

SDG7 LED LIVELIHOOD SOLUTIONS FOR PEOPLE WITH DISABILITY

AN OVERVIEW : INCLUSIVE SOLUTIONS AND CASE STUDIES



SELCO FOUNDATION

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BACKGROUND

About **2.2%** of India's population lives with some kind of physical or mental disability, as per the National Statistics Office report on disability released in 2019 (1). World Bank data on the total number of persons with disabilities in India suggests the number is between 40 and 80 million(2). The 2011 census estimated that the number of people with disabilities in India is close to **2.68 crore** — that is more than the entire population of Australia. The last census considered seven kinds of disabilities which was increased to 21 with the introduction of the Rights of People with Disabilities with the most common disability being the inability to move without assistance.

These historically marginalized communities have faced discrimination, lack supportive infrastructure as well as social and cultural acceptance leading to "othering".



Case study 1: Illaiyaraja running a solar powered mobile Printer/Photocopying business

(1) <https://indianexpress.com/article/explained/explained-how-much-of-indias-population-lives-with-disabilities-7088195/>

(2) <https://thewire.in/health/persons-with-disabilities-challenges-india>

BACKGROUND

The [World Report on Disability 2011](#) sums up the various definitions of disability by stating that “Disability is complex, dynamic, multidimensional, and contested”. Disability is not homogenous as there are variations from person to person and is a spectrum. Data on disability points to a correlation between ‘disability’ and ‘poverty’. A large number of people with disabilities are born in to poor households. This is not just a mere coincidence. This is due to the fact that pregnant mothers have to work until the very late months of their pregnancy under very harsh conditions to make ends meet (1). Census data also suggests that **69%** of the disabled population reside in rural areas.

Persons with Disabilities in low income groups struggle with lack of support, lack of livelihoods, income and social mobility.



Case study 2: Hanumanthappa running a solar powered roti rolling enterprise



(1)<https://thewire.in/health/persons-with-disabilities-challenges-india>

BACKGROUND

Climate change impacts Persons with Disabilities disproportionately. This includes impact of heat stress on their physical conditions, power outages during disasters leading to them not being able to use their assistive technologies, inability to evacuate during disasters and so on.

Persons with **Disabilities** also have higher mortality rates and are impacted directly by increasing climate stresses.

