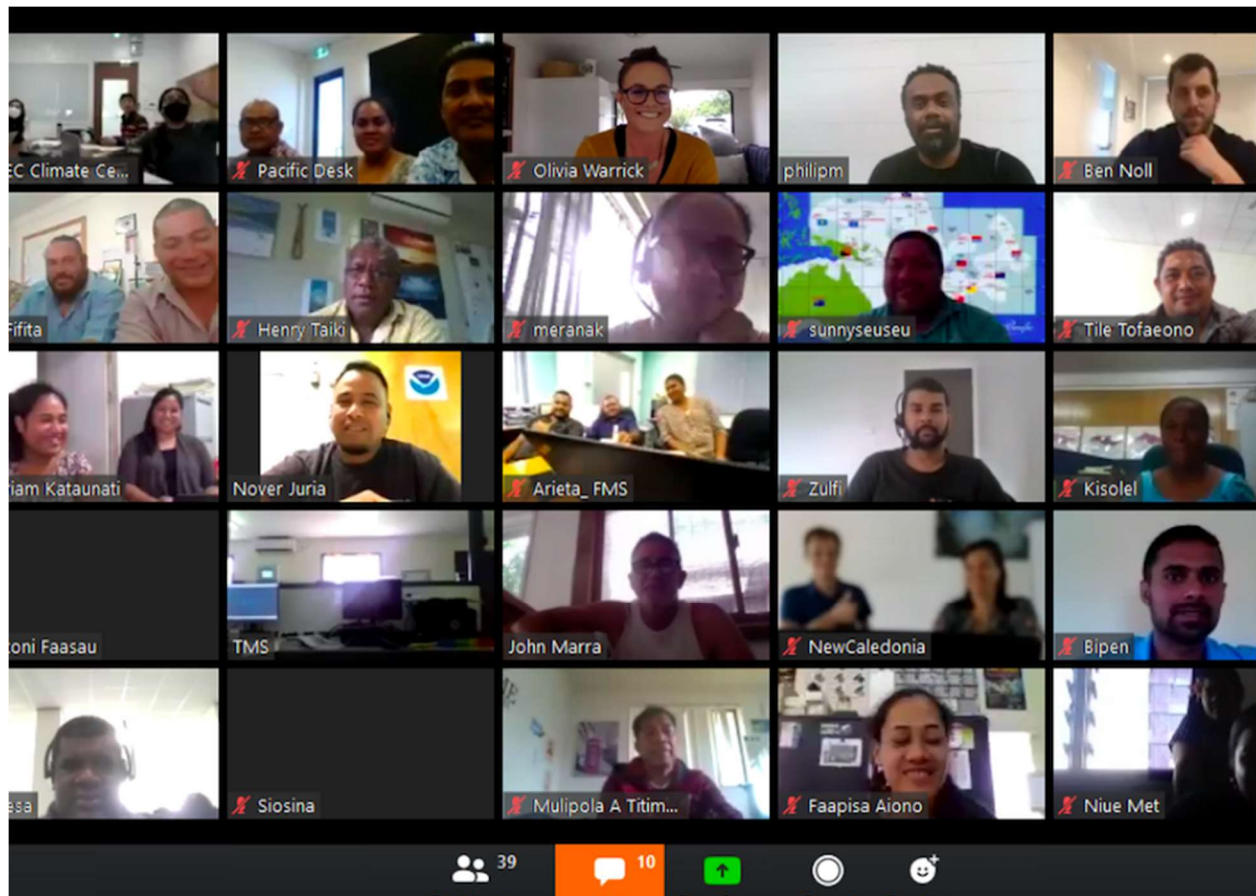


Sixth Pacific Islands Climate Outlook Forum (PICOF-6)

April 2020



Hosted virtually by the Secretariat of the Pacific Regional Environment Programme Pacific Met Desk Partnership and the University of Hawaii

21 April, 2020

Introduction

Regional Climate Outlook Forums have been held annually in the Pacific since 2015, allowing face-to-face dialogue and learning between the providers and users of climate information. Pacific Islands Climate Outlook Forums (PICOFF) are organized by the Pacific Meteorological Council's (PMC) Pacific Islands Climate Services Panel (PICS Panel), its secretariat SPREP and the WMO and supported by various international and regional organisations.

