

2019 AOGEO Statement

Canberra, Australia

November 4th, 2019

Overview:

1. In 2019, AOGEO transitioned from establishment to delivery, achieving tangible impact on our core goal and tagline, “Earth Observations for Asia Oceania”:
 - 1.1. We brought together over 325 people from 35 countries in two flagship forums and 4 training courses across our region
 - 1.2. We continued to grow GEO focusing on the connection with end users by recruiting two new countries into AOGEO (Indonesia and New Zealand), establishing a new Disaster Resilience task and launching three Integrated Priority Studies led by end users in pilots for Samoa, the Mekong River delta and the Kanchenjunga Landscape
 - 1.3. We welcome the recent move by the agencies who conduct Earth observations in the Asia-Oceania region, particularly space agencies, who release new data, information and knowledge to benefit policy and actions
2. This Statement is adopted to recognize the ongoing efforts of and the future plans for the Asia-Oceania Group on Earth Observations (AOGEO). Our forums in 2018/19 have included the:
 - 2.1. 12th AOGEO Symposium (2-4 November Canberra, Australia) including the sectorial meetings of nine Task Groups (TG, see Background) with over 200 participants from 35 countries
 - 2.2. 2nd AOGEO Workshop (10-11 April, Jakarta Indonesia, 54 participants from 10 countries)
 - 2.3. Four AOGEO capacity building activities (Nepal, Laos, Sri Lanka and Indonesia with over 75 participants from 12 countries)
3. The year 2018-2019 was marked by the series of events and reports which further demonstrated the vulnerability of Asia Oceania and the increasing threats to our environment. Earth observation was fundamental to the conclusions drawn in a number of reports including: the series of IPCC Special Reports, the IPBES Global and Regional Assessment Report on Biodiversity and Ecosystem Services and the Hindu Kush Himalaya Assessment report by ICIMOD all reported the rapid and unprecedented changes in the climate, biodiversity and the possible consequences; G20 Osaka Summit included in its Declaration the Osaka Blue Ocean Vision, which commits to reducing additional marine plastic waste to zero by 2050; the several extreme weather events caused damage around the world. The world must take responsible actions addressing climate change urgently.

Contributes to 2030 Agenda for Sustainable Development:

4. AWCI launched full-scale efforts to activate Platforms on Water Resilience and Disasters by promoting dialogues, reinforcing partnership, sharing data, information, models, tools, experiences and ideas, and expanding sustainable practices. APBON emphasized the need to promote the harmonization of activities that contribute to achieving SDGs (13, 14, 15) by identifying the synergies and trade-offs of ecosystem services and societal requirements. OCI promoted better access to marine data through: interoperability and standardisation of data and validation of satellite based marine and coastal products. For the Mekong and Pacific Island IPS, OCI addresses IUU (Illegal Unreported Unregulated) fishing (SDG14. 4 and 6) and coastal pollution including marine plastics (SDG14.1). AsiaRiCE particularly addresses the issues of SDGs 1, 2, 13, 15 and 17 through better agri-food policy implementation by improving the outlook of crop production, precision agriculture, development of decision-support systems and early warning systems in co-operation with the ASEAN Food Security Information System (AFSIS). The Drought Monitoring task make drought indicator data and algorithms available to improve the understanding, monitoring and forecasting of drought, and to increase the capability for mitigation of drought impacts, linked to SDGs 1, 2, 6,

50 8, 11, 13, 15, 16 and 17. EMP directly addresses the issues of SDG 3, 6, 7, 11, 13, 14, 15 and 17 that mon-
51 itor the terrestrial ecological and atmospheric environmental conditions with multi-source EO data, and
52 provide annual reports for sustainable ecosystems, clean air, clean water, clean energy, sustainable cities
53 and communities to support evidence-based decision making for environmental protection.
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55 **Contributes to Paris climate agreement within the UNFCCC:**

