



World Meteorological Organization

Weather • Climate • Water

Implementation of WIGOS (WMO Integrated Global Observing System) in RA-V (south west Pacific)

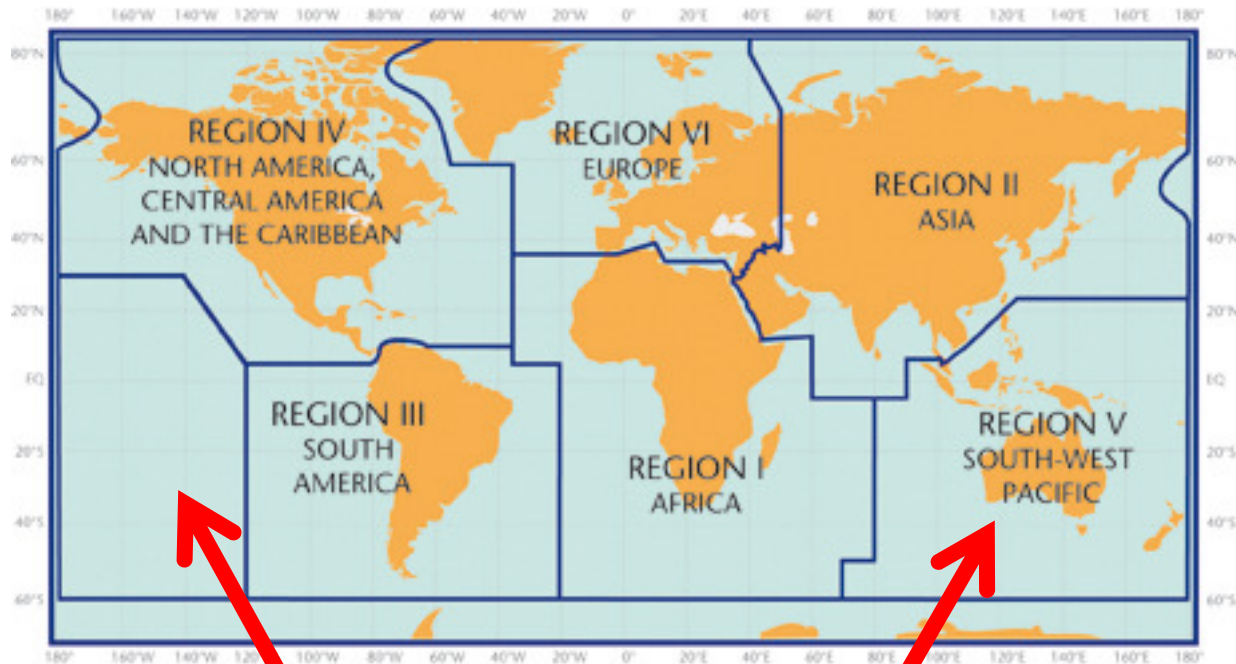
Report to ICG-WIGOS-3, February 2014

Sue Barrell / Russell Stringer

Outline

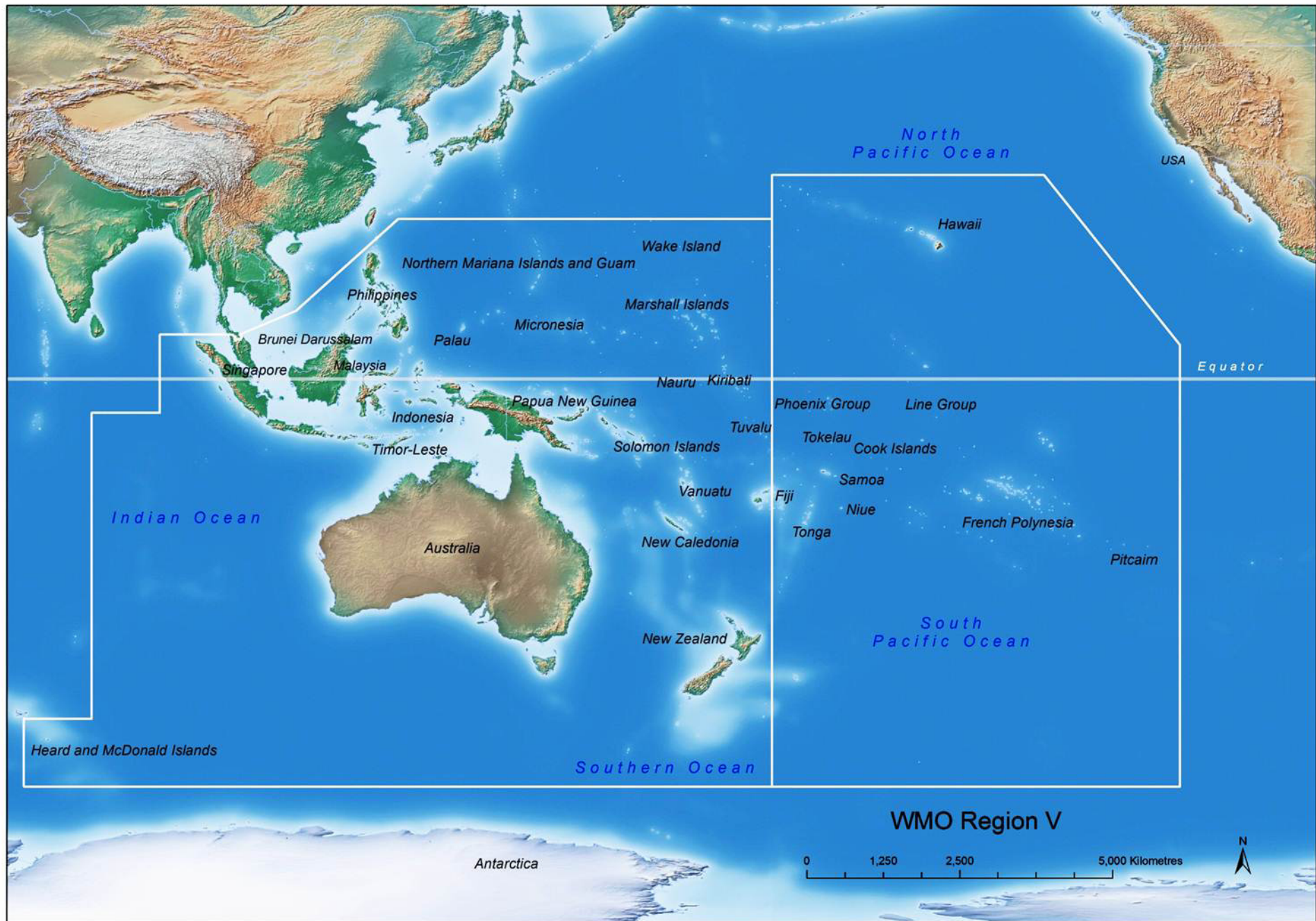
- Introduction
- Development of Regional WIGOS Implementation Plan (R-WIP-V)
- Development of Regional WIS Implementation Plan
- Progress achieved by RA-V Working Group on Infrastructure
- Next session of the Regional Association





REGION V





- An important role of WMO is to enable all the 191 Member countries across the world to collect standardised observations and achieve effective data management and exchange,
- These observations are needed for the provision of services which assist communities to reduce disaster risks and adapt to climate variability and change, amongst other benefits,



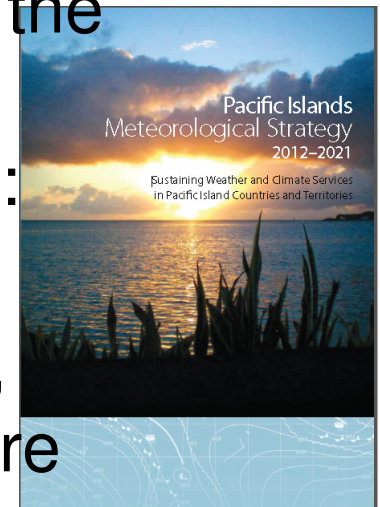
- one of the five priority areas in the WMO Strategic Plan 2012-2015 is:
 - Implementation of the WMO Integrated Global Observing System (WIGOS) and WMO Information System (WIS),
- At the Regional level, this is reflected in the Regional Key Outcomes of the RA-V Strategic Operating Plan 2012-2015:
 - RKO 4.1.1: WIGOS is implemented
 - RKO 4.2.1: WIS is implemented



