

1. Decentralised Milling Services during COVID-19



CONTEXT

Ms. Rosy Louis Dabale as an Asha Worker (Accredited Social Health Activists- a community of public health workers, instituted by the Government of India's Ministry of Health and Family Welfare) in the Local Health Centre. Ms. Rosy, 36, belongs from Agsalkatta, Karnataka and manages the flour mill at her house premises along with her husband. In 2005, when she was on the field as a social worker, she attended a solar training workshop organised by SELCO India, the social enterprise. She was inspired by the technology and decided she would take up solar in the future as it could benefit her entire community. Today, the family has invested in a solar home lighting system, and also has a solar-powered flour milling centre, along with a stationery store which is operated by her husband. Her husband is a farmer and the shop is a secondary source of income for him.

Agsalkatta is predominantly occupied by the Siddi community, members descended from the East African region and has about 57 households (population strength of 375). It is a forest area and the villagers have around 1-10 acres of land where they grow different types of crops such as maize, paddy, sugarcane and pulses. The rice grown in their land is used partly for self-consumption (a family of 6 consumes 30 kg of rice), and around 50 quintals of rice by each household is then sold to the market. They face daily 5-6 hours of a power cut and during the rainy season, it worsens and face 1-2 days to a week of power cut issues.

Solution Overview

Initially, the villagers used to do milling at the nearest town, Kesarolli, that is 4kms away, and used to get 15-20 kgs milled but faced challenges as the basic means of transport was absent. Thus, the transaction costs were high. After Rosy invested in the milling machine in March 2019, the community is able to mill 7-10 kg minimum/day (20kg on some days), 30 kgs a month.

IMPACT ON BUSINESS DURING COVID-19

- **Access to Work:** As far as milling business is concerned, it has not experienced any disruptions so far, and she is milling similar amount of flour every day.
- **Garnered additional business:** Community is appreciative of the presence of such a facility- since the travel restrictions were announced due to COVID-19, the presence of the service in their village is recognised as a big boon. Rosy has also seen that in addition to the regular customers few other members of the community are using her mill.

“Customers say that if this mill was not there in our village we would have stayed hungry. We wouldn't have been able to access mills outside of the village.”

- Rosy Louis Dabale, Flour Mill Entrepreneur

The community has many large families consisting of 15-20 members, requiring 3-4 kgs of flour every day. Previously, some of these villagers had to travel to the nearest flour mill- about 10 kms away from the village. If it wasn't for the decentralisation of the service through Rosy, the entrepreneur, the villagers would have not been able to access milling services.

- **Stressed about the welfare of her customers:** Rosy, being an Asha Worker, is well connected in the community and knows the community members well. During Crisis times, Rosy allows for deferred payments or discounts to vulnerable members of the village- widows, older individuals or families who have other difficulties.
- **Income** - While running the flour mill brings her regular income, but other businesses have been impacted like Petty shop which is the only one catering to the needs for her community and is running out of stocks as supply chains have seen disruptions.
- **Financials:** She has contracted a loan amount of INR 25,000 /- with tenure of 2 years - from a local financial institution. She was paying a weekly EMI of INR 425. Since the government has announced a Moratorium period till end of May, Rosie is able to save her earnings.

KEY TAKEAWAYS

- Importance of diversified income streams which will insulate the entrepreneur against the shocks.
- Strategies to retain the customers - allowing deferred payments and giving discounts to select customers.
- Conserve the cash - a moratorium on the loans contracted will be very helpful will certainly soften the impact on the health of the enterprise
- Presence of such a facility ensures food and nutritional security.
- **The region is highly remote with poor connectivity where logistics and broken supply chains would have hampered such a service from taking place without the presence of this flour mill. Due to the decentralised nature of this mill, the remote communities are able to access it.**



Ms. Rosy, with her family in her Solar Powered Flour Milling Centre (The pictures were taken before COVID-19)

2. Roti Rolling Entrepreneurs serving Communities during COVID-19



CONTEXT

Preeti Joshi, is a social entrepreneur, belonging to Haligal, Karnataka; who post losing her husband, single handedly started her catering business, and has subsequently employed 5-6 women from her community, all who were previously unemployed. She is juggling her day between managing the production and sales of her food items at her shop, engaging in catering business and taking care of her household chores.

She invested in a solar powering roti rolling machine (increasing her productivity) and in a solar powered flour milling machine which enabled a saving of INR 4,500 on her prior flour milling expenses, INR 800 on electricity bills, increasing her overall income by INR 10,000 and saved time as well. Her primary customer base is local bank employees, local students and workers.

Seeing the benefits of the solar energy based productive use technologies, and growing her enterprise slowly, she consequently also invested in a Solar powered DC refrigerator (100 litres) and a solar powered photocopying machine. For all of the above, she connected to a local rural bank.