- 56 5. AWCI has developed user-friendly analysis tools and engaged all stakeholders in climate change adapta-
57 tion planning and implementation at the national scale, and filled the gap between adaptation and mitiga-
58 tion by choosing options which are beneficial to mitigation. GEO-C has harmonizing the increasing num-
59 ber of platforms (e.g. remote sensing, in-situ observations, and inventories) for monitoring GHGs in
60 Asia-Oceania. We seek to reduce uncertainties in their sources and sinks to support the ultimate goal of
61 reaching zero net emission as required by the Paris Agreement. Relevant institutions and agencies for GHG
62 observations and analyses will cooperate to support reporting regional GHGs budgets, tracking sources and
63 removals as contributing to the Global Stocktake Process. AsiaRiCE reduced methane emissions without
64 reducing the productivity of rice production in the AO region. Data and algorithm in the Drought Monitor-
65 ing task will contribute to all targets in the Paris Agreement. As vegetated ecosystems are an important
66 carbon sink, EMP developed products related to ecosystem status and atmosphere conditions, and to eval-
67 uate the environmental responses and feedback to climate change. Himalayan GEOSS is an important in-
68 strument for promoting generation and sharing of information on glacier melt, disaster risk reduction and
69 biodiversity to support the call for climate actions by HKH Assessment Report.
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71 **Contributes to Sendai Framework for Disaster Risk Reduction:**

- 72 6. AWCI archived disaster damage data and maintains statistics for encouraging investment for water-related
73 disaster risk reduction. For risk managers of water-related disasters, it is important to understand the im-
74 pact of drought and flood on agriculture using EO data in the activities of AsiaRiCE and Drought Moni-
75 toring.
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77 7. The Disaster Resilience task was established. It is developing a 3-year work programme that will focus on
78 disaster risk reduction. This aims to support our Integrated Priority Studies and will link to other related
79 activities within GEO and organisations such as CEOS and the United Nations.
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81 AOGEO promotes concerted actions among stakeholders on resilience, sustainability, inclusive growth, and
82 adaptation to climate change through coordination towards achievement of the three global agendas.
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84 **Scaling up through our Integrated Priority Studies:**

- 85 8. The IPS exemplify the potential benefits that cross-cutting efforts bring as well as inter-disciplinary study,
86 co-design and co-production. Achievements towards Aichi Target 11 in the ASEAN region demonstrate
87 gains and gaps in each of the target deliverables and provided some recommendations towards a post 2020
88 target on protected areas. These initiatives enable APBON's objective on data sharing and contributions to
89 regional assessments intended as the basis of future policy and action. For the Mekong, space based rice
90 crop growth information by using the Vietnam Data cube was reported in the CEOS 2019 plenary in Hanoi,
91 Vietnam and it is a good example to show the necessity to coordinate in-situ observation and validation /
92 comparison activities among related countries. We shall report on the IPS findings in a special issue of the
93 Journal Remote Sensing on Earth Observations in Asia-Oceania in late 2020
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95 **Cross cutting topics: Data sharing and platform:**