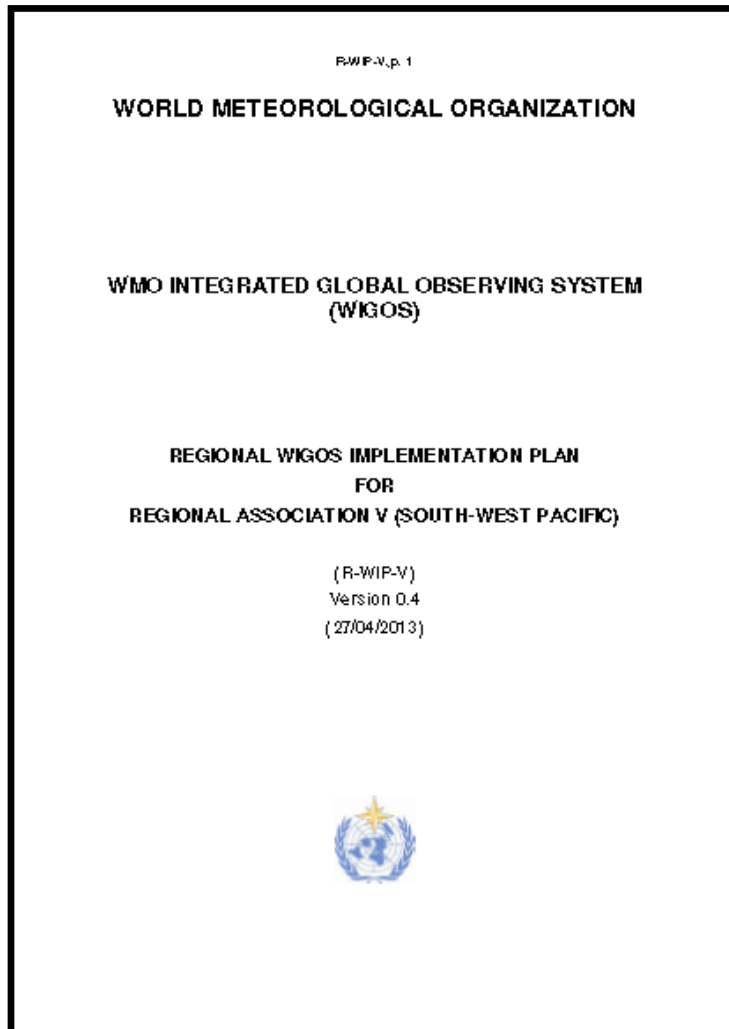
Introduction

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- And also in the Pacific Islands Meteorological Strategy (of the Pacific Meteorological Council) which includes:
 - Pacific Key Outcome (PKO) 7: Improved quality of observations and coverage of networks in the Pacific Islands region,
- Then under PKO 7 (amongst other elements):
 - 3. Coordinate the development and implementation of a regional WIGOS plan, ensuring that all countries and territories are integrated (not only WMO members).
 - 4. Promote and coordinate regional development and implementation plan for WIS.



Development of Regional WIGOS Implementation Plan (R-WIP-V)



The WIP was followed closely to produce a template for Regional WIGOS Implementation Plans:

- same ten Key Activity Areas,
- table of Implementation Activities for the Region,

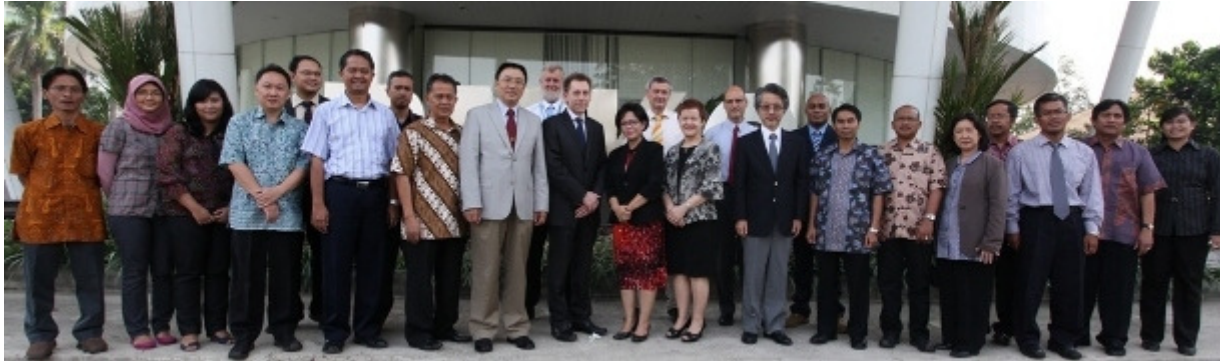
R-WIP-V has completed a process of:

- drafting,
- presentation to RA-V Management Group,
- Circulated to PRs of RA-V Member countries for comment,
- Final check by WIGOS-PO,
- Now with President RA-V,

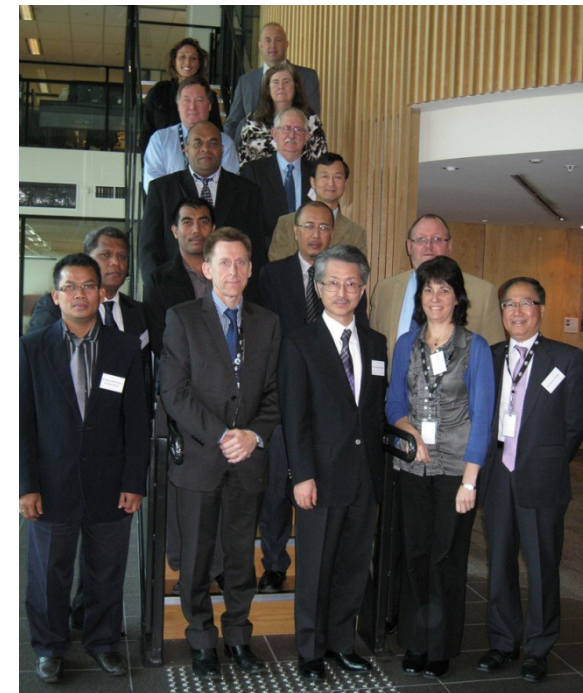
It is available on the WIGOS website.