COVID-19 Lockdown

Being a hotspot of COVID-19 cases, the lockdown in her district has been very strict, with careful sealing off of villages to avoid transmission. After the lockdown in Haliyal, all hotels, eateries and bakeries were shut down. Joshi stopped all of her work for the first few days of the lockdown and was nervous about losing income. Using her presence of mind, she immediately shifted her appliances and utensils to her home which is very close to her workspace to avoid spending on rent. She started to receive calls from her existing customer base who were stuck due to the lockdown requesting her to resume her catering service.

Solution Overview

Post lockdown, she also started to receive meal orders from other workers who had migrated to the region for work i.e. bank employees, workers in local offices and hotels etc who could not go back to their homes due to the borders being sealed off. People working during COVID-19 lockdown as essential workers like the local police officials, social workers, ANM, ASHA workers (ie public health workers travelling from village to village for screening and spreading awareness) started requesting her to provide meals.

Before the lockdown, she would provide 25-30 meals for breakfast and a similar number for lunch. Currently, she is receiving 35-40 orders. Peak summer approaching, she also prepares buttermilk and stores it in her solar powered fridge and sells those along with the meals. There have been special cases like when she was contacted by a local social worker who requested 80 meals in a day for the officials working at the border check-posts. Her business allows her to also provide free or discounted meals to vulnerable community member who are unemployed and short of ration during this period.

All the meals are collected by the customers, and proper social distancing measures are practiced. She and her employees wear masks and constantly sanitize the kitchen and the produce, ensuring safe production and delivery of food.

IMPACT ON BUSINESS

- **Increased Business:** Her income has increased during this period as she has been able to expand her market, cater to individuals engaged in 'essential services'.
- **Access to Food:** Joshi is able to provide an essential service to people who are unable to cook at home and are far away from their homes at this time.
- **Providing Employment:** Two of her employees live in far off villages and are unable to cross check posts to come to work. However, her other employees initially had stopped coming for work but soon resumed as they were used to the routine and needed the income. She is able to pay their salaries and they are able to provide for their families during these uncertain times.

“I will do as much as I can to help. When the lockdown started, I was very nervous and was ready for hardships to come. However, I am lucky that my livelihood has not been hampered and that I am able to provide an important service to so many people everyday.”

- Preeti Joshi, Roti Rolling Entrepreneur

KEY TAKEAWAYS

- Due to her existing market linkages and strong word of mouth in the region, she was able to continue her services.
- A service like this operating at this time has proven to be essential as it ensures food and nutritional security
- Due to investing in a value chain i.e. flour mill and roti rolling machine, she is self-sufficient and is unaffected by the stoppage of other services. The refrigerator is allowing her to add value to her business through diversification.



Ms. Preeti Joshi, at her shop and Roti Making Facility (The pictures were taken before COVID-19)

3. Decentralised Energy for Blacksmiths during COVID-19



CONTEXT

Lakshman is a champion blacksmith entrepreneur, and hails from a small village situated around 25km from the city of Tumkur, in the southern part of Karnataka. In the region, agriculture is the main source of income for the communities with more than 80% of the population involved in groundnut, millets, paddy, maize, and rice cultivation. Since the majority of them are small-holder farmers, the modern mechanization of farming is in a very nascent stage. Thus, it necessitates the requirement of various agricultural tools for different farming operations.

In the vicinity of Kodyala for 20-25km, where the entrepreneur runs his small blacksmithy business from his home, there are very few entrepreneurs who are involved in the blacksmithy craft. Also, with an experience of more than 20 years in the craft, Lakshman is a very well-known entrepreneur in the region, with a good number of farmers coming to him to get their agricultural tools done or repaired. He sources the raw materials for the tools from the town nearby, and quite often, the farmers bring their own raw materials from their abandoned farm equipment which Lakshman turns into useful tools. He has always been very careful about having a good stock of raw materials as sometimes farmers come to him with immediate requirements without bringing raw materials. Adhering to his business etiquette, he has never said no to any of the customers due to his judicious use of raw materials along with a diligent way of working, prompt delivery time, and mastery in the craft which have resulted in him building great trust with the farmers of the region.

However, due to the drudgery involved with the process, especially the necessity to have a constant airflow to keep the fire burning for which Lakshman was using a manual blower which needed constant efforts from another person, he wasn't able to expand his customer base. But after the solar-powered blower intervention over a year ago, his incomes and overall situations have improved significantly due to the increased efficiency, reduced dependency, and drudgery involved in the process. The solution was installed with a 50W motor after carefully assessing the types of tools that he needs to create, which was financed by SKDRDP after designing it to suit his cashflow.

