

Solar Irrigation for Agricultural Resilience (SoLAR)

Summary Report

National Forum on Making Solar Irrigation Pumps (SIPs) programs equitable and inclusive in Nepal

International Water Management Institute

Date: 4th February, 2022 | Time: 09:30 PM– 11:00 AM

Venue: Zoom (Virtual)

Organized by:

International Water Management Institute (IWMI)

Alternative Energy Promotion Centre (AEPC)

Introduction

The IWMI-led Solar Irrigation for Agricultural Resilience (SoLAR) project funded by the Swiss Agency for Development and Cooperation (SDC). The goal of the project is to contribute to climate-resilient, gender-equitable, and socially inclusive agrarian livelihoods in Bangladesh, India, Nepal, and Pakistan by supporting government efforts to promote solar irrigation.

The national forum on Making Solar Irrigation Pumps (SIPs) programs equitable and inclusive in Nepal was organized in partnership with Alternative Energy Promotion Centre (AEPC)¹ and IWMI. The event was initially planned to be organized as a in-person event, but due to the Covid19 third wave due to Omicron variant, it was advice to organize the event virtually.

The national forum was organized virtually via zoom on February 4, 2022 and there was around 50 participants. The National Forum was divided into two sessions. In the first session, IWMI researchers presented their research work on Impact Evaluations of the SIP program through Quantitative Surveys and Qualitative Studies. In the second session, a panel discussion moderated by Dr. Laxman Prasad Ghimire (from AEPC) where distinguished panellists shared their experiences, knowledge, and thoughts on Emerging opportunities and challenges for promoting women and marginal farmer-centric solar irrigation technologies for food, water security, and prosperity in Nepal.

Session Program:

| Time | Activity | Responsible Person |
|---------------------------------------|--|---|
| 09:30 AM – 09:35 AM <i>5 mins</i> | Session Chair and Welcome Remark | Dr. Madhusudan Adhikari / ED AEPC |
| | Purpose of the National Forum by IWMI Country Representative | Dr. Manohara Khadka / IWMI |
| 09:35 AM – 09:45 AM <i>10 mins</i> | Introduction | Self |
| 09:45 AM – 09:50 AM <i>5 mins</i> | Video (3 mins Video) | Mr. Shisher Shrestha / IWMI |
| 09:50 AM – 10:00 AM <i>10 mins</i> | Presentation I – Understanding impact of AEPCs Solar Irrigation Program | Dr. Aditi Mukherji / IWMI |
| 10:00 AM – 10:10 AM <i>10 mins</i> | Presentation II – GESI in SIP technology | Ms. Gitta Shrestha Dr. Manohara Khadka/ IWMI |
| 10:10 AM – 10:40 AM <i>30 mins</i> | Panel Discussion – Emerging opportunities and challenges for Promoting women and marginal farmer-centric solar irrigation technologies for food, water security, and prosperity in Nepal Moderated by Dr. Laxman Ghimire / AEPC | Panelist: Ms. Pooja Sharma / <i>Practical Action</i> Mr. Baburam Paudel / <i>Renewable World</i> Mr. Khem Raj Bhandari / <i>GIZ</i> Mr. Bishwaraj Bhattarai / <i>Gham Power</i> Ms. Sangeeta Giri / <i>NEA</i> |

¹ Alternative Energy Promotion Center (AEPC) is the nodal agency responsible for developing and promoting renewable energy technologies in Nepal.

| | | |
|---------------------------------------|---|--------------------------------|
| 10:40 AM – 10:50 AM <i>10 mins</i> | Q&A Session | |
| 10:50 AM – 11:00 AM | Reflection and Closing Remarks by session Chair | Dr. Madhusudan Adhikari / AEPC |

Panelist

| SN | Name | Email Address | Organization |
|----|-------------------------|--|---|
| 1 | Ms. Pooja Sharma | Pooja.Sharma@practicalaction.org.np | Thematic Lead - Energy, Practical Action |
| 2 | Mr. Baburam Paudel | Baburam.Paudel@renewable-world.org | Global Technical Manager, Renewable World |
| 3 | Mr. Khem Raj Bhandari | khem45@googlemail.com | Technical Advisor, GiZ |
| 4 | Mr. Bishwaraj Bhattarai | bishwaraj@ghampower.com | Project Manager, Ghampower |
| 5 | Ms. Sangeeta Giri | sangitagiri038@gmail.com | Engineer, NEA |

Welcome Remark and Purpose of National Forum

Welcome remarks by Madhusadan Adhikari from AEPC

- AEPC has been involved in making various modalities in a robust and sustainable manner.
- The team is being led by Dr. Laxman Ghimire of AEPC.
- AEPC will use the learnings from IWMI and expects to use it in the project.