Development of Regional WIGOS Implementation Plan (R-WIP-V)



- The table of Implementation Activities was drafted at the RA-V WIGOS Workshop (Jakarta, September 2012),
- then refined at the RA-V WG-Infrastructure meeting (Melbourne, April 2013)

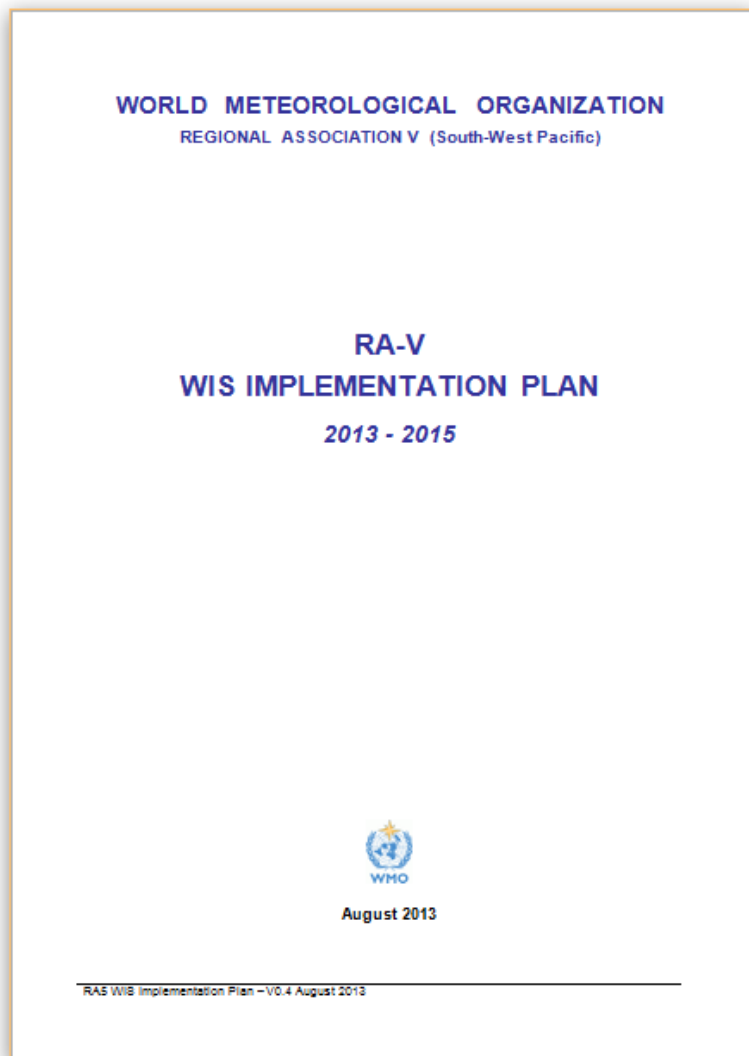


Development of Regional WIGOS Implementation Plan (R-WIP-V)

- The table of Implementation Activities can be addressed in part with our existing capacities by prioritising our efforts
 - Working Group on Infrastructure
 - National efforts
- however much important work will depend on cooperation and assistance,



Development of Regional WIS Implementation Plan



First draft commenced at the RA-V WG-Infrastructure meeting (Melbourne, April 2013);

Draft completed by Task Team on WIS;

Now out for further comment by WG members;

Will submit for endorsement at RA-V session in May.



Progress achieved by RA-V Working Group on Infrastructure

- first meeting of the RA-V WG-Infrastructure (Melbourne, 24-27 April 2013)
- WIGOS planning:
 - RA V Workshop on Regional WIGOS Implementation Plan (Jakarta, 8-9 Sept 2012)



Progress achieved by RA-V Working Group on Infrastructure

- WIS implementation and migration to Table Driven Code Forms (TDCF):
 - A key area of concern for RA-V. Our WG-INFR has amongst its task teams the following:
 - TT-WIS
 - TT-migration to TDCF
 - TT-Pacific satellite communications



Progress in WMO Region V: GISC Melbourne (Washington, Toulouse, Tokyo)

- GISC Melbourne is the only GISC in RA-V
- It was "designated" as a GISC by EC64 in June 2012 and became operational on 16 April 2013
- Amongst all the RA-V Member countries there are also some affiliations with GISCs Washington, Toulouse, Tokyo



Progress in WMO Region V: Other WIS centres - NCs

- It is expected that each Member will have at least one NC in WIS (and for most of the Members, it is likely that one NC would be sufficient),
- In February 2012, WMO circulated a letter to all Members inquiring information from the Permanent Representatives regarding: 1) nomination of a principle GIS which will be associated with the WIS centre(s) of the Member; and, 2) nomination of a focal point for WIS/GTS related matters).



