

YINI ENGINGAYENZA
NGOKUGUQUKA
KWESIMO
SEZULU

Intergovernmental Panel on Climate Change (IPCC) iyinhlangano engaphansi kwe- United Nations (iNhlangothi Yezizwe) ehlaziya isayensi yamanje mayelana nokuguquka kwesimo sezulu. Inikeza abantu abasezikhundleni amandla okuthatha izinqumo nolwazi oluwusizo ekuthatheni izinyathelo ezifanele ngezinqumo ezibhekene nomhlaba ezimayelana nokuguquka kwesimo sezulu okudalwa ngabantu. Umbiko wakamumva okhishwe i-IPCC ugqamisa ukubaluleka kwezinyathelo ezinqala nesidingo sokuba kuguqulwe izinhlelo zamazwe omhlaba ezifaka phakathi izinguquko ezinkulu emphakathini nasemnothweni. Ngenxa yalokhu, kubalulekile ukuba abantu bazi ukuthi yikuphi abangakwenza ukulekelela lolu hlelo. Ngo-2020, uMasipala waseThekwini wethule i-Climate Action Plan ezwenikazi i-Afrika, ebophezela iTheku ngokufezekisa umgomo ka-40% wokuncishiswa kwesisi esingcolisa umoya ngo-2030, kusukela emthamweni obukhona ngo-2015, nokuthi lokhu kube sekwehle ngo-80% ngo-2050. Leli bhukwana licaphuna kwisayensi esivele ibhaliwe emibikweni emithathu yakamva ye-IPCC, kanjalo nakweminye imithombo, ukugqamisa ukuthi yikuphi izakhamuzi zaseThekwini ezingakwenza ukufaka isandla ukuze kuhlangelekele nezinjongo zokubhekana nesimo esibekiwe

Leli bhukwana lihlanganiswe yi-IPCC Working Group II eMnyangweni wakwa-Technical Support (TSU) emahhovisi aseThekwini. Olunye ulwazi lutholakala ngokubhalela kuleli

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Lokhu akusho ukuthi i-IPCC iyawugunyaza noma iyaweseka lo mbhalo nanoma yiziphi izincomo noma izinqumo okufinelelwe kuzona kuwona. Okubhalwe kuleli bhukwana akuzange kudluliswe emehlweni e-IPCC ukuze ikubuyekeze.

Amazwi Okubonga

Sifisa ukubonga i-IPCC Trust Fund ngokuxhasa ngezimali ukugaywa kwaleli bhukwana, nohulumeni waseGermany, Norway naseNew Zealand ngokweseka isikhathi sabasebenzi esichithwe kukhiqizwa leli bhukwana. Sibonga kakhulu naku-Itumeleng Masenya, uMagash Naidoo, uMichelle North, uSean O'Donoghue, uAndrew Okem noDebra Roberts ngokubuyekeza lo mbhalo. Siphinde sidlulise ukubonga kwithimba lakwa Communication Unit ngokushicilela lelibhukwana ngesiZulu.

Ababhali: Marlies Craig (Oyi-Science Officer kwi-IPCC Working Group II TSU emahhovisi aseThekwini) noNina Hunter (owenza ucwaningo emva kweziqu zobudokotela eNyuvesi yaKwaZulu-Natal).

Umdidiyeli: Marlies Craig



Ukuguquka
kwesimo
sezulu
kwandisa
izinkinga
esinazo kudale
nezintsha
– kubantu
nasemvelweni.

Yini inkinga?

Ukufudumala komhlaba akuyona ingozi yangomuso kuphela. Kuyinto eyenzekayo **njengamanje**.

Umhlaba kumanje **usufudumele ngo-1°C** ngaphezulu uma kuqhathaniswa neminyaka ewu-150 eyedlule. Ngendlela okuqhubeka ngayo manje ukungcoliseka komoya, umhlaba uzobe usufudumele ngo-1.5°C cishe phakathi kuka-2032 no-2050.

ITheku libe nenkinga yokushoda kwamanzi, yizimvula ezinamandla, amagagasi aphakeme, ukuguguleka kwezindawo ezisogwini nezikhukhula, okudale ukulimala nokufa kwabantu, abanye baba ngondingasithebeni, kwalimala nezakhiwo nengqalasizinda.

Ngomuso iNingizimu Afrika izobhekana nezigameko eziningi zeshisandlu, isomiso, imililo yequbula, iziphepho, izimvula ezinamandla, izikhukhula nokwenyuka

kwamazinga olwandle. Lezi zigameko eziyingozi zizoya ngokwandla uma kwenyuka amazinga okushisa. Ziphinde zibhebhethekiswe nawukungabi khona kwentuthuko eyanele nobudedengu bukahulumeni. Lezi zigameko eziyingozi zizoya ngokwanda uma kwenyuka amazinga okushisa. Ngokuhamba kwesikhathi, izinguquko zizokwenza singabi nakho ukuzikhethela.

Ukuguquka kwesimo sezulu kuzokwenza kube nzima ukuthi amazwe athuthuke ngendlela efanele, futhi kuzobeka ikusasa lezingane zethu nesizukulwane esizayo engcupheni. Izinguquko eziningi zinomthelela ongemuhle ezimpilweni zethu, kwinhlalakahle yethu nakwezomnotho kodwa kungagwemeka uma SISUKUMA MANJE sehlise ukufudumala komhlaba futhi sigweme ukuba amazinga okushisa angeqi ku-1.5°C.

Siyixazulula kanjani le nkinga?

Singakwazi ukuxazulula le nkinga yokuguquka kwesimo sezulu kuphela uma siyiqala **ezimpandeni zayo**.

Yini edala ukuguquka kwesimo sezulu?

Isimo sezulu siyaguquka ngenxa yokufudumala komhlaba okudalwa isisi (greenhouse gases) esingcolisa umoya (okuyisisi esibamba ukushisa) emkhathini. Isisi esingcolisa umoya emkhathini sandiswa ikakhulukazi yizenzo zethu singabantu, kanti lokhu kudala ukufudumala komhlaba, kanti lapha kubalwa isisi se-carbon dioxide (CO₂), yi-methane, yi-nitrous oxides, ne-halocarbons.

Umthombo omkhulu walesi sisi esingcolisa umoya wukushiswa kwezimbiwa phansi (amalahle, uwoyela, negesi yemvelo) ukuze kuphehlwe amandla. Lawa mandla asetshenziselwa ukuphehla ugesi. Uma singashintshi ukwenza mayelana nokusebenzisa kwethu amandla, umthamo wesisi esingcolisa umoya emkhathini uzolokhu ukhuphukile, kanti-ke nokufudumala komhlaba nakho kuzolokhu kukhuphukile. Isisi esingcolisa umoya siphinde sitholakale nakweminye imithombo njengezimboni ezithile, umanyolo wezolimo, imfucuzo, nokulimala kwemithombo yemvelo, umhlabathi namahlathi.

INingizimu Afrika isendaweni ka-15 kwezihamba phambili emhlabeni ngokungcolisa umoya. Ngakho-ke sineqhaza elikhulu esingalibamba. Ukuguquka kwesimo sezulu akuyona nje inkinga yabantu abathile, kodwa kuyinkinga yawo wonke umuntu.

A carbon footprint is the total amount of greenhouse gases that come from things or activities, be it a country, a city, an event, an organization, a service, a product, or an individual person. Some have bigger carbon footprints than others based on what people do and how they do it.

Yikuphi engingakwenza?

Abantu bangenza okuningi. Cishe u-72% wokungcoliseka komoya uvela ezinqumweni ezithathwa emakhaya ethu: Ukuthi sisebenzisa amandla angakanani, sisebenzisa kanjani izinto nokuthi siphila kanjani.

Indlela esisebenzisa ngayo imali isivezela isithombe esihle ngokuthi siwungcolisa kangakanani umoya.

Ukulinganisela umthelela wekhlabhoni onawo, vakashela ku: **<https://www.carbonfootprint.com/>** Sazi kanjani ukuthi yiziphi izinyathelo ezizoba



nomthelela omkhulu?

Ake sibheke igalelo izwe lethu elinalo kwisisi secarbon.

Kuningi esingakwenza ukunciphisa isisi secarbon. Ezinye izinyathelo zingaba nomthelela omkhulu, ezinye zibe nomthelela omncane.

Icarbon ekhiqizwa yiNingizimu Afrika

SESIONKE ISISI ESINGCOLISA UMOYA ESIKHIQIZWAYO



U-80% wecarbon ekhiqizwa yiNingizimu Afrika uvela kwizimbiwaphansi, ezisetshenziswa ukuphehla amandla...

... bese enye ivela kwezolimo, izimbongi nemfucuza.

IZIMBIWA PHANSI

AMANDLA

Ezinye izimbiwaphansi (ikakhulukazi amalahle) ziyakwazi ukugugulwa zibe wugesi ezikhungweni zikagesi, ...

...ngesikhathi ezinye zikwazi ukushiswa ngqo zishintshelwe kuwoyela njengophethiloli, udizili nopharafini.

Some gas escapes.

