iburasirazuba.

Mukarusine akoresha Biyogazi mu guteka ibifungurwa ku mashyiga atatu (3) no gucana itara rimwe (1) riri mu ruganiriro. Akimanizanye akoresha Biyogazi mu gutekera ku ishyiga rimwe no gucana itara akoresha mu gikoni atekeramo. Naho Mukandinda akoresha Biyogazi mu guteka gusa kandi akoresha amashyiga abiri (2).

Abakoresha Biyogazi bose bahuriza ku guhamya ko kubera ibyiza bayibonyemo; iyaba byashobokaga buri Munyarwanda wese yakabaye akoresha Biyogazi cyane cyane mu mirimo yo guteka. Bati "hehe n'imyotsi iyo utekesha Biyogazi! Iteka vuba kandi n'abagabo badakunze gutekera ku mbabura cyangwa ku nkwi kuko Biyogazi itagira imyotsi."

Mukarusine yatangiye gukoresha Biyogazi kuva mu mwaka wa 2009, akaba afite ikigega cya m3 10. Ati "Nyikoresha mu mirimo yo gutekera umuryango wanjye w'abantu barenga 7 iyo abana bose bari mu biruhuko kandi n'abashumba n'iyo batekesha ibyo kurya byabo." Mukarusine yongeraho ko Biyogazi inamufasha gucana itara rimwe riri mu ruganiriro.

Gutekesha Biyogazi bituma urugo ruyikoresha rushobora kwizigamira amafaranga rwakoreshaga mu kugura amakara cyangwa inkwi, bikaruhura abagore n'abana umwanya bamaraga mu mashyamba bari gutashya, bikarinda iyangirika ry'ibiti n'ibindi.

Gukoresha Biyogazi byatumye Mukarusine ashobora kwizigamira amafaranga ibihumbi 28 buri kwezi kuko yakoreshaga imifuka 4 y'amakara buri kwezi. Mukandida kuva muri 2011 yashoboye kwizigamira amafaranga arenga ibihumbi 15 kuko yakoreshaga imifuka 2 n'igice buri kwezi n'aho Akimanizanye yashoboye kwizigamira amafaranga arenga ibihumbi 10 yakoreshaga buri kwezi agura inkwi.

Mukandinda Bonifrida na Akimanizanye Venancie bemeza ko guteka kuri Biyogazi byatumye barushaho kugira isuku ku masafuriya yabo. Akimanizanye agira ati "ngutekesha inkwi, nta safuriya yanjye yamaraga kabiri kubera imbyiro ndetse n'igikoni ntekeramo cyabaga cyuzuyemo imyotsi n'inkuta zigahindura ibara kubera umuraya n'imyotsi."

Mukarusine ashishikariza abantu bose gukoresha Biyogazi mu gihe bafite nibura inka 2. Ati "gukoresha Biyogazi biroroshye. Nta mpanuka itera kandi ihisha vuba cyane; ikindi ni uko wayitekesha isaha iyo ari yose byaba ku manywa cyangwa saa cyenda z'ijoro."

Akimanizanye we avuga ko adafite uburyo yashishikariza gukoresha Biyogazi kubera ibyiza yamuzaniye kuko we anateganya kuba yagura amase mu gihe inka ze zitamuhaye amase ahagije. Ati "abana banjye bakundaga kurwa inzoka ari kuva natangira gukoresha Biyogazi bajya ku ishuri bakarabye amazi ashyushye kandi ntawe ukirya ibiryo bikonje."

UKO BIYOGAZI IKORWA

Mbere y'uko twinjira mu buryo tekiniki bw'uko Biyogazi nyir'izina ikorwa, reka tubanze twibutse ko umuturage wese ufite nibura inka 2 kandi zubakiwe

ikiraro, iyo abishatse abakozi ba EWSA bamwubakira ikigega cya Biyogazi iwe mu rugo ariko indi mirimo yose ni we utangira kuyikorera nk'uko aba yabyigishijwe uretse ko aba agishobora no kubona ubufasha bw'abo bakozi mu gihe cyose agize ikibazo.