Progress in WMO Region V: Other WIS centres - NCs

Member / Org	Function	Principal GISC	Focal Point (FP)	FP confirmed to WMO
Australia	NMC	Melbourne	Weiqing QU, Kelvin WONG w.qu@bom.gov.au k.wong@bom.gov.au	Yes
Brunei Darussalam	NMC	Melbourne		
Cook Islands	NMC	Melbourne		
Roro TAIA	rorotaia@oyster.net.ck	No		
Fiji	NMC	Melbourne	Leonard BALE Leonard.Bale@met.go.fj	No
France	WSO (Wallis and Futuna)	WE-VGISC Toulouse		
French Polynesia	NMC	Melbourne	Xavier MARESCOT xavier.marescot@meteo.fr	
Indonesia	NMC	Melbourne	Mochammad RIYADI mochammad.riyadi@bmgk.go.id Endang PUDJIASTUTI endang.pudjiastuti@bmgk.go.id Iky Asih MARIANI iky.asih@bmgk.go.id I. PUTA PUDJA puta.pudja@bmgk.go.id	Yes for I. PUTA PUDJA
Kiribati	NMC (Phoenix Islands)	Melbourne	Ikenti BENIAMINA beniamina70490@gmail.com	No
Malaysia	NMC	Melbourne	Zabani MD ZUKI zabani@met.gov.my	Yes
Micronesia, Federated States of	N/A	Washington	Sosten SOS sosten.sos@noaa.gov	No
New Caledonia	NMC	Melbourne	Jacqies ANQUETIL	No
New Zealand	NMC (Tokelau)	Melbourne	Filipo PEREZ filipo.perez.fp@gmail.com	No
New Zealand	NMC	Melbourne	Wim VAN DIJK wim.vandijk@metSERVICE.com	Yes
Niue	NMC	Melbourne	Sionetasi PULEHETOA Sionetasi.Pulehetoa@mail.gov.nu	Yes
Papua New Guinea	NMC	Melbourne	Jimmy GOMOGA jgomoga@gmail.com	No
Philippines	NMC	Tokyo	Vicente Jr PALCON vppalconjr@pagasa.dost.gov.ph	No
Samoa	NMC	Melbourne	Mulipola Ausetalia TITIMAEA ausetalia.titimaea@mnre.gov.ws	No
Singapore	NMC	Melbourne	Huat Aik CHOO Choo_huat_aik@nea.gov.sg	Yes
Solomon Islands	NMC	Melbourne	Allan WALE'ELE a.wale@met.gov.sb	No
Timor-Leste	NMC	Melbourne		
Tonga	NMC	Melbourne	Ofa FA'ANUNU ofaf@met.gov.to	No
Tuvalu	NMC	Melbourne	Tinapa FALETIUTE faletiuete@yahoo.com	No
United Kingdom of Great Britain and Northern Ireland	WSO (Pitcairn Islands)	WE-VGISC Exeter		
United States of America	WSO (Line Islands, Guam)	Washington		
Vanuatu	NMC	Melbourne	Patricia MAWA patou@meteo.gov.vu	Yes



Progress in WMO Region V: Other WIS centres - DCPCs

- The table below provides information on the DCPCs in RA-V with their planned functions and designation status (as of May 2013).

Member / Org	Function	Principal GISC	Const. Body	Endorsement CBS	Congress/EC
Australia	TWS	Melbourne	JCOMM	Endorsed by CBS	2011-06-01
Australia	RTH	Melbourne	CBS	Endorsed by CBS	2011-06-01
Australia	RSMC-Geographical (Darwin)	Melbourne	CBS	Endorsed by CBS	2011-06-01
Australia	NCC	Melbourne	CCI	Endorsed by CBS	2011-06-01
Australia	IPS	Melbourne	CBS	Endorsed by CBS	2011-06-01
Fiji	RSMC-Activity-TC	Melbourne	CBS	Not submitted to ET-GDDP	
New Zealand	RTH	Melbourne	CBS	Not submitted to ET-GDDP	
New Zealand	RSMC-Geographical	Melbourne	CBS	Not submitted to ET-GDDP	
United States of America	RSMC-Activity-TC (Honolulu)	Washington	CBS	Not submitted to ET-GDDP	



Progress in WMO Region V:

AusAID funded activity for WIS/TDCF implementation

- "Training and implementing systems for participation by Pacific countries in open international exchange of meteorological information"

This activity prepares partner countries in the Pacific to:

1. adopt the new arrangements for the future free and open international exchange of weather and climate information and products through a more comprehensive information service known as the WMO Information System (WIS); and
2. adopt the new data formats required to participate in the WMO-coordinated international exchange of weather and climate related information, i.e. to migrate to Table Driven Code Form (TDCF) for the exchange of data and products.



