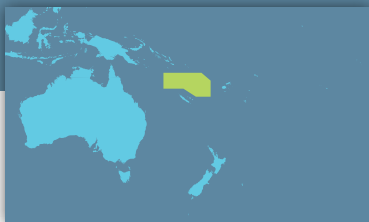


Pacific Climate Change Science Program



Kaen klaemet blong naoia mo long fiuja Blong Vanuatu



- > Vanuatu Meteorology and Geo-hazard Department
- > Australian Bureau of Meteorology
- > Commonwealth Scientific and Industrial Research Organisation (CSIRO)



Australian Government

Kaen klaemet blong naoia long Vanuatu

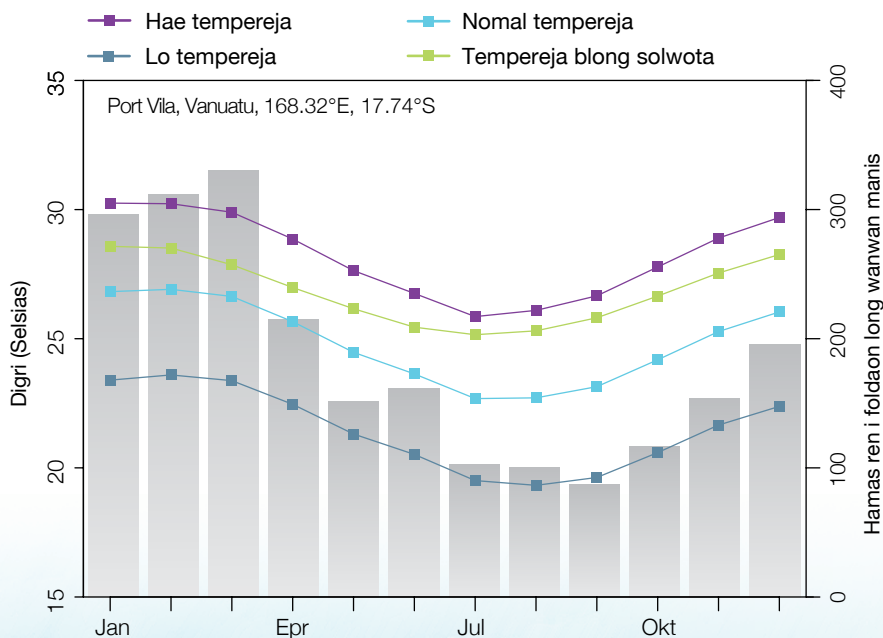
Long Vanuatu, evritaem ples i save hot stat long 23.5 i go kasem 27.5 digri Selsias. Long ol defren taem blong yia, ples i save hot o i no hot tumas, mo hem i dipen plante long solwota, se i kolkol o i no kolkol. Vanuatu i gat tu different klaemet. Wan hemi taem we ples i hot mo plante ren, hemia long manis Novemba i go kasem manis Eprel, mo narawan hem i taem we ples i no hot tumas mo i drae we hemi long Mei kasem Oktoba. (lukluk Pikja namba 1).

Wan bigfala eria blong cloud we hemi normally stap long yumi long Pasifik, we oli stap kolek South Pacific Convergence Zone hemi stap influensem renfol pattern long Vanuatu. Eria blong cloud ia i kamap long ples we air i ko antap ova long wom wota mo wind i kam tugeta mo i save mekem fulap ren wetem thunder. Eria ya i stat long Solomon Aelan i go kasem is saed blong Cook Aelan (lukluk Pikja namba 2). Long taem blong ren long Vanuatu, South Pacific Convergence Zone i kam mo active mo i muv i go

moa long saot blong country mo i kivim fulap ren. Eria ya nao ol low presa oli stap long hem mo oli save kam ol tropikol saeklon long taem blong saeklon season blong yumi.