Imyanda ijya mu kigega cya Biyogazi igabanijemo ibice bibiri (2):

Hari imyanda iva mu misarani (amabyi) ndetse hakaba n'imyanda ituruka ku matungo (amase aturuka ku nka, ingurube, ihene, inkoko n'ibindi) ariko kugeza ubu abaturage benshi bakoresha Biyogazi yatanzwe n'imyanda y'amatungo (inka) n'aho ibigo by'amashuri n'amagereza bagakoresha Biyogazi iva ku myanda yo mu misarani. Gusa EWSA ifite gahunda yo guhuriza hamwe imyanda y'amatungo n'iyo mu misarane mu kigega cyubakirwa umuturage mu rwego rwo kongera ingano ya Biyogazi.

Mu gihe bishoboka ni byiza ko iyo myanda yose ishyirwa mu kigega cya Biyogazi ibanza ikavangirwa ahabugenewe n'amaganga y'amatungo cyangwa inkari z'abantu ariko kuko aya maganga cyangwa inkari biba bidahagije, abakoresha Biyogazi bemererwa kuvanga iyo myanda bakoresheje amazi ariko bakaba bagomba kwitondera ibipimo by'amazi ashyirwamo.

INGANO Y'AMAZI AKORESHWA

Amazi ashyirwa mu myanda y'amatungo

Ubundi mu buryo busanzwe ikiro kimwe (Kg 1) cy'amase ushyiramo litiro imwe (L 1) y'amazi. Ijerekani 1 y'amazi iba irimo litiro 20 z'amazi.

URUGERO:
Niba ufite ibase y'amase y'ibiro bitanu (Kg 5) ushyiramo litiro eshanu (L 5) z'amazi ukabishyira mu ruvangiro (Inlet) rwubatswe ku buryo bwabigenewe. Hanyuma muri urwo ruvangiro ukavangavanga neza ayo mase n'amazi cyangwa n'amagana wifashishije icyuma cyabugenewe ku buryo imvange ihinduka nk'igikoma gifashe maze ukarekurira urwo ruvange mu kigega cya Biyogazi binyuze mu muyoboro wabugenewe.

ICYITONDERWA :
Mbere yo kuvanga amase n'amazi ugomba kubanza ukavangura amase n'imyanda itabora (nk'ibyatsi, amabuye n'ibindi).

Amazi ashyirwa mu myanda yo mu misarani

Imyanda yo mu misarani mbere yo kujya mu kigega cya Biyogazi nayo igomba kubanza gushyirwamo amazi. Ingano y'amazi nayo isa n'iy'amase; ni ukuvuga ikiro 1 cy'amabyi hashyirwamo ilitiro 1 y'amazi.

Ariko kuko bigoye kumenya imyanda iri mu misarani hifashishwa akagega gapimye, kubatswe hagendewe ku mubare w'abakoresha uwo musarane (nk'abatuye muri urwo rugo cyangwa abanyeshuli ku ishuri, abanyururu n'abandi). Maze umuntu agakurikiza ingano y'amazi yabwiwe gushyiramo ubwo yubakirwaga icyo kigega cya Biyogazi.

Umuntu uvangavanga amase n'amazi ahabugenewe

URUGERO :
Ikigo cy'ishuri gifite abanyeshuli 800 biga baba mu kigo.

Umunyeshuri umwe tugereranya ko atanga amagarama 300 y'amabyi ku munsi. Iyo ushaka kumenya amabyi atangwa n'abanyeshuli 800 ku munsi; urafata 800 ukube na 300 ubone ko abanyeshuri bose 800 bazatanga amagarama ibihumbi 240 ariyo angana n'ibiro 240 ku munsi. Bityo uzahyiramo litiro 240 z'amazi zingana n'injerikani 12 z'amazi kuko ijerikani 1 ihwanye na litiro 20.

UKO BIKORWA:
Abanyeshuri iyo bakoresheje imisarani, imyanda iguma mu muyoboro wabugenewe. Byagera ku mugoroba, umukozi w'ishuri ubishinzwe agafata za jerikani 12 zirimo amazi agashyira muri ka kagega kabugenewe maze ayo amazi agasunika amabyi [aba ategerereje muri wa muyoboro] bigatuma byose hamwe bijya mu kigega cya Biyogazi aho biborera bigatanga ingufu za Biyogazi.