UGESI

UKUSHISWA KUKAWOYELA

AMAGESI ANGAVAMILE

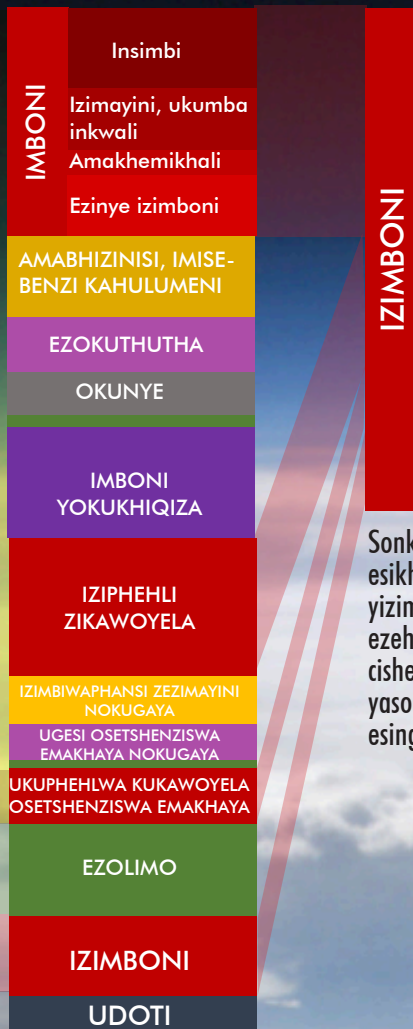
EZOLIMO

IZIMBONI

UDOTI

Cishe ingxenye yawo wonke ugesi isetshenziswa ezimbonini, ikakhulukazi izimboni ezinkulu (ezensimbi, izimayini, ukumbiwa kwamatshe, amakhemikhali, opulastiki, namaminerali)... . . . enye isetshenziswe emakhaya, emabhizinisini nasezikhungweni

Kushiswa izimbiwa ezigaywayo neziwuwoyela ukuze kukhiqizwe ukushisa namandla, kwezokuthutha, ezimbonini nakwezinye izindawo.



Ubude bebhokisi bukhombisa umthelela ekuguqukeni kwesimo sezulu. Izinyathelo ezingqala ngesimo sezulu zisho ukubhekana ngqo nalawa mabhokisi amakhulu nokuthatha izinqumo ezibalulekile. Ezinye izinqumo zizoba lula, ezinye zibe nenselelo enkudlwana. Ezinye izinyathelo zizodinga ukuba kutshalwe izimali, kodwa ngokuhamba kwesikhathi zigcine zizikhokhela zona. Sifuna ukuqala ngezinyathelo ezisheshayo nezilula futhi ezizoba nomthelela omkhulu.

Sonke isisi esikhiqizwa yizimboni ezehlukene sakha cishe ingxenye yaso sonke isisi esingcolisa umoya.

Izindawo eziyishumi nambili ezibalulekile zezinyathelo ezidinga ukuthathwa

1. Amandla kagesi avuselelekayo Ikhasi 10

- ¥ Xhuma amaphaneli esolar nama gyser esolar.
- ¥ Qala kancane, bese ukhula ngokuhamba kwesikhathi.
- ¥ Shintshela ekusebenziseni ugesi ngezikhathi zasemini.
- ¥ Yenza imizamo yokusebenzisa imoto kagesi ngomuso.

2. Ugesi Ikhasi 13

- ¥ Gwema ukusebenzisa i-air conditioning noma izinto zokushisa indawo.
- ¥ Vula igeयर kuphela uma kunesidingo, ishisele phansi.
- ¥ Sebenzisa uhlobo lwamalambu e-LED noma usebenzise ukukhanya kwemvelo.
- ¥ Sebenzisa imishini yasendlini ngokonga, ikakhulukazi leyo eshisayo.those that heat.

3. Ezokuthutha Ikhasi 18

- ¥ Sebenzisa imoto yakho kancane uma ungakwazi.
- ¥ Gibelani nibe baningi (Sebenzisani imoto eyodwa/gibelisani).
- ¥ Sebenzisa imoto encane, eyongayo ongayikhona.
- ¥ Qaphela indlela oshayela ngayo nesivini, gwema imigwaqo enesiminyaminyana.

4. Izimbongi Ikhasi 22

- ¥ Thenga ngomthamo omncane.
- ¥ Ikakhulukazi thenga kancane impahla yensimbi, uplastiki, amaminerali namakhemikhali.
- ¥ Sebenzisa onakho, amasekeni alunge kakhulu.
- ¥ Gwema impahla ewukhofukhokufo (foam) noma eyiStyrofoam.



5. Imfucuzu

Ikhasi 24

- ¥ Yithi cha kuplastiki.
- ¥ Nqaba ukwenza imfucuzu, Nciphisa imfucuzu, Sebenzisa

6. Indlu noma indawo ohlala kuyona Ikhasi 26

- ¥ Hlala endlini encane eyanele wena.
- ¥ Yandisa abantu abahlala endaweni (ezindlini zokuhlala).
- ¥ Yakha isakhiwo ngendlela eyonga amandla.
- ¥ Sebenzisa impahla enekhahoni encane.

7. Imvelo

Ikhasi 28

- ¥ Vikela imithombo yemvelo enempilo, okubalwa nomhlabathi.
- ¥ Buyisela kahle imithombo yemvelo ekhahlamezekile.
- ¥ Tshala izihlahla ukuze unciphise isisi secarbon.

8. Amanzi

Ikhasi 30

- ¥ Yonga amanzi — zikhathi zonke.
- ¥ Faka amathangi ukuze wonge amanzi emvula.

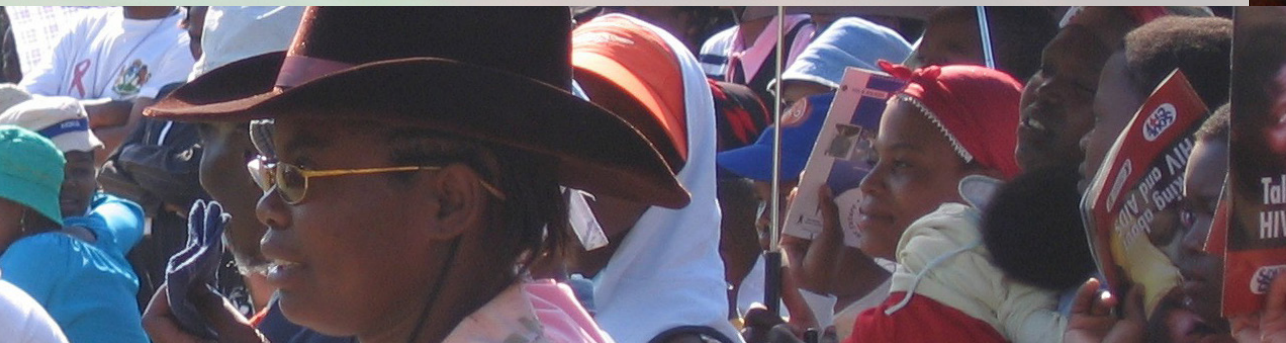
8. Ukudla

Ikhasi 31

- ¥ Yidla ukudla okunempilo, ikakhulukazi okuyizithalo.
- ¥ Yidla inyama encane, ibe ncane kakhulu ebomvu.
- ¥ Gwema ukumosa ukudla.

10. Izwi labantu nokusebenzisa imali Ikhasi 32

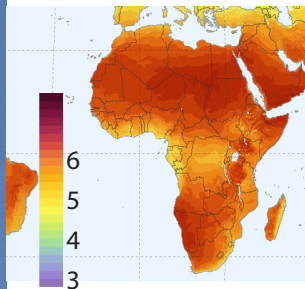
- ¥ Sebenzisa imali ekuthuthukiseni abantu, hhayi ezintweni.
- ¥ Tshala imali emfundweni, ezempilo nakwinhlalakahle.
- ¥ Shitshela ekutshaleni imali emnothweni owonga imvelo.
- ¥ Qinisekisa ukuthi izwi lakho liyezwakala.
- ¥ Dlulisela phambili umyalezo.



1. Ugesi Ohlanzekile

Ugesi siwusebenzisela izinto eziningi ezihlukene empilweni yansuku zonke (ukufudumeza, ukupholisa, ukukhanyisa, ezokuthutha, njll.). Ugesi ohlanzekile kungenzeka kungabi yinto yokuqala esiycabangayo kodwa ukuze sikwazi ukubhekana ngqo nokuguquka kwesimo sezulu, abantu nxazonke kudingeka baguqukele kugesi ohlanzekile, kanti uMasipala waseThekwini uzibophezele kulokhu. Ugesi ohlanzekile ungatholakala kwimithombo efana nelanga, umoya, amagagasi, nokunye. Njengoba intengo kagesi ikhula ngendlela engaphezulu kokukhula kwamazinga email, izindleko zikagesi ohlanzekile zona ziyehla. Ugesi ohlanzekile uyazikhokhela wona futhi ukwazi ukonga kakhulu ngemuva kweminyaka embalwa.

Le mephu ikhombisa ukuthi nasezindaweni ezingenalo ngokwanele ilanga e-Afrika, kusengakwazi ukuthi kutholakale amandla elanga angaphezu kwawaseYurophu, lapho kusetshenziswa khona kakhulu amandla elanga. 6 5 4 3 2 kWh/m² ngosuku



Ugesi ophehlwa ngelanga

Umithombo osetshenziswa kakhulu wamandla avuselelekayo e-Afrika yilanga. Ugesi ophehlwa ngelanga ungavunwa ngezindlela ezehlukene:

- Ukushisa (njengegiza kagesi ophehlwa ngelanga)
- Ugesi wokukhanyisa (amaphaneli kagesi ophehlwa ngelanga)
- Ugesi wokushisa (amapayipi adonsa amandla okushisa)
- Ukutshala izimali kumaphaneli kagesi ophehlwa ngelanga/igeyser kagesi ophehlwa ngelanga.
- Ungaqala kancane uye ngokukhula ngokuhamba kwesikhathi.
- Yenza imisebenzi eminingi edinga ugesi omningi (ukupheka, ukufudumeza amanzi, imishini kagesi) emini, ukuze impilo yakho ikhoneke kalula.