COVID Context and Continuity of Business:

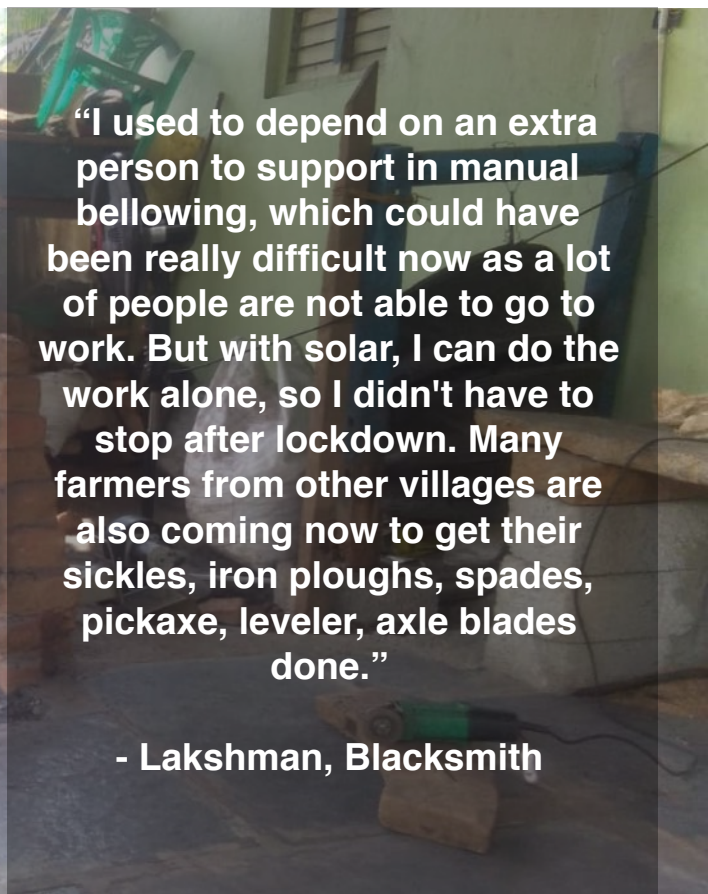
Although the majority of the small businesses are either closed or operating with significantly lesser revenues during the COVID-19 crisis, due to the decentralized way in which Lakshman's business operates, the lockdown hasn't affected his business to a greater extent. Since Kharif is the main season to cultivate crops in the region, the months of April - May is when the farmers start getting their lands ready for the crops in Monsoon. Thus, the need for newer agricultural tools, repairing the older ones arise during these times. **Since Lakshman shifted to a solar powered blower for his blacksmithy workshop, he is not dependent on external labour anymore- labour which during non-lockdown period was hard, and would have been harder during the lockdown period.** Lakshman's business is based out of his home and his son helps him with some of the work, and this has allowed him to keep his business running during the lockdown period. **Although there is a shortage of raw materials for a lot of businesses around, his conservative way of consuming raw materials has helped him in serving the farmers even in these times.**

IMPACT

- Due to the constant availability of services provided by Lakshman, the farmers in the region have been able to get their tools ready for farming activities. Although, farming has been considered as one of the essential services and the lockdown wasn't supposed to restrict the activities, due to the lack of decentralized farmer allied services, a lot of farmers have been struggling to carry on their preparation for Kharif/ Rabi cultivation activities. **The presence of Lakshman ensures that the farmers aren't affected by the lack of agricultural tools.**
- **The entrepreneur has been able to continue the business due to his local market access, the trust built with farmers, uninterrupted energy access, careful use of raw materials, and the very nature of home-based entrepreneurship.**
- Since this is the only blacksmithy facility available during the lockdown, many farmers from other villages are also coming to him to get their agricultural tools done. So, the lockdown situation has in fact given him wider market access with services being available for farmers from other villages as well.

KEY TAKEAWAYS

- Importance of bringing decentralized pathways in enabling access to agriculture allied services for local farmers while also building resilience among local artisanal livelihoods.
- The criticality of champion local entrepreneurs in the rural livelihood ecosystem who build sustainable business models through their excellent craftsmanship, commitment towards their work and effective support of enabling conditions such as technology, financing, and local market environment.



Mr. Lakshman at his blacksmith unit with a solar powered blacksmith blower. (The pictures were taken before COVID-19)

4. Millet Process Unit for Farmer Producer Organisations



CONTEXT

Vanasiri Rural Development Society (VRDS) was started in 2003 as an NGO by Samshuddin D Baligar, a noted rural health and livelihood activist with over 20 years of experience in working with villagers to correct the information asymmetry and widespread ignorance among populations in these areas. VRDS has promoted Bhoomika Farmers Producers Souharda Sahakari Niyamita, Menasinahal in Ranebennur taluk in Haveri district under guidance and support by NABARD Bangalore. It is an independent body formed by the farmers in the year 2015-16, with 475 shareholders with share capital of INR 430,000, started in a cluster of villages and now it has extended its activity to other parts of the taluka. Since two years, it has been providing end to end services to farmer members, by supporting their farming and allied activities, related to production, harvesting, procurement, grading, pooling, marketing, processing etc. Under this project, VRDS provides the training support to the FPO on production of quality products, maintenance of processing unit, books and records, GST, marketing, publicity campaigns, ads and technical guidance and support on a continuous basis to all the stakeholders etc.

