International CLIMATE CHANGE ADAPTATION Initiative

Pacific Climate Change Science Program

Klaemet blong Solomon Aelan long distaem an long fiucha

> Solomon Islands Meteorological Service
> Australian Bureau of Meteorology
> Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Australian Government

Klaemet blong Solomon Aelan long distaem

Temperecha (temperature) long Solomon Aelan hem stap semsem nomoa diuring long yia an garem smol cheinjes (changes) nomoa from wanfala sison (season) kasem narafala sison. Temperecha long Solomon Aelan hemi dipen long cheinj blong temperecha blong solwata. Solomon Aelan hemi garem tufala sison nomoa – wet sison from Novemba kasem Eprol an drae sison from Mei kasem Oktoba.

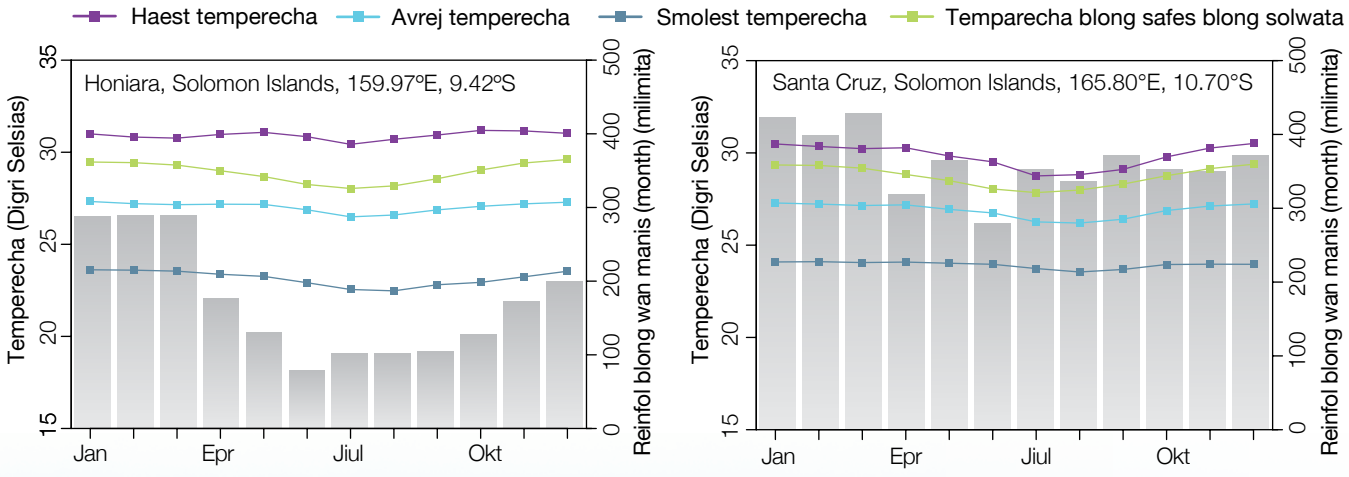
Honiara hem garem klia wet sison bikos long avrej, kolsap 70% blong totol yia ia rein foldaon (fall). Long drae sison (Mei kasem Oktoba), avrej reinfol long wan manis (month) hem abaot 100 milimita bat diuring wet sison, avrej reinfol long wan manis hem 300 milimita. Long ist (east), reinfol long Santa Crus hem stap semsem nomoa diuring yia, an avrej hem bitwin 280 milimita an 420 milimita long wan manis.

Muvment blong Saot Pasifik Konvejens Zoun an Intatropikol Konvejens Zoun hem afektim reinfol long Solomon Aelan. Olketa hevi reinfol ia hem hapen taem ea wea raes ovam wom wata hemi mit wetem win so hem kosim tandastom. Disfala Saot Pasifik Konvejens Zoun ia hem kavam (covers) Pasifik Osen from Solomon Aelan go kasem Kuk Aelan. Disfala Intatropikol Konvejens Zoun ia hem kavam Pasifik bat jas not long ikweita (Figa 2). Disfala West Pasifik Monsun ia hem tu influensim reinfol long Solomon Aelan. Difrens long temperecha blong lan an solwata nao kosim disfala monsun fo stat an diswan save kosim cheinj from wetha wea hem drae fogut go long wetha wea hem wet fogut.

