

**AUSAID PROJECT
ENHANCED APPLICATIONS OF CLIMATE PREDICTIONS IN
PACIFIC ISLAND COUNTRIES
(PI-CPP)**

***Report on the Regional Training Workshop on SCOPIC and Seasonal
Forecasting Predictions Scheme***

Training Room, Fiji Meteorological Services, Nadi, Fiji
16th to 20th April 2007

Introduction

The Bureau is conducting an AusAID-funded project entitled “Enhanced Application of Climate Predictions in Pacific Island Countries”, which aims to develop a seasonal prediction capacity, and establish an ongoing seasonal prediction service, in ten Pacific Island Countries.

In response to a recommendation made at the Regional Meteorological Service Directors meeting in Noumea on 11th July 2006 for more training on SCOPIC and on seasonal climate forecasting, the Bureau of Meteorology proposed to run a 5-day training workshop, the AusAID agreed to this proposal. The workshop was initially scheduled in November 2006, but due to the political unrest in Fiji in November, the workshop was postponed till early 2007. This workshop was the last of the Phase I activities.

The workshop was aimed at new NMS staff who have been engaged since the initial training workshops and who have been given the responsibility of running the climate prediction model (SCOPIC) and issuing the seasonal climate outlooks. The workshop also catered for staff members who were still unsure of certain aspects of the newly implemented climate prediction scheme and who need some reinforcement retraining.

The training workshop included basic training on SCOPIC and seasonal forecasting (including validation techniques, basic statistics, and how to interpret climate outlooks). We will also address the issue of why SCOPIC outlooks sometimes differ from ICU outlooks and how the two can be used to complement each other. In addition, there were some basic training sessions on PC management. The last day of the workshop focussed on the Bureau’s Data Rescue Project, which is involved with the implementation of ClimSoft in a number of Pacific Island Countries.

Workshop Arrangements

Due to Fiji’s central location in the Southern Pacific and availability of a wide range of hotels available close to Fiji Meteorological Service, it provided the most economical location for a workshop. The workshop was held at the Training Room at the Fiji Meteorological Service (FMS) in Nadi, which has 10 to 15 desktop computers with Internet access.

Overall the workshop had several purposes which are as follows:

1. Revision on seasonal climate forecasting and the software SCOPIC;
2. To equip NMSs with better understanding of global/regional and localised climate forecasting;
3. To equip NMSs with better understanding of several SCO applications in a

- number of user sectors;
4. To prepare NMSs for Phase II pilot projects; and
 5. To inform NMSs on the Bureau's ClimSoft project.

Fifteen participants from ten Pacific Island Countries attended the workshop (see attached participants list). All out of country participants stayed at the Melanesian Hotel which was less than 10 minutes walk from the FMS. All tea breaks and meals were catered at the FMS in order to minimise time loss. This also gave the project team to spend more out-of-workshop time with the participants.

The Project Team comprised of: Janita Pahalad (Team Leader), Dr David Jones, Lynette Bettio and Rod Hutchinson from the Bureau; David McClymont, Queensland Climate Change Centre of Excellence (QCCCE); Ashmita Gosai, National Institute of Water and Atmospheric Research Ltd (NIWA); and Sarah Jones, National Oceanic & Atmospheric Administration (NOAA).

Dean Solofa (PI-GCOS Coordinator), Henry Taike (WMO-Sub Regional Office) and Linda Yuen (SOPAC) also attended some parts of the workshop. Vandana Naidu (Suva-AusAID post) attended the Phase II briefing and the round-table discussion sessions.

The workshop was divided into two main topics: seasonal climate forecasting and its associated software, SCOPIC and ClimSoft (climate database management system). The training started with a session on desktop computer management. For more details please refer to attached agenda. The participants spent more time doing hands-on exercises.

Sarah Jones and Ashmita Gosai gave talks on examples of seasonal climate outlook applications in the northern Pacific Islands, and the process involved to derive seasonal forecast for the PICs in the Island Climate Update, respectively.

Ravind Kumar (Fiji) and Kasis Inape (PNG) gave a talk on examples of where some users were already using seasonal climate outlooks in their planning such as Fiji Sugar Corporation and PNG National Agriculture Research Institute.

