First Bi-Annual Progress Report

2018-20

Mujkuva Solar Pump
Irrigators' Cooperative Enterprise
(MSPICE)

Chairman's Message

Shri Chiman Padhiyar
(Chairman, MSPICE)

On the second anniversary of the inauguration of India's first grid-connected Solar Pump Irrigators Cooperative Enterprise i.e. Mujkuva Saur Urja Utpadak Sahakari Mandli by Shri Narendra Modi, Hon'ble Prime Minister of India, it is an honour for us to release this first Bi-Annual progress report. I vividly remember the joyous day of inauguration i.e. 30th Sep 2018. This was indeed a memorable day for all the villagers and it happened due to relentless efforts and support from National Dairy Development Board (NDDB), Rajasthan Electronics & Instruments Ltd. (REIL) and International Water Management Institute (IWMI). I would like to use this opportunity to thank all of them for bringing Mujkuva on the world map as a "climate smart village". I would also like to thank our Gram Panchayat leadership for allocating land to build central solar power evacuation centre and Mujkuva Solar Pump Irrigators' Cooperative Enterprise (MSPICE) office. It would not have been possible without their support.

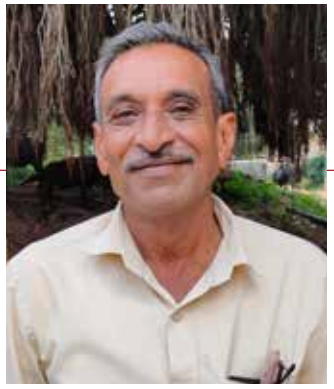
The credit for successfully establishing and running the MSPICE for last two years goes to solar farmers and their spirit of cooperation. Together, we faced many challenges including natural calamity of Vayu cyclone which damaged our micro grid lines, but we ensured continued and effective functioning of our society.

For the past two years, our member farmers, with 11 solar pumps having total installed capacity of 150 kWp, were irrigating their own land at no cost and have been selling the surplus solar energy generated to Madhya Gujarat Vij Company Ltd. (MGVCL). I feel proud to say that our solar farmers have collectively foregone their rights of agricultural connections with subsidised electricity and saved lakhs of rupees for the government. Society's Power Purchase Agreement (PPA) with Madhya Gujarat Vij Company Ltd. (MGVCL) has proved to be a source of additional income for our farmers. Now it is not just solar power but solar crop for our farmers. In the last 22 months farmer members of the solar cooperative have earned more than Rs.11 lakh. We are thankful to MGVCL for this opportunity.

The operations of our cooperative have provided great learnings for all stakeholders. We feel proud that the idea of SPaRC (solar power as remunerative crop), has inspired the design of Gujarat's innovative Suryashakti Kisan Yojana (SKY) and one of the three components of the Kisan Urja Surksha evam Utthan Mahabhiyan (KUSUM) scheme of Government of India.

The idea of MSPICE was conceptualized and implemented jointly through a partnership among NDDB, REIL and IWMI-Tata Program. NDDB and REIL made available the capital subsidy for the project and IWMI-Tata Program offered the cooperative additional 'green energy' and 'water conservation' bonus for a period of two years, to top up the feed-in-tariff offered by MGVCL. We thank Chairman, NDDB, Managing Director, REIL and Program Leader, IWMI-Tata Program for their support in helping the cooperative achieve its objectives.

With great pleasure I would like to put forth the bi-annual report of MSPICE. I assure our stakeholders & well-wishers that MSPICE will continue to stay as a successful example of climate smart initiative, of farmers and for the farmers.



Secretry's Message

Shri Labhu Patel
(Secretary, MSPICE)

This Bi-annual progress report presents the operating results of MSPICE for the period of September 2018 to July 2020. Key results in terms of benefits created by the MSPICE for various stakeholders are mentioned below.

1. Since 30 Sep 2018, MSPICE generated more than 3.2 lakh Kilo Watt Hour (kWh) units of solar power; of which, around 1.2 lakh kWh were used for irrigation and almost 2 lakh kWh units were sold to MGVCL.
2. During the operational period of 22 months, MSPICE saved the potential farm power subsidy around Rs.12 lakhs of the Government, besides providing them with an additional gain of around Rs.2 lakh from redistribution of 2 lakh kWh of solar power purchased from MSPICE. MSPICE also helped MGVCL earn Renewable Energy Credit (REC) of at least Rs.3 lakh against the solar power generated.
3. Till July 2020, generated green energy by MSPICE has helped in reducing around 320 kg of CO2 emissions[1] from the use of fossil fuels. One of the lacunas in managing operations of MSPICE is our low annual average generation of 2.85 kWh/kWp, as we continue to improve our operations, our target is to reach up to 4.2-4.5 kWh/kWp.
4. Over 500 guests visited MSPICE in the last two years which included farmer groups, students & academicians, researchers & policy makers, journalists & media personnel, bureaucrats & politicians, international delegations and a number of high level dignitaries notable amongst them were Shri Rajeev Kumar (Vice Chairman, Niti Ayog), and Shri Satish Marathe (Board Member, RBI), Shri Dilip Rath (Chairman, NDDB), Shri Tushaar Shah (Emeritus Scientist, IWMI), and Shri Rakesh Chopra (MD, REIL).

I am grateful to the IWMI-Tata Program (ITP) and NDDB teams for their help in compiling all the data in order to come up with a comprehensive analysis of MSPICE operations presented in this report.