A recent review of the PICOFF found one PICOFF a year insufficient for providing much needed information on the state of ENSO and climate/ocean outlooks. The PICOFF outlook issued in late October for example covered November to January and November to April but not the six months prior to the next PICOFF. As such, a second PICOFF was recommended by the PICS Panel to be held in late April, coinciding with the beginning of the south west Pacific dry season. Due to limited resources (and COVID-19) a virtual Apr-PICOFF was proposed for 2020.

Unlike the Oct-PICOFF which includes representatives from a particular sector, the Apr-PICOFF was restricted to NMHS and partner participation. The agenda (Annex 1) included a series of presentations on climate and ocean monitoring and prediction from a range of NMHS and seasonal prediction delivery partners. The Apr-PICOFF, being the first PICOFF to be run virtually, was a pilot as was organised around the following objectives:

- a) To discuss the Climate of November 2019-April 2020 2019/20 TC season, and the Climate Outlook for the Pacific Islands for May-October 2020
- b) To compare the various seasonal climate forecast guidance for the Pacific region

An April PICOFF Regional Statement summarising climate and ocean conditions over the past months and seasonal outlook May-October 2020 was produced as an output of the Apr-PICOFF.

This report offers a short summary of material presented during the virtual meeting, the key discussion points, and any Meeting recommendations and action points.

Agenda Item 1: Welcome and Objective

The Co-Chair of the PICS panel welcomed participants from the NMHSs, the PMC Chair, WMO representatives and partners to the Sixth Regional PICOF and the First Virtual PICOF meeting to be held in April. The Co-Chair:

- **Acknowledged** that these are unusual times and we are facing substantial disruptions and appreciate participants taking time to attend and in particular, countries who have been recently affected by Cyclone Harold.
- **Provided** background and rationale for hosting a second PICOF which is traditionally held in October
- **Noted** the timely occurrence of the meeting leading into the south west Pacific dry season as it comes at a valuable time where the demands on water resources as hygiene measures for COVID response will increase
- **Introduced** the objectives of the Virtual PICOF which is
 - To discuss the climate outlook for the November 2019-April 2020 season and the May-October 2000 season
 - To compare the various seasonal guidance material and prepare for the November 2020-April 2021 TC outlook
- **Acknowledged** the Logistical support from UH-TASI and SPREP for hosting the virtual meeting
- **Called on** all the participants to note the difficulties experienced with participating through ZOOM connections as it will assist with logistical support moving forward.

Agenda Item 2: NOAA Summary of PEAC Teleconference, 2019 North Pacific Typhoon Season and 2020 Outlook for US Territories and Affiliated Islands

The Meeting:

- **Acknowledged** the multiple contributors to the Apr-PICOF NOAA seasonal climate outlook for the USAPI material

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- **Noted** that official consensus probabilities favor ENSO-neutral for the Northern Hemisphere summer 2020 (~60% chance), remaining the most likely outcome through autumn
 - **Noted** that during March 2020, above-average sea surface temperatures (SSTs) were observed across most of the tropical Pacific Ocean and that for the next four months of 2020 elevated levels of heat stress will exist across a large portion of the western and central South Pacific. Coral mortality in the waters north of PNG is likely.
 - **Noted** above normal tropical cyclone activity in the western North Pacific is likely through June 2020 and that the eastern North Pacific and central Pacific Hurricane season outlooks will be released on May 20th and May 21st respectively.
 - **Emphasised** the ongoing drought situation for most of the western North Pacific islands and that the PEAC Seasonal Rainfall Outlook for April-June indicates continuing dry conditions in Yap, Palau and Saipan.
 - **Noted** likelihood of increasing sea level anomalies for many islands in the tropical western Pacific, including southern Micronesia.

Discussion:

- SPREP asked RMI to speak to the drought conditions on the ground in the northern Marshall Islands including the response on the ground in the north. NOAA responded that Palau is rationing water.
- RMI responded that the islands to the north of 8N to 10N in the RMI all are affected by water rationing at the moment and the disaster committee is going to provide more RO units to some of the islands, especially to the most affected ones.
- RMI had technical issues and was not able to respond online but shared observations via email.

