

Ukutshintsha kwemozulu kunye Nesomiso

Kuyintoni, kutheni kusenzeka kwaye ingaziintoni ezinokuba lifuthe lako?

Intshayelelo

limo zemozulu kwihlabathi iyatshintsha. Abantu kwihlabathi jikelele baluqaphele utshintsho kumaqondo obushushu, ukujika kwamaxesha onyaka nezandyondyo zemvula ezibaxileyo, nembalela emmandla kunye nemimoya eyongameleyo. Abezenzulu lwazi sele beqinisekisile malunga noko abantu bebekuqaphele; ukuba imozezulu ziyaatshintsha. Basilumkisile ukuba olu tshintsho lusenokuba sisisongelo eluntwini, kwizilwanyana nakwizityalo. Okona kothusayo, kokokuba iinzulu lwazi sele zinisekisile ukuba sithi thina bantu abangunobangela wolu tshintsho. Siye saxothula kakhulu emhlabeni saze sabangela nongcoliseko oluninzi ngenxa yokunxanelwa kwethu ushishino kwanempilo yaseNtshona. Umhlaba wenele kwaye ukuba siyaqhubeka noku sikwenzayo, awusenakukwazi ukusigcina.

Owona msebenzi mkhulu woluntu ngalo mzuzu kukufunda ukuba singakuthintela njani na ukuba negalelo ekutshintsheni kwemozulu ngokuthi sitshintshe indlela esiphila ngayo. Kwakhona kufuneka siliqonde ifuthe lokutshintsha kwemozulu ukwenzela ukuba sikulungele oko. Umzekelo, kufuneka siqiniseke ukuba singkufumana a nako ukudla kunye namanzi acocekileyo xa kunokubakho imbalela, izikhukula kunye nemozulu engagqibeki. Eli phetshana lokwazisa liza kuzama ukuphendula imibuzo ethi: Kuyintoni ukonyuka okugqithisileyo kwamaqondo obushushu? Luyintoni utshintsho lwemozulu? Zibangelwa yintoni ezi zinto? Ziza kubuchaphazela njani na ubomi babantu?

lirhasi ezisemoyeni ezikhupha imitha zibangela ukuba ihlabathi libe nobushushu obugqithisileyo

Ukutshintsha kwemozulu kubangelwa yinto yokuba umgangatho womhlaba uya utshisa ngokumandla, kwaye oku kubangela imo zemozulu ezintsha kwihlabathi jikelele. Esinye sezizathu zokuba umgangatho womhlaba uye utshisa ngokutshisa kukonyuka “kweerhasi ezisemoyeni ezikhupha imitha yerhasi” emoyeni ojikeleze umhlaba.

Umhlaba ujikelezwe ngumaleko weerhasi ezibizwa ngokuba yi-atmosfere. Siyayazi i-mongomoyo ekuyenze yezi gesi – kufuneka siphfumlele i-mongomoya ukuze siphile! Kodwa, zikhona nezizezinye iirhasi kwi-sibhakabhaka. Ezona zinika umdla, xa kusiziwa kumba wokutshintsha kwemozulu, zezi kuthiwa ziirhasi ezisemoyeni ezikhupha imitha yerhasi ukuba ze



Greenhouse gases trap the heat of the sun and warm the earth

Source: global warming for dummies



ifuthe elifanayo nelo lophahla lweglasi kunye neendonga zendlu ekukhuliselwa kuyo izityalo. Ngamanye amazwi, zivula imitha yelanga ukuba ingene, ifudumeze umhlaba nolwandle, kodwa zibe zibuvalelela obo bushushu bungaphumi. Iirhasi ezisemoyeni ezikhupha imitha kagesi zivalelela ubushushu belanga zize zifudumeze umhlaba.

Eyona nto ibalulekileyo ngeegesi ezisemoyeni yikhabhon dioxide (CO₂). Xa siphefumla (kunye nazo zonke ezinye izilwanyana), siphefumlela i-umongomoya ngaphakati size siyiphefumlele phandle Ikhobon dioxide kwaye oku kunceda ekugcineni izinto zizinzile. Ngelishwa abantu bayaluphazamisa olu zinzo ngokuyomba kakhulu i-oli, irhasi namalahle baze bawatshise ukuze benze amandla ombane. Xa sitshisa amafutha ezinto zendalo (amalahle, irhasi ne-oli), zikhuphela ikhabhon dioxide emoyeni. Oku konyusa umthamo weerhasi ezisemoyeni kwenze ukuba ubushushu obugqithisileyo buvaleleke – uphahla lwendlu yokukhulisela izityalo lube luqilima kakhulu.

Adibana njani nokutshintsha kwemozulu amafutha enziwe ngezinto zendalo?