Ol bigfala hil oli save afektem patten or fasin blong ren long ol aelans blong yumi. Long taem blong ren, ren i foldan moa long saed blong hil we wind i blow moa long hem (saot-is) long ol bigfala aelans blong yumi be smol nomo i foldan long narasaed blong hil (not-wes saed) mo i kam mo drae long taem we yumi

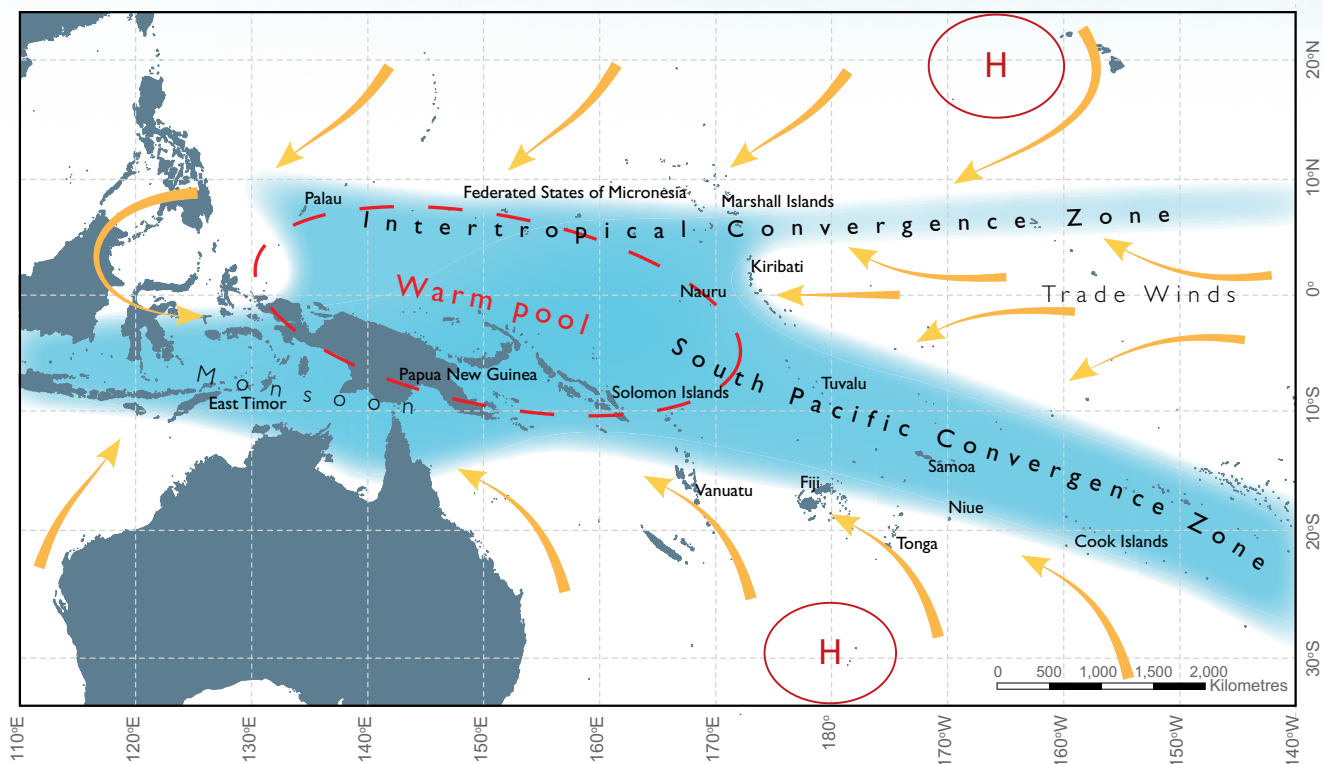
no karem tumas ren. Klaemet blong Vanuatu i stap jenis long evri yia from wan system blong klaemet we yumi kolek El Niño -Southern Oscillation (ENSO). Patten blong klaemet ia i stap happen long eria klosap long equator mo i affectem weta raon long world. I gat tu kaen fasin o sistem blong El Niño -Southern Oscillation (ENSO), we samfala yia i go long wan, we oli kolek El Niño, mo samfala yia i go long narawan, we oli kolek La Niña, o maet i stap long medel blong tufala. Sipos yumi komperem tufala ya, ol statistik blong klaemet blong Vila mo Aneityum oli soem se long taem blong El Niño, ples i stap drae moa, mo yumi karem ol ren late long taem blong ren blong yumi. Long El Niño taem tu bae ples i save kolkol moa bitim nomal drae traem blong yumi. Be sipos taem blong La Niña, ples i wetwet moa o i gat fulap ren tumas mo bae i gat late start long drae season blong yumi.



