**MoM CEOS Working Group Disasters Meeting #13 v2**

09 - 11 March 2020

1200 – 1500 UTC

Virtual Meeting: Cisco WebEx

[Meeting Presentations](http://ceos.org/meetings/wgdisasters-13/)

**Meeting Agenda**

**DAY 0 (Monday, 9 March) GEO/LEO/SAR Flood Pilot Side Meeting**

|  |  |  |
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| 1200 | Attendance/Background/Flood Interest | All |
| 1220 | Co-Lead Introductions  GEO/LEO Progress and Pilot Concept  Pilot Objectives  Pilot Deliverables | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |
| 1300 | Group Discussion | All |
| 1330 | CEOS Objectives (Alignment)  CEOS Agency Contributions to Pilot  EO Data Requirements  Expressions of Interest / Partners | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |
| 1410 | Group Discussion | All |
| 1500 | End Teleconference |  |

**DAY 1 (Tuesday, 10 March) WGDisasters-13 Teleconference**

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| 1200 | Attendance | All |
| 1205 | Introductory Remarks | David Green, NASA |
| 1210 | Telecon #26 MoM: Open Actions Review | Dave Borges, NASA |
| 1240 | CEOS 2020-2022 Work Plan: WGD Deliverables Review | David Green, NASA |
| 1255 | Landslide Pilot   * Status and Main Results * 2020 Planned Activities * Deliverables Review | Dalia Kirschbaum, NASA  Jean- Philippe Malet, UNISTRA  Jonathan Godt, USGS  Sigrid Roessner, GFZ Potsdam |
| 1315 | GEO/LEO/SAR Flood Pilot   * Pilot Participation * Pilot Proposal Review * Deliverables Review | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |
| 1325 | Group on Earth Observations (GEO)   * GEO Work Plan and CEOS Involvement * GEO DRR WG * Regional GEOs Integration | James Norris, GEO |
| 1350 | Geohazard Supersites and Natural Laboratories (GSNL)   * Results/Requests from Supersites * User Engagement * Vision for Future, New Supersites * Deliverables Review | Stefano Salvi, INGV |
| 1415 | GEO-DARMA   * Status of Regional Assessments * Project and Project Proposal Status * Deliverables Review | Ivan Petiteville, ESA  Andrew Eddy, Athena Global |
| 1435 | GEO Geodesy4Sendai Community Activity | Allison Craddock, NASA JPL |
| 1445 | GEO [EO4DRM Community Activity](https://www.earthobservations.org/documents/gwp20_22/EO4DRM.pdf)   * Implementation Plan Review | David Green, NASA  Pierric Ferrier, CNES |
| 1500 | End Teleconference |  |

**DAY 2 (Wednesday, 11 March) WGDisasters-13 Teleconference**

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| 1200 | Attendance | All |
| 1205 | Seismic Demonstrator   * Status and Main Results * 2020 Planned Activities * Update on User Engagement / Feedback * Deliverables Review | Philippe Bally, ESA  Dorella Papadopoulou, ARGANS |
| 1225 | Geohazards Lab   * Status and Main Results * Agreement with ESA to put Pleiades data on GEP (CNES) * Implementation on the Platform (ESA) * Deliverables Review | Philippe Bally, ESA  Dorella Papadopoulou, ARGANS  Pierric Ferrier, CNES |
| 1245 | Volcano Demonstrator   * Status and Main Results * Update on User Engagement * Deliverables Review | Mike Poland, USGS  Susi Ebmeier, Leeds |
| 1305 | Haiti Recovery Observatory   * RO Progress since last meeting * Legacy Planning and Wrap-Up * Deliverables Review | Helene de Boissezon, CNES  Andrew Eddy, Athena Global |
| 1325 | Generic Recovery Observatory   * Activities / Meetings Updates * 2020 Next Steps * Deliverables Review | Helene de Boissezon, CNES  Andrew Eddy, Athena Global |
| 1335 | ISRO (CEOS Chair 2020) Agency Priorities Presentation | Shantanu Bhatawdekar, ISRO  G Srinivasa Rao, ISRO |
| 1345 | Data Coordination Team (DCT) Report   * Pilot / Demonstrator Quotas * DCT Reporting Process | Pierric Ferrier, CNES |
| 1400 | International Charter / WGDisasters Cooperation Update   * WG Letter to Charter (1 October 2019) | Pierric Ferrier, CNES  Dorella Papadopoulou, ARGANS  David Hodgson, UKSA |
| 1415 | [CEOS DRM EO Strategy Document](https://docs.google.com/document/d/1oVlj-AeGoA-jmkfuByvde2K2OUcqUs2BsfRbSu6j9QQ/edit?usp=sharing)   * ToC Discussion * Timeline * Writing Responsibilities | David Green, NASA Pierric Ferrier, CNES |
| 1455 | Conclusions / AOB | David Green, NASA  All Participants |
| 1500 | End Meeting |  |