Ipulazi elikhulu lamaphaneli kagesi ophehlwa ngelanga

Amaphaneli kagesi ophehlwa ngelanga ezindaweni

Igeyser kagesi ophehlwa ngelanga nama-igeyser kagesi ophehlwa ngelanga

Uphahla olufutshane ngamaphaneli kagesi ophehlwa ngelanga

Izindlu zomxhasi ezinamagagasi kagesi ophehlwa ngelanga

gese
anga

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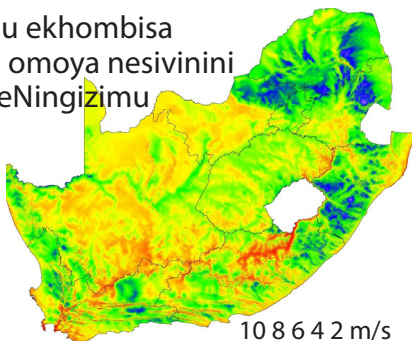
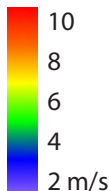
elwe
kagesi
anga

so
gese ophehlwa

Ugesi ophehlwa ngomoya

Izindawo eziningi e-South Africa zithola umoya omningi ngokwanele ukuthi zingasiza ekuphehlweni kukagesi ohlanzekile.

Le mephu ekhombisa amandla omoya nesivinini somoya eNingizimu Afrika.



Ugesi ophehlwa ngelanga uphehleka emini kuphela, umoya nawo uyafika ubuye uphele. Ukuze ube nogesi ohlala isikhathi, udinga ukuba namabhethri, noma uqhubeke ukusebenzisa ugesi ojwayelekile

Ophephela bakagesi womoya abawumthamo omkhulu



Ophephela bakagesi womoya namaphaneli kagesi ophehlwa ngelanga ophahleni lwezakhiwo



Izixazululo zobuchwepheshe obungabizi

Imiyalelo mayelana nezixazululo zasekhaya zobuchwepheshe obungabizi obusinika ukushisa nokukhanya uma kusetshenziswa amandla avuselelekayo, ziyatholakala uma uphenya kwi-internet.



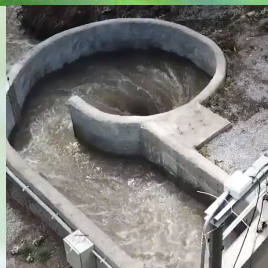
Ibhokisi lokupheka yisikhwama noma ibhokisi elakhiwe kahle elibamba ukushisa. Ubilisa ukudla, ukufake phakathi lapho kuqhubeke khona nokuzipheka ngokushisa kwakho.

Amalambu azikhanyisayo athola amandla emshinini omncane owenza amandla ngesisindo sawo njengoba elenga entanjeni.



Uhhavini wesola udonsa ukushisa kwelanga kuze ebhokisini elivaliwe, elibamba ukushisa elishisa ngokwanele ukuthi ungabhaka kulona.

Okokupheka okudonsa amandla elanga, okuwuhlobo lomshini wamandla aphehlwa ngelanga, odonsa futhi uqondise amandla elanga endaweni eyodwa. Zikhona nezinye izinhlobo zemishini yamandla aphehlwa ngelanga.



Zikhona nezinye izinhlobo zemishini yamandla aphehlwa ngelanga.



I-Methane evela kwimfucuzo yasengadini ebolayo (i-biogas) ingasetshenziswa njengegesi yokupheka.

Izimoto zikagesi

Izimoto zikagesi ezishajwa ngogesi ophehlwa ngelanga, izimoto ezixubile (ezisebenzisa ugesi, bese zisebenzisa nowoyela) zibaluleke kakhulu ekongeni ikusasa, kodwa okwamanje ziyabiza ngokwenani.

- Qala ukufuna amamodeli ashicile, nokuthi izithuthi zomphakathi zisebenzise ugesi. Njengamanje ayikho ingqalasizinda edolobheni lonke yokweseka izimoto zikagesi, kodwa zingakwazi ukusebenzelana nezindawo zikagesi wamandla elanga ezisemakhaya.



2. Ugesi

Ukusentshenziswa kukagesi kungaba phezulu kakhulu uma kufudunyezwa indawo (amahitha), ukupholiswa kwezindawo (ama air-condition), kugcinwa amanzi ashisayo (amagiza) namaphampu amaphuli, ngoba lokhu imvamisa kusebenza usuku lonke. Nokho-ke, ukusebenza kukagesi kuzona zonke izinto zasendlai ekhaya, sezihlanganisiwe, kungaba kukhulu kakhulu. Ngokusebenzisa imishini yethu ngokucophelela, singanciphisa icarbon esiyikhiqizayo ngesigamu nangaphezulu, futhi singabe sinciphisa isikweletu sethu sikagesi ngaleso sikhathi.

Ukushaja amaselula

I-M-Net Decoder / Umsakazo wama-DVD

I-Toaster

Umbonakude (51cm owumbala)

I-Microwave oven

I-ayina lezingubo

Iketela

I-Vacuum cleaner

Ifriji eline-freezer

Umshini wokuwasha

Umshini wezitsha

Istofu

Ifriji (eline-freezer)

I-Tumble dryer

Uhhavini

Ikhompyutha

Istofu esincane

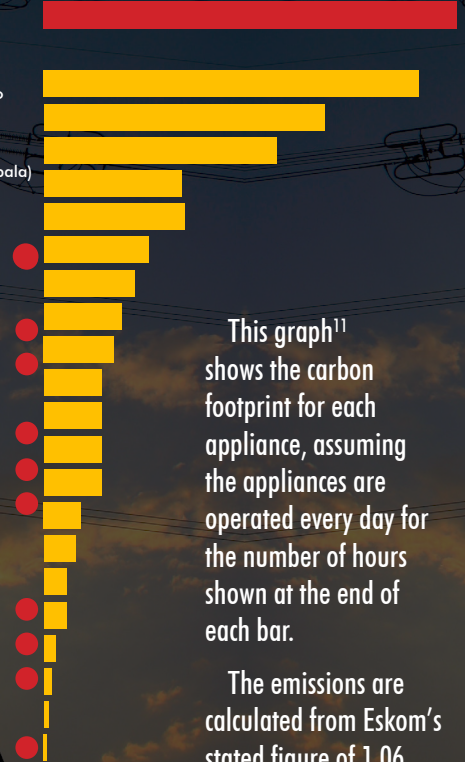
Amalambu ayizixhanti (ezinamalambu awu-10)

Iphampu yepool

Igeyser

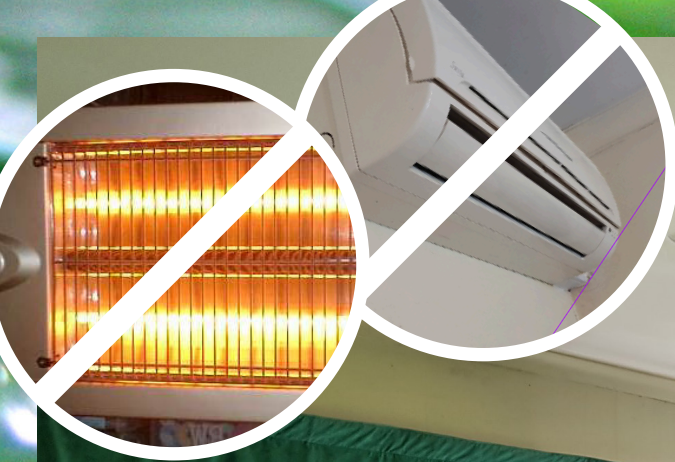
I-Air conditioner

Iheater



This graph¹¹ shows the carbon footprint for each appliance, assuming the appliances are operated every day for the number of hours shown at the end of each bar.

The emissions are calculated from Eskom's stated figure of 1.06 tCO₂ per MWh.



Ama-heater/ama-air conditioner

- ✧ Gwema ukusebenzisa ama-air conditioner: nciphisa ukushisa okungenayo ngamakhethini, ngama-blind noma ngomthunzi wezihlahla ukupholisa ilanga.
- ✧ Gwema ukusebenzisa iheater: gqoka ijezi lokwengeza noma usebenzise ingubo yokwengeza yokulala.
- ✧ Setha izinga lokushisa licishe lilingane nalokhu okusemnyango (angabandi kakhulu ama-air conditioner ehlobo, angashisi kakhulu ama-heater ebusika).
- ✧ Cisha uma uphuma endlini.
- ✧ Vala amawindi nezicabha ukuvimbela ukuphuma noma ukomoya obandayo noma oshisayo.
- ✧ Sebenzisa okokuvala ophahleni ukusiza ukugcina ukushisa ngaphakathi (uma kubanda) noma ngaphandle (uma kushisa).



I-pool engenabo ubungozi esimweni sezulu nemvelo ile egcwaliswa ngamanzi emvula kuphela ephampu esebenza ngelanga. Iphampu esebenza

Igeyser yamanzi ashisayo

Ukugcina amanzi egeyser eshisa amahora angama-24 ngosuku kumosha ugesi omningi. Le grafu ikhombisa ama-kilo-Watts (kW) kagesi osetshenziswa igeysers ejwayelekile engu-150L, uma uyisebenzise kabili ngosuku olulodwa, nokuthi ubiza malini. Nakhu ongakwenzi ukuze wonge ugesi owusebenzisayo 12,13. (1) Beka i-thermostats ye-geysers ku 40°C, hhayi ku 75°C.

(1) Beka i-thermostat ezingeni lokushisa eliphansi. Igeyser ngayinye egcwele, yonga u-R1300 ngonyaka uma njalo yehliswa ngo 10°C. (2) Kuthatha amahora amabili ukushisa amanzi ngo- 35°C.

• Vula igeysers uma udinga amanzi ashisayo kuphela, uphinde uyicishe. (3) Usebenzisa ugesi omncane kakhulu, ngokusebenzisa

igeysers enamanzi ashisayo kanye ngokusuku.

• Sebenzisa amanzi ashisayo amancane. (4) Kwehlisa ukusebenza kukagesi kakhulu ukwenza kokubili:

• Sebenzisa amanzi ashisayo amancane bese uvula/ uvale igeysers. (5) Amaphampu kagesi okushisa amanzi asebenzisa ugesi omncane kakhulu kunegiza, ikakhulukazi uma ezobekwa emazingeni aphezulu okushisa. Amaphampu okushisa abiza kakhulu kunamagiza ajwayelekile, futhi adinga ukuseviswa njalo, kodwa lokhu kuzozikhokhela kona ngezindleko zikagesi owongiwe.