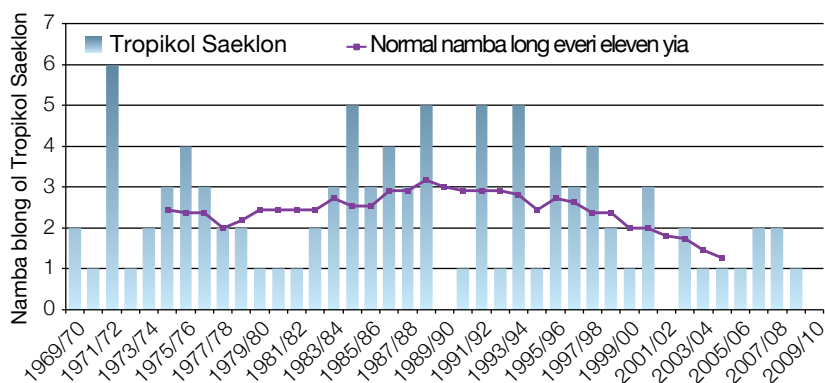
Pikja namba 1: Renfol mo temperaja long different manis long Port Vila.



Sanbis blong Eton, long wes blong Efate



Pikja namba 2: i givim posisen blong ol somting we i controlem weta long manis Novemba i go long manis Eprel. Ol aro oli soem ol win kolongsap long graon, mo kala blu i soem ol eria we ol ren oli save kamaot long hem. Wan sekel we laen blong saed blong hem i dotdot i soem wan eria long Wes blong Pasifik we solwota blong hem i stap wom oltaem, mo bigfala leta H i soem samfala ples we plante taem ol eria blong hae presa oli stap long hem.



Pikja namba 3: i givim namba blong ol saeklon we oli kam 400 kilomita klosap long Vila. Laen we i stap long kala pepol hem i soem nomal namba blong saeklon long everi eleven yia we i pas finis.

Tropikol Saeklon

Tropikol Saeklon i save kasem Vanuatu stat long manis Novemba iko kasem manis Eprel long everi yia. Stat long 1969 i kasem 2010 we hemi 41 yia evriwan, i gat 94 saeklon we oli kam 400 kilomita klosap long Vila. Hemia i minim se long evri taem blong saeklon, i gat tu o tri saeklon we oli kam klosap long Port Vila (lukluk Pikja namba 3). Be namba ya i save jenis bigwan long ol defren yia, olsem samfala yia i no gat saeklon nating, be long samfala yia i save gat kasem sikis.

Ol jenis long klaemet blong Vanuatu

Ples i stap kam hot moa

Ol statistik blong klaemet long Vila mo Aneityum oli soem se stat long 1950, ples i kam moa hot mo i includim taem season blong hot mo kolkol (lukluk Pikja namba 4). Long Bauerfield eapot long Vila, ples i stap kam moa hot long wan reit blong 0.17 digri Selsias long evri ten yia, mo long Aneityum, i kasem 0.18 digri Selsias. Hemia i semak nomo long ol kaen inkris olsem we i stap tekem ples raon long wol naeia.

Long taem blong ren, ren we I foldaon i no bigwan olsem bifo

Stat long 1950 i kam, long stret taem blong ren long Vila, amaon

blong ren we i foldaon i stap go daon smolsmol. Be sipos yumi luk long ren we i foldaon long wan ful yia, o long taem we i no stret taem blong ren, i soem se i no jenis tumas long Vila mo Aneityum. Long ol yia ia, I bin gat ol bikfala janis lo amaon blong ren we I foldaon lo wan wan yia lo tufala station ia.