**DAY 0: GEO/LEO/SAR Flood Pilot Meeting**

*Participants*: David Green (NASA, WGDisasters Chair), Pierric Ferrier (CNES, WGDisasters Vice Chair), Dave Borges (NASA, WGDisasters Secretariat), Mitch Goldberg (NOAA), Andrew Molthan (NASA), David Hodgson (UKSA), Dorella Papadopoulou (ARGANS), Shantanu Bhatawdekar (ISRO), G Srinivasa Rao (ISRO), Issaak Parcharidis (Harokopio University of Athens), Minos Fylaktos (Harokopio University of Athens), Kristy Tiampo (University of Colorado), Simona Zoffoli (ASI), Guy Schumann (RSS), James Norris (GEO Secretariat), Patrick Matgen (LIST), Weiyuan Yao (CAS), Ziyang Li (AOE CAS), Helene de Boissezon (CNES), Alvaro Soldano (CONAE), Marcelo Uriburu Quirno (CONAE), Ricardo Quiroga (NASA), Sang-Ho Yun (NASA), Frank Webb (NASA), Dalia Kirschbaum (NASA), Emmalina Glinkis (Cloud to Street), Ivan Petiteville (ESA), Pukar Amatya (NASA), Judy Lai-Norling (NASA)

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| 1220 | Co-Lead Introductions  GEO/LEO Progress and Pilot Concept  Pilot Objectives  Pilot Deliverables | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |
| 1300 | Group Discussion | All |

Pierric Ferrier (CNES) commented that it was too early to elaborate on potential CNES agency contributions. Helene de Boissezon (CNES) noted, from a Recovery Observatory perspective, they know they are going to propose continuation as a Demonstrator, and major disaster events worldwide are often flood or hydromet related. So yes, there could be interest in recovery activities following major flood events. In addition, primary CNES teams devoted to these topics work in partnership with NASA on GPM. Will come back to the Pilot Team with feedback.

Dave Hodgson (UKSA) noted that UKSA is certainly interested, and that UKSA flood risk staff with Met office, flood defenses, infrastructure-focused teams would be useful components. Requested tangible activities list he could sharing internally with UKSA to inform potential contributions.

Dorella Papadopoulou (ARGANS) indicated that ESA would be most interested in the Platform solutions aspect of the Pilot. Copernicus S1 is already open and available for the Pilot. Suggested the Pilot team not start with a very large user/partner group as it would be more difficult to manage – initial scale should be focused.

Guy Schumann (RSS) commented that it would be good to strategically pick areas of interest – perhaps one geographical area with known, abundant data sources, and a stress case, where impacts are significant but data sources are fewer.

Marcelo Quirno (CONAE) proposed a study location (2 river basins) in Argentina, shared with Bolivia and Paraguay that are very vulnerable. Interested and considers this Pilot a good opportunity to test new approaches. He also, on behalf of CONAE, offered to supply SAOCOM data access for Pilot activities.

Ricardo Quiroga (NASA) also noted the importance of SAR data these regions due to persistent cloud cover.

David Green (NASA) highlighted that the Pilot Team needs to address the Platform issue. Within AmeriGEO, there is the AmeriGEO Platform, with the possibility to integrate efforts. He encouraged product/data sharing good practice examples.

Shantanu Bhatawdekar and G Srinivasa Rao (ISRO) acknowledged that ISRO has GEO and LEO constellations, but current flood efforts are only utilizing LEO data sources at present. Interested in contributing to the Pilot to explore integration of GEO and SAR data sources.

Ivan Petiteville (ESA) highlighted the important need to increase frequency of observations, and that while difficult, combining disparate data from different Agencies will address this need moving forward.

Mitch Goldberg (NOAA) confirmed that the Flood Pilot would determine a number of case studies, based on relevance and importance to involved Agencies, that will address difficulties of data assimilation, making the data more accessible, and ultimately demonstrate tangible value to contributing Agencies and stakeholders/end users.

Simona Zoffoli (ASI) recommended close coordination with CEOS WGCapD. ASI is also very interested in the integration of COSMO-SkyMed with Sentinel data in terms of flood mapping. Partnership efforts between ASI and Italian civil protection agencies might be relevant.

Dorella Papadopoulou (ARGANS) commented that the GEP might be an appropriate environment to host Flood Pilot activities, rather than other thematic TEPs such as the Hydro TEP. GEP has existing services for flood detection and there is intent to integrate a new service, which generates binary flood maps.

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| --- | --- | --- |
| 1330 | CEOS Objectives (Alignment)  CEOS Agency Contributions to Pilot  EO Data Requirements  Expressions of Interest / Partners | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |
| 1410 | Group Discussion | All |

Weiyuan Yao (CAS) shared a presentation highlighting CAS interest in the Flood Pilot. China is one of the most heavily affected regions globally in terms of flood, mainly occurring in East China in several primary river basins with flat elevation. The Yangtze and Pearl River basins were identified as primary areas of interest. Primary objectives included identification and inventory of Chinese satellite data sources that could contribute to flood mapping and exploration of interoperability/feasibility.

