

REGIONAL ASSOCIATION V (SOUTH-WEST PACIFIC)

**WORKING GROUP ON INFRASTRUCTURE
TASK TEAM ON WIGOS**

RA V Workshop on Regional WIGOS Implementation Plan

Jakarta, Indonesia, 8-9 September 2012

FINAL REPORT



WORLD METEOROLOGICAL ORGANIZATION



Participants in the RA V Workshop on Regional WIGOS Implementation Plan at the headquarters of the Indonesia Agency for Meteorology, Climatology and Geophysics (BMKG) (Jakarta, Indonesia, 8 September 2012)

RA V Workshop on Regional WIGOS Implementation Plan (Jakarta, Indonesia, 8-9 September 2012)

1. Opening

1.1 The Regional Association V (South-West Pacific) Workshop on Regional WMO Integrated Global Observing System (WIGOS) Implementation Plan (R-WIP) was held at the headquarters of Indonesia Agency for Meteorology, Climatology and Geophysics (BMKG) in Jakarta on 8 September 2012 and at Mercure Convention Centre Ancol in Jakarta (venue of the fifteenth session of the Commission for Basic System (CBS)) on 9 September 2012. The list of participants and the agenda of the workshop are given in [Annex I](#) and [Annex II](#), respectively. All the documents of the workshop and presentations delivered at the workshop can be accessed at: <http://www.wmo.int/pages/prog/dra/rap/meetings/RAV-WIGOS-DocPlan.html>.

1.2 Mr Russell Stringer, Lead of the Working Group on Infrastructure welcomed the participants and expressed his gratitude to the Indonesia Agency for Meteorology, Climatology and Geophysics (BMKG) for hosting the workshop and providing local arrangements.

1.3 Dr Sri Woro B. Harijono, president of RA V and Permanent Representative of Indonesia with WMO welcomed all the participants to Jakarta. She recalled that WIGOS is one of high priorities of WMO during the sixteenth financial period (2012-2015) and noted the importance of the development and implementation of a Regional WIGOS Implementation Plan for RA V (R-WIP-V) in relation to the implementation of the RA V Strategic Operating Plan (SOP) 2012-2015 and related activities within RA V. She thanked the Lead of the Working Group on Infrastructure for his invaluable efforts in taking a leading role in developing the R-WIP-V and members of the Task Team on WIGOS Interpretation and Opportunities (TT-WIGOS) for their participation in this endeavour. She wished a successful workshop and an enjoyable stay in Jakarta.

1.4 On behalf of the Secretary-General of WMO, Dr Wenjian Zhang, Director of the Observing and Information Systems Department, welcomed all the participants in the workshop and expressed his gratitude to the BMKG for hosting the workshop and providing local arrangements. He stressed the importance of the development of R-WIP-V in response to the decision by the Sixteenth Congress (2011). He wished a constructive and productive workshop and assured the support for the participants by the Secretariat staff with the local host.

1.5 Mr Stringer briefed the workshop on the background of the workshop. He also informed that: the purpose of the workshop is to make progress on and to plan further steps for tackling the Regional Key Outcome 4.1.1 "WIGOS is implemented" (from the WMO RA V Strategic Operating Plan 2012-2015), and more specifically, the goals of the Workshop are to:

- Raise the awareness and understanding of the WIGOS framework, the WIP and the expected contributions from and benefits for RA V, particularly amongst the experts contributing to the TT-WIGOS and its parent Working Group on Infrastructure (WG-INFR); and
- Develop a first draft version of the R-WIP-V, taking into account a range of stakeholder inputs to identify priority actions for the Region.

2. Implementation of WIGOS

2.1 Dr Roger Atkinson (WMO) delivered a presentation entitled "What is the WIGOS framework". He stressed that:

- a) WIGOS framework *IS NOT* about establishing a NEW observing system,
- b) It *IS* about *DOING MORE WITH WHAT WE HAVE*, to enable more efficient and effective service delivery.

