International Workshop on Agricultural Monitoring Using Earth Observation (AM-SEO)

30 November – 1 December 2026

Venue: Space Applications Centre, ISRO, Ahmedabad

Summary of programme schedule

All indicated timings are in IST (UTC + 5.5 hours)

Summary of sessions & Detailed Programme for ISRO-ESA-GEOGLAM workshop

- Venue for Day 1 & 2 (afternoon): Yashpal Auditorium, SAC, Ahmedabad
- Venue for Day 2 (Forenoon): Yashpal Auditorium & Break-out sessions in different locations as mentioned in detailed progamme below; Special Session at room no. 4016

Timings of Day-1 (30 November 2026)	Sessions on Day-1	Timings of Day-2 (1 December 2026)	Sessions on Day-2
0815-0915 hrs	Arrival & Reporting of delegates	**0900-1245 hrs**	Involving Indian Research and Operations in GEOGLAM activities *1. GEOGLAM Introduction and Overview* of working groups *2. Discussion in each of 5 break-out sessions*
0930-1050 hrs	Meeting Opening, Strategic Perspectives & Institutional Priorities		
1115-1300 hrs	Operational Agricultural Monitoring	**1345-1515 hrs**	Short Talks & Report back/Summary of discussion from Day 1 & Day 2
1400-1515 hrs	Satellite Missions & Data synergies	**1540-1700 hrs**	Panel discussion on community priorities
1540-1700 hrs	Research to operations	**1700-1800 hrs**	Workshop summary & conclusion
1700-1830 hrs	Private Sector Capabilities in Agricultural Monitoring	Special session for Solar Induced Fluorescence (Invitees only): **0900-1245 hrs & afternoon** (between ESA & NRSC/ISRO) exclusively on FLEX CAL-VAL	
Visit to Posters during Breaks in Lobby of Yashpal Auditorium			

Summary of sessions of ISRO-ESA Technological Demonstration-cum-Tutorial

Venue: HRDD conference Hall, New Bopal Campus, SAC, Ahmedabad Time: 0930 – 1730 hrs

(Only for selected Participants)

Timings of Day-3 to Day-5 (2 - 4 December 2026)	
Day 3 *(2 December 2026)*	Technical Demonstrations and Tutorial by ESA Worldcereal
Day 4 *(3 December 2026)*	Technical Demonstrations and hands-on of ISRO tools for crop monitoring
Day 5 *(4 December 2026)*	Technical Demonstrations and tutorial by ESA Worldcereal (Contd.)

Detailed Programme Schedule

All indicated timings are in IST (UTC + 5.5 hours)

Day 1: 30 November 2026 **Venue: Yashpal Auditorium**

Arrival & reporting of delegates: 0815 – 0915 hours

Session name & duration	Elements for session	Name & Designation
Inviting dignitaries on Dais : (Director, SAC, Chief Guest, Deputy Director, EPSA, GEOGLAM, Co-Chair, Head, ESA Land Application Scientist, Programme Convenor)		
1.1 Opening/Inaugural **0930 – 1010 hrs.**	*Welcome*	
	Lighting the lamp & Prayer	All dignitaries on Dias
	Overview of workshop	Rashmi Sharma, Deputy Director, EPSA, SAC, ISRO
	Remarks	Zoltan Szantoi, Land Application Scientist & Agriculture Applications Lead, ESA
	Remarks	Christopher Owen Justice, GEOGLAM Co-chair
	Remarks	Narmdeshwar Lal, Principal Secretary, Bihar Agriculture Department
	Opening remarks & release of a coffee table book	Director, SAC
	Vote of thanks	Bimal K. Bhattacharya, Convenor
1.2 Strategic Perspectives & Institutional Priorities (10 minutes each) **1010 – 1050 hrs.** Co-Chairs: *Rashmi Sharma, DD, EPSA* *Koen DeVos, Vito* Rapporteurs: *Karun K Choudhary, NRSC*	*ISRO EO Programme*	J V Thomas, Director, EDPO, ISRO HQ
	ESA EO Programme	Zoltan Szantoi, ESA
	GEOGLAM objective and interests	Sven Gilliams, GEOGLAM program Director
High tea: 1050-1115 hrs		