Issaak Parcharidis (Harokopio) will share a Greece/Balkans transboundary presentation and case study with the Pilot Team, identifying an area of interest, considering many rivers in the Balkans pass through many countries.

James Norris (GEO) highlighted that the 2020-2022 GEO Work Programme contains a wide variety of water related activities (GEO-DARMA, GEOGLOWS, GEOGLAM, GFRM, GloFAS, Blue Planet) and in this water domain, there quite a lot of activity. He encouraged the Pilot Team to confer with relevant organizations and GEO project lead, which he can supply. David Green asked about GSNL Supersites, and if the concept of Flood Supersites should be explored. James noted that the vast majority of GEO projects focus on satellite data, with a general lack of integrated in situ data sources.

Kristy Tiampo (Colorado) emphasized that the focus areas need good ground truth data, in terms of quantifying feedback from algorithms used.

Mitch Goldberg (NOAA) agreed, and stated that in terms of case studies – vulnerability, national perspectives/interest will be Pilot criteria.

Sang-Ho Yun (NASA JPL) reminded the group that some people heavily rely on assumptions, like when you compare/combine multiple sensors, that timing would be identical. This is often not the case. It is more challenging than expected to find synchronized observations for specific events. One example is Hurricanes Matthew and Harvey where pre-event coordination with NOAA (providing them upcoming satellite overpass/acquisition schedules) allowed NOAA to acquire temporally aligned high-resolution optical data.

David Green (NASA) asked ISRO and CONAE about in situ data availability in their proposed AOIs. Both representatives confirmed they have some sparse hydromet in situ networks in the identified river basins, as well as LULC and other socioeconomic data.

Mitch Goldberg (NOAA) acknowledged that the Pilot Co-Leads need to create metrics that define what makes a good case study. They also need to identify where volunteered data will be collected, and that this Pilot activity is intended to learn and develop new capabilities through collaboration, and after a successful Pilot, then operationalization in the form of a Demonstrator would be the next step, to ensure what the Team learns is implemented and adds value.

**DAY 1: WGDisasters-13 Teleconference**

*Participants:* David Green (NASA, WGDisasters Chair), Pierric Ferrier (CNES, WGDisasters Vice Chair), Dave Borges (NASA, WGDisasters Secretariat), Kerry Sawyer (NOAA, CEOS CEO), Ellen Rameriz (NOAA), Andrew Eddy (Athena Global), David Hodgson (UKSA), Dorella Papadopoulou (ARGANS), Shantanu Bhatawdekar (ISRO), G Srinivasa Rao (ISRO), Issaak Parcharidis (Harokopio University of Athens), Minos Fylaktos (Harokopio University of Athens), Weiyuan Yao (CAS), Ziyang Li (AOE CAS), Helene de Boissezon (CNES), Alvaro Soldano (CONAE), Marcelo Uriburu Quirno (CONAE), Fernando Echavarria (U.S. State Dept), Ian Johnson (NASA), Ivan Petiteville (ESA), James Norris (GEO Secretariat), Jens Danzeglocke (DLR), Ricardo Quiroga (NASA), Simona Zoffoli (ASI), Antonio Montuori (ASI), Andrey Kuklin (ROSCOSMOS), Alison Craddock (NASA JPL), Pukar Amatya (NASA), Mike Poland (USGS)

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| 1205 | Introductory Remarks | David Green, NASA |

David Green and Dave Borges (NASA) thanked the WG for their patience and flexibility in accommodating the late notice changes to WGDisasters-13 made necessary by the COVID-19 situation.

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| 1210 | Telecon #26 MoM: Open Actions Review | Dave Borges, NASA |