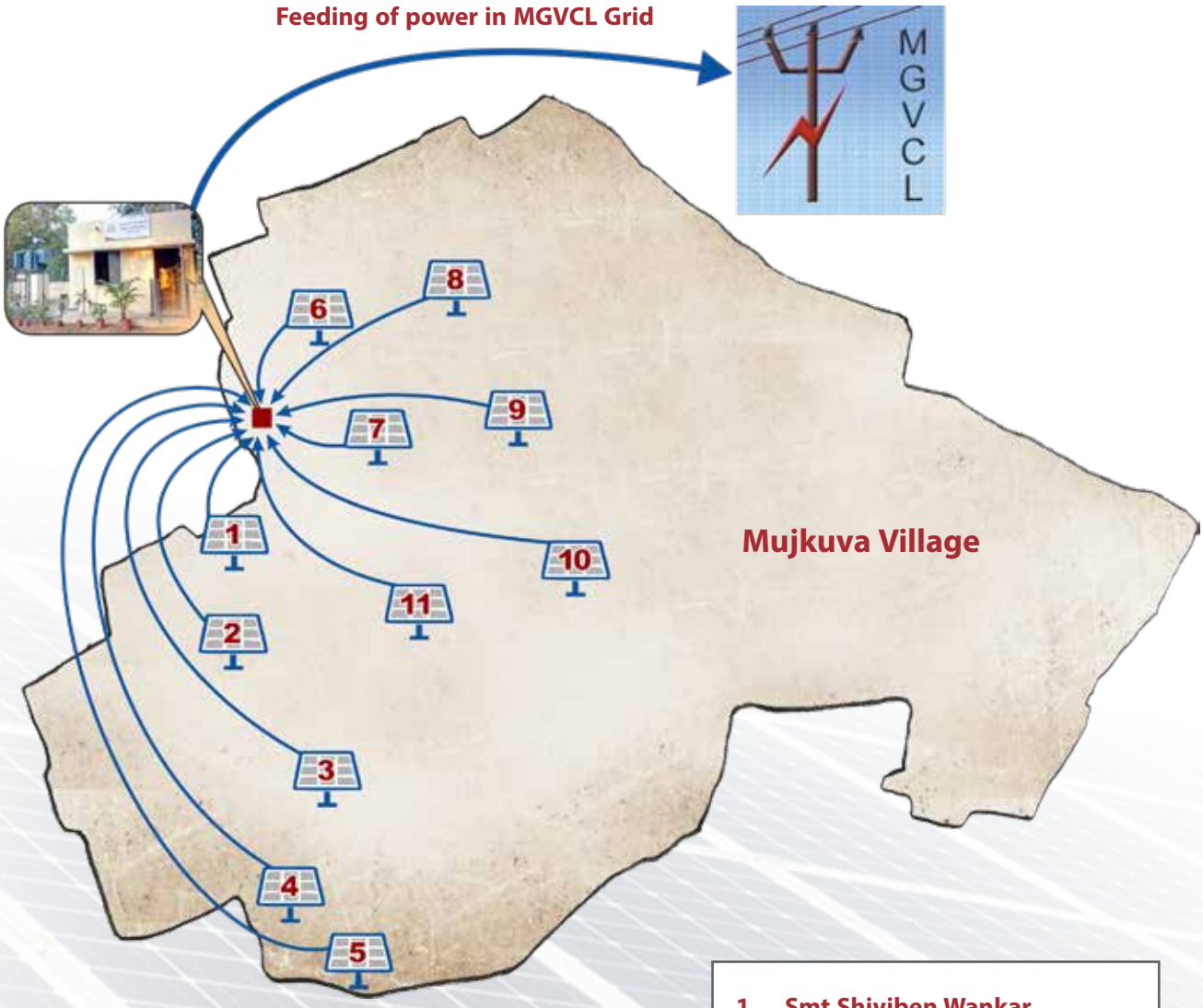
Sarpanch's Message

Shri Manu Padhiyar
(Former Sarpanch, Mujkuva)

I feel truly humbled with all the appreciation Mujkuva village has received, in the last two years, for coming up with such a unique cooperative. And I am confident that MSPICE will inspire many other farmers to choose such environmentally benign irrigation arrangement.

[1]http://cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver10.pdf

Concept of MSPICE



MSPICE Building & Central Evacuation Point

Farmers generating solar energy individually from the panels installed in their farms

1. Smt Shiviben Wankar
2. Shri Ramesh Padhiyar
3. Shri Mafatbhai Padhiyar
4. Shri Samantbhai Gohel
5. Shri Kabhai C Padhiyar
6. Shri Punambhai H Padhiyar
7. Shri Rajendrabhai Patel
8. Shri Ramanbhai P Padhiyar
9. Shri Ranchodbhai P Padhiyar
10. Shri Samarsinhbhai Chawda
11. Shri Prakashbhai H. Parmar

Background

Mujkuva village is situated in Anklav taluka of Anand district in Gujarat. Most of 600 households in the village are engaged in agriculture or dairy related activity. There are 54 grid-connected irrigation pumps ranging from 10 to 20 HP size. Since Mujkuva is 100 per cent dependent on groundwater for irrigation, these electric pump owners provide irrigation services to other farmers in the village. Irrigation service providers have invested in pipelines across the village to cater to a large base of water buyers. Annually, the overall irrigation market amounts to about Rs.15-20 lakhs. All metered pumps together consume about 8 lakh kWh energy in a year at Rs.0.60/kWh and government subsidy to these metered connection amounts to about Rs.40 lakhs annually.

Teams from NDDB - which is working with the village dairy cooperative of Mujkuva and IWMI - which has an extensive experience with groundwater & irrigation related issues and had worked with diesel pump owner farmers earlier for solarising their pumps and providing them with option to sell the surplus energy through cooperatives came together for this initiative. The team explained to Mujkuva's electric pump owner farmers about the benefits of solar pumps and possibility of earnings through sale of surplus energy. Mujkuva farmers' exposure to solar irrigation pumps in a neighbouring IWMI pilot was also conducted. Availability of day-time power, better water output and income from selling surplus power were the major attraction for some pump owner farmers.

Eleven farmers of Mujkuva, who had grid power, adopted the unique ideas conceptualized and piloted by IWMI: Solar Power as Remunerative Crop (SPaRC) and Solar Pump Irrigators' Cooperative Enterprises (SPICE). In March 2017, these farmers registered India's first grid-connected farmers' solar cooperative and took an exceptional decision to surrender their subsidised electricity connection. With the support from NDDB, REIL and IWMI, installation of 11 solar pumps with a total capacity of 150 Kilo Watt Power (kWp) was completed by December 2017. During December 2017 to September 2018, generated solar energy was used only for irrigating farmers' own fields and the neighbouring fields. Once MGVCL completed the proofing of concept and accorded an approval to substitute the grid power with solar power the micro-grid was commissioned in September 2018. MSPICE started the sale of surplus energy from 30th September 2018. Since then, MSPICE farmers are using the generated solar energy to fulfil their own irrigation requirement and sell available surplus solar energy to the grid.