- 96 9. AOGEO recognises that open Earth observations are a continuum and we support the efforts made by all
97 members of our region towards the most accessible, highest quality and trusted open Analysis Ready Data
98 (ARD) as well as the integration approaches of in-situ data, so that we can all benefit.
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- 100 10. Through the establishment of the IPS Pilots we have demonstrated the benefit of a data sharing platform
101 and infrastructure and we have continued discussions towards the roll out of an enduring AOGEO Data
102 Hub for open ARD in our region. The roll out of Open Data Cubes within Asia Oceania continues to grow
103 with over ten AO countries now operating or planning deployments. Finally, Japan's DIAS continues to
104 grow and China is ramping up its development of the Spectrum Earth platform.
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- 106 11. In addition to the accumulated and integrated efforts to publicize in-situ Earth observation data through
107 suitable international and intergovernmental frameworks, the space agencies of China, Republic of Korea
108 and Japan will release satellite Earth observation data in 2019-2020:
- 109 11.1. Japan has been publishing data from 10 Earth observation satellites, such as GCOM-W,
110 GCOM-C, and GPM and also the dataset such as the Global Mosaic dataset by Japanese L-band
111 SAR satellite data from JERS-1/ALOS/ALOS-2 continuously. In addition, Japan is planning to
112 distribute L-band SAR satellite data. This data is key particularly in the tropics where cloud
113 cover hinder optical sensors; thus Radar satellites assure key data to historical time series for
114 various decision-making.
- 115 11.2.. Republic of Korea provides high resolution KOMPSAT data for the IPS with the initial focus
116 on: the Mekong River Basin, Pacific Island and Himalayan Mountains. The KOMPSAT data
117 consists of high resolution optical and SAR measurements. It is useful for applications such as
118 environmental change detection and disaster monitoring. KOMPSAT data is also important to
119 measure the SDGs on a household level such as for Samoa.
- 120 11.3. China has fully opened the Wide Field Camera archives and future acquisitions of its GF 1 and
121 6 satellites for the IPS. These 800km swath 16m data, in conjunction with existing open data,
122 will significantly increase the temporal revisit of traditional agricultural scale time series appli-
123 cations.
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- 125 12. Linking in-situ and satellite observation data on physical, chemical and biological observations enables us
126 to tackle environmental issues of different scales from local, national to regional. Accessibility and in-
127 teroperability of various in-situ observation data from different themes on our environment, and establish-
128 ing platforms for integration, are critical to achieving GEO's aims.
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- 130 **Connecting with users and capacity building:**
- 131 13. Regional efforts deliver tangible results in promoting and accelerating better use of Earth Observation:
132 geographical and cultural proximity, opportunities for co-design and co-production, access to regional
133 funding mechanism to name a few. AOGEO will promote further communication with GEO and with the
134 other regional GEOs.
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- 136 14. To effectively link our effort to GEO's global efforts and to connect the entire GEO community to end us-
137 ers within Asia Oceania we have directly connected 9 of our 12 tasks to existing global programs and have
138 begun holding co-design workshops with end user communities such as the EO for Pacific Workshop held
139 in Brisbane October 2018.
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- 141 15. AOGEO shall enhance user engagement in the process of scaling-up IPS projects by identifying and re-
142 viewing the user needs in our region. Capacity development will be key for the task groups in the
143 2020-2022 GEO Work Programme and contribute to accelerate the transformation from data to knowledge
144 by conveying expertise, datasets and information services.
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- 146 16. The 3rd AOGEO Workshop will be held in Changzhou, China in April/May and the 13th AOGEO Sympo-
147 sium in Tokyo, Japan in September 2020.
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Background on AOGEO

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1. Asia Oceania holds two thirds of the world’s population, all land types, all levels of development and is the most vulnerable region in the world to natural disasters. Earth Observation is a key technology to understanding and acting on sustainable development, climate change and disasters. AOGEO brings together just under half of the global economy, the fastest growing space agencies on Earth and experts from the top of Mt Everest to the smallest islands in the Pacific. AOGEO focuses on the three areas of GEO’s Engagement Strategy, including 2030 Agenda for Sustainable Development (SDGs), Paris Climate Agreement within the UNFCCC (Paris Agreement), and Sendai Framework for Disaster Risk Reduction (Sendai Framework) by implementing three activity types: Regional Application Activities, Foundational Tasks and Integrated Priority Studies.
 - 1.1. Regional Application Activities: AOGEO will enhance Earth observation capacity and their applications through 1) Asian Water Cycle Initiative (AWCI); 2) Asia-Pacific Biodiversity Observation Network (AP-BON); 3) GEO Carbon and GHG Initiative (GEO-C); 4) Oceans, Coasts, and Islands (OCI); 5) Agriculture and Food Security (AsiaRiCE); 6) Drought monitoring and evaluation; 7) Environmental Monitoring and Protection (EMP); 8) Disaster Recovery (DR); and 9) Himalayan GEOSS.
 - 1.2. Foundational Tasks: To promote regional coordination, AOGEO will implement selected, often enabling, activities including 1) Data Sharing; 2) Data Platforms and Cubes; and 3) User Engagement and Communication.
 - 1.3. Integrated Priority Studies: To exemplify the cross-cutting and inter-related nature of various Societal Benefit Areas (SBAs), AOGEO recognizes that, with respect to SDGs, Paris Agreement and Sendai Framework, special efforts for integrating Earth observations and harmonizing research and operational activities are needed in some specific areas including 1) Mekong River Basin; 2) Small Island States; and 3) Himalayan Mountains.