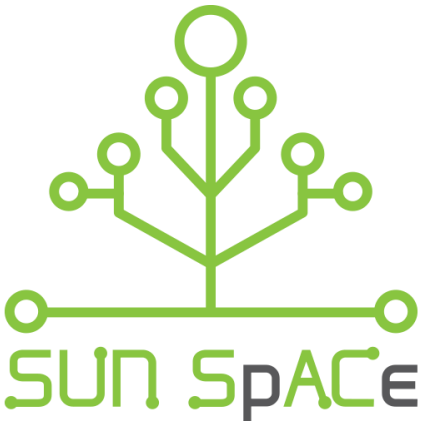

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SUstainabledevelopmeNT Smart Agriculture Capacity

(SUNSpACe)

Project Reference No	598748-EPP-1-2018-1-FR-EPPKA2-CBHE-JP (2018-3228/001-001)
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Dissemination Level	Restricted
Date	2022.11.22
Editor(s)	AEC, CMU, KEC, KKU, & RUB
Document Description	The purpose of this document is to report the T2.6 cross-pilot plan, and training to farmers from Bhutan, Nepal, and Thailand

Document history

Date	Name	Description
2022.11.22	Ugyen Yangchen (RUB)	Initialization of the document
2022.12.03	Keshar Prasain (KEC)	Input
2022.12.08	Patcharee Hongthong (KKU)	Input and Review
2022.12.09	Keshar Prasain (KEC)	Input
2022.12.10	Kalpana Karki (AEC)	Input
2022.12.11	Ugyen Yangchen (RUB)	Formatting and input

Executive Summary

The first part of the document consists of introduction, framework, plans for implementation of cross-pilot. The second part is on the implementation of the cross-pilot. Five Asian partners from the SUNSpACe consortium participated in the Cross Pilot training as the resource persons held at KEC and AEC, Nepal. The training was organized for two days from 14 to 15 November 2022. Ten farmers from Bhutan, Nepal, and Thailand participated in the training. The training had input on sensors and their applications in crops, cattle, and fish production with hands-on practice and demonstration of the sensor. The participants also visited the hydroponic farm in Lalitpur to understand the application of smart technology in hydroponics. The training ended with post-evaluation, feedback on the training, and the award of certificates to participants and resource persons.

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Abbreviations and Acronyms

AEC	Acme Engineering College
CMU	Chiang Mai University
CNR	College of Natural Resources
KEC	Kantipur Engineering College
KKU	Khon Kaen University
RUB	Royal University of Bhutan

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1 Introduction

Cross-pilot is Task 2.6 under work package 2 (Development: Implementation and Assessment). There are three different pilots i.e organic, quality, and working condition and health-sharing pilots in partner countries (Bhutan, Nepal, and Thailand). The best practices from every partner countries will be integrated under cross-pilot.

The Asian partners from the SUNSpACe Consortium, Chang Mai University (CMU) and Khon Kaen University (KKU) from Thailand, Acme Engineering College (AEC) and Kantipur Engineering College (KEC) from Nepal and Royal University of Bhutan (RUB) from Bhutan are the partner countries responsible to implement the cross-pilot training.

1.1 Framework for cross-pilot

The pilots are analysed based on the competency and services that can be delivered from each pilots. The details are in Table 1 and Table 2.

a. Competency analysis

Table 1 Competency of Asian partners

Partners	Strength	Weakness	Nice to Have
CMU	1. Farm Sensor 2. IoT Platform 3. Business Incubation	1. Farming Practice 2. Farm Management Practice 3. International Standard	1. Marketing Tool/Platform 2. Farmers' best practice exchange
KKU	1. Farm sensor outdoor 2. Farm management 3. Farmer networking	1. Farming Practice 2. Farm Marketing and Management Practice 3. International Standard 4. Farmer's digital ability skill	1. Marketing business and management 2. Farmers' best practice exchange
AEC	1. Farm Sensors (outdoor and indoor) 2. IoT platform 3. Automation system	1. Farming practice and management 2. Weak digital literacy among the farmers 3. No concrete standard for certification of smart farmers	1. Marketing Platform 2. Knowledge exchange among farmers 3. Service centres for easy communication between agro-expert and famers
KEC	1. Farm Sensors 2. IoT Platform 3. Agro-Health Lab 4. Startups Development	1. Digital literacy among farmers is very low 2. Government subsidy not transparent 3. Smart Farming is a new idea to farmers and its affordability is a question 4. National and International certification in farming	1. Marketing Platform 2. Farming knowledge exchange 3. Awareness and need for Smart Farming technology among farmers
RUB	1. Farm Sensor 2. Off-season vegetable cultivation in a protected environment	1. Digital literacy of farmers below average 2. Smart technology adoption limited to government and research centers. These limitations may hinder the	1. Marketing Platform 2. Sensitization and awareness of smart technology in farming

		adoption of smart technology in farmers' field	

b. Service analysis

Table 2 Service analysis from each pilot

		Thailand			**Bhutan**	**Nepal**	
		Pilot1 - Organics	Pilot2 - Vegetables	Pilot3 - Cattle	Pilot4 - Off Season vegetable	Pilot5 - Vegetable	Pilot6- Fishery
Pilots class	1.The description of the theoretical part	1. Focus on 4 main topics i.e. (1) Farm Management (2) Farm Sensoring (3) Farm Standards (4) Agricultural Product Marketing 2. Specialized in Farm Sensoring and Marketing 3. Expert in Organic Standard, Halal Standard and Good Agricultural Practice (GAP)	The cultivating skill (such as reserving resources, fertilizers, and pesticides) and the adoption of smart farm technology and farmers' application will be improved up to 30-70%. To make vegetable cultivation more efficient and	The raising of cattle skills (nutrition and living conditions of cattle) and the adoption of smart farm technology and farmers' application will be improved up to 30-70%. To increase the exchange rate of meat and reduce cow	Cultivation of off-season vegetables in protected environment, adoption and application of smart technology (irrigation and soil moisture sensors). The smart technology is expected to 1. improve productivity 30 - 50% of cole crops	Focus on farm sensors and data analytics. Smart technology will help to reduce the use pesticides and chemical fertilizer. The data stored will be used for predicting farming practice in future.	The death rate of fish inside the pond is reduced using smart technology. The automation will circulate the water by putting on the motor when Oxygen level goes down the threshold value.

