

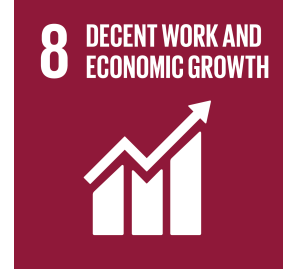
# Livelihoods + COVID 19

**SELCO FOUNDATION**

INDIA - JUNE, 2020



**SUSTAINABLE  
DEVELOPMENT  
GOALS**





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A farmer feeds lettuce to his buffalo at Bhuinj village in Satara district, Maharashtra, April 1, 2020. Photo: REUTERS/Rajendra Jadhav  
[The Wire](#)

# Agriculture & Food

## CHALLENGES

Links to complete consultation on [Agriculture](#)

### TRANSPORT OWNERSHIP

**Due to border being sealed off, and permission being tough to secure, many farmers and FPOs were unable to move their produce to markets and vendors leading to wastage.**

#### MARKETS

FPOs and farmers most often do not have their own mode of transportation and have very high dependance on vendors for linkages. Vendors come pick up the produce from the farms and have the upper hand in quoting prices leading to farmers not having a choice to negotiate or sell to other markets.

"Transportation was a very serious issue as we couldn't send our produce to the market. Government had provided some transportation but locally it was a huge problem during the lockdown as the police had restricted transportation on ground."

**Paamayan, Organic Farmer and Director at ADISIL NGO, Tamil Nadu**

### STORAGE

**With borders being sealed off, APMCs, other markets and usual vendors being unavailable, prices being very low, there was huge amount of wastage.**

#### MARKETS

Farmers were unable to sell their produce due to not have appropriate linkages and being dependant on many uncertain linkages with no bargaining power. They were unable to store their produce due to not having sufficient or appropriate storage facilities due to which wastage was high.

"Transportation was a very serious issue as we couldn't send our produce to the market. Government had provided some transportation but locally it was a huge problem during the lockdown as the police had restricted transportation on ground."

**Paamayan, Organic Farmer and Director at ADISIL NGO, Tamil Nadu**





## LABOUR

**The COVID induced lockdown saw many migrant labourers returning home. Some migrants move for farm labour, in the absence of similar facilities to farm at home throughout the year.**

### INPUTS

A large number of migrants undertake long journeys every year in search of labour intensive work. If facilities like seed distributions, land rights, irrigation and other input supplies are considered, farming could occur across seasons preventing larger scale migration.

"Lohdaga, the district we work in is majorly dominated by tribal communities. People from this community annually migrate to Punjab, Haryana, Delhi, Mumbai and the southern states. 30-50% people migrate with all family members. The communities, although hardworking people, struggle to find work locally through the whole year and will be returning soon."

**Chandrapati Yadav, LGSS  
NGO, Lohdaga, Jharkhand**

## ACCESS TO FINANCE

**Due to not being able to sell their produce and having been given low rates for their produce, farmers lost on the income which they would have invested for the next crop cycle. A lot of farmers had to spend their savings on buying and stocking up on essentials. Many commitments like loan repayments and plans to invest on assets will have to be put on hold.**

### INPUTS

In the absence or lack of access of formal financing, a large number of farmers depend on traders for input linkages - like seeds, fertilisers and capital as well as for channels for sales. Farmers continue to remain highly dependent on such middlemen for their continuity of business and capital needs - losing out on much of their negotiation power. When linkages provided by such traders fail, farmers often have no other options remaining.

"Poor liquidity for farmers is now a constraint and is further compounded as other sources of income dry up. Traders want to take the most advantage of the situation and try to get the produce from the farmers, the second paddy crop at the best rate which would be worst rate the farmers point of view."

**Satish, DDM, NABARD,  
Karnataka**



## SEEDS

### The lockdown affected input supplies - like seeds constraining upcoming farming seasons

#### INPUTS

Farmers traditionally exchanged and stored seeds locally, ensuring that there would always be a steady supply. Seeds would be exchanged with those in need boosting local economy. With onset of hybrid seeds and centralised seed suppliers, traditional practices have dramatically reduced with heavy dependence on centralised suppliers.

"Seed supply is now a constraint both for hybrid and local varieties. In the case of local seeds, people save these from their older produce and exchange them with one another to conserve as well as consume - these varieties are now being eaten due to shortage of food. Hybrid seeds on the other hand are purchased from traders who are not yet currently functioning."

**Chandrapati Yadav, LGSS  
NGO, Lohdaga, Jharkhand**

## ON FARM EQUIPMENT

### The lockdown caused conventional channels of farm equipment to fail, affecting upcoming farming seasons.

#### INPUTS

Farmers usually depend on two sources of farming equipment - government depts and private vendors. Govt and agriculture universities who even though provide machines at reduced costs have limited numbers of machines and often in poor quality, these are often also not accessible by all farmers. In this situation, private vendors often take advantage providing machines at high costs, often unaffordable for most marginal farmers.

"On Farm equipments are usually brought us from West Bengal to Jharkhand by private equipment traders - like threshers, paddy cutters and harvesters. Renting costs are expensive approximately INR 1100 per hour while it takes 1-2 days for a batch to be processed. Larger famers find this affordable due to economies of scale however those with small batches find it too expensive. For smaller farmers, small equipments, hand held and manual machines can be made available. Some machine like tractors and rotators are fewer in number, and get booked early on. "

**Sharif Khan, TSRD NGO,  
East Singbhum, Jharkhand**

## TRAINING AND INSTITUTIONS

### The crises has left many jobless inducing further needs for training - coupled with increased restrictions due to social distancing.

#### INPUTS

Many government and private institutions would need to re-think training delivery mechanisms and linkages needed to develop entrepreneurship for those migrating back home and with lost livelihoods.

"At the farm level - safe storage of produce and waiting for opportune time to sell their produce would be the best option. But in the Indian condition famers are small or marginal and these farmers would require immediate cash flow. Unemployed youth or diploma agriculture holders can assist and act as mediators between farmers and consumers."