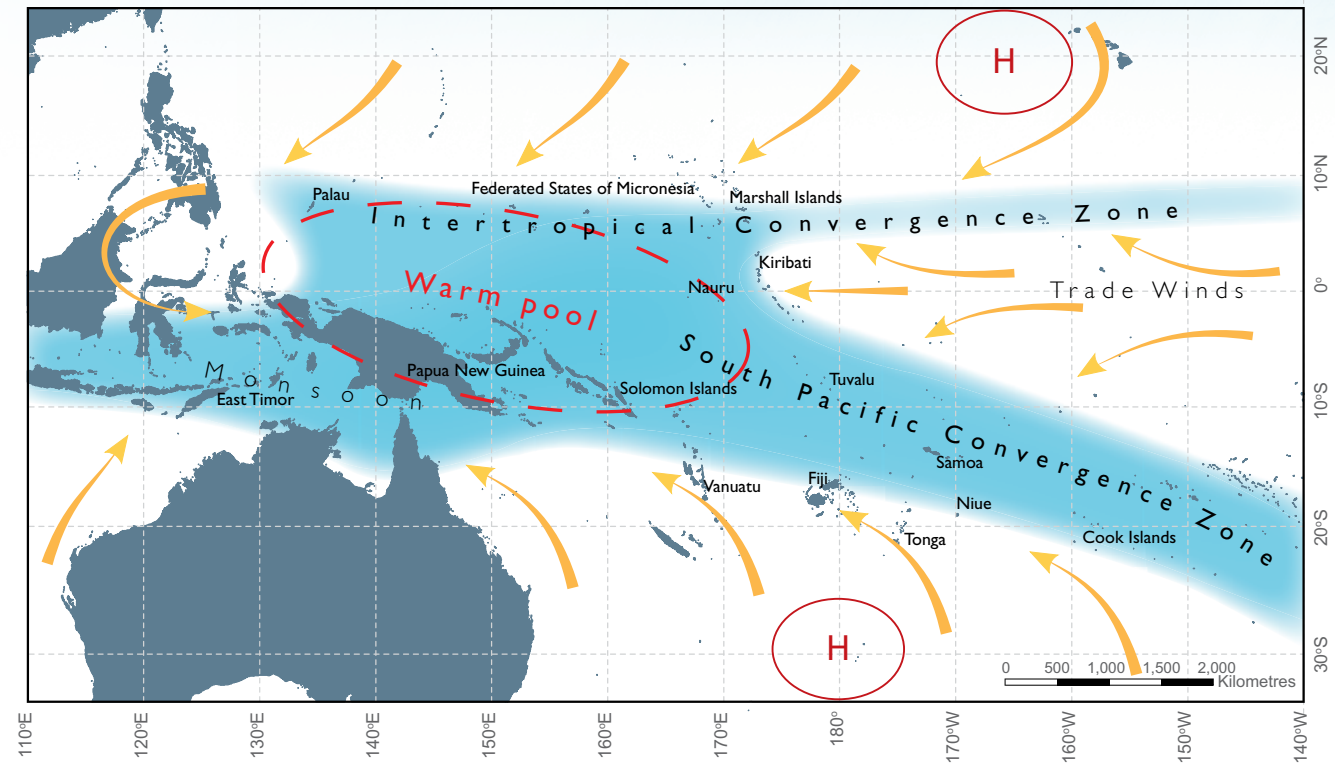
Klaemet blong Solomon Aelan hem cheinj evri yia bikos long El Niño-Saoten Osileison.. Diswan ia hem wanfala nachurol klaemet paten wea hapen akros long tropikol Pasifik Osen an hem save afektim wetha araon long wol. Garem tufala spesol steij blong El Niño-Saoten Osileison: El Niño and La Niña. Garem wanfala niutrol steij tu. El Niño hem kosim wom an drae wet sison, an La Niña hem kosim kol, moa wet sisons. Disfala klaemet hem afektim Santa Crus moa den hem aftektim Honiara.

