

# 第11回GEOSSアジア太平洋シンポジウム 開催結果



2018年12月20日

文部科学省 研究開発局 環境エネルギー課



文部科学省

MINISTRY OF EDUCATION,  
CULTURE, SPORTS,  
SCIENCE AND TECHNOLOGY-JAPAN

# 第11回アジア太平洋シンポジウム (その1)

1. 期 間： 平成30年10月24日(水)～10月26日(金)
2. 場 所： 京都テルサ
3. テ ー マ：“Strengthening Regional Cooperation through AOGEOSS for the SDGs, Paris Agreement and Sendai Framework”
4. 主 催： GEO事務局、文部科学省
5. 出席者： 171名  
日本、豪州、カンボジア、カナダ、中国、フランス、インド、インドネシア、韓国、モンゴル、ネパール、ニュージーランド、ロシア、スペイン、スリランカ(Palitha Range Bandara (パリタ・ランゲ・バンダラ) 灌漑・水資源管理省国務大臣を含む)、スイス、タイ、フィリピン、米国、英国、ベトナム他21か国及びアジア太平洋地球変動研究ネットワーク(APN)、他



## 1. 概 要：

### (1) 基調講演

- ・ 松尾隆 アジア開発銀行駐日代表事務所駐日代表より、「SDGs、パリ協定、仙台防災枠組とアジア開発銀行の取組」をテーマとした講演が行われた。

### (2) 新興ケーススタディ：メコン川プロジェクト

〔登壇者〕 小池俊雄氏 (ICHARM)、Yongseung Kim氏 (韓国航空宇宙研究院(KARI))  
〔概要〕

- ・ メコン川プロジェクトの概要説明、及び今後の見通しについての説明があった。
- ・ 各タスクグループの積極的な参加、及びAOGEOSS内の連携が呼びかけられた。

### (3) 特別セッション1：分野横断的課題について

〔テーマ〕「データ共有とAO-Data Cube／ユーザーエンゲージメントとユーザーコミュニケーション」

〔モデレータ〕 David Hudson氏 (Geoscience Australia)

〔登壇者〕 Gilberto Câmara氏 (GEO事務局)、Qinhuo Liu氏 (RADI)、小池俊雄氏 (ICHARM)、Andy Steven氏 (CSIRO)

〔概要〕

- ・ Hudson氏より、AOGEOSSのデータ共有について報告があった。
- ・ 小池氏より、ユーザーエンゲージメントとユーザーコミュニケーションに関する報告とともに、日本が独自に取り組むDIASの事例が紹介された。
- ・ 登壇者は各活動の紹介を行い、アジア・オセアニア地域のキャパシティビルディングが重要であるという意見も述べられた。
- ・ Câmara氏より、AOGEOSSイニシアティブの充実した活動を評価するとともに、データの公開についても期待する旨が述べられた。

### (4) 分科会

- ・ 「GEOS Asia Pacific Water Cycle Initiative (TG1)」「生物多様性観測網ネットワーク(TG2)」「GEO炭素・GHGイニシアティブ(TG3)」、「海洋・沿岸・島嶼(TG4)」、「農業と食料安全保障(TG5)」「環境モニタリングと評価(TG7)」の各分科会が開催され、TG7を除き、我が国の研究者が分科会共同議長を務め議論を牽引した。また、TG1とTG5は3日目に合同セッションを開催した。
- ・ 議論結果は「京都宣言2018」に反映された。



# 第11回アジア太平洋シンポジウム（その2）



## (5) 成果志向GEOSSに向けた戦略

- Gilberto Câmara GEO事務局長による講演が行われた。
- 世界は中国、インド、韓国、日本等が保有するデータを必要としている旨が述べられ、データを他国のために活用するよう呼びかけがあった。
- Google Earth Engineのように、誰でも地球観測データを利用できるようなプラットフォームが必要とされていることについても言及があった。

## (6) 特別セッション2：分科会活動の総括

〔モデレータ〕 村岡 裕由氏 (岐阜大学)

〔登壇者〕

- TG1共同議長：Richard Lawford氏 (Morgan State University)
- TG2共同議長：矢原 徹一氏 (九州大学)
- TG3共同議長：三枝 信子氏 (NIES地球環境センター)
- TG4共同議長：安藤 健太郎氏 (JAMSTEC)
- TG5共同議長：Thuy Le Toan氏 (CNES-CNRS-Université Paul Sabatier)
- TG7共同議長：Qinhuo Liu氏 (RADI)

