
WP23_25: Data Integration and Analysis System

1174,220

Basic Information

Full title of the Initiative

Data Integration and Analysis System

Short Title or Acronym

DIAS

Current category in the 2020-2022 GWP

GEO Initiative

Proposed category in the 2023-2025 GWP

GEO Initiative

Points of Contact

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Purpose

Objective

DIAS is committed to contributing to society's adaptation policies for various time scales of climate change and weather events.

Please provide a short description of the Initiative

DIAS(Data integration and analysis system) is committed to contributing to society's adaptation policies for various time scales of climate change and weather events. For long-term climate change of several decades, DIAS contributes to sustainable policy decision (disaster prevention, agriculture, ecosystem management, public health, etc.) at local government level by providing dataset and/or offering applications of downscaling model from the global climate change and predicting model of local meteorological phenomena (rainfall, temperature, radiation). DIAS will make application to solve the specific problem associated with climate change adaption. In this process, co-design and co-work activities with stakeholders and scientists are regarded as important. DIAS provide the opportunity of co-design and co-working as Information technology platform.

Why is this Initiative needed?

The importance of adaptation actions for climate change are increasing as well as the mitigation activities, and effective adaptation actions require the detailed information of climate change and social bases in local/regional scale. For these actions, the information platform, like DIAS, plays important role to integrate and analyze data to give adaptation solution/options for climate change.

What evidence is there to support this need?

In GEO activity, actions for climate change are one of the most important activities to utilizing earth observations. DIAS will contribute to make adaptation plan/applications based on earth observation data, climate projection data, and societal bases data, with scientific knowledges. In addition, technology transfer and capacity building will be archived in the developing processes the adaptation solutions through co-design/co-working of climate scientists, information technicians and stakeholders.

Is this Initiative open to participation by representatives of any GEO Member, Participating Organization, and GEO Associate?

Yes

Are you aware of other projects or initiatives at a global or regional scale (both in GEO and externally) that provide similar products or services?

No

Please identify the most important actual and/or intended outputs (products, services, etc.) produced by the Initiative, along with their intended and/or actual users. This list does not need to be comprehensive but should identify the outputs which are most used and are expected to have the greatest potential impact.

Output	Status	Users	Additional info
Flood forecasting and monitoring in Sri Lanka	Regularly updated	Government users	
Agriculture Drought Monitoring and Prediction System in Brazil	Regularly updated	Government users	
Malaria infection forecasting and warning system in South Africa	Regularly updated	Public	
S-uiPS (Sekine's urban inundation Prediction System)	In development	Public	
Developing water related disaster reduction platform to enhance resilience to climate change in West Africa	Regularly updated	Government users	
Mirage (Fata Morgana) Forecasting using DIAS	Regularly updated	Public	
Monitoring Marine Debris and Micro Plastics	In development	Public	

If needed, please provide additional comments or explanation to accompany the outputs table

- no answer given -

What kinds of decisions are the outputs of this Initiative primarily intended to support?

- no answer given -

How will these decisions benefit from the outputs of this Initiative?

- no answer given -

What kinds of impacts (for example, reduced loss of life, monetary savings, conservation of biodiversity, etc.) are anticipated as a result of the use of the outputs of this Initiative?

- no answer given -

Has this Initiative been asked to provide specific information (for example, reports, data, services) on an ongoing basis to an international convention, organization, or other multilateral body?

Yes

Please identify the requesting organization.

local governments in Asia-Oceania region, private company in distribution industry

Describe the nature of the request.

climate projection data in specific region, not only for mean trends but also for extreme events.

Please provide supporting documentation of the request.

- no supporting documents provided -

Technical Synopsis

Please provide a brief description of the methods used by the Initiative to produce its (actual or planned) outputs.

DIAS has been archived various observation data and climate projection and downscaling data and opened them to public. In addition, end-to-end applications based on information technologies is developed to provide climate change impacts and to make adaptation plans. In previous period, DIAS have been focused on the disaster prevention, and will extend various area of climate change adaption, such as agriculture/fisheries, ecological services and health and well-being.

If you would like to provide further details on the technical methods, you may upload one or more documents here.