**Review of Minutes (WGD #12) and Open Actions [Dave Borges / All]**

**Open Actions:**

| # | Action | Actionee | Due | Status/ Comments |
| --- | --- | --- | --- | --- |
| M13/1 | GEO/LEO/SAR Flood Pilot: Confirm Pilot Team participants, based on interest expressed. Pilot Case Study Criteria specifics to be distributed to Pilot Team. | Andrew Molthan, Mitch Goldberg | T27 | Open |
| M13/2 | GSNL / DCT Dedicated Meeting to address outstanding actions.  Decisions required:  Renewal of support to Iceland Supersite  Renewal of support to Southern Andes Supersite  Renewal of support to Virunga Supersite (Quota increase of 100 images was requested after report was delivered)  Support to the China EQ Supersite  Support to the Kamchatka/Kuriles Supersite | Stefano, Pierric, David Green, Dave Borges, WGD | T27 | Open |
| M13/3 | Distribute latest CEOS ARD Strategy document and SAR Product Family Specification (PFS) document to Geohazards Lab Co-Leads and the entire WG. Identify if PFS development is relevant to Geohazards Lab activities. Provide feedback to CEOS ARD Strategy Team and CEOS SIT Chair. | Dave Borges, Dorella Papadopoulou | T27 | Open |
| M12/3 | Consolidate WG Activity membership lists, request membership lists from Activities that have not provided these.  Create a list of target user communities the WG works with by requesting Activity leads to share top five, or key engagement communities/stakeholders each Activity engages. | Dave Borges, Pilot/Demonstrator Leads | T27 | Open |
| M12/5 | Report on web statistics at each meeting | Dave Borges | Recurring; Each meeting | Open |
| M12/7 | Submit formal proposal to CNES to place Pleiades data on the GEP, and allow online processing services for GSNL.  Process to authorize GEP community users to access Pleiades data in the processing environment has been defined, based on authentication and authorization. Future telecon scheduled, and feedback will be provided to the WG. | Stefano Salvi, Philippe Bally | WGD14 | Open |
| M12/13 | Identify requirements for RSAT-1 and 2 data and compile. | Andrew Eddy (existing requirements from past actions); activity leads (new requirements not currently listed in actions); liaise with Yves Crevier | T27 | Open |
| M12/16 | Articulate the open review process (post Santorini, to possibly be reopened) as an activity. Dorella to form small group to address scope.  <http://esamultimedia.esa.int/docs/EarthObservation/Geohazards/esa-geo-hzrd-2012.pdf>  Dorella to recirculate final versions of five Google Docs on thematic hazards, requesting feedback on objectives and requirements. | Philippe Bally and Dorella Papadopoulou | T27 | Open |
| M12/18 | Complete EO4DRM Strategy document ([Google Doc Link](https://docs.google.com/document/d/1oVlj-AeGoA-jmkfuByvde2K2OUcqUs2BsfRbSu6j9QQ/edit?usp=sharing)) update based on ToC distributed by Andrew Eddy prior to T26. Complete assignment of writing sections Dave Borges to distribute monthly call schedule where progress will be reviewed. | EO strategy small reflection team | T27 | Open |
| M12/20 | Assess with NASA/USGS/NOAA/CSA the concept of combination of geodetic data and remote sensing data, models and tools for assessing displacements consistent with disaster risks associated with intensive movements including earthquakes and tsunami in the vicinity of exposed and vulnerable communities, lifelines and economies. Evaluate the interest of the participating agencies. Assessment report to be provided. | Catherine Proy CNES, NASA, USGS, NOAA, CSA | T27 | Open |
| M12/21 | Make presentation on SCO at next meeting in context of developing climate activity within the group – linkages to Coastal change effort within CEOS. | Helene de Boissezon | T27 | Open |
| M12/22 | Ask GEO-GLAM to brief next meeting on their successful ‘Data to Decisions’ process vision. | Dave Borges | WGD14 | Open |
| M11/7 | Circulate a data sheet on the NovaSAR data specs and information on processing tools. | David Hodgson, Amy Parker | As soon as available | Open |
| M11/9 | Articulate an informal guideline document to explain what each agency is concerned about for proposal drafters  Jens shared relevant emails with DCT. Current recommendation TBD.  Pierric to distribute three page document detailing useful guidelines and ask for WG comments. | DCT chair lead, representative from GSNL, from pilots | T27 | Open |
| M10/18 | Pilot and demonstrator leads to review website updates and provides links to further examples/documents, as well as more pictures to illustrate work.  Notes: Detailed products are available from the pilots/demonstrator, but not linked through the website. Need to show all the great work we are doing. Are there more LINKS in particular that can be added to website? | All pilot and demonstrator leads, Dave Borges | T27 | Open |
| M5/19 | Inform WGD Chair of relevant outreach, programmatic events, publications and all other activities. | WG Activity Leads | Monthly | Permanent Action |