Agenda Item 3: NIWA Summary of the Island Climate Update and 2019/20 South West Pacific Tropical Cyclone Season

The Meeting:

- **Noted** that the number of TCs that occurred in the 19/20 season was consistent with the 19/20 outlook.
- **Noted** that the subsurface waters are cooling at depth and thus the upper oceanic heat may be decreasing across the west central Pacific, so perhaps a gradual transition towards La Niña conditions later in the year. Thunderstorm activity concentrated in the west Indian Ocean - which may lead to drier conditions in the Western Pacific
- **Presented** island groups at risk of water stress according to the ICU based on rainfall status and ICU rainfall outlook (5 model ensemble) combined
- **Recommended** to investigate the possibility of aligning boundaries used for TC seasonal outlooks before the October 2020 PICOF

Discussion:

- SPREP asked what the probability is of a TC forming out of season. NIWA responded that based upon subseasonal models, it looks unlikely at the moment that a TC will occur over the coming months
- Samoa Met requested clarification on boundaries of areas of jurisdiction for the NIWA TC Outlook. NIWA responded that the domain starts at 135°E for outlook and verification. Samoa asked for further clarification regarding which area of focus the outlook is for the purposes of the PICOF and suggested to follow the domain covered by Fiji RSMC. Recommend for all Partners to use the same boundaries to generate forecasts and outlooks to avoid confusion and for ease of verification
- Tonga Met acknowledged that Samoa raised an important issue as the media is often confused as to the different outlooks provided by different providers (Fiji

RSMC and NIWA). Potentially can convey a different message and something that needs to be looked at further and try and consolidate the boundaries so that boundaries for verification is all the same across

- The PICS Panel **NOTES** the issue and recommendation to work towards resolving the boundary issues by the Oct 2020 PICOF
- NOAA recommends that we have a common slide template for future PICOFs

Agenda Item 4: BoM Summary of ENSO Wrap Up, 2019/20 South West Pacific Tropical Cyclone Season

The Meeting:

- **Noted** that we have had a positive IOD phase since the last PICOF impacting the PNG landmass
- **Emphasised** that the ENSO forecast beyond May should be used with caution although most models are favouring ENSO neutral conditions
- **Presented** the different boundaries for TC outlooks used by the Bureau and NIWA. The 19/20 Outlook performed well overall.
- **Noted** that there is generally good agreement between ACCESS-S outlooks and Copernicus outlooks for both rainfall and temperature and that ACCESS-S has good skill across the central and eastern Pacific.
- **Noted** that Norfolk Island has been in drought for the past 48 months and that there is a significant drying trend over the past half century.
- **Recommended** that the PICOF begin to consider islands in the sub-tropics given the drying trend.

Discussion:

- Fiji Met noted that the ACCESS-S and NIWA outlooks are very different for some countries and that in general, the outlooks offered by various providers at present are significantly different with reasonably high confidence. NMHSs need guidance

on how to deal with this situation to provide usable information for the public and the PICO is the forum in which to discuss a methodology. BoM recommend that the discussion occurs following the meeting as it is a wider issue to address.

- NOAA reiterated to take note of the drought in Palau.
- Fiji Met requested that in future PICO is, RSMC Nadi should have a slot to present their TC Outlook. The PICO Panel Chair noted the oversight, reconfirmed that the agenda had been circulated for comment within the PICO Panel before finalization, and recommended that RSMC have a slot at future PICO is.
- Samoa Met agreed that the PICO Panel should not have left out RSMC.
- Tonga Met noted that RSMC functions are only for TC, not for general climate services.

Agenda Item 5: APCC Summary of APCC MME, CLIK-P, and PICASO Outlooks

The Meeting:

- **Presented** APCC MME, CLIK-P, and PICASO outlooks for May to October 2020
- **Noted** that most coupled models participating in the APCMM MME climate prediction predict neutral state of ENSO (with 65% probability) in MJJ, by showing the diverse forecast of ENSO evolution of its value and the transition timing from slightly positive to negative phase.
- **Noted** that there is a possibility for La Nina conditions with 45% probability (comparable with the probability of ENSO neutral conditions with 41% probability) in ASO (updated based on final official APCC outlook)
- **Noted** CLIK-P predicts above normal temperature in most South Pacific in MJJ and ASO (except central-to-eastern Pacific), below normal precipitation over equatorial central Pacific in MJJ and ASO, and near normal precipitation over western and subtropical Central Pacific in MJJ.

