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Swiss Agency for Development and Cooperation SDC

IWMI International Water Management Institute

# Solar Irrigation for Agricultural Resilience in South Asia (SoLAR-SA)

## Minutes of 3rd Project Steering Committee (PSC) Meeting

24 February 2020, Time: 3 pm to 5 pm IST

Venue: Online meeting on Zoom

## A) Attendees

Refer to annex 1 for the list of attendees.

## B) Agenda

### 1. Welcome Remarks

- Welcome remarks and introduction of new PSC members by Dr Mark Smith, IWMI DG and Co-Chair of SoLAR PSC. He mentioned that 2020 was a challenging year, disruption of the COVID-19 pandemic has considerable activity on the project. Despite the situation, considerable progress had been made by the project team. He mentioned a few positive developments, viz., development of training manuals and training that took place with some groups, the national forum was delivered, adapting data collection method – telephonic survey, collation and use of secondary data, 5 innovation fund grants have been awarded with one in at least in each country. IWMI is grateful for all the partnership it has on this project and wishes this cooperation grows stronger over time as we advance and achieve the shared goals of the project.
- This was followed by a warm welcome to all the participants by Corrinne Demenge, Chair of PSC. She appreciated the strategic suggestion for the project. She said it was very enriching to have a project in all 4 countries that is a truly regional program, therefore SDC SoLAR is a flagship program. Despite Covid-19, the project has made remarkable advancement in the very first year. She mentioned it was remarkable and positive to see the innovative ideas from the innovation fund grantees. She requested all the PSC members to critically review the proposed activities in year 2.

### 2. Project-related update since the Inception Workshop in January 2020

Aditi Mukherji, Regional Project Leader for the SDC-SoLAR project, shared project updates as per the meeting agenda.

### 3. Update on project activities

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| Bangladesh | ○ Partnership - MoU has been signed with IDCOL.<br>○ A working relationship with BADC, BMDA, BREB, SREDA has been established.<br>○ Entered into a service contract with NGO Forum for data collection.<br>• **Activity 1.1.1: Impact evaluation and GESI**<br>○ Solar irrigation pump –operator 1st round of survey has been completed.<br>○ 30 policy documents that have a bearing on solar irrigation have been translated into English which is now under review.<br>○ All the content and instruments are ready for the household survey which could not be started due to COVID and now the wait is for the *boro* season to get over.<br>○ Situation analysis for Bangladesh is completed.<br>• **Activity 1.2.1: Groundwater related studies**<br>○ Secondary data has been collected and some preliminary analysis has been carried out.<br>○ NGO-forum will be involved in instrumentation and monitoring.<br>• **Activity 2.1.1: Scale pilot to test individual SIP promotion model of IDCOL [Revised: Comparative cases of different SIP promotion models in Bangladesh]**<br>○ Secondary data from BMDA and BREB SIP modalities were collected.<br>○ Online interviews were conducted to know the operational modalities of different SIP modalities.<br>• **Activity 2.2.1: Demonstration of pilots for grid-connected SIPs**<br>○ This activity is carried out by IDCOL.<br>○ Identified 5 locations for grid connection of existing SIPs.<br>○ Identified sponsors who would implement the activity and design.<br>• **Activity 3.1.1: Training of farmers**<br>○ 1 training has been conducted with farmers (a group of 30 farmers) in cooperation with the department of extension (DAE).<br>• **Activity 3.2.2: National forum**<br>○ A webinar was conducted.<br>○ One CPMC meeting was conducted |
| India | • Established good working relationship with GUVNL, GERMI, and NDDB<br>• A situation analysis report has been completed.<br>• **Activity 1.2.2: Groundwater studies in India**<br>○ Secondary data from GWDRC and CGWB has been collected.<br>○ A methodological note has been developed.<br>○ A Census of the selected SKY feeder has been conducted partially.<br>• **Activity 2.2.2: IE and institutional aspects of SKY**<br>○ Data from the SKY portal has been downloaded.<br>○ A methodological note for impact evaluation has been developed.<br>○ A preliminary analysis of SKY data was undertaken.<br>• **Activity 3.1.1: Training of farmers**<br>○ Training modules have been finalized.<br>○ Partnership with GERMI, NDDB, and Junagarh agricultural university.<br>• **Activity 3.2.2: National forum**<br>○ One webinar conducted. |

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| | ○ One CPMC meeting was conducted |
| Nepal | • **Activity 1.1.2: IE and GESI study**<br>○ Rapid assessment of SIP in the country has been done and submitted to AEPC.<br>○ Methodological note and sampling note has been prepared.<br>• **Activity 1.1.2: Grid-connected SIP**<br>○ Site selection has been done.<br>○ A review of various modalities of grid connection and design has been undertaken.<br>○ Several op-eds and blog have been published.<br>• **Activity 3.1.1: Training for solar technicians**<br>○ The curriculum has been developed.<br>○ In partnership with CTVT university to train students and technicians<br>○ The first training will be happening in the last week of Feb 2021.<br>• **Activity 3.2.2: National Forum**<br>○ One webinar and one CPMC meeting has been conducted |
| Pakistan | • **Activity 1.2.3: Groundwater Studies in Pakistan**<br>○ A telephonic survey of 100+ SIP farmers has been carried out – Report based on this data is ready.<br>○ Methodological Note for conducting the field study has been prepared.<br>• **Activity 2.2.4: Simulation of Grid-connected solar pumps**<br>○ No plan has been planned under this activity.<br>• **Activity 3.1.1: Training of students and technical partners**<br>○ Demonstration of training was carried out with students from the university.<br>○ Online training was conducted with students and technical partner.<br>• **Activity 3.2.2: Simulation of Grid-connected solar pumps**<br>○ One webinar and a CPMC meeting were conducted. |
| Regional activity | • **Activity 2.3.1: Administration of an innovation fund**<br>○ Five innovation funds were granted.<br>○ Some progress from the partner has been delayed due to Covid-19.<br>○ It helps to incubate newer and innovative solutions.<br>• **Activity 3.2.1: Regional knowledge forum**<br>○ 2nd online regional forum was held in Jan 2021.<br>• **Activity 3.1.2: Training of groundwater, energy, and agricultural officials**<br>○ Outline of the training program has been prepared for mid to top-level officials.<br>○ Speaker and lecture have been identified.<br>○ But hosting institutions is yet to be identified and it will be a certified training program |