Visits of Posters and interactions

Session name & duration	Elements for session	Name & Designation
1.3 Operational Agricultural Monitoring **1115 – 1300 hrs** Co-chairs: *Sven Gilliams, GEOGLAM* *J V Thomas, Director, EDPO* Rapporteurs: *Rojalin Tripathy*	*Plenary Talk : Shri Narmdeshwar Lal, IAS, Principal Secretary, Bihar Agriculture Department*	
	ISRO supported systems & future priorities (15 min)	Bimal K. Bhattacharya, Group Director, AESG, SAC
	ESA-supported systems & future priorities (15 min)	Zoltan Szantoi, Land Application Scientist, ESA
	Krishi-DSS & upcoming opportunities (15 min)	Soumya Bandyopadhyay, Director, MNCFC, MoAFW, GoI
	GEOGLAM Crop Monitors & Early Warning Systems (global perspective) (15 min)	Chris Justice, GEOGLAM co-chair
	Open Discussion (15 min)	

Lunch Break: 1300-1400 hrs

Session name & duration	Elements for session	Name & Designation
1.4 Satellite Missions & Data synergies **1400 – 1515 hrs** Co-chairs: *Nitant Dube, SAC* *M. R. Pandya, SAC* Rapporteurs: *Ayan Das*	*ISRO electro-optical & SAR payloads beneficial for agriculture (15 min)*	Sanjeev Mehta, Group Director, Sensor Development Area, SAC
	ESA Missions for Agriculture (15 min)	Timon Hummel, ESA
	The NASA-ISRO Synthetic Aperture Radar (NISAR) Mission and its Agricultural Applications (15 min)	Elodie Marcops, NASA (recorded)

	CNES missions (15 min)	Jean-Louis Roujean/Mark Irvine, Research Director, CESBIO
	Open Discussion (15 min) on data access, harmonization & interoperability	

Tea/Coffee Break: 1515 - 1540 hrs

Visits of Posters and interactions

Session name & duration	Elements for session	Name & Designation
1.5 Research to Operations **1540 - 1700 hrs** Co-chairs: *Bhaskar Nikam, ISRO HQ* *Sven Gilliams, GEOGLAM* Rapporteurs: *Pradesh Jena, NESAC*	*Multi-scale yield modelling from Space*	Rojalin Tripathy, Scientist-SG, SAC (10 min) Karun K. Choudhury, Head, CAD, NRSC (10 min)
	Precision Agriculture from Space & Drone	Rahul Nigam, Head, PACD, SAC (10 min) Rabi N Sahoo, Principal Scientist, IARI (10 min)
	Space-based SIF imaging in the perspective of ESA FLEX mission	Jinesh Ramachandran, FLEX Mission System Manager, ESA (15 min)
	ESA WorldCereal	Koen DeVos, R&D Remote Sensing expert, VITO (15 min)
	Open Discussion (10 min)	

Session name & duration	Elements for session	Name & Designation
1.6 Private Sector Capabilities in Agriculture Monitoring **1700 - 1830 hrs** Co-chairs: *S. P. Agarwal, Director, NESAC* *S. Bandyopadhyay, Director, MNCFC* Rapporteurs: *Mukesh Kumar*	*Short overview In-SPACE initiatives for agriculture monitoring by private sector* *Dr. C. P. Singh, Deputy Director, In-SPACE (10 min)*	
	Varahaag, India (12 min)	TBD
	Amnex Infotechnologies Pvt. Ltd. (12 min)	Mihir Dakwala, Business Unit Head, Agriculture Technology
	Pixxel, India (12 min)	Grp. Capt. Debashish Sengupta, Director of Government Sales
	The EarthDaily Constellation, France (12 min)	Srinibas Patnaik, Senior Director, APAC
	Niruthi Climate and Ecosystems Pvt. Ltd. (12 min)	Makarand Anant Kulkarni, Chief Product Officer
	Open Discussion (20 min)	

<<<<<<<<<<<<<<<<<<<<<<<<End of Day 1>>>>>>>>>>>>>>>>>>>>>>>>

Day 2: 1 December 2026

Morning: 0900 – 1245 hrs (GEOGLAM Session)