**V . Geethalakshmi,  
Director, Tamil Nadu  
Agricultural University**

# SOLUTIONS

## BUSINESS AND OWNERSHIP MODELS

**If SHGs and individuals are to own solutions, the appropriate business models need to be aligned and developed for the ventures to be successful. These could be service models or self-serving models, based on the linkages. Ever so often, these end users are either operating with smaller capacities or single crops which will take a very long time for them to breakeven their loans - this calls for linking with subsidies and schemes for them to set up and function.**

### 1 FPO OWNED MODEL WITH LOCAL SERVICE LINKAGES WITH FARMING COMMUNITIES AND MULTIPLE NGOS

**“Our mill is the only mill working in the district. Before the lockdown 5-6 people would visit per day and post the lockdown, there are 12-15 people visiting, with an approximate increase of 6 quintals per day and an increased income of approximately INR 1200 per day.”**

**Mr. Subhrajit Satpathy, CEO, Danteswari FPO.**

Harsha Trust supported Danteswari Women FPO has established the production of aromatic paddy, black jira rice and normal varieties of rice with 470 of their registered farmer members and shareholders. The procurement of the paddy, milling, packaging and marketing was established in partnership with Harsha Trust, SF, DC office to establish a milling centre in Kanhaguda block, Kosagumuda. The machine was subsidised by SF as they were starting a business and would take a prolonged period to break even. During COVID, due to having strong linkages and procurement model, the FPO was able to mill their storage stock, sell to NGOs doing relief work, run additional hours due to solar back up. As they had their own vehicle, they were not only able to move their supply but also rent it to other NGOs in need. Non FPO members also used the service to mill produce for self consumption. [Read the case study here](#)

### 2 SHG OWNED MODEL WITH LOCAL SERVICE LINKAGES AND PROMOTION OF LOCAL VARIETY OF RICE

Kisan Mahila Mandal is a women based SHG with 20 members in Latehar district, Jharkhand who decided to take up the decentralised solar powered rice mill intervention as they observed the need for hulling of rice and polishing. They are supported by LEADS, an NGO working with 1600 rice farmers in Gumla and Laterhar alone. The mill was subsidised as the SHG members were starting a business for the first time. Earlier their only savings was the money they received from their husbands. Multiple training sessions were conducted by SELCO Foundation staff for the women members who operate the machines, handle packaging, accounts, registers, maintenance etc. During COVID, they made profits as they had farmers from neighbouring villages utilizing the milling service and were unaffected by power cuts which other mills were struggling with. [Read the case study here](#)



### 3 INDIVIDUAL OWNED LAST MILE SERVICING FLOUR MILLING UNIT

**“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.”**

**Mrs. Rosy Louis Dabale, Flour Mill Entrepreneur**

Rosy belongs to the Sidhi community and lives in Aagsalkatta, a remote village in a forested area. She works as an ASHA worker and decided to take up the solar powered flour milling machine for which she received part grant and also took a loan for INR 25,000 from a local bank. Earlier the community would have to incur high transaction costs to mill their produce from towns far away. During COVID, other milling centres in the region could not be accessed and the community self-quarantined themselves. However, they were all able to access her mill due to its decentralised nature. [Read the case story here](#)



### 4 INDIVIDUAL OWNED FLOUR MILLING AND FOOD PROCESSING UNIT PROVIDING LOCAL EMPLOYMENT

**“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.”**

**Mrs. Preeti Joshi, Roti Rolling Entrepreneur**

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 invested in a solar powering roti rolling machine, a solar powered flour milling machine and a solar powered refrigerator with grants from SELCO Foundation and rural bank loans. She is also part of an SHG supported by SKDRDP, which helps her maintain her savings. The solutions 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. Due to having strong market linkages, she was able to continue her work during COVID lockdown as was able to serve stranded migrants as well while making a profit. [Read the case story here](#)



## LINKAGES & BUSINESS PLANNING

**If FPOs do not have many pre-requisites in order, they are bound to fail. Some of these issues include having too many activities being carried out which needs strong management that comes with all rounded sectoral expertise. Critical capacities are missing which need to design strong business models, input and output linkages, storage facilities, right number of members and shareholders etc. During the COVID lockdown, FPOs that managed to keep going and even make profit were the ones who met these pre-requisites and were able to adapt to the current situation.**

### 5 LEADERSHIP AND STRONG LINKAGES SHG RUN LIVELIHOOD CENTRE

An FPO formed by IDS (on ground partner) and IGSSS in remote Koraput district started a solar powered livelihood centre which has a rice mill, millet mill, sewing machine, photocopier and printer and a mobile charging unit. The main objective of the livelihood centre was to mitigate the drudgery, time, money and effort expended by the communities in the nearby regions to access basic services. The livelihood centre was proposed to be completely run and maintained by a Self Help Group (SHG), and the income from these services are divided amongst the members. Through the IDS program, there are 270 households cultivating ragi and 500 growing rice within Lakhimpur block itself which is a strong number of input supplying farmers. During the lockdown, IDS supported the SHG by creating awareness in the block regarding the centre which enabled more people to utilise the service, increasing income and channels. With strong relationships with the panchayat, they are always supported locally. The service model is successful through the lockdown as well due to meeting all the pre-requisites of having a successful group run establishment. [Read the case story here](#)

### 6 CROSS LEARNING BETWEEN FPOs

An issue raised by FPOs is lack of awareness and knowledge on running FPOs, many of which were established due to benefits offered by NABARD. As SELCO Foundation has established relationships with many FPOs run by partner NGOs which have proven to be successful and carry with them experience, knowledge and know-how, newer FPOs could be linked to them for knowledge sharing. This has been identified as a major gap i.e, the lack of linkages between FPOs even in the same region. This could enable cross learning and also foster relationships and linkages, livelihoods wise.

### 7 NGO SUPPORTED BUSINESS DEVELOPMENT AND TRAINING

Vanasiri Rural Development Society (VRDS) was started in 2003 as an NGO. They promoted Bhoomika FPO, an independent body formed by farmers in Haveri in the year 2015-16, with 475 shareholders with share capital of INR 430,000 and has now spread all over 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. Due to all of the above established links and systems, VRDS has been running successfully through the COVID lockdown by using their 3 different solar powered machines which are used for de-stoning, grading and de-hulling of millets. 15 quintals of Jowar and 5 quintals of other millets is milled per day. They were also able to supply rations and relief to 200 stranded migrants as they had excess stock in their godown. [Read the case story here](#)



If for the same technology, appropriate business models and linkages are worked out based on seasons, inputs, outputs, linkages are worked on as per the context, the end users will be able to run a profitable livelihood.