## 4. Planned activities for 2nd year of the project

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| Bangladesh | • **Activity 1.1.1: Impact evaluation and GESI**<br>○ The first round of the household survey |

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| | ○ 2nd, 3rd, and 4th round of SIP survey<br>○ Analyze data and results.<br>○ Research papers, reports, and policy briefs<br>○ Need to change the narrative of SIP from financial viability aspects towards mitigation, energy efficiency and climate justice lenses. There are non-tangible benefits to SIP which we are thinking to bring to the picture.<br>• **Activity 1.2.1: Groundwater related studies**<br>○ Instrumentation and monitoring groundwater discharge<br>○ Measure groundwater application into the field<br>○ Data from field and remote sensing data will be used for analysis to write papers and reports.<br>○ This year 2 plan is to provide evidence on the concern of groundwater sustainability issues under SIP.<br>• **Activity 2.1.1: scale pilot to test individual SIP promotion model of IDCOL [Revised: Comparative cases of different SIP promotion models in Bangladesh]**<br>○ Quantitative and qualitative interview with farmers across IDCOL, BREB, and BMDA models for SIP<br>○ Analyze the data, write papers and reports.<br>• **Activity 2.2.1: Demonstration of pilots for grid-connected SIPs**<br>○ Finish the grid connection in 5 SIP sites.<br>○ Gather the data and analysis – reporting and papers.<br>○ The results from this activity would help to fine-tune the solar –road map for Bangladesh.<br>• **Activity 3.1.1: Training of farmers**<br>○ 2nd farmers training is planned with farmers in cooperation with the department of extension.<br>• **Activity 3.2.2: National forum**<br>○ 2nd national forum and a CPMC meeting is planned end of this year |
| **India** | • **Activity 1.2.2: Groundwater studies in India**<br>○ Complete the census under non-SKY feeders in partnership with INREM.<br>○ Installation and monitoring of groundwater discharge of tube wells under SKY and Non-SKY program which will be followed by data collection and analyzation.<br>○ Write policy brief, report, and papers.<br>○ From a policy point of view understanding the groundwater sustainability under solarisation of pumps is extremely central.<br>• **Activity 2.2.2: IE and institutional aspects of SKY**<br>○ Paper/report based on the analysis from SKY portal data.<br>○ Conduct household survey<br>○ Data analysis – policy brief, paper, report.<br>○ An important question to give insight on whether the incentivization in grid-connected solar pumps changes the farmer's energy consumption behaviour.<br>• **Activity 3.1.1: Training of farmers** |

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| | ○ Demand from the GUVNL planned to train all the farmers under the SKY portal.<br>○ A randomized control trial will be used to evaluate the impact of the training on the energy generation and energy sold to the grid.<br>• **Activity 3.2.2: National forum**<br>○ 2nd national forum will be conducted at the end of 2021.<br>○ Two CPMC meetings were conducted.<br>○ Learning from national forum to learn the impact of the solar pump from other states; planned to commission study in Maharashtra and Jharkhand in collaboration with IRMA group. |
| **Nepal** | • **Activity 1.1.2: IE and GESI study**<br>○ Planned to conduct a household survey in province 1 and 2.<br>○ Phone survey with AEPC SIP recipient in Tara province<br>○ Data analysis and results – report and paper<br>○ So far, any impact study at a large scale has not been done on farmer's livelihood.<br>• **Activity 1.1.2: Grid-connected SIP**<br>○ Planned to have a formal agreement with NEA, AEPC, and village Palika.<br>○ Implement in one site.<br>○ Monitor data: analyze data, report, and papers<br>• **Activity 3.1.1: Training for solar technicians**<br>○ 2nd training is planned for Oct-Nov of 2021<br>• **Activity 3.2.2: National Forum**<br>○ 2nd webinar is planned for Nov of 2021 |
| Pakistan | • ***Activity 1.2.3: Groundwater Studies in Pakistan***<br>○ Planned to conduct a primary survey with SIP and diesel farmers<br>○ Installation of field instruments for groundwater measurement is planned<br>○ Data analysis, preparation of report and paper<br>• **Activity 2.2.4: Simulation of Grid-connected solar pumps**<br>○ Planned to conduct a choice experiment where simulation of the heat sink and the different tariff will be presented to farmers to make a choice.<br>○ A field experiment will be carried out<br>• **Activity 3.1.1: Training of students and technical partners**<br>○ Planned to conduct training with students and technical partner.<br>• **Activity 3.2.2: Simulation of Grid-connected solar pumps**<br>○ 2nd webinar and a CPMC meeting are planned to be conducted in 2021. |
| **Regional activity** | • **Activity 2.3.1: Administration of the innovation funds**<br>○ 2nd innovation funds call to go out between 1st to 15 March 2021.<br>○ Section of new grantees<br>○ Follow up and evaluation of all existing grantees.<br>• **Activity 3.2.1: Regional knowledge forum**<br>○ 3rd regional forum was held Jan-Feb 2021<br>• **Activity 3.1.2: Training of groundwater, energy, and agricultural officials** |

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| | ○ It is planned to have an online training co-hosted with an academic institute to provide certification.<br>○ One of the training will be done in 2021 and another one in 2024 |

## C) Discussion

**Q1: Divya:** Direct Financing an organization that is a fee-for-service model – is this model viable?

**Answer: Ahsan, IDCOL:** We don't know, yet. Irrigation is important for Kharif, and benefits at the farmer's level also need to be assessed along with the finances of sponsors. Also, alternative energy use needs to be explored. Holistic benefits need to be considered to evaluate the viability assessment.

**Q2. Rajeev Gyani:** Optimum utilization of groundwater should also be included as a part of promoting solar irrigation so that solar irrigation also increases productivity.

**Answer: Tushaar:** No clear evidence whether the solar pumps have increased water extraction, but it has surely increased quality energy supply that further increases the irrigation access. Within two years, the evidence will emerge whether solar pumps increase groundwater extraction.

**Alok:** In SoLAR, we are also assessing the productivity level of plots that received irrigation from solar pumps. Efficient use of water is also included in Bangladesh with alternative wetting and drying and in Gujarat, laser land levelling aspects to see efficient use of water extracted from solar pumps.

