

**REGIONAL WORKSHOP STRENGTHENING MULTI
HAZARD RISK ASSESSMENT AND EARLY WARNING
SYSTEM WITH APPLICATIONS OF SPACE AND
GEOGRAPHIC INFORMATION SYSTEMS IN THE
PACIFIC ISLAND COUNTRIES**

**ACHIEVEMENTS AND LESSONS
LEARNED BY PILOT PROJECT IN
PAPUA NEW GUINEA**

BACKGROUND

- Training on National Multi-Hazards Early Warning System with Geospatial Applications for Disaster Risk Reduction and Sustainable Development, Citeko, Indonesia, 10 July - 2 August 2017
- Pilot project in Papua New Guinea National Weather Services (PNG-NWS) was conducted from 13th to 18th November 2017 within the projects to Strengthen Multi hazard Risk Assessment and Early Warning System with Applications on Space and Geographic Information System in Pacific Island Countries that coordinating by UN-ESCAP and Indonesia Agency for Meteorology, Climatology and Geophysics (BMKG)
- The implementation of the pilot project was conducted by installing and customizing the Drought Monitoring System and disseminate interactive drought information through PNG-NWS website for the public.

IMPLEMENTATION

Key activities carried out during the pilot project

- Establishment of Drought Monitoring System
- On-site capacity building session on installing, running and managing drought monitoring system as an operational program for PNG NWS
- Improving the interactive dissemination of Drought Monitoring Information for stakeholders
- Focus Group Discussion with National Agriculture Research Institute (NARI) and National Disaster Center (NDC) to enhance the climate awareness for stakeholder

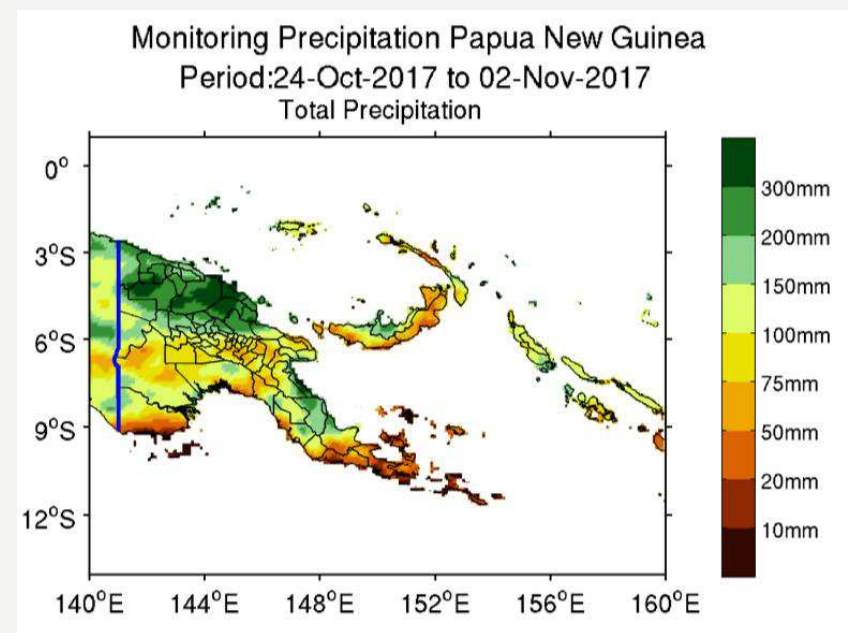
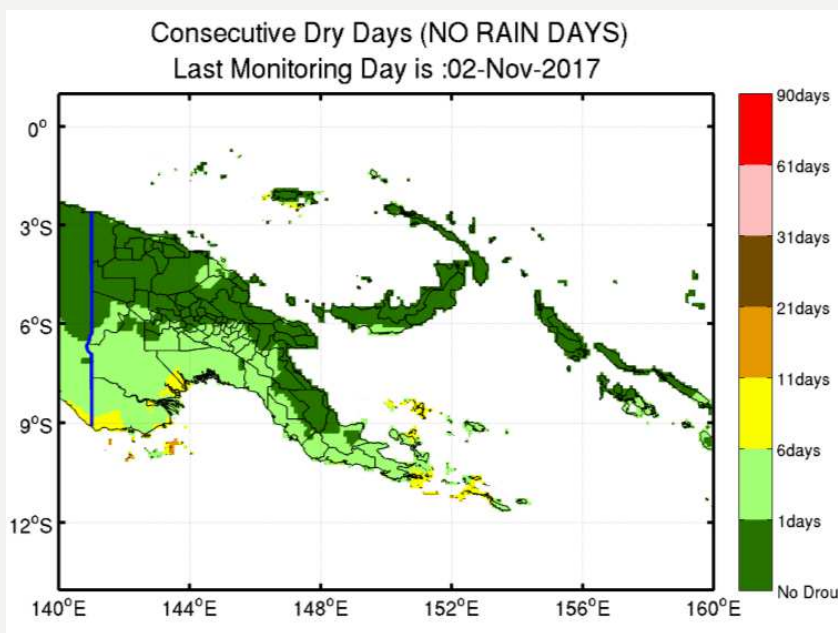
ON-SITE CAPACITY BUILDING SESSION ON INSTALLING, RUNNING AND MANAGING DROUGHT MONITORING SYSTEM AS AN OPERATIONAL PROGRAM FOR PNG NWS STAFF