Solar Powered Millet Processing Unit

The FPO planned to establish a millet processing unit in FPO ownership for better services to its stakeholders, enhancing the agriculture production and improving income level of small and marginal farmers. The region where the FPO is established suffers with heavy load shedding and unreliable power- significantly impacting the production capacity and working hours of the Processing Unit. The objective of the unit was to empower the farmers with processing facilities to avoid middlemen developing market linkages with wholesale traders; but instead the farmer production units developing skills for direct purchase and selling of local agriculture products in the area. In addition, the model was also complimented with training for farmers on improved agricultural technologies, organic farming integrated farming practices.

Bhoomika FPO has 3 different solar powered machines which are used for de-stoning, grading and de-hulling of millets. These machines can be used for all types of millets by changing the sieves and by adjusting the airflow rate. The 3 types of processing machines can also be used for other commodities as well, such as paddy and pulses can be cleaned using de-stoner. The de-stoner and grader have a capacity of 300 kgs per hour and the de-huller can hull up to 150 kgs per hour. Weekly twice, the machines are being utilized from 10AM to 5PM. 15 quintals of Jowar is milled per day and for other millets like Foxtail, Barnyard, Pearl millet, Finger millet and Kodo millet, 5 quintals is milled per day.

Bhoomika FPO has planned to sell the processed millet through rural mart, where products with the brand name Bhoomika are sold directly to the customers.

IMPACT ON BUSINESS DURING COVID-19

Due to the lockdown, the borders in the region have been sealed off leading to cutting off the established market linkages to the demand in nearby districts. However, the demand has increased within Haveri district itself and due to having a strong presence in the region, their supply has been constant and business as usual. They are able to continue procuring millets from their farmers across 11 villages within the taluk itself. Their general practice is that, they procure in bulk when the farmers harvest, store the millets and hull them based on requirements and orders.

Provisional stores and small retail stores have been allowed to function during the lockdown as well due to which they have been able to continue their business as these stores are their main market linkage presently.

VRDS is a very well known entity in the region and has been a part of discussions with the collectorate and district administration on COVID-19 strategies. **They found out that there is a need for supplying dry rations to close to 2000 labourers who have been stuck in the region. Since they had excess stock in their godown, the FPO was mobilized to process white jowar as they have a processing unit set up and distribute it to these labourers for free. The fund was mobilised through the supporting TRUST as a form of relief contribution during this crisis.**

KEY TAKEAWAYS

- **Strong intra-district market linkages:** Due to having a strong set up and market linkages within the district itself, the lockdown and border sealing has not affected the FPO's business and they have been able to continue serving the people's demand constantly.
- **Adequate number of farmers:** Due to having an adequate number of farmers as registered shareholders within the taluka across 11 villages, there has been no issue with input supply as well. Since they had an adequate storage facility where they stock surplus produce, they were able to serve the labourers when in need.
- **Established connection with the local administration:** Having been formed by VRDS, an organization with a 20 year history in the region, they are well known by the district administration and have worked with them. Being a part of strategic conversations has allowed them to be involved in relief work as well.



Vanasiri Rural Development Society Ranabennur, distribute groceries as a relief package along with the Tahashildar, Executive officer, Asst Director.

5. Cold Storage and Farmer Producer Organisations



CONTEXT

Harsha Trust works with tribal and vulnerable communities across remote regions of Odisha, aiming to bring in human development in challenging conditions. They intervene on basic needs of food self-sufficiency and livelihoods. The organization has over the past 10 years tried to demonstrate models of sustainable livelihoods that arrest migration and give people a chance to develop within their circumstances. Harsha trust is working with more than 89,000 families spreading over around 1,500 villages in 19 blocks of 7 districts of south and western Odisha i.e. Rayagada, Koraput, Nabarangpur, Malkangiri, Kandhamal, Ganjam and Kalahandi.

One of their primary programs includes formation of FPOs covering vegetable, millet and small backyard poultry farmers. Through this program, supporting 5000+ women Self Help Groups (SHG), capacity has been built in the SHGs for financial linkages with formal banks, livelihood promotion and empowerment of the women members. The SHGs have leveraged on loans from banks for creation of livelihood assets and meeting working capital needs.

Markoma Women Farmer Producer company is one such FPO formed and supported by Harsha Trust which has 460+ registered farmer members. They are all vegetable growers and were suffering losses due to untimely reach of produce to the market and the fluctuating market rates. A solar powered cold storage unit was installed in the Harsha Trust training and livelihood centre in the region for the FPO farmer members to avoid for this loss.

Solution Overview

The 5 MT solar powered decentralized cold storage was installed in September, 2018 and its operations were designed as a service model. The FPO owns the cold storage, procures the produce from farmer members who pay a price of INR 2 per kg to store. The rate is fixed irrespective of the amount of time the farmers want to store for. Meanwhile, through promotional activities, the FPO identified 40 vendors in the nearest big market, out of which 12 were active suppliers who signed up to be regular vendors for them. They go from village to village or straight to the cold storage to deposit and gather the produce.

The farmers have been divided into two categories: farmers with land holding below half acre and above half acre. Most farmers accessing the cold storage are the ones with land holding above half acre as they are able to produce good volumes to store and sell to the FPO directly as well. The vendors procure the supply from the farmers, leave it in the cold storage as farmers cannot do it themselves due to lack of transportation in these remote regions.