Major Milestones for MSPICE

Inauguration of MSPICE by Prime Minister

SEPT 2018

Signing PPA with MGVCL

SEPT 2018

Commencement of Installation of Solar Panels

OCT 2017

MAR 2017

Registration of MSPICE

MAR 2017

Meeting of all the stakeholders at Mujkuva Dairy Cooperative

SEPT 2019

MSPICE completed one year of surplus power evacuation to grid

DEC 2018

Receiving of first payment

JUNE 2019

MSPICE withstand extreme weather conditions including excessive rain and cyclone Vayu

APR 2017

First Management Committee Meeting of MSPICE

Meet Our Solar Farmers

Smt.Shiviben Wankar

Family Members: **6**
Land: **2.28 acres**
Solar Pump: **15 HP**
Own Irrigation: **2.28 acres**
Irrigation Service: **4.57 acres**
Total Solar Power Generated: **29,127 kWh**
Solar Power Sold: **19,117 kWh**
Earning from sale: **₹1,06,508**

Shri Ramesh Padhiar

Family Members: **7**
Land: **4.5 Acres**
Solar Pump: **10 HP**
Own Irrigation: **4.5 Acres**
Irrigation Service: **7.0 Acres**
Total Solar Power Generated: **37,609 kWh**
Solar Power Sold: **13,012 kWh**
Earning from sale: **₹66,250**

Shri Mafatbhai Padhiar

Family Members: **12**
Land: **3 Acres**
Solar Pump: **15 HP**
Own Irrigation: **3 Acres**
Irrigation Service: **12 Acres**
Total Solar Power Generated: **24,615 kWh**
Solar Power Sold: **11,258 kWh**
Earning from sale: **₹55,777**

Shri Samantbhai Gohel

Family Members: **12**
Land: **3 Acres**
Solar Pump: **15 HP**
Own Irrigation: **3 Acres**
Irrigation Service: **12 Acres**
Total Solar Power Generated: **24,615 kWh**
Solar Power Sold: **11,258 kWh**
Earning from sale: **₹55,777**

Shri Kabhai C. Padihar

Family Members: **6**
Land: **2.57 acres**
Solar Pump: **10 HP**
Own Irrigation: **3.71 acres**
Irrigation Service: **16.85 acres**
Total Solar Power Generated: **16,022 kWh**
Solar Power Sold: **11,452 kWh**
Earning from sale: **₹60,869**

Shri Punambhai H. Padhiar

Family Members: **9**
Land: **22.85 Acres**
Solar Pump: **15 HP**
Own Irrigation: **22.85 Acres**
Irrigation Service: **6 Acres**
Total Solar Power Generated: **34,719 kWh**
Solar Power Sold: **9,007 kWh**
Earning from sale: **₹42,339**

Shri Rajendrabhai Patel

Family Members: **5**
Land: **6.3 Acres**
Solar Pump: **15 HP**
Own Irrigation: **6.3 Acres**
Irrigation Service: **7.3 Acres**
Total Solar Power Generated: **35,573 kWh**
Solar Power Sold: **19,647 kWh**
Earning from sale: ₹**1,05,859**

Shri Ramanbhai P. Padhiar

Family Members: **6**
Land: **2.85 Acres**
Solar Pump: **15 HP**
Own Irrigation: **2.85 Acres**
Irrigation Service: **2 Acres**
Total Solar Power Generated: **32,875 kWh**
Solar Power Sold: **25,795 kWh**
Earning from sale: ₹**1,42,560**

Shri Ranchodbhai P. Padhiar

Family Members: **4**
Land: **0.57 Acres**
Solar Pump: **15 HP**
Own Irrigation: **0.57 Acres**
Irrigation Service: **1.43 Acres**
Total Solar Power Generated: **32,427 kWh**
Solar Power Sold: **30,848 kWh**
Earning from sale: ₹**1,72,729**

Shri Samarsinhbhai Chawada

Family Members: **6**
Land: **1.71 acres**
Solar Pump: **15 HP**
Own Irrigation: **1.71 Acres**
Irrigation Service: **3.43 Acres**
Total Solar Power Generated: **24,473 kWh**
Solar Power Sold: **20,116 kWh**
Earning from sale: ₹**1,08,656**

Shri Prakashbhai Parmar

Family Members: **3**
Land: **2.30 Acres**
Solar Pump: **15 HP**
Own Irrigation: **2.30 Acres**
Irrigation Service: **3.00 Acres**
Total Solar Power Generated: **39,526 kWh**
Solar Power Sold: **32,562 kWh**
Earning from sale: ₹**1,82,962**

Gains for MSPICE farmers[2]

Every member of the SPICE has earned around Rs.1 lakh as gross income from energy sale in last two years. The average income for farmers have been Rs.53,000/- per year.

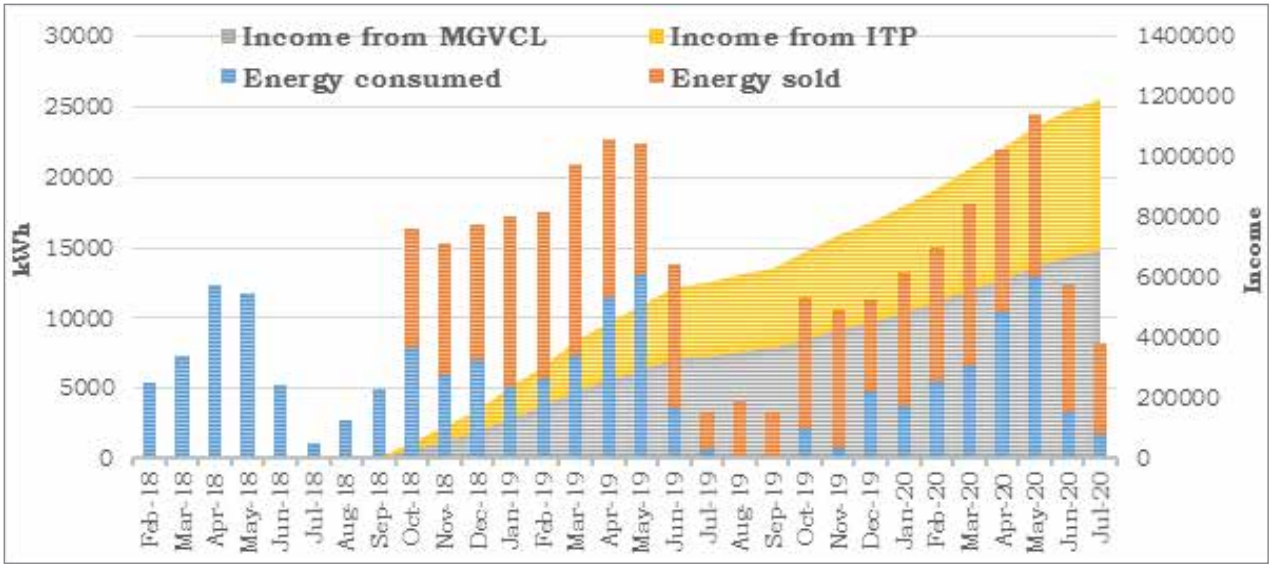
Farmers have sold around 63 per cent energy to the grid and members' gross gain from the energy sale was Rs.5.84 lakhs[3] for the year. As is seen from the graph there is an encouraging impact of incentivising energy sale. Farmers are now learning to optimise energy consumption and smartly trade-off between selling of water and selling of energy.