Amafutha enziwe ngezinto zendalo (amalahle, i-oli kunye neerhasi zendalo) yeyona mithombo imangalisayo ekufumaneka kuwo amandla. La mafutha athathe izigidi zeminyaka ukuba yenzeke. Zizintsalela zezityalo ezaziphila kwizigidi ezingama-300 zeminyaka edlulileyo – zaze zafa zishiya umaleko ongqindilili we"zichumiso". Ngokuye ixesha lihamba ezi zityalo zifileyo zakekwa ngokwalekwa ngumhlaba namatye. Uxinzelelo lwalo maleko kunye nobushushu

bomhlaba luzenze zaqina zaba ngamatye, lwaze lwazitshintsha zaba ngamalahle, irhasi kunye ne-oli. Ngokuzitshisa singenza ubushushu bokwenza umbane kunye nokudumisa iimoto zethu. Sihambe sahamba saxhomekeke kumafutha enziwe ngezinto zendalo ekuqhubeni ushishino kweli hlabathi siphila kulo kwaye awukho omnye umthombo wamandla onobunganga okanye osebenzayo njengawo (Umzekelo iilitha ezi-5

Ukonyuka okugqithisileyo kwamaqondo obushushu kwenzeka xa amaqondo obushushu omgangatho womhlaba esonyuka kuba kukho iirhasi ezisemoyeni ezikhupha imitha yerhasi emoyeni. Ukutshintsha kwemozulu yenye yeziphumo zokonyuka okugqithisileyo kwamaqondo obushushu. Iimvula, imimoya kunye neemo zemozulu zitshintsha unaphakade. Iirhasi ezisemoyeni ezikhupha imitha kagesi zanceda ekugcineni umhlabaungabandi ngokugqithisileyo. Ngaphandle kwazo, umlinganiselo wamaqondo obushushu bomhlaba bungema ku-18°C, okungenza kube nzima ukuphila ngenxa yengqele egqithisileyo. Ezona gezi zisemoyeni zininzi zezekhabhon dioxide (CO₂), umphunga wamanzi (H₂O), imethane (CH₄), iNitrous oxide (N₂O), ichloroflourocarbons (CFCs).

Ingxaki engakumbi...

Xa izityalo "ziphefumla" zifunxa ikhabhon dioxide emoyeni. Zisebenzisa ikhobhon dioxide ukuze zikhulise amagqabi, iingcambu kunye namasebe azo. Oku kunceda ekunciphiseni amaqondo ekhabon dioxide emoyeni. Kodwa yenza usizi into yokuba abantu bawatshabalalise ngokukhawuleza kangaka amahlathi kunye namathafa kuba belungisela ukwakha okanye besenzela ezolimo. Siphazamisa indlela indalo yomhlaba eyigcina iselulawuleni ngayo ikhabhon dioxide.

zepetroli zingenza imoto eyitoni enye ihamba kangangeekhilomitha ezili-100!) Kodwa, kukho iingxaki ezimbini ezibalaseleyo malunga nokusetyenziswa kwamafutha enziwe ngezinto zendalo ukukhawulelana neemfuno ezethu zamandla(umbane) ehlabathini.

1. Ongeza ikhabhon dioxide emoyeni ekungowona nobangela uphambili wokonyuka ngokugqithisileyo kwamaqondo obushushu nonobangela wokutshintsha kwemozulu.
2. Ukufumaneka kwamafutha enziwe ngezinto zendalo kunqongophele. Kungekudala siza kuphelelwa yi-oli, amalahle kunye nrhaesi.

Uqoqosho loMzantsi Afrika kunye namafutha enziwe ngezinto zendalo

UMzantsi Afrika ngomnye ophambili ukudaleni amaqondo obushushu agqithisileyo kuba uxhomekeke kakhulu ekutshiseni amalahle ukuze enze amandla, kwaye ukutshisa

amalahle kukhuphela ikhabhon dioxide eninzi emoyeni. UMzantsi Afrika unamalahle amaninzi kwaye afumaneka lula. Ngenxa yoku sinoqoqosho lwezamandla olumandla – okuthetha ukuba uhlobo lohishino olukhulayo lolu lusebenzayo olunamalahle okanye umbane ongatyabuli.

UMzantsi Afrika ngumvelisi walahle wesihlanu kweyona iphambili ehlabathini kwaye ukufumaneka kwamalahle kungaphezu kwama-70% kweemfuno zethu zamandla. Ngelishwa, zikwalilinye lawona mazwe akhe “angcola”.IChina, i-USA kunye noManyano lwaseNtshona lungabona bavelisi bekhabhon dioxide baphambili. UMzantsi Afrika ungowe-12 ehlabathini.... Ngoko kufuneka sifumene iindlela ekuzezinye

zokuvelisa amandla ngokukhawuleza.