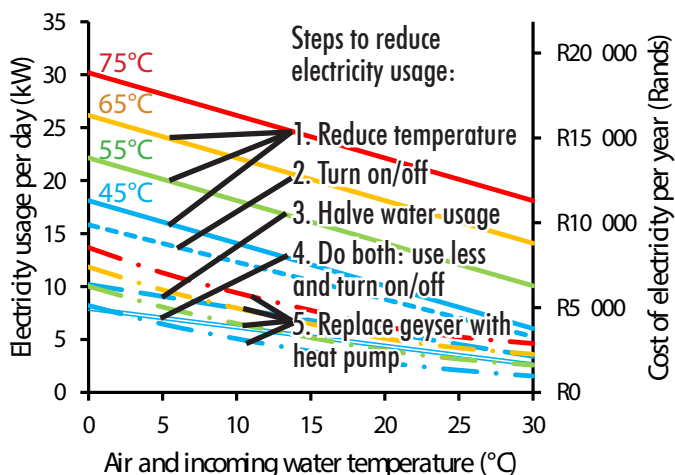
• Thenga iphampu yokushisa amanzi.

• Mboza igeysers namapayipi ukuze akwazi ukugcina



Use an automatic timer to turn the geyser on and off at set times every

Use a digital geyser controller to heat water to specific temperatures at different hours of the day.



Ukukhanyisa

Kubalulekile ukwazi ukuthi mangaki amalambu esinawo endlini, ashiywe isikhathi esingakanani ekhanya, futhi ikakhulukazi, hlobo luni lwamalambu asetshenziswayo. Ishumi nambili lamalambu okukhanyisa ohlobo oludala angu-100W angasebenzisa ugesi omningi njengegiza ngosuku olulodwa. U-23 Watt fluorescent bulb usebenza kahle ngokuphindwe kane, nama-LED angu-6 watt asebenza kahle ngokuphindwe kawu-16, onga izinkulungwane

- ¥ Faka amalambu ohlobo lwe LED.
- ¥ Cisha amalambu uma engadingeki.
- ¥ Nciphisa isibalo samalambu afakiwe.
- ¥ Sebenzisa ukukhanya kwemvelo uma kungenzeka.



Skylights reduce the need for indoor lighting.

Ama-Fridge

- ¥ Pholisa ukudla ngaphambi kokukufaka efrijini.
- ¥ Vikela ama-fridge nama-freezer elangeni.
- ¥ Beka amazinga okubanda ngendlela efanele.
- ¥ Gcwalisa ngendlela evumelekile, ungagcwalisi kuze kweqe ukuze umoya ukwazi ukuhamba ngokwanele ngaphakathi.
- ¥ Vula uphinde uvale ngokushesha, ungavumeli umoya obandayo uphume.
- ¥ Hlola ama-seal, ncibilikisa iqhwa, uqikelele ukuthi ama-condenser coil angemuva awanalo uthuli.
- ¥ • Khanda ifriji uma ivuza i-gas bese ufaka i-gas engeyona



Appliances

Izinto ezisebenza ngogesi

Izinto zokufudumeza zisebenzisa ugesi omningi kunokunyakaza (Isibonelo. Amaphampu, ophephela).



Ukubilisa nokupheka

¥ Bilisa amanzi owadingayo kuphela.

¥ Gcina amanzi abilile angasebenzile kwi-thermos flask ukuze uwasebenzise ngesikhathi usuwadinga.

¥ Pheka ukudla isikhathi esincane ngokungenzeka (Ukudla imifino eluhlaza noma ephekwe isikhathi esincane nakho kunempilo).

¥ Ncibilikisa ukudla ngokukushiya ngaphandle (kunokukufaka kwi-microwave).

¥ Iketela lisebenza kahle ngo-80%, ngakho sebenzisa iketela ukubilisa kunestofu (esisebenza kahle ngo-70%) noma ne-microwave (50%)

Umshini wokuwasha izitsha

¥ Gcwalisa umshini, ungawashi izintsha eziwuhhafu emshinini.

¥ Kungcono ukungawusebenzisi uphephela wokomisa izitsha, kunalokho omisa izitsha ngokuzibeka ngaphandle zomiswe umoya.

¥

Umshini wokuwasha

¥ Washa izingubo uma sezingcolile kuphela.

¥ Gcwalisa umshini, ungawashi izingubo ngomshini ongagcwele.

¥ Sebenzisa amazinga okushisa aphantsi ukwenza umsebenzi.

Umshini wokomisa izingubo

¥ Neka izingubo ukuzomisa uma lokho kuzokwenzeka.

¥ Qaqa, uhlukanise izingubo ngaphambi kokuba uzifake emshinini wokuzomisa.

¥ • Hlanza ama-filter.

¥ • Gcina umshini ungawashi izingubo emshinini ongagcwele, noma ungawagcwalisi ngokweqile.



Izinto ezisebenza ngogesi

¥ AGwema ama-TV amakhulu ohlobo lwe-plasma noma ama- gaming console.

¥ • Nciphisa amazinga okukhanya.

¥ • Cisha ama-screens uma engasetshenziswa.

¥ • Cisha izinto ezisebenza ngogesi nama-charger odongeni ngoba kudonsa ugesi noma ngabe akusebenzisiwa.

3. Ezokuthutha

Sonke siyadinga ukuhamba. Singakwazi kanjani ukunciphisa izindleko ezihlobene nezinto zokuhamba?

Kuze kube yilapho izimoto ezisebenzisa amandla aphehlwa ngelanga zibakhona kithi sonke, singonga kakhulu ngezinye izindlela.

- Uhlobo lwesithuthi
- • Isibalo sabagibeli imoto ngayinye
- • Amayela (ama-kilometres asehanjiwe esewonke)
- • Ukusebenza kukaphethroli (uphethroli osebenzayo i-km ngalinye elihanjiwe)

1 person
One trip

4 people
One year

1 person
limit
One year

Per
person

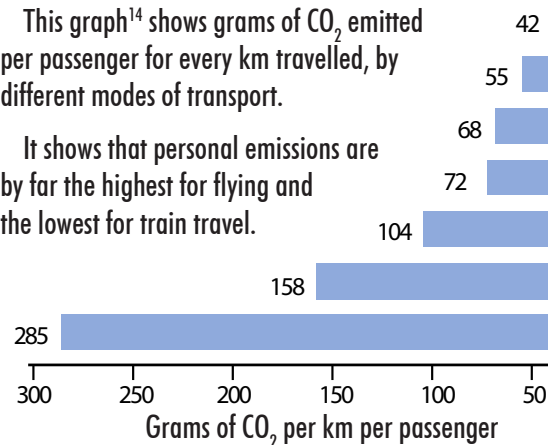
Air travel

Ukuhamba ngebhanoyi njengesibonelo sangempela, uhambo lwamazwe aphesheya olunemilenze emine (ukusuka eNingizimu Afrika uya eCanada, cishe ibanga olungu-38,000km ukuya nokubuya) okuholele ku-4500kg wesisi sekhlabhoni. Lokhu kungaphezu ngokuphindwe kabili kwesibalo esiphezulu saminyaka yonke esingu-2000 kg CO₂e ngomuntu ngamunye, uma sizonciphisa ukufudumala komhlaba kungabi ngaphezulu kuka-1.5°C. Uma kuqhathaniswa, phakathi nalo nyaka wonke, umndeni wabane uhambe u-17,000km ngemoto yomndeni, wakhiqiza u-3500 kg CO₂

Mode

This graph¹⁴ shows grams of CO₂ emitted per passenger for every km travelled, by different modes of transport.

It shows that personal emissions are by far the highest for flying and the lowest for train travel.



Carbon Emission: 1028.50 kgs

Class	T - Economy		Non Stop	
Departs	20:15	O R Tambo International Arpt, Johannesburg	JNB	Terminal B
Arrives	06:15	Frankfurt Intl, Frankfurt Germany	FRA	Terminal 1
	Flying Time	11:00	Carbon Emission: 1028.50 kgs	
	Equipment	Airbus Industrie A340-600		

14



156



4



4



12.7



1.2



1.5



1.5



88

0 Average number
of passengers

Occupancy

This graph also shows that if more passengers travel in a vehicle together, emissions come down per person.

So, for a given number of passengers, the smallest vehicle that can fit this many people will be the most economical, and produce the least emissions.

- ¥ Fly as little as possible.
- ¥ Fly economy class. A business class ticket has 3 times more emissions than an economy ticket, a first-class ticket up to 9 times more¹⁵.

Mileage

One sure way to reduce transport emissions is simply to drive less.

- ¥ Use your car as little as possible.
- ¥ Combine trips and get the most out of every kilometre travelled.
- ¥ Work from home if possible, or allow staff to work from home.
- ¥ Use Google Maps to find the best route.

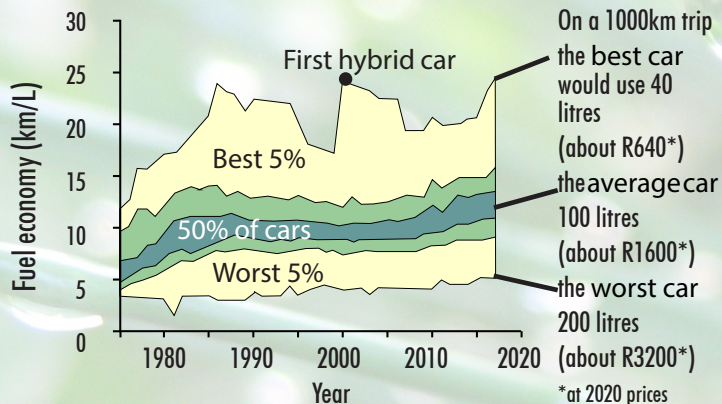
COVID-19 has created health risks for air travel. Many people no longer want to fly. The pandemic has encouraged online meetings, which is good news for climate change. It also saves money, time and effort.