**Q3. Corinne:** What is your opinion on the progress of the SoLAR project in Nepal?

**Answer: Laxman, AEPC:** Rapid assessment report helped AEPC to change how to increase the inclusiveness of the program. Policy recommendation on the inclusiveness in the solar program by encouraging application from small and women farmers at the local Palika level. A pilot program on the grid connection is a nice initiative and would encourage such activities from IWMI in Nepal.

**Q4 Corinne:** What is your opinion on the progress of the SoLAR project in India?

**Answer: Akhilesh, GERMI**: SoLAR India group got good access data from GUVNL, post SKY data. Pre-SKY data has not been given access, which may be due to political sensitivity. Primary data needs to be collected to know what changes the program has done to cropping patterns and the efficiency of the model. Early results are very interesting. On the training front, the modules have been ready to build capacity at the farmer's level.

**Aditi**: Pre-sky data has not been received. It is sensitive to access. To compensate for this, we might need to collect it from the field – farmers' electricity bills and hard copies from the local DISCOMs.

**Akhilesh:** pre-SKY data is important to estimate the impact of the program. GERMI can help in collecting the data.

**Q5. Rajeev Gyani:** States have adopted great design on the grid-connected solar program. So your results will be on the grid-connected solar. But in Off-grid no regulation happens, and thus the behaviour would be very different. Therefore, while recommending, please exactly make sure the results are segregated on off-grid and grid-connected solar.

**Answer: Aditi:** In the case studies that were proposed under SoLAR India, the project is trying to look into how cropping patterns changed in the off-grid solar case. Since Chhattisgarh has a higher density

of off-grid solar, we would be able to answer how it affects water consumption but through cropping intensity. PSC has approved this additional activity. We would also carry out a small case study with grid-connected solar in Maharashtra.

**Q6. Rajeev Gyani**: Solar irrigation was also expected to cater the entrepreneurship? Can you look at whether the project is focusing on this?

**Answer: Aditi:** Entrepreneurship is done mostly through training and innovative perspective. But the overall objective of the project is mostly on the change in the solar policies and the implication of these solar policies at ground level. Therefore, mostly work is for the government and policymakers.

**Divya**: Overall project objective is to bring evidence and implication of solar irrigation policies. The private sector engagement is mostly through training and the larger engagement is going towards the government.

**Q7. Corrine:** Any reflection on SoLAR Bangladesh?

**Answer: Kazi Ahsan:** Impact assessment should be focused on the farmer's level. A household survey is planned yet to roll out. We know what the financial aspects of the service providers are but don't know what the benefits at the farmer's level are. So, through this project, we expect to know the economic benefits of solar irrigated farmers.

**Aditi:** Yes, we are ready to cater to do this. We are planning to conduct the household survey during this Kharif season. This activity will be prioritized.

**Q8. Aditi: Suggestion on Regional training:** Looking for professional delivery of the training. It is not on the material development but mainly to run the training professionally. This is an online training for 1-2 hours every day for two weeks.

**Answer: Ahsan:** As we experience in APMC, mostly this year, given the Covid-19 struggles, the government officials are facing a huge work burden. This long training might not help them. Maybe making a short training and an option to choose the models should be given. Basically, looking into the aspect of flexibility.

**Tushaar**: Is there any training assessment that has been done on this? Do you have any idea who are the good government officials to train? The impact of this type of training is pronounced if the training audience has the power to implement changes and make any decision at their level.

**Aditi:** During the last inception meeting in Colombo, there was a lot of interest in the energy and water module. On GESI modules, only a few top officials were interested, but low interest from others. We may need to access the training needs and learn the demands from officials.

**Corinne**: We approve the new commission study as well as the planned activities for year 2.

*Annex 1: List of Attendees*

| Name and Designation | | Attended |
|---|---|---|
| Corinne Demenge, Head of SDC, New Delhi | Chair, PSC | Yes |
| Mark Smith, Deputy Director-General, IWMI | Co-Chair, PSC | Yes |
| Aditi Mukherji, Regional Project Leader, SoLAR-SA, IWMI | Member Secretary, PSC | Yes |
| Divya Kashyap, Senior Advisor and Project Manager SoLAR-SA, SDC | Regular Member, PSC | Yes |
| Alok Sikka, IWMI Country Representative, India | Regular Member, PSC | Yes |
| Tushaar Shah, Emeritus Fellow, IWMI (Special Advisor to the SoLAR Project) | Regular Member, PSC | Yes |
| Rajeev Gyani, Additional Director, International Solar Alliance (ISA) | Co-opted Member, PSC | Yes |
| Akhilesh Magal, Head of Advisory and Consulting, GERMI, India | Co-Opted Member, PSC | Yes |
| Laxman Prasad Ghimire, Senior Office, Solar and Wind Energy, AEPC, Nepal | Co-Opted Member, PSC | Yes |
| Kazi Ahsan Uddin, Manager IDCOL, Bangladesh (deputed on behalf of Mr Monirul Islam, Deputy CEO, IDCOL) | Co-Opted Member, PSC | Yes |
| Muhammad Tahir Anwar, National Project Coordinator, FWMC, MNFS&R, Pakistan | Co-Opted Member, PSC | No |
| Shoiab Ahmad, Deputy Director SAARC Energy Center, Pakistan | New Member, PSC | No |
| Dr Yashodha Yashodha, IWMI | Post-Doctoral Fellow | Yes |
| Ms Mansi Chopra, IWMI | Admin Assistant | Yes |

Abbreviations: AEPC: Alternative Energy Promotion Centre, Nepal; GERMI: Gujarat Energy Research and Management Institute, India IDCOL: Infrastructure Development Company, Bangladesh; ISA: International Solar Alliance; IWMI: International Water Management Institute; SDC: Swiss Agency for Development and Cooperation; SAARC: South Asian Association for Regional Cooperation

*Annex 2: Achievements and outcomes of Year 1 (2020)*

## Table 1. Progress in planned activities in Bangladesh in 2020

| Activity No. | Deliverables due in 2020 | Status | Plan for 2021 |
|---|---|---|---|
| 1.1.1 Impact evaluation and GESI case studies of existing and new SIP programs in Bangladesh | Situation analysis report based on secondary data. | Completed | To be a part of a Regional Paper that discusses the challenges and opportunities of solar irrigation in South Asia |