Topic: Involving Indian Research and Operations in GEOGLAM activities

Session name & duration	Elements for session	Session Lead/Co-lead & Rapporteur
2.1 GEOGLAM Introduction and Overview of working groups **0900 - 1100 hrs** **(All participants)** Venue: Yashpal Auditorium	• Overview (Chris Justice, GEOGLAM Co-Chair & Sven Gilliams GEOGLAM Program Director) • Example GEOGLAM Contributory Projects ▪ ASIA-Rice (Shin-ichi Sobue, JAXA) ▪ CASHEWS, Koen DeVos, VITO GEOGLAM Working Groups ○ In-situ data ▪ Integration and validation frameworks (Pratihast, Arun, WENR, GEOGLAM in situ WG co-lead) ○ JECAM global network of research sites ▪ Intro (Catherine Champagne, AAFC) ▪ Overview NEPAL JECAM site, (Dr Uma Shankar Panday (Kathmandu University / JECAM Nepal) ○ Essential Agricultural Variables (EAVs), Sven Gilliams GEOGLAM Program Director, EAV co-lead	
2.2 Break-out sessions (1125 – 1245 hrs)	**Break-out sessions & discussion (1125 – 1245 hrs)**	
2.2.1 Break-out session 1 *Venue: Seminar room, Vikram hall*	***Essential Agricultural Variables (EAVs)*** Lead: Sven Gilliams Co-Lead: Bimal K. Bhattacharya Support by: Ayan Das, SAC	

2.2.2 Break-out session 2 *Venue: Yashpal auditorium conference room*	***JECAM global network : India re-engagement opportunities*** Lead: Catherine Champagne (online) Co-lead: Meghavi Prashnani Support by: Ahmed, RRSC-S & J P Singh, SAC
2.2.3 Break-out session 3 *Venue: Horse-shoe room, Vikram hall complex*	***In-situ data integration and validation frameworks*** Lead: Arun Pratihast Support by: Prabir K Das, RRSC-E & Ujjwal K Gupta, SAC
2.2.4 Break-out 4 *Venue: Yashpal Auditorium*	***Early Warning*** Lead: Chris Justice, GEOGLAM Co-Chair Co-Lead: Koen, DeVos, Vito Support by: Mukesh Kumar, SAC
2.2.4 Break-out 5 *Venue: Conference room at 5141 (Building 51 & room no. 41)*	***Asia-Rice*** Lead: Shin-ichi Sobue (online) Co-lead: Bijoy Handique, NESAC Support by: Francis Dutta, NESAC & Nikhil Lele, SAC

Meeting links for Outstation participants

Sessions	Meeting Link	Meeting ID	Password
Break-Out Session-1	https://isrosac.webex.com/isrosac/j.php?MTID=m1cdfd1bcbf9dd9672433cfffe892bab3	2518579 6118	01122026
Break-Out Session-2	https://isrosac.webex.com/isrosac/j.php?MTID=md1b4b44899c71beb61fa892eef8291d1	2516856 0175	01122026
Break-Out Session-3	https://isrosac.webex.com/isrosac/j.php?MTID=ma59e0c7d9fc2a5dceb830ea9dadab514	2519415 1715	01122026
Break-Out Session-4	https://isrosac.webex.com/isrosac/j.php?MTID=m84f839a8352d2f955a820de7a37cd246	2517003 2475	01122026
Break-Out Session-5	https://isrosac.webex.com/isrosac/j.php?MTID=m21ec06a8758c45bc2f1ca8b206fdec8d	2510969 5532	01122026

<<<<(***Tea/Coffee break: 1100 – 1125 hrs; Lunch break: 1245 – 1345 hrs)***>>>>

Day-2 (1 December 2026) Special Session

0915 – 1245 hrs: Solar Induced Fluorescence Imaging & future possibility of advanced SIF instrument

(*Invitees only***)**

Venue **:** EPSA conference room (4016)

Chair **:** R. P. Singh, Director, IIRS, Dehradun

Co-chair **:** EDPO, ISRO HQ

Rapporteur: Rahul Nigam, SAC

Brief on FLEX instrument & Expectation from ISRO	: *ESA representatives* (15 minutes)
Indian studies on SIF	: *NRSC, SAC* (15 minutes' presentation each)
Photon to Flux	: Debsundar Dutta, IISC (online) (15 minutes)
SIF CAL-VAL for FLEX	: Karun K. Choudhury, NRSC (15 minutes)
ISRO's Imaging spectroscopy capability for SIF	: Ankush Kumar, SEDA, SAC (15 minutes)