- no supporting documents provided -

Are there any significant scientific or technical challenges that need to be resolved by the Initiative during the 2023-2025 period?

Yes

Please describe these challenges and the steps being taken to solve them.

The challenge in technical point of view is a increasing the size of dataset especially in the climate projection data. We will solve this problem by increasing computational power and making advanced tools/libraries. In scientific point of view, evaluation of uncertainty is big challenge, especially for communication with stakeholders. We should recognize importance of knowledge transfer and capacity building again.

Does the Initiative expect to complete any key new outputs, improvements to existing outputs, or improvements to the methods of producing outputs, in the 2023-2025 period?

Yes

Please describe these new outputs or improvements.

To develop new web applications with invited researchers in various area of climate change adaptations.

Please identify the key tasks that must be implemented to ensure delivery of these changes, with target dates for completion.

Task	Task description	Expected completion (month/year)
search and selection of new application	invite the proposal of new applications	1year
develop new application	developing new application with invited researchers and stakeholders	3year

Resources

Have all resources required to implement the Initiative's planned work in the 2023-2025 period been secured?

Please list all financial and non-financial contributions to the Initiative (other than in-kind, voluntary participation by individual contributors) having a value of more than USD 50,000.

Contributing Organization	GEO Status	Type of Resource	Value	Currency
MEXT (Ministry of Education, Culture, Sports, Science and Technology)	Japan	Financial	1 billion for 3years	Yen

Lessons from the 2020-2022 Period

Were all planned activities for the 2020-2022 period implemented as expected?

Yes

Were there any key challenges faced by the Initiative in the 2020-2022 period?

No

Were there any impacts or changes to operations due to COVID-19?

Yes

Please describe.

There are many difficulties in international collaboration, e.g., difficulties in on-site communication/discussion, hands-on seminars.

Please describe the key changes proposed for the 2023-2025 period, for example, new projects, new areas of focus, or adjustments to the activity governance.

In this period, JAMSTEC (Japan Agency for Marine-Earth Science and Technology) is in charge of planning and promotion instead of RESTEC (Remote Sensing Technology Center of Japan), and governing members are changed. Disaster prevention has been main focus in previous period, and new area associated with climate change adaptation is planinng.

Does the Initiative have outputs (products, services, etc.) available to users now, even if only on a pilot or testing basis?

Yes

Please provide any available information describing this usage (for example, user statistics, results of user testing) and/or feedback from users (for example, user comments, evaluations).

Various outputs from DIAS already achieved. Such as water related disaster prevention in various countries (West Africa, Sri Lanka and so on) as well as drought monitoring in Brazil based on water circulation research. Also the Malaria infection monitoring and warning system in South Africa. Detailed information is summarized in supporting document.

Please provide supporting documentation if available.

- no supporting documents provided -

Do you have evidence of any impacts that have occurred in part as a result of using the outputs of the Initiative (for example, policy decisions taken, behaviour changes by users, risks mitigated)?

Yes

Please provide examples, with evidence where available.

Application for Water disaster risk reduction, dam evaluation client management, application international cooperation Receive information on its input

Please provide supporting documentation if available.

- no supporting documents provided -

Have there been any internal or external reviews or evaluations of the Initiative since 2019?

Yes

Please provide a copy of the report, if available.

- no supporting documents provided -

Please indicate any GEO Work Programme activities with which you have ongoing collaboration.

- AOGEO - Asia-Oceania Group on Earth Observations
- GEO BON - GEO Biodiversity Observation Network
- GEOGLOWS - GEO Global Water Sustainability
- GEOSS Data, Information and Knowledge Resources - GEOSS Data, Information and Knowledge Resources

Please indicate any additional GEO Work Programme activities with which you would

like to establish new collaborations.

- C3S - Copernicus Climate Change Service
- BLUE-PLANET - Oceans and Society: Blue Planet

Stakeholder Engagement and Capacity Building

Are there specific countries or organizations that your Initiative would like to engage?

Yes

Please list these countries, regions or organizations.

local government in Asia-Oceania region
Private company for climate change adaptation

What are your plans to engage them?