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| | Methodological Note (including sampling strategy) | Completed | Sample to be updated with information from IDCOL and ADB |
| | Questionnaire for Baseline study | Postponed due to COVID-19, to be completed in 2021 | By March 2021 |
| | Baseline HH survey | Postponed due to COVID-19, to be completed in 2021 | By August 2021 |
| | SIP level survey data | 1st survey covering Kharif 2020 completed | SIP Survey 2,3,4 in 2021 |
| | Baseline report + Blog Post | Blog post based on phone survey written | To be completed based on HH level data and first 3 SIP surveys by Dec 2021 |
| | Research article based on analysis of policy documents through GESI lens | Translation of documents completed; analysis ongoing | Part of a regional research paper, to be completed by July-August 2021 |
| 2.1.1<br>Scale pilot for testing different SIP promotion models in Bangladesh | This activity has changed from the Y1 work plan, where the deliverable was a preliminary report on the choice experiment.<br><br>Now it is a "Comparative case study of different SIP promotion models in Bangladesh" | • Interview with BREB and BMDA completed<br>• SREDA database downloaded.<br>• Discussion with ADB for collaboration done | In 2021, use mixed methods and secondary data to do comparative analysis:<br><br>• Research notes with secondary data<br>• A case study report on irrigation permit |
| 1.2.1<br>Groundwater-related studies embedded in demonstration pilot in Bangladesh | • Methodological and monitoring protocol note for GW sustainability studies.<br>• Baseline data and preliminary report on analysis of monitored data | • Methodology and monitoring protocol developed; Instrument finalized with providers' quotations in place.<br>• Selection of farmers and installation and GW monitoring postponed due to Covid. | • Selection of sites and installation by April 2021.<br>• Monitoring data and a draft report on instrumentation process and data analysis by Dec 2021<br>• Preliminary report on GW levels and trend in regions with solar SIPs using secondary data (March 2021) |

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| | | | • Draft report on conceptual GW model (Sep 2021) |
| 2.2.1 Demonstration pilots for grid connection of SIPs | • IE Methodological Note<br>• Grid connection in 5 sites with Engineering and installation report<br>• Qualitative report from pilot sites | • Methodological Note completed.<br>• Identification of pilot locations done.<br>• Grid connection for five sites postponed | • Complete 5 grid connections by June 2021 with technical reports from IDCOL<br>• Qualitative report based on FGDs |
| 3.1.1 Training of local technicians and farmers | One training workshop | Completed and Training report finalized | 2nd training workshop in Sep-Dec 2021 |
| 3.2.2 National forums | 1 National Forum in 2020 | Webinar held on 04 February 2021 | 2nd National forum in Oct-Dec 2021 |

Table 2. Progress in planned activities in India in 2020

| **Activity No.** | **Deliverables due in 2020** | **Status** | **Plan for 2021** |
|---|---|---|---|
| 1.1.2 GW studies in India | Collection and analysis of secondary data on biophysical and groundwater parameters in project feeders | Partially Completed. SKY feeder for groundwater study selected, select non-SKY feeders yet to be selected. | This task is to be completed in 2021 in partnership with INREM |
| | Census/survey at farm level in selected feeders to collect data on Pump and well details | Not completed due to COVID restrictions | The census questionnaire was prepared and now work is going to carry some part of the census via phone, plus limited fieldwork. |
| | Develop and finalize methodology and monitoring protocol for GW sustainability studies | Completed | - |
| | Selection of instruments to put in the field for monitoring | Completed | - |
| | Installation of instruments in the field | Not completed due to COVID restrictions | This task is to be completed in 2021 |

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| | | | in partnership with INREM |
| | Monitoring and data collection, and data analysis to establish groundwater pumping and energy relationship. | Not completed due to COVID restrictions | This task is to be completed in 2021 – to mid-2022 in partnership with INREM |
| | Preliminary report on data analysis & review paper | Not completed due to COVID restrictions | This task is to be completed in 2021 – to mid-2022 in partnership with INREM. |
| 2.2.2 Scale pilot on institutional aspects of grid-connected SIPs in Gujarat, India | Detailed Methodological Note for Impact evaluation of SKY feeders – impact on groundwater use | Completed | - |
| | Download and compile all data from the SKY portal of GUVNL for 82 SKY feeders | Completed | This data to be cleaned, cross verified with GUVNL and analyzed in detail in Q1 of 2021. Part of the analysis done. |
| | Draft baseline report summarizing results from SKY portal | Not completed as SKY data access was gained recently | To be done in 2021, Q1 |
| | Blog/opinion piece/newspaper article<br>on SKY scheme in Gujarat | Not completed | To be done in 2021. Q1 |
| 3.1.1 Training of Lead Farmers | Development of Training Curricula including training modules | Not completed, but in progress | To be carried out in 2021 – two rounds of training |

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| | Training report including details of personnel trained | Not completed due to COVID 19 | Planned in 2021 |

Table 3. Progress in planned activities in Nepal in 2020

| Activity | Deliverable Due in 2020 | Status | Plan for 2021 |
|---|---|---|---|
| 1.1.2 [IE & GESI Studies in Nepal) | Short Note on sample size, sampling framework and guiding questions | Completed: Short Note on sampling framework, sample size is completed. | - |
| | Detailed methodology, GESI framework, including questionnaires and checklists for FGDs | Completed: Framework is completed. The GESI team is also working on a policy review. Provided inputs to sampling framework/note for IE study. Detailed inputs to the questionnaire will be provided once the IE team shares the questionnaire. An in-depth interview for the GESI case study will be carried out by a Vendor hired for the IE study. | • Working paper on review of policies & programs in Nepal & region<br>• Research paper on impact of SIP from GESI lens in Nepal |
| | Field notes, FGD transcripts prepared | Completed: Submitted on 28 May 2020 | - |
| | Draft qualitative report submitted to AEPC | Completed: Submitted on 16 May 2020 | - |
| | Quantitative data collected, cleaned, tabulated, and summary statistics report generated along with final dataset [IE Study] | Not yet started. The vendor has been selected, and all questionnaires are under preparation. Surveys to be launched in March/April 2021 | • Surveys to commence in March 2021.<br>• Develop a journal article |
| | Data analysis and draft report [IE Study] | Not yet started. The vendor has been selected, and all questionnaires are under preparation. Surveys to be launched in March/April 2021 | • IE Study Draft Report |
| | Final report submitted to AEPC and SDC PM [IE Study] | Not yet started: Will start after data collection by vendor & analysis of data by IWMI team is completed. | • IE Study Final Report |
| | New deliverable given COVID 19 delays: An opinion piece or blog based on one | Completed: Two Op-Eds, 1 in English and 1 in Nepali are published (See below for details) | - |