COVID-19 also creates risks for other forms of public transport. So while high occupancy rates are economical and good for climate change, we need to take the personal protection measures very seriously.



Ukusebenzisa uphethiloli ngokonga

- ✧ Le grafu engakwesokudla ikhombisa ukuthi noma ukusetshenziswa kukaphethiloli ngokonga kuya ngokuba ngcono ngokuhamba kwesikhathi, kunomehluko ophakathi kuka-4 kuya ku-5 uma kuqhathaniswa eyonga kakhulu kanye nemoto eyonga. Into enomthelela kakhulu ubungako benjini futhi lokhu kubala - nezithuthuthu imbala.
- ✧ Hamba ngemoto encane, neyonga kakhulu kuphethiloli.
- ✧ Ukuze uhlomule elitheni ngalinye likaphethiloli, bona ithebula.
- ✧ Ngabe kufanele ngithole enye imoto eyonga kangconywa? Mhlawumbe, kepha akunasidingo. Khumbula ukuthi isisi se-carbon esikhiqizwayo ngemoto entsha sisuka:
- ✧ Kumathani ayi-6 ekhabhoni ngemoto encane kunazo zonke,
- ✧ 17 wamathani ekhabhoni ngemoto enesinqa ejwayelekile, kanye
- ✧ 35 wamathani ekhabhoni nge-SUV, kwencike emotweni,
- ✧ Lokhu kungalingana nophethiloli weminyaka eminingi. Kubukeka kuyisu elingcono ukuhamba ngemoto inkathi ende futhi nangendlela eyonga uphethiloli ngangokungenzeka.



Ukwakheka kwenjini nezinto ezithinta ukudleka kukaphethiloli	isibalo
Amandla enjini (ejwayelekile 140HP iqhathaniswa ne-sport 200HP)	30%
Ekadizili	15-30%
Cylinder deactivation; idle stop-start systems	4-10% each
Ama-Turbocharger; variable valve timing; direct fuel injection	a few % each
I-Air conditioning kuya ku	20%
Ama-rack amabhayisikili aphezu kwemoto – kungafinyelela ku	20%
Ukukhombisa ukudleka kukaphethiloli/udizili -kungafinyelela ku	15%
Amathayi angagcwele kungafinyelela ku	4%
Ngo-100kg womthwalo wokwengeza, ngaphezu kuka-1000km	3 litres of fuel
Isimo senjini, nokuthi isevisiwe yini (amalitha amathathu kaphethiloli)	

Indlela yokushayela

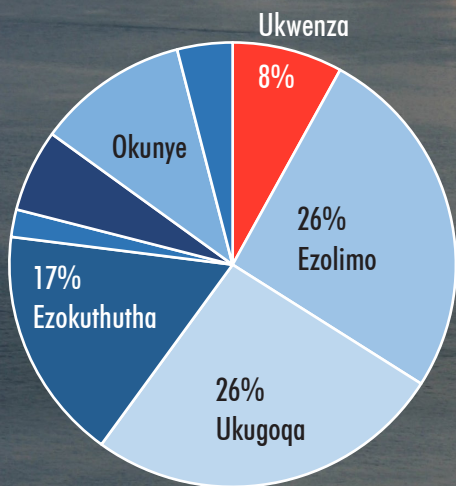
- ¥ Ukushayela ngodlame, ngesivinini esinamandla nokunyathela amabhuleki ngamandla kungaphindaphinda ukudleka kukaphethiloli.
- ¥ Shayela kahle nangokucophelela.
- ¥ Isivinini
- ¥ Isivinini esifanele siphakathi kuka 40-100 km/h. Uphethiloli udleka ngokuphindekile uma uhamba ngesivinini esiphansi kakhulu (20km/h) noma ngesiphezulu kakhulu (140km/h) uma siqhathaniswa nesemukelekile.
- ¥ Ngakho-ke:
- ¥ Shayela ngesivinini esamukelekile emigwaqweni evulelekile nakothelawayeka.
- ¥ Edolobheni, khetha imizila ehambayo nesheshayo, egwema ukulokhu wehlisa isivinini nokuma njalo kwizimpambanamgwaqo, noma ukuma nemoto edumayo emarobhothini.
- ¥ Shayela ngegiya eliphezulu kunawo wonke imoto ibe isesivinini esithile esisodwa.
- ¥ Uphethiloli udleka ngokuphindekile kabili ezimotweni nangokuphindekile kathathu emalolini uma kunesiminyaminyama sezimoto ezihamba kancane, uma kuqhathaniswa nemoto ehamba ngesivinini esifanayo emigwaqweni okuhambekayo kuwona.
- ¥ Gwema izikhathi zebhizi nesiminyaminyama.



4. Izimboni

Ekuqaleni sibonile ukuthi, uma uhlanganisa zonke izingxeny ezahlukahlukene, izimboni ziyiwona mthombo omkhulu wokukhiqizwa kwesisi secarbon eNingizimu Afrika. Singacabangi ukuthi, umuntu ngamunye akakwazi ukulawula izimboni, kodwa lokhu

akulona iqiniso. Izimboni zisinika lokhu esikufunayo. Singabasebenzisi bemikhiqizo yezimboni. Asikhumbule ukuthi “izimboni ezinkulu” (ezensimbi, zamaminerali, zeplastiki, zamakhemikhali, zezimayini nezinkwali) yizo ezikhiqiza icarbon eningi.



Imikhiqizo eyahlukahlukene inemithelela ehlukene esimweni sezulu nasemvelweni. Ukuhlaziya okuphelele kubala icarbon isiyonke yomkhiqizo noma yomsebenzi owenziwayo, kuzona zonke izigaba zokukhiqiza. Isibonelo, 8% kuphela wempilo kanemenayidi owenzeke ngenxa ‘yomsebenzi uqobo’ owenzeka enkampanini ewukhiqizayo. Lo omunye u-92% isisi esiphuma ngaphandle kwenkampani. Lapha kubalwa yonke into kusukela ekutshaleni, ekuvuneni, ekukhiqizeni nasekuthutheni ushukela, ukukhiqiza uplastiki, izigubhu zengilazi nensimbi nokupakisha, kuya ekuthutheni ngomkhumbi, ukugcina nokudayiswa komkhiqizo, nakho konke okwezekayo ukuthulula isigubhu emva kokuba usilahlile.

- ¥ Thenga izinto ezimbalwa.
- ¥ Ikakhulukazi thenga izinto ezimbadlwana zensimbi, zikaplastiki, zamaminali namakhemikhali.
- ¥ Khanda izinto uma ziphuka
- ¥ Qhubeka nokusebenzisa amagajethi (afana neselula noma izinto zikagesi) kuze kube ayafa, hhayi ngoba sekukhona angcono kunamadala.
- ¥ Thenga, dayisa, udlulise impahla eyisekeni.
- ¥ Thenga ikhwalithi ehlalayo, gwema impahla eshibhile elahlwayo.
- ¥ Phisana ngama-gift voucher, kunokuthengela abantu izipho abangeke bazisebenzise.

Ama-Halocarbons

Ngale kokuba nesandla ekukhiqizeni isisi secarbon, izimboni ziphinde zikhiqize ama-halocarbons. Lokhu kunomthelela ekufudumezeni umhlaba ishe ngokuphidwe ngezinkulungwane kunekhabhoni. Uma esesemkhathini, ama-halocarbon ahlala lapho iminyaka eyizinkulungwane. Lezi zisi zikhiqizwa ikakhulukazi izibandisi/amafriji kanye nembali ye-foam.

- ¥ Gwema ukusebenzisa i-foam ne-styrofoam.
- ¥ Lungisa ukuvuza kwegesi emafrijini nakuma-air conditioner.
- ¥ Qinisekisa ukuthi ifriji nefriza yakho isebenzisa igas eyamukelekile engabangi ukwenyuka kokufudumala komhlaba. Sekunemithetho mayelana nalokhu manje, buza umuntu okukhandela ifriji.



5. Imfucuzu

Imfucuzu ihlobene kakhulu nezimboni. Esithombeni esingakwesokudla sibona udoti wemvelo (ukudla okulahlwe, izinsalela zezitshalo nodoti wabantu) ubola bese ukhiqiza i-methane. Sibuye sibone udoti ongewona owemvelo (udoti okungewona owemvelo awuboli, kepha kungenzeka ugcine uhla kaze kile ekugcineni). Siphinde sibone imiphumela yokumosha okujwayelekile: omunye umphakathi usebenzisa izinto eziningi ngokweqile. Bese sibona imiphumela yemikhiqizo emoshekile: izinto ezisethenziswe kanye bese zilahlwa (njengezinto zokupakisha).



Because methane is over 30 times more powerful as a greenhouse gas than CO_2 , the effect of organic waste on global warming is very important. Food waste and food loss is a major contributor to waste-related methane emissions.



The problem with plastic

Inkinga ngamaplastiki

Uplastiki udinga kukhulunywe ngawo ngokukhethekile. Ngokujwayelekile, izinto zokupakisha zihlanganisa u-36% wokukhiqizwa koplastiki, kanye no-47% kadoti woplastiki. Uplastiki uphinde uye nakweminye imikhiqizo yezindwangu kanye nemikhiqizo yabathengi, Cishe lonke ucezu

lukaplastiki luqala njengezinsalela zikaphethiloli, futhi-ke izisi zegesi edala ukufudumala komhlaba ziyakhiqizeka kuzona zonke izigaba zempilo kaplastiki (ukukhishwa, ukukhiqizwa, ukwabiwa kanye nokuphathwa kukadoti).