Purpose of National Forum by Dr. Manohara Khadka, Country Representative, IWMI Nepal

- Dr. Khadka welcomed all the invitees on behalf of IWMI-Nepal
- She set the context of the SoLAR project across South Asia and the two main themes under the project in Nepal
- The first theme will be to share and learn from IWMI's findings on small and women farmers and the second theme will be on making SIP technologies friendly for women farmers.

Presentation 1: Understanding impact of AEPC's Solar Irrigation Program by Dr. Aditi Mukherji

- She gave a timeline for the project so far
- She highlighted the challenges arising out of Covid-19
- 19 Terai districts were targeted wherein phone surveys were conducted and approximately 876 farmers were interviewed between March-May 2021.

Findings:

- In the first four years (2017-21), SIP connections have increased ever since subsidy programs were introduced by AEPC (~9100)
- Those who did not apply for SIPs were the smallest and marginal farmers from DAG (Disadvantaged groups) community.
- Farmers who received almost 100% subsidy: 60% were from AEPC and the rest were from private companies and local government.

- SIPs reduce diesel use: 750-hour annual use of SIPs, but not completely replaced diesel. SIP farmers reduced diesel pump use by 64 & 33% for monsoon paddy and wheat respectively.
- SIP farmers introduce new crops: 21% of SIP farmers used new crops mostly vegetables. They denote more land to vegetables (4 pp) compared to non-SIP farmers
- There is no significant difference in the yield of monsoon paddy and wheat for SIP and non-SIP farmers.
- Farmers who received SIPs earn 10% more crop revenue.
- There is no significant difference in hours of irrigation for monsoon paddy and wheat, among SIP and non-SIP farmers.
- 1/4th of farmers reported breakdown of SIPs, 3/4th reported their problems were resolved by AEPC and vendors. During breakdown, the farmers used diesel pumps.

Conclusion:

- AEPC and GESI-criteria are compatible with the selection of farmers and make the SIP subsidy delivery process reliable.
- Capacity building of technicians for O&M and breakdown is required

Presentation 2A – Technology for whom? SIPs, women, and smallholders in Terai by Ms. Gitta Shrestha, IWMI Nepal

Key points:

- 3 models, viz., AEPC, ICIMOD, and IWMI-iDE models were compared
- She mentioned purposive sampling, methodology, the semi-structured interviews, 20 IDI, 4 KII, 4 telephone interviews.
- The survey was done in two phases- August 2021 and November 2021.
- She mentioned about the theory of change and women's economic empowerment.
- She gave a comparison and how it impacts women, small and landless farmers across the three models.
- AEPC and ICIMOD models: men and mostly privileged castes received SIPs whereas, under IWMI-iDE, the landless, near landless, women and Dalit farmers received SIP.
- The practical outcomes were mentioned as under:
 1. Easy, cheaper, and reliable water access.
 2. Technology friendly.
 3. Access to land opportunities.
- The strategic outcomes were mentioned as under:
 1. Change in gender roles.
 2. Impact on gender stereotypes.
 3. Capabilities/agency.
 4. The stereotype of irrigation is men's job is intact among farmers.
 5. Land access: a constraint for Dalits.

Conclusion:

- Address structural constraints and explicitly address the needs, responsibilities, and constraints of women and marginalized communities.

Recommendations:

- Across SIP schemes/projects, technology deployment, access to resources, gender transformative relations.
- Need to strengthen GESI lens.
- Need to create safe spaces and need to address the existing social inequalities.

Presentation 2B – Do water, energy, and agricultural (WEF) policies promote gender-transformative approaches and interventions in South Asia?

by Dr Manohara Khadka

Key points:

- She talked of the gender-continuum scale that comprises gender-blind, gender-aware, gender-responsive, and gender-transformative basis.
- Agency, relations, structure: as the domain of change for GESI impacts.
- Keywords were mentioned while reviewing policies.

Findings:

- WEF (Water-Energy-Food) policies in Nepal are gender-aware.
- Most of the policies still do not address the systemic barriers.
- There is a need to improve knowledge and build capacity.
- SIP subsidy policies lack GESI perspectives, for ensuring SIPs access by women and smallholder farmers.

Suggested recommendations:

- WEF policy frameworks need to incorporate GESI perspectives.
- Affirmative policy action is needed.
- Targeted programs
- Attractive business models

Panel Discussion

This session was moderated by Dr. Laxman Prasad Ghimire, AEPC. Dr. Ghimire

Question by Laxman Ghimire: Tell us about Practical Action's financing model? How is that model working in terms of providing access to women and smallholder farmers? What are the practical lessons?

Answer by Pooja Sharma:

She explained that the main objective is to bring the cost of SIP down. Grant investment and equity investment from the private sector, grant financiers, cooperative or user community.