			easier smart tools.	stress with smart tools.	(Cauliflower) and 2. farmers would earn 50% more income, 3. Control resource usage (water) using drip and sprinkler irrigation and proper nutrient management 4. reduce 50% usage of labour in cultivation of vegetable.		
	2. Records of practical session	1. 20 VDO Contents have been recorded (in Thai)	1. 18 VDO recorded for class training, 3 VDO recorded for site visits and 5 VDO recorded for field trips		1. 8 VDO recorded	13 Videos have been recorded for story board	15 videos have been recorded for story board.
Smart lab	3. What is the smart lab for each partner	1. Organic standard 2. GAP management platform 3. Indoor sensors 4. Weather	1.Humidity sensors 2. Soil sensors 3. Temperature	1.Motion sensors 2.water sprinkler system 3.	1. Growing off-season vegetables in a protected environ	Smart vegetable farm including Indoor and outdoor sensor to implement farm control system based on IoT platform	Smart fish farm having Oxygen, Potassium and Temperature

		sensors 5. Farm control system 6. IoT platform	sensors 4. Weather station 5. Data collection 6. Farm control system	Temperature sensors 4. Weather station 5. Data collection 6. Farm control system	ment 2.Irrigation Control system control system 3. Weather Sensors 4. Indoor sensors		sensor. Control system based IoT platform maintains the Oxygen level inside the fish pond.
	4. Services of the smart lab and the description	1. Theoritical Knowledge Training 2. Smart Farm Practical Training 3. Virtual Equipment Training 4. Smart Farm Consultation 5. Agro-Business Incubation	1. Water release control system via smartphone training 2. The smart sensor system measures soil moisture levels to provide adequate water to the plant's needs efficiently training 3. The system for detecting toxins and contaminants in water	1. The motion sensor system for monitors the cow's behavior training 2. The cattle housing temperature control and detection system for keeping cows cool training 3. The data of cow growth rate will collect	1. Theoretical knowledge Training 2. Smart Farm practical Training 3. Smart irrigation controlling system via smart phone-scheduling or operation of irrigation in greenhouse via smartphone 4. Smart sensors measur	Soil moisture sensor detects the moisture level of soil and automatically put on the irrigation system if required. Similarly, light, temperature and PH value is adjusted. Weather station detects the climatic condition for vegetable cultivation.	Oxygen, Potassium and Temperature sensor inside the fish pond detects the corresponding value and the automatic system maintains the value based on need of fishes.

			training 4. The weather station for detecting climate for professional vegetable cultivation training	in the data collection system with an intelligent RFID system training	e soil moisture, temperature, UV, humidity, Co2		
	5. What are the functions of each service	1. MOOC Training 2. Indoor Data Collection Training 3. Weather Data Collection Training 4. Farm control training 5. Data Visualisation 6. Platform Training 7. Data analytic platform training 8. Smart Farm virtual trainer training 9. Agritech startup incubation	1. MOOC Training 2. IoT in Agriculture training 3. Smart monitoring and smart controlling training 4. Data processing training 5. Business modelling training 6. Occupational health topics supplemented with field visits training 7. Demonstration of agro-meteorology, soil, pH and moisture sensors training 8. Automation of irrigation equipment installed at the smart lab training 9. Integrated Organic farm training		1. MOOC Training 2. Indoor data collection training 3. Platform training 4. Weather Data collection training 5. Data Visualisation 6. Data analystic platform training 7. Farm control training (automation of weather	1. MOOC Training 2. Indoor Data Collection Training 3. Weather Data Collection Training 4. Farm control training 5. Data Visualisation 6. Platform Training 7. Data analytic platform training	1. Oxygen, temperature and potassium level Control Training

				, cooling pad and smart irrigation)		
	6. How it is trained	1. Hybrid Learning (Online + Offline) 2. E-Learning 3. Smart Farm Lab 4. On-Field Project 5. On-Field Consultant	1. Hybrid Training 2. Smart Farm Lab 3. Visit on site 4. Demonstration on site	1. Hybrid learning (Online + face to face) 2. E-learning 3. Smart Farm Lab	1. Hybrid Training 2. Smart Farm Lab, 3. Visit on site. 4. Demonstration on site	Demonstration in Fish pond and smart farm lab visit
	7. Feedback on the training class (+,-)	(+) New knowledge (+) Hands-on Practice (-) need more Thai content (-) need more equipment for 1-on-1 training	(+) New knowledge (-) Need practical/hands-on training on the handling of equipment (-) Need for more time/duration to learn smart technologies covered in the training	(+) New and additional knowledge (-) Need more hands-on practice on equipment handling (-) Need more time/duration to learn in training	The participants gave positive feedback about the training. They were happy and request us to organize such type of training frequently.	The participants gave positive feedback about the training. They were happy and request us to organize such type of training frequently.