The FPO has signed an agreement with the vendors to have a fixed price on produce based on seasons allowing farmers to not incur losses or waste produce as the cold storage also helps them. This was a mobilized effort by an FPO association which is a coalition of FPOs promoted by local NGOs from across districts like Muniguda, Bissamcuttack. This was formed to protect farmers from middle men and malpractices.

COVID-19

When the lockdown was announced as a measure to curb transfer of the COVID19 virus, it was an unpredictable time for the farmer members and vendorr. To avoid any losses and food insecurity, the vendors were asked to collect all the produce and fill the cold storage with 3.5 MT of produce. The produce was housed in the cold storage for over a week. Meanwhile, the FPO members wrote a letter to

the Block Development Officer requesting to resume their activities and stressed on the importance of the same. They were facing a lot of harassment from the police if they were found on the roads or in their vehicles. The BDO immediately agreed and gave them permission which allowed them to freely use their transportation to sell their produce. Post the permission being granted, the vendors were able to sell all the produce within a week. Presently, the farmers have produced bitter gourd, tomato, chilli, watermelon, cucumber - 2 tons of which gets loaded into the cold storage and sold within 3 days. In the month of lockdown, this schedule has become regularized. The farmers have not faced any loss of income during this crisis and are continuing to cultivate the next batch of crops before the monsoons arrive.

KEY TAKEAWAYS

- **Decentralised Infrastructure combined with Best Practices:** A combination of shifting crop patterns in a scientific manner to avoid mono-cropping, establishing relationships with the vendors for a fixed supply chain and the cold storage allowing their produce to sustain for long periods has ensured the community does not suffer at any point in the year, including a lockdown.
- **Strong relationship established with vendors:** Due to this, farmers do not have to struggle to find transportation during the lockdown to sell their produce. Vendors are few and have been granted permission by the district administration, reducing the number of people reaching the markets to sell.
- **Fixed rates, fixed supply chain:** Due to the agreement with the vendors, which allows for farmers to receive a fixed (and agreed upon) price for their produce throughout the year, the farmers have remained unaffected even during the pandemic and lockdown. Meanwhile, farmers in many regions have been struggling with having to sell their produce for very cheap due to disrupted supply chains, fear of wastage of supply and incurring losses.
- **Approaching the administration:** Addressing the district administration immediately in a timely manner and communicating the critical need for their work to continue allowed the FPO members to carry on with their activities.



Cold Storage Facility at the Markoma Women Farmer Producer company (The picture was taken before the Lockdown and the COVID19 Pandemic)

6. Solar Powered Digital Service Centres supporting Communities during COVID19



CONTEXT

Access to digital services- printing, photocopying, photo studios are integral for entities such as government offices, schools and colleges, financial institutions, local businesses etc. These services become critical in undertaking business transactions, maintaining records and for individual households in accessing bank and government schemes, subsidies and so on.

The lack of such facilities in rural, tribal and peri-urban communities means that households and small businesses spend a significant amount of time and money in trying to access these basic services. The erratic power situation or complete lack of electricity inhibits the establishment of such digital service centers in rural and peri-urban settings. Where small entrepreneurs do set up shops, erratic power cause severe disruptions in business- leading to breakdown of equipment, inconsistent service provision and loss of income.

The Lok Sewa Kendra or LSK is a solar powered digital service center that gives a comprehensive set of solutions from a single photocopy machine to multiple systems. Some of these are co-located at the house of the entrepreneur, while others are located in village centers or within the premises of local government or educational institutions. A large percentage of them, implemented by SELCO Foundation or through the SELCO Foundation channels, are financed through bank loans that are being paid off by the entrepreneur through the increased income from the business.

The onset of COVID 19 and the subsequent lockdown imposed by the Indian government directly affected the business and income of these LSKs. However, a few LSK entrepreneurs managed to not only serve customers but also increase their income through certain coping mechanisms.

Solution Overview

The cases of two specific LSK entrepreneurs in Kalahandi- Subas Chandra Disari of Hirapur (in Jayapatna) and Haru Majhi of Dumerpadar (Thauma Rampur) - are particularly interesting in terms of resilience and the value of decentralized energy systems and micro-energy entrepreneurship. Kalahandi district in Odisha is one of the poorest districts of the country, with a large population of tribal communities who have historically faced challenges of poor socio-economic development. In such a region, the effects of a lockdown such as the current one could strike a deathblow to many micro entrepreneurs, but these two entrepreneurs are finding ways to cope with the current crisis.