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- **Note** the PICASO forecast for the MJJ period: below normal rainfall over the eq. central Pacific (consistent with CLIK-P), above normal over western and subtropical Central Pacific (different from CLIK=P), and below normal in Penrhyn, and above normal in Rarotonga, Cook Islands.

Discussion:

- Fiji Met asked what the baseline is for defining climatology. APCC responded that the hindcast period is 1991-2010, which was updated in January 2020.

Agenda Item 6: SPC Summary of Recent Ocean Patterns and Anomalies and sea level and SST outlooks

The Meeting:

- **Reviewed** SSTs October 2019 to March 2020 noting that in late 2019 SSTs were warmer than normal for much of the Pacific islands.
- **Presented** the SST outlook noting that although the SST is forecasted to remain warm in the western regions, the central and eastern regions show cooling towards the third quarter of 2020, a typical La Niña like pattern.
- **Emphasised** that Tuvalu did great public awareness about the predicted higher than normal sea level in late 2019 in the equatorial region
- **Noted** that sea level forecasts to October 2020 show La Niña like conditions
- **Noted** that the coral bleaching outlook for the upcoming months shows high alert levels for countries in the north western regions.

Discussion:

- Samoa Met asked SPC if they have assessed how good the ocean outlook products are. SPC responded that later in the year before the October 2020 PICOF SPC should be able to get some reflections from the countries on how the product is performing.

Agenda Item 7: MeteoFrance Summary of Recent Climate and Outlooks for the French Territories

The Meeting:

- **Noted** demonstration of the new feature developed by JAXA Climate Rainfall Watch in real time for 1 month to 3 month rainfall regionally.
- **Noted** a neutral ENSO phase likely for the coming three months.

Discussion:

- No questions from the participants regarding the New Caledonia presentation.

Agenda Item 8: OCOF Summary of Station Rainfall over Past Six Months and Outlook for the Next Three Months

The Meeting:

- **Noted** the contributions of all countries since last October for sharing outlooks
- **Noted** that both below and above normal rainfall have been observed in parts of the Pacific January to March 2020
- **Noted** that extreme high rainfall was observed over the past 3 months in Kiribati, Samoa, Tuvalu, PNG and Solomon Islands. Extreme low rainfall was also observed in Fiji and Vanuatu
- **Presented** the SCOPIC rainfall outlook for the next three months is indicating drier than normal conditions in FSM, northern and southeast PNG, central Solomon Islands, Vanuatu, Fiji, Tonga, Niue and southern Cook Islands and wetter than normal in western Kiribati, Tuvalu and northern Cook Islands. Looking six months ahead, below normal rainfall is favoured for northern PNG, central Solomon Islands, Vanuatu and Fiji. Wetter conditions are also expected for western Kiribati, Rotuma, Tuvalu and northern Cook Islands.
- **Agreed** to discuss the differentiated purposes of the OCOF and the PICOF at upcoming COSPPac and PICS Panel meetings and;

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- **Recommended** development of a concise document delineating the different climate forums, mechanisms and reporting structures that exist in the Pacific (including the RCC, OCOF, PICOF/RCOF etc), the members and governance arrangements.

Discussion:

- Fiji requested an update from the Bureau on suggested changes to the OCOF process. Explaining the PICOF is an opportunity to discuss the available resources (climate models) from various providers and Fiji proposed to expand the OCOF process to include other models beyond COSPPac models that operate in the Pacific.
- Bureau explained OCOF is an extension of the COSPPac programme training ground for NMHS, thus the content of OCOF is focusing primarily on models used by the COSPPac Project. Should the purpose of OCOF be no longer required PICOF will become the main platform for partners to present outlooks from NOAA, NIWA, APCC, Bureau and others in the form of true RCOF. Noted that NOAA hosts similar calls for the PEAC and focuses also on NOAA products similar to COSPPac OCOF.
- The PMC Chair supported the continuation of the OCOF for training purposes for NMHS.
- SPREP supported comments by the Bureau and agreed with including other products. Since OCOF is a COSPPac initiative, expanding to include other products is something to take up with the COSPPac steering committee.
- The PICS Panel chair noted that this is something to continue discussion on at a PICS Panel meeting ACTION POINT
- Tonga Met recommended a one page outline on the different climate forums RCC vs, OCOF, vs PICOF and how the reporting lines work and who are the members.