1.2 Plans for Implementation

- **Short term (within the project)**

a. MoU Signing between KKU and KEC in Bhutan

During the project, KKU and KEC signed an MOU for the completion of the cross pilot, with the following implementation plan outlined in the agreement:

- anticipate academic matters and transfer knowledge of smart agriculture to
- support their farmers into smart farming
- share information and data between the smart labs
- conduct joint smart-farming workshop and training
- conduct joint academic researches
- support faculty and staff exchange for training and academic purpose

b. Knowledge Sharing Workshop

To ensure the cross-pilot implementation during the project duration, there will be collaborative and knowledge-sharing techniques and learning materials have been used in a local learning for future to make use of the knowledge in the distribution projects in Thailand, Nepal and Bhutan, relevant information will be shared and disseminated. Through a two-way knowledge-transfer loop with distributed stakeholders, knowledge-sharing will improve the potential in all stages of agriculture product development to improve early and late-stage development. Transparent knowledge transfer across the cross-functional institute requires knowledge sharing between Thailand, Nepal and Bhutan. KKU, CMU, KEC, AEC and RUB play critical roles in the project's external and internal knowledge distribution. Sharing of knowledge can provide benefits to smart farming and agriculture innovation in improving local farmers' agriculture product quality and enhancing local farmers' potential in Thailand, Nepal and Bhutan.

The performance training and workshop of local farmers have been organized to develop their careers in farming and livestock and promotion of opportunities for further career development within agriculture in Thailand, Nepal and Bhutan to implement cross-pilot and smart farm academy. Capacity Building of Extension Farmers on Smart Agriculture. Smart farm innovation training will provide the agricultural community with skills to assist with on-farm practice change. Project results are communicated through open farms, discussion groups, case studies and field trip days. Two days is enough time to go over harder concepts more than once. There will be two day in May 2023 for training workshops, the first of which concerns organic vegetables and the second concerns precision livestock technologies. Thirty participants are an appropriate number for 2 days of training: 10 Farmers and 5 Faculties from Thailand (KKU and CMU), 15 Farmers and 5 Faculties from Nepal (KEC, AEC and RUB).

c. Mobility of farmers to Bhutan
Two farmers from CMU, KKU, AEC and KEC will travel to Bhutan for the cross-pilot training of farmers.

d. Inviting new partners to the consortium
The SUNSpACe consortium recognizes the critical role that SUNSpACe's traditional partners, including Asian-based implementing partners, play in attracting new, non-traditional, and local partners. New partnerships that have not previously collaborated with the SUNSpACe consortium have been invited to participate in trans-regional projects utilizing cross-pilot knowledge sharing. The arrival of new partners allows the cross-pilot to be expanded further, allowing the data flows and information sharing.

- **Long term (after the project)**

a. Data sharing and processing
   i. Asian partners share data from smart lab
   ii. Data analysis and paper writing
b. Online Training
   i. Smart farm academy (monthly) via online platform
c. Research Project
   i. Secure new (national/international) research grant
   ii. Present paper in conference (SKIMA, ECTI N-CON, etc.)
d. Start-up incubation using experience from the consortium
   i. Promote the start-up in Asian country to another country

1.3 Cross pilot program

Best practices from each pilots can be shared and these practices from three pilots can be integrated. From each PCs, we select two smart farmers, and 3 academic staff to be trained in Bhutan. At least, 6 Smart Farmers and 9 academic staffs will be trained and play the role of the trainer in their country. A group of 6 administrative staff will be formed to raise awareness of the project's objectives, and to become involved in the sustainability of these actions at the Asian level (2 staff/PC).

2 Cross-pilot Training of Farmers

Organizer: Kantipur Engineering College (KEC) and Acme Engineering College (AEC), Nepal

Training Date: 14-15 November 2022

Training Venue: KEC and AEC, Nepal

Implementation of Sustainable Development Fund (SDF) of USD 200 per person per day in Bhutan from September 2022, made it expensive for partners, and farmers to travel to Bhutan. Therefore, the cross-pilot training was shifted to Nepal

Training Participants: 10 (Bhutan - 1, Nepal - 7, and Thailand 2)

During the two days Cross Pilot training, project partners and farmers from Asian countries were involved. On first day of training, pilot demonstration, skill and knowledge sharing was done with physical experimental activities, where farmers exchanged their work experiences and also questioned about their problems and interest with other farmers and delegates from partners countries. Topics covered by each Asian partners for the training is in 2.1.

2.1 Training topics

Chiang Mai University focused on the soil sensor and its application. The participants were taught to install sensor and read the collected data through mobile device and web applications. The sensors used were for soil temperature, water temperature, and soil moisture content.

Khon Kaen University focused on sensors use in cattle farm and its applications. During the training KKU demonstrated the use of RFID tag to be used in cattle to help store and access information of the cattle like age, diet, medicines taken, etc using mobile device. The use and application of temperature sensors, humidity sensor and motion sensors were also demonstrated to the participants. Participants evaluated their knowledge by the use of such sensors.

Kantipur Engineering College focused on the fruit quality in terms of Degree Brix Measurement i.e. the sugar content of fruits. Prof. Keshar Prasain from KEC demonstrated how sugar content of fruit can be determined using a fruit refractometer and how to compare quality of fruit in terms of Brix.

Acme Engineering College focused on the use of sensors for the determination of water temperature, water nutrients and oxygen concentration in fish pond.

Royal University of Bhutan highlighted the importance of soil pH and soil EC measurement and how the parameters can be controlled. RUB demonstrated the use of soil pH sensor and EC sensor to make participants familiarize with the equipment use.

On the second day, all the participants of the cross-pilot visited a farm named Hope Nepal Bio-phonics run by William Ashwell, a foreigner involved in fish farming and plant growing in soil less media. The farm specializes in Biofloc in which the waste generated by fish with the help of probiotic bacteria is converted to the nutrients required by the plant in hydroponic system.

The participants from Nepal, Bhutan and Thailand interacted among themselves and shared their farming practices, technology usage, and networking among the farmers of Asian countries for the knowledge, experience and skill sharing in the coming future. The participants requested the organizers for continuing such programmes with more farmer's participation.