The participants were also briefed on Phase II activities namely pilot projects. They have been asked to carry out some preliminary assessment in order to finalise the pilot project(s) for each PIC.

At the end of the workshop, all participants were presented with an attendance certificate and a CD with the workshop slides.

Evaluation

An evaluation of the workshop was carried out (see attached summary report). The overall rating for the workshop ranged from *very good* to *excellent*. The participants indicated improvement in their competency in seasonal forecasting at the end of the workshop.

Discussion

Vandana Naidu opened the round-table discussion by requesting participants to give some impact based feedback.

Henry Taike suggested that the PI-CPP should consider adding monetary value to various SCO applications to emphasis social economic benefits if such climate information are utilised. Pahalad in response pointed out that the pilot projects have been designed to demonstrate simple but useful applications and do not have the budget to carry out such complex assessment. To fully gauge economic benefit for example for the sugar industry in Fiji, it will require engaging an economist, and of course climate is just one contributing factor of many.

Kasis Inape (PNG) queried if PNG NMS will be held liable for issuing an incorrect forecast because of bad data, which led on to a discussion on liability issues and inclusion of a disclaimer statement. It was suggested that it maybe worth mentioning the data quality in a disclaimer statement. Pahalad is to follow this up with Brenda Coutinho and design a statement for the NMSs.

Inape queried if the project could fund several provincial training workshops in PNG and provide financial assistance for PNG NMS staff to travel to other provinces and talk to their clients. Pahalad in response stated that all project funds are already committed for various activities within the project therefore at this stage it is not possible to add more activities. However, by the third year of the project, if there are any surplus funds, it maybe possible, to include additional workshops, but this will require an approval from the AusAID. Pahalad suggested PNG NMS to put in their request in writing to the PNG AusAID post.

Lloyd Tahani (Solomon Island) commended the project and highlighted how it has enhanced Solomon Islands NMS' client network. Solomon Islands Water Authority, after the implementation of the water management pilot project in Phase I, has become their major client.

Tahani also highlighted the appalling condition of some of their observing equipment. PI-CPP and NZMet funding for the observing equipment was discussed. Dean Solofa also added that PI-GCOS can provide rainguages. Taike commented that there are currently a number of projects providing observing equipment and recommended that there should be a better coordination between these projects. Rod Hutchinson recommended that Kevin Smith, who is the focal point for the RA V GCOS Lead Centre should be kept in loop.

Linda Yuen informed the group that lot of rainfall data has been collected under HYCOS.

ClimSoft Training Workshop

In the past many Pacific Island NMHS's have been using CLICOM as the preferred climate database, however CLICOM was written for the DOS operating system (O/S). Many users have been able to run CLICOM up to the Windows 98 O/S, but there have been difficulties in getting CLICOM to run on later O/S. Many NMHS have resorted to using spreadsheets to store climate data. In all cases observed by Rod Hutchinson these spreadsheets are unstructured and poorly organised. There is an enormous amount of data held in widely disparate spreadsheets in most Pacific Island NMHS's.

The data is difficult to locate and is essentially lost to a user who is not involved in the original spreadsheet development.

As part of the Pacific Islands - Building Robust Infrastructure project (PI-BRI, funded by AGO), Hutchinson presented an overview of the ClimSoft database to SCOPIC participants. ClimSoft is a relational database built in Microsoft Access. A general description of the database including its internal arrangement and work flow processes was provided to attendees. On the second day, participants were put through a small workshop to restructure spread sheet record into a format which permitted upload into ClimSoft. Most participants succeeded in reformatting data, and the most useful outcome was that officers were made aware that existing electronic data could be uploaded into ClimSoft with some small reformatting, but without re-keying.

Side Meeting

Janita Pahalad, Ashmita Gosai (NIWA), Dean Solofa (PI-GCOS), Sarah, Rod Hutchinson (BoM), Sarah Jones (NOAA) and Linda Yuen (SOPAC) had an informal meeting on Friday, 20th April at the Mercure Hotel, Nadi to discuss way to enhance linkages between a number of regional activities such as ICU, HYCOS, PI-GCOS, and Data Rescue.