This income from solar energy can be increased further by at least 30% through improved operation & maintenance. The average power generation by farmers in the year 2019 was around 1,000 kWh/kWp. This average is significantly lower than the expected average generation of 1,400 – 1,600 kWh/kWp in Gujarat.

Gain for Power Distribution Company (DisCom)

MGVCL is purchasing surplus power offered by MSPICE at Rs.3.47 per kWh and PPA has been signed for 25 years. Against this, MSPICE farmers which were eligible to sell power to the grid, have forgone their subsidised grid connection at the rate of Rs.0.7/kWh to run their pumps. As the average annual power consumption by all the grid farmers in Mujkuva is 900 kWh/HP Government has to extend energy subsidy[4] to the tune of Rs.55,600 to each farmer. Now because of these 11 farmers of MSPICE and without any investment in the system, Government is expected to save around Rs.6.2 lakhs on annual basis.

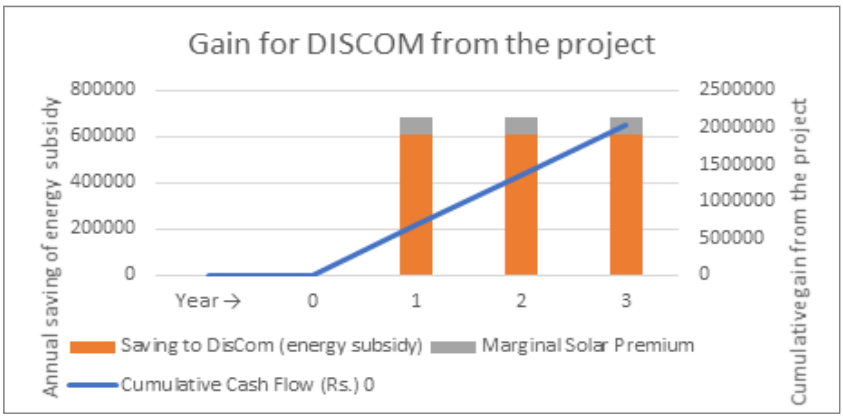
Apart from this, the MGVCL purchases the power at Rs.3.47 at village level which can be sold at higher rate to other consumers. Hence the 1 lakh kWh units sold by MSPICE on annual basis can help MGVCL earn additionally at least up to Rs.1 lakh through sell of this power to other consumers.



[2]All numbers and data shared in the report are based on daily data collection over the last two years undertaken by the IWMI-Tata Program with support from NDDB and MSPICE
[3]Farmers gain=income from energy sell (5.75 rs/kWh) + saving on electricity bill (0.7 rs/kWh)
[4]We considered 4.5 rs per kWh as cost of supply to the farmers. Since average pump size of cooperative members is 13.7 hp, therefore average power consumption of each farmer is around 12330 kWh.

Moreover, as per the PPA, MGVCL also gets the claims of Renewable Power Obligations (RPOs)/RECs against the generated energy by MSPICE.

Hence cumulating all such benefits MSPICE actually helps in additional earnings/savings to the tune of almost Rs.9 lakh/year to all stakeholders.



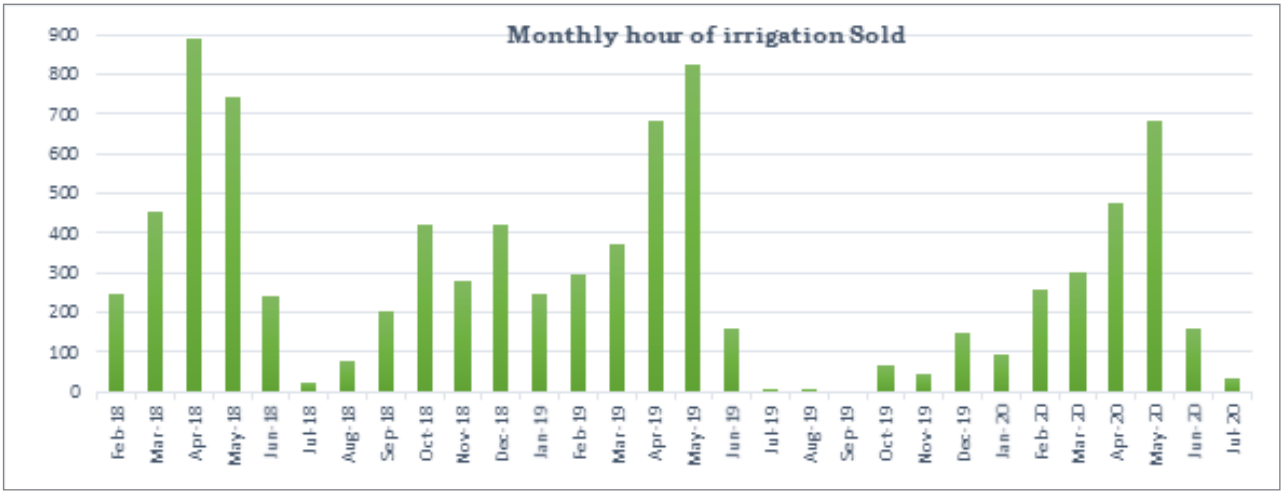
Reduction of Carbon Emission

Through the generated 3.2 lakh kWh clean energy till July 2019, farmers replaced the consumption of around 2 lakh kWh of grid electricity with clean solar energy and have added 1.2 lakh kWh clean energy into the grid. It means indirectly MSPICE has added around 3.2 lakh kWh clean energy in to the grid. Considering that each kWh conventional power replaces with clean energy save around 0.98 kg of carbon emission in the atmosphere, the clean energy generated by MSPICE has saved around 320 tonnes of carbon emission into the atmosphere.

Impact on Irrigation Water Market in Mujkuva

In Mujkuva village, the electric pump owners provide irrigation service charging Rs.50 to 60 per hour depending on the pump size. Earlier, farmers used to generally get electricity during night. But MSPICE farmers provide irrigation service in day time which has helped the water buyers as well.