2.2 Training programme schedule

Table 3. Programme for Cross Pilot Training

November 14-15, 2022	
CROSS PILOT Session	
14 November 2022 Venue: Acme Engineering College Registration, Tea & Coffee 8:30 AM – 9:00 AM	
9:00 AM - 9:30 AM	Welcome farmers from Thailand, Nepal, and Bhutan – Prof. Pradip Kumar Paudyal, Principal AEC
	Introduction of partners and participants (Self)
	Overview of SUNSpACe project – Dr. Ravi Chandra Koirala Special Remarks: Prof. Rameshwar Rijal, Chairman, KEC
9:30am – 12:30pm	Pre-evaluation of Farmers Plant session (Agriculture pilot) • Quality Pilot / Organic Pilot/ Vegetable Pilot- Ms. Ugyen Yangchen (RUB), Dr. Paweena Suebsombut (CMU) and Dr. Keshar Prasain (KEC) • Practical session; Use of Soil Sensors, Air Sensors and Water Sensor (installation of sensors, collection of data and data interpretation)- CMU; Weather/ Agrometeriology, pH, EC (Use of weather station, data collection, interpretation and applications, use of pH and EC meter)- RUB; Comparting the brix of fruits and result interpretation by the use of Refractometer- KEC • Discussion of the overall session.
12:30 PM -1:30 PM	Lunch break
1:30 PM – 3:30 PM	Cattle and Fish session (Farm pilot) • Cattle and Fish pilot –Ms. (KKU) and Ms. Kalpana Karki (AEC)

	• Practical session: RFID sensor use, data store and data sharing, RFID tag display; Humidity sensor use for animals; Temperature Sensor and Motion Sensor installation and use (KKU); Fish pond sensor installation and use (AEC) • Discussion
November 15th 2022 Venue: Kantipur Engineering College	
9:00 AM – 12:30 PM	Visit of Farm
	Post-evaluation, feedback of participants and certificate Distribution
9:00 AM – 12: 30 PM	Certificate Distribution and participants feedback

2.3 Farmer participants

There were ten farmers (1 from CMU; 1 from KKU; 1 from RUB; 5 from KEC and 2 from AEC) participating in the Cross Pilot training.

Table 4. Farmers participating the cross pilot training

Sl. No	Partner University	Name
1	CMU	Nopnakhorn Ngampatirup (Thailand)
2	KKU	Surachai Lamphuttha (Thailand)
3	RUB	Tshering Yangzom (Bhutan)
4	KEC	Susheel Joshi (Nepal)
5	KEC	Pralhad Chapagain (Nepal)
6	KEC/AEC	Dollraj Pandey (Nepal)
7	AEC	Binisha Shrestha (Nepal)
8	AEC	Prabin Pramod Khatiwada (Nepal)
9	KEC	Ram Prasad Paudel (Nepal)
10	KEC	Bishal Bhattarai (Nepal)

2.4 Trainer

The trainers for the cross pilot training from the consortium are listed below:

Table 5: Name of the trainers

Sl. No	Partner University	Name
1	UWS	Ravi Chandra Koirala
2	CMU	Paweena Suebsombut
3	CMU	Padungphong Sitthithan
4	KKU	Patcharee Hongthong
5	KEC	Keshar Prasain
6	KEC/AEC	Krishna Keshav Chaudhary
7	KEC	Tek Narayan Adhikari
8	AEC	Kalpana Karki
9	RUB	Ugyen Yangchen
10	RUB	Budhiman Limboo

3. Evaluation of Farmers

The farmers were evaluated on the pre-evaluation and post-evaluation questions (annex 1). Pre-evaluation was conducted before the start of the training and post evaluation conducted after the training. The comparative progress of all participants is highlighted in the graph below:

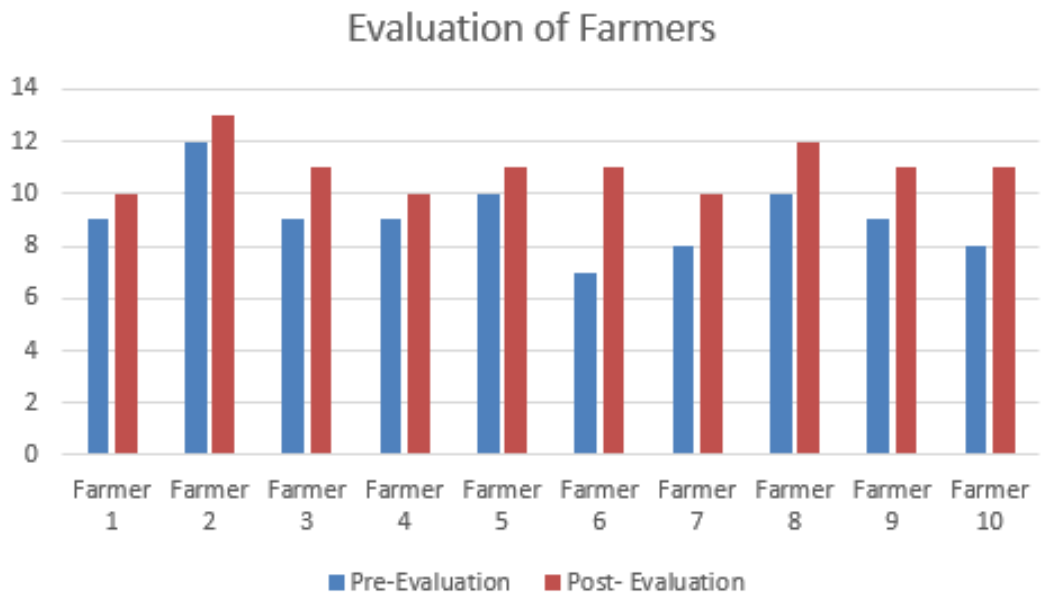


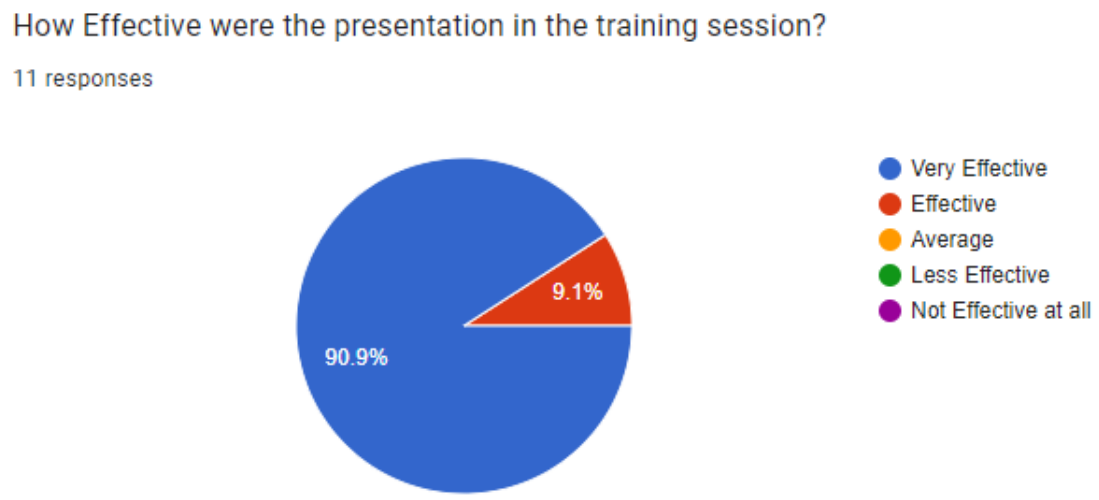
Figure 1: Evaluation of the farmers

Ten questions were asked with total 15 weightage. The total marks obtained by the smart farmers before and after the training was compared. The average score of the farmers in pre-evaluation and post-evaluation were 9 and 10 respectively.

4. Feedback from the Participants

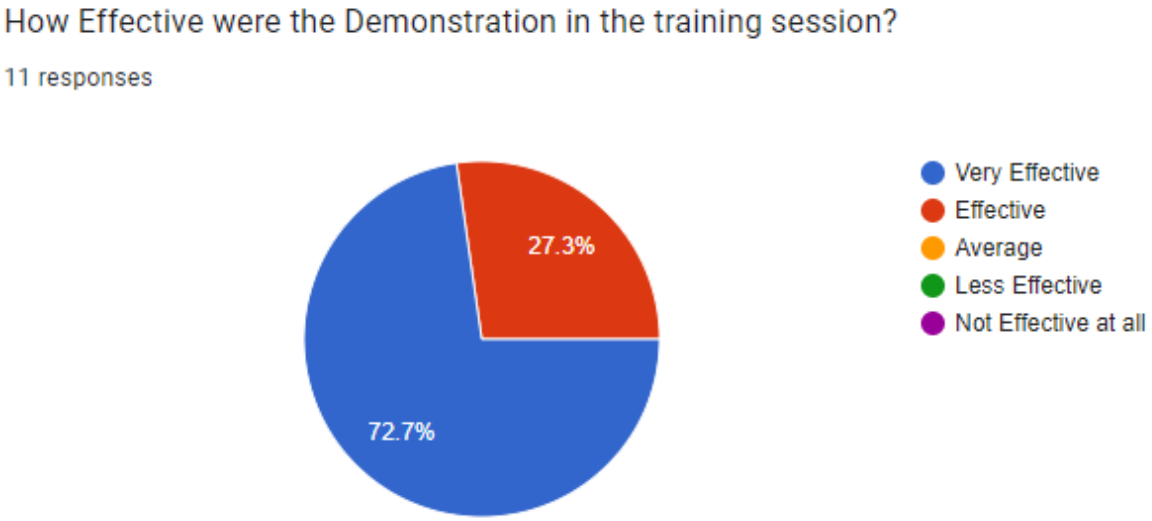
At the end of the training feedback was taken from the participants. The feedback was collected on the basic of seven questions and one suggestion. The summary of the feedback is as following:

Question No. 1



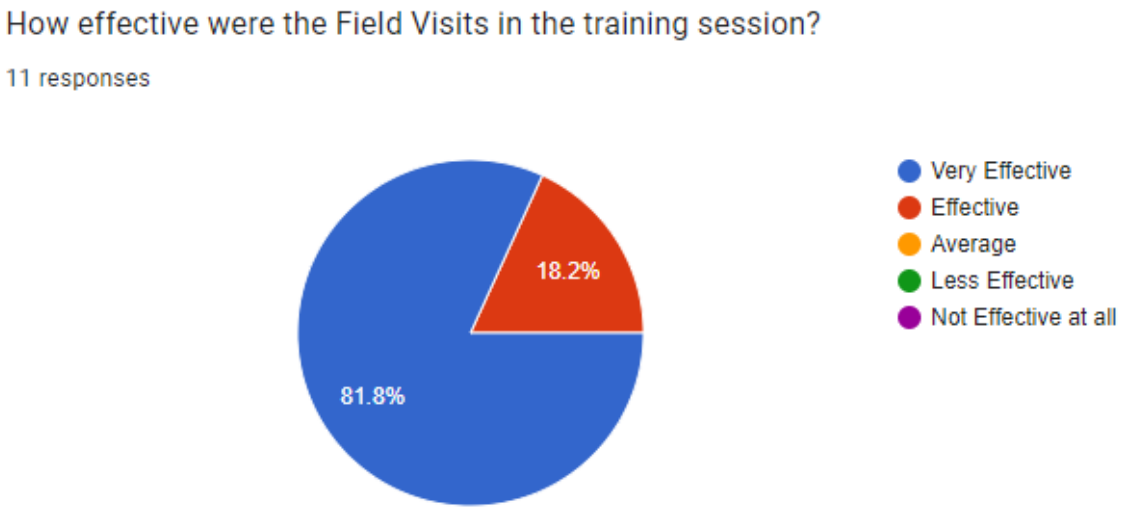
The training was considered very effective by 10 participants out of 11.