Progress in WMO Region V: AusAID funded activity for WIS/TDCF implementation

two-stage approach:

1. training workshop on WIS/TDCF held Melb. Apr/May 2013,
2. implementation plan developed with each partner country, on-site visit / assistance provided.
 - Some late in 2013, others in 2014.



Progress achieved by RA-V Working Group on Infrastructure

- Pacific Satellite Communications and Satellite User Requirements:
 - Advocating for continued provision to Pacific countries of access to products from GOES broadcasts (EMWIN and LRIT services);
 - Promoting use of RANET Chatty Beetle in the Pacific, for example helping the real time collection of synoptic observations from remote sites;
 - RAPIDCast (RANET Asia Pacific Information Dissemination Broadcast) initiative is progressing. Broadcasts are now reaching across the Pacific to west of 150E, providing meteorological information to areas beyond the GOES broadcasts



Progress achieved by RA-V Working Group on Infrastructure

- Pacific Satellite Communications and Satellite User Requirements:
 - task of documenting satellite user requirements in RA-V through a standard WMO process is being undertaken, including a side meeting of representatives from many RA-V countries at the 4th Asia Oceania Meteorological Satellite Users Conference (Melbourne early October 2013)
- Traceability of Observations:
 - workshop on calibrations and field inspections was held in July/August 2012 in Fiji (hosted by Fiji Meteorological Service as part of the Japan International Cooperation Agency (JICA) Third Country Training Programme);
 - questionnaire circulated to RA-V countries.



Next session of the Regional Association

- RA V-16 to be held in Jakarta, 2-8 May 2014:
 - Opportunity to discuss and prioritise the many actions identified in R-WIP-V, perhaps leading to revision and Version 2?;
 - Opportunity to use R-WIP-V to guide the work programme for the next period 2016-2019;
- Regional Conference 30 Apr – 1 May;
- Management Group will hold a preparatory meeting in Jakarta, 14-15 March 2014.



Thank you for your attention

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(note: details of R-WIP-V table of implementation activities are available if required.....)



R-WIP-V: Table of Implementation Activities (1)

1. Management of WIGOS Implementation in Region V				
No.	Activity	Deliverables	Timeline	Responsibility
1.2.1 R	Develop the Regional WIGOS Implementation Plan for Region V (R-WIP-V)	Regional WIGOS Implementation Plan for Region V (R-WIP-V)	2012-13	Drafting by WG-Infrastructure (TT-WIGOS), adoption by President RA-V
1.2.2 R	Compile information from Member countries, other relevant partners and WMO sources as input to a “stock-take” of existing WMO observing systems in RA-V.	A report detailing all the current WMO observing systems in Region V, including the composition of networks, data outputs and who the owners/operators are.	2013	WG-Infrastructure (TT-WIGOS) assisted by Secretariat
1.2.3 R	Assess the EGOS-IP and other WMO observing system implementation plans to identify actions relevant to RA-V and Member countries; assign priorities to these actions.	Prioritised list of actions for RA-V and for Members arising from the EGOS-IP and other IPs.	2012-13	Drafting by WG-Infrastructure (TT-WIGOS), adoption by President RA-V
1.2.4 R	Provide an effective RA-V focal point to liaise with CBS about the implementation of EGOS-IP in RA-V.	An effective RA-V focal point for EGOS-IP, who is actively corresponding with CBS.	2012-15	RA-V MG, focal point for EGOS-IP



R-WIP-V: Table of Implementation Activities (2)

2. Collaboration with WMO and co-sponsored observing systems				
No.	Activity	Deliverables	Timeline	Responsibility
2.2.1 R	Identify and engage further potential partners for collaboration in the collection of observations on a Regional scale. Clarify the target area/s for collaboration and the mechanism for resolving governance issues.	A report on existing partnerships on a Regional level, to provide a baseline and reference,	2012-15	WG-Infrastructure (TT-WIGOS).
2.3.1 N	Encourage Member countries to identify and engage further potential partners in the collection of observations for WMO programs. Clarify the target area/s for collaboration and the mechanism for resolving governance issues.	Increased number of collaborating partners at a National level and increased collection of observations.	2012-15	Encouragement by MG, action by all Member countries in RA-V.
2.2.2 2.3.2 R, N	Collaborate with CIMO to develop a <i>reliable feedback mechanism</i> on the performance of instruments and systems in Region V. Provide feedback regularly.	A status report is provided to RA-V and CIMO on progress of meteorological observing systems against WMO regulations and standards.	2013	WG-Infrastructure (TT-Traceability) develop mechanism, Member countries in RA-V provide feedback.