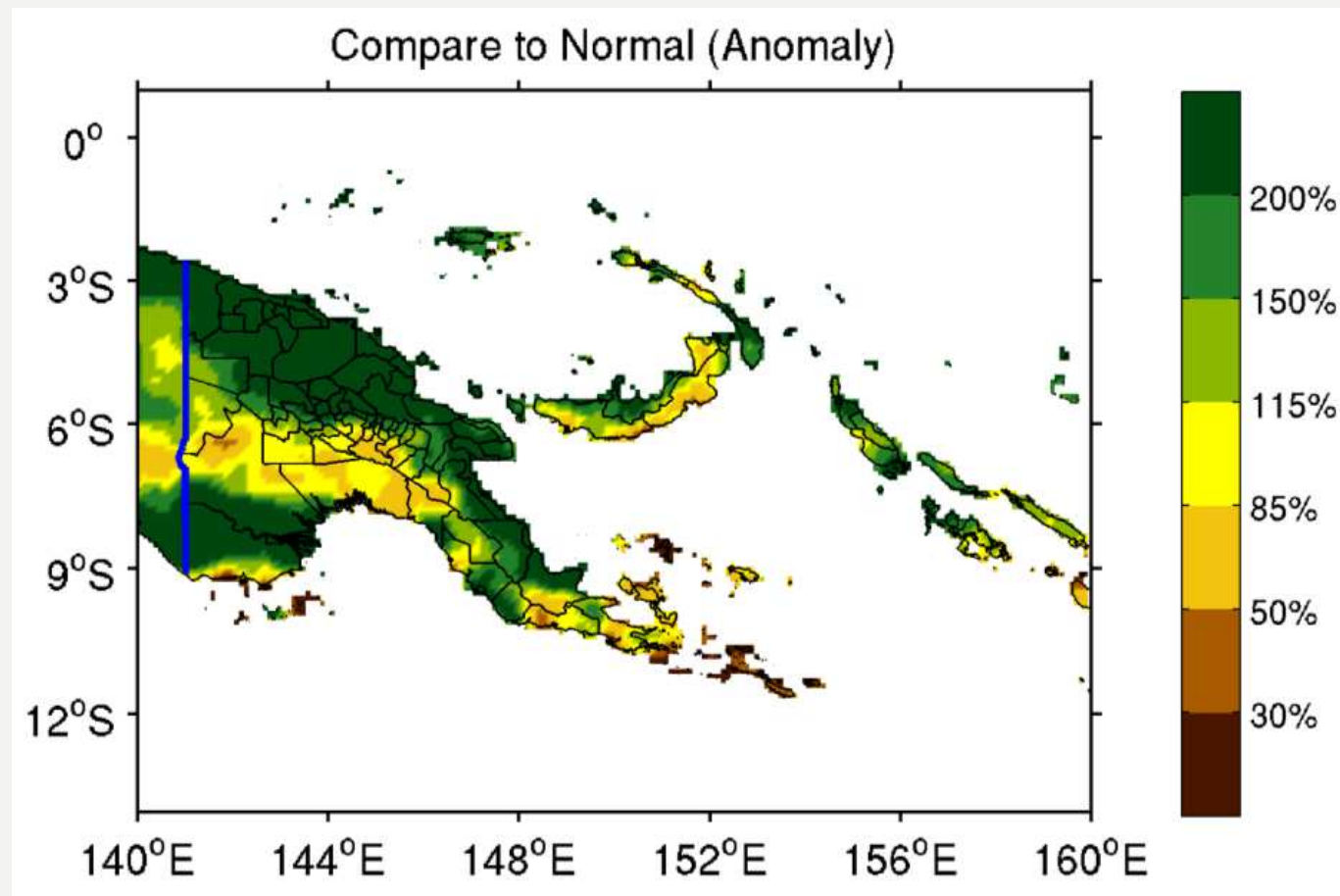
- The capacity building session is hands on training under simple coding work to install, run, operate and customize the sustainability of drought monitoring system using those tools with satellite data input. The topics covered during the session includes:
 - Hardware preparation, installing and running DMT, CPT and SCOPIC
 - Data input preparation for PNG area base on satellite
 - Working with raster data
 - Produce the drought monitoring for PNG area base on spatial map
 - Produce monthly and seasonal forecast using CPT on Provinces in PNG
 - Review NWS to run SCOPIC operationally and Fill in the gap capacity to explore SCOPIC utilities