**Closed Actions:**

| # | Action | Actionee | Due | Status/ Comments |
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| M12/1 | Clarification of ISRO incoming chair priorities related to disasters. Dave Borges to distribute SIT TW and Plenary ISRO presentations containing priorities outline. David Green to request specifics and determine ties to existing WGD activities. | Dave Borges, David Green | WGD13 | Closed |
| M12/2 | Determine ISRO designate for WGDisasters.  ISRO designate is Shantanu Bhatawdekar. | David Green | 2019 Q4 | Closed |
| M12/4 | Content to be shared at GEO Plenary through CEOS booth to be coordinated through Dave Borges  Note: RO & G-RO Content received and highlighted at GEO Plenary CEOS Booth. | Activity Leads | End September | Closed |
| M12/6 | Propose a solution to provide transparency for data requests within demonstrator and pilots to facilitate quota sharing.  Note: Going very well past two months, another data request sent to CNES, procedure was much easier. This action was specifically for CNES. Dorella, on CSM licence for all future requests, sent yesterday to ASI, 10 partners who have signed it, will save time; POC for ASI will be Dorella. Telecon in early Dec to finalize produce, and gain access to hosting data in GEP. Andrew: Cross-activity data requests should be transparent. Dorella can create list of all data requests of the Seismic Demonstrator to be posted to website. Pierric working to make data available on GEP, to ease data delivery.  Highlight specifics that have made things easier, document what has been achieved and significance. | Pierric Ferrier, Dorella Papadopoulou | WGD13 | Closed |
| M12/8 | Write to Simona to explain data issue in Virunga (copy Olivier de Witte). | J-P Malet, Dalia | WGD13 | Closed |
| M12/9 | Determine which volcanoes would be valuable for background mission of RSAT-2/RCM.  Yves Crevier worked with Susi to renew agreement under SOAR Program to extend the dates for data collection over approved volcano sites and extend the list of sites and add new users. Closed at recommendation of Andrew Eddy. | Susi Ebmeier and Yves Crevier | WGD13 or sooner if feasible | Closed |
| M12/10 | Establish linkages to GEO-DARMA-2 for Unistra. | Andrew Eddy, Anne Puissant | WGD13 | Closed |
| M12/11-1-2 | **Action WGD12/11-1**: Provide access to CSK StripMap tool to ASI in GEP (Philippe, Dorella, Francesca, Deodato). Tool is now available on GEP.  **Action WGD12/11-2**: ESA/GeoHazards Lab to consider the opportunity to develop CSK SpotLight tool in GEP, once any reader-related issues are resolved. (Philippe, Michael, Dorella). No such reader available on SNAP. | Francesca Cigna, Deodato Tapete, Michael Foumelis, Phillipe Baly, and Dorella Papadopoulou | WGD13 | Closed |
| M12/12 | Add a column to the Generic RO benefits table presented at WGD12, in order to address capacity components, and a timeline analysis to show when data is collected and when it fits into the PDNA and other processes. | Andrew Eddy and Helene de Boissezon | WGD13 | Closed |
| M12/14 | Identify interested agencies and points of contact for GNSS and link to GEO Community.  GEO link is Geodesy4Sendai Community Activity, led by Allison Craddock. | Catherine Proy, James Norris | WGD13 | Closed |
| M12/15 | Gather needs for PRISMA background mission – Simona to write to activity leads requesting input. Activity leads to respond with detailed needs.  WG Activity Leads encouraged to contact Simona if there are any needs for data. | Simona Zoffoli; Activity Leads. | WGD13 | Closed |
| M12/17 | Revise/update ToC based on comments and circulate to small reflection group. | Andrew Eddy | T26 | Closed |
| M12/19 | Develop concept of WGD Flood Pilot; establish proposal team with potential pilot partners; begin proposal preparation. In-Principle Proposal distributed prior to T26 for review. | David Green, Andrew Molthan, Dave Borges | WGD13 | Closed |
| M12/23 | Circulate Google doc list of upcoming events, conferences, meetings.  All relevant GEO DRR events/meetings now listed on GEO website.  <https://www.earthobservations.org/area.php?a=dr>  James Norris’ role as GEO DRR Lead has ended. GEO Secretariat seeking replacement. | James Norris | WGD13 | Closed |
| M12/24 | Circulate dates for March meeting, and identify location. | Dave Borges | End of October | Closed |
| M11/1 | List which outreach or programmatic events will be attended and provide PoCs.  Note: Dalia attending EGU, can arrange in person WGD meeting.  EGU will now be a remote attendance event. | All | WGD13 | Closed |
| M11/13 | Craft an action to raise the platforms issue within CEOS, specifically with regard to WGISS. | David Green and Haris Kontoes | T26 | Closed |
| M11/18 | Create a list of target user communities the WG works with – redefine who these communities are – for each pilot/demonstrator, identify the priority engagement activity for the coming year (key partners and events)  Note: Merged with M12/3. | David Borges with input from pilot and demonstrator leads | T26 | Closed |
| M11/19 | Facilitate linkages and increased engagement with Regional GEOs. Share list with WGD of Disasters lead elements/POCs within each Regional GEO (EuroGEO, AfriGEO, AOGEO, and AmeriGEO). WGD13 GEO presentation posted to WGDisasters meeting website. | James Norris, Dave Borges | WGD13 | Closed |
| M11/21 | Each agency should contact their SDG/Sendai PoC and share with the group their national approaches. | All National Space Agency reps | WGD 12 | Closed |
| M10/8 | Define two case studies for Data Cube application  Notes: any overlap between Columbia landslide pilot work and CEOS data cube activities. | Jean-Philippe Malet/Jonathan Godt for Columbia; Peeranan Towashiraporn/Andrew Eddy for Mekong | WGD12 | Closed |

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| 1255 | Landslide Pilot   * Status and Main Results * 2020 Planned Activities * Deliverables Review | Dalia Kirschbaum, NASA  Jean- Philippe Malet, UNISTRA  Jonathan Godt, USGS  Sigrid Roessner, GFZ Potsdam |

Landslide Pilot Team continuing to develop Demonstrator transition proposal, but a one-year extension was requested to ensure utilization of provided data.

Ivan Petiteville noted that most of the content in Dalia’s presentation was landslide events because of precipitation. Are there studies on landslides caused by deforestation and urban sprawl?

Dalia confirmed that there is some work included in the Pilot focused on deforestation, and they are looking to better capture these impacts and susceptibilities in the LHASA global model.