〔概要〕

- 村岡氏より、以下の3つのテーマについて問いかけがあった。
  - ① タスクグループが優先連携3分野に貢献するための優良事例や新たな取組はあるか
  - ② タスクグループ間の連携によって、どのような成果の創出が期待できるか
  - ③ 国、地域を越えた地球観測のマルチプラットフォームや能力開発に向けて、どのような課題、取組、優先事項が考えられるか
- 登壇者より、政府やNGO等との地域に根ざした協力や、国際会議等のグローバルに意見を収集する事例が紹介された。
- 議論を通じて、ステークホルダーとの連携や分野を超えた協力が必要であるという共通認識が得られた。



## (7) 「京都宣言2018」の採択

- 次回シンポジウムに向けて、以下について合意する「京都宣言2018」を採択した。
  - ◇ 優先連携3分野（SDGs、パリ協定、仙台防災枠組）及びメコン川流域をターゲットとした新興ケーススタディについて、各タスクグループの成果や今後取るべき行動
  - ◇ 分野横断的事項に関して、ライセンスデータのオープン化、基本的な前処理済みのデータ（Analysis Ready Data: ARD）の配布、能力開発や知識共有に向けて更なる努力を行うこと



## (8) 次回シンポジウムの開催アナウンス

- 第12回GEOSSアジア太平洋シンポジウムは、2019年にオーストラリア（キャンベラ）にて開催予定。

## Kyoto Statement 2018

Kyoto, Japan  
October 26<sup>th</sup>, 2018

The 11<sup>th</sup> Global Earth Observation System of Systems Asia Pacific Symposium (GEOSS AP) was held in Kyoto from 24<sup>th</sup> to 26<sup>th</sup> October 2018, by the Group on Earth Observations (GEO) and Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT). The Symposium, attended by 171 participants including H.E. Mr. Palitha Range Bandara, State Minister of Irrigation and Water Resources and Disaster Management of Sri Lanka. The Symposium addressed the theme of "Strengthening Regional Cooperation through AOGEOSS for the SDGs, Paris Agreement and Sendai Framework". The Symposium plays a significant role in sharing experiences and find solutions to overcome challenges under the activities of the Asia Oceania GEOSS (AOGEOSS) initiative as a fundamental piece of regional infrastructure and an overarching vision for other EO initiatives in the Asia Oceania region.

A keynote presentation was delivered by the Asian Development Bank, and was followed by the introduction of the AOGEOSS Case Study: Mekong region then a panel session on cross cutting issues including data sharing, data platforms and user engagement. The six breakout task group sessions included GEOSS Asian Water Cycle Initiative (AWCI), Asia-Pacific Biodiversity Observation Network (APBON), GEO Carbon and GHG Initiative (GEO-C), Oceans, Coasts, and Islands (OCI), AsiaRiCE and Environmental Monitoring and Protection (EMP).

Each task group focused on developing a clear work program for 2019 directly delivering on GEO's priority areas.

The Participants agreed to the following outcomes and resolved to take the following actions toward the next Symposium.

### **(1) 2030 Agenda for Sustainable Development:**

It is critical to end poverty and hunger, achieve gender equality, and make societies and economies resilient to water-related disasters in both urban and rural areas. AWCI launches 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. AWCI promotes initiative that will address targets in SDG 6 on Water use efficiency and Integrated Water Resources Management as well as SDGs related to Poverty, Food Security and Life on Land.

APBON discussed 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. In-situ observations and their emerging knowledge will address these issues by taking consideration of the challenges in balancing our natural systems and societal systems. APBON also identified the importance of long-term monitoring of terrestrial, freshwater, coasts and marine ecosystems to produce the data and knowledge for sound decision making. Tackling the challenges with regard to climate change needs for cross-disciplinary activities including water resources, carbon management, food production, and also with various platforms of Earth Observations (EO).

In relation to SDG14, OCI will promote better access to marine data through: interoperability of data such as catalogues of state owned-data; standardisation of in situ and satellite data through the development and application of standards including Analysis Ready Data (ARD), that provide confidence and consistency, and better validate satellite based marine and coastal products by applying in-situ observation for calibration, validation and algorithm processing. OCI will continue to build upon its user-engagement activities with Oceania states to provide capacity building and training, develop regionally-specific best-practice EO methods and products that are useful to these communities in addressing climate, environment and livelihood issues.