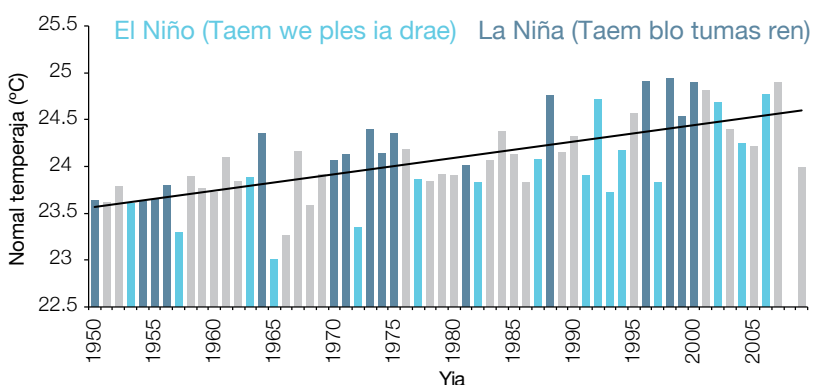
Level blong solwota i stap kam antap

Taem we solwota i stap kam hot moa, i stap mekem se level blong solwota i stap kam antap. Long wol, ol ples blong sno mo aes oli holem plante wota i stap, be taem we klaemet i stap kam hot moa, ol aes ya i oli stap melt o kam wota bakegen, mo oli stap fulumap solwota moa mo mekem i

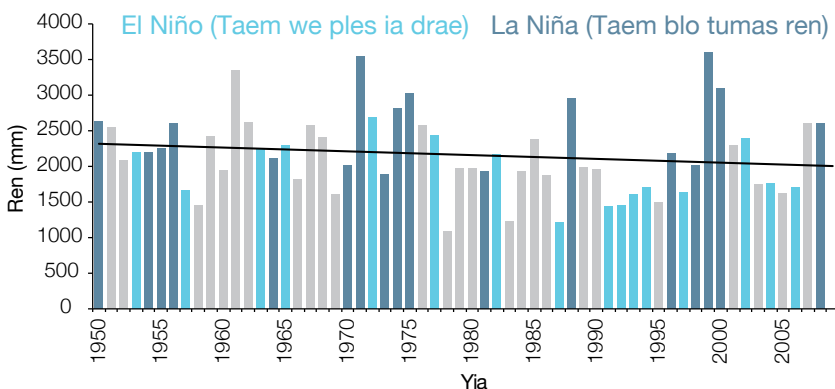
kam antap moa. Ol saentis oli gat tu teknik blong wajem olsem wanem solwota i stap kam antap. Oli stap putum wan samting long solwota blong ridim level blong hem, mo ol satelaet antap long skae olgeta tu oli save monitorem. Oli faenem se klosap long Vanuatu, stat long 1993 i kam, solwota i stap kam antap long wan amaon blong 6 milimita long evri yia (lukluk Pikja namba 7). Raon long wol, solwota i stap kam antap long wan level blong 2.8 i go kasem 3.6 milimita long evri yia. Hemia i minim se long Vanuatu i moa bitim plante narafala ples, mo maet hem i rilat long ol jenis blong weta we tufala sistem blong klaemet ya El Niño wetem La Niña tufala i stap mekem.

