



# Day 1

# 1 Session Plan for Day 1 of the Program

Table 1: Outline of Day 1 of the Capacity Development Program

	Outline of Day 1 of the Capacity Development Program					
Time	Duration	Sessions	Outcome			
0900-1045	105 Minutes	Session 1.1: Registration, training overview, and learning goals and Introduction to solar technology	<ul> <li>Introduce the purpose of the capacity building program</li> <li>Understand best practices regarding SPIS</li> </ul>			
1045-1100	15 minutes	Group Photo and Tea/Coffee Break				
1100-1300	120 minutes	Session 1.2: Solar irrigation technologies and application	<ul> <li>Enable identification of different types of SPIS technology</li> <li>Create awareness about benefits of SPIS especially cost- effectiveness</li> </ul>			
1300-1400	60 minutes	Lunch Break				
1400-1700	180 minutes	Session 1.3: Different models of solar powered irrigation systems	<ul> <li>Comprehend the different deployment models for SPIS</li> </ul>			
1700		End	of Day 1			

# 1.1 Registration, training overview, and learning goals and introduction to solar technology.

The two-fold objective of this session is to (i) introduce the capacity building program agenda and gather insights from the trainees about their expectations from the program; and (ii) examine the existing level of knowledge/experience of the trainees on irrigation technologies and water management practices.

#### 1.1.1 Session outline and delivery process/methodology

Table 2: Day 1 Session 1.1 Outline and Delivery Process/Method

		Se	ssion Outline		
Time	Duration	Process	Learning Method	Outcome	Material
Time		Compo	nent: Registration		
0900-0915	15 minutes	<ul> <li>Fill form with details on name, age, gender, occupation, location, etc.</li> <li>Give name tags to each trainee for easy identification</li> </ul>	-	-	<ul><li>Registration sheet</li><li>Name tags</li></ul>
Time	Component: Welcome and Introduction to the Capacity Building Programme				
0915-0920	5 minutes	Define the overall objective of the program and explain daily session plan and agenda	Classroom Training	Describe the overall capacity program,	<ul><li>Folders with session plan</li></ul>





	Session Outline					
Time	Duration	Process	Learning Method	Outcome	Material	
				define its purpose and	and stationary	
0920-0930	10 minutes	Create 3-4 learning groups with equal number of trainees for participative learning and conduct an icebreaking session	Group Exercise 1	understand expectations of the trainees	-	
0930-0940	10 minutes	Ask trainees to write 2-3 bullet points on their expectations from the capacity building program on coloured cards and discuss the same	Group Exercise 2		<ul><li>Coloured cards</li></ul>	
0940-0950	10 minutes	Ask trainees to fill a pre- training questionnaire to understand existing knowledge	Questionnaire		<ul> <li>Pre-training questionnaire</li> </ul>	
Time:		Component: Challenges in Agr	riculture and Irriga	tion Faced by Farm	ers	
0950-1010	20 minutes	Conduct discussions on key challenges related to irrigation and agricultural practices with the learning groups, and understand the solutions deployed by them	Group Exercise 3	Gather trainees' perspective on key challenges and probable solutions	<ul> <li>Board/Chart paper</li> </ul>	
1010-1020	10 minutes	Collate these challenges on a board and explain how SPIS could be a viable solution			-	
Time:		Component: Ove	erview of SPIS in Ag	ıriculture		
1020-1030	10 minutes	Deliver a short PPT to define the core terminology used for solar applications and explain the concept of SPIS	Classroom Training	Develop an overall understanding on best	■ PPT	
1030-1035	5 minutes	Show 1-2 videos of farmers experience with SPIS ( <u>Link 1</u> ; <u>Link 2</u> )	Audio Visual Learning	practices regarding SPIS	■ Video	
1035-1045	10 minutes	Conduct a quiz with multiple- choice questions and also an open discussion/Q&A session	-		<ul><li>Quiz sheet</li></ul>	
1045-1100		Time: Group Ph	oto and Tea/Coffe	e Break		

# 1.2 Solar irrigation technologies and application

The overarching objectives of the session are to describe the different types of SPIS and their usage, explain the components of a typical SPIS, and brief the benefits of technology in comparison to the traditional pumping systems.