- **Diversification and reliability of services: The solar powered Lok Sewa Kendra afforded Subas Chandra Disari of Hirapur in Jayapatna, Kalahandi, an opportunity to add a banking kiosk of the State Bank of India (SBI) to his offerings at the center.** Such banking kiosks require reliable energy services and digital systems allowing for easy withdrawal, deposits and other transactions for locals in the area. **This is the only kiosk of this sort in the local village panchayat jurisdiction. As banking is considered an essential service, the kiosk was allowed to stay open during the lockdown and allowed Subas Disari to continue some aspects of his business.**

While the lockdown has affected income from a variety of services, the banking kiosk continued to bring in money. People have come in to withdraw money from their accounts, and to collect monthly subsidies and stipends from various government schemes including LPG subsidies, Jan Dhan Yojana and so on. His typical monthly income prior to the lockdown was INR 10,000 per month. In April, he earned around INR 15,000 as his incentive from the bank for all the transactions undertaken through the banking kiosk.

- Reliability of the Energy System:** The day after the announcement of the lockdown, a huge failure in the power system caused the transformer near Hirapur to break down. The entire area remained without electricity for a period of 40+ days in the midst of the lockdown. **Without access to the solar powered Lok Sewa Kendra, households would have had to find ways to travel more than 12 kilometers to the nearest bank to withdraw cash for basic needs.** This would have been particularly difficult in the absence of all public transportation and the ban on movement of private vehicles. The entrepreneur said that solar truly saved us during this difficult period. This experience provides an important learning in the efforts to create more resilient local communities.
- Creation of Linkages and Networks:** As the LSK became more popular and was used more regularly by the local community in Dumerpadar of Thaumal Rampur in Kalahandi, Haru Majhi, the LSK entrepreneur, was able to expand his networks and take on additional work through local government channels. **His networks and popularity of the LSK resulted in him becoming a Gram Saathi for MGNREGA (Employment guarantee programme) in his village.** His role involves mobilizing people within the village that are lacking employment and facilitating their access to work through MGNREGA. For his effort as a Gram Saathi, he gets an income of INR 4 per person per day. This will continue to be an important channel for Haru Majhi in the coming months as many migrant labourers return to their rural homes and will need some guaranteed employment to ensure a basic income for their household.

Many of the LSK entrepreneurs function not just as digital service providers but as centers allowing for the convergence of schemes and subsidy provisions for local government and banks. They often also provide recharge services for mobile phone networks and DTH (cable TV networks).

KEY TAKEAWAYS

- The ability to diversify income sources is a quintessential part of the Lok Sewa Kendra. By using decentralized solar energy to power digital services, a local petty shop can be transformed into a service center that also allows for the convergence of government schemes, banking transactions, mobile phone recharge and other essential services.
- The energy system being decentralized and powered by solar energy played a critical role in making the local community resilient in the face of a power failure that lasted more than 30 days. Localization, decentralization of energy systems and energy governance should be an important element of reshaping our societies so we are better able to deal with crisis situations of this nature in the future.



Solar Powered Digital Service Centres or Lok Sewa Kendras in Kalahandi, Odisha. These pictures were taken before the COVID19 Lockdown was enforced by the Government of India.

7. Milking Machines and Woman Dairy Farmer in Karnataka



CONTEXT

Shilpa Chandrashekar is a dairy farmer from Bettahalli village, Mandya district, Karnataka. A family of 4, Shilpa and her husband practice dairy farming as their primary occupation. They have 12 cows of which 8 are adult cows with 5 giving milk regularly and 3 more cows which will start within a month. The couple also own a 3 acre farm which is uncultivable as their bore well failed after multiple attempts to resurface it. They have dug a small pond which allows them to cultivate little fodder and some vegetables.

Early this year, right before the installation of the milking machine in January 2020, Shilpa's husband suffered with a serious bike accident severely injuring him in the head and his stomach. Since his accident, he has not been able to engage in dairy activities; and has not been able to take up alternative employment either due to his condition. He has to receive regular treatment in the district hospital which is 22 kms away from their village.

Solar Powered Milking Machine

Shilpa is an active member of a Self Help Group formed by SKDRDP, a local micro finance institution that supports women. In January, 2020 a local enterprise along with the dairy secretary had conducted a meeting where they showed some videos of solar powered milking machines and its applications to local dairy farmers. **She was very keen on adopting the solution as her husband could not help her in the dairy farm anymore, reducing her productivity and milking capacity.** She saw this machine as an opportunity to revive her livelihood and sell to the nearest collection centre. SKDRDP informed SELCO of her CIBIL score which is below 500 due to which she was unable to take loans from financing institutions. With the machine cost of INR 73,000, she was linked to the Karnataka Milk Federation scheme which covered INR 15,000 of the amount and the remaining support was given by SELCO Foundation and SKDRDP.

- She also took up the lighting solution (2 light system in her home and 1 light system in the shed) as they need to start milking the cows by 5 AM before sunrise. The region also suffers with 3-4 hours of power cut which are erratic due to which the light is very reliable and helpful.
- Due to the milking machine, her husband is also able to help with milking the cows where it takes about 6 minutes to milk each cow, twice a day.