Asid insaed lo solwota i moa bitim bifo

I gat plante samting we yumi stap mekem o yumi wokem we oli prodium wan quarter long wan gas, nem blong hem carbon dioxide. Majoriti blong gas ia i stap go insaed long solwota, mo taem we i miks wetem solwota, i jenisim smol i kam asid. Kaen solwota olsem ia nogud long ol samting olsem korel mo ol selfis, mo i save mekem se ol rif oli save kam nogud. Asid wota tu i affectem ol laev lo solwota we oli important especili blo balancem lae lo solwota. Infomesem blong wan hundred yia i pas i soem se amaon blong asid ya we i stap



Pikja namba 4: Nomal temperaja long wan yia long Bauerfield Eapot long Vila. Ol laen we oli laet blu oli soem ol yia blong El Niño, mo ol laen we oli dak blu oli soem ol yia blong La Niña. Ol yia we oli no gat wan long tufala sistem ia oli stap long kala grei.



Pikja namba 5: Nomal ren we i foldaon long Vila long wan yia. Ol laen we oli laet blu oli soem ol yia blong El Niño mo ol laen we oli dak blu oli soem ol yia blong La Niña. Ol yia we oli no gat wan long tufala sistem ya i wok, oli stap long kala grei.



Solwota blong Eton, long wes blong Efate

Fuja Klaemet blong Vanuatu

Klaemet hemi affectem evri pat long laef blong yumi. Hemi impoten blong yumi save mo andastanem kaen Klaemet we bai yumi save fesem long ol taem we oli stap kam, blong gavman wetem ol kominiti oli save rere from.

Olsem wanem nao ol saentis oli save talem Klaemet blong fiuja taem?

Ol lukluk long saet blong fiuja klaemet we ol saentis oli mekem folem Klaemet blong Wol nao i save helpem yumi blong andastanem kaen klaemet blong Fiuja taem. Ol lukluk ia oli mekem usum ol spesel computa blong olgeta. Bes long ol infomesen ya, mo ol save long saed blong ea, solwota, graon, mo aes, ol computa ya oli save faenemaot ol sistem blong klaemet we oli stap raon long wol. Mo antap long hemia, oli save givim wan gudfala pikja se klaemet blong ol yia we i kam bambae i olsem wanem.

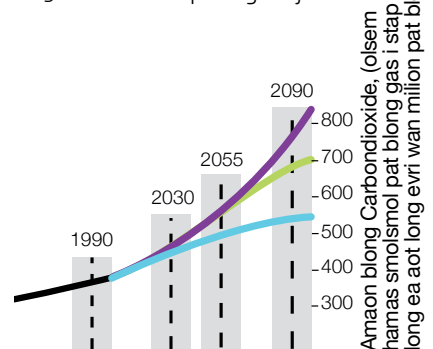
I gat plante defren kaen lukluk blong fiuja klaemet. Ol saentis blong Projek blong Pacific Climate Change Science program oli mekem stadi long wok blong 24 difren klaemet fiuja lukluk raon long wol, mo oli jusum 18 we oli luk se i fit situesen blong rijen blong Pasifik. Bes long hemia oli kam antap wetem sam lukluk long klaemet blong Vanuatu long ol yia we i stap kam.

I no isi blong talem stret klaemet blong fiuja, from klaemet we bambae yumi fesem long fiuja hemi dipen long fasin blong envaeromen mo fasin blong man. I gat ol narafala samting tu we oli kontribut blong mekem klaemet blong fiuja olsem populesen blong wol, se i stap go

antap o i stap semak, ikonomi blong ol kantri, se istap gro i kam bigwan o no, mo ol developmen long saed blong teknoloji. I gat wan Komiti we oli lukluk long Jenis blong klaemet raon long wol, (The Intergovernmental Panel on Climate Change) mo komiti ya i stap lukluk long ol poen ya, mo i kam antap wetem sam tingting se sipos populesen, ikonomi mo teknoloji i olsem wanem, oli save talem tu se bambae klaemet i olsem wanem. Oli lukluk tu long hamas rabis gas yumi stap putum long ea, mo hamas gas blong ol spre yumi mekem i go long ea, from ol samting ya tu oli save spolem klaemet blong wol. Oli givim wan nem long ol defren lukluk blong olgeta, eksampol, maet populesen i go antap fastaem, be afta i nomo stap go antap tumas, mo maet ikonomi blong wol i gro bigwan, mo maet i gat ol niufala teknoloji i kam antap. Situesen ya oli kolem A1B. Mo sapos i olsem, oli save gat wan gudfala lukluk se klaemet blong wol bambae i olsem wanem.