Uplastiki uhlala emvelweni iminyaka eyishumi kuya kweyikhulu nangaphezulu. Ilambu le-Ultraviolet ligcina liwuncibilikisile uplastiki (kwesinye isikhathi

Imigomo yokunciphisa udoti

Udoti



Yithi CHA emabhodleleni amaplastiki, koplastiki bokuphatha, i-styrofoam, imimese nezimfoloko zeplastiki, kanye nezinto zokupakisha zikaplastiki noma

Nciphisa



Uma ungakwazi ukuphila ngaphandle kwento ethile, zama ukuyisebenzisa kancane kunakuqala: izinto zikagesi ezincane, ubucwebe, izicathulo, izimpahla, njl

Lungisa



Thenga izinto ezizohlala inkathi ende. Uma zifa, zama ukuzilungisa kunokuba uzilahle.

Sebenzisa kabusha



Ungakwazi nokuthi usebenzise kabusha izinto. Isibonelo, sebenzisa kabusha amagobhozi ukuze ugcinie impahla, amathawula amadala uwasebenzisele ukuwandlala phansi njengamaragi. Thenga udayise njengamasekeni.

Sebenzisa ngenye indlela



Ungakwazi ukutholela izinto zakho ezindala omunye umsebenzi kunokuzilahla. I-internet igcwele amasu okusebenzisa kabusha nakahle impahla endala (ukusebenzisa udoti kabusha nangesitayela).

Sebenzisa kabusha udoti



Ezinye izinto ziwudoti ongasebenziseka kabusha. Insimbi yiyo esebenziseka kabusha kakhulu. Qaphela ukuthi, noma ukusebenziswa kabusha kukadoti kubalulekile, uma kuhamba kodwa ngeke kuyixazulule inkinga kadoti. Kucishe kufane nethemba lokugcina.

Buyisa



Ekugcineni, ezintweni ezigcina ezindaweni okulahlw akuzona udoti, kungakwazi ukuthi kutholwe kuzona izinto ezifana nensimbi eyigugu namakhemikhali, noma ekuvuneni i-methane gas. Kodwa kulesi sigaba sikadoti, umonakalo omningi sewuvele wenzekile.

6. Ukwakha

Impahla yokwakha

Kokubili izitini nosimende kukhiqiza icarbon eningi. Kuphuma isisi esiningi ngesikhathi kubhakwa izitini. Ukumbiwa kobumba nakho kukhiqiza isisi esiningi. Usimende wakhiwa ngetshe elihlanganiswe nobumba kuhhavini bese kuyagaywa kube yimpuphu. Lokhu akugcini nje kuphela ngokusebenzisa amandla amaningi, kepha kukhiqiza ikhemikhali iCO₂. Uhlobo lokwakha nge-rammed earth indlela yakudala yokwakha lapho isisekelo, iphansi, kanye nezindonga kwakhiwa kusetshenziswa inhlabathi egqingqiwe. Le ndlela yokwakha Inemihlomulo eminingi: ayiyilimazi imvelo, ihlala iskhathi eside, isibhile, ilula, iqinile kanti iyamelana nokushisa nokubanda. Inkinga ukuthi okwamanje ayigunyaziwe ngomasipala abanangi — ngakho lolu hlobo lokwakha kusadingeka lufakwe ezindleleni zokwakha ezigunyaziwe. Ukwakha ngowatela nodaka ngenye yezindlela zokwakha ezingakhiqizi icarbon eningi nokudala ukuthi izindu zasemakhaya zingayilimazi imvelo.



Ramming
earth



Rammed earth building



Design

Kusuka ngo-2011 imithethonqubo yaseNingizimu Afrika elawula ukwakhiwa kwamabilili amasha noma ukulugiswa kwamabilili idinga ukuba kongiwe amandla. Lokhu kufaka nezinto ezifana nendlela indlu emi ngayo mayelana nokubheka ngaselangeni, impahla yokwakha esetshenziwe, ukukhiqiza, ukungena komoya wemvelo kanye nokukhanya, izindlela zokushisa amanzi, njll. UMasipala waseThekwini uUkuminyana

Ukwakha kufaka nemigwaqo, amabhuloho namapayipi. Amadolobha anamakhilomitha amaningi emigwaqo nenye ingqalasizinda akhiqiza icarbon eningi.

Ukuminyana

Ngalesi sizathu, amadolobha anabantu abaningi endaweni encane angcono kakhulu kunamadolobha lapho kuqhelelwene futhi kungagcwele kakhulu khona. Ukwenyusa isibalo sabantu abahlala ekhaya elilodwa kwehlisa umthamo wekhabhoni ekhiqizwa ngumuntu ngamunye. Nakuba izindawo ezinabantu abaningi Usayizi

Ngenxa yezizathu ezingenhla, izindlu ezincane azikhiqizi icarbon eningi. Abanye abantu bathenga izindlu ezinkulu kakhulu ngoba bezikhona. Kepha

kunendlela entsha, ebizwa ngokuthi 'umkhankaso wezindlu ezincane' lapho abantu abasemazingeni empilo ahlukahlukene bekhetha ukuhlala emakhaya amancane. Indlu enkulu kanye nezindleko eqhamuka nazo, asikho isidingo sayo futhi ayenzi kahle emvelweni.

Usayizi

Ngenxa yezizathu ezingenhla, izindlu ezincane azikhiqizi icarbon eningi. Abanye abantu bathenga izindlu ezinkulu kakhulu ngoba bezikhona. Kepha kunendlela entsha, ebizwa ngokuthi 'umkhankaso wezindlu ezincane' lapho abantu abasemazingeni empilo ahlukahlukene bekhetha ukuhlala emakhaya amancane. Indlu enkulu kanye nezindleko eqhamuka nazo, asikho isidingo sayo futhi ayenzi kahle emvelweni. omncane.

- Hlala endlini encane oyidingayo.
- Iba nabantu abaningi abahlala endaweni eyodwa, ezindaweni ezihlelekile.
- Hlala nabanye abantu ndawonye/uqashise ngendawo ongayisebenzisi.
- Sebenzisa impahla yokwakha enekhabhoni encane.
- Akha ngendlela ezokwenza ukuthi udinge ugesi

7. Imvelo

Ukubhekelela ukuguquka kwesimo sezulu kusho ukwenza izinto ngendlela engakhiqizi isisi esilimaza imvelo kepha kusho nokususa iCO₂ esikhona emoyeni. Imvelo enempilo iyamunca futhi igcine iCO₂.



Amahlathi kanye nezihlahla zemangrove ikakhulukazi zinhle kakhulu ekumunceni icarbon. Kanti futhi imvelo engenayo impilo ingadala ukukhiqizeka kwekhabhoni.

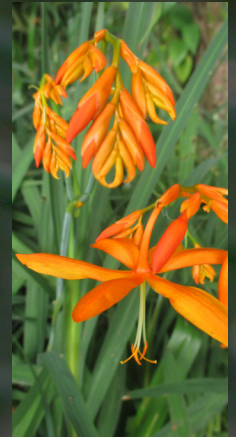
Izihlahla zinkulu futhi zigcina umthamo omningi wekhabhoni endaweni encane. Izihlahla zezithelo ziphinde zikhiqize nokudla. Amafokozi agcina icarbon encane kodwa akhula ngokushesha.



Utshani bukhula ngamandla kakhulu okuyinto enhle kwezolimo, ezilwaneni kanye nasemvelweni eyehlukahlukene.

Izihlahla

Izihlahla zimumatha futhi zigcina iCO₂ ngokwemvelo uma zikhula. Imvelo enempilo kumele ivikelwe, kanti imvelo ekhahlamezekile kumele ilungiswe. Izihlahla zemvelo zeseka imvelo eyehlukahlukene endaweni, kanti izihlahla zokufika (okungezona zaseNingizimu Afrika) aziyeseke. Ukuvuswa kwamahlathi kumele kwenziwe ngemvelo. Izihlahla zokufika ziphazamisa ukukhiqizwa kokudla, izihlahla zokufika ikakhulukai zilimaza imvelo yendawo.



Amakhambi, izimbali kanye nezihlahla ezincane nazo zinomthelela omkhulu omuhle emvelweni eyehlukahlukene.



Izikhotha zotshani nazo zingagcina icarbon elingana negcinwa amahlathi.

Ukwehliswa kwecarbon

Okunye ukukhiqizwa kwecarbon akugwemeki. Ukunciphisa umthelela walokhu emvelweni, singatshala izihlahla. Ngesikhathi zikhula zisusa icarbon emoyeni. Izihlahla zemvelo ezahlukahlukene eNingizimu Afrika zisusa kusuka ku-30 kuya ku-130 kg we-CO₂ emoyeni minyaka yonke kuye ngobukhulu bazo nangokuthi zikhula ngamandla kangakanani.

- ¥ Sebenzisa leli thebula ukubala ukuthi zingaki izihlahla ezingehlisa umthelela kagesi kanye nophethiloli wakho emvelweni.
- ¥ Zitshalele wena izihlahla, noma
- ¥ Uzinikeze umuntu onendawo, noma
- ¥ Dlala indima emizamweni yokutshala kwezihlahla.

Njalo ngonyaka uma sikhula isihlahla, sigcina icarbon ngaphezulu nangaphansi komhlaba.

Umthamo ngonyaka	Ukuncishiswa kwe-CO ₂ ekhiqiziwe	Izihlahla:		
		Ezinkulu	Eziphakathi nendawo	Ezincane
100L fuel	240kg (uphethiloli)	2	4	8
(~2 tanks)	290kg (udizili) ²⁴	3	5	10
1000 kW electricity	1060 kg ²⁵	8	19	36

Isibonelo, u-100 litres kaphethiloli osetshenziswa ngonyaka ukhiqiza u-240kg we- CO₂. Ukunciphisa lokhu, uzodinga ukutshala izihlahla ezimbili ezinkulu, njengezohlobo lomkhiwane wendabuko. Uzodinga ukuzitshala kanye kuphela lezi zihlahla. Ngesikhathi zikhula zimoma lesi sisi esikhiqizekayo ngonyaka.

Kungathatha isihlahla esisodwa iminyaka engu-30 ukunciphisa icarbon yohambo olulodwa oluya phesheya kwezilwandle.