2.2 He illustrated:

- a) How existing WMO observing systems (the Global Observing System (GOS), the Global Atmosphere Watch (GAW), the WMO Hydrological Cycle Observing System (WHYCOS) and the Global Cryosphere Watch (GCW), including surface-based and space-based components and all WMO contributions to GFCS, GCOS, GOOS, GTOS and GEOSS) can be given a collective identity as WIGOS and, like a broad tree trunk, provide the support required by all WMO Application Areas across all WMO Programmes,
- b) The following important observing system concepts: operational cycle, key operational features, and key management imperatives, and
- c) The ten “Key Activity Areas” which address the above concepts and which need action in order to implement the WIGOS framework.

2.3 Dr Miroslav Ondras (WMO) delivered a presentation entitled “WIGOS Framework Implementation Plan”. He reviewed the decision by the Sixteenth Congress (2011) to proceed with implementation of WIGOS and its request for Regional Associations to:

- i) develop their regional WIGOS implementation plans;
- ii) coordinate WIGOS implementation activities with the WIS in their operating plans and work programmes; and
- iii) promote capacity-building and outreach activities to assist Members in the implementation of WIGOS.

2.4 Dr Ondras noted the follow-up actions taken by the relevant bodies including the Executive Council, the Inter-Commission Group for WIGOS (ICG-WIGOS) and the Commission for Basic Systems (CBS).

2.5 Dr Ondras introduced the WIGOS framework Implementation Plan (WIP¹) that was adopted recently by the Executive Council at its 64th session, highlighting two aspects:

- i) The ten Key Activity Areas that need to be addressed in order to implement the WIGOS framework; and
- ii) The table of WIGOS Implementation Activities, which lists specific work to be done in each of the ten Key Activity Areas. Some of the work needs to be done at a Regional or National level.

3. The Regional Association V Context

3.1 Mr Stringer presented the workshop with some information and thoughts about the Region Association V context to be taken into account when developing WIGOS implementation plans. Firstly, some brief comments were made about current observing systems which provide the baseline for implementation of WIGOS.

3.2 Next, attention was given to existing guidance on directions and priorities for WMO component observing systems and their integration in RA V. As well as the WMO Technical Regulations (including Manuals and Guides) which define the RBSN/RBCN, the GSN/GUAN/GRUAN, and so on, there is the EGOS-IP (Implementation Plan for Evolution of Global Observing Systems) and a range of other strategies and plans from the various WMO programmes. At a Regional level, the Strategic Operating Plan 2012-15 sets broad priorities which are further refined in the Terms of Reference and work plans of the Working Group on Infrastructure and its Task Teams. Also, the “Technical Plan” of the Tropical Cyclone Committee defines a number of priorities for observing systems in the Region.

¹ The WIP is available from the WMO web site in all six of the WMO official languages at: http://www.wmo.int/pages/prog/www/wigos/principal_documents.html

3.3 Finally, it was proposed that there also needs to be consideration given to the alignment of Regional WIP plans with national activities and harmonized aid-funded projects.

4. Drafting Regional WIGOS Implementation Plan for RA V

4.1 Given the time constraints of the workshop, the agenda items 2.3, 4 and 5 were handled in a combined manner. The template for the R-WIP-V that had been circulated prior to the workshop was considered in detail. While progressing through the plan, discussion was undertaken and initial ideas were gathered on activities for inclusion in the table of WIGOS Implementation Activities.

4.2 In particular, the workshop noted that R-WIP is composed of the following ten (10) Key Activity Areas and discussions were undertaken following this structure:

- i) Management of WIGOS Implementation in Region V;
- ii) Collaboration with WMO and co-sponsored observing systems;
- iii) Design, planning and optimized evolution of WIGOS and its regional, sub-regional and national observing components;
- iv) Integrated Observing System Operation and Maintenance;
- v) Integrated Quality Management;
- vi) Standardization, System Interoperability and Data Compatibility;
- vii) The WIGOS Information Resource (WIR) ;
- viii) Data discovery, accessibility and retrieval;
- ix) Capacity development;
- x) Communication and outreach.