The farmers paid back the investment made by impact financiers by increased income due to the availability of irrigation water through SIP.

The cost of the project includes the cost of training, social mobilization, community engagement, knowledge dissemination. The key part of the business model was working on the agriculture value chain and market linkages by bringing in the stakeholders from the market.

The main attraction for the smallholder and women farmers was the affordability of the monthly installment payments while the reduced risk of investment as the impact financiers were taking the risks through insurance coverage and O&M services.

PA worked with the Local government where the investment was made by the local government and Practical Action provided technical assistance.

Question by Laxman Ghimire: Could you highlight Gham Power's business model?

Answer by Biswaraj Bhattarai, Gham Power: He mentioned about the different business models prevalent in Gham Power. He further mentioned about farmers who cultivated vegetables and earned better crop revenue. Therefore, there is an effort to help in the commercialization of these crops. Gham Power has micro-financing, training services provisions with a special focus on women and making them aware.

Question by Laxman Ghimire: How small farmers get impacted in the mid-hills region?

Answer by Baburam Paudel: The focus is on providing domestic water security. Agricultural activities are included and linked to markets. There is a focus on water-saving time; for education and other economic empowerment activities. There is a significant difference between the hilly and Terai regions. He further laid focus on subsidy for better implementation.

Question by Laxman Ghimire: How net-metering can provide additional programme?

Answer by Sangita Giri: She mentioned about the micro-grid programme in Chipparhmai Rural Municipality. Selling of additional electricity is needed to gain profits. Every farmer has to install an inverter which can be cost-intensive.

Question by Laxman Ghimire: Could you mention how pilot projects be beneficial for single SIP systems?

Answer by Khemraj Bhandari: He mentioned about certain shortfalls, viz., intermittent and inadequate supply of power to pumps as it is weather reliable. There is no water demand during the off-season with the added problem of inefficient water pumping. The individual SIPs face issues of theft of PV controllers. This could be minimized if there is a centralized system. There will be 8 SIPs as the pilot, and this will be beneficial for all the stakeholders which need to be scaled up. Surplus power could be sold to the national grid. He further added that cluster SIPs will be more beneficial in the future.

Q&A Session

Did the research team had the opportunity to look in to or analyse historical observation and past trend analyses on the climate drivers and their impacts? Was the data available to do such analyses?

Question by Mr. Mukti Bikram Chettri, AEPC

AM: We don't have a long term analysis for the SoLAR project but IWMI has done similar work which can be presented to AEPC.

From SoLAR project we can calculate the black carbon emission

From your studies we come to know that there is no significant difference in the yield of monsoon paddy but another findings is that Farmers who received SIP's earn 10 % crop revenue. Would you please elaborate and clarify on this?

Question by Mr. Sundar Bahadur Khadka

AM: We did not find yield difference but we think that the increased in revenue is because the farmers shifted to vegetables farming and fish which has higher market value. The farmers are also saving on diesel cost.

The SIP farmers may have been better connected with holding power, so they may be able to sell at a better price. But we don't have data to show this.

Have assessment been done for SIP feasibility (technical and economic). What business model be more effective?

Question by DHINRICH

AM: The SoLAR project mainly focused on AEPC's SIP program. We have some technical and economic feasibility. The SIP are very mature technology which is feasible in the Terai. It is also very cost effective.

The economic analysis shows, the farmers has benefited.

For business model, this project doesn't focus on the business model but the ICIMOD project has done some work on it which I was leading the project at that time.

NREP is also seeing interest in solar cooling technologies to preserve produce before farmers can get products to market. Is AEPC and others considering this market as well?

Question by DHINRICH

LG: AEPC works on subsidy policy which focus on Solar irrigation but not focus cooling technology. But it is a good suggestion for future programs.

BP: Renewable world is also thinking of cooling technologies especially in rural hill area. Small holders produce crops in small amount, RW is working on developing cooperative who can store the crops and once a week they can move the produce to the market.

Concluding remarks

The concluding remarks were given by Mr. Nawa Raj Dhakal and Dr Madhusudan Adkhikari.

Mr. Nawa Raj Dhakal, AEPC

- He congratulated IWMI for a very good study program. AEPC needs to go through the study findings.
- Regarding the GCF project, AEPC after being accreted as direct access entity for GCF, we are now preparing pipeline of projects, one of the projects in solar irrigation is named Increasing Community Resilience through enhancement of Green Agriculture. AEPC has completed the concept note and conducting feasibility. GESI element is prominent in the project and plan to be implemented in Gandaki and Lumbini project.
- The second NDC of Nepal also highlight the emissions in agriculture sector. APEC working in line with the second NDC with agriculture and food security.