Question No. 2



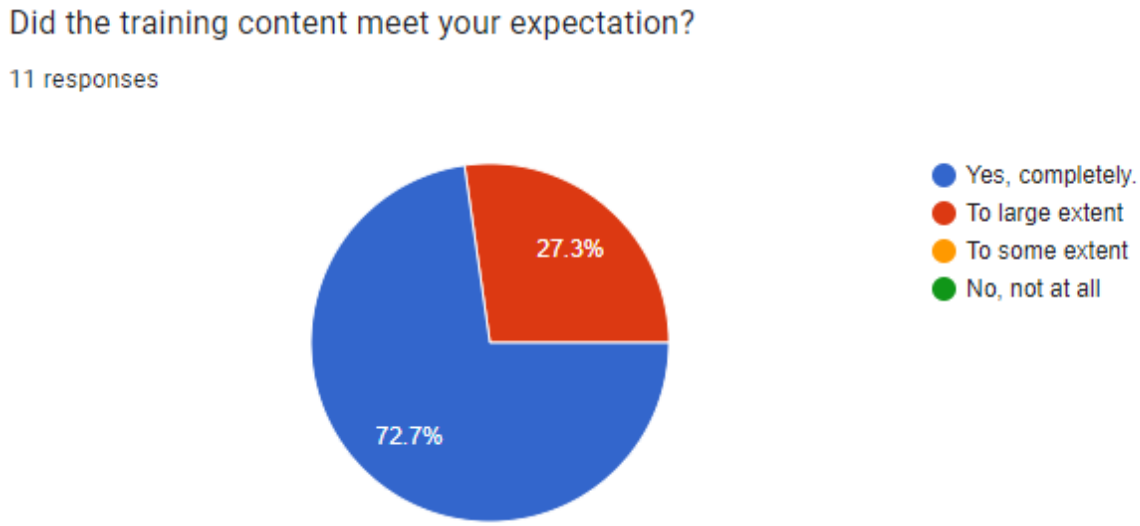
Out of 11 Participants 8 participants considered the demonstrations of sensors, equipment and technology very effective and the remaining 3 considered it as effective

Question No. 3



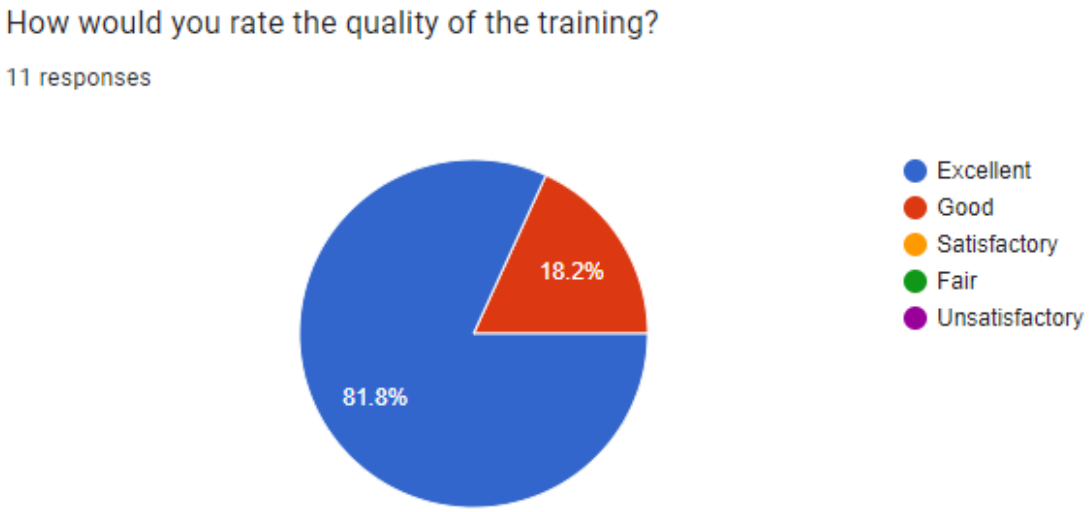
9 out of 11 participants marked the field visit to be very effective and 2 participants considered it as effective.

Question No. 4



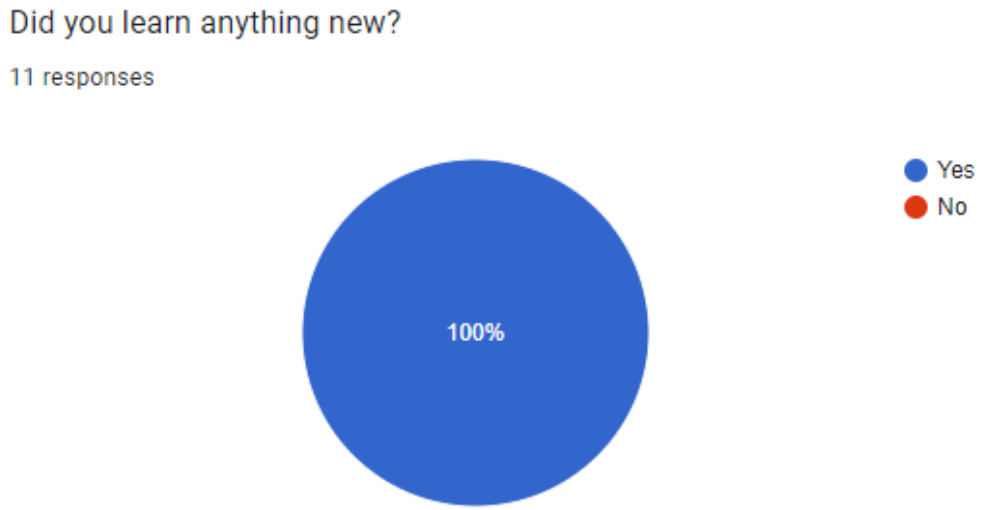
8 out of 11 participants considered that the training could meet their expectations completely. Three participants felt that the training fulfilled their expectation to the large extent.