4.3 The initial ideas on priority activities to pursue in each of the ten Key Activity Areas were tabulated in a first-draft table of WIGOS Implementation Activities. These were reviewed and refined in the second day of the workshop, as given in [Annex III](#). This table represents substantial development of the R-WIP-V from a template to a draft plan.

4.4 Further work will need to be completed by the Task Team on WIGOS to (i) refine the table of activities by adding some relevant information in the resources column, cross-checking against other observing system plans and priorities relevant to Region V, and considering how to make some of the actions more specific, and (ii) refine the text in the template in order to develop a complete first draft of the R-WIP-V.

4.5 The workshop also noted that further steps would be needed:

- Review of the table by workshop participants before inclusion in the report of the workshop;
- Review of the first draft R-WIP-V by stakeholders including:
 - Members of RA V (NMHSs and others)
 - regional organizations
 - relevant experts working within RA V and in expert teams of technical commissions and of ICG-WIGOS
 - WMO Secretariat including the WIGOS Project Office
- Revision(s) of the draft R-WIP-V;
- Finalization of the draft R-WIP-V, ready for review/endorsement by the Management Group and the adoption by the president of RA V;

- Ultimately there will need to be coordination to undertake the identified activities in order to implement the WIGOS framework in Region V.

5. Closure

5.1 The participants and the representative of WMO expressed their appreciation to Dr Sri Woro B. Harijono and her staff for the successful hosting of the meeting and for the warm hospitality and excellent arrangements made.

5.2 The workshop closed at 12:15 hours on 9 September 2012.

List of Participants

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Mr Wim Van Dijk <i>Member of WG-INFR, representing Mr Jochen Schmidt, member of TT-WIGOS</i>	New Zealand	Data Manager, Meteorological Service of New Zealand wim.vandijk@metervice.com
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WMO Secretariat

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Agenda

1. Opening
 2. Implementing WIGOS
 - 2.1 What is the WIGOS framework?
 - 2.2 The WIGOS framework Implementation Plan (WIP)
 - 2.3 Development of a Regional WIP for RA V (R-WIP-V)
 3. The Regional Association V context
 - 3.1 Current observing systems and state of development of the WIGOS framework
 - 3.2 Existing guidance on directions and priorities for WMO component observing systems and their integration in RA-V
 - 3.3 Alignment of Regional WIP plans with national activities and harmonized aid-funded projects
 4. Identifying the big issues for WIGOS in RA-V (discussion session)
 5. Drafting R-WIP-V (drafting and review steps)
 6. Reporting
 - 6.1 Final draft R-WIP-V from this workshop
 - 6.2 Report of the Workshop
 7. Closure of the workshop
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Table 2 WIGOS Implementation Activities (Region V)

Activities in bold are considered the most critical for WIGOS to gain operational acceptance by 2015.

Depending on the implementation scale, planned activities are specified as follows: **R** = Regional activity and **N** = National activity.

Key to activity numbers: **a.b.c**, where **a** is number of respective sub-section of section 2, **b** is for a regional (2) or national (3) activity, and **c** is a sequential number to distinguish activities from one another. ARB = Available Regular Budget. RB = Regular Budget.

No.	Activity	Deliverables	Timeline	Responsibility	Estimated Costs (2012-2015) K CHF		Potential Risks ¹
1. Management of WIGOS Implementation in Region V							
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 MG			Low
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			High
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 MG			Low
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			Mod

¹ A simple rating of “risk” is registered in this plan for each activity, using the scale Low/Medium/High to represent the combined assessment of the likelihood of not fully completing the activity and deliverable/s as intended, plus the consequential impact of such non-completion. More detailed risk assessment, including mitigation where warranted, is needed when more detailed planning is undertaken for each activity.