I gat trifala defren lukluk o kes we yumi save lukluk long hem. Sapos ol samting antap oli mekem se i no gat tumas rabis gas i go long ea, oli kolem kes B1, i gat smol gas nomo. Sipos i

gat lelebet gas i go long ea, oli kolem kes A1B, gas i no tumas. Mo sipos i gat plante gas i go long ea, oli kolem A2, gas i bigwan. Mo wetem trifala defren lukluk ya, yumi save askem se bambae hamas rabis gas i stap go long ea long ol fiuja yia, olsem 2030, 2055 mo 2090. Ansa i stap long Pikja namba 6.



Pikja namba 6: Hamas smolsmol pat blong Carbon dioxide (CO₂) bambae oli stap go long ea, bes long trifala lukluk o kes. Kes blong gat smol gas nomo oli kolem B1, i stap long kala blu. Kes blong gas i no tumas oli kolem A1B, i stap long kala grin. Kes blong gas i bigwan oli kolem A2, i stap long kala pepol. Projek blong Lukluk long Jenis blong Klaemet long Pasifik i mekem stadi long trifala kes ya long saed blong klaemet blong ol yia 1990, 2030, 2055, mo 2090, mo hemia oli mekem kala blong hem i grei.



Wota i kam antap long Teuma, Vanuatu

Klaemet blong Vanuatu long ol yia we i stap kame

Hemia hem i ol mein poen blong ol defren lukluk long fiuja klaemet blong Vanuatu. Blong karem moa infomesen, lukluk long Volume 2 blong wan buk oli kolem *Climate Change in the Pacific: Scientific Assessment and New Research*. I gat infomesen i stap long intanet tu .long wan websaet oli Kolem Pacific Climate Futures (available at www.pacificclimatefutures.net).

Bambae ples i stap kam hot moa

Evri lukluk blong hamas gas i go long ea i soem se long fiuja, bambae ples i kam hot moa, mo bambae solwota tu i kam hot moa (lukluk long Tebol namba 1). sapos i gat plante gas i stap go long ea, i minim se long yia 2030 bambae ples i hot moa long wan reit blong 0.4 i go kasem 1.0 digri Selsias.

Bambae i gat moa dei we ples i hot tumas

Taem we ples i stap kam hot moa, bambae i gat moa dei we ples i hot tumas mo tu, bambae ol naet oli save kam hot moa, mo bambae taem blong kolkol i kam smol nomo.

Tebol namba 1: Bambae ples i hot olsem wanem, long trifala defren lukluk blong hamas gas i go long ea, mo long trifala defren taem. Ol Lukluk ya oli bes long majoriti blong ol stadi, mo ol jenis oli bes long hemia we i stap long ol yia 1980-1999.

	2030 (°C)	2055 (°C)	2090 (°C)
I gat smol gas nomo	0.2–1.0	0.5–1.5	0.7–2.1
Gas i no tumas	0.3–1.1	0.8–2.0	1.3–3.1
Gas i bigwan	0.4–1.0	1.1–1.7	2.0–3.2

Bambae taem blong ren i jenis

Inogat wan klia pikja long lukluk blong ren lo fiuja. Be i luk olsem long ol yia we oli stap kam, bambae drae taem i stap kam drae moa, mo bambae taem blong ren i stap gat moa ren bitim naoia. I save gat moa ren olsem from we oli luk se lo fiuja bae South Pacific Convergence Zone (SPCZ) bae hemi kam mo aktif. I no gat wan stret tingting yet se ol bigfala drae taem bambae oli kam plante moa o nogat.

Bambae i gat moa dei we ren i bigwan tumas

Ol dei we ren i foldaon bigwan tumas long hem, bambae oli stap kam plante moa.