## 8 DIFFERENTIAL BUSINESS MODEL LEARNINGS FROM TWO FPOS USING SOLAR POWERED COLD STORAGE SOLUTIONS

### Harsha Trust, Bissamcuttack

Markoma Women Farmer Producer company an FPO formed and supported by Harsha Trust in Bissamcuttack, Odisha 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 5 MT cold storage unit was installed which had a model serving only the FPO registered farmers. As the lockdown was announced, the FPO gathered all the produce from the FPO farmers as well as vendors and non-FPO farmers and filled it to capacity. After a week, the produce was sold and they received good rates for it. By adapting to the lockdown situation they are now working on their input side to address market demands. The FPO has changed their cropping patterns slightly to include vegetables through the year. They have also linked to vendors to get fixed price and for farmers to not run into losses.



### CINI, Khunti, Jharkhand, Cold Storage

With the help of CINI, Farmers in Khunti carry out a cold storage business with a solar powered 3.5 MT cold storage. The group had originally planned to provide a pay per use service to farmers who would want to store their produce for a longer duration of time and gain a higher margin of returns. However, due to low volumes associated with this model, it was soon rejected. The group now functions as a trader, purchasing vegetables and fruits locally, storing them to gain higher value and thereafter selling the produce in larger markets, thus gaining profits (INR 34,000 p.m.). By establishing appropriate linkages with vendors, they have a bargaining power now. They were able to function successfully during COVID as well.







Milch farmers of Kunnankattupathy in Chittur pouring their excess milk on the ground as Milma had not procured their milk on Wednesday due to the lower demand in the wake of the COVID-19 lockdown.

[The New Indian Express](#)

# Animal Husbandry

## CHALLENGES

Links to complete consultation on [Dairy](#) and [Poultry](#)

### ANIMAL FEED

**The availability of feed was a key issue in this sector due to closure of borders and lack of supply.**

#### INPUT PROCESSING

Most of the feed in the country is produced in a few regions in a concentrated and centralised manner mostly in the states of Andhra Pradesh, Namakkal, Coimbatore, parts of Maharashtra, Punjab and Bihar - where both Maize production and number of large integrated poultry companies are large in number.

"My major problem is access to feed, I could not complete one cycle of 1000 chickens and incurred a loss of INR 1.5 lakhs."

**Mr Krishnamurthy  
Poultry Farmer,  
Chamarajanagara,  
Karnataka**

### INPUT/OUTPUT LINKAGES

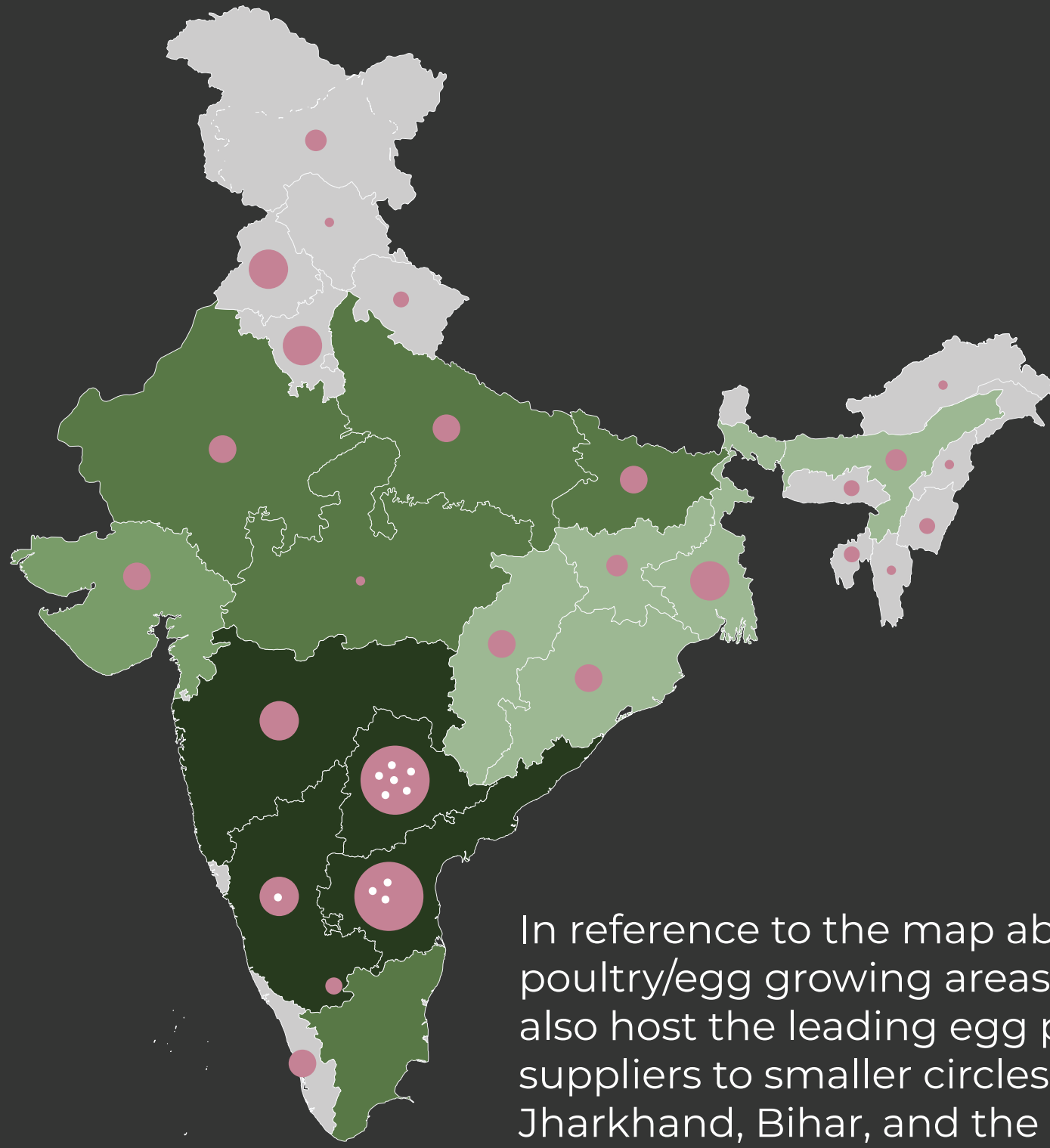
**Due to linkages being dependant on each other, any disruptions in one part of the system of various animal husbandry sectors caused the whole sector to collapse during COVID lockdown**

The backward linkages for animal husbandry are highly dependant on larger bodies functions of which need to be decentralised to the community level for timely access and local entrepreneurship.