There is often complete changes of hill slope characteristics after wildfires and local models are quite developed, but the team is trying to build a global model based on this work. This a significant issue for areas in Australia and the Western United States.

There is currently little research to understand this type of large-scale change and associated impacts – working to address this moving forward with the modeling community.

Marcelo Quirno (CONAE) expressed interest in following up with Dalia to learn more about Landslide Pilot efforts, particularly successful efforts that have integrated in-situ data with space-based Earth observations.

Dalia confirmed she could share a paper addressing this topic with CONAE.

Dave Hodgson asked who in the UK is involved in the Pilot, and Dalia referred him to Jean-Philippe Malet, but the focus area would be Scotland.

Simona asked who are the final users of these operational landslide monitoring tools.

Jean-Philippe replied that primarily end users are highway/infrastructure companies and engineering bureaus.

Dalia added that they are attempting to leverage more public/private partnerships, because it increasing chances for long-term sustainability – building capacity of these groups and companies to carry on without the EO community at some point.

Pilot D1 is funded by World Bank.

Pilot D2 has no direct funding, but Deltares interested in funding and BGE Engineering interested in providing funding or in-kind support.

Pilot D3 is funded by research grants.

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| 1315 | GEO/LEO/SAR Flood Pilot   * Pilot Participation * Pilot Proposal Review * Deliverables Review | Andrew Molthan, NASA  Mitch Goldberg, NOAA  David Green, NASA |

Following Andrew Molthan’s review of Flood Pilot progress made the previous day, Helene commented that CNES technical teams are very interested in being part of the Pilot and some already work closely with NASA JPL ARIA team. CNES plans to add an AOI to the Pilot for consideration.

Marcelo noted that CONAE would like to better understand the dynamics of this Flood Pilot – there are some case studies proposed by individual Agencies, but are we expected to work in parallel and then try to consolidate in one document.

Dave Borges commented that data/methodology integration and fusion is the primary objective, so the individual case studies need to integrated, whether through a single exploitation platform, or some other means.

David Green agreed that determining the specific mechanisms for collaboration is very important, and should be one of the Pilot Team’s first priorities.

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| 1325 | Group on Earth Observations (GEO)   * GEO Work Plan and CEOS Involvement * GEO DRR WG * Regional GEOs Integration | James Norris, GEO |

NOTE: James Norris’ secondment on behalf of Ordnance Survey as GEO’s DRR Policy Lead from 2018-2020 has just ended. Steven Ramage, GEO Secretariat, will be filling this role until an official replacement is confirmed.

CEOS WGDisasters thanked James for his support in identifying linkages and ensuring DRR/DRM efforts were coordinated between CEOS WGDisasters and GEO.

Dave Borges asked the WG who currently is also active in their own regional GEO initiatives.

James commented that EuroGEO operates on a different format, and is largely represented by Copernicus EMS.

In addition, AOGEO has only just formally initiated a DRR Task Group, made official at GEO Plenary 2019 in Canberra.

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| 1350 | Geohazard Supersites and Natural Laboratories (GSNL)   * Results/Requests from Supersites * User Engagement * Vision for Future, New Supersites * Deliverables Review | Stefano Salvi, INGV |

Stefano Salvi was unable to attend WGD-13, and Mike Poland gave the GSNL presentation.

Simona commented that she did not know how to proceed with required decisions.

NOTE: Action M13/2 has been created to address this.

Simona also noted that she has previously shared some comments about the Southern Andes Supersite report. She finds the report incomplete and has asked for revisions – asking for more details/clarity on data sharing amounts. The report stated it is not useful to use CSK for volcano monitoring.

If there is no acknowledged benefit, she would like to confirm this and can stop acquisitions for this Supersite.

She also asked about feedback from those GSNL members who are using the GEP. No known feedback was shared.

Per Action M13/2, a dedicated meeting will be scheduled to address these and other GSNL decisions.

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| 1415 | GEO-DARMA   * Status of Regional Assessments * Project and Project Proposal Status * Deliverables Review | Ivan Petiteville, ESA  Andrew Eddy, Athena Global |

No comments followed the GEO-DARMA presentation. Please contact Ivan and Andrew with specific questions.

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| 1435 | GEO Geodesy4Sendai Community Activity | Allison Craddock, NASA JPL |

No comments or questions followed the Geodesy4Sendai presentation. Please contact Allison with specific questions.