Dr Madhusudan Adkhikari, AEPC

- Thankful to organizing team and IWMI for organizing the national forum.
- SIP technology focus on modernizing agriculture sector.
- IWMI has raised the sustainability aspect of technology
- AEPC to get all the details form the research findings from Dr. Laxman Ghimire to make Solar irrigation and lift irrigation more accessible to the beneficiaries.

Annex 1: Photos from the webinar:

Zoom Meeting

Recording

Participants in the grid (from top-left to bottom-right):

- M. Adhikari AEPC
- Zeba Ahsan, IWMI
- Shisher Shrestha
- Aditi Mukherji
- Nawa Raj Dhakal
- Laxman prasad ghimire
- IWMI International Water Management Institute
- Pooja Sharma
- Sakari
- Mukti Bikram Chhetri (AE...)
- Khem Raj Bhandari
- Baburam Paudel
- DHINRICH
- Sangita Giri
- Stamrakar
- Rabindra Kumar Karki
- Basana Sapkota
- Pratima KC
- Dipak Paudel
- Sundar Bahadur Khadka
- Om Acharya
- archisman mitra
- Manish
- Manjari Shrestha
- Rabindra Lamichhane

Zoom Meeting

Recording

Shisher Shrestha is talking...

Participants in the grid (from top-left to bottom-right):

- Khem Raj Bhandari
- Baburam Paudel
- DHINRICH
- Sangita Giri
- Stamrakar
- Basana Sapkota
- Pratima KC
- Dipak Paudel
- labisha
- Sundar Bahadur Khadka
- Manjari Shrestha
- Parbata Bhatta... @AEPC
- Rabindra Kumar Karki
- Om Acharya
- archisman mitra
- Manish
- Rabindra Lamichhane
- Ashma Vaidya
- Mahesh Pun
- Ritavrat Joshi
- Santosh Anand
- Connecting to audio
- Bharat Malli
- RECON
- prakash bikram...

Mute My Audio (Alt+A)

Mute Stop Video

Participants 35

Chat

Share Screen

Record

Reactions

Leave

Type here to search

14°C

ENG

10:50

04-02-2022

Annex 2: Participation data and Zoom details

List of participants:

1. Shisher Shrestha
2. Laxman Prasad Ghimire
3. Labisha Uprety
4. Dr Manohara Khadka
5. Khem Raj Bhandari
6. Puran Chaudhary
7. Dr Aditi Mukherji
8. Archisman Mitra
9. Ashma Vaidya
10. Baburam Paudel
11. Basana Sapkota
12. Bharat Malla
13. Bipin Dulal
14. Biswaraj Bhattarai
15. Dinesh Dulal
16. Dipesh Joshi
17. Divya Kashyap
18. Faiz Alam
19. Gitta Shrestha
20. Guna Raj Dhakal
21. Kishwor Karki
22. Mahen Pun
23. Manish Kumar
24. Manjari Shrestha
25. Manu (AEPC/CREF)
26. Moti Rijal
27. Mukti Bikram Chhetri
28. Nabina Lamichhane
29. Nawa Raj Dhakal
30. Om Acharya
31. Pooja Sharma
32. Prachanda Pradhan
33. Pragyan Regmi
34. Prakash Bikram Besnett
35. Pratima KC
36. Rabindra Kumar Karki
37. Rabindra Lamichhane
38. Ritavrat Joshi
39. Sagar Mani Gnawali
40. Sakarki
41. Sangita Giri
42. Sanju Koirala
43. Santosh Anand
44. Shankar Khagi, USAID Nepal
45. S Tamrakar
46. Subhash Dhakal
47. Sujan
48. Sundar Bahadur Khadka