COVID-19 AND KEY TAKEAWAYS

- **Decentralized Market Linkage:** The lockdown was very strict in the region with all the district borders sealed off. However, the dairy industry was deemed as an essential service producing essential commodities allowing constant income. With the closest collection centre being one kilometre away in a decentralized manner, she was unaffected by the lack of transport and the lockdown.
- **Lack of Fodder:** The dairy industry across the country has been impacted by one critical component - fodder. The lack of availability of fodder has affected a lot of dairy farmers as it is a key input supply, severely affecting the output of the cows. Shilpa has also been impacted by this. Karnataka Milk Federation would usually supply them with a particular seed, which is used in the feed. This has been unavailable due to the lockdown. **Due to this, the nutritional value of the feed has reduced resulting in the cows producing 45 litres as opposed to 60 litres per day.** The milk has grades as well based on the fat content on the basis of which rates are decided, with the milk falling down a grade. This has reduced her income since the lockdown.

- **Labour Shortage:** Shilpa would have had to hire a labourer to support her with milking and other activities due to her husband's condition. This would not have been a possibility due to the lockdown as labourers are unable to move freely and seek employment. **Due to the milking machine, she has been able to manage by herself even on days that her husband cannot assist her.**
- **Support from Financial Institution:** The loan repayment has been put on hold by SKDRDP due to the lockdown impacting the livelihood of most communities. **Shilpa, on the other hand has been able to pay the loan back as per her convenience. She has also gotten a personal loan of INR 25,000 with no interest from the institution to take care of her husband's medical expenses.**

“I was hesitant in adopting the milking machine initially because it felt like an expensive prospect. However, I would not have been able to practice my livelihood today without it. After my husband's accident I have to manage all the work myself and without the machine it would have been impossible. Due to the lockdown, KMF collection centres are only open in the morning and evening between 4.45-6.00. With such odd timings, my family cannot help and I cannot hire labour because of the lockdown. The intervention has been very helpful to us.”

- Shilpa Chandrashekar, Dairy Farmer



Shilpa Chandrashekar in her dairy farm with the solar powered milking machine. This picture was taken before the COVID19 Lockdown was enforced by the Government of India.

8. Solar Powered Decentralised Rice Milling Unit in Jharkhand



CONTEXT

Life Education and Development Support (LEADS) is an organization that works in the districts of Jharkhand, primarily in Khunti, Hazaribagh, Latehar, Ghumla (amongst others) to promote sustainable livelihood solutions in rural and tribal communities. They also work in urban areas with their base located in Ranchi. Within the livelihoods work, they focus on agriculture and natural resource promotion, animal husbandry for sustainable livelihoods and more. They have members grouped in Self Help Groups across the districts, some of which are driven by women participation and leadership.

In Latehar and Ghumla districts alone, they have 1,600 members who practice rice cultivation. These farmers live in very remote forested regions and predominantly belong to tribal communities.

The Intervention

Kurokala village in Mahuadan Block, Latehar district is a remote village with Santhal communities residing there. They are all small and marginal farmers who grow rice for one season and practice horticulture farming as well. The farmers primarily grow a special variety, Black Jeera Rice along with some other varieties of rice which they consume and sell. 300 households cultivate paddy in this cluster of Mahuadan block with each household producing about 15-20 bags of paddy (10 quintals) per season. They keep enough paddy aside for self consumption and sell the rest.

Kisan Mahila Mandal is a women based SHG with 20 members who decided to take up the decentralized solar powered rice mill intervention as they observed the need for hulling of rice and polishing there. The nearest rice mill was in a town, about 10 kms away- large in scale, it was primarily catering to large farmers, bringing in paddy in larger quantities to be hulled. A small building infrastructure was set up with the help of the Jharkhand Livelihood Mission and the solar powered rice processing machines was installed in May, 2019. Multiple training sessions were conducted by SELCO Foundation staff for the women members. The women operate the machines, handle packaging, accounts, registers, maintenance etc.

The huller and polisher are two separate components with the huller processing 60 kgs per hour and the polisher cleaning 50 kgs per hour. With the machines running for 6 hours, they can mill 3 quintals of produce per day.

The decentralized mill is being run as a service model where they sell their produce through 4 middlemen who they have developed linkages with. Due to not having their own transportation, they sell to the middle men who come regularly and pick up the milled produce as well as paddy from the farmers. The middle men take the produce to markets in nearby towns like Daltonganj.

COVID-19

The lockdown has severe repercussions in Latehar district, with many establishments having to close down. **This includes the oil mill, flour mill and the rice mill which people from the town and villages nearby would access. With this access being cut off, villagers from nearby villages of 5-6 kilometer radius started to come to the SHG run solar powered mill as they heard of it from the middlemen.** The SHG started to mill and polish the produce charging town folks INR 5 per kg and their associated Farmer Producer Organization members INR 2 per kg, as opposed to the usual rate of INR 3 per kg. The mill has been running for an additional 3 hours per day milling 150 kgs of paddy to rice per day.