Without solar, cost of grid power used for every hour of irrigation sold would be Rs.15 for the seller. From February 18 to July 20, MSPICE farmers have provided irrigation service of 5,000 hours to the water buyers. Solar pumps have helped



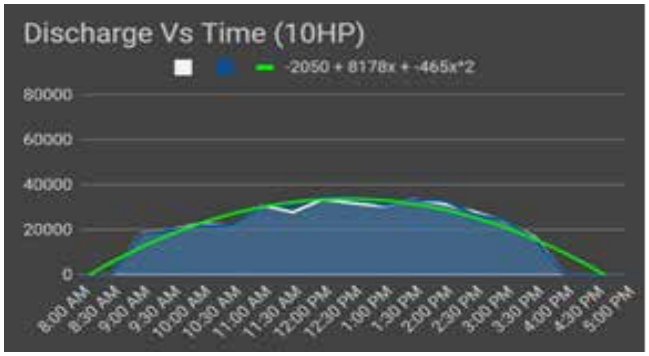
them to save about Rs. 75,000 against the cost for sold hours of irrigation. These 5000 hours of sold irrigation would also provide them an earning of up to Rs.2.5 lakh. Although considering the uncertainty of realisation of these earnings from water buyers and waiting period of one whole year once the irritation is provided, the above savings have become very important for MSPICE farmers.

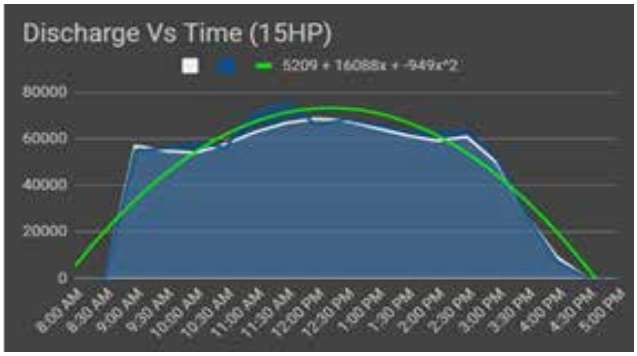
The data also suggests that hours of irrigation sold by the farmers have gone down over the years (refer chart above). One of the reason could be varying amount of water output from solar during different times of the day. Water output is relatively low during morning & evening hours and in cloudy weather.

But as found in the chart below though sold irrigation hours are reducing, the pumping for own irrigation has increased for pump owners.

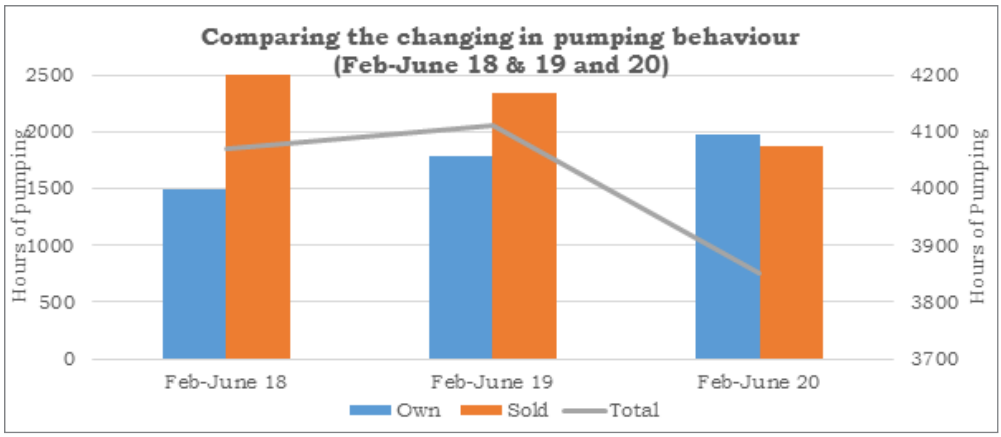
MSPICE farmers have increased their pumping by 32 per cent from (February-June 18) to (February-June 20). Data is compared for these months to minimize the impact of rainfall on pumping data. An interesting insight in the pumping data of MSPICE farmers reveals that since the solar power is generated at no additional cost, farmers seem to feel more unrestricted while using the water for their own irrigation requirement. While the same farmers are choosing to sell power in the grid over selling of irrigation using the generated power. Though in the coming years, pumping behaviour of MSPICE farmers may undergo further change as the learning & understanding of gains of farmers will improve.

The data also suggest that overall pumping has gone down due to lesser water selling to the water buyers. Even though an opportunity to sell the





generated power at 5.7 Rs/kWh is a much better opportunity than that of selling irrigation for MSPICE farmers, they cannot stop selling water to the buyers. Irrigation service is more than an economic transaction since water buyers have been dependent on sellers for very long time and in some cases, many of the buyers have also contributed in capital investment during installation of the irrigation system. Moreover, water sellers are also dependent on buyers for agriculture labour and irrigation service creates some obligation for them to provide their labour whenever required. Therefore, they cannot completely refuse irrigation service to them against the gains from energy sell.



Presence of Cooperative & its importance

Being the country's first grid-connected farmers' cooperative, MSPICE had its own set of challenges. The rights of claiming RECs are transferred to the DisCom. Due to safety, security and other related concerns of DisCom, a separate micro-grid infrastructure was created by MSPICE farmers for energy purchase and sale at an additional initial investment. For creating a separate Micro grid

network within the existing grid infrastructure of DisCom, MSPICE farmers agreed to take the burden of all commercial losses (higher than the pre-determined limit) of the DisCom's own grid infrastructure present in the vicinity of micro-grid. A similar design is now also seen in Gujarat's SKY scheme, where farmers on solarized feeders have to bear any losses in excess of a pre-determined benchmark.

Due to this, MSPICE has to remain more vigilant not only for its own members but also other non-members within its coverage area and hence MSPICE have ensured the reduction in the vigilance efforts of DisCom through reduction in T&D losses of DisCom grid. MSPICE presents an example of group of farmers creating a leakage proof system by collectively taking the liability.

Since DisCom is a permanent buyer serving as an assured market for MSPICE, members are ensured about stability of returns. Assured returns also prepares MSPICE to cover risks for members. For maintenance & administration of micro-grid, MSPICE has provisioned for Rs.400/month per farmer from the income earned. For the last one year MSPICE has effectively dealt with various challenges such as impairment of poles due to cyclone, pruning of trees & other grid maintenance related tasks, replacement of damaged solar panels etc. Though MSPICE is still in the learning phase but cooperative is strengthening the institutional capacity to look after its own power supply.