49. Vijay

50. Zeba Zoariah Ahsan

| SN | Name (Original Name) | User Email | Duration (Minutes) |
|----|--------------------------------------|----------------------------|--------------------|
| 1 | Guna Raj Dhakal | | 9 |
| 2 | Bharat Malla | bharat.20malla@gmail.com | 1 |
| 3 | Shisher Shrestha (IWMI Nepal Events) | iwmi-nepal-events@iwmi.org | 117 |
| 4 | Ritavrat Joshi | | 14 |
| 5 | Laxman prasad ghimire | | 1 |
| 6 | Laxman prasad ghimire | | 116 |
| 7 | labisha | | 1 |
| 8 | labisha | | 105 |
| 9 | Manohara Khadka | m.khadka@cgiar.org | 1 |
| 10 | Manohara Khadka | m.khadka@cgiar.org | 115 |
| 11 | Santosh Nepal | santosh.nepal@icimod.org | 1 |
| 12 | Rabindra Lamichhane | | 2 |
| 13 | Gta Shrestha | gittat@gmail.com | 1 |
| 14 | Gitta Shrestha (Gta Shrestha) | gittat@gmail.com | 91 |
| 15 | Sagar Mani Gnawali | | 1 |
| 16 | Sagar Mani Gnawali | | 73 |
| 17 | Zeba Ahsan# IWMI | | 1 |
| 18 | M Adhikari AEPC | | 1 |
| 19 | Aditi Mukherji | n.sigtia@cgiar.org | 1 |
| 20 | Aditi Mukherji | n.sigtia@cgiar.org | 81 |
| 21 | Zeba Ahsan# IWMI | | 107 |
| 22 | M Adhikari AEPC | | 12 |
| 23 | RECON | | 3 |
| 24 | Indra Khanal | | 2 |
| 25 | Manu | | 3 |
| 26 | Mukti Bikram Chhetri (AEPC) | | 1 |
| 27 | Indra Khanal | | 1 |
| 28 | Mukti Bikram Chhetri (AEPC) | | 103 |
| 29 | archisman mitra | | 1 |
| 30 | Om Acharya | | 1 |
| 31 | Om Acharya | | 103 |
| 32 | archisman mitra | | 103 |
| 33 | Indra Khanal | | 2 |
| 34 | Manu (AEPC/CREF) (Manu) | | 74 |
| 35 | Ritavrat Joshi | | 73 |
| 36 | Guna Raj Dhakal (RECON) | | 68 |
| 37 | Manish | | 1 |
| 38 | Manish | | 103 |
| 39 | Santosh Nepal | santosh.nepal@icimod.org | 1 |
| 40 | Santosh Nepal | santosh.nepal@icimod.org | 24 |
| 41 | Sangita Giri | | 1 |
| 42 | Sangita Giri | | 102 |
| 43 | Bipin Dulal | | 1 |
| 44 | Bharat Malla | bharat.20malla@gmail.com | 1 |
| 45 | Bipin Dulal | | 6 |
| 46 | Bharat Malla | bharat.20malla@gmail.com | 57 |
| 47 | Shanker Khagi# USAID Nepal | | 1 |
| 48 | Shanker Khagi# USAID Nepal | | 77 |
| 49 | Manjari Shrestha | | 1 |
| 50 | Manjari Shrestha | | 101 |
| 51 | Aditi Sanjay | | 1 |
| 52 | Aditi Sanjay | | 3 |
| 53 | Indra Khanal | | 1 |
| 54 | Pooja Sharma | | 1 |

| | | | |
|-----|--|--------------------------------------|-----|
| 55 | Indra Khanal | | 1 |
| 56 | Pooja Sharma | | 100 |
| 57 | Smaranika Mahapatra | smahapatra44@gmail.com | 1 |
| 58 | Smaranika Mahapatra | smahapatra44@gmail.com | 36 |
| 59 | Rabindra Lamichhane | itsrabindra@gmail.com | 1 |
| 60 | sanjukoirala | | 1 |
| 61 | sanjukoirala | | 71 |
| 62 | Dinesh Dulal | | 1 |
| 63 | Rabindra Lamichhane | itsrabindra@gmail.com | 100 |
| 64 | Prakash Bikram Basnet (SEMAN) | | 1 |
| 65 | Ashma Vaidya | | 1 |
| 66 | Dipesh Joshi WWF | dipesh.joshi@wwfnepal.org | 1 |
| 67 | Dinesh Dulal | | 63 |
| 68 | Gham Power_Bishwaraj | | 1 |
| 69 | Nabina lamichhane | | 1 |
| 70 | Ashma Vaidya | | 95 |
| 71 | Prakash Bikram Basnet (SEMAN) | | 12 |
| 72 | Dipesh Joshi WWF | dipesh.joshi@wwfnepal.org | 26 |
| 73 | Bishwaraj Bhattarai_Gham Power Nepal (Gham Power_Bishwaraj) | | 17 |
| 74 | Nabina lamichhane | | 61 |
| 75 | Indra Khanal | | 7 |
| 76 | STamrakar | | 1 |
| 77 | Baburam Paudel | baburampaudel@yahoo.com | 1 |
| 78 | Baburam Paudel | baburampaudel@yahoo.com | 98 |
| 79 | STamrakar | | 88 |
| 80 | Divya Kashyap | divya.kashyap.2012@gmail.com | 1 |
| 81 | Divya Kashyap (Divya Kashyap) | divya.kashyap.2012@gmail.com | 77 |
| 82 | Khem Raj Bhandari | | 1 |
| 83 | Khem Raj Bhandari | | 98 |
| 84 | Pragyan Regmi | | 1 |
| 85 | faiz alam | faizu1990@gmail.com | 1 |
| 86 | Pragyan Regmi | | 34 |
| 87 | faiz alam | faizu1990@gmail.com | 52 |
| 88 | Mahesh Pun | | 1 |
| 89 | Mahesh Pun | | 97 |
| 90 | Prachanda Pradhan | | 1 |
| 91 | Prachanda Pradhan | | 78 |
| 92 | Nawa Raj Dhakal | nrdhakal@yahoo.com | 1 |
| 93 | Nawa Raj Dhakal | nrdhakal@yahoo.com | 95 |
| 94 | Subash Dhakal | | 1 |
| 95 | Subash Dhakal | | 77 |
| 96 | Rabindra Kumar Karki | rkarki@ideglobal.org | 1 |
| 97 | Rabindra Kumar Karki | rkarki@ideglobal.org | 1 |
| 98 | Sundar Bahadur Khadka | | 1 |
| 99 | Bipin Dulal | | 1 |
| 100 | Bipin Dulal | | 74 |
| 101 | Sundar Bahadur Khadka | | 94 |
| 102 | Santosh Anand | | 1 |
| 103 | Rabindra Kumar Karki | rkarki@ideglobal.org | 1 |
| 104 | Rabindra Kumar Karki | rkarki@ideglobal.org | 67 |
| 105 | Santosh Anand | | 68 |
| 106 | Tripti Prajapati | tripti.prajapati@renewable-world.org | 1 |
| 107 | Moti Rijal | | 1 |
| 108 | Tripti Prajapati | tripti.prajapati@renewable-world.org | 38 |
| 109 | Moti Rijal | | 76 |
| 110 | Redmi | hardik@ghampower.com | 1 |
| 111 | Redmi | hardik@ghampower.com | 5 |
| 112 | sujan | | 1 |
| 113 | sujan | | 8 |