**DAY 2: WGDisasters-13 Teleconference**

*Participants:* David Green (NASA, WGDisasters Chair), Pierric Ferrier (CNES, WGDisasters Vice Chair), Dave Borges (NASA, WGDisasters Secretariat), Kerry Sawyer (NOAA, CEOS CEO), Ellen Rameriz (NOAA), Andrew Eddy (Athena Global), David Hodgson (UKSA), Dorella Papadopoulou (ARGANS), Shantanu Bhatawdekar (ISRO), G Srinivasa Rao (ISRO), Issaak Parcharidis (Harokopio University of Athens), Minos Fylaktos (Harokopio University of Athens), Weiyuan Yao (CAS), Ziyang Li (AOE CAS), Helene de Boissezon (CNES), Alvaro Soldano (CONAE), Marcelo Uriburu Quirno (CONAE), Fernando Echavarria (U.S. State Dept), Ian Johnson (NASA), Ivan Petiteville (ESA), James Norris (GEO Secretariat), Jens Danzeglocke (DLR), Ricardo Quiroga (NASA), Simona Zoffoli (ASI), Antonio Montuori (ASI), Francesca Cigna (ASI), Deodato Tapete (ASI), Andrey Kuklin (ROSCOSMOS), Alison Craddock (NASA JPL), Pukar Amatya (NASA), Mike Poland (USGS), Francesco Barchetta (ESA)

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| 1205 | Seismic Demonstrator   * Status and Main Results * 2020 Planned Activities * Update on User Engagement / Feedback * Deliverables Review | Philippe Bally, ESA  Dorella Papadopoulou, ARGANS |

A Seismic Demonstrator presentation was not shared with the WG.

The Demonstrator team published a white paper on [Satellite mapping in response to the 2016 7.8 magnitude earthquake in Muisne, Ecuador](http://ceos.org/document_management/Working_Groups/WGDisasters/Pilots/Seismic/2016_earthquake_Muisne_Ecuador_white_paper.pdf) in December 2019.

The Demonstrator team also a [GEP for Capacity Building activity in Palu, Sulaweai, Indonesia](https://discuss.terradue.com/t/gep-for-capacity-building-in-palu-sulawesi-indonesia/858); article published February 2020.

ASI and CNES have held multiple telecons to try to refine procedures for data requests and data access. All data sharing activities are running smoothly.

The Demonstrator team is awaiting feedback from University of Leeds, who are working on five geographical areas using Pleiades data (Ecuador, Nepal, Kenya, Turkey, and Indonesia).

Kerry Sawyer (CEOS CEO) noted that Kenya is not a CEOS Agency.

Jens asked if the Seismic Demonstrator activities in Turkey are coordinated with the local GSNL Supersite.

Dorella will confirm with Stefano, but Stefano coordinates all requests for data in this region, so she thinks there is no duplication of effort/data use.

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| 1225 | Geohazards Lab   * Status and Main Results * Agreement with ESA to put Pleiades data on GEP (CNES) * Implementation on the Platform (ESA) * Deliverables Review | Philippe Bally, ESA  Dorella Papadopoulou, ARGANS  Pierric Ferrier, CNES |

Dorella reported on the Geohazards Lab status. The GEP is intended to be on-boarded on the Network of Resources (NoR). ES will provide further information on that in the next CEOS meeting. Latest CEOS ARD Strategy and technical Product Family Specification (PFS) developments were discussed, as well as their relevance to ongoing Geohazards Lab activities. Action M13/3 was created to address this discussion.

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| 1245 | Volcano Demonstrator   * Status and Main Results * Update on User Engagement * Deliverables Review | Mike Poland, USGS  Susi Ebmeier, Leeds |

High Level Outcomes:

Increased uptake of satellite imagery for volcano monitoring in target regions.

Increased global coverage of volcano deformation measurements.

Advances in ability to interpret deformation, degassing, thermal, and topographic change.

Specific Outputs:

Annual report to CEOS WGDisasters detailing progress.

Feedback from Demonstrator participants.

Publications in academic journals describing the scientific results.

Simona asked about the state of coordination with Volcano Supersites.

Mike responded that Demonstrator Leads are in close communication with GSNL Leads to ensure no volcanoes are being missed or that work is being duplicated.

Simona commented that Africa seems underrepresented, but that the Virunga Supersite report was quite good. Jens noted that DLR has some data sharing restrictions in certain portions of Africa, and Mike acknowledged they are doing an impressive amount of work, and any opportunities to merge efforts in a way that would add value will be examined.

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| 1305 | Haiti Recovery Observatory   * RO Progress since last meeting * Legacy Planning and Wrap-Up * Deliverables Review | Helene de Boissezon, CNES  Andrew Eddy, Athena Global |

Francesca Cigna updated about ASI’s research and capacity building activities. COSMO-SkyMed Spotlight SAR acquisitions over the three user-defined AOIs are progressing as tasked, and data are regularly uploaded in GEP. Jens asked whether there is need to continue acquiring TerraSAR-X Stripmap images over Haiti and, if so, until when. It was agreed to continue acquisitions up to the end of the CEOS RO, i.e. October 2020, to guarantee a complete temporal coverage along the whole project duration.

Following on from the technical mission undertaken in Haiti in May 2019, ASI, CNES and CNIGS have arranged for capacity building visit of 2 CNIGS staff members in ASI in Rome, to learn how to process Sentinel-1 data in GEP. The activity was planned to start in mid March up to early April 2020, however, due to COVID-19 emergency and travel restrictions, the activity has been put on hold. ASI researchers have also promoted abstract submissions to IGARSS 2020 and FRINGE 2020. ASI collaborated with ESA GEP and CNES RO Teams to disseminate more widely the research carried out with Sentinel-1 data by publishing a news-story in the ESA GEP Blog and with COSMO-SkyMed Spotlight data by publishing an update on the CEOS RO website.