# 1.2.1 Session outline and delivery process/methodology

Table 3: Day 1 Session 1.2 Outline and Delivery Process/Method

		Sessi	ion Outline		
Time	Duration	Process	Learning Method	Outcome	Material
Time:	Com	ponent: Solar Irrigation Technol	ogies - Types, Con	nponents and Applic	ation
1100-1115	15 minutes	Deliver a PPT explaining the different SPIS technologies, components and its application/usage based on various parameters	Classroom Training	<ul> <li>Enhance knowledge on usage of SPIS</li> <li>Enable</li> </ul>	• PPT
1115-1125	10 minutes	Show videos showcasing different types of pumps (stand-alone submersible/surface, portable, and floating etc.) (Surface Pump - Link; Portable SPIS - Link)	Audio Visual Learning	identification of different types & components of SPIS	■ Video
1125-1145	20 minutes	Give each learning group a chart with images of different SPIS technologies and components and ask trainees to place a sticker with the name of that respective technology/ component against its respective image	Group Exercise 4		Chart paper and stickers
1145-1200	15 minutes	Display the charts with the identified technologies/components of each group and hold an open discussion/Q&A session			■ Pamphlet
Time	Component: E	Benefits of SPIS - Disaggregated cropp	at two levels (i) by ing systems	type of pump and (	ii) by crop and
1200-1215	15 minutes	Deliver a PPT explaining the benefits of SPIS from the perspective of farmers (i.e. reliability, convenience, economical, time savings) by type of pumps as well as based on irrigation requirements of various cropping systems including a short video on comparison of SPIS with diesel pump (Link)	<ul> <li>Classroom Training</li> <li>Audio Visual Learning</li> </ul>	Create awareness on benefits of technology and facilitate easy demonstration on cost- effectiveness of SPIS	■ PPT and Video
1215-1245	30 minutes	Conduct a game on economics of SPIS with the learning groups	Game on economics of diesel pumps/SPIS		<ul><li>Chart paper</li><li>Pens</li><li>Coloured tokens</li></ul>





		Session Outline					
Time	Duration	Process	Learning Method	Outcome	Material		
					■ Meta - Cards		
1245-1300	15 minutes	Ask one member of each learning group (selected randomly) to describe learnings from the game and clarify any questions			<ul> <li>Observation sheet for facilitators</li> </ul>		
1300-1400			Time: Lunch Bi	reak			

## 1.3 Different models of solar powered irrigation systems

The key learning outcomes desired from this session are creating a comprehensive understanding of the varied deployment models for solar powered irrigation systems and developing practical skills on usage of different irrigation technologies.

#### 1.3.1 Session outline and delivery process/methodology

Table 4: Day 1 Session 1.3 Outline and Delivery Process/Method

	Session Outline							
Time	Duration	Process	Learning Method	Outcome	Material			
Time: Co	mponent: SPIS	Deployment Models						
1400- 1410	10 minutes	Deliver a PPT with simple flow charts explaining the different deployment models	Classroom Training	<ul> <li>Impart knowledge on different types of implementation</li> </ul>	•			
1410- 1440	30 minutes	Display 3-4 posters with different SPIS deployment models with each learning group and ask them to analyse the poster, discuss as a group and share their learnings on a chart paper	Group Exercise 5	models – usage, viability, challenges  • Enable visualization of the implementation procedure of few	<ul><li>Posters</li><li>Chart papers</li><li>Markers/Pens</li></ul>			
1440- 1455	15 minutes	Show a video on the cooperative model deployed in Gujarat (Link)	Audio Visual Learning	innovative models including key actors and their roles	■ Video			
1455- 1510		Tim	e: Tea/Coffee Break					
Time:	Component	: Field Visit Day 1 - Demonstration o	of SPIS at BISA farm					
1510- 1640	90 minutes	Demonstrate different types of technologies (including AC/DC, portable 1 HP pump, drip/sprinkler irrigation systems, solar components of SPIS) and explain basic installation steps (through a DIY kit) and maintenance techniques	Field Demonstration	Develop practical skills on usage of different irrigation technologies	Source SPIS technology and irrigation technologies (drip/sprinkler)			
1640- 1710	30 minutes	Ask each learning group to describe key learnings from the	Group Exercise 6		<ul><li>Charts</li><li>Markers/Pens</li></ul>			