| | | | |
|-----|--|--------------------------------------|----|
| 114 | Puran Chaudhary | | 1 |
| 115 | Puran Chaudhary | | 81 |
| 116 | Basana Sapkota | | 1 |
| 117 | Basana Sapkota | | 90 |
| 118 | Galaxy Note20 5G | | 1 |
| 119 | prakash bikram basnet (Galaxy Note20 5G) | | 79 |
| 120 | kishwor karki | | 1 |
| 121 | kishwor karki | | 62 |
| 122 | Yashodha- IWMI | | 1 |
| 123 | Yashodha- IWMI | | 17 |
| 124 | sujan | | 45 |
| 125 | Narayan Adhikari | | 1 |
| 126 | Narayan Adhikari | | 52 |
| 127 | Vijay | | 1 |
| 128 | Vijay | | 39 |
| 129 | Bishwaraj Bhattarai_Gham Power Nepal | | 70 |
| 130 | sakarki | | 1 |
| 131 | sakarki | | 77 |
| 132 | Dipak Paudel | | 1 |
| 133 | Dipak Paudel | | 72 |
| 134 | pragyan.regmi | | 1 |
| 135 | pragyan.regmi | | 44 |
| 136 | Pratima KC | | 1 |
| 137 | Pratima KC | | 51 |
| 138 | Parbata | | 1 |
| 139 | Parbata Bhatta @AEPC (Parbata) | | 47 |
| 140 | Vijay | | 22 |
| 141 | Indra Khanal | | 1 |
| 142 | Indra Khanal | | 7 |
| 143 | Tripti Prajapati | tripti.prajapati@renewable-world.org | 1 |
| 144 | Tripti Prajapati | tripti.prajapati@renewable-world.org | 24 |
| 145 | DHINRICHS | | 1 |
| 146 | DHINRICHS | | 10 |
| 147 | Guna Raj Dhakal | | 1 |
| 148 | Ritavrat Joshi | | 31 |
| 149 | RECON | | 1 |
| 150 | Guna Raj Dhakal | | 20 |
| 151 | Guna Raj Dhakal (RECON) | | 19 |
| 152 | Santosh Anand | | 1 |
| 153 | Santosh Anand | | 22 |
| 154 | Aditi Mukherji | n.sigtia@cgiar.org | 1 |
| 155 | Aditi Mukherji | n.sigtia@cgiar.org | 22 |
| 156 | Gta Shrestha | gittat@gmail.com | 1 |
| 157 | Gta Shrestha | gittat@gmail.com | 6 |
| 158 | M Adhikari AEPC | | 1 |
| 159 | M Adhikari AEPC | | 1 |
| 160 | M Adhikari AEPC | | 1 |
| 161 | M Adhikari AEPC | | 15 |
| 162 | Sangita Majhi | sangitamajhi2605@gmail.com | 1 |
| 163 | Sangita Majhi | sangitamajhi2605@gmail.com | 2 |
| 164 | prakash bikram basnet | | 4 |
| 165 | Bharat Malla | bharat.20malla@gmail.com | 1 |
| 166 | Rabindra Kumar Karki | rkarki@ideglobal.org | 1 |
| 167 | Bharat Malla | bharat.20malla@gmail.com | 9 |
| 168 | Rabindra Kumar Karki | rkarki@ideglobal.org | 4 |
| 169 | Gta Shrestha | gittat@gmail.com | 1 |
| 170 | Gta Shrestha | gittat@gmail.com | 3 |
| 171 | RECON | | 1 |
| 172 | RECON | | 8 |
| 173 | prakash bikram basnet | | 5 |