Olketa spesol wetha ivent

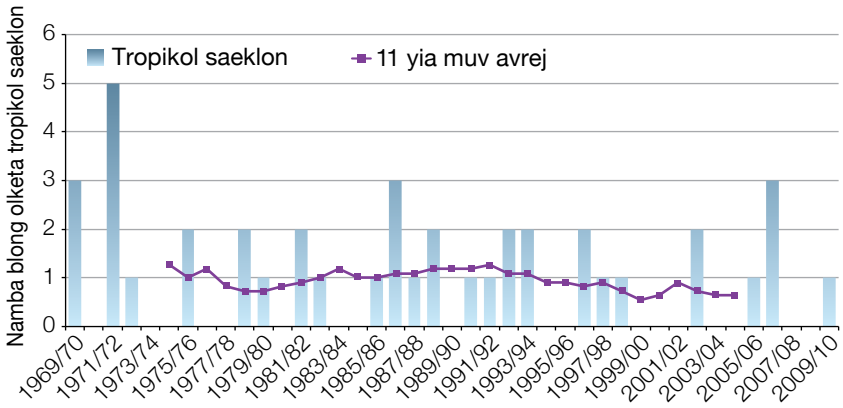
Long Solomon Aelan tropikol saeklon hem save kosim flad an damej from win. Gwalekana, Malaita, Makira an Santa Isabel bin (have) expiriansim bik flad wea bin kilim staka pipol and damejim agrikalcha an oketa rod an beisik sevis.



Figa 1: Sison reinfol an temperecha long Honiara an Santa Crus.



Figa 2: Olketa avrej posison blong mein klaemet paten from Novemba kasem Eprol. Olketa aro som win kolsap long safes, blu kala hem representim olketa eiria blong reinfol konvejens zoun, das ovol som West Pasifik Wom Pul an H representim nomol posison blong muvment blong olketa hae presa sistem.



Figa 3: Namba blong olketa tropikol saeklon wea pasem 400 kilomita insaet long Honiara. Leven-yia muvment avrej nao long pepol.

Olketa tropikol saeklon

Olketa tropikol saeklon save afektim Solomon Aelan from Novemba go kasem Eprol. Long foti-wan-yia piriod from 1969 kasem 2010, foti-wanfala tropikol saeklon nao bin pasem 400 kilomita insaet long Honiara. Long avrej, hem wan saeklon long wan sison (Figa 3). Evri yia garem difren namba blong saeklon. Samfala sison no garem eni saeklon bat samfala sison save garem faefala saeklon. From 1969 kasem 2010, staka saeklon hem hapen diuring olketa El Niño yia.

Cheinj long klaemet blong Solomon Aelan

Temperecha hem inkris

Long Honiara, haest an smolest temperecha insaet wan yia hem bin inkris sins 1951. Haest temperecha hem go ap long reit 0.15 digri selsias evri ten yias sins 1951. Disfala inkris long temperecha ia hem semsem wetem globol woming paten.

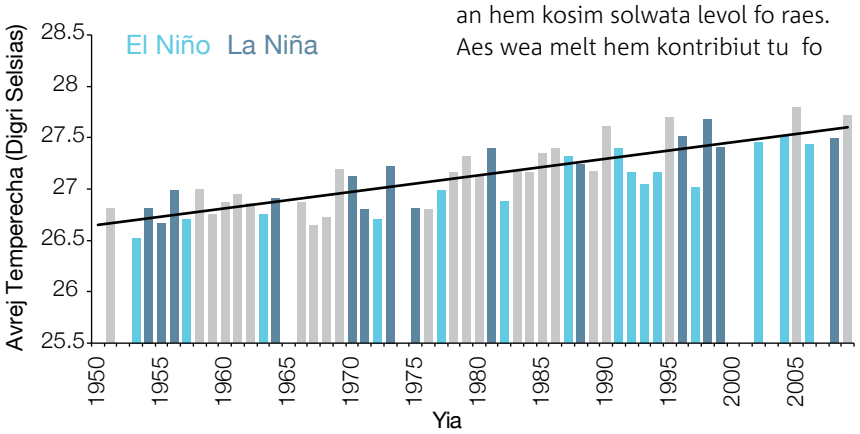
No eni reinfol cheinj

Infomeison fo Honiara sins 1950 hem nating som eni klia paten blong reinfol insaet wan yia o reinfol insaet wan sison. Diuring long disfala taem ia, hem garem bik difrens long reinfol from wanfala yia kasem nara yia.