Izihlahla zohlobo lwe-baobab ngesikhathi zilokhu zikhula amakhulu ngamakhulu eminyaka, zigcina izinkulungwane zamathani ekhabhoni. Kepha kamuva ziyafa okungenzeka ukuthi zibulawa ukuguquka kwesimo sezulu.

Umhlabathi

- ¥ Ngokwemvelo, yiningi icarbon ehlala emhlabathini kunasezihlahleni ngaphezu komhlaba. Icarbon ingena kanjani emhlabathini? Izihlahla ziphushela icarbon ngaphansi komhlaba ngezimpande zazo, ngosizo lwe-fungi. Izilwane ezihlala emhlabathini (njengezilwanyana kanye neminyundu) nazo zigqiba inqwaba kadoti wezihlahla ezifile emhlabathini.
- ¥ Umhlaba onempilo ubamba le carbon uphinde uthathe nanye ngokuhamba kwesikhathi. Kancane kancane icarbon ilokhu ingena ngaphansi komhlaba. Kanti umhlaba ongaphandle, ovela elangeni, emoyeni nasemvuleni uyaguguleka iphume kuwona icarbon. Lo mhlabathi ulahlekelwa umsoco nempilo.
- ¥ Gwema amakhemikhali abulala izihlahla, izilwanyana kanye nezinambuzane.
- ¥ Ungashiya umhlabathi ungambozekile: qinisekisa ukuthi umhlaba uyavikeleka njalo noma uyavundiswa ukuze uvikeleke.
- ¥ Vikela umhlabathi ukuze ungashisi ngokweqile, ungaphazamiseki, ungonakali futhi ungaguguleki.
- ¥ Ekugcineni, sifuna ukususa e $i\text{-CO}_2$ eningi emkhathini



Izimpande zezihlahla zisebenzisana nezilwanyana ukuphushela icarbon ngaphansi komhlaba.



8. Amanzi

Amanzi ayinto ebalulekile ezoba into eyimvela kancane emhlabeni wonkana ngokuhamba kwesikhathi, nokufaka iNingizimu Afrika, ngenxa yokuguquka kwesimo sezulu. Amanzi ahlanzekile kampompi nakho ukuhlanzwa kwawo elungiselelwa ukuphuzwa kukhiqiza icarbon. Kusetshenziswa ugesi ukuhlanza amanzi azophuzwa, kanye nokuhlanza angcolile. Ngokonga amanzi nsuku zonke, hhayi kuphela uma kunesomiso kuphela, sehlisa isidingo samanzi ahlinzekwa ngumasipala.

- ¥ Yenza kube umkhuba ukongiwa kwamanzi.
 - ¥ Xhuma amathangi amanzi emvula.
 - ¥ Phinde usebenzise amanzi/amanzi asebenzile.
- supplies.

9. Ukudla

Ukudla kuyisidingongqangi empilweni yabantu. Kepha ukudla okuningi okukhiqizwayo kugcina kungadliwanga. Izinhlelo zokukhiqiza ukudla kwesimanje zinesandla kakhulu ekungcoleni komoya, ngenxa yokuthi (1) kuba noshintso ekusetshenzisweni komhlaba nokugawulwa kwamahlathi okubanga ukwanda kwe- CO_2 , (2) amakhemikhali okuvundisa umhlabathi akhipha i-nitrous oxide, (3) nobulongwe bezinkomo bukipha i-methane gas. Ukugawulwa kwamahlathi kwandile ngenhloso yokwakha amadlelo ezinkomo noma amasimu, kanti nezitshalo zivamise ukusetshenziswa njengokudla kwemfuyo, esikhundleni sokuthi zidliwe ngabantu ngqo. Ngenxa yalokho, i-carbon enyameni iningi ngokuphindiwe kunaleyo yezihlahla ezinamaphrotheni

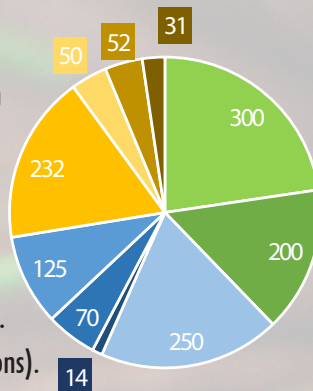
(ubhontshisi, amakinati, okusanhlamvu).

Kuphinde kuthinte nendawo lapho imfuyo ikhona. Ishadi elingakwesokudla lisinika imikhombandlela yokudla ngendlela enomsoco futhi ebhalansile nsuku zonke eyakhelwe phezu kwalesi sisekelo:

- Kulokho okudingwa yimizimba yethu
 - Okuyikhona okuhle kithina, ngokwempilo yethu
 - Lokho okungawulimazi umhlaba
- ✖ Eat a healthy diet mainly of plant-based food.
 ✖ Ration the meat. Have regular no-meat days.
 ✖ Eat mostly white meat, very little red meat.
 ✖ Eat less processed food (avoid industry emissions).
 ✖ Eat locally produced food (avoid transport emissions).
 ✖ Buy only what you will eat, eat what you buy.



Growing our own vegetables has many benefits.



Grams per day of:

- Vegetables
- Fruits
- Dairy
- Red meat
- White meat / eggs
- Legumes
- Whole grains
- Starchy vegetables
- Added fats
- Added sugars



10. Abantu

Abantu yiyona mbangela yokuguquka kwesimo sezulu, kodwa futhi abantu yibona abangaba yisixazululo.. Singakwazi ukufundisa abantu ngezindlela ezahlukeneyo.

- ¥ Singanciphisa ukumoshisa imali ezintweni, kodwa siyichithe kakhulu kwesikwenzayo, isibonelo:
- ¥ Khokhela umuntu ukuba akwenzele umsebenzi othile kunokuthenga umshini. Ukuchitha imali kubasebenzi kunciphisa izindleko zokuthenga izinto nokwenza imisebenzi edala kakhulu isisi secarbon.
- ¥ Khokhela imiholo “eqeda ububha”, kunokukhokha imiholo enqunyiwe yezinga eliphansi. Lokho kuzosiza ekutheni kube nokulingana, futhi sikwazi ukusebenzisa ngendlela imali yethu.



11. Imali

Emnothweni, uma amakhasimende eyidinga into, kukhona okumele awatholele yona. Singakwazi ukusiza ekutheni umnotho wethu uguqukele kulowo onesisisi secarbon esincane ngokuthi sibheke ukuthi siyitshala kanjani imali yethu.

- ¥ Thola ukuthi iyiphi imikhiqizo nezimboni

abatshalizimali abakutshalela kuzona izimali.

- ¥ Cela ezikhungweni zezimali zakho ukuba zivule amathuba esikhathi eside nafanele, uma ngabe zingakawavuli.
- ¥ Khipha imali yakho ezimbonini ezigxile ekukhiqizeni isisi secarbon kakhulu, bese utshala ezimbonini ezisemkhakheni wamandla avuselelekayo. Uma banda kithina abenza lokhu, imakethe izobe isilandela.
- ¥ Ungakwazi nokunxenxa ukutshalwa kwezimali ezinhlanganweni oxhumene nazo, njengezinhlangano ezingenzi nzuzo nezinhlangano zezenkolo.

12. Izwi

- ¥ Sonke singadlulisela imiyalezo, sitshale abangani bethu nomakhelwane ngezinyathelo esizithathayo mayelana nokuguquka kwesimo sezulu.
- ¥ Njengentsha, singafundisa abazali bethu, bese sitshala ijoka lokwenza izinguquko emakhaya nasemindenini yethu.
- ¥ Njengabasebenzi singabheka inqubomgomo yokuguquka kwesimo sezulu bese senza amaphethishini ezinguquko.
- ¥ Njengabavoti nezakhamuzi singafaka ingcindezi kuhulumeni ukuba uthathe izingqumbezifanele, ngevoti lethu nangokubamba iqhaza kwezepolitiki.
- ¥ Njengezakhamuzi zomhlaba singajoyina imikhankaso yokubhekana nokuguquka kwesimo sezulu yamazwe omhlaba.



Uhlu Lwezinyathelo Ngesimo Sezulu

UGESI OPHEHLWA NGEMITHOMBO EVUSELELEKAYO

- ☐ Igeyser ye-sola
- ☐ Amaphaneli esola
- ☐ Iphekhi yamabhethri

IZIMOTO ZIKAGESI

- ☐ Imoto kagesi/exubile

IZINDLELA EZINGABIZI ZASEKHAYA

- ☐ Ibhokisi/Isikhwama sokupheka
- ☐ Uhhavini we-solar
- ☐ Amalambu ohlobo lwe-gravity lights

UGESI

AMA-AIR CONDITIONER/AMAHITHA

- ☐ Beka amazinga okushisa asondelane nawaleyo ndawo
- ☐ Nciphisa isikhathi sokusebenza kwawo
- ☐ Sebenzisa imithunzi (amakhethini/ ama-blinds/izihlahla)
- ☐ Sebenzisa uphephela esikhundleni se-air conditioner
- ☐ Gcina amawindi neminyango kuvaliwe
- ☐ Cisha uma uphuma endlini
- ☐ Faka okokubamba ukushisa kwisilingi

IGEYSER YAMANZI ASHISAYO

- ☐ Yibeke emazingeni okushisa aphantsi
- ☐ Fudumeza amanzi kuphela uma kudingeka
- ☐ Yicishe usuku lonke
- ☐ Faka okokukala isikhathi okuzicishayo
- ☐ Faka okokulawula igeysar kwedijithali
- ☐ Sebenzisa amanzi amancane ashisayo
- ☐ Faka amaphampu okufudumeza kagesi
- ☐ Faka okokwemboza okubamba ukushisa kwi-geyser nasemapayipini