| | | | |
|-----|--------------------------------------|---------------------------|----|
| 174 | STamrakar | | 1 |
| 175 | STamrakar | | 7 |
| 176 | labisha | | 1 |
| 177 | labisha | | 7 |
| 178 | Rabindra Kumar Karki | rkarki@ideglobal.org | 1 |
| 179 | Rabindra Kumar Karki | rkarki@ideglobal.org | 6 |
| 180 | Gta Shrestha | gittat@gmail.com | 1 |
| 181 | Gta Shrestha | gittat@gmail.com | 4 |
| 182 | Galaxy Note20 5G | | 1 |
| 183 | Galaxy Note20 5G | | 2 |
| 184 | DHINRICHs | | 1 |
| 185 | Bishwaraj Bhattarai_Gham Power Nepal | | 1 |
| 186 | Dipesh Joshi WWF | dipesh.joshi@wwfnepal.org | 20 |
| 187 | Sagar Mani Gnawali | | 2 |
| 188 | DHINRICHs | | 24 |

Zoom Link:

IWMI Nepal Events is inviting you to a scheduled Zoom meeting.

Join Zoom Meeting

<https://us02web.zoom.us/j/86538387742?pwd=S1FMOXMzRE9vTW9kK2tpa2ZiOVJCZz09>

Meeting ID: 865 3838 7742

Passcode: 105615

One tap mobile

Zoom Recordings

https://us02web.zoom.us/rec/share/ZfRu_ICaDj23eF173idoyVMlwFsPcRbj4VFRVKrEErtWPqbHTtwtaBl8xvYuR6y5.IVvRONwrt7uSfFXQ?startTime=1643946394000

(Passcode: %gLr+2B3)