"The solution for this problem is decentralisation end to end — that is decentralisation of the feed market and also retail sector."

**Dr. Sharath,  
Veterinary Doctor,  
Mysore, Karnataka**





**MAIZE PRODUCTION STATES (AS PER YIELD)**



**EGG PRODUCTION STATES (AS PER YIELD)**



● LEADING EGG PRODUCING COMPANY/INTEGRATOR IN INDIA

In reference to the map above, larger circles with major poultry/egg growing areas and higher maize growing areas also host the leading egg producing companies act as input suppliers to smaller circles in Odisha, Chattisgarh, Jharkhand, Bihar, and the North East States.

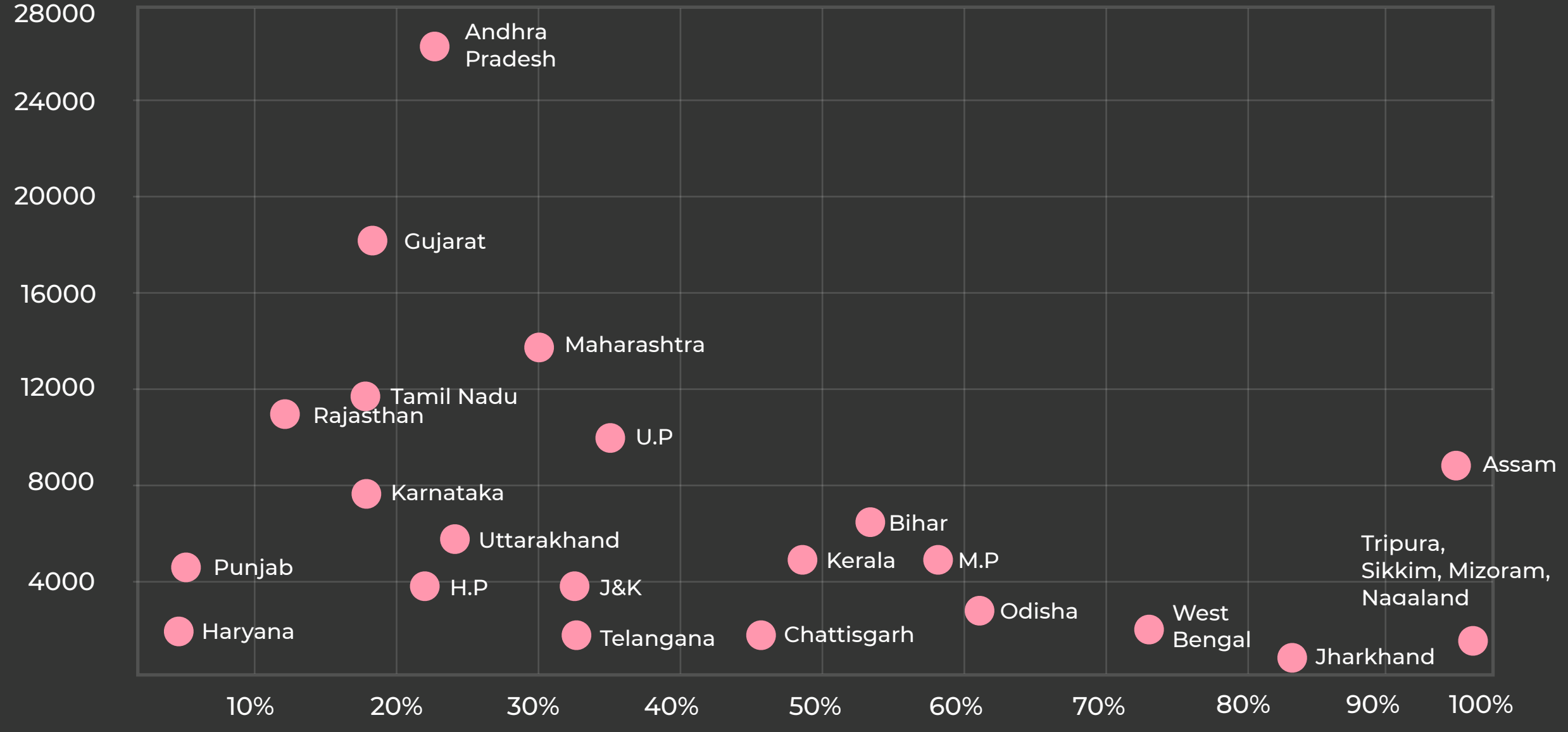


**43.5% of Poultry Population in India comes from Backyard Poultry**

The graph below showcases spends by NABARD on the Dairy Entrepreneurship Development Scheme (Which Includes all major poultry development programs), against the total share of Backyard Poultry in the state.

**Funds dispersed by NABARD for DEDS In INR (Lakhs)**

Spends are higher in states with higher percentages of commercial poultry units rather than where backyard poultry is higher.



**%Share of Backyard Poultry in States Of Total Poultry Production in Each State**



## VALUE ADDITION OF END PRODUCTS

**Animal husbandry products are perishable by nature. Due to disruption in supply chains either on the production side or the market side, produce was wasted.**

### OUTPUT PROCESSING

Small scale farmers either do not have the capacity or technology to make value added products or do not have markets even if they are able to produce them

"We began processing our excess milk into powders but currently we do not have enough market linkages for powders that we are producing."

**Mr Anand and Mr Rudra Aditya Milk Federation, Belgaum, Karnataka**

## WORKING CAPITAL

## POULTRY

**With poultry farmers unable to sell due to a slump in the market and having no linkages to feed to keep their chicks alive, they incurred losses for entire batches during the lockdown**

### INPUTS

In order to start a new batch and to keep their operations going, farmers and farmer groups are going to be in need of working capital. For many farmers, their savings have been utilized for operational expenses on the current batch.