R-WIP-V: Table of Implementation Activities (3)

3. Design, planning and optimized evolution of WIGOS component observing systems at regional, sub-regional and national levels

No.	Activity	Deliverables	Timeline	Responsibility
3.2.1 R	Design and plan observing systems in the Region, taking into account: (i) the technical guidance of the technical commissions as represented in the EGOS-IP and other observation system implementation plans; (ii) the Regional priorities adopted by President RA-V (see action item 1.2.3); (iii) relevant actions identified in the Technical Plan of the Tropical Cyclone Committee for the South Pacific and South-East Indian Ocean; (iv) the need for “gap filling” and restoration of silent stations; and (v) cross-regional coordination opportunities.	Improved WMO observing system design in Region-V.	2012-15	Coordination by WG-Infrastructure (TT-WIGOS).
3.3.1 N	Evolve and implement National observing systems, taking into account: (i) the technical guidance of the technical commissions as represented in the EGOS-IP and other observation system implementation plans; (ii) the Regional priorities adopted by President RA-V (see action item 1.2.3); (iii) relevant actions identified in the Technical Plan of the Tropical Cyclone Committee for the South Pacific and South-East Indian Ocean; (iv) the need for “gap filling” and restoration of silent stations.	Improved WMO observing systems in Region-V.	2012-15	Member countries in Region V.



R-WIP-V: Table of Implementation Activities (3+)

3. Design, planning and optimized evolution of WIGOS component observing systems at regional, sub-regional and national levels

No.	Activity	Deliverables	Timeline	Responsibility
3.2.2 R	Define and describe the Regional WIGOS Network (building on action item 1.2.2) as the collective identity for all WMO observing systems in Region V.	A report to convey the definition and description of the Regional WIGOS Network.	2014	WG-Infrastructure (TT-WIGOS).
3.2.3 R	Validate the user requirements documented by the global RRR process against Regional user requirements; use the results to update the RRR user requirements database and to fine tune the EGOS-IP and observing system plans.	WMO observing systems are responsive to Regional user requirements.	2013-15	WG-Infrastructure (TT-WIGOS).
3.3.2 N	Validate the user requirements documented by the global RRR process against National user requirements for WMO systems; use the results to update the RRR user requirements database and to fine tune the EGOS-IP and observing system plans.	WMO observing systems are responsive to National user requirements for WMO systems.	2013-15	Member countries in Region V.



R-WIP-V: Table of Implementation Activities (4)

4. Integrated Observing System Operation and Maintenance

No.	Activity	Deliverables	Timeline	Responsibility
4.2.1 R	<p>Compile, from Member contributions, a set of examples of integrated operation and maintenance between observing system owners/operators, covering the sharing of experiences, practices and ideas, the sharing of expertise and the pooling of resources for joint activities; noting specifically that:</p> <p>(1) training is an effective way to share knowledge and skills;</p> <p>(2) funding for capacity development is often the trigger which enables increasingly integrated approaches.</p> <p>Promote this report amongst Member countries as a stimulus for thinking broadly about opportunities to benefit from integration.</p>	A report providing examples of integrated approaches to operation and maintenance.	2013	WG-Infrastructure (TT-WIGOS).
4.2.2 R	Capacity development in data communication techniques related to observations collection and reporting	Reference material, case studies and training, leading to enhanced capacities	2013-15	WG-Infrastructure (TT-PSC)
4.2.3 R	<p>Capacity Building in Radar Techniques in Southeast Asia, supported by appropriate technical missions to countries, through:</p> <ul style="list-style-type: none"> All the ASEAN developing countries will prepare a national report on their arrangements for the operational use of weather radar data; and A sub/cross-region (for the ASEAN developing countries) strategic plan for addressing technical issues and necessary actions identified in the national reports. 	Enhanced capacity in monitoring and forecasting of severe weather using radar data.	2013-15	Those Member countries involved in the sub-Regional /cross-Regional (with RA-II) ASEAN Sub-Committee on Meteorology and Geophysics

R-WIP-V: Table of Implementation Activities (5)

5. Integrated Quality Management				
No.	Activity	Deliverables	Timeline	Responsibility
5.2.1 R	Progressively achieve traceability to SI standards of measurements made throughout RA V, focusing initially on surface pressure, temperature, precipitation, humidity, also sea level.	Traceable observations from progressively more components of the Regional WIGOS Network.	2012-15	WG-Infrastructure (TT-Traceability), in collaboration with the RICs and Members.
5.2.2 5.3.1 R, N	Develop a self-assessment tool to enable Members to follow CIMO guidelines for observations	Self-assessment tool.	2014	WG-Infrastructure (TT-Traceability), with input from Members.
5.2.3 R	Actively review and respond to the findings of CBS' periodic data flow monitoring exercises.	An active review process.	2012-15	WG-Infrastructure (TT-WIGOS).
5.2.4 R	Find new means of continuous monitoring of observations data quality in Region V with the support of Centres of the GDPFS (Global Data Processing and Forecasting System).	Request is made (for the systemic errors in observations from the analysis scheme) and collaboration is established with Chair OPAG-GDPFS on this topic.	201x	WG-Infrastructure (TT-WIGOS), in collaboration with Centres of the GDPFS.