Question No. 5



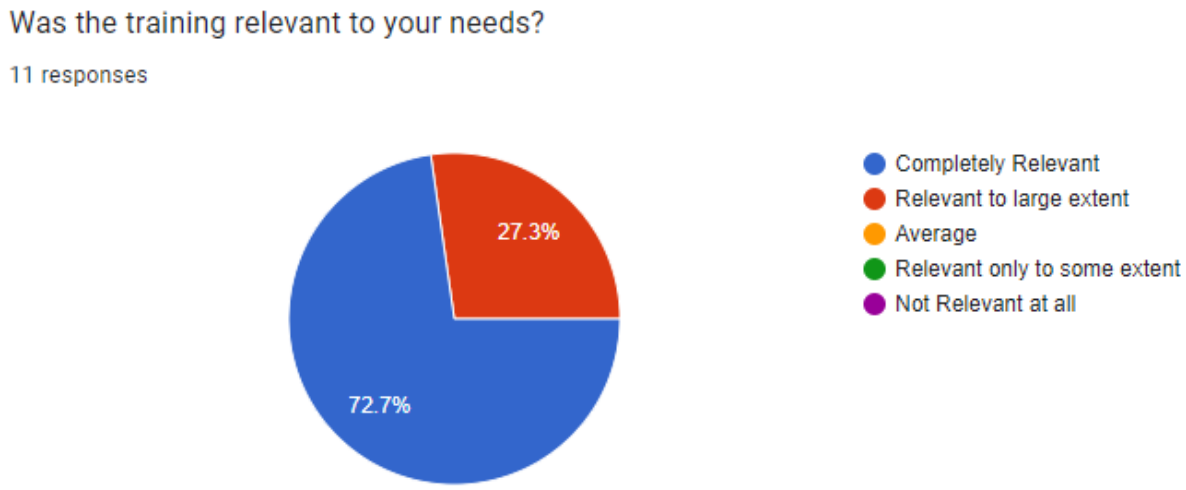
Nine out of 11 participants rated the overall training as excellent and two participants rated it as good.

Question No. 6



All the 11 participants agreed that they learnt something new in the training.

Question No. 7



Eight out of 11 participants mentioned that the training was completely relevant to their needs and three participants mentioned the training was relevant to large extent.

The suggestions from the participants for the improvement of such trainings were:

Improve in presentation language
No, Not at all
Need Extra time and more session
Good training, Need more advance training
Need more practical session
Less Demonstration part so request to increase it
Need such kind of training in other parts of Nepal too.
Everything was perfect! Extra farm visit
Excellent training!! It will be better if we include government personal

Annexure 1: Knowledge assessment form

Pre-Evaluation and Post-Evaluation Sheet

Table 6. Knowledge assessment form

Name	
Address	
Email	
Phone	

Choose the correct answer with (√) mark.

1. What advantages does radio frequency identification provide?
   A. Animals are not stressed
   B. Animals eat more food
   C. Farmer can manage each animal individually
   D. Animals sleep well

2. Which of the following is not included in the livestock housing system?
   A. Ventilation system
   B. Cooling system
   C. Appropriate food supplements
   D. Fences and gates

3. Which sensor supports controlling the climate in cattle housing?
   A. Humidity sensor
   B. Temperature sensor
   C. Motion sensor
   D. pH sensor

4. What is the application of motion sensors?
   A. Automatically turn the water on and off with the humidity control system
   B. Using the card to scan in and out of the door
   C. Controlling the lights on and off based on the movement of objects
   D. Automatic power supply when the power goes out

5. Acidity or alkalinity of soil is measured using:
   A. pH meter
   B. Humidity meter
   C. Thermometer
   D. Anemometer

6. An acidic soil will usually have all of the following nutrients except:
   A. Fe

B. Mn
C. B
D. N

7. Electrical conductivity in soil indicates:

A. Soil Salinity
B. Soil particle density
C. Soilhumidity
D. Soil bulk density

8. When the temperature of water increases, dissolved oxygen
A. Increases
B. Decreases
C. Has no effect
D. Initially increases and then decreases

9. Why sunlight is required in the fish farming
A. To raise the temperature of water
B. To help Algae grow
C. To increase the dissolve Oxygen
D. To increase fish growth

10. How the dissolved oxygen is increased in the fish pond
A. By adding urea
B. By adding salt
C. By growing algae
D. By providing light

11. Which one is **INCORRECT** about water temperature sensor?

A. To collet temperature of water.
B. Can connect with irrigation system.
C. To measure value for cooling system.
D. None of above

12. Which one is **INCORRECT** about an application of soil moisture sensor?
A. It is used to measure the moisture in soil.
B. It is used to be connected to an irrigation system.
C. It is more effective at maximizing irrigation when plants do not need additional water.
D. It is more effective at maximizing irrigation system in terms of saving water resource.

13. If sensors measure soil moisture value = 35%, air temperature = 28.5 °C, and water temperature = 35 °C, what is the meaning of these values and how to solve these situations?

Use following condition to answer question 13

Optimum soil moisture is 55 % – 75%
Optimum air temperature is 25 °C – 30 °C
Optimum water temperature is 20 °C – 25 °C

A. - Water in soil is not enough for crops growth, need to turn on irrigation.
- Air temperature is appropriate to crops growth.
- Water temperature is too high, put more water into water tank to reduce water temperature.