"To sustain the operations, infusion of working capital would be required. Birds which are 30-45 days old have to be fed 200g of feed per day which comes up to INR 10/per bird. A marginal poultry farmer with 500 birds would require INR 5000 per day which is not possible hence they would either cull the birds or resort to distress sale."

**Dr Kallul Bohra, Executive Director, Harsha Trust, Odisha**

## CONSUMER AWARENESS

## POULTRY

**Poultry sector was deeply affected with the outbreak of COVID as there were unsubstantiated fears linking the transmission of virus with poultry.**

### MARKETS

Chicken and egg sales dropped drastically (over 50%) and broke the 1 trillion dollar poultry industry as soon as news of corona virus broke. This was due to misinformation spread through whatsapp, social media and other platforms very rapidly.

"Poultry is always the first industry to be affected by various circumstances and repetitive diseases like bird flu."

**Dr Elangovan, Principal Scientist, ICER-National Institute of Animal Nutrition and Physiology (NIANP)**



## MILK CHILLING AND COLLECTION

## DAIRY

**Large quantities of milk was wasted across the country at the start of the lockdown due to reduced demand and milk collection centres being at over capacity.**

### MARKETS

Not enough adequate infrastructure at decentralized levels for collection and chilling leading to malpractices, deteriorating quality of milk, wastage and low rates being offered to farmers.

"Highly centralised models are ineffective. Centralised chilling centres often have malpractices where franchise operators would not chill the milk constantly to avoid generator costs but ensure milk is chilled to 4 degrees before it is tested and collected so as to receive their commission without incurring costs."

**Mr Nitin Goel,  
Founder, Inficold**

## STORAGE AND TRANSPORT

## SILK

**Closing of borders led to disruption in production and farmers were unable to store excess produce as well**

### MARKETS

Raw material, processing, production are almost never present in one region in a decentralised manner. The interdependency of systems, disruption of communication, transport led to complete loss of production. Farmers have not been able to sell produced goods or store them due to not having adequate and appropriate storage facilities.

"In West Bengal, black cocoons are available but can't transport to beneficiaries. In case of yarn supply, demand has become completely down. So running the small enterprises has become difficult, especially in the operations."

**Ashish Chakraborty,  
Tassar Development  
Foundation, Resource  
Person for MoRD - NTFP**

## DEMAND

## SILK

**With the on set of COVID and the lockdown, silk based products were categorised as non-essential leading to a complete stand still of the industry.**

### MARKETS

With job losses and uncertainty, the demand in silk has dropped drastically as people do not have the spending power to buy silk products. Tourism has also taken a hit, being another cause for reduced demand and markets.

"Sualkuchi, a hub for silk and handloom industry has about 5000 - 8000 weavers who are dependent on it as source of livelihood. With COVID coming all the business has come to standstill and normally during this part of the time we see a lot of sales due to tourists. As per industry estimates around INR 10 -15 crores loss to business has happened."

**Diganta Bharali, Silk  
Expert, Sualkuchi, Assam**



# SOLUTIONS

## ANIMAL FEED

Feed prepared in centralised mills are expensive (making up most of the input cost) and of poor quality, reducing yield of livestock. Most farmers rely on regional milk federations for feed procurement who are also dependant on national level feed supply. In cases where people have direct linkages to feed mills in neighbouring districts, they were affected during the lockdown due to the chain was broken. They had to go back to relying on centralised mill supply which are more expensive and of poor quality resulting in reduced milk yield and substantial losses.

**If local decentralised feed mills along with their forward and backward linkages are set up and available, local enterprises and farmers will be able to access feed easily, while creating employment, channels and cross linkages.**

"I haven't been able to access the regular feed mill in a neighbouring district as it was closed. I thus had to resort to utilising feed provided by the federation which is very expensive and of lower quality. This led to a large loss in my milk business."

**Mr Manjunatha Degavi,  
Bailahongala, Karnataka**



### 9 LINKING OF FPOs FOR ANIMAL FEED PRODUCTION

SESTA, a partner NGO based in Assam, works with marginalised and Women farmers forming and strengthening SHGs, VOs and FPOs in North East. A solar powered feed mill is going to be installed for an agri FPO in Chirang, Assam. The mill has a grinder which will grind the dry components like maize and a pelletizer which makes pellets. SESTA also has FPOs in other neighbouring districts who could be linked to this feed producing FPO creating an inter looped system.

### 10 ENTREPRENEUR LED DECENTRALISED POULTRY FEED VALUE CHAIN

In Chamrajnagar, SELCO Foundation has set up brooding and ventilation interventions with a local poultry farmer. To complete the value chain, input supply is needed for which he is interesting in starting a local feed mill to make pellets by pulverizing the materials. A solar powered pulverizer is to be tested. He will start selling chickens as well as feed in his shop to local poultry farmers.



## ANIMAL FEED

**If better understanding is developed on breeds and the feed required for them, as well as of locally available produce which can be used to make feed. If feed materials are unavailable, multi cropping could be encouraged**

"Farmers can prepare their own feed and can have a small feed unit. Alternatives to feed inputs can be used as per the local availability, including broken rice, broken wheat, jowar, groundnut cake (good quality), redseed meal, sunflower cake etc."

**Dr Elangovan, Principal Scientist, ICER-National Institute of Animal Nutrition and Physiology (NIANP)**

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### REGION SPECIFIC ANIMAL FEED KNOWLEDGE REPOSITORY

A region specific knowledge repository with mapping of locally available produce for nutrient rich substitutes needs to be created and disseminated.

12

### FEED MILLING INNOVATIONS IN MULTIPLE TYPOLOGIES

Decentralised technologies: Maize and soya growing regions where poultry is also practiced can have decentralised milling units for feed preparation.

In coastal regions, dry fish could be used as a feed input as it is abundantly available. A solar powered pulveriser unit could be set up to make protein rich feed for poultry.