The continuous interaction among MSPICE farmers, is helping them to learn about significance of keeping the panels clean, removing shade on panels etc. which may lead to reduced generation or losses. The very design of SPICE ensures that a MSPICE farmer not performing his/her maintenance duty as a user will be the loser individually without harming the gains of other farmers and the MSPICE.

Transparent mechanism for accounting of energy sold while ensuring proportionate returns through digital metering system at the central evacuation point and digital payment transfer from MGVCL has been put in place by MSPICE. Any potential conflicts in Governance and Management of MSPICE are avoided because of transparent metering mechanism and enforced individual accountability. Also MSPICE, serving the purpose of a farmer owned institution, deals with individual issues associated of members with external stakeholders at appropriate forums. Institutional presence of MSPICE thus reduces the transaction cost for every stakeholder i.e. farmers, distribution companies etc. as a single point of contact.

Just as it happened in the case of milk cooperatives, as MSPICE matures, it can take on greater responsibilities to serve its members and help them maximize their incomes. For instance, the solar cooperative can inform member farmers about energy and water efficient technologies and practices that can help each of them maximize generation and minimize own use – ultimately resulting in maximum income for farmers.

Mujkuva Saur Urja Utpadak Sahakari Mandli Ltd

Income & Expenditure Statement

Particulars	01-04-2019 to 31-03-2020	01-04-2018 to 31-03-2019
Expenses		
Registration Fees paid to GEDA	-	11,800
Purchase of Electricity	562,043	139,351
Grid Establishment		490,763
Salary	45,000	
Bank Charges	337	424
Printing & Stationary	625	160
Miscelleneous Expenses	300	1,160
Audit Fees	2,000	400
Refurbishment Expenses	6,250	-
	616,555	**644,058**
Income		
Sale of Electricity to MGVCL, Green Energy & Water Conservation Bonus from IWMI	562,128	139,351
Interest from Bank	3,846	2,350
Member Contribution	66,000	
Grant fund for Grid Establishment	-	490,763
Excess of Expenditure over Income	-15,419	11,594*
	616,555	**644,058**

Balance Sheet

Particulars	As on 31-03-2020	As on 31-03-2019
Assets		
150 kW Transformer & Micro Grid, MSPICE Building, Solar Pump, Panels & Invertor	18,116,187	18,116,187
Payment Receivables	72,314	67,200
Balance in Bank	98,364	6,150
Excess of Expenditure over Income	-3,458	11,961
	18,283,407	**18,201,498**
Liabilities		
Share Capital	3,100	3,100
Entry Fees	140	140
Reserves	1,645	2,470
Payment to be made	162,335	162,351
Loan from REIL	1,489,500	1,572,250
Members additional contribution for infrastructure**	165,500	-
Grant for Project Infrastructure	16,461,187	16,461,187
	18,283,407	**18,201,498**

Notes

* Rs.367 carried forward from the Accounts of previous FY 2017-18

** Contribution from farmers against the payment being made to REIL for Asset Loan


मुजकुवा सौर ऊर्जा उत्पादक सहकारी मंडली लिमिटेड
माननीय श्री नरेन्द्र मोदी
भारत के प्रधानमंत्री द्वारा
माननीय श्री विजय रूपाणी
गुजरात के मुख्यमंत्री


SPICE
NATIONAL DAIRY DEVELOPMENT BOARD
MGVCL
IWMI-TATA
ની સહભાગી પહેલ
સૌર ઊર્જા ક્રાંતિની દિશામાં હરણફાળ

DeshGujarat

GUJARAT INDIA/WORLD POLITICS FAITH BUSIN

PM to launch Mujkuva solar cooperative project of farmers in Central Gujarat

September 29, 2018

Central Gujarat Gujarat Narendra Modi

Follow us on Instagram , Follow us on Telegram

SUNDAY TIMES OF INDIA, AHMEDABAD
SEPTEMBER 30, 2018

8

Anklav farmers go solar, opt out of subsidized power

Form India's First Grid-connected Solar Cooperative Enterprise

THE MUJKUVA MODEL

SAUR ENERGY INTERNATIONAL

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Home » News » PM to Inaugurate Solar Cooperative Society in Gujarat

PM to Inaugurate Solar Cooperative Society in Gujarat

By Anirudh Sharma / Updated On Mon, Oct 1st, 2018

The inauguration in Gujarat will add to the country's pro-active approach in the solar development and a suppo... ...of 100 GW by year 2022

Photos from Vijay Rupani's p...

Vijay Rupani

1 hr

આંકલાવ તાલુકાના મુજકુવા ગામના 11 ખેડૂતોએ મુજકુવા સૌર ઊર્જા સહકારી મંડળીના માધ્યમથી પોતાના ખેતરોમાં સોલર પ્રોજેક્ટ સ્થાપીને પોતાના ખેતરમાં જ ઉત્પાદિત સૂર્ય વીજળીથી સુવિધાજનક રીતે સિંચાઇ અને અન્ય કામો કરી રહ્યા છે. વડાપ્રધાનશ્રી નરેન્દ્રભાઇ મોદી આવતીકાલે મોગર ખાતેના કાર્યક્રમમાં મુજકુવા સૌર ઊર્જા સહકારી મંડળીનો ઇ-તકતીથી પ્રારંભ કરાવશે. મુજકુવાના ખેડૂતો પોતાના ખેતરમાં સિંચાઇ બાદ વધારાની વીજળી વીજ કંપનીને પ્રવહન વ્યવસ્થામાં પ્રવાહિત કરીને એક નવું પ્રકરણ આલેખવામાં આવશે. આ ખેડૂતો હવે વીજ કંપનીના વીજ વપરાશકાર મટીને એનર્જી સપ્લાય બનશે અને આવકનો એક નવો સ્ત્રોત તેમના માટે ખૂલશે.