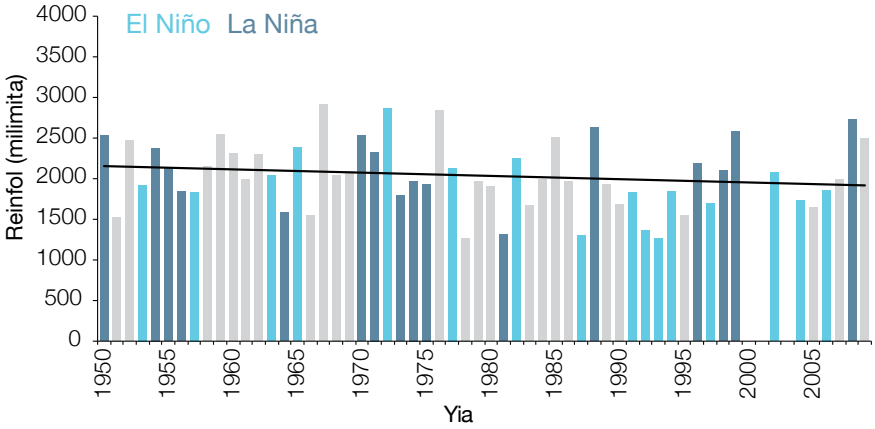
Solwata levol hem raes

Taem solwata hem wom, hem ekspan an hem kosim solwata levol fo raes. Aes wea melt hem kontribiut tu fo mekem solwata levol fo raes.

Samfala tul wea olketa putim long satalaet an olketa taed geijes nao olketa iusim fo mesam levol blong solwata.. Satalaet infomeison hem som dat solwata levol kolsap long Solomon Aelan hem raes abaot 8 milimita evri yia sins 1993. Diswan hem big ovam nao globol avrej wea hem 2.8–3.6 milimita insaet long wan yia. Disfala hae reit blong raes long temperecha ia hem kam from nachurol cheinj wea hapen from wan yia go kasem nara yia o insaet evri ten yias wea olketa samting olsem El Niño-Saoten Osileison nao kosim. Figa 7 hem som nao difrens long solwata levol ia wea hem inkludim rekod from taed geij sins 1974 an data from satalaet sins 1993.



Figa 4: Avrej temperecha blong Honiara long wan yia. Olketa laet blu ba som El Niño yias, olketa dak blu ba som La Niña yias an olketa grei ba som niutrol yias.



Figa 5: Reinfol blong Honiara long wan yia. Olketa laet blu ba som El Niño yias, olketa dak blu ba som La Niña yias and olketa grei ba som niutrol yias.

Asid long solwata hem inkris

Abaot wan kwata blong kabon daeoksaed wea kam from aktiviti blong man hem go insaet long solwata. Taem ekstra kabon daeoksaed ia hem riakt wetem solwata, hem mekem solwata fo garem moa asid. Disfala inkris long asid hem mekem corol an olketa nara smol animol wea olketa kam from kaboneit minarols fo no grou gut. Olketa spisis ia olketa impoten tumas long balens wea tropikol rif ekosistem hem nidim. Data hem som dat sins18th senchuri, levol blong asid long Solomon Aelan wata hem bin slouli inkris.

Vilij blong Lilisiana saet solwata, Malaita Provins.

Fiucha klaemet blong Solomon Aelan

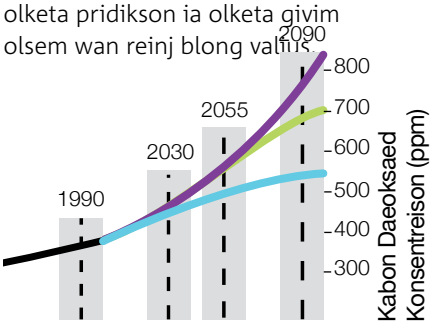
Klaemet hem afektim kolsap evri pat blong laef long Solomon Aelan. So hem impoten fo save abaotem wat nao bae posibol fiucha klaemet blong Solomon Aelan so dat pipol an gavman save plan fo olketa cheinj ia.