## LINKAGES

**If systems are integrated at a decentralised level with inputs into backyard poultry, dairy and silk rearing, farmers will remain unaffected by any supply chain disruptions and make larger margins.**

"The industry in its current form is tightly integrated and dominated by few big players (i.e integrators) who control the market right from supplying the birds, inputs in terms of feed, concerning wellbeing of the animals - like supplying the vaccines or medicines , getting into contracts for buyback of the produce, setting the farm gate prices."

**Dr Kallul Bohra, Executive Director, Harsha Trust, Odisha**

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### SCALING OF EGG INCUBATORS VIA TRAINING LINKAGES

A solar powered hatching unit has been installed in Chirang with the SESTA FPO and have 3 poultry farms connected to the hatching unit. The resource persons have been trained and can train other groups as well. SESTA with SELCO Foundation wants to scale to 6 hatchery units which can support 500 families. This will be replicated in Ghorpeta district. The feed mill also set up by SESTA in Chirang will be connected to this FPO as well.



## 14 DECENTRALISED SILK VALUE CHAIN

- Abha Foundation has been working with silk rearing farmers and has been trying to formalise every phase of the silk value chain - farming, rearing and yarn processing. SELCO Foundation is partnering with them to establish sustainable energy driven technologies at each step.
- For inputs, they want to leverage sericulture department's expertise on buying good host plants, disease free eggs and practicing scientific rearing.
- For processing, they are looking at technologies for seed preservation and having sustainable built structures for rearing. Solar powered humidifiers would be required for site specific rearing to maintain certain levels of humidity.
- Improved cookstoves to be installed for boiling of worms and coloured dyes for yarn.
- For these assets to be owned, linking with banks, csr, sericulture dept for capital is required.
- Training and capacity building to be done at each step.

## 15 DECENTRALISED POULTRY VALUE CHAINS WITH PUBLIC PRIVATE PARTNERSHIPS

Integrated Tribal Development Agency (ITDA) works on welfare of tribal communities which includes education and schooling. Harsha Trust's promoted FPO has been working with 2 such schools in supplying chicken twice a week to their residential students. Initially, ITDA had also supported 400 chicken capacity farms for 50 households from among the FPO farmer members. This relationship led to further developing with the FPO supplying chicken to ITDA schools for meals.

During COVID, schools were shut due to which poultry farmers suffered a tremendous loss. After consultation with ITDA and a letter from the FPO requesting working capital support as an advance for a forthcoming order from the schools was facilitated. ITDA gave 8 lakhs of working capital.

SELCO Foundation has partnered with Harsha Trust to test and pilot sustainable energy solutions for poultry after testing for heat solutions, exhaust fan and lighting solutions for 26 households. Harsha Trust scaled it up to 150 households via a part subsidy offered by SELCO Foundation. SELCO Foundation further worked on additional parts of the value chain including vaccine storage for last mile vaccine services for all members of the poultry FPOs.

During COVID, the veterinary department used these refrigerators to store vaccines and utilize them to provide services to the community.

## 16 DECENTRALISED VACCINE STORAGE AND SERVICES BY GOVERNMENT PROMOTED ENTREPRENEURS

Morzina Khatun practices animal husbandry in Gutipra village, Dhubri, Assam who due to the lockdown started struggling with increased mortality of her chicken and ducks as vaccines were unavailable. She is also a Poshu Sakhi at the panchayat level and handles vaccinations for 5000 birds in her cluster. A solar powered vaccine refrigerator is being installed which will enable her to provide vaccination services without any disruption.



**If milk collection and chilling units could be housed at decentralised levels as opposed to centralised, dairy farmers would suffer lesser losses. With having these units closer to dairy farmers, they would not have to spend time traveling which would reduce chances of milk quality deterioration and subsequently lesser rates.**

"Instant cooling of milk — in less than 3 hours is extremely critical for inhibiting bacteria growth and creating a longer shelf life. This is not an efficient practice currently in India as chilling and further processing is done in larger highly centralised centres with smaller centres acting as aggregators of milk."

**Mr Nitin Goel, Founder, Inficold**

### 17 COLD CHAIN LINKING DAIRY FARMS AND COLLECTION CENTRES

Need for pre cooling decentralised technologies: At a decentralised level, pre cooling machines are required. As in smaller chillers, the temperature difference in batches of milk leads to spoilage.

**If decentralised machines could support dairy farmers, issues like lack of labour and increased expenses can be curtailed and managed.**



### 18 SOLAR POWERED MILKING SOLUTIONS

Shilpa Chandrashekar, a dairy farmer adopted the solar powered milking machine and was able to continue dairy activities despite her husband not being able to help her due to health reasons. During the lockdown she would not have been able to hire labour either as the borders were closed off ceasing movement. However, she was able to continue her work and earned her livelihood despite of the lockdown.

SELCO Foundation has implemented 155 milking machines so far across 9 states. - [Link to Full Case Study](#)



# Crafts & Textile

## CHALLENGES

Links to complete consultation on [Pottery](#), [Silk](#) and [Cotton Textile](#)

### TRAININGS

### POTTERY

**The revival of the livelihood post COVID-19 would be dependent on the skill of the potters, and the established sales channels.**

### PRODUCT DIVERSIFICATION

The sales channels or the market for Potters could range from temples, pots and water containers for local market to artisanal products and containers for sweet shops. Some sales channels will be more secure than the others during and post COVID scenario. Training on the business understanding of Pottery would be key.

“A lot of the sales happen during exhibitions and fairs that are held during Summer- which is going to be affected. I have regular monthly orders from the Sweet shop- they set curd in my earthen pots. That is the only link which will continue during this period- transportation might still be an issue though.”

**Raghuram Kulal,  
Potter, Kundapura**

### GOVERNMENT LINKAGES

### POTTERY

**Handicrafts is a subset of the Ministry of Textile, and Pottery a further subset of that.**

Considering the number of individuals and families who depend on it for livelihood, not enough national level measures are taken to support this community. While departments such a KVIC and District Industries Centre has provided relief packages for Pottery Communities in the past, these have primarily been for basic (food) relief and not to secure livelihoods.

“During Fani (cyclone), DIC supported with INR 820 as relief support. The timing of this lockdown is going to need a long term support- there is no raw material, and the temples who we provide our pots to will not open up soon.”