+2

Share

प्रथम सौर ऊर्जा उत्पादक समिति की स्थापना

जयपुर. भारत की प्रथम मुजकुवा सौर ऊर्जा उत्पादक सहकारी समिति मंडली का उद्घाटन प्रधानमंत्री नरेंद्र मोदी ने अमूल चॉकलेट संयंत्र मोगर, आनंद में एक समारोह में किया। राष्ट्रीय डेयरी विकास बोर्ड एनडीडीबी और राजस्थान इलेक्ट्रॉनिक्स एंड इंस्ट्रूमेंट्स लिमिटेड रील द्वारा इस परियोजना को शुरू किया गया है। इसका उद्देश्य कार्बन उत्सर्जन को कम करने, नवीकरणीय ऊर्जा को प्रोत्साहित करने और भूजल स्तर को कम करने के लिए किसान की आमदनी को दोगुना करना है। इस अवसर पर रील के एमडी एके जैन ने कहा कि यह परियोजना ग्रामीण बिजली परिदृश्य में महत्वपूर्ण परिवर्तन लाएगी।

દિવ્ય ભાસ્કર

ગુજરાત

મુજકુવાના 11 ખેડૂતો સૂર્યશક્તિથી સિંચાઇના પર્યાવરણ

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ફાયદો

સૂરજને ધરતી પર ઉતારવો અસંભવ કાર્ય છે, પરંતુ ટેકનોલોજીની મદદથી આણંદ જિલ્લાના મુજકુવા ગામના ખેડૂતોએ સૂરજને ધરતી પર ઉતારી સૂર્ય શક્તિને નાથીને સિંચાઇનો પર્યાવ...

આંકલાવ તાલુકાના મુજકુવા ગામના 11 ખેડૂતોએ મુજકુવા સૌર ઊર્જા સહકારી મંડળીના મ... સોલર પ્રોજેક્ટ સ્થાપીને પોતાના ખેતરમાં જ ઉત્પાદિત સૂર્ય વીજળીથી સુવિધાજનક રીતે સિ... રહ્યા છે. પ્રથમ તો આ તમામ 11 ખેડૂતો વીજ કંપનીને વીજળીના નાણાં ચૂકવવામાંથી મુક્ત... ઊર્જા મધ્ય ગુજરાત વીજ કંપનીને (MGVCL) વેચીને તેઓ આવકનો એક નવા સ્ત્રોતનો વિ... છે.મુજકુવા સૌર ઊર્જા સહકારી મંડળીના મંત્રી લાભુભાઇ પટેલે જણાવ્યું કે, એન.ડી.ડી.બી. આઇ.ડબલ્યુ.એમ.આઇ.ના સહયોગથી સૂર્યના ખેતરમાં અવતરણનો આ પ્રયોગ ખેડૂતો માટે... જણાવ્યું કે, મુજકુવા સૌર ઊર્જા ઉત્પાદક સહકારી મંડળીમાં 11 ખેડૂતો જોડાયેલા છે. જે પૈકે... અને આઠ ખેડૂતોએ 15 એચ.પી. સોલાર પંપ પોતાના ખેતરમાં લગાવ્યા છે. મંડળી દ્વારા ખે... વધારાની વીજળી વીજ કંપનીને યુનિટ દીઠ રૂા. 3.24પૈસાના ભાવે વેચવાના પચ્ચીસ વર્ષના...

મુંજકુવા સૌર ઊર્જા સહકારી મંડળીનું ઇ-લોન્ચિંગ કરશે

» રાજ્ય સરકાર દ્વારા પર્યાવરણને અનુરૂપ ખેડૂતલક્ષી સૂર્યશક્તિ કિસાન યોજના અમલી

» સૂર્ય ઊર્જાથી 11 ખેડૂતોને વીજ બિલથી મુક્તિ મળી, વધારાની વીજ વેચવાથી નફો રળાયો

નવગુજરાત સમય » આણંદ

આંકલાવ તાલુકાના મુંજકુવા ગામના 11 ખેડૂતોએ મુંજકુવા સૌર ઊર્જા સહકારી મંડળીના માધ્યમથી ખેતરોમાં સોલર પ્રોજેક્ટ સ્થાપીને ઉત્પાદિત સૂર્ય વીજળીથી સુવિધાજનક રીતે સિંચાઇ અને અન્ય કામો કરી રહ્યા છે.

List of Visitors

Month	Date	Name	Affiliation
Apr-18	22	**Sangram Chaudhary**	**ED, NDDB**
June-18	20	**Dilip Rath**	**Chairman, NDDB**
Sep-18	29	**Rakesh Chopra**	**MD, REIL**
Oct-18	19	Hari Shankar Tripathi, Dina Nath	Barauni Dairy, Bihar
	19	S.S. Sinha	MIT, NDDB, Mehsana
	19	Pramesh Kourav	Ujjain Milk Union
	19	Dr. Sanjeev D. Dixit	Milk federation, Vijayapur, Karnataka
	25	Ranjitsinh M Rathva	Director, Baroda Dairy
	30	Udesinh P Vaghela	Chhotalal Vyas Kendra Nadiad
Nov-18	1	Dr. Shreekant Sahoo	NDDB Silliguri.W.B
	1	M Govindan	Principal, NDDB Erode
	14	Karan Shah	Amsterdam, the Netherlands
	20	Prof Y L R Moorthi	IIM Bangalore
Dec-18	1	**Dilip Rana**	**Collector & D.M Anand**
	3	**Dr. Claudia Sadoff**	**Director General, IWMI**
	3	**Tushaar Shah**	**Emeritus Scientist, IWMI**
	3	Madar Samad	Principal Researcher, IWMI, Columbo
	3	Pankaj Fole	Shakti Pumps
	3	Hossein Nazarboland	Tehran,Iran
	3	Rishabh Sood H. Thakkar	Rabobank
	4	Harish Pathak	Advisor, Bharatiya Jain Sanghatana
	4	Shubhoshree Banerjee	INREM Foundation
	4	Avinash Krishnamurthy	Karnataka
	4	Dheeraj Kumar Gupta	Aga Khan Rural Support Programme
	4	Shreyas Somashekar	Bangalore
	4	Kezia Fernandez Kiran Kumar Sen	Sattva
	4	Eshwar Kale	Maharashtra
	4	Vishnu Pandey	IWMI Nepal
	4	Unnikrishnan Nair	Global Green Growth Institute
	4	Aniruddha Dey	Kolkata
	4	Rajeev Gyani	Additional Director (RE), Secretariat of International Solar Alliance (ISA)

