



# Knowledge Sharing and Capacity Building Workshop for Precision Agriculture using UAV Techniques in the South and Southeast Asian Region



Sant Longowal Institute of Engineering and Technology

Longowal, Punjab, INDIA

28<sup>th</sup> November – 1<sup>st</sup> December 2023

<https://sites.google.com/sliet.ac.in/apn>



北海道大学  
HOKKAIDO UNIVERSITY



ASIA-PACIFIC NETWORK FOR  
GLOBAL CHANGE RESEARCH



ĐẠI HỌC CẦN THƠ  
Can Tho University



Global  
LAND  
Programme  
GLP.earth



GLP  
Japan  
Nodal Office



भारतीय प्रौद्योगिकी संस्थान रुड़की  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE



UNIVERSITI  
TEKNOLOGI  
MARA



UNIVERSITAS  
GADJAH MADA



Jahangirnagar  
University



SANT LONGOWAL INSTITUTE  
OF ENGINEERING & TECHNOLOGY



## Knowledge Sharing and Capacity Building Workshop for Precision Agriculture using UAV techniques in the South and Southeast Asian Region:

### Hands-on training workshop

<https://sites.google.com/sliet.ac.in/apn>

**Date:** 28<sup>th</sup> November to 1<sup>st</sup> December 2023

**Workshop Venue:** Mini Auditorium, Computer Block, SLIET, Longowal, India

*“How can we use drones as a tool to support lower capital / smallholder farmers in making their enterprises more efficient and profitable?”*

#### **Aim:**

The aim of the hands-on-training programme is to develop the capacity of various stakeholders to use UAV/drones as a tool for precision agriculture in the participating countries. The training programme aims to develop a better understanding of drone applications in agriculture by providing hands-on training and topical lectures.

#### **Organizers:**

SLIET, Longowal, India and Hokkaido University, Japan.

#### **Capacity Building Workshop Programme Schedule:**

Date/Times	Subject	Venue/Resource Person
<b>Tuesday 28 November 2023 (Day 1)</b>		
09:00-09:30 (30mins.)	Registration/Morning refreshment	All
09:30-09:35 (5mins.)	<b>Departmental Spotlight</b>	HOD (EIE), SLIET
09:35-09:40 (5mins.)	<b>Research Perspectives</b>	Dean (R&C), SLIET
09:40-09:45 (5mins.)	<b>Keynote Insights</b>	Dean (Academics), SLIET
09:45-10:00 (15 mins.)	<b>APN capacity development hands-on-training overview</b>	Assc. Prof. Dr. Ram Avtar
10:00-10:10 (10mins.)	<b>Visionary Address</b>	Director, SLIET
10:10-10:20 (10mins.)	Group Photo	All
10:20 - 11:00	<b>Networking and coffee break</b>	
11.00-11.45 (45mins.)	<b>Lecture 1: Introduction to precision agriculture.</b>	Assc. Prof. Dr. Ram Avtar
11.45-11.55 (10mins.)	Question, answer and discussion	Chairperson
11.55-12.40 (45mins)	<b>Lecture 2: Introduction to challenges in conventional agriculture: climate change, demography, etc.</b>	Stephanus Albertus Louw
12.40-12.50 (10mins.)	Question, answer, and discussion	Chairperson

12:50-14:00 (1hr. 10mins.)	Lunch break	All
14:00-14:45 (45mins.)	<b>Lectures 3: Computer Vision for Precision Agriculture</b>	Prof. Ashwani Kumar Aggarwal
14.45-14.55 (10mins.)	Question, answer, and discussion	Chairperson
14:55-15:40 (45mins.)	<b>Lectures 3: Drones in Agriculture in India</b>	Dr. Deepak Singh
15.40-16.00 (20mins.)	Question, answer, discussion and networking	Chairperson
<b>Wednesday 29 November 2023 (Day 2)</b>		
9.00-9.30 (30 mins.)	Computer setup & preparation for hands-on training.	Facilitators
9.30-10.30 (1hr.)	<b>Practical 1: UAV Operation and Simulation</b>	Stephan Louw & participants
10.30-10.50 (20mins.)	Coffee Break	
10.50-11.40 (50mins.)	<b>Practical 2: UAV Flight Planning</b>	Facilitators
11:40-12:45 (1hr. 5 mins.)	<b>Practical 3A: UAV Structure from Motion (SfM) data processing: Orthophoto, point clouds &amp; DSM generation. [OpenDroneMap]</b>	Facilitator & participants
12:45-14:00 (1hr. 15 mins.)	Lunch break	All
14:00-15:00 (1hr. )	<b>Practical 3B: UAV Structure from Motion (SfM) data processing: Orthophoto, point clouds &amp; DSM generation. [Agisoft Metashape]</b>	Facilitator & participants
15:00-16:00 (1hr)	<b>Practical 4: Vegetation Indices and applications</b>	Facilitator & participants
<b>Thursday 30 November 2023 (Day 3)</b>		
	Field Trip	
<b>Friday 1 December 2023 (Day4)</b>		
09.00-10.30 (1hr. 30mins.)	<b>Practical 5: Sugarcane condition analysis</b>	Facilitator & participants
10.30-10.45 (15mins.)	Coffee Break	All
10.45-11.45 (1hr. )	<b>Practical 6: Oil Palm Biophysical parameter estimation.</b>	Facilitator & participants
11.45-12.45	Closing Ceremony	All
12.45-14.00	Lunch break	All
14.00-16.00	Networking and discussion	All