**Swarnalata Bisoi,  
President, Puri Pottery Association**



**LINKAGES****SILK TEXTILE**

**The Silk rearing is Common Pool Resource (CPR) dependent activity where plantation is an integral part compared to the dependence on the individual property resources**

**TRAINING**

Input costs for the weavers were identified as a key aspect that needs to be reduced- where the gap lies in the transaction costs of locally sourcing the cocoons. The gap lies not only in decentralisation of rearing of cocoons but also the technical knowledge.

"if the grange is available and grange entrepreneurs are encouraged within the village and other support infrastructure is created locally and made available then to some extent we can insulate from such disruptions as COVID."

**Satish Patnaik, Tassar Development Foundation**

**PARTNERSHIPS****SILK TEXTILE**

**Investment and different financial products and programs are required across the value chain- loans for farmers, to investment in Common Facility Centres.**

Schemes announced are often not unlocked at the grassroots level, and also are not focussed towards bringing down the transaction costs of the most marginalised in the value chain, or improving the capacity. Partnerships between government programs, NGOs and solution providers can prove fruitful.

"We need government support: eri silk - rearing houses needed, disease free varieties, funds for cluster development, training programs for tribal communities.."

**Anu Mandal, Chairperson, AVA Foundation**

**TRAINING****SILK TEXTILE**

**The market is going to be even more competitive. Technology can bring consistency and upgrade the craft, but technology upgradation without upgradation of skills will not reach desired impact.**

Consumers will be increasingly looking for better quality products, environmentally friendly processes. It was identified important that the skills across the value chain is improved, and decentralised in order to retain livelihoods and conserve the craft.

"We need to concentrate on how to upgrade our machinery like how to make quality products , one of the biggest issues that I have been seeing in the north east is the quality and consistency."

**Ameel, Silk Expert, Sualkuchi, Assam**



# SOLUTIONS

## CLUSTER DEVELOPMENT

## POTTERY

**If the end to end value chain was to be looked at from the lens of technology development and ownership in one cluster, the productivity increase will be two fold and drudgery will be reduced for all stakeholders in the production part of the value chain.**

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### END TO END CONTEXTUALISED VALUE CHAIN FOR POTTERY PRODUCTION

In Dhubri district, Assam, a cluster of 30+ potters was identified by a SELCO Foundation incubatee which are a part of the Potters Association. They have received government support to set up a pottery production unit. The whole end to end value chain which includes solar powered blunger, solar powered pugmill, solar powered pottery wheel and efficient kiln will be implemented. New points of the value chain have also been identified with technological needs. New machines are being developed which locally are called Jigarjoli and Pillarjoli which are pressing machines with moulds to make lamps. The small products cannot be made on the pottery wheel and have to be made manually which are usually made in the hundreds and thousands as they are very cheaply sold. The drudgery will be considerably reduced and productivity will increase by two fold

## TRAININGS

## POTTERY

**If appropriate training were to be conducted by champions with experience, more clusters will be independent and can pass on their knowledge to further more clusters**

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### TRAINING IN NEW GEOGRAPHIES BY CHAMPION POTTERS

In Kamrup district, Assam, a pottery unit is association with Assam Rural Livelihood Mission has adopted the whole value chain i.e. solar powered blunger, solar powered pugmill, solar powered pottery wheels and efficient kiln, Raghu Kullal, one of the early adopters of the SELCO Foundation pottery value chain visited the cluster and trained them on using the equipment and on diversification.





## 21 TRAINING REPLICATION BY TRAINED CHAMPION POTTERS

In South Garo Hills, Meghalaya, Bakdil NGO have identified pottery clusters in Baghmara where the end to end value chain will be implemented for 12 families who practice pottery. Training has already been conducted for this cluster by one of the trainees who received training from Raghu Kullal in Kamrup. He has become a champion trainer and will be training other clusters henceforth as well.

### PRODUCT DIVERSIFICATION

### POTTERY

**If product diversification is passed on to potters with singular focus and marketing channels for it are developed, pottery clusters will be able to function through the year as opposed to being restricted to festive seasons**

## 22 PARTNERSHIPS FOR DEVELOPING POTTERY PRODUCT DIVERSIFICATION FOR NEW MARKETS

In West Jaintia Hills, Meghalaya, Dakti Craft works with women artists who make textiles and pottery as well. They work with these women in very remote parts of the hills which have either no electricity or very few hours of it. A few demos will be installed with some clusters. And the expertise that Dakti comes with is product diversification and marketing which will be developed with SELCO Foundation and pathways for knowledge dissemination will be explored.

### GOVERNMENT LINKAGES

### POTTERY

**If clusters and NGOs are tied up with government bodies, existing schemes and subsidies can be leveraged. Most potters in India do not have identification, for which through nodal government bodies, artisan cards can be made which will allow them to reap many benefits financially and market wise linkages.**

## 23 GOVERNMENT LINKED SUBSIDIES FOR POTTERY LOANS

Puri, Odisha: SELCO Foundation has connected with a pottery community in Puri who supply to Puri Jagganath temple and installed a demo for awareness creation. For the cluster, 17 potters have applied for bank loans for which subsidies can be availed through Shilpa Unnat Yojana (scheme). An efficient pottery shed with designed by SF with appropriate lighting, ventilation will also be installed for the community.





Sambalpur, Odisha: A pottery cluster with 40 families was identified by SF for whom the end to end value chain interventions will be done. Every 10 families will share one blunger and pug mill as it is not used everyday and each household will have one pottery wheel. The families have already been given technical training using the demo wheel. The installations will be done by SF incubatee Sunpay Solar. The potters will have artisan cards made through DIC which will help them avail schemes, which they couldn't during COVID period. Through Shilpa Unnat Yojana, the potters can be linked to avail subsidies from DIC and through ORMAS cluster level programs they will be can be helped with developing market channels.

Manamadurai in Tamil Nadu is a well established pottery society with 80 pottery families producing large quantities and selling through well established market linkages. SELCO Foundation has partnered with them and installed a solar powered value chain demo at the society. Through DIC, and Indian Overseas Bank, 50% of the members can be linked to capital subsidies - 33% for women potters and 25% for marginalized communities, which the potters belong to. Along with the pottery wheel, blunger and pug mill, a large scale efficient kiln will be built at the society quarters, for which the society can be linked to KVIC for subsidies. Street lights will also be set up around the society as the whole community lives there.