Due to this, the SHG has been making profits even during the lockdown. People accessing this mill have been expressing that they prefer this as they have reduced time and expenses as the centralized mill in town would charge them INR 2 per kg but would not return the husk. Whereas, the SHG members have been returning the husk to the customers along with their hulled rice. The husk has many uses for the farmers in the form of mixing it with manure to make bio fuel, using it as fuel to keep the pots going which they use to make alcohol and laying poultry farms with this base to revoke ammonia. This husk is usually sold for INR 50-70 per bag for fuel used to make alcohol and INR 30-40 for the poultry shed with each bag weighing 20 kgs. The decentralized rice mill generates 60% rice and 40% husk of the paddy being fed. The solar powering has been very useful during the lockdown as the region suffers heavy load shedding and frequent power cuts. **If diesel were to be used as a backup fuel, they would take 2 days to procure diesel during the time of lockdown which would have hampered their service and production.**

KEY TAKEAWAYS

- **Income and profit:** Even during the lockdown, due to the unit being located in a remote region, the SHG members remained unaffected and were allowed to operate through it. This brought in more customers, increasing their income and turning in profits.
- **Additional customer base:** Due to the mills in the town being shut down as a result of the lockdown, people from nearby villages and towns started to use this service to mill their produce. At least 100 people newly accessing this mill have expressed to the SHG members that they will only come to their centre henceforth even post lockdown as it is more economical, convenient and time saving.
- **Food security:** Farmers and communities from nearby villages and from Kurokala have been able to process their stored paddy to rice which is giving them food security in a time where access to essentials has been difficult.
- **Awareness on solar:** A lot of the visiting communities are seeing solar energy for the first time and have learnt of its existence, uses and applications beyond just lighting.
- **Combatting energy issues:** The remote region suffers a lot of power cuts, frequent load shedding and voltage dips which would have required the SHG to rely on diesel, if it weren't for solar. It takes 2 days to procure a batch of diesel and in the time of lockdown, it would have taken longer with additional permissions required to be able to access it, causing hindrances in their service.



Photo taken in 2019, during the inauguration of the Decentralized Solar Powered Rice Mill

9. Tailoring Training Centre, Converts into a Mask Production Centre



CONTEXT

Priscilla Centre, a training cum production centre for women based in Guwahati, Assam works with women, school-dropouts, widowed women from the states of Assam, Nagaland, Manipur and other neighbouring states on skill training. They conduct two year training programs post which the women who graduate are linked to other advanced skill training institutes. One of the main programs run by them is Sustainable Income Generating Program (SIGAP) focussing on textile based training which is conducted at their training centre in Guwahati and also at other partner grassroot NGOs. Priscilla Centre also has a sister concern which is a for-profit organization that helps with market linkages and selling of the products made by the trainees and graduates - sarees, kurtas, traditional clothing, bags etc.

SELCO Foundation partnered with Priscilla to understand their model better and explore sustainable energy interventions in their training centres.

COVID19 AND RELIEF WORK

The training centre is located in Panbazaar, a main market area in Guwahati city which is under a containment zone due to positive cases that have been detected in the region. Due to this, the trainees and trainers from the city also have not been able to access the sewing machines as they are housed at the centre. All the trainees from neighbouring states like Manipur and Nagaland left for their respective home towns and districts right before the lockdown. This also led to a complete stop of the training program temporarily due to the lockdown.

Meanwhile, a senior tailoring instructor who lives in Guwahati city received a request from Satribari hospital for producing masks, caps and gowns for the hospital staff using the green coloured medical cotton based cloth. Using the sewing machine at her home, she single handedly met the demand of 300 numbers of masks, 100 numbers of caps and 50 numbers of gowns for the hospital within 20 days. The organisation has also received a certificate of acknowledgement on assisting the hospital at this dire time.

In the early days of the lockdown, the organization received a letter from NITI Aayog which states that NGOs have to use their financial resources, staff and skills to complement the government's efforts. As they received the letter towards the end of March close to the financial year, they had some remaining funds in their organizational account. Utilizing these funds, they could carry out 8 prescribed types of activities out of which they decided to choose two:

1. Preparing packets of dry rations which they would procure and deliver to villagers nearby. These are being delivered to families with no ration cards due to which they have not been able to access free rations through PDS.
2. Stitching masks for volunteers, a list of which was provided to them from the district administration.

To carry out the stitching activity, they roped in 4 of their graduates who lived nearby and had sewing machines at home. They did not have any form of livelihood due to the lockdown presently. The organization had a lot of stock cotton fabric which they delivered to the graduates to start stitching masks. Using their funds, they are paying the workers INR 20-25 per mask and they are making 500 masks a week. With the help of the graduates, current demand rate and availability of limited raw

material, the organisation is planning to produce 2500 units of masks for next month. Moreover, if the rate of demand is increased they will keep a repository of stitched new masks. However, to meet this demand there might be a requirement of working capital to procure the raw material.

KEY TAKEAWAYS

- **Entrepreneurial Staff:** Due to the entrepreneurial nature of their senior staff and her contacts, she was able to provide critical PPEs to the hospital staff due to which the district administration was able to identify the organization and the potential work they were able to do during the lockdown period.
- **Income for Workers:** Their graduates who have no other source of income at the moment, are receiving work through the organization and steady income even during this lockdown period.



Masks in production at the Priscilla Centre