Trening blong lukaotem gud ol infomesen blong Klaemet insaet long computa, Dipatmen blong Meteo mo Volkeno, Vanuatu.

Namba blong saeklon i save go daon, be bambae oli kam strong moa

Long bigfala lukluk bambae namba blong ol saeklon raon long wol i go daon. Be taem we i gat saeklon, bambae win i save strong moa long wan reit blong 2 -11 pesen, Mo ren we i stap klosap long medel blong saeklon (100 km) i save go antap kasem 20 pesen.

Long eria blong Vanuatu, lukluk istap se bambae namba blong saeklon i go daon, be taem we wan saeklon i kam, i save strong moa.



Saeklon Gene i spolem wan haos, Janueri 2008.

Vanuatu Meteorology and Geo-hazard Department

Bambae level blo solwota i stap kam antap

Olsem we Tebol namba 2 mo Pikja namba 7 i talem, bambae level blong solwota raon long Vanuatu i stap kam antap moa. Sipos amaon blong gas we i go long ea i bigwan, i save mekem se taem we yumi kasem yia 2030, bambae solwota i bitim level blong naoia long wan reit blong 3 i go kasem 17 sentimeta. Ol jenis ya oli save mekem se solwota i save kamsa i bitim ol mak blong hem bifo, mo i save gat solwota o wota i save fulap long plante ples we bifo i nogat. Ol saentis oli stap traem blong mekem moa stadi long saed blong ol bigfala ples blong aes, olsem antartica mo greenland from

we sipos ol aes long ol ples ya i kam wota, bambae solwota i save kam antap mo i save kamsa i bitim mak we oli stap talem antap ya.

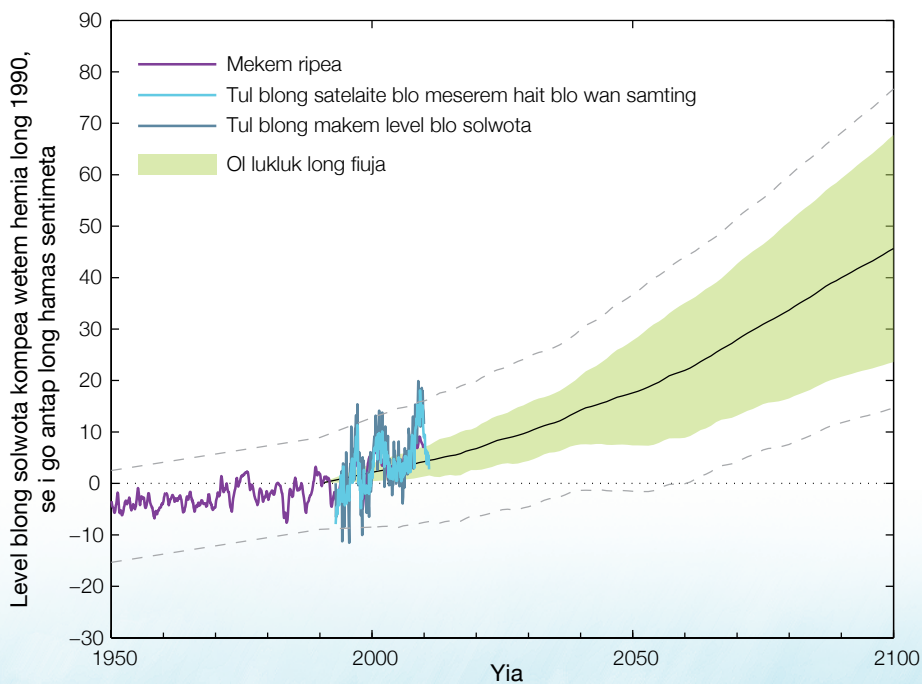
Tebol namba 2: Bambae solwota i kam antap olsem wanem, long trifala defren kes blong hamas gas i go long ea, mo long trifala defren taem. Ol ansa ya oli bes long majoriti blong ol stadi, mo ol jenis oli bes long hemia we i stap long ol yia 1980-1999,