Helene asked about any SAOCOM data availability as the RO transitions to a Demonstrator.

Simona confirmed that ASI access to SAOCOM data does not include Haiti.

Marcelo requested that Helene contact him directly to discuss SAOCOM data availability for this effort.

Andrew Eddy commented that there is a need to emphasize strong successes in terms of RO products being used in other projects. One example is the training that CNES organized on base land cover products as a building block for an environmental information system. In Haiti, this effort has been funded for the next several years by UNEP and possibly USAID. Products initially developed for Recovery are now contributing to ongoing Resilience efforts.

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| 1325 | Generic Recovery Observatory   * Activities / Meetings Updates * 2020 Next Steps * Deliverables Review | Helene de Boissezon, CNES  Andrew Eddy, Athena Global |

The Draft Generic Recovery Observatory Demonstrator document has been shared with WGDisasters.

Jens commented that it will be vital to provide clear expectations, timelines, objectives and a differentiation between data quotas and derived products as development of the Demonstrator effort continues.

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| 1335 | ISRO (CEOS Chair 2020) Agency Priorities Presentation | Shantanu Bhatawdekar, ISRO  G Srinivasa Rao, ISRO |

Shantanu and G Srinivasa highlighted a prototype initiative for online processing for use by the International Charter.

ISRO, as CEOS Chair, also would like to pursue the following initiatives:

Focus on Actual Constellation (AC) with regard to EO satellites – Gap analysis in priority areas, global studies.

Applications focus on SDGs for BIMSTEC Region – Vegetation, Water etc. through Data Cube Concepts.

Renewable energy assessment (Solar and Wind) from Space.

Explore new tools for disasters management – GEO-LEO based solutions.

ISRO also highlighted significant interest in wildfire, such as GEO component in studying moisture availability to understand progression of forest fires.

David Green noted that WGDisasters does not currently address wildfire as a topic/theme, but asked the WG to comment and share if any of the Agencies have interest in pursuing a wildfire theme within the WG.

Ivan confirmed that historically WGDisasters has never addressed this topic, but is something that with climate change is going to affect more and more people in increasingly severe ways. This is a topic that will likely interest many countries and the WG should further examine possibilities. For example, ESA has already received specific requests from Australia to get any information on fire risk, detection, burn scars, etc.

Marcelo also agreed with the relevance and importance of this topic and added that CONAE has supporting wildfire monitoring research for some years and could gather more details and share with the WG.

Dorella reminded the group the Copernicus EMS has a strong operational presence in terms of wildfires and that a new standalone WG Pilot may not be necessary.

Dave Borges concurred that within GEO there are significant efforts including the GEO Global Wildfire Information System (GWIS).

David Green said it would be worthwhile to identify the existing landscape, and if/how, WGD could add value in terms of space-based EO gaps.

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| 1345 | Data Coordination Team (DCT) Report   * Pilot / Demonstrator Quotas * DCT Reporting Process | Pierric Ferrier, CNES |

Pierric provided an updated report on data sharing quotas and usage. Action M13/2 was created to address the need for DCT to support a dedicated GSNL meeting address required decisions.

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| 1400 | International Charter / WGDisasters Cooperation Update   * WG Letter to Charter (1 October 2019) | Pierric Ferrier, CNES  Dorella Papadopoulou, ARGANS  David Hodgson, UKSA |

Pierric confirmed that the arrangement put in place through correspondence between WGD and the Charter is working and the Charter was glad to receive the WGD offer to provide value added services.

He has already contacted the Charter webmaster and most of the WGD Activity Leads already have access as observers to the Charter Operational System.

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| 1415 | [CEOS DRM EO Strategy Document](https://docs.google.com/document/d/1oVlj-AeGoA-jmkfuByvde2K2OUcqUs2BsfRbSu6j9QQ/edit?usp=sharing)   * ToC Discussion * Timeline * Writing Responsibilities | David Green, NASA Pierric Ferrier, CNES |

Current version of the WGD DRM EO Strategy draft document is available on Google Docs at the link above.

The WG agreed to attend regularly scheduled (monthly) meetings dedicated to this topic moving forward.

David Green stated that a final draft should be completed and shared at the CEOS SIT Technical Workshop in September 2020 for comment and at CEOS Plenary 2020 for decision.

Several section of the draft document outline still require WG members to volunteer as lead authors.

Dave Borges, according to Action M12/18, will be distributing monthly meeting invitations to facilitate ongoing coordination of the editing process.

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| 1455 | Conclusions / AOB | David Green, NASA  All Participants |

David Green and Pierric Ferrier thanked the entire Working Group for their dedication, flexibility and excellent contributions to the virtual WGDisasters-13 meeting.