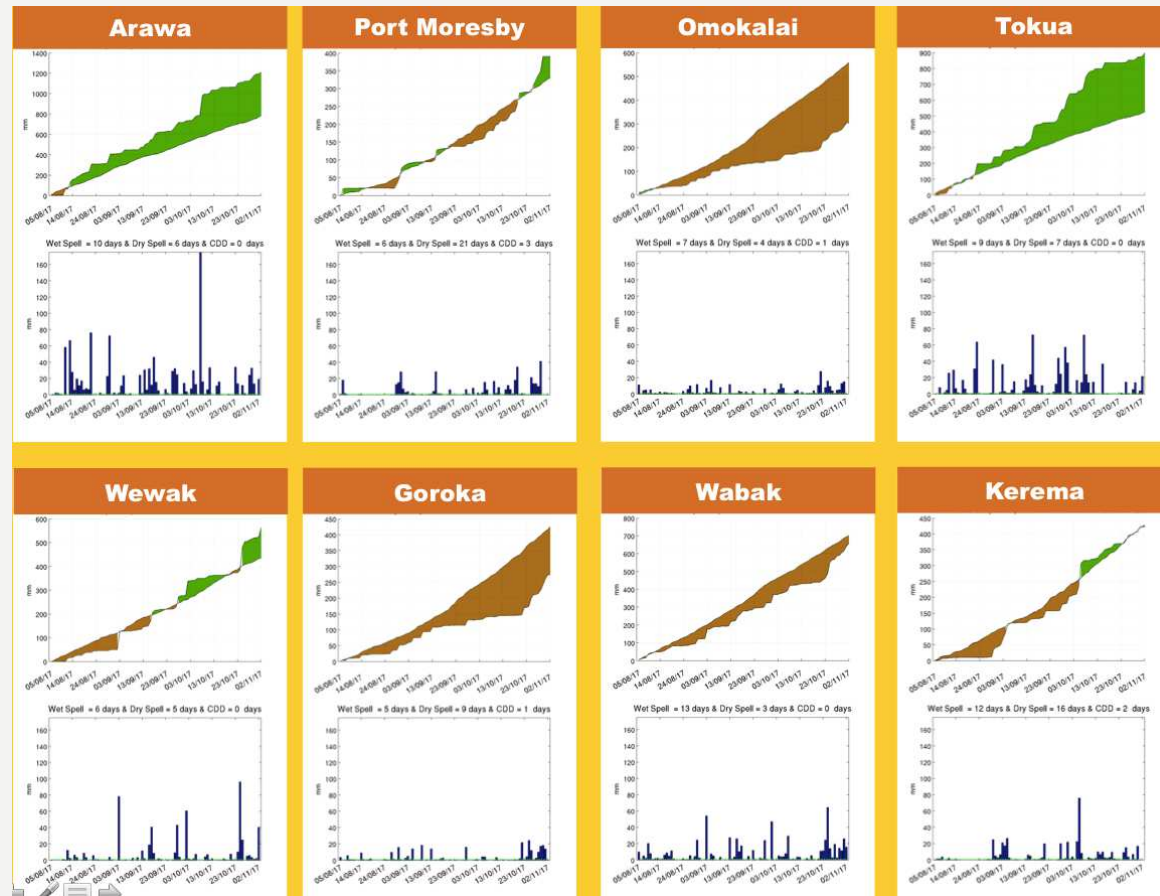
- After the completion of pilot project, PNG-NWS is be able to produce the information of climate prediction and drought monitoring.
- This information need to be disseminated to users and stakeholders such as agricultural sector and national disaster center.
- Climate prediction and Drought monitoring in PNG has produced and disseminated through PNG-NWS website (http://www.pngmet.gov.pg/Climate_Division/).The drought monitoring (CDD, DS and WS) should be updated every ten days (decade), and climate prediction and SPI on every month.
- The pilot project has an exact contribution to develop interactive map of drought monitoring and to enrich variation of climate information on PNG-NWS website which existed information is only seasonal and monthly rainfall prediction. (SCREEN SH0T)