	Session Outline							
Time	Duration	Process	Learning Method	Outcome	Material			
		field visit and mention any questions/queries for further clarification on a chart — they can also be asked to come prepare next day after analysing different component during the day						
End of Day 1								

# Day 2

# 2 Session Plan for Day 2 of the Program

Table 5: Outline of Day 2 of the Capacity Development Program

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	Outline of Day 2 of the Capacity Development Program					
Time	Duration	Sessions	Outcome			
0900-1130	150 Minutes	Session 2.1: Schemes and Programs for acquiring SPIS	<ul> <li>Comprehend the scope of financial assistance for acquiring SPIS and the procedure of applying for the scheme</li> </ul>			
1130-1145	15 minutes	Tea/Coffee Break				
1145-1415	150 minutes	Session 2.2: Selection and Installation of SPIS	<ul> <li>Enhance understanding on the selection and installation process of SPIS based on different parameters</li> </ul>			
1415-1515		Lun	ch Break			
1515-1700		Session 2.3 Visit to farmers' field, group discussion with farmers	<ul> <li>Develop practical skills on usage of SPIS</li> </ul>			
		End of Day 2				

# 2.1 Schemes and Programs for acquiring SPIS

The key objectives of this session are to (i) generate awareness among agri-extension workers on salient features of the different national and state level schemes and (ii) explain the procedure for acquiring stand-alone SPIS through these schemes.

#### 2.1.1 Session outline and delivery process/methodology

	Session Outline				
Time	Duration	Process	Learning Method	Outcome	Material
Time		Сотр	onent: Recap of Day 1	-	
0900-0910	10 minutes	Conduct a multiple-choice quiz on the topics covered in Day 1	-	Examine retention capacity	<ul><li>Quiz sheet</li></ul>





			Session Outline		
Time	Duration	Process	Learning Method	Outcome	Material
0910-0920	10 minutes	Each participant will also share about MILLY (Most Important Lesson Learnt Yesterday)	Group Exercise 7		-
0920-0930	10 minutes	Discuss the charts prepared by the learning groups during the field visit (if not done yesterday)			-
Time:	Component	: National and State Level Schen	ne/Programs Promoting Acquiring SPIS	g SPIS – Guidelines a	nd Procedure for
0930-0935	5 minutes	Distribute pamphlets/reading materials (sourced from govt. agencies/NGOs or prepared internally based on the content provided) on relevant policies at the national and state level with the learning groups	-	■ Generate awareness on financial and non- financial incentives that can be accrued by beneficiaries	<ul> <li>Pamphlets/ reading material on national and state level schemes</li> </ul>
0935-0945	10 minutes	Short video on farmers experience applying for KUSUM scheme ( <u>Link</u> )	Audio visual learning	Develop ability to apply for different schemes/ programs and acquire technology	<ul><li>Video</li></ul>
0945-1025	40 minutes	Discussion within each learning group to understand the guidelines and application of their respective schemes/programs and display of chart explaining key components of policies/schemes with all trainees	Group Exercise 8		<ul> <li>Board/Chart paper</li> </ul>
1025-1035	10 minutes	Interactive session with an expert from the state nodal agency on the entire procedure for acquiring SPIS	Interaction with Experts		<ul> <li>Guide for interaction with experts</li> </ul>
1035-1045	10 minutes	Hold an open discussion/Q&A session	-		-
Time:		Component: Finan	cing mechanisms for ac	quiring SPIS	
1045-1055	10 minutes	Interaction with a financial institution on how to access finance for SPIS	Interaction with Experts	Understand financial process and mechanisms to acquire SPIS	<ul><li>Guide for interaction with experts</li></ul>
1055-1105	10 minutes	Interaction with an organization deploying innovative financing mechanisms like PAYG/lease model/wateras-a-service			
1105-1130	25 minutes	Undertake a role play on step-by-step procedure for	Role Play		<ul><li>Document capturing</li></ul>