Month	Date	Name	Affiliation
Dec-18	4	Tinni Sawhney	CEO Office, Aga Khan Foundation
	4	Alok Rajouria	IWMI
	4	Kian Alibakhshian	CEO, Smart Water Metering Inc.
	4	Hossein Nazarboland	Chair, Smart Water Metering Inc.
	4	Dalsukh Vaghasiya	Ambuja Cement Foundation
	4	Rishabh Sood Ravinder Singh Malik	Senior Manager-Rural and Development Banking, Rabobank India
	5	Anjali Parasnis	World Bank
	5	JVR Murty	World Bank
	5	Rasel Ahmed	IDCOL
	5	Deepa Maggo	World Business Council for Sustainable Development
	5	Suddatta Ray	Stanford University
	5	Abhishek Jain	Sr Program Lead, Council on Energy, Environment and Water (CEEW)
	5	Akshay Anand	Venus School of Architecture
	5	Mansee Bal Bhargava	Prof., Institute of Architecture and Planning, Nirma University
	5	Himanshu Thakkar	South Asia Network on Dams, River and People
	5	S K Swaroop	CGWB
	5	Dr Nehaal Mayur	UNDPI
	5	Paresh Shirsath	Associate Scientist, CCAFS
	5	Dinesh Chadha	Farmer, Dharmaj
	5	Athar Parvez	Journalist
	5	Rashmi Kiran Shrestha	Nepal
	6	Amit Mishra	Piramal Sarvajal
	6	Uzra Sultana, Vivek Warade, Surbhi Arul	Programme Manager, Urban, ARGHYAM
	6	Geetika Varshneya Prodyut Mukherjee	Assistant Professor, Development Management Institute
	6	A Gurunathan	The Dhan Academy, Madhurai
	6	Nivedita Khandekar	Journalist, Delhi
	6	Nilanjan Ghose	Senior Advisor, (GIZ)

List of Visitors

Month	Date	Name	Affiliation
Dec-18	6	Vijay Shankar	Samaj Pragati Sahayog
	6	Dinesh J. Kagathi	Head, Renewables, Power Research & Development Consultants P Ltd
	6	S.K. Swaroop	CGWB
	6	Suddatta Ray	Stanford University
	6	Nwedita Khandekar	Journalist, Delhi
	6	Faiz Alam	IWMI, Delhi
	6	Tauseef Shahidi	CEEW, Delhi
	6	Manas Satpathy	Pradan
	20	Saurabh Choudhary	Private Organization
	24	J. Raja kumar	Private Organization
	28	Chaitanya D. Sangawar	Director, Solar Initiatives
	28	**Satish Marathe**	**Director - RBI, Director - NCDC, Founder Member - Sahakar Bharti**
Jan-19	1	Yasin. I. Vohra	Meter Technician, Nadiad Rural Lab
	1	Hiren Chandrakant Barot	Principal, Sundalpura, Dakor
	6	Siddhartha Dabhi	University of Exeter, United Kingdom
	6	Khyati Acharya	Dexter Consultancy, Ahmedabad
Jan-19	10	Patel Dineshbhai	Atma Project Department
	10	Nagjibhai	Farmer, Gujarat
	11	Dr. Ambika Prasad Mishra	Sundarban Milk & Livestock Union
	14	Haijing Wang	Founder, Hydrosolutions
	14	Wolfsans Kinzelbach	ETH Zuvich, Swizerland
	23	Samit Shah, Dharmesh Makwana, Meru Dodiya	IWMI Staff, Anand
Mar-19	11	Sandra Forces	KFW Office, Delhi
	12	**Mr Rajiv Kumar**	**Vice Chairman, NITI Ayog**
	22	NCDC Team	Gandhinagar
Apr-19	13	Dr. Bruce A. Schoiten	Durham, U.K
	27	Students of B.Sc. Environmental Studies	The Maharaja Sayajirao University of Baroda
Jul-19	1	Hiteshbhai	Farmer, Nadiad
	11	Amit Vyas	MD, Amul Dairy
	11	Kuldeep Singh Chaudhary	H/O, Amul
	17	B.P Desai	Farmer, Nadiad
	18	R.M Kabhi	Farmer, Vasna

Month	Date	Name	Affiliation
Jul-19	23	Delegation from Kathmandu, Nepal	Ministry of Agriculture & Livestock department, Nepal
	23	Govinda Prasad	Chairman of Central tea Co-operative Federation of Nepal
	24	Vishnubhai Solanki	Sarpanch
	24	Zeeshan Farooqui	KPMG Delhi
	26	**Arun Raste**	**ED, NDDB**
	27	Anusha Rajagopalan	KPMG Delhi
	29	Harjibhai Ramabhai Rabari	Farmer Thermal
	29	Abhishek Pratap & Rachel, Pearlim Ramapali Kumari, Aniruddha Bhattarcharjee	CEED, GSCC
	29	Karan Patel, Yashraj Gore	GERMI
Aug-19	8	**Dr Dhan Singh Rawat, Govt. of Uttarakhand**	**Minister of State for Coops, Higher Education & Dairy Development**
	9	R. N. Bhaskar	Journalist, Free Press Journal
	19	Mr Thomar R Carter	Senior Advisor, FAO
	30	Shailesh H. Bharwad	Farmer, Ahmedabad
Sep-19	20	Dharmendra Bhai	ETV bharat Nadiad
	27	Students of B.Sc. Environmental Studies	The Maharaja Sayajirao University of Baroda
	21	Ayan Deb	Tata Trusts, Ranchi
	25	Harsh Vyas, Gaurang Joshi, Jenil Panara, Jeet Gori, Dhruraj, Shyam Parmar	Farmers, Rajkot
Nov-19	1	Hitesh Bhai	Nadiad
	4	Nabina Lamichhane	ICIMOD
	18	Delegation from Bangladesh	Ministry of Agriculture & Livestock department, Bangladesh
	20	Rohitsinh Vaghela, Atmil	Banaskatha
Dec-19	10	Senior Management Officers	MDFVPL, Delhi
	15	Aseema Sulakhe Rajitha Jammineni	Students from IRMA
	19	Delegation from Bangladesh	Ministry of Agriculture & Livestock department, Bangladesh
Feb-20	25	Chief Executives	Milk Producer Companies across India
	28	Senior Officers	Milk Producer Companies across India

Visitors

Shri Rajiv Kumar (Vice Chairman, Niti Ayog)

Shri Dilip Rath (Chairman, NDDB) visiting MSPICE

Shri Satish Marathe (Board Member, RBI)

Shri Sangram Chaudhary (MD, MDFVPL)

Dr. Claudia Sadoff (Director General, IWMI) &
Shri Tushaar Shah (Emeritus Scientist, IWMI)

Happy faces at the end of the day of Inuguration
Thanks to all who have contributed in making MSPICE a success!

With sincere thanks to

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IWMI International Water Management Institute

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