AsiaRiCE directly addresses the issues of SDG 1, 2, 3, 6, 10, 13, 15 and 17 through better agri-food policy implementation. Compiled agromet information from various EO systems in Japan (JAXA/JASMIN), India (ISRO/MOSDAC) and other countries in AsiaRiCE under GEOGLAM. AsiaRiCE will greatly contribute to global and regional food security, by improving the outlook of crop production, precision agriculture, development of decision-support systems and early warning systems for biotic and abiotic stresses, in cooperation with the ASEAN Food Security Information System (AFSIS).

EMP directly focuses on SDG 15, also investigates ecosystem responses to natural disasters and climate change closely related to SDG 11, 13 and 17. By integrating multiple source EO data, EMP will monitor and assess terrestrial ecological and atmospheric environments, to generate annual policy relevant reports to support national governments and international organizations to make evidence-based decisions for environmental protection. EMP will provide quantitative remote sensing products for sharing and validation to all AO partners to strengthen cooperation.

### **(2) Paris climate agreement within the UNFCCC:**

AWCI accelerates regional coordination to build capacity for identifying, monitoring and predicting the changing probability of water-related disasters and their associated risks. It will develop user-friendly analysis tools and engage all stakeholders in climate change adaptation planning and implementation at the national scale, and fill the gap between adaptation and mitigation by choosing options which are beneficial to mitigation.

GEO-C aims to support the evaluation of the effectiveness of climate change measures, and to provide measurement-based knowledge of atmospheric greenhouse gas (GHG) concentration in support of the evaluation and improvements emission inventories. Separation of natural and anthropogenic source and sink estimations is a key scientific focus. Large uncertainty remains in global or regional source and sink estimations for carbon dioxide. It is urgently needed to harmonize the increasing number of platforms for monitoring GHGs in Asia–Oceania, and to reduce uncertainties in their source and sink estimations. For example, methane emission from agricultural and industrial activities in Asia. Relevant institutions and agencies for GHG observation will cooperate to develop and improve up-to-date analysis systems, using remote-sensing and in-situ observations and to provide the data and knowledge to stakeholders in support of the Global Stocktake Process under the Paris Agreement.

Methane is also a key component of greenhouse gas, and the lowland rice field is one of the major sources of methane emission being measured by AsiaRiCE for optimization and minimization of water use. AsiaRiCE hope to reduce methane emissions without reducing the productivity of rice production in the AO region. AsiaRiCE also not the critical partnership required with the CEOS community.

As vegetation ecosystem is an important carbon sink, EMP is developing products related to vegetation ecosystem status and variation monitoring. The long time series of quantitative remote sensing products, including the vegetation phenology, Leaf Area Index, Fractional Vegetation Cover, Biomass and Net/Gross Primary Productivity, are used to study the climate change and the ecological effect and feedback of the ecosystem to the GHG, such as the carbon dioxide.

### **(3) Sendai Framework for Disaster Risk Reduction:**

AWCI facilitates the implementation of Platforms on Water Resilience and Disasters to promote the four priorities for action of the Sendai Framework. AWCI provides usable and actionable information on thematic activities including preparedness and mitigation. AWCI archives disaster damage data and maintains statistics for encouraging investment for water-related disaster risk reduction.

Integrated climate models with EO data and information is critical for improving climate resilience. For risk management of water-related disasters, it is important to understand the impact of drought and flood on agri-

culture, which can be estimated by the agromet information and the monitoring of inundated area based on EO data in the activities of AsiaRiCE. This task is closely linked with SDG 13.

**(4) Emerging Case Study for Mekong Region:**

In 2018, AOGEOSS committed each Task Group to focus their knowledge to overcome the specific challenges in the Mekong region.

APBON will provide knowledge about biodiversity and ecosystem services, particularly on the impacts of climate and land use changes and hydropower dam construction. APBON will focus on fresh water biodiversity by intensive field research including direct fish sampling, environmental DNA, and market survey. Existing initiatives on the integration of climate change scenario impacts on the river basin ecosystem will serve as a platform for collaborations and inform effective conservation measures.

OCI will focus on the Mekong Delta and coastal bay to (a) develop algorithms for the retrieval of water quality parameters, and (b) work with other task groups to understand how changes in Mekong river discharge and land-use activities have affected coastal geomorphology, water quality, and fisheries productivity.