2. Collaboration with WMO and co-sponsored observing systems						
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.	Increased number of collaborating partners at a Regional level and increased collection of observations.	2012-15	WG-Infrastructure (TT-WIGOS).		Mod
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.		Mod
2.2.2 2.3.2 R, N	Collaborate with CIMO to develop a feedback mechanism to CIMO on the performance of instruments and systems in Region V. Provide feedback regularly.	Meteorological observing systems are widely compliant with WMO regulations and standards.	2012-15	WG-Infrastructure (TT-Traceability) develop mechanism, Member countries in RA-V provide feedback.		Mod
3. Design, planning and optimized evolution of WIGOS and its regional, sub-regional and national observing components						
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 MG (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).		High

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 MG (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.		High
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.	Definition and description of the Regional WIGOS Network.	2013	WG-Infrastructure (TT-WIGOS).		High
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).		Mod
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.		Mod

4. Integrated Observing System Operation and Maintenance						
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).		low
4.2.2 R	Identify opportunities to benefit from sharing (of experiences, practices and ideas, the sharing of expertise and the pooling of resources for joint activities) across regions (RA II / RA V)	Identified opportunities to benefit from sharing across regions (RA II / RA V)	2012-13	WG-Infrastructure (TT-WIGOS).		Mod

4.2.3	Capacity Building in Radar Techniques in Southeast Asia, supported by appropriate technical missions to countries, through: <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		Mod
5. Integrated Quality Management						
5.2.1 R	Progressively achieve traceability to SI standards of measurements made throughout RA V, focusing initially on surface pressure, temperature, precipitation and humidity.	Traceable observations from progressively more components of the Regional WIGOS Network.	2012-15	WG-Infrastructure (TT-Traceability), in collaboration with the RICs and Members.		Mod
5.2.2 5.3.1 R, N	Document the quality of all observations across RA V.	Documented quality of all observations across RA V.	201x	WG-Infrastructure (TT-WIGOS), with input from Members.		High
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).		Low
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).	New means of continuous monitoring of observations data quality in Region V.	201x	WG-Infrastructure (TT-WIGOS), in collaboration with Centres of the GDPFS.		Mod
6. Standardization, System Interoperability and Data Compatibility						
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).		Mod

6.2.2 R	Develop a process to monitor and report on the level of regional compliance with WIGOS standards.	A process is developed to monitor and report on the level of regional compliance with WIGOS standards.	2014	WG-Infrastructure (TT-WIGOS).		Mod
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.	2015	WG-Infrastructure (TT-WIGOS).		Mod
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.	201x	WG-Infrastructure		high
7. The WIGOS Information Resource (WIR)						
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).		Mod
8. Data discovery, accessibility and retrieval						
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).		Mod
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).		Mod

9. Capacity development¹						
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.		Mod
9.2.2 9.3.1 R, N	Promote the training needs identified in collaboration with Member countries in Region V with respect to WIGOS.	Training needs of Member countries in Region V with respect to WIGOS are identified and addressed.	2012-15	WG-Infrastructure (TT-WIGOS), in collaboration with Regional partners and Members.		Mod
9.2.3 9.3.2 R, N	Assist Member countries to fill gaps (both infrastructure and human capacities) in their WIGOS observing systems.	Gaps (both infrastructure and human capacities) in the WIGOS observing systems of Member countries are identified and filled.	2012-15	WG-Infrastructure (TT-WIGOS), in collaboration with Regional partners and Members.		Mod
10. Communication and outreach						
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.		Low

¹ Congress stressed that an effective capacity-building strategy is an essential component of the WIGOS implementation. Specialized education, training activities and improvement of necessary observing infrastructure should be reflected in the regional, sub-regional and national WIGOS implementation plans, especially for NMHSs of LDCs, LLDCs and SIDS. Hence, capacity building is not to be limited to scientific and technological concerns, but also to strategic and management consideration including human resources development, resource mobilization and communications and outreach activities.

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.		Low
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