	Session Outline					
Time	Duration	Process	Learning Method	Outcome	Material	
		accessing finance (brief description of the role play given below)			script of the role play	
1130-1145	Time: Tea/Coffee Break					

#### 2.2 Selection and Installation of SPIS

The two-fold objective of this session is to (i) enable the trainees to select the appropriate type, size and location of the SPIS based on various factors, and (ii) inform trainees about the installation and maintenance procedure of SPIS to increase efficiency of their system.

#### 2.2.1 Session outline and delivery process/methodology

Table 6: Day 2 Session 2.2 Outline and Delivery Process/Method

		Se	ssion Outline		
Time	Duration	Process	Learning Method	Outcome	Material
Time:		Component: Sele	ction of SPIS – Type an	d Size	
1145-1150	5 minutes	Share a comprehensive list of factors used for selection of SPIS type/size such as cropping system, location, water level, soil type, land area, TDH, water source, daily evapotranspiration etc.	-	Develop skills on selection/ sizing of SPIS through visual learning tools	<ul> <li>List of factors for selection of SPIS</li> </ul>
1150-1220	30 minutes	Demonstrate the tool prepared by BISA on selection/size of SPIS based on a situational analysis game with the learning groups	<ul><li>Situational Analysis Game</li><li>Online tool on sizing/selection of SPIS</li></ul>		<ul> <li>Web /Mobile Tool</li> <li>Chart paper/ marker/ game cards</li> </ul>
1220-1230	10 minutes	Hold an open discussion/Q&A session to discuss the outcome of the learning tool	-		-
Time:		Component: Installation	Guidelines and Proced	dures for SPIS	
1230-1240	10 minutes	Deliver a short PPT with pictorial representation of guiding principles on installation of SPIS	Classroom Training	Explain the step-by-step procedure for installation of	■ PPT
1240-1250	10 minutes	Show videos on installation of SPIS ( <u>Link</u> )	Audio Visual Learning	SPIS	■ Video
1250-1320	30 minutes	Deliver a pictorial game on installation of SPIS with the learning groups	Pictorial Game on Installation		Pictures for the game
1320-1330	10 minutes	Hold an open discussion/Q&A session	-		-
		Componen	Time: t: Maintenance of SPIS		





	Session Outline					
Time	Duration	Process	Learning Method	Outcome	Material	
1330-1340	10 minutes	Lead a session designed as FAQs to gather perspective from the trainees on the key problems they foresee regarding operation/maintenance of SPIS and provide requisite solutions	Group Exercise 9	Explain the maintenance plan and generate awareness on typical terms of contracts	■ Board/Chart Paper	
1340-1355	15 minutes	Distribute a maintenance schedule that includes the procedure and frequency and explain the schedule			<ul> <li>Maintenance schedule of SPIS</li> </ul>	
1355-1400	5 minutes	Show videos on proper maintenance and cleaning of SPIS (Link)	Audio visual learning		■ Video	
1400-1415	15 minutes	Interactive session with a progressive farmer or solar company on maintenance of SPIS, AMCs, and weather factors	Interaction with Experts		Guide for interaction with experts	
1415-1515		Tim	e: Lunch Break			

# 2.3 Visit to farmers' field, group discussion with farmers

The expected outcome of this session is to develop practical skills among trainees on usage of technology and understand field level challenges and impact of technology.

## 2.3.1 Session outline and delivery process/methodology

Table 7: Day 2 Session 2.3 Outline and Delivery Process/Method

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	Session Outline					
Time	Duration	Process	Learning Method	Outcome	Materi al	
Time		Component: Introduction to the	Visit and Objec	tives		
1515-1530	15 minutes	Explain the objective of the visit and define any rules/procedures for the trainees	Discussion	-	-	
1530-1545	Time: Travel to Field Site					
Time:	Component: Field Visit Day 2 - Deployment of SPIS at Farmers' Field					
1545-1645	60 minutes	Conduct a focus group discussion (FGD) among the trainees and farmers to understand the usage of technology, its benefits and challenges	Group exercise 10	Understand field level challenges and impact of	■ FGD Guide	
1645-1700	15 minutes	Hold an open discussion/Q&A session	-	SPIS technology	-	
	End of Day 2					





# Day 3

## 3 Session Plan for Day 3 of the Program

Table 8: Outline of Day 3 of the Capacity Development Program

	Outline of Day 3 of the Capacity Development Program						
Time	Duration	Sessions	Outcome				
0900-1115	135 Minutes	Session 3.1: Efficient use of SPIS and Scaling/Promotion of Solar Irrigation Systems	<ul> <li>Enhance knowledge on climate smart strategies and showcase best practices for scaling/promoting SPIS</li> </ul>				
1115-1130		Tea/Coffee Break					
1130-1300	90 minutes	Session 3.2: Interactive Session with Experts	<ul> <li>Gather learnings from key ecosystem players on SPIS technology, it's usage and impact</li> </ul>				
1300-1400			Lunch Break				
1400-1700	165 minutes	Session 3.3: Open Discussion, Training Feedback, Closing	<ul> <li>Enable agri-extension workers to create awareness among farmers on SPIS</li> <li>Seek feedback on the capacity building program</li> </ul>				
			End of Day 3				

# 3.1 Efficient use of SPIS and Scaling/Promotion of Solar Irrigation Systems

The two-fold objective of this session are to (i) enhance knowledge about climate smart and efficient water management practices aligned with SIPS, and (ii) share best practices on scaling/promoting of SPIS.

#### 3.1.1 Session outline and delivery process/methodology

Table 9: Day 3 Session 3.1 Outline and Delivery Process/Method

	Session Outline				
Time	Duration	Process	Learning Method	Outcome	Material
Time:		Component: Re	cap of Day 2		
0900-0910	10 minutes	Conduct a multiple-choice quiz on the topics covered on Day 1 and Day 2	-	Examine retention capacity	<ul><li>Quiz Sheet</li></ul>
0910-0920	10 minutes	Each participant will also share about MILLY (Most Important Lesson Learnt Yesterday)	Group Exercise 11		-
0920-0930	10 minutes	Hold an open discussion/Q&A session			-
Time:	Component	:: Efficient Use of SPIS - Water Manage	ement and Clim	nate Smart Agricultu	re Practices
0930-0945	15 minutes	Showcase videos on efficient water management practices and climate smart agriculture practices	Audio visual learning	Facilitate development of climate smart	<ul><li>Videos</li></ul>
0945-1030	45 minutes	Conduct a scenario-based game on efficient use of SPIS with the learning groups	Scenario based game	strategies/plans based on different scenarios	<ul> <li>Meta – Cards</li> <li>Coloured tokens</li> <li>Chart paper</li> <li>Markers</li> </ul>





	Session Outline				
Time	Duration	Process	Learning Method	Outcome	Material
1030-1045	15 minutes	Hold an open discussion/Q&A session	-		-
Time:		Component: So	caling of SPIS		
1045-1055	10 minutes	Deliver a PPT on scaling of SPIS in terms of key actors, cropping systems, private and development sector engagement	Classroom Training	Enhance knowledge on implementation of scaling strategies through field experiences	■ PPT
1055-1105	10 minutes	Interaction with an expert from the govt. agency/manufacturer/distributor to share experiences of rapid scaling of SPIS in their respective area	Interaction with Experts		<ul> <li>Guide for interaction with experts</li> </ul>
1105-1115	10 minutes	Hold an open discussion/Q&A session	-		-
1115-1130	Time: Tea/Coffee Break				

#### 3.2 Interactive Session with Experts

The two-fold objective of this session is to (i) gather learnings from key ecosystem players (i.e. solar energy experts, agrarian researchers, and private sector agencies) on usage and benefits of SPIS technology, and (ii) disseminate information on existing knowledge resources for further learning.

#### 3.2.1 Session outline and delivery process/methodology

Table 10: Day 3 Session 3.2 Outline and Delivery Process/Method

	Session Outline				
Time	Duration	Process	Learning Method	Outcome	Material
Time:	Component: Engagement with Experts in the SPIS Sector				
1130-1150	20 minutes	Interactive session with a technical research institute on the design of a SPIS followed by FAQs	Interaction with Experts	Enable interaction with key ecosystem players and experts to clarify queries regarding technology application, impact, challenges etc.	<ul> <li>Guide for interaction with</li> </ul>
1150-1210	20 minutes	Interactive session with a NGO/CSO supporting farmers access SPIS followed by FAQs			experts
1210-1230	20 minutes	Interactive session with an agricultural research institute on applicability of SPIS and best practices for water management/CSA followed by FAQs			
	Time:  Component: Knowledge Sharing on SPIS - Resources, Forums, Tools and Institutions				
4220 4250					
1230-1250	20 minutes	Disseminate information on existing knowledge platforms/resources on SPIS	Group Exercise 12	Enable knowledge sharing and peer-to-peer learning	<ul><li>List of resources</li></ul>
1250-1300	10 minutes	Hold an open discussion/Q&A session	-		-
1300-1400	Time: Lunch Break				





# 3.3 Open Discussion, Training Feedback, Closing

This session is designed to enable agri-extension workers to effectively deliver training on SPIS through a simulation exercise, assess the learnings derived from the three day capacity building program and gather feedback on the process and methodology of implementing the program.

#### 3.3.1 Session outline and delivery process/methodology

Table 11: Day 3 Session 3.3 Outline and Delivery Process/Method

	Session Outline					
Time	Duration	Process Lo	earning Method	Outcome	Material	
Time	Component: Simulation Exercise with Agri-Extension Workers					
1400-1450	50 minutes	Conduct a practical simulation exercise with each learning group on how they would deliver the content of this program to farmers	Simulation Exercise	Enable agri- extension workers to effectively deliver the	<ul> <li>Feedback template</li> </ul>	
1450-1515	25 minutes	Gather written feedback from the trainees on the content delivered and process followed during the simulation exercise		content learnt in the capacity building program		
Time	Component: Evaluation of the Capacity Building Program					
1515-1600	45 minutes	Ask trainees to fill a post- training questionnaire (with multiple choice and open- ended questions) to assess learning outcomes and identify knowledge gaps	Questionnaire	Evaluate the effectiveness of the program (content and method of delivery)	<ul> <li>Pre-training questionnaire</li> </ul>	
1600-1615		Time: Te	ea/Coffee Break			
Time		Component: Feedback o	n the Capacity Build	ding Program		
1615-1630	15 minutes	Hold an open discussion/feedback session	Group Exercise 13	Improve the content and	-	
1630-1700	30 minutes	Gather written feedback on the entire capacity building session, covering the relevance of content delivered, processes followed, logistics and teaching pace etc.		delivery mechanism of the program	<ul> <li>Feedback template</li> </ul>	
	Time: Certificate Distribution and Closing of Capacity Building Program					