ICYITONDERWA:
Hagomba gukurikizwa ingano y'amazi yagenwe, kuko iyo itubahirijwe ingano ya Biyogazi iragabanuka. Icya kabiri, hagomba kubanza gukurwamo imyanda itabora (nk'ibipapuro, cotex n'ibindi). Ni itegeko ko mu misarani ikoresha ikigega cya Biyogazi hagomba gukoreshwa impapuro z'isuku zabugenewe (papier hygienique – toilette papers).

IBISIGAZWA BY'IMYANDA YAVUYEMO BIYOGAZI BIBA BYAHINDUTSE IFUMBIRE NZIZA CYANE

Imyanda iri mu kigega cya Biyogazi iyo imaze kubora nyuma y'iminsi 60 irasohoka ikajya mu ngarani yabugenewe. Ni byiza kuyikuramo igakoreshwa nk'ifumbire mu mirima. Iyo fumbire ishobora gukoreshwa yonyine cyangwa ivanzwe n'amazi mu kuhira imbuto, imboga n'ibindi cyangwa igakoreshwa ivanzwe n'ibindi byatsi.

Mukarusine Vérène avuga yakoresheje ifumbire zitandukanye ariko ko iyi ivuye mu bisigazwa bya Biyogazi ifite itandukaniro rinini cyane. Ati "kuko iba yashizemo gazi yose, ntinuka kandi ntikurura amasazi yangiza imyaka iyo wayifumbije. Jye mbona iyi fumbire ari nziza kurusha izindi zose nakoresheje."

Akimanizanye Venancie nawe ukora umwuga w'ubuhinzi yuzuzanya na mugenzi we Mukarusine ko nawe iyo fumbire yasanze itandukanye n'izindi zose ariko akaba afite ikibazo cy'uko itaba ihagije.

NI GUTE WAMENYA KO UMUYOBORO WA BIYOGAZI WATOBOTSE UGATAKAZA GAZI (FUITE)?

Muri rusange ikigega cya Biyogazi kimara imyaka irenga 30 kikiri kizima ariko kuko impanuka zishobora kubaho, bimwe mu bikigize bishobora kwangirika.

URUGERO RWA 1:
Uko wamenya ko umuyoboro wa Biyogazi wangiritse ku buryo utakaza gazi.

Iyo igipimo (mubazi = compteur) kigaragaza ko mu kigega harimo gazi nyinshi ariko wateka igahita ishira, nta gushidikanya ko habayeho ikibazo cyo gutoboka k'umuyoboro utwara gazi. Igihita gikorwa ni ugucukura, ugakurikira umuyoboro ukareba ahari ikibazo maze hagasimburwa.

URUGERO RWA 2:
Uko wamenya ko gazi iri gutakarira ku mufuniko w'ikigega.

Iyo gazi itakarira ku mufuniko bigaragazwa ni uko amazi ari hejuru y'umufuniko ubona asa nabira. Icyo gihe hagomba gushakwa irindi bumba ryiza. Ubishinzwe akongera akarisiga neza hagati y'umufuniko n'inyubako y'ikigega.

Uburyo wakoresha mu kumenya ahari

Akarima k'igikoni ka Akimanizanye afumbiza ifumbire y'ibisigazwa bya Biyogazi no mu gihe cy'icyi. ifoto yafashwe mu gihe cy'izuba [muri Kanama] (Ifoto/Niyigena F.)

Mu bazi ipima ingano ya Biyogazi iri mu kigega (Ifoto/Niyigena F.)

kumenekera (gutumukira) gazi mu matiyo:

Ufata isabune y'ifu nka OMO cyangwa ubundi bwoko bw'isabune y'ifu; ukayikoroga mu mazi, maze ugafungura gazi, ubundi ugafata ifuro rya ya sabune ukarishyira aho amatiyo ateranirijwe hose. Iyo hagaragaye utubumbe tubyina (bubbles), gazi iba iri gutakarira aho utwo tubumbe turi guturuka. Icyo gihe hagomba gusanwa.

Mu rwego rwo kugira isuku, ni ngombwa gusukura ibikoresho ukoresha birimo no koza akagega kavangirwamo (Ifoto/Niyigena F.)