Agenda Item 9: RSMC Nadi TC Outlook

The Meeting:

- **Agreed** to include an agenda item for RSMC to discuss their 2019/20 TC Outlook performance
- **Noted** that the TC outlook was generally consistent with the other outlooks. Predicted numbers were consistent with the range predicted in the forecast.
- **Recommended** future PICOFs to include updates and/or presentation from the RSMC Fiji as a regional provider
- **Noted** that they can respond to questions via email.
- **Noted** request from Samoa for PICS panel to develop guidelines on phasing in of different models and products for stakeholders

Discussion:

- Samoa requested guidelines from the PICS Panel on phasing in of different models that are introduced when new tools will be fully operational. NMHSs require guidance on how to incorporate all of the new products in the bulletins for different stakeholders for example Agro-met bulletin requested for a 6-month rainfall outlook for their planning . NOTED as discussion point for PICS Panel meeting
- Bureau suggested a study in the future to be conducted to identify best models to be selected for countries for use of MME consensus approach.
- The PICS Panel chair noted Samoa Met's point as a discussion to continue at PICS Panel meetings.

Agenda Item 9: Presentation of Draft PICOF Statement by PICS Panel Chairs

The Meeting:

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- **Noted** that the PICS Panel chairs and Vice Chair will put together a first draft of the PICOF Regional Statement by end of 21 of April and circulate to presenters on 22nd for their inputs before circulating to all participants for their inputs and sending to NMHS Directors for approval on the 24th of April
 - **Noted** that final comments are required from Directors by 28th May the Statement will aim to be released by May 1

Discussion:

- Samoa Met requested clarification on zero order draft circulation. The Bureau responded that the draft for comments will come later today.
- SPC requested that to be included in the email list.
- SPREP requested clarification on date for comments from directors. The Bureau responded, all comments required by 28th to meet the 1st of May release of the PICOF Statement.

Agenda Item 10: Next Steps and Closure of PICOF-6

The PICS Panel chair:

- **Confirmed** that the Regional Statement and PICOF report will be circulated soon.
- **Thanked** the participants for their involvement and noted the excellent contributions made by all
- **Apologize** for the oversight in the inclusion of Fiji from TC verification discussion

Discussion:

- Tonga Met reminded the chair of the PMC and group that there was a PMC-5 resolution to reform the activities of SPREP and WMO. The recommended approach is to ask chairs of various panels to give ideas on reform to minimize duplication of efforts.

- The PICS Panel chair noted this reminder and recommended that it is an agenda item at the next PICS Panel meeting

Key Action Points Arising from the Meeting

Action	Responsible Party
Discuss possibility of aligning boundaries used for TC seasonal outlooks between regional providers	PICS Panel, RSMC, NIWA, BoM.
Develop a common slide template for future PICOFs	PICS Panel
Ensure RSMC Nadi presents their TC outlook and verification at future PICOFs	PICS Panel
Discuss the differentiated purposes of the OCOF and the PICOF at upcoming COSPPac Planning and PICS Panel meetings and; Develop a concise document delineating the different climate forums that exist in the Pacific (including the RCC, the OCOF, the PICOF), the members and governance arrangements.	PICS Panel
Develop recommendations for the PMC reform with the PICS Panel	PICS Panel chairs

Annex 1: Agenda Timeline

5 March 2020: Concept presented during the PICS panel meeting. Approval requested to proceed. APPROVAL GRANTED, COMPLETED.

6 April 2020: Pacific NMSs notified of upcoming virtual Apr-PICOF

20 April 2020: Deadline for PowerPoint presentations to be send to the PICS panel members. PICS panel co-chairs, vice and secretariat draft version 1 of the Apr-PICOF statement.

21 April 2020: Virtual Apr-PICOF teleconference held (see proposed agenda below). Draft version of the Apr-PICOF statement circulated to members for input/comments.