Comments

FMS has established a strong partnership with the Fiji Electricity Authority and the Fiji Sugar Corporation. In exchange of climate data managed by the two authorities, it issues a special climate bulletin specific to their requirement. Sugarcane Bulletin is issues every 3 months. FMS reported 1267 hits on seasonal climate outlook for March.

Participants made no strong recommendations on the software or the training requirements though they highlighted some their staffing issues, data issues and observing instrument problems.

Participants' List

| Name | Address |
|---|--|
| Mr Simon McGree | Manager Climate Services Fiji Meteorological Services PMB NAP0351 Nadi Airport Fiji Email: simon.mcgree@met.gov.fj |
| Mr Ravin Kumar | Fiji Meteorological Services Email: ravin.kumar@met.gov.fj |
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AGENDA

Monday, 16th April

- 8.30am Participants arriving...registration etc
- 9am Opening Ceremony (prayer)
- 9.10am Overview of the workshop - Janita Pahalad
- 9.20am Brief self introduction of the participants
- 9.45am MORNING TEA**
- 10.30am PC Management - David McClymont
- 1pm LUNCH**
- 2pm Round Table discussion: ENSO impact and climate/seasonal variability in PICs – Chaired by J Pahalad
- 2.45pm Background on the climate system including key process (small scale/large scale variability) - Lynette Bettio
- 3.15pm AFTERNOON TEA**
- 3.45pm Introduction to Seasonal Climate Forecasting - David Jones
- 4.30pm END OF DAY 1**

Tuesday, 17th April

- 8.30am Introduction to basic statistics (probabilities, terciles, median, average vs normal etc) – D Jones
- 9.30am Overview of SCOPIC operations – D McClymont
SCOPIC Installation and setup: hands-on session
- 10.00am MORNING TEA**
- 11am STEP 1: Organise Data (Demo and hands-on exercise) – D McClymont
- 12pm STEP 2: Explore Data (Demo and hands-on exercise)
- 1pm LUNCH**
- 2pm STEP 3: Analyse Relationships (Demo and hands-on exercise)
- 3pm AFTERNOON TEA**
- 3.30pm Introduction to Skill Testing and Hindcast - L Bettio
- 4.30pm END OF DAY 2**

Wednesday, 18th April

- 8.30am STEP 4: Test Skill (Demo and hands-on exercise) – D McClymont
- 9.30am STEP 5: Generate Report (Demo and hands-on exercise)
- 10am MORNING TEA**
- 10.30am Island Climate Update: the process and validation - Ashmita Gosai, NIWA
- 11.00am SCOPIC outlook versus Global/Regional outlooks: Why SCOPIC outlooks sometimes differ from outlooks issued by other forecast centres including ICU outlooks and how various forecasts can be reconciled - L Bettio
- 11.45am Australian/ Fiji examples of Seasonal Climate Outlooks statements –Simon McGree, FMS/BoM

12.15pm Exercise: each participant to prepare next three-month outlooks for their respective country using SCOPIC, and draft a media statement.

1pm LUNCH

2pm Participants to present their media statement, followed by feedback and discussion - Chaired by J Pahalad

3pm AFTERNOON TEA

3.30pm How or should you issue forecasts with no or low skills? - D Jones

4.15pm END OF DAY 3

Thursday, 19th April

8.30am SCO applications in PICs; Sarah Jones, NOAA

9.00am PI-CPP examples: (e.g. Fiji Sugarcane, others) – Ravind Kumar/ Kasis Inape

10.00am MORNING TEA

10.30am Overview of Phase II – Vandana Naidu, AusAID rep

Round-table discussion on clients' feedback, lesson-learned, results from fact finding assessment and recommendations for SCOPIC and SCO – chaired by J Pahalad and V Naidu

1pm LUNCH

2pm Preparation briefing on pilot studies, validation study, data digitisation, observation equipment assessment and others activities that will be conducted in Phase II: J Pahalad

2.45pm Presentation on Expert Team on El Niño/La Niña – WMO RA V – Ravind Kumar

3pm AFTERNOON TEA

3.30pm Introduction and linkage with Data Rescue and ClimSoft - Rod Hutchinson, BoM