Hao nao olketa saentist kam up wetem pridikson abaotem klaemet?

Olketa globol klaemet modol ia nao hem best tul fo iusim fo save moa abaotem fiucha klaemet cheinj. Olketa klaemet modol ia hem mathimatikol kalkiuleison blong klaemet sistem an hem nidim olketa strong kompiuta nao fo waka long hem. Olketa modol ia hem beis long lo blong fisiks an hem inkludim infomeison abaotem ea, solwata, lan an aes.

Garem staka difren globol klaemet modol an evriwan representim klaemet lelebet difrentli. Olketa saentist from Pacific Climate Change Science Program (PCCSP) bin stadim tuentifofala modol from raonim wol an faendem dat eitinfala nao olketa representim gut klaemet blong westen tropikol Pasifik rijon. Disfala eitinfala modol ia nao olketa bin iusim fo divelopem nao pridikson fo Solomon Aelan. Nachurol tings an waka blong man nao bae influensem klaemet blong fiucha. Iumi no save wat nao bae hapen long fiucha, so iumi nid fo lukluk long samfala posibol fiucha kondison, or situeison, long olketa klaemet modol ia. Olketa Intergovernmental Panel on Climate Change (IPCC) bin kam up wetem samfala situeison abaotem fiucha cheinj long popiuleison, ekonomik divelopment an chenj long teknologi. Fo eksampol, A1B (o midium) sabsten rilis situeison ia hem gesim dat wol popiuleison bae kasem haest blong hem long midol long wan handre yia ia an bae drop slouli afta dat. Long disfala taem bae garem fast ekonomik grout an bae garem inkris long olketa niu an moa beta teknologi. Olketa Grinhaos gas an olketa sprei rilis situeison nao olketa iusim insaet long klaemet modoling ia fo givim pridikson wea hem representim waed reinj blong olketa kaen fiucha wea bae iumi ekspektim.

Olketa klaemet pridikson fo Solomon Aelan hem beis long trifala IPCC emison situeison ia: lou (B1), midium (A1B) an hae (A2), fo olketa taem piriod araon long 2030, 2055 an 2090 (Figa 6). Bikos ich long olketa modol ia hem givim difren risolt, olketa pridikson ia olketa givim olsem wan reinj blong valiu.



Figa 6: Kabon daeoksaed (CO_2) konsentreison (pats pe milion,ppm) wetem trifala IPCC sabsten rilis situeison: Lou sabsten rilis (B1 – blu), midiam sabsten rilis (A1B – grin), an hae sabsten rilis (A2 – pepol). Olketa PCCSP nao lukluk long klaemet modol risolt fo olketa piriod long 1990, 2030, 2055, an 2090 (kala).

Foto blong Westen Provins from skae.

Ministry of Environment, Climate Change, Disaster Management and Meteorology

Flad long Sikaiana Atol, Malaita Provins, long 2006.

Klaemet blong Solomon Aelan long fiucha

Diswan hem samari blong olketa klaemet pridikson blong Solomon Aelan. Sapos iu laekem moa infomeison, lukluk long Volium 2 blong *Climate Change in the Pacific: Scientific Assessment and New Research*, an intanet klaemet pridikson tul – Olketa *Pacific Climate Futures* (luk long www.pacificclimatefutures.net)

Temperecha bae kontiniu fo go ap

Pridikson fo evri emison situeison long Solomon Aelan som dat avrej temperecha blong ea an temperecha blong solwata safes insaet long wan yia bae inkris long fiucha. (Tebol 1). Long yia 2030, anda hae sabsten rilis situeison ia, disfala temperecha inkris ia bae hem insaet long reinj blong 0.4 –1.0 digri selsias.

Moa hot deis fogut

Temperecha inkris bae kosim raes long namba blong hot deis an wom naets an dikris long kol wetha.