Ukongeza emalahleni, sixhomekeke kumafutha ipetroli nedizili ukuze sithuthe abantu neempahla. Ingaba ukhe wacinga ukuba ingakanani ipetroli nedizili esetyenziswayo ukuthutha ukudla? Ingengokudla kuphela, cinga nantoni oyithengileyo uze ucinge ngamandla asetyenzisiweyo ukuyisa kwakho.

Sixhomekeke kakhulu kula mafutha kangangokuba asikhe sicinge ngendima ayidlalayo kwiinkalo ngeenkalo zobomi nempilontle yethu. Uninzi lwethu sikuqaphele okokuqala ngqa indlela esixhomekeke ngayo embaneni xa bewumane ucinywa ngo-2007. Siza kuqhubeka njani nobu bomi buphezulu sibuphilayo kwixa elizayo xa singenakuxhomekeka kumafutha ezinto zendalo?

Amafutha enziwe ngezinto zendalo akwabizwa ngokuba yimithumbo yamandla engenakwenziwa ngokutsha. La mafutha aza kuhamba ahambe aphele kwaye asinayo indlela yokuwabuyisela endaweni, awakwazi “kwenziwa ngokutsha”. Xa ephela kufanele siqinisekise ukuba sinayo eminye imithombo kunye neenkqubo zokuqinisekisa ukuba iimfuno zethu zamandla kuyahlangatyezwana nazo. Imithombo yamandla enokwenziwa ngokutsha zizinto ezifana nokukhanya kwelanga, amandla omoya, amandla amaze, iinkuni, njalo njalo. Ayipheli yona...okanye kwimeko yeenkuni, zona zingabuyiselwa ngokuthi kulinywe eminye imithi.

Sibulela kwezi gezi zisemoyeni zikhupha imitha kagesi kuba umhlaba unamaqondo obushushu asilungeleyo. Ngaphandle kwezi gezi zisemoyeni zikhupha imitha kagesi, ubushushu bomhlaba bungaphelela nje

Ingakanani iKhabhon dioxide?

UMzantsi Afrika njengelizwe usebenzisa izigidi zeelitha zepetroli nedizili, kunye nezigidi zeetoni zamalahle ngonyaka. Ngo-2007 sasingunobangela wokukhuphela ama-4363 zigidi zekhabhon dioxide emoyeni. Oku kubulingana nama-733 zigidi zeenkunzi zeendlovu!...nyaka ngamnye!

Zithini iziphumo zokonyuka ngokugqithisileyo kwamaqondo obushushu?

Sifumanise ukuba ukonyuka kweerhasi ezisemoyeni ezikhupha imitha yerhasi emoyeni kudala ukonyuka kumaqondo obushushu emhlabeni. Obu bushushubudala utshintsho olumandla kwiimo neemeko zemozulu zehlabathi. Ayikokonyuka nje kwamaqondo obushushu esinokukulindela kwixa elizayo, kodwa neemeko ezigqithisileyo zemozulu – iindawo ezingenamvula yaneleyo ngoku zingathwaxwa yimbalela. Kungakho izikhukula kubekho neenkqwithela kwiindawo apho ina khona kakhulu. Kungakho utshintsho kwiimo zomoya nakumaza olwandle. Imozulu iya ingagqibeki kwaye ziyonyuka iintlekele ezinobungozi zendalo. Ukonyuka okugqithisileyo kwamaqondo obushushu kusisongelo esidala iintlango ezingakumbi kunye namaxesha amade embalela. Ukunqongophala kwamanzi, ukunqongophala kokudla kunye nokutshintsha kwizinto eziphilayo nokusingqongileyo akunakuchazwa. Loomimandla afumileyo ngoku nayo ingafumana ubunzima kuba ingayimigxobhozo, ibe neenkqwithela kunye nezikhukhula. Njengokuba amaqondo obushushu omhlaba esonyuka, amaqondo obushushu olwandle nawo ayonyuka kudaleke umphunga wamanzi emoyeni. Xa imimoya okanye neenkanyamba zifumana lo mphunga emoyeni kuza kubakho iinkqwithela ezimandla nangakumb. Kwezinye iindawo ulwandle luyabanda kakhulu ngoku, ikhephu elikwiincam zomhlaba liyanyibilika lwenze amaqondo obushushu olwandle abande nangakumbi kuloo mmandla. Ukunyibilika kwekhephu kwiincam zomhlaba kudala ukuba imigangatho yolwandle yonyuke kuze kwezeke izikhukula nezandyondyo zemvula. Ukonyuka kwemigangatho yolwandle kusenokuba neziphumo ezibi kwabo bahlala ngaselwandle abasenokuba ngamaxhoba ezikhukula kunye nokonakaliswa kweziseko zobomi babo. Amafutha enziwe ngezinto zendalo ezithi ukuba zisetyenzisiwe zingabisakwazi ukuphinde zisetyenziswe kwakhona. La mafutha azakuhamba ahambe aphele kwaye asinayo indlela yokuwabuyisela endaweni, awakwazi “kwenziwa ngokutsha”. Xa ephela kufanele siqinisekise ukuba sinayo eminye imithombo kunye neenkqubo zokuqinisekisa ukuba iimfuno zethu zamandla kuyahlangatyezwana nazo.