4.30pm END OF DAY 4

Friday, 20th April

8.30am Climsoft – R Hutchinson

- Reinforce broad structure of ClimSoft
- Overview of key entry and data transfer options
- Exercise to reformat spreadsheet records (without re-keying) to ClimSoft format and make it suitable for uploading

10.00am MORNING TEA

10.30am Overview of data management procedure at FMS: Varanise Vuniyayawa

11:00am Evaluate yesterday's reformatting Exercise – R Hutchinson

11.45pm Reinforce broad structure of ClimSoft

Reinforce data entry options and techniques

1pm LUNCH

2pm Evaluation/Certificate Presentation

Closing remarks: Simon McGree, Manager Climate, FMS/ Janita Pahalad

EVALUATION REPORT

Introduction

An evaluation was done for the 5-day workshop held at the Training Room, Fiji Meteorological Services, Nadi, Fiji from 16th to 20th April 2007. The main purpose of the evaluation was to ensure that the objectives of the workshop were met.

Evaluation Form

The form consisted of five sections with rating ranging from 5 (excellent skills or strongly agree) to 1 (no skills or strongly disagree).

In order to rate each participants' competency in SCOPIC and seasonal climate forecasting, they were asked to rate their skills ranging from 1 (no skill) to 5 (excellent skill) before the workshop and after the workshop.

The participants were asked to rate the sessions on PC management and ClimSoft by its contents (its usefulness and relevance).

Participants also had a chance to comment on each presenter: how well the presenter do and how could he/she improve.

Finally, there was a section on overall assessment: most valuable aspect; least valuable aspect, venue, entire workshop and any additional comments.

Results

The following results are summarised from 12 forms.

1a) How did you rate your operational skills in SCOPIC before the workshop?

The rating was given from 2 to 5 with an average of 3.6.

1b) How do you rate your operational skills in SCOPIC now?

The rating was given from 3 to 5 with an average of 4.7.

2a) How did you rate your understanding of seasonal forecasting and its applications before the workshop?

The rating was given from 3 to 4 with an average of 3.5.

2b) How do you rate your understanding of seasonal forecasting and its applications now?

The rating was given from 4 to 5 with an average of 4.7.

3a) How did you rate your ability to produce a seasonal climate outlook statement before the workshop?

The rating was given from 2 to 4 with an average of 3.2.

3b) How do you rate your ability to produce a seasonal climate outlook statement now?

The rating was given from 4 to 5 with an average of 4.7.

The above assessment indicates an overall improvement in participants' skills.

PC Management session:

Overall, participants found this session relevant, useful and felt it will benefit their organisation as whole. The average rating for this session was 4.4.

ClimSoft session:

Only ten participants responded to the questions on this session. Once again, most participants found this session relevant, useful and saw ClimSoft as an appropriate database management system for their organisation. The average rating for this session was 4.4.

The presenters were generally rated from very good to excellent.

The overall rating for the workshop was from very good to excellent.

Some notable comments made by the participants:

Most valuable aspect of the training:

- Regional interactions between participants and the trainers;
- Capacity building and *upskilling* of climatologist in the Pacific to understand and produce SCO;
- Total commitment and dedication from both the trainers and the trainees;
- Hands-on training was very effective. Having the project staff on hand proved useful as they were able to answer queries and fix problems that arose during the training.
- ..also meeting participants from other countries and to witness what they for their respectful countries.

In general:

- Good to know how the different countries get to make use of SCOPIC
- ...statistic is a hard topic;
- We should keep the same people on next workshop;
- The whole workshop was very well organised
- Overall organisation of the workshop was well managed
- The training has shown me good confidence in carrying on with the work I do back home. I have learned more from this and will continue to do this kind of work in the near future. One week is too short.

Further Comments

There was no major criticism aimed at the training with the exception of two of the participants commented that the tea breaks were too long and there was too much food.

Though the participants have indicated higher competency in seasonal forecasting during the evaluation, this is yet to be tested. Only their on-site performance will give a more realistic indication of how successful was the training in Fiji.