## TYOLOGIES

## POTTERY

**If the technology is tested with various typologies of potters using different types of materials, it's use can be diversified and more potters can be reached out to and supported.**

In Pondichery, Tamil Nadu, in partnership with Labour Net, the solar powered pottery wheel was demonstrated with potters making clay and ceramic products. The government had given them electric wheels which were not useful for these potters as the speed was too high. For making ceramic pots, the speed should be low and higher for clay. The solar powered wheel has proven useful for the community as it has a speed controller allowing them to be able to make items with both materials. There are 100 such potter families in the region who are interested in taking this solution up.

Similarly, with WDC NGO in Manipur work with potters who make black pottery products which are made with a mix of sand and clay. Implementations with a bigger cluster are being planned which will be a new typology that can be explored.



**If the right NGO and government partners are identified, weaving centres can be reached and impacted at scale. These partnerships with larger clusters also result in scoping for newer solutions to address emerging problem statements.**

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### DECENTRALISATION OF VALUE ADDING MACHINERY FOR SILK CLUSTERS

In Ri-bio district of Meghalya, a cluster with 200 eri silk spinners engaged with Meghalaya Rural Development Society are being partnered with. These spinners supply yarn to middle men and cooperative societies who make finished silk products. A block level project is being innovated where the spinners will be categorized based on activities and solar powered interventions for silk spinning and reeling will be implemented. Other crucial technology points will be studied like solar powered sprayers for spraying water on worms which is a critical part of the rearing process.

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### PARTNERSHIPS WITH NGOs DEVELOPING WEAVING CENTRES

In Assam, Gramya Vikas Mancha, an NGO partner works with weavers and have established weaving centres. Two centres have been identified where jacquard integrated efficient looms will be implemented. There is potential for scaling in these centres as well.

**If local technologies in value chains are identified and their inventors supported technically and with business development, end users and can be supported with local solutions fit to solve local issues**

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### INCUBATING GRASS ROOT LOOM MANUFACTURERS

SELCO Foundation has incubated Altaf and Biren Singh, two looms manufacturers through it's incubation program. Both incubatees are local inventors who have built power looms which were made efficient and solar powered by SF. They have their own network of local customers as well with whom 6 sites have been identified and implementations will be done. These sites are a mix of individual home based weavers and weavers who are a part of cooperative societies.





**If the value chains are covered end to end with the same cluster or with clusters connected to each other, the dependency with centralised is cut off, better prices can be ensured, orders can be constant and shared, and a circular economy can grow locally.**

**During COVID lockdown, even clusters and organizations that had pending orders could not meet them due to not having access to inputs. If end to end value chains were present for clusters, they could have continued their work.**

30

### DECENTRALISED RAW MATERIAL PRODUCTION LINKAGES FOR SILK WEAVING

In Assam, MASK, a partner NGO has established a Common Facility Centre where through part grant and contribution, 10 eri spinning units have been installed. A new centre is being constructed for which SELCO Foundation has designed an efficient sustainable bamboo structure which will be built using locally available materials. Further, in the new centre, discussion is being had to implement solar powered pirn and bobbin winding machines, warp making machines which will help them produce their own raw material. Using this raw material, they will have their own handlooms to weave as well as silk reeling. The entire silk value chain can be implemented making the centre self-sustainable.

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### PARTNERSHIPS WITH SILK EXPERTS IN SPECIFIC TYPOLOGIES

Discussions and planing are in order to implement farm level solutions like solar powered pruners, solar powered sprayers; granage level solutions like humidifiers and efficient structures for appropriate light and air circulation to host the cocoons as well as processing level machineries like reeling and spinning machines. Tasar silk process is different than eri silk and the solutions will also be scoped and developed to suit those needs.

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### DECENTRALISED SILK VALUE CHAIN

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- For inputs, they want to leverage sericulture department's expertise on buying good host plants, disease free eggs and practicing scientific rearing.
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- Improved cookstoves to be installed for boiling of worms and coloured dyes for yarn.
- For these assets to be owned, linking with banks, csr, sericulture dept for capital is required.
- Training and capacity building to be done at each step.



**If communities are trained in using newer technologies, to trouble shoot and to diversify their products, they can be self sustainable and can carry forward their skills to other clusters as well. For these training, local resource persons from clusters, training centres, government bodies and NGOs can be identified.**

### 33 DECENTRALISED SOLAR TECHNOLOGIES AT SILK TRAINING CENTRES

In Ri-Bhoi district, Meghalaya, Ferrando, a local NGO partner works with providing livelihood opportunities and skill training of vulnerable women, school and college drop out, widows etc. They have a training centre where a solar powered eri spinning machine and a solar powered sewing machines has been installed. These are used by trainees to learn skills as well as for minimal production.

During COVID, the Ferrando centre was in the quarantine area so it could not be accessed. However, graduates from the institute were linked to the orders coming in from the district administration and local hospitals. They produced masks throughout the lockdown period which were supplied to frontline workers as well as communities in nearby villages. **Read the case study done.**



### 34 TRAINING CONTENT DEVELOPMENT IN LOCAL LANGUAGES AND IMPLEMENTATIONS IN PARTNERSHIP WITH GOVT. DEPARTMENTS

In Nongpoh, Ri-Bhoi district, along with a resource person from the district sericulture office, a training program has been developed in the local language of Meghalaya. Along with this, in their spinning unit (for production), one solar powered silk spinning machine has been installed and an existing inefficient spinning machine has been solar powered.



**Thank You!**  
**For more information**  
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## **SELCO FOUNDATION**

INDIA - JUNE, 2020

### **Links and Resources**

#### Sector Consultations

- [Millet](#)
- [Pottery](#)
- [Poultry](#)
- [Dairy](#)
- [Agriculture](#)
- [Cold Storage](#)
- [Textile: Cotton](#)
- [Textile: Silk](#)
- [Food Processing](#)

[Stories of Resilience: Case Studies of Entrepreneurs using Sustainable Energy to Tide over the COVID Crisis](#)

[Tele-Livelihoods: Solution for Migrants](#)