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| | fieldwork conducted in March 2020, and secondary data from AEPC and desk research, etc. | | |
| 2.2.3 Grid-connected pilot in Nepal | Technical Note, methodological Note, and instruments for surveys (including a report with a description of finalized sites) | Partially done: Site prioritization report is prepared; Review of institutional models and a matrix of various methods of grid connection are underway, will be completed in this year. | • Develop a methodological note.<br>• Develop instruments for survey |
| | Draft baseline report summarizing results from qualitative and quantitative surveys, including GESI outcomes | Not yet started: Will start after installation of MG system only | • Baseline report with results from surveys, including GESI outcomes |
| | Grid connection completed in at least one site | Not yet started: due to field restriction related to COVID-19 | • Grid connection completed in at least one site |
| | Technical report with installed MG system & its functioning | Not yet started: Will be prepared based on technical details provided by the vendor | • Technical report with installed micro-grid system and its functioning |
| | New deliverable given COVID 19 delays: A blog/opinion piece/newspaper article on advantages of grid connection in Nepal | Completed: Published in Spotlight (please see below for details) | - |
| 3.1.1 Training for local technicians in Nepal | Training materials (curricula/modules); Trainee was chosen; All technical and logistical arrangements are done | Partially completed: Syllabus is prepared and consulted with stakeholders; details of training module are prepared.<br>The vendor is identified and has submitted a cost proposal for implementing the training program.<br><br>Training commences on 26 February 2021. | • Develop training manual (with detailed contents of each module)<br>• Conduct training |
| | Training report including details of persons attended | Not yet started: Will be prepared after the training event is completed. | • Training report with details of training delivery, participants, feedback, etc. |

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| 3.2.2 National Forum in Nepal | National forum workshop report | Completed: Webinar organized on 05 February and webinar report has been prepared | • Prepare workshop report |
| | At least one policy brief outlining the main findings and policy implications | Not yet started: to be prepared based on deliberation and outcomes of national forum workshop | • Policy brief based on the theme of the national forum |

**Details on Op-Eds:**

- Kashi Kafle and Marie-Charlotte Buisson (2020). Corona and possibilities of agriculture sector (in Nepali). Nepal Flash, 13 June 2020. https://nepalflash.com/news/8767
- Kashi Kafle and Marie-Charlotte Buisson (2020). Agriculture: Can it provide relief to returnee migrants and vulnerable populations? Himalayan Times, 03 June 2020. https://thehimalayantimes.com/opinion/agriculture-can-it-provide-relief-to-returnee-migrants-and-vulnerable-populations/
- Upreti L, Pandey VP (2020). Why we need smarter, targeted subsidies to promote solar irrigation? Spotlight, 10 September 2020. https://www.spotlightnepal.com/2020/09/10/why-we-need-smarter-targeted-subsidies-promote-solar-irrigation/
- Pandey VP, Gyawali S. (2020). Can grid-connected solar irrigation pumps be the future of irrigation in Nepal? Spotlight, 14 October 2020. https://www.spotlightnepal.com/2020/10/14/can-grid-connected-solar-irrigation-pumps-be-future-irrigation-nepal/

Table 4. Progress in planned activities in Pakistan in 2020

| Activity | Deliverable Due in 2020 | Status | Plan for 2021 |
|---|---|---|---|
| 1.2.3 GW related studies embedded in demonstration pilot in Pakistan | Collection of the data from the OFWM Punjab, FWMC, PARC about the diesel and SIPs in Pakistan | Completed: Data on SIPs were collected and data on Diesel farmers at a disaggregated level including farmer names and contact does not exist. The decision is to be collected through a survey | - |
| | Reconnaissance visits to the diesel and SIP sites in Punjab | Not Done due to travel restrictions arising out of Covid-19. However, it has not impacted the design of the methodology | Planned in 2021 |
| | Develop Methodology for impact on groundwater use of Diesel pumps vs SIPs | Completed: Methodological Note was completed and shared with Team. Suggestions incorporated and the Note revised | - |
| | Preparation of survey instruments and selection of groundwater instruments for the study | Partially Completed: Pre-Survey instrument was developed, reviewed and revised. A phone survey with SIP owners, based on the list | • Full survey to be deployed in 2021 |

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| | | shared by PARC was completed | |
| | Pilot testing of methodology and survey instrument. Finalize sampling methodology | Not Yet Started: It will be carried out once the main survey starts in 2021 | • Full survey to be deployed in 2021 |
| | Start Data collection on weekly basis for the Kharif season | Not Yet Started: It will now be replaced with data collection for the Rabi Season once the survey sample is finalized | Data Set |
| | Deployment of instruments for the selected diesel and SIP pumps | Not Yet Started: It will be done once the main survey sample is finalized | • Field Deployment Notes |
| | Not Due in 2020: Analysis of Data for the Kharif Season | It will now be "analysis of Data of Rabi Season" | • Working paper |
| | Not Due in 2020: Start Data collection on weekly basis for the Rabi season | It will now be "Start Data collection on weekly basis for the Kharif season" | • Data Set |
| | At least one policy brief outlining the main findings and policy implications | Not yet started: to be prepared based on deliberation and outcomes of national forum workshop | • Policy brief based on the theme of the national forum. |
| 3.1.1 Training of local technicians in Bangladesh, India and Nepal; training for farmers in Pakistan | Training curricula, including training modules | Complete: A couple of on-field pieces of training have already been provided on soil infiltration tests and Laser Grading for Precision surface irrigation. A final Training on WINSRFR Modelling for using SIP will be arranged in December. | - |
| | Training report, including details of personnel trained | Completed | - |
| 3.2.2 National Forum in Pakistan | National forum workshop report | National webinar conducted on 05 February 2021, and report has been prepared | |

Table 5. Progress in planned regional activities in 2020

| **Activity** | **Deliverable Due in 2020** | **Status** | **Plan for 2021** |
|---|---|---|---|
| 2.3.1 | Administration of innovation funds | Completed – 5 innovation funds grants awarded | Regular monitoring of activities of the grantees |

| | | | |
|---|---|---|---|
| 3.1.2 | Training of groundwater, energy and agriculture officials in all four countries | Not completed – scheduled for 2021 | To be held in online mode in 2021 |
| 3.2.1 | Regional Knowledge and Policy Forum | Held online on 23 and 24 of February 2021 | To be held in online mode in 2021 |

*Annex 3: Activity Level Planning for Year 2*

### 1.1.1 Impact evaluation and GESI case studies of existing and new SIP programs in Bangladesh

Timeline for each activity:

| Details of sub-activities | Start date* | End date* | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| SIP Survey Rabi 2021 | 15/04/2021 | 30/05/2021 | Primary data on SIP operations for three seasons from 82 schemes | Partner NGO Forum for data collection, Marie-Charlotte, Archisman for data analysis |
| SIP survey Kharif 1 2021 | 15/07/2021 | 30/08/2021 | | |
| SIP survey Kharif 2 2021 | 15/10/2021 | 30/11/2021 | | |
| Journal article draft based on three (Kharif 2, 2020, Rabi 2021 and Kharif 1 2021) rounds of SIP surveys | 1/10/2021 | 31/12/2021 | Draft journal article ready for submission to a journal | Marie-Charlotte, Archisman, NGO Forum, Aditi |
| HH level survey | 01/05/2021 | 30/07/2021 | - Sampling note, and Questionnaire<br>- Primary farmer level data from 900 households | Marie-Charlotte, Archisman, Yashodha, Aditi |
| Baseline analysis | 01/10/2021 | 30/12/2021 | - Baseline report based on descriptive analysis of HH level data.<br>- Blog post | Marie-Charlotte, Archisman, Ahsan, Yashodha |
| Policy analysis | 01/01/2021 | 30/06/2021 | - Research article based on analysis of policy documents through GESI lens (Bangladesh and Nepal combined)<br>- Blog post | Gitta Shrestha, Archisman, Marie-Charlotte, Aditi** |

*Notes: * The dates for the surveys are tentative dates which may be adapted to consider health and regulatory conditions and cropping calendars.*

*** This research article would be a regional research paper. Archisman and Marie-Charlotte's input would be to contribute with some background information and descriptive statistics.*

**Deliverables:**

- SIP level database for 3 seasons in 2021 (i.e., Rabi, Kharif 2, Kharif 1) through telephone survey (30/11/2021)
- A draft of a journal article with findings from three rounds of SIP surveys (Kharif 2, 2020, Rabi 2021 and Kharif 1 2021) (31/12/2021)
- Household survey sampling note and Household survey questionnaire (30/4/2021)
- Household-level database (30/09/2021)
- Baseline report based on descriptive analysis of HH level data (31/12/2021)
- Two to three blog posts and regular contributions to SDC-SoLAR newsletter – throughout the year
- Draft Journal article note based on analysis of policy documents through GESI lens (31/08/2021 – a combined paper with data from Bangladesh and Nepal)

### 1.1.2: Impact Evaluation (IE) and GESI Case Studies of SIP Program in Nepal

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Draft journal article based on the report submitted to AEPC in May 2020, plus additional work done as a part of Situation Analysis Report | 01-01-2021 | 30-06-2021 | Journal article submitted | Kashi/Shisher/Aditi/Manohara |
| Phone surveys with AEPC grantees in all Provinces except Province 1 and 2 | 15-03-2021 | 31-06-2021 | Compiled and clean data from phone surveys, and preliminary report, blogs | Aditi/Kashi |
| Quantitative and qualitative data collection (by FCB-vendor) from GESI lens and data analysis | 01-01-2021 | 30-09-2021 | Data analysis and preliminary report, blogs | Kashi/Gitta (data collection by Full Bright Consultants FBC) |
| Develop a journal article from quantitative aspects of IE study and phone survey | 01-05-2021 | 31-12-2021 | Submission of Journal Article | Kashi/ Aditi/Manohara/ Gitta/ Labisha |
| Review of GESI policies and/or programs in solar irrigation in project countries and synthesize the findings | 01-01-2021 | 31-08-2021 | - Research article based on analysis of policy documents through GESI lens (Bangladesh and Nepal combined) | Gitta/ Labisha/ Manohara /Aditi/Marie Charlotte/Archisman |
| Develop a journal article from qualitative aspects of the IE study | 01-05-2021 | 31-12-2021 | Research article/paper – Impacts of SIP from GESI lens in Nepal using field data | Gitta/ Labisha/ Manohara et al |

**Deliverables:**

- A journal article based on the report submitted to 2020 (30-06-2020)
- Impact Evaluation Report (Draft and Final versions) based on phone surveys and IE surveys (31-12-2021)
- Draft Journal article note based on analysis of policy documents through GESI lens (31/08/2021 – a combined paper with data from Bangladesh and Nepal)
- Research article/paper –Impacts of SIP from GESI lens in Nepal using field data (31/12/2021)
- Two to three blog posts and regular contributions to SDC-SoLAR newsletter – throughout the year

### 1.2.1 Groundwater-related studies embedded in demonstration pilot in Bangladesh

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Spatial analysis of groundwater data and overlay with SIPs. | 01-12-2021 | 28-03-2021 | Preliminary report on groundwater levels and trend in regions and in areas with Solar SIPs | Faiz, Smaranika and Alok |
| Collection of plot-level water application for SIP farmers and adjoining diesel farmers through surveys, installation of field instruments | 01-01-2021 | 30-04-2021 | Farmers selected for data collection and instruments installed at the monitoring site | NGO forum |
| Monitoring and data collection [pumping, GW levels, agriculture and climatic data] | 30-04-2021 | 31-12-2021 | Database on collected data | NGO forum |
| Data analysis of Kharif II season collected data | 01-08-2021 | 31-12-2021 | Draft report on data analysis | Faiz, Smaranika |
| Set up of soil model to estimate return flows and groundwater model of the region | 01-06-2021 | 31-12-2021 | Draft report on conceptual groundwater model | Smaranika |
| Annual Reporting | 01-12-2020 | 31-12-2020 | Preliminary report on data analysis & review paper | Faiz and Alok |

**Deliverables:**

- Database on farmers' pump, wells, groundwater, and water management practices in selected SIPs and diesel plots in NW and SW Bangladesh.
- Report on instrumentation installation and data collection protocol.
- Brief report on data analysis of Kharif II season.
- Report on conceptual soil and groundwater model for the study area.

### 1.2.2 Groundwater-related studies embedded in scale pilot in India

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible (Activity lead by Faiz) |
|---|---|---|---|---|
| Spatial analysis of state groundwater data and overlay with SKY feeders. | 01-12-2020 | 28-02-2021 | Preliminary report on groundwater levels and trend in SKY and non-SKY areas | Faiz |
| Census/survey at farm level in selected feeders to collect data on Pump and well details | 01-12-2020 | 28-02-2021 | Selection of farmers in selected feeders for groundwater monitoring | INREM Foundation |
| Installation of instruments in the field | 30-02-2021 | 30-04-2021 | Instruments installed on monitoring site | INREM Foundation |
| Monitoring and data collection, and data analysis based on data from Kharif season | 30-04-2021 | 31-12-2021 | Database on collected data, a draft report on data analysis | INREM Foundation, Faiz |
| Data analysis of Kharif season collected data | 01-08-2021 | 31-12-2021 | Draft report on data analysis | Faiz |
| Set up of conceptual Groundwater model of the region | 01-12-2020 | 30-08-2021 | Draft report on conceptual groundwater model | PhD student |
| Report/journal article | 01-12-2020 | 31-12-2020 | A draft report showing the energy-groundwater pumping relationship | Faiz |

**Deliverables:**

- Preliminary report on groundwater levels and trend in SKY and non-SKY areas (28-02-2021)
- Census database on farmers' pump, well, groundwater and water management practices in selected feeders (01-04-2021)
- Report on instrumentation installation and data collection protocol (31-05-2021)
- Report on conceptual groundwater model (31-08-2021)
- Brief report on data analysis with draft GW abstraction-energy relationship (31-12-2021)
- Blog posts and regular contributions to SDC-SoLAR newsletter – throughout the year

### 1.2.3: Groundwater-related studies embedded in demonstration pilot in Pakistan

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Rapid Enumeration of | 01/01/2021 | 31/04/2021 | Data Set | Azeem/Zain/Kashi Yashodha |

| | | | | |
|---|---|---|---|---|
| Diesel and SIP Farmers | | | | |
| Main <socio-economic survey> Survey of Diesel and SIP farmers | 15/04/2021 | 31/06/2021 | Data Set | Azeem/Zain / Kashi/ Yashodha. Main survey to be conducted through Survey firm |
| A weekly collection of data for Kharif season on groundwater abstractions | 01/04/2021 | 30/10/2021 | Data Set | Zain |
| Analysis of Data <Data groundwater and socioeconomics> survey | 01/06/2021 | 31/07/2021 | Working paper | Azeem/Kashi |
| Collection of Data<<Data groundwater or socioeconomics> > for Rabi Season | 15/10/2021 | 30/04/2022 | Data Set | Azeem/Zain |

**Deliverables:**

- Data set on groundwater usage of diesel vs solar pumps in Punjab sites – July 2021 socio-economic survey and Nov 2021 for Kharif season report/working paper on impact of SIPs on groundwater – Nov 2021.
- A policy brief for the Government on the promotion of SIPs – Dec 2021
- Collection of Data for the Kharif season – April 2021 – October 2021
- Draft Manuscript based on analysis – Dec 2021.
- Blog posts and regular contributions to SDC-SoLAR newsletter – throughout the year

### 2.1.1 Scale pilot for testing different SIP promotion models in Bangladesh

#### Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Develop the Research note after collecting secondary data, literature review, develop instruments for FGD and key informant interview, a sample section | 01-01-2021 | 30-04-2021 | Research note, questionnaire, Secondary data, Descriptive journal article | Yashodha and Aditi Mukherji |

| | | | | |
|---|---|---|---|---|
| Conduct FGD and Key informant interview | 01-05-2020 | 30-06-2020 | | |
| Data Analysis | 01-07-2020 | 30-08-2020 | | |
| Final Report | 01-09-2020 | 30-12-2020 | Preliminary report and a journal article | |

**Deliverables:**

- Descriptive journal article based on different SIP models (31/12/2021).
- A case study report on Upazila permit policy and its implementation, and its implications for SIPs (31/12/2021)

### 2.2.1 Demonstration pilots for grid connection of SIPs Bangladesh

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Getting approval of Utility, identify different systems architecture and designs, and identify equipment requirements. | 01-01-2021 | 28-02-2021 | Detailed report on each of the five grid integration projects with technical parameters and socio-institutional features | IDCOL |
| Identify the EPC for the installation and commission of grid connection equipment and connecting SIPs to the grid | 01-03-2021 | 31-06-2021 | | |
| Baseline data collection and SIP level survey at selected sites (also see 1.1.1) | 01/06/2021 | 15/08/2021 | Primary data on grid-connected and off-grid solar pumps | Marie-Charlotte, Archisman, Ahasan Habib, Yashoda |

**Deliverables:**

- Detailed report on each of the five grid integration projects with technical parameters and socio-institutional features (IDCOL)

### *2.2.2*: Scale pilot on institutional aspects of grid-connected SIPs in Gujarat, India

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible (Overall responsible: Yashodha) |
|---|---|---|---|---|
| Collection of Non-sky feeder data, Cleaning and analysis of SKY data | 1/01/2021 | 28/02/2021 | SKY feeder and farmer level data | Yashodha, Aditi Sanjay, and Alok Sikka |
| Intermediate report on SKY data | 1/03/2021 | 31/04/2021 | Technical report/draft research paper/blog post | Yashodha, Aditi Sanjay and, Buisson, Marie-Charlotte |
| Sample selection and questionnaire preparation | 1/04/2021 | 30/05/2021 | Questionnaire | Yashodha, Aditi Sanjay and Buisson, Marie-Charlotte |
| Carrying out the household survey (piloting, and monitoring survey) | 1/06/2021 | 30/08/2021 | Primary data | A survey company (yet to be contracted) and monitored by Yashodha |
| Analysis of primary data | 1/09/2021 | 31/12/2021 | Report /research article | Yashodha, Aditi Sanjay Buisson, Marie-Charlotte |

**Deliverables:**

- Compilation of secondary data from SKY web-portal and GUVNL (28/02/2021)
- Compilation of primary and secondary data (30/08/2021)
- Technical report/paper/blog piece on SKY feeder data (1/06/2021)
- Preliminary report on the impact of the SKY program. (31/12/2021)

### 2.2.3: Demonstration pilots on Grid Connection SIPs in Nepal

Timeline for each activity:

| Details of sub-activities | Days required | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|---|
| Baseline surveys (including GESI studies) in selected grid connection and control sites | | 01-05-2021 | 31-07-2021 | Draft baseline report summarizing results from qualitative and quantitative surveys, including GESI outcomes | Labisha/ Shisher et al |

| | | | | | |
|---|---|---|---|---|---|
| Procure a consultant/vendor to install MG | | 01-04-2021 | 31-05-2021 | Agreement with vendor/consultant | IWMI |
| Installation of grid connection in one or two SIP site | | 01-06-2021 | 30-08-2021 | Grid connection completed in at least one site.<br>Technical report with installed MG system & its functioning | Shisher |
| Develop a framework, including indicators/ parameters to monitor, monitoring frequency, etc. for evaluating the effectiveness of the MG system | | 01-03-2021 | 30-05-2021 | A framework for evaluating the effectiveness of the MG system | IWMI/ Consultant |
| Regular monitoring of various parameters related to the micro-grid system, crop production, and change in behaviour of farmers, etc. | | 01-09-2021 | 31-12-2021 | An Excel database of regular monitoring | Labisha/ LFA (local field assistant/ Shisher et al |

**Deliverables:**

- Technical Note, methodological Note and instruments for surveys
- Draft baseline report summarizing results from qualitative and quantitative surveys including GESI outcomes.
- Technical report with installed micro-grid system and its functioning

### 2.2.4: Demonstration pilots and simulation of grid-connected pumps through heat sinks in Pakistan

### Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Method Statement including design of Choice Experiments | 01/04/2021 | 31/07/2021 | Methodological Note | Azeem/Kashi/Yashodha |

| | | | | |
|---|---|---|---|---|
| Procurement of hardware/instruments | 15/08/2021 | 31/09/2021 | Hardware | Azeem/Zain |
| Field deployment of Instruments and Data collection for Rabi Season | 01/10/2021 | 30/04/2022 | Data Set | Azeem/Zain |
| Pilot for testing the choice cards and making sure tariff range are relevant | 01/10/2021 | 30/10/2021 | Data Set | Zain |
| Choice Experiment Survey | 15/11/2021 | 31/12/2021 | Data Set | Azeem/Zain |

**Deliverables:**

- Method Statement – July 2021
- Data Set for Choice Experiment – Dec 2021

### 2.3.1 Administration of innovation funds

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments |
|---|---|---|---|
| Finalization of IF grant call and announcing the call on the IWMI SoLAR website | 01/01/2021 | 01/03/2021 | Call for IF grant advertised on IWMI website and a newsletter was sent |
| Screening of applications, shortlisting by Country Leads, further scoring by technical panel members, interviews with semi-finalists and announcement of final awardees | 01/04/2021 | 31/07/2021 | All screening and shortlisting done |
| The signing of contract and commencement of work by 2nd round of IF grantees | 31/07/2021 | 31/10/2021 | Contracts with IF grantees of 2021 |

**Deliverables:**

- Final call for Innovation grants – with details about themes for which innovation grants will be given, selection criteria for choosing grantees, and roles and responsibilities of grantees [March 2021].
- Three to four grant agreements; and minutes of one review meeting [December 2021]

### 3.1.1 Training of farmers and local technicians in Bangladesh, India and Nepal and Pakistan

Timeline for each activity:

| Details of sub-activities | Start date | End Date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Preparation of training curricula, training modules and selection of trainers and trainees | 1/01/2021 | 31/12/2021 | Training materials have been finalized and trainees have been chosen, and all technical cum logistical arrangements for training have been completed | |
| Training workshop/school (3-5 days training) | 1/07/2021 | 31/12/2021 | Training conducted | |

**Deliverables:**

- Training curricula, including training modules
- Training report, including details of personnel, trained

### 3.1.2 Training of groundwater, energy, and agriculture officials in all four countries

Timeline for each activity:

| Details of sub-activities | Start date | End Date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| Preparation of training curricula, training modules and selection speakers/lecturers | 1/01/2021 | 30/06/2020 | Training materials have been finalized and trainees have been chosen, and all technical cum logistical arrangements for training have been completed | Aditi Mukherji |
| Partnership with an academic institution to host the program and issue certificate | 1/01/2021 | 30/06/2021 | Partnership agreement signed | Aditi Mukherji |

| | | | | |
|---|---|---|---|---|
| to the participants | | | | |
| Selection of participants (nominated by respective country Ministries) | 30/06/2021 | 31/08/2021 | Participants nominated and selected | Aditi Mukherji |
| Online training conducted and curated | 1/09/2021 | 31/12/2021 | Training conducted and training report prepared | Aditi Mukherji |

**Deliverables:**

- Training curricula, including training modules
- Training report, including details of personnel, trained

### 3.2.1 Regional knowledge and policy forums

Timeline for each activity:

| Details of sub-activities | Start date | Outputs/Comments | Person/s responsible |
|---|---|---|---|
| 2nd Regional Forum | 1/1/2021 | 28/2/2021 | Aditi Mukherji |
| Detailed report | 23/02/2021 | 15/03/2021 | Aditi Mukherji |

**Deliverables:**

1. Approved work plan for year 2 (24/02/2021)
2. Inception workshop report ready, with an editor for copy edits, then to be formatted and shared (15/03/2021)
3. MOU signing ceremony with IDCOL.

### 3.2.2 National forums

Timeline for each activity:

| Details of sub-activities | Start date | End date | Outputs/Comments | Person/s responsible |
|---|---|---|---|---|
| National forum (20-30 participants – mostly policymakers) | 01/08/2021 | 31/12/2021 | National Forum Workshop Reports | Respective country leads |

| | | | | |
|---|---|---|---|---|
| or else, a webinar | | | | |

**Deliverables:**

- National workshop reports – 31/12/2021