Sample product form Drought Monitoring Tool



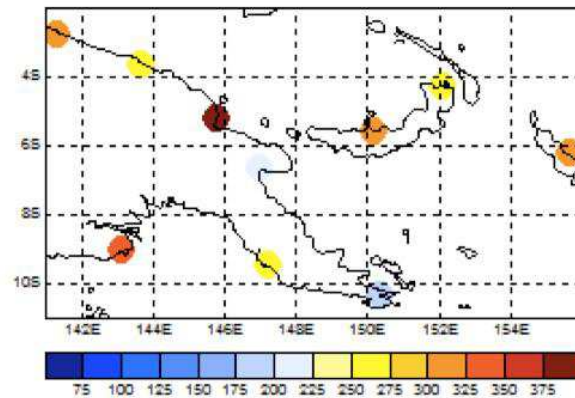






Annex 3. PNG-Rainfall Forecast Outlook December 2017

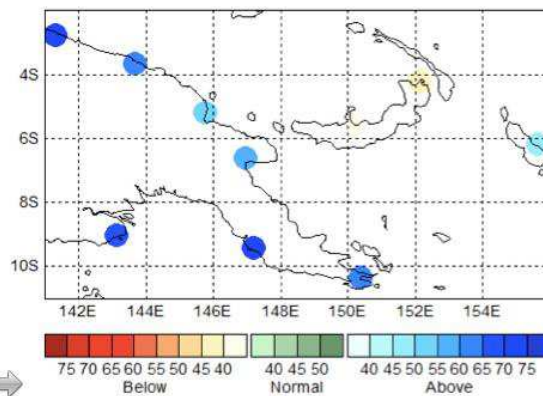
Deterministic Forecast



Forecasts:

Dec 1998 to Dec 2016			
Station	Forecast	Lower	Upper
PortMoresby	259.3	184.4	458.9
Lae	215.4	139.2	382.5
Madang	377.3	250.8	633.2
Wewak	272.4	178.6	414.8
Rabaul1990	261.7	143.5	326.5
Kimbe	317.8	261.8	444.3
Daru	340.4	176.8	414.9
Alotau	183.1	106.3	237.2
Vanimo	324.2	215.5	462.6
Kieta	320.3	189.3	395.5

Probabilistic forecasts



Forecast probabilities:

Dec 1998 to Dec 2016			
Station	Below Normal	Above	
PortMoresby	7%	22%	71%
Lae	17%	27%	56%
Madang	20%	27%	53%
Wewak	12%	24%	64%
Rabaul1990	41%	30%	29%
Kimbe	39%	26%	35%
Daru	9%	22%	69%
Alotau	13%	26%	61%
Vanimo	7%	22%	71%
Kieta	26%	27%	47%

ACHIEVEMENTS

- Project has contributed towards monitoring of drought vis a vis flood
- Training from both Citeko and at the NWS increased human capacity for officers
- We have created virtual drought monitoring for every major town and districts in PNG
- Improved profile - Attracts resource.
- We did not have high performance computers to use at the Climate section so used the RIMES computers. After the implementation of the DMT/CPT we received 2 brand new computers to help the Climate team produce climate forecasts. This was made supported under the RESPAC fund through UNDP.
- Sustainability of National Climate Outlook Forum but now as Seasonal Forum .The next one scheduled for May 17-19

LINKING THE PROJECT WITH OTHER ESTABLISHED PROJECTS & STRATEGIES

- Sendai Framework - DRR (Geological & Hydro-meteorological hazards)
- UNESCAP
- GCF projects - UNDP & WMO
- DFAT projects - COSPPac (Climate Ocean Science Programme of the Pacific)
- Pacific Island Meteorological Strategy plus Pacific Island Climate Services Roadmap
- PNG Meteorological Strategy plus PNG Climate Services Roadmap “PNG Framework for Climate Services”

LESSONS LEARNED

- The principal of working together to address the natural hazards
- Awareness is crucial within (NWS, NDC) and also outside (stakeholders, users, etc)
- Information sharing within line agencies
- PNG has a policy “PNG Development Cooperation Policy” which was implemented in 2016 to coordinate & monitor the influx of projects/grants that have seen an increase in the country.

FUTURE ACTIONS

- Workshops in PNG to:
- Raise awareness within NWS, stakeholders and district level
- Drafting SOP Drought Information implementation ranging from analysis to dissemination
- To develop action plan amongst different stakeholders to mitigate drought hazard in PNG
- To have a drought guideline for the 3 categories – Meteorological, Hydrological & Agricultural, so products can be tailored to different sectors
- To have a district forecast on the website and through various communication mediums :NWS, Stakeholders, users – CHALLENGE
- To ensure the DMS are running sustainable operationally to support stakeholder
- Need more training for Climate officers in using Dynamical Modelling

THE BMKG TEAM VISIT TO PNG NWS



FGD WITH STAKEHOLDER TO ENHANCE CLIMATE AWARENESS



CHALLENGES

- High Performance Computers
- Smoothen the images
- Automatic fill forms on the web
- To have a drought guideline for the 3 categories – Meteorological, Hydrological & Agricultural, so products can be tailored to different sectors

CONCLUSION

- Multi Hazard Early Warning System is in our view the best possible strategy to mitigate Disaster Risk in PNG. This is owing to the fact that
 - -High Risk (location and the large area of the country)
 - -Low government investment in EVWS i.e. monitoring, hazard risk analysis & the communication of that disaster risk to mitigate impacts is in an as efficient manner as possible
 - One stop shop for Disaster Risk Information and warning dissemination
 - -Establishment of PNG MHEW Centre (RIMES Regional Sub-hub of the Pacific)
 - -Achieved through Go PNG