Utilizing various communities such as AOGEO(Asia-Oceania Group on Earth Observations) activities for Asia-Oceania region. TCFD (Task Force on Climate-related Financial Disclosures) consortium for private company.
Holding international symposium, workshop to organizing potential users.

Does your Initiative engage users in the work of the Initiative (for example, consultation, testing, co-design)?

Yes

Please briefly describe the Initiative's approach to engaging users.

DIAS invite the proposal to develop new applications for co-design and co-working activities from local stakeholders as well as international ones.

Does the Initiative have a user engagement strategy or similar kind of document?

No

Are there categories of users that are not represented at this time, but you would like to engage?

Yes

Please list these user categories or regions.

Users, development of new application, providing new solution for example, financial sector of climate change adaptation

What are the plans for further engagement of users in the Initiative?

Holding international symposium, workshop to organizing potential users.
publication through web pages.

Does the Initiative have a documented capacity development strategy?

No

Please describe the approach to capacity development that is being implemented by the Initiative?

DIAS has an experience to hold online e-learning meeting, and spread know-how to other developers of applications. Fulfillment of online contents of describing applications and datasets have been planed.

Are there any commercial sector organizations participating in this Initiative?

Yes

Please list the commercial sector organizations.

Organization name	GEO Member/PO/...	Country in which the organization is based	City in which the organization is based
Nippon Koei		JAPAN	Tokyo
RESTEC		JAPAN	Tokyo

Are there opportunities for commercial sector uptake of the outputs of the Initiative?

Yes

Please describe these opportunities.

DIAS invite the private companies as a partner of developing applications, joint research activities.

Is there already commercial uptake occurring?

No

Are there opportunities for further commercial sector participation in the Initiative?

Yes

Please describe these opportunities.

Utilizing research outputs, computer systems, accessing data, etc.

Does the Initiative have a plan for commercial sector engagement?

Yes

Please describe this plan or upload the relevant document.

Not fixed the plan, but start communication with commercial sectors.

- no supporting documents provided -

Governance

Please describe the roles of each of the key leadership positions, as well as any team structures involved in day-to-day management.

The initiative is based on the MEXT as a funding agency, and JAMSTEC is in charge of planning and promotion, and management of the entire project. Application development support is mainly at the University of Tokyo, and is shared by Kyoto University, Kyushu University and the National Institute of Informatics (NII).

Waseda University and Kitami Institute of Technology are promoting the application development for utilizing climate/weather information for disaster prevention, and sightseeing.

Is there a steering committee or other governance bodies that advise the Initiative but are not involved in day-to-day management?

Yes

Please describe the roles of each body. If there are multiple governance bodies, please describe the relationships among them (such as through a governance structure diagram).

Progress of research and development, communication with users will be evaluated by experts committee which is organized by MEXT.

- no supporting documents provided -

What methods does the Initiative use to communicate with its participants?

- Email / e-newsletters
- Regular conference calls
- Website
- Regular events

Please describe the key risks that could delay or obstruct the completion of the planned activities and outputs of the Initiative, along with any actions taken to mitigate these risks.

Description of the hazard	Description of the possible impacts	Scale of impact	Likelihood of occurrence	Mitigation measures
lack of computer components	stop/reduce services	Severe	Not very likely	storage the replacement

What methods are used by the Initiative to monitor its effectiveness?

- Informal discussions with users / beneficiaries
- User or beneficiary surveys
- Website statistics
- Consultations or events
- Evaluations

Would the Initiative be interested in assistance from the GEO Secretariat for developing an impact plan?

No

How are the results of the monitoring and evaluation activities shared with participants and the wider GEO community?

DIAS report their activities on the events like symposium as well as by the websites.

Are any monitoring or evaluation activities required by funders/contributors?

Yes

Please describe and provide reports if available.

- no answer given -

- no supporting documents provided -

Participants

Please list the active individual participants in the Initiative

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Other information

Please provide any other comments or information that was not included in the previous sections, but you would like to appear in the Implementation Plan.

- no answer given -

- no supporting documents provided -

Co-Editor Management

List of co-editors for this initiative

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