Imithombo yamandla enokwenziwa ngokutsha zizinto ezifana nokukhanya kwelanga, amandla omoya, amandla amaza, iinkuni, njalo njalo. Ayipheli yona...okanye kwimeko yeenkuni, zina zingabuyiselwa ngokuthi kulinywe eminye imithi.

Luninzi uphando olwenziwayo ekuvelisweni “kwamandla anokwenziwa ngokutsha” afana namandla asuka elangeni (ilanga), amandla asuka kwizityalo (biomass) kunye namandla enziwe ngamanzi (ulwelo). Ezi ntlobo zamandla zingatsalwa zize zenziwe kwakhona ngaphandle koloyiko lokuba zingaphela.

Ifuthe lokutshintsha kwemozulu kuMzantsi Afrika

Ukutshintsha kwemozulu kunokuba nefuthe elibi kokusingqongileyo koMzantsi Afrika, kuluntu nakuqoqosho ngokunjalo. Iimvula eMzantsi Afrika azizinzanga kungoku kwaye nangoku sisaxakene nokuba sentlango. Kucingelwa ukuba amaqondo obushushu asenokonyuka nge-3°C kule minyaka ili-100 izayo. Iimvula ingancitshiswa kangange-10% kwimimandla aba nemvula ebusika ize yonyuke kancinci kwimimandla eba nemvula ehlotyeni. Sisenokulindela imbalela engakumbi kunye nezikhukula ezihamba nesomiso esilandela ziinkqwithela ezimandla. Urhulumente woMzantsi Afrika kuza kufuneka uhlangebezane nolu tshintsho uze uqinisekise ukuba zikhona iziseko ezilucendo ezifana namadama kunye nemizila yokunikezela ngamanzi ukuba anikezele ngamanzi kwimimandla enokuchaphazeleka. Ukufumaneka kokudla kuyenye inkxalabo ekufanele



siyilungiselele nanjengoko kucingelwa ukuba amafama aza kuxakana nezi meko zintsha zemozulu.

Imigangatho yolwandle yonyuka kangange-0.9 m ngo-2000. Abo baxakene nezikhukula qho ngonyaka,ingakumbi oogobityholo baza kuluva ulwamvila lwefuthe lokonyuka kwemigangatho yolwandle. kongeza ekonakalisweni kwamakhaya ngenxa yezikhukhula, kusenokwenzeka kubekho ukonyuka kwimiba yezifo ezihamba namanzi ezifana nekholera okanye icesina.

Ukuqokumbela

Iphakadei lethu lisengxakini ngenxa yokugxininisa kushishino koqoqosho lwehlabathi. Abona bangcolisi bemozulu okwangoku ngamazwe aphuhlileyo kwezoqoqosho. Kodwa nangona kunjalo, ngabantu abahluphekayo abaluvayo ulwamvila bemozulu yethu etshintshayo. Ngabantu abahluphekayo abachatshazelwa kakhulu kukonyuka kwamaxabiso okudla abe namanzi nawo enqongophala kube kuphela neendawo zokuhlala ezo zoogobityholo zithwaxwa zizikhukula kwanezinto ezihamba noko.

UMzantsi Afrika uzifumana umi phakathi kukamtyholi kunye nokuzifumana bekwimeko abangakwaziyo ukuyithintela – sizigqithisa njani iinkonzo ezidingwa ngabantu ngendlela apha engaqhubekiyo ibangela ukonyuka okugqithisileyo kwamaqondo obushushu? Siyiphucula njani indlela esiphila ngayo nabo bonke abo baphilayo ngoku ngeli lixa siqinisekisa ukuba isizukulwana esizayo siyakufumana oko sikudingayo ukuze siphile? Umsebenzi wabantu abaninzi ngowokufumana izisombululo zezi ngxaki, zisombululo ezo ezifana nokuza nobucwephetsha obulungalanayo kusingqongileyo kwanokuxhasa iindlela ezifanelekileyo kokusingqongileyo zokuvelisa ukudla. Ezi zisombululo zikho kwindawo yonke, kodwa kuza kufuna nje uzimiselo olululo loosopolitiko ukuze babe nokuziphumeza.

Ibhalwe ngu-Haidee Swanby & Stephen Law

Kule ye Khala 2011 yaze yaguqulelwa esixhoseni ngu Zukiswa Hani.

Ishicilelwe yi-Environmental Monitoring Group, PO Box 13378, Mowbray,
7705, South Africa