IMISHINI KAGESI YASENDLINI

- ☐ Bilisa amanzi owadingayo kuphela
- ☐ Bilisa ngeketela, hhayi ngesitofu noma i-microwave
- ☐ Gcina amanzi abilisiwe kwi-flask ubuye uwasebenzise
- ☐ Pheka ngezinga lokushisa eliphansi
- ☐ Pheka isikhathi esifushane ngangokungenzeka
- ☐ Yidla imifino nezithelo ezingaphekiwe
- ☐ Khipha iqhwa ngokubeka ukudla emoyeni (hhayi nge-microwave)
- ☐ Bheka isilinganiso sika-AAA

sokonga imvelo

UMSHINI WEZITSHA

- ☐ Wugcwalise umshini ungabi nguhhafu

- ☐ Ungazomisi ngomoya oshisayo

UMSHINI WOKUWASHA

- ☐ Ziwashe uma zingcolile kuphela izingubo

- ☐ Wugcwalise umshini ungabi uhhafu

- ☐ Sebenzisa amanzi aphilile

- ☐ Wusebenzise ngokonga

AMA-TUMBLE DRYER

- ☐ Zomise ngokuzineka izingubo

- ☐ Sebenzisa amazinga okushisa aphantsi

- ☐ Qala ngokuzomisa nge-spin dry izingubo uzihlakaze

- ☐ Gcina ama-fliter ehlanzekile

- ☐ Gwalisa umshini (ungabi wuhhafu), ungagcwalisi ngokweqile

IMISHINI KAGESI

- ☐ Gwema ama-TV eplasma amakhulu nemishini yokudlala amagemu

- ☐ Cisha ama-screen uma ungayibuki iTV

- ☐ Nciphisa ukukhanya kwe-screen

- ☐ Cisha yonke imishini yasendlini odongeni

AMAFRIJI NAMA-FREEZER

- ☐ Vula/vala ifriji ngokushesha
- ☐ Pholisa ukudla ngaphambi kokukufaka efrijiini?
- ☐ Vikela ifriji elangeni
- ☐ Cupha kahle amazinga okushisa
- ☐ Bheka ama-seal, uyikhiphe iqhwa
- ☐ Gcina ama-condenser coil engenazo izintuli
- ☐ Ungayigcwalisi kuze kweqeke
- ☐ Lungisa ukuvuza kwe-gasi
- ☐ Faka i-gas yohlobo olungawungcolisi umoya

AMALAMBU

- ☐ Faka amalambu e-LED
- ☐ Nciphisa isibalo samalambu
- ☐ Cisha amalambu
- ☐ Sebenzisa ukukhanya kwemvelo
- ☐ Faka ama-sky lights

IPHAMPU YEPOOL

- ☐ Gcwalisa ipool ngamanzi emvula
- ☐ Faka iphampu esebenzisa amandla aphehlwa ngemisebe yelanga

Izithuthi

UKUNDIZA NGBHANOYI

- ☐ Kugweme ukundiza ngebhanoyi
- ☐ Sebenzisa i-economy class hhayi i-business class

IMOTO / UKUHAMBA ENGWAQWENI

- ☐ Sebenzisa imoto kancane ngangokungenzeka
- ☐ Gibelisana nabanye abantu

- ☐ Sebenzela ekhaya
- ☐ Sebenzisa i-Google Maps ukuze uhambe indlela eqondile
- ☐ Sebenzisa imoto encane eyongayo
- ☐ Shayela kahle ungagijimi
- ☐ Shayela phakathi kuka-40km/h no-100km/h
- ☐ Sebenzisa imigwaqo esheshayo nekhululekile

IZIMBONI

- ☐ Thenga impahla encane
- ☐ Thenga izinto ezincane ezakhiwe ngensimbi, ngeplastiki, ngamaminali nangamakhemikhali
- ☐ Lungisa izinto uma ziphuka
- ☐ Sebenzisa imishini kagesi ize iphelelwe yisikhathi
- ☐ Nikela ngamavawusha ezipho kunokuthengela abantu izipho
- ☐ Thenga, dayisa futhi uphisane ngempahla esebenzile
- ☐ Thenga ikhwalithi, ungazilahli izinto? Ungathengi izinto ongazingi

UDOTI

- ☐ Gwema ukumosha ukudla: yidla okuthengile
- ☐ Wenqabe uplastiki ngayo yonke indlela
- ☐ Ungayisebenzisi istryrofoam

- ☐ Nciphisa ukusebenzisa zonke izinto
- ☐ Khanda izinto kunokuzilahla
- ☐ Zisebenzise kaningi izinto
- ☐ Sebenzisa okunye (thola indlela ongayisebenzisela yona impahla)
- ☐ Vuselela futhi uhlukanise udoti ekhaya

UKWAKHA

- ☐ Hlala endlini encane oyidingayo
- ☐ Hlalisana nabanye endlini
- ☐ Qashisa ngendawo ongayisebenzisi
- ☐ Sebenzisa impahla yokwakha engangcolisi umoya
- ☐ Yakha indlu eyonga amandla
- ☐ Izindlu ezonga imvelo
- ☐ Amabhilidi onga imvelo
- ☐ Lungisa indlu yakho ukuthi isebenzise ugesi omncane

IMVELO

- ☐ Thatha izinyathelo zokunciphisa icarbon
- ☐ Tshala izihlahla zomdabulo
- ☐ Yonga futhi uvuselele imvelo ehlukene
- ☐ Gwema ukusebenzisa amakhemikhali abulala izilwane, izihlahla nolwelwe?
- ☐ Yemboza umhlabathi ngezihlahla noma ngemvundiso
- ☐ Vikela umhlabathi ekushiseni ngokweqile, ekugandayekeni/ ekugugulekeni/

nasekuphazamisekeni

AMANZI

- * Yonga amanzi
- * Xhuma amathangi amanzi emvula
- * Phinda usebenzise amanzi angcolile

UKUDLA

- * Yidla ukudla okuthakwe kakhulu ngezitshalo
- * Nciphisa inyama oyidlayo / yiba nezinsuku zokungayidli inyama
- * Yidle kancane inyama ebomvu
- * Yidla kancane ukudla okucolisiwe IKHAVA

* Yidla ukudla kwakuleli

* Ungamoshi ukudla

ABANTU

- * Khokhela umuntu akwenzele okuthile kunokuthenga umshini
- * Khokha amaholo okulwa nobubha

IMALI

- * Bheka ukuthi utshalomali lwakho lunamthelela muni kwicarbon
- * Yeka ukutshala izimali ezimbonini ezingcolisa umoya kakhulu
- * Buza ngotshalomali oluvikela imvelo
- * Tshala izimali emnothweni owonga

imvelo futhi obhekelela ingomuso

IZWI

- * Yenza izinguquko ekhaya lakho
- * Dlulisela phambili umyalezo
- * Tshela abangani nomakhelwane
- * Fundisa umndeni wakho
- * Gququzela uguquko emsebenzini
- * Votela izinyathelo zokubhekana nokuguquka kwesimo sezulu
- * Yiba yingxenywe yemikhankaso yomhlaba yokubhekana nokuguquka kwesimo sezulu

“Konke ukufudumala kuyasithinta, wonke unyaka uyasithinta, konke esikwenzayo kuyasithinta.” - Hoesung Lee USihlalo we-Intergovernmental Panel on Climate Change Wonke umuntu ubalulekile. Uyingxenywe yesixazululo!

WUKUFUDUMALA KOMHLABA

OKUNGANANI okuphephile? Okuncane kungcono kakhulu kunokuningi! Ngo-2017 umhlaba ufudumale cishe ngo -1°C ukwedlula iminyaka ewu-150 eyedlule, ngokusho kwe-Intergovernmental Panel on Climate Change. Lokhu kube nomthelela obonakalayo emhlabeni wethu, ikakhulukazi kubantu abahlwempu nabasengcupheni. Ukwenyuka kuka-1.5°C kuzoba nemiphumela emibi nakakhulu; lesi sigamu sezinga lokushisa singaba nobungozi obungaphezu kwe-degree lokuqala. U-2°C uzokuba nobungozi obukhulu kubantu nasemvelweni emhlabeni jikelele. Izinhlobo eziningi zemvelo nabantu angeke zikwazi ukusinda.

KUMELE sisukume nini? – MANJE! I-IPCC ithi isisi secarbon sidinga ukuphungulwa ngohhafu ngo-2030, size sifinyelele ku-0 ngo-2050, ukuze kugwenywe ukufudumala komhlaba ngo-1.5°C. Lokhu kusho ukuthi isisi esikhiqizwa wumhlaba

kumele sehle cishe ngo-7.5% ngonyaka (okuyinto esiyibone ngesikhathi kuhlasela i-COVID 19) phakathi konyaka ka-2020 no-2030. Uma lokhu kungafezeki, kuzoba nzima kakhulu ukuthi kuncishiswe ukufudumala komhlaba kume ku-1.5°C, kanti lokhu kuzogcina kungafezekanga.

NGUBANI okumele asukume? – SONKE, abanye kumele baqale, bese abanye beyalandela.

Ngenxa yamazanga angefani entuthuko emhlabeni jikelele namhlanje, ukuguquka kwesimo sezulu akudlwa yiwo wonke umuntu ngokulingana. Amazwe acebile nabantu abacebile yibona ikakhulukazi abanomthelela ekufudumaleni komhlaba, ngakho-ke kumele babe yisibonelo sokusukunyelwa kwendaba yesimo sezulu. Izenzo zabo yizona ezizobeka umhlaba endleleni egondile, ukuze nabanye bakwazi ukulandela kalula.

YIZIPHI izinyathelo? – Zonke izinyathelo zibalulekile, kodwa ezinye zinomthelela nakakhulu. Funda leli bhukwana ukuthola ukuthi yiziphi lezi zinyathelo.

*"Every bit of warming matters,
every year matters,
every choice matters."*

— Hoesung Lee

Chair of the Intergovernmental Panel on Climate Change

Wonke umuntu ubalulekile. Uyingxenywe yesixazululo!

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Every individual matters.

YOU are part of the solution!

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