22 April 2020: Second draft of the Apr-PICOF statement circulated to members for input/comments.

24 April 2020: Final version of the statement send to the Pacific NMS directors for approval, deadline close of business Monday 27 April 2020 (note 27 April is a public holiday in New Zealand and Australia)

Tuesday 28 April 2020: Apr-PICOF statement released

Proposed agenda

<p style="text-align: center;">Virtual PICOF2020</p> <p style="text-align: center;">Tuesday 21 April 2020, 14:00-15:30hrs Samoa time</p> <p style="text-align: center;">Summary of climate and oceans from November 2019 to April 2020, Seasonal outlook for May to July 2020 and May to October 2020 (where possible)</p>

14:00-14:05	Welcome and objective – Olivia Warrick
14:06-14:15	NOAA summary (PEAC teleconference summary, comments on the 2019 North Pacific typhoon season and outlook for the 2020 season) for the US territories and affiliated islands, 3 minutes for questions – John Marra
14:16-14:25	NIWA summary (ICU summary, comments on 2019/20 SW Pacific TC season), specific comments for Tokelau and the Pitcairn Islands, 3 minutes for questions – Ben Noll
14:26-14:35	Bureau of Meteorology summary (ENSO Wrap Up, comments on 2019/20 SW Pacific TC season, ACCESS-S outlooks), specific comments on the Australian Pacific Islands, 3 minutes for questions – Simon McGree
14:36:14:45	APCC summary (CLIKP and PICASO outlooks), 3 minutes for questions – Dr. Soo-Jin Sohn
14:46:14:55	SPC summary (recent ocean patterns/anomalies and sea level and SST outlooks), 3 minutes for questions – Zulfi Begg
14:56:15:05	MeteoFrance summary (recent climate and outlooks for the French Territories), 3 minutes for questions – Alexandre Peltier
15:06:13:15	Summary from the OCOF (rainfall patterns from station records over the last 6 months, outlook for the next three months), 3 minutes for questions – April OCOF Chair or Philip Malsale
13:16:13:28	Presentation of draft PICOF statement – Olivia Warrick and Simon McGree

13:28-13:30	Next steps, wrap up and close – Simon McGree
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Annex 2: Participants

List of Countries and Partners who have indicated to join the virtual APR-PICOF

Country	Participant	Gender	Partner	Participant	Gender
			NOAA	John Marra	Male
Samoa	Faapisa Aiono	Female	NIWA	Ben Noll	Male
	Kotoni Faasau	Male	APCC	Dr. Soo-JIn Sohn	Female
	Mulpola Titimaea	Male		Ms. Bo Ra Kim	Female
				Dr. Wanmoo Kim	Male
				Dr. Yun-Young Lee	
Vanuatu	Glenda Pakoa	Female	BOM	Simon McGree	Male
	John Ruben	Male		Elise Chandler	Female
	Allan Rarai	Male	Climate Centre	Olivia Warrick	Female
Kiribati	Miriam Kataunati	Female	WMO	Henry Taiki	Male
	Mwata Keariki	Female			
New Caledonia	Alexandre Peltier	Male		Tessa Tafua	Female
	Olivia Yu	Female	SPC	Zulfi	Male
Tuvalu	Niko Iona	Male	SPREP	Merana	Female
	Eli Ene	Male		Salesa Nihmei	Male
Tonga	Selu Finaulahi	Female		Leanne Moananu	Female
	Laitia	Male		Philip Malsale	Male
	Ofa Faanunu	Male		Tile Tofaeono	Male
Fiji	Arieta Baleisolomone	Female		Siosina Lui	Female
		Male		Azarel Maiai	Female
	Terry Atalifo	Male		Duncan Robert	Male
				Kwon Heekyoung	Female
				Kim Doyi	Female

	Bipen Prakash	Male	VANKIRAP Project	Sunny Seuseu	Male
	Shweta	Female	Pacific Desk - UH	Jose Aquino	Male
	Jasneel Chandra	Male			
Niue	Hingano Laufoli	Female			
	Raquel Tanaki	Female			
	Maxine Edwards	Male			
Papua New Guinea	Kisolel Posanau	Female			
	Kasis Inape	Male			
Marshall Islands	Nover Juria	Male			
Solomon islands	Lloyd Tahano	Male			
	Max Sitai	Male			