Tebol 1: Pridikson blong avrej ea temperecha cheinj long Solomon Aelan fo trifala sabsten rilis situeison ia an trifala difren taem piriod insaet long wan yia. Olketa valiu ia representim 90% blong olketa modol ia an olketa cheinj ia hem rileit long avrej blong taem piriod from 1980 go kasem 1999.

	2030 (°C)	2055 (°C)	2090 (°C)
Lou sabstens rilis situeison	0.2–1.0	0.7–1.5	0.9–2.1
Midium sabstens rilis situeison	0.4–1.2	0.9–1.9	1.5–3.1
Hae sabstens rilis situeison	0.4–1.0	1.0–1.8	2.1–3.3

Cheinj long reinfol paten

Avrej reinfol insaet wan yia an wan sison bae hem inkris long 21st senchuri ia. Wet sison bae inkris bikos long strong biuld ap blong Saot Pasifik Convejens Zoun an Westen Pasifik Monsun. Bat garem samfala daot long reinfol pridikson ia bikos evri modol ia no som semsem risolt. Pridikson blong draot hem no semsem akros long Solomon Aelan tu.

Moa wos reinfol deis

Modol pridikson som dat wos reinfol deis bae hapen olowe.

Lou namba bat moa strong saeklon

Long globol skeil, olketa pridikson som dat bae en long 21st senchuri bae garem lou namba blong tropikol saeklons. Bat bae garem inkris long avrej hae spid blong win blong saeklon bitwin 2% an 11%, an inkris long fos blong reinfol bae abaot 20% insaet long 100 kilomita long senta blong saeklon. Long Solomon Aelan rijon, pridikson hem som dikris long namba blong taems wea tropikol saeklon hem hapen long leit 21st senchuri an garem inkris long reit blong moa strong stoms.

Antap: king taed, Ta'arutona, West Are'Are, Malaita Provins, long 2008.

Raet: damej from Tropikol Saeklon Zoi long Tikopia,Temotu Provins, long 2002.

Photos courtesty of the Ministry of Environment, Climate Change, Disaster Management and Meteorology

Solwata levol bae kontiniu fo raes

Levol blong solwata long Solomon Aelan bae hem kontiniu fo raes (Tebol 2 and Figa 7). Olketa pridiktim dat bae yia 2030, anda

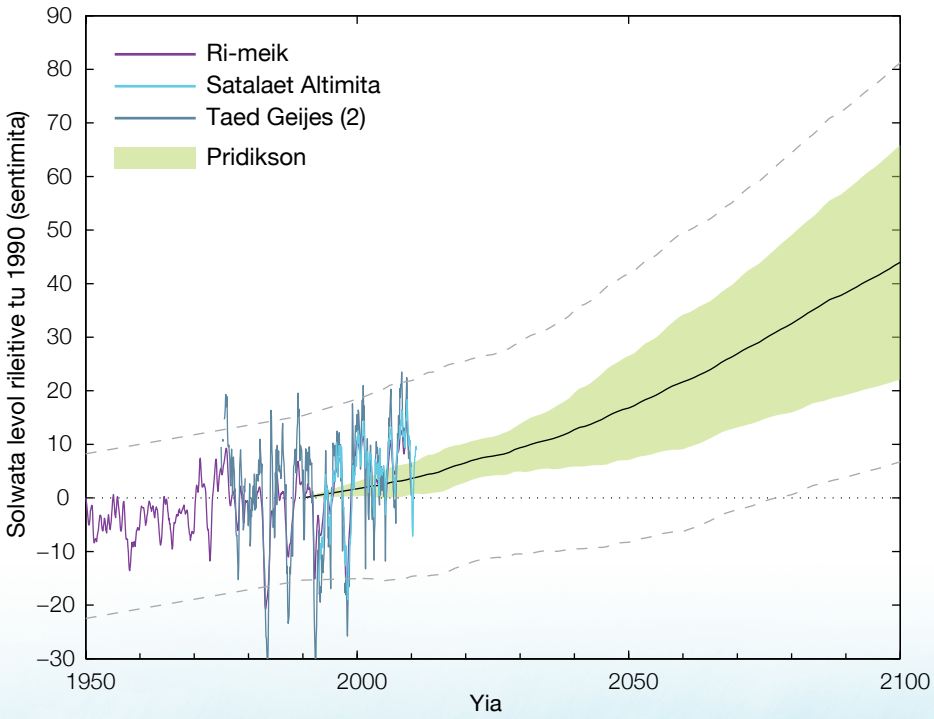
disfala hae sabstens rilis situeison ia bae solwata hem raes bitwin reinj blong 4–15 sentimita. Solwata levol raes ia an nachurol cheinj long wan yia kasem nara yia bae inkrisem nao ifekt blong stom an flad long saet solwata. Garem staka samting fo lanem, olsem olketa bik pises blong aes long Antaktika an Grinlan kontribiut tu long solwata-levol raes ia, an olketa saentist pridiktim dat bae garem solwata raes wea hem bik ovam wat olketa talem distaem.