	2030 (cm)	2055 (cm)	2090 (cm)
I gat smol gas nomo	5–16	10–27	17–47
Gas i no tumas	5–16	8–31	20–59
Gas i bigwan	3–17	7–31	21–63

Bambae solwota i stap kam asid moa

Nating we rabis gas we i go long ea i smol, o i no bigwan tumas, o i bigwan, be bambae i kontiniu blo ko long solwota mo bambae i mekem se solwota i stap kam asid moa. Hemia i save spolem ol rif mo ol laev samting we oli stap long solwota. Mo i no hemia nomo, be ol narafala samting oli save afektem ol rif. Taem we solwota i kam hot moa, i save kilimded ol korel, mo long taem blong strong saeklon, ol bigfala solwota oli save damejem ol rif, mo tu maet ol pipol oli stap kakae tumas ol samting blong rif mo solwota. Ol samting ya i mekem se i gat bigfala kwestin mak long fiuja blong ol rif.

Pikja namba 7: mak blo Solwota mo lukluk lo level blo solwota kolosap long Vanuatu. Ol mak blong solwota we oli makem wetem ol skel long solwota, ol namba blong olgeta oli stap long kala dak blu. Ol mak blong solwota we ol satelaet oli skelem, stat long 1993, oli stap long kala laet blu. Ol mak we oli ting se solwota i stap long hem (be i no gat man i skelem gud), stat long 1950, oli stap long kala pepol. Ol lukluk long fiuja, long kes we gas we i go long ea i no tumas, we majoriti blong ol stadi blong ol saentis oli talemaot, i stap long kala grin we oli kalarem eria blong hem blong soem 1990 i go kasem 2100. Ol laen we oli dotdot oli soem olsem wanem level blong solwota i save jenis, hemia long ol nomal taem, mo tufala laen i givim level we i hae, mo level we i daon.



Ol jenis long klaemet blong Vanuatu

- > Ples i stap kam hot moa, mo bambae namba blong ol dei we ples i hot tumas long hem, bambae i kam plante moa
- > Stat long 1950, amaon blong ren we i foldaon long Vila long stret taem blong ren i godaon smol, be hemia long Aneityum i stap semak nomo. Long nekis hundred yia, bambai ikat mo dei we bambae umi karem bigfala ren isave foldaon long hem mo bambae i gat moa dei we ren i stap foldaon i bigwan tumas long hem.
- > Long fiuja yia we istap kam, lukluk is stap se bambae namba blong saeklon i go daon, be bambae paoa blong ol saeklon we oli kam i mo strong
- > Level blong Solwota raon long Vanuatu i kam antap, mo bambae i stap kam antap moa long ol yia we oli stap kam.
- > Asid lo solwota I bin stap kontiniu blo kam antap raon long solwota blong Vanuatu. Mo bambae i stap kam asid moa long ol yia we oli stap kam. Wetem hemia bambae ol rif oli save kam nogud, mo bambae ol laev samting long solwota oli save ded.

Ol toktok insaed long pepa ya oli kamaot long wan wok we Dipatmen blong Meteo mo Volkeno blong Vanuatu i mekem wetem Pacific Climate Change Science program. Projek ya hem i wan pat blong wan bigfala program we gavman blong Ostrelia i setemap blong givhan long ol kaontri raon long wol blong pripea blong fesem ol jenis blong klaemet. Ol risej we Pacific Climate Change Science program i mekem, mo ol infomesen we i kamaot long hem, i follem findings we i kam aot lo namba fo assessment report blo IPCC lo 2007 Blong karem moa infomesen long saed blong klaemet blong Vanuatu, lukluk long buk ya *Climate change in the Pacific Scientific Assessment and New Research. Volume 1: Regional Overview. Volume 2: Country Report*

www.pacificclimatechangescience.org

Blong save mo infomesen, yu save kontaktem Dipatmen blong Meteo mo Volkeno blong Vanuatu:

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