Open discussion on SIF CAL-VAL & advanced instrument

<<<<<(Tea/Coffee break: 1045 – 1105 hrs; Lunch break: 1245 – 1345 hrs)>>>>

Day-2: Afternoon sessions (Plenary for all participants)

Venue: Yashpal Auditorium

Session name & duration	Elements for session	Name & Designation
2.3 Short talks **1345 - 1430 hrs** Co-chairs: *M. R. Pandya, SAC* *Jonali Goswami, SAC* Rapporteurs: *Pradesh Jena, NESAC*	Galaxye, India	TBD
	Sahyadri/Sensartics, India	Paresh Ramachandra Pawar, CTO Sensartics
	Farmland habitat biodiversity	Maninder Singh, Wirzberg, Germany

[N.B. Separate meeting link will be shared to ESA for specific FLEX CAL-VAL discussion over India with NRSC during 1345 – 1430 hrs.]

Session name & duration	Elements for session	Name & Designation
2.4 Report back / Summary **1430 - 1515 hrs** Co-chairs: *Zoltan Szantoi, ESA* *Bimal K Bhattacharya, SAC* Rapporteurs: *Rahul Nigam*	Day 1 Summary	Rapporteurs of each session (5 min each) to be led by Zoltan Szantoi & Bimal K Bhattacharya
	Day 2 summary (GEOGLAM break-outs)	Sven Gilliams & Chris Justice + Session leads/Co-leads

Tea/Coffee break: 1515 – 1540 hrs

Session name & duration	Elements for session	Name & Designation
2.5 Panel discussion on Identifying Community Priorities **1540 - 1700 hrs** Chair: *Chris Justice* Rapporteurs: *Rojalin Tripathy*	Chair: Chris Justice **Panelists (TBD depending on the participation)** FPC (Sahyadri) User Ministry (e.g. Gujarat/Bihar) Academia (AAU representative) Dipanwita Halder, Dy. Head, Agriculture & Soils Deptt., IIRS, Dehradun Bijay Handique, Head, Agriculture, NESAC CGIAR institute (IRRI) …….. *Open Discussion*	

Session name & duration	Elements for session	Name & Designation
2.6 Concluding session **1700 – 1800 hrs** Chair: *Director, SAC*	Summary of workshop – *ISRO, ESA, GEOGLAM joint* • *Key outcomes and next steps* • *Agreement on follow-up actions* Concluding remarks by Director, SAC Formal close of workshop	

High tea: 1800 hrs

<<<<<<<<<<<<<<<<<<<End of Day 2 & Workshop >>>>>>>>>>>>>>>>>>>>>>

Technical Demonstration and Tutorial for Agriculture Monitoring

(For selected Participants only)

Venue: HRDD Conference Hall, New Bopal Campus, SAC(ISRO), Ahmedabad

Day	Topic	Instructors
2nd December 2026 Time : **0930 – 1730 hrs**	Introduction Session Technical Demonstrations and Tutorial by ESA Worldcereal <u>Content</u> To be shared	Dr. Sasmita Chourasia, SAC(ISRO) & team Dr. Koen DeVos (VITO, ESA contractor) & Mr. Shabarinath S. Nair (University of Strassbourg, ESA contractor)
3rd December 2026 Time : **0930 – 1730 hrs**	Technical Demonstration and hands-on of ISRO tools for crop monitoring <u>Content</u> • SASYA: NISAR data analysis • SPEAR: Crop phenology tool • GeoCREST: Semi-physical yield model • ABHYAS: Hyperspectral analysis tool …….	Ayan Das (SAC), Ujjwal Gupta (SAC), Mukesh Kumar(SAC), Karun K Choudhury(NRSC)
4th December 2026 Time: **0930 – 1530 hrs** Time**: 1600 – 1700 hrs**	Technical Demonstrations and Tutorial by ESA Worldcereal (Contd.) <u>Content</u> To be shared Feedback & Concluding session	Dr. Koen De Vos (VITO, ESA contractor) & Mr. Shabarinath S. Nair (University of Strassbourg, ESA contractor) All

Tea/Coffee break: 11 – 1130 hrs & 1500-1530 hrs; Lunch break: 1300-1400 hrs

Side meetings of ISRO, ESA, GEOGLAM in the morning & afternoon of 2nd & 3rd Dec. 2026