AsiaRiCE and Data Platforms will work with the Vietnam National Space Center and the Mekong River Commission to develop onsite and cloud based Open Data Cube deployments across the Mekong region with a focus on rice crop and forest monitoring in addition to hydrological response.

**(5) Cross cutting topics:**

The entire community accepts the critical requirement for data providers to distribute openly licensed data and ARD to power our platforms. Capacity building and platforms for knowledge sharing was highlighted as a key area to increase our efforts in 2019. Data sharing and data platforms/cubes committed to undertake an ambitious work plan in 2019 related to the development of ARD, roll out of the Asia Oceania Data Hub, capacity building, integration of systems in our region and operational deployment of systems for AOGEOSS's starting with the Mekong region, expanding into our other priority regions (Himalayas and Oceania) and in the medium term covering the entire Asia-Oceania region.

The Participants resolve to reconvene at the 12th GEOSS-AP Symposium to be held in Canberra, Australia in 2019.

## Mapping AOGEOSS Initiative TG Activities with GEO Priorities

GEO Priorities		Cross-Cutting Areas	TG1	TG2	TG3	TG4	TG5	TG6	TG7	TG10	TG11	TG12
SDGs	1.NO POVERTY		3	3	0	0	3	1	0	1	1	1
	2.ZERO HUNGER		3	3	0	0	3	1	0	1	1	2
	3.GOOD HEALTH AND WELL-BEING		1	3	1	1	2	1	0	1	1	1
	4.QUALITY EDUCATION		1	2	2	2	0	1	0	0	0	1
	5.GENDER EQUALITY		2	1	0	0	0	1	0	1	1	2
	6.CLEAN WATER AND SANITATION		3	3	2	1	2	1	1	2	2	3
	7.AFFORDABLE AND CLEAN ENERGY		2	3	2	0	1	1	1	1	1	1
	8.DECENT WORK AND ECONOMIC GROUTH		1	2	1	1	3	1	0	1	1	1
	9.INDUSTRY, INNOVATION AND INFRASTRUCTURE		2	1	1	0	2	1	0	1	1	1
	10.REDUCED INEQUALITIES		1	2	0	0	2	1	0	1	1	1
	11.SUSTAINABLE CITIES AND COMMUNITIES		3	3	2	1	0	1	1	1	1	3
	12.RESPONSIBLE CONSUMPTION AND PRODUCTION		1	3	0	1	0	1	0	1	1	1
	13.CLIMATE ACTION		3	3	3	3	3	1	2	1	1	3
	14.LIFE BELOW WATER		2	3	2	3	0	1	0	1	1	1
	15.LIFE ON LAND		3	3	2	1	3	1	3	1	1	2
	16.PEACE, JUSTICE AND STRONG INSTITUTIONS		1	1	0	0	0	1	0	0	0	1
	17.PARTNERSHIP FOR THE GOALS		3	3	2	2	3	1	2	1	1	3
Paris Agreement	Adaptation		3	3	2	1	3	1	0	1	1	2
	Loss & Damage		3	3	1	1	0	1	0	1	1	2
	Capacity Development/Technology Transfer		3	3	2	2	0	2	2	2	2	3
	National Reporting/Global Stocktake		0	2	3	2	0	1	1	2	2	1
	Mitigation		2	3	3	1	0	1	0	1	1	1
Sendai Framework	Understanding disaster risk		3	3	3	1	0	2	0	2	2	2
	Strengthening disaster risk governance to manage disaster risk		3	3	0	1	0	2	0	1	1	2
	Investing in disaster risk reduction for resilience		3	3	0	1	0	1	0	2	2	2
	Enhancing disaster preparedness for effective response, and to "Build Back Better" in recovery, rehabilitation and reconstruction		3	3	0	0	0	1	0	2	2	2
	Data Sharing Infrastructure		3	3	3	3	3	2	2	3	3	3
	User Engagement and Communication		3	3	2	3	3	2	2	3	3	3
<b>Total:</b>			<b>64</b>	<b>74</b>	<b>39</b>	<b>32</b>	<b>36</b>	<b>33</b>	<b>17</b>	<b>36</b>	<b>36</b>	<b>51</b>

\*Scoring: 0=Do nothing, 1=less active, 2=active, 3=very active