Annex 3: Forum Chat box data

00:26:01 Rabindra Kumar Karki: Hi Everyone good morning ! Rabindra Karki From iDE.
00:26:34 Om Acharya: Om Acharya, IWMI Nepal
00:26:49 Bishwaraj Bhattarai_Gham Power Nepal: Hello everyone, Namaste! I'm Bishwaraj Bhattarai, Project Manager at Gham Power Nepal. Glad to be here. Thank you.
00:27:00 Prachanda Pradhan: Prachanda Pradhan, FMIST
00:27:03 Pooja Sharma: Namaste everyone! Pooja Sharma, Practical Action
00:27:05 Manu (AEPC/CREF): Manu Binod Aryal, AEPC/CREF
00:27:06 Mukti Bikram Chhetri (AEPC): Good Morning and Namaste to all. Mukti Bikram Chhetri from AEPC.
00:27:09 Khem Raj Bhandari: Khem Raj Bhandari
00:27:15 Guna Raj Dhakal, RECON: Guna Raj Dhakal, Renewable Energy Confederation of Nepal, RECON
00:27:19 Moti Rijal: Good morning and namaste
00:27:21 Sangita Giri: Good Morning everyone, I am Sangita Giri from NEA
00:27:55 Manjari Shrestha: Namaste and Good morning everyone, Manjari Shrestha, Practical Action
00:28:03 Pragyan Regmi: Namaste....
Pragyan Regmi
NMB Bank
00:28:06 Manish: Good morning to everyone. I'm Dr. Manish Kumar, IWMI Delhi
00:28:13 Divya Kashyap, SDC: Good Morning everyone. This is Divya Kashyap Sharma from India office of the Swiss Agency for Development and Cooperation. I manage SoLAR project on SDC behalf
00:28:34 Ashma Vaidya: Ashma Vaidya, Freelancer - Sustainable Energy
00:29:15 sanjukoirala: Good morning!!! Sanju Koirala, Freelancer-Water, Migration and Gender
00:29:26 Khem Raj Bhandari: Good Morning Everyone! This is Khem Raj Bhandari, I am working at GIZ Nepal as Technical Advisor.
00:29:29 Subash Dhakal: Good morning everyone, Namaste, Subash Dhakal, SNV Nepal
00:30:06 Mahesh Pun: Mahesh Pun from Long Spring Consulting, Washington DC
00:32:13 Dipesh Joshi WWF: Dipesh Joshi WWF Nepal
00:33:00 Rabindra Lamichhane: Rabindra Lamichhane, TRACTEBEL GmbH
00:33:42 Sagar Mani Gnawali: Sagar Gyawali, NEA
00:35:49 Moti Rijal: Good morning to everyone, Moti Rijal from Central Department of Geology, Tribhuvan University
01:00:47 Guna Raj Dhakal, RECON: Strongly Agree with Arguments of Dr Manohara
01:03:59 labisha: please post your questions here if any
01:04:10 Guna Raj Dhakal, RECON: We need complete multiple uses with attractive business model
01:11:18 labisha: Speakers are requested to turn on their videos if possible
01:15:30 Mukti Bikram Chhetri (AEPC): A question to Dr. Aditi. As AEPC is currently in the phase of developing a project on SIP for the Green Climate Fund. In addition to the mitigation potential of the SIPs i.e. reduction in GHG emission, in order to justify concessionality we would have to justify how the project will increasing the resilience (i.e. the adaptation benefits). To assure adaptation benefits we need to make a case to strengthen cause-effect relationship between climate impact and benefits of SIP. So, did the research team had the opportunity to look in to or analyse historical observation and past trend analyses on the climate drivers and their impacts? Was the data available to do such analyses?
01:16:36 labisha: Thank you for your question, we will soon get to it right after the panel discussion, others are also requested to put in their questions in the chat box, if any.
01:19:16 Moti Rijal: SIP and impact on water budget and groundwater environment (as pesticides load increases when other crops are replaced by vegetation)
01:20:42 Ashma Vaidya: Much of SIP projects remain technocratic in Nepal. SIPs are the means and not the ends per se. Access to technology alone cannot empower women and smallholder farmers. Enabling them to access the market, negotiate and receive fair value for their produces would be crucial to help them use SIPs to their benefit and welfare. In addition to that, as Gita ji pointed out integration of interventions to change intra-household dynamics would be crucial to achieve gender transformation through SIP projects.
01:23:03 DHINRICH: Sorry late
01:31:10 Bipin Dulal: I agree completely with Ashma Vaidya ji. We need a holistic approach where along with SIP technology, poor farmers products should have access to steady Markets with justified selling price. For that, economic education and marketing skills should be incorporated. At the end, profits motivates and brings smile on farmers.
01:35:22 Sundar Bahadur Khadka: A question to Dr. Aditi. From your studies we come to know that there is no significant difference in the yield of monsoon paddy but another findings is that Farmers who received SIP's earn 10 % crop revenue. Would you please elaborate and clarify on this.
01:36:48 DHINRICH: Have assessments been done on SIP feasibility, including both technical and economic feasibility? What business model is the most effective?
01:37:06 Pooja Sharma: Agree @Ashma ji, also we don't want women just as a technology user but as a key market actor. Also, have their voice to negotiate and decide which technology they want to invest on.

01:37:47DHINRICHS: NREP is also seeing interest in solar cooling technologies to preserve produce before farmers can get products to market. Is AEPC and others considering this market as well?

01:39:29DHINRICHS: And just to note, NREP has quarterly offerings of needs-based financial support to end-users such as farmers in Provinces 2, Lumbini and Karnali. We also offer free technical assistance. Other Development Partners may add to our available resource base.

01:40:02Mukti Bikram Chhetri (AEPC): Thank you.

01:40:07Sundar Bahadur Khadka: thank you

01:41:48Pooja Sharma: @Douglas, I shared an example of impact financing and governance model, will share you later if that's helpful.

01:41:57DHINRICHS: Thank you Aditi.

01:43:30DHINRICHS: Thank you Pooja. I joined the call late--is it possible to share the model with me? Dhanyavad.

01:43:31Ashma Vaidya: Thanks all presenters and panelists for sharing your experiences/findings. Appreciate if presenters could share papers on researches presented today. Very interesting findings!

01:45:06DHINRICHS: Thank you Dr. Ghmire and participants, very interesting session.

01:45:34DHINRICHS: Namaste Nawa Raj Sir.

01:55:04Manohara Khadka: Thank you all; much appreciated the discussions and comments.

01:55:31Laxman prasad ghimire: AEPC is much thankful to everyone

01:55:54Aditi Mukherji: As soon as COVID restrictions are less, we will like to organise field trips to other countries for the AEPC, NEA and Municipalities for seeing grid connected SIPs in India before pilot implementation in Nepal

01:55:56Aditi Mukherji: Thank you

01:56:07Sangita Giri: very interactive session thank you everyone

01:56:07Manjari Shrestha: thank you everyone

01:56:12Manish: Thank you everyone

01:56:14STamrakar: Thank you everyone

01:56:20sakarki: Thank You