B. - Water in soil is enough for crops growth.
- Air temperature is appropriate to crops growth.
- Water temperature is too high, put more water into water tank to reduce water
temperature.

C. - Water in soil is not enough for crops growth, need to turn on irrigation.
- Air temperature is not appropriate to crops growth, turn on mist irrigation to
reduce air temperature.
- Water temperature is too high, put more water into water tank to reduce water
temperature.

D. - Water in soil is not enough for crops growth, need to turn on irrigation.
- Air temperature is appropriate to crops growth.
- Water temperature is appropriate to irrigate crops.
- Air temperature is not appropriate to crops growth, turn on mist irrigation to
reduce air temperature.
- Water temperature is too high, put more water into water tank to reduce water
temperature.

14. Degree Brix in fruits indicates:
    A. The hardness of the fruit pulp
    B. Size of the fruit
    C. Dissolved solids present in the fruit
    D. Amount of water present in the fruit skin

15. Device used to measure Degree Brix in the fruit is:
    A. Fruit Durometer
    B. Fruit Refractometer
    C. EC Meter
    D. Fruit Penetrometer

Annexure 2: Pictures from Cross Pilot training
Day One


"Cross Pilot Training of Farmers"
November 14-15, 2022


"Cross Pilot Training of Farmers"
November 14-15, 2022
Smart Farming


"Cross Pilot Training of Farmers"


"Cross Pilot Training of Farmers"


33.2
54.0
1008
UV
586
74.2
5
N
1
0


"Cross Pilot Training of Farmers"
November 14-15, 2022
AEC
UWS


Organizers
Kantipur Engineering College
Dhapakhel, Lalitpur
AEC
Acme Engineering College
Sitapaila, Kathmandu
Partners
UWS
MATO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"Cross Pilot Training of Farmers"
November 14-15, 2022
SUNSpACe


Sustainable development Smart Agriculture Capacity
SUNSpACe

Day Two


TOKEN OF LOVE


SUstainable developmeNt Smart Agriculture Capacity (SUNSpACe) Presents:
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SUstainable developmeNt Smart Agriculture Capacity (SUNSpACe) Presents:
Cross Pilot Training
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SUstainable developmeNt Smart Agriculture Capacity (SUNSpACe) Presents:


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SUstainable developmeNt Smart Agriculture Capacity (SUNSpACe) Presents:
November 14-15, 2022
Organizers
Partners


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November 14-15
Organizers


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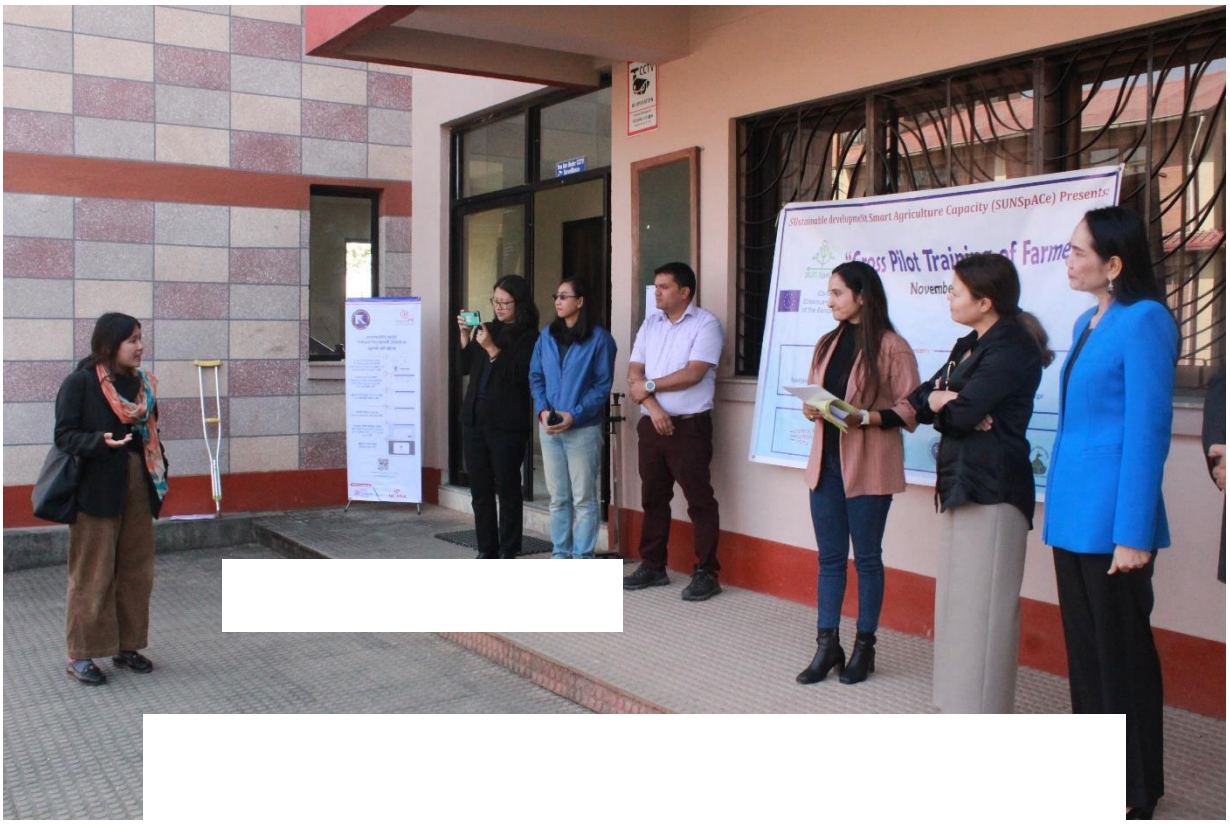
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