Tebol 2: Solwata-levol raes pridikson fo Solomon Aelan fo trifala sabstens rilis situeison ia an trifala taem piriods. Olketa valiu ia representim 90% blong reinj blong olketa modol ia an olketa cheinj ia hem rileit go long avrej blong piriod 1980 kasem 1999.

	2030 (cm)	2055 (cm)	2090 (cm)
Lou sabstens rilis situeison	4–14	10–26	17–45
Midium sabstens rilis situeison	5–14	8–30	19–58
Hae sabstens rilis situeison	4–15	8–30	20–60

Asid long solwata bae kontiniu fo go up

Anda long olketa trifala sabstens rilis situeison (lou, midium an hae) ia, bae asid levol long solwata blong Solomon Aelan rijon hem kontiniu fo inkris diuring disfala 21st senchuri ia, an bigest cheinj nao bae hapen anda long hae sabstens situeison ia. Hae asid levol long solowata bae afektim helt blong rif ekosistem an bae save biuld up wetem nara tings olsem corol bliching, stom damej an fising presa.



Figa 7: Stadi an pridikson long solwata-levol cheinj kolsap long Solomon Aelan. Solwata-levol rekod wea olketa stadim nao long dak blu (rileitive taed geij stadi) an laet blu (satalaet rekod sins 1993). Olketa ri-meid solwata levol kolsap long Solomon Aelan (sins 1950) nao long pepol. Olketa predikson fo A1B (midium) sabstens situeison ia (representim 90% long reinj blong olketa modols) hem long kala grin rijon from 1990 kasem 2100. Olketa das laen ia hem estimeit long 90% blong reinj from nachurol cheinj from wan yia kasem nara yia long solwata levol.

Olketa cheinj long Solomon Aelan klaemet

> Temperecha hem bin wom kam finis an bae kontiniu fo wom moa so bae garem moa hot deis long fiucha.

> Reinfol long Honiara hem som no eni klia paten sins 1950. Pridikson hem talem dat bae disfala wan handre yias ia bae garem moa wos reinfol.

> Pridikson hem talem dat bae en blong wan handre yias ia, bae garem lou namba blong tropikol saeklon bata olketa saeklon ia bae strong fogut.

> Solwata levol kolsap long Solomon Aelan hem raes an bae kontiniu fo raes diuring disfala wan handre yias ia.

> .Asid insaet long solwata blong Solomon Aelan hem bin inkris an bae kontiniu fo inkris an bae spoelem corol rif and olketa ekosistem.

Olketa infomeison long disfala brosa ia hem kam from waka blong Solomon Islands Meteorological Service an Pacific Climate Change Science Program – wanfala pat blong Ostreilia Gavman International Climate Change Adaptation Initiative. Disfala infomeison an risech ia Pacific Climate Change Science Program nao karem aot an hem biuld from olketa risolt from 2007 IPCC Fourth Assessment Report. Sapos iu laek fo save moa abaotem infomeison long klaemet blong Solomon Aelan an Pasifik, lukim nao: *Climate Change in the Pacific: Scientific Assessment and New Research. Volume 1: Regional Overview. Volume 2: Country Reports*.

www.pacificclimatechangescience.org

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CSIRO

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