R-WIP-V: Table of Implementation Activities (6)

6. Standardization, System Interoperability and Data Compatibility				
No.	Activity	Deliverables	Timeline	Responsibility
6.2.1 R	Achieve the migration to Table Driven Code Forms throughout Region V as specified by CBS.	Completed migration to Table Driven Code Forms throughout Region V.	2014	WG-Infrastructure (TT-TDCF).
6.2.2 R	Develop a process to monitor and report on what Members currently do in relation to compliance with WIGOS standards.	A process is developed to monitor and report on what Members currently do in relation to compliance with WIGOS standards.	20xx	WG-Infrastructure (TT-WIGOS).
6.2.3 R	Review and suggest requirements for new WIGOS standards and/or regional best practices.	Proposals for new WIGOS standards and/or regional best practices.	20xx	WG-Infrastructure (TT-WIGOS).
6.2.4 6.3.1 R,N	Implement the WMO Siting Classification Scheme in RA V, through: <ul style="list-style-type: none"> Provision of information and training to Member countries, and Adoption of new procedures by Member countries. 	WMO Siting Classification Scheme is implemented in RA V.	201xxx	WG-Infrastructure
6.2.5 R	Determine capacity of WMO Members in RA-V to maintain and submit to WMO interpretation metadata (as currently required for Vol.A)	Report on the capacity of WMO Members in RA-V to maintain and submit to WMO interpretation metadata (as currently required for Vol.A)...	2014	WG-Infrastructure (TT-WIGOS).

R-WIP-V: Table of Implementation Activities (7)

7. The WIGOS Operational Information Resource (WIR)				
No.	Activity	Deliverables	Timeline	Responsibility
7.2.1 R	Request, support and encourage Members to provide up-to-date metadata to the WIR and ensure its ongoing maintenance.	Up-to-date metadata maintained at WMO.	201x- (dependent on completion of database)	WG-Infrastructure (TT-WIGOS).



R-WIP-V: Table of Implementation Activities (8)

8. Data discovery, delivery and archival				
No.	Activity	Deliverables	Timeline	Responsibility
8.2.1 R	Foster increased exchange of observations data and discovery metadata using WIS in the Region, through awareness raising and provision of guidance for the adoption of WIS standards, including implementation of Data Collection and Production Centres (DCPC) and National Centres (NC), in collaboration with GISC Melbourne.	Increased provision of “discovery metadata” hence accessibility of data through the WIS.	2012-15	WG-Infrastructure (TT-WIS).
8.2.2 R	Encourage Member countries to share data via the WIS, including from organizations other than NMHSs.	New sources of data are available through the WIS.	2012-15	WG-Infrastructure (TT-WIS).



R-WIP-V: Table of Implementation Activities (9)

9. Capacity development

No.	Activity	Deliverables	Timeline	Responsibility
9.2.1 R	Assist Member countries to introduce or improve institutional mandates and policies relating to observing systems.	Improved institutional mandates and policies in Member countries relating to observing systems.	2012-15	Management Group, supported by TT-WIGOS.
9.2.2 9.3.1 R, N	Assist Member countries to fill gaps (both infrastructure and human capacities) in their WIGOS observing systems, in particular: <ul style="list-style-type: none"> Assist Fiji to fully implement and sustain their calibration facilities (end of 2013); 	Gaps (both infrastructure and human capacities) in the WIGOS observing systems of Member countries are identified and filled.	2012-15	WG-Infrastructure (TT-WIGOS, TT-TO), in collaboration with Regional partners and Members.



R-WIP-V: Table of Implementation Activities (10)

10. Communication and outreach

No.	Activity	Deliverables	Timeline	Responsibility
10.2.1 R	Contribute to WIGOS communication and outreach across Region V by: (i) responding to the role defined in the ICG-WIGOS communication strategy; (ii) utilising material provided by WIGOS-PO to raise awareness and commitment to WIGOS in Region V.	Effective communication and outreach for WIGOS across Region V.	2012-15	WG-Infrastructure (TT-WIGOS) and Management Group.
10.3.1 N	Contribute to WIGOS communication and outreach within Member Countries by: (i) responding to the role defined in the ICG-WIGOS communication strategy; (ii) utilising material provided by WIGOS-PO to raise awareness and commitment to WIGOS in Region V.	Effective communication and outreach for WIGOS within Member countries.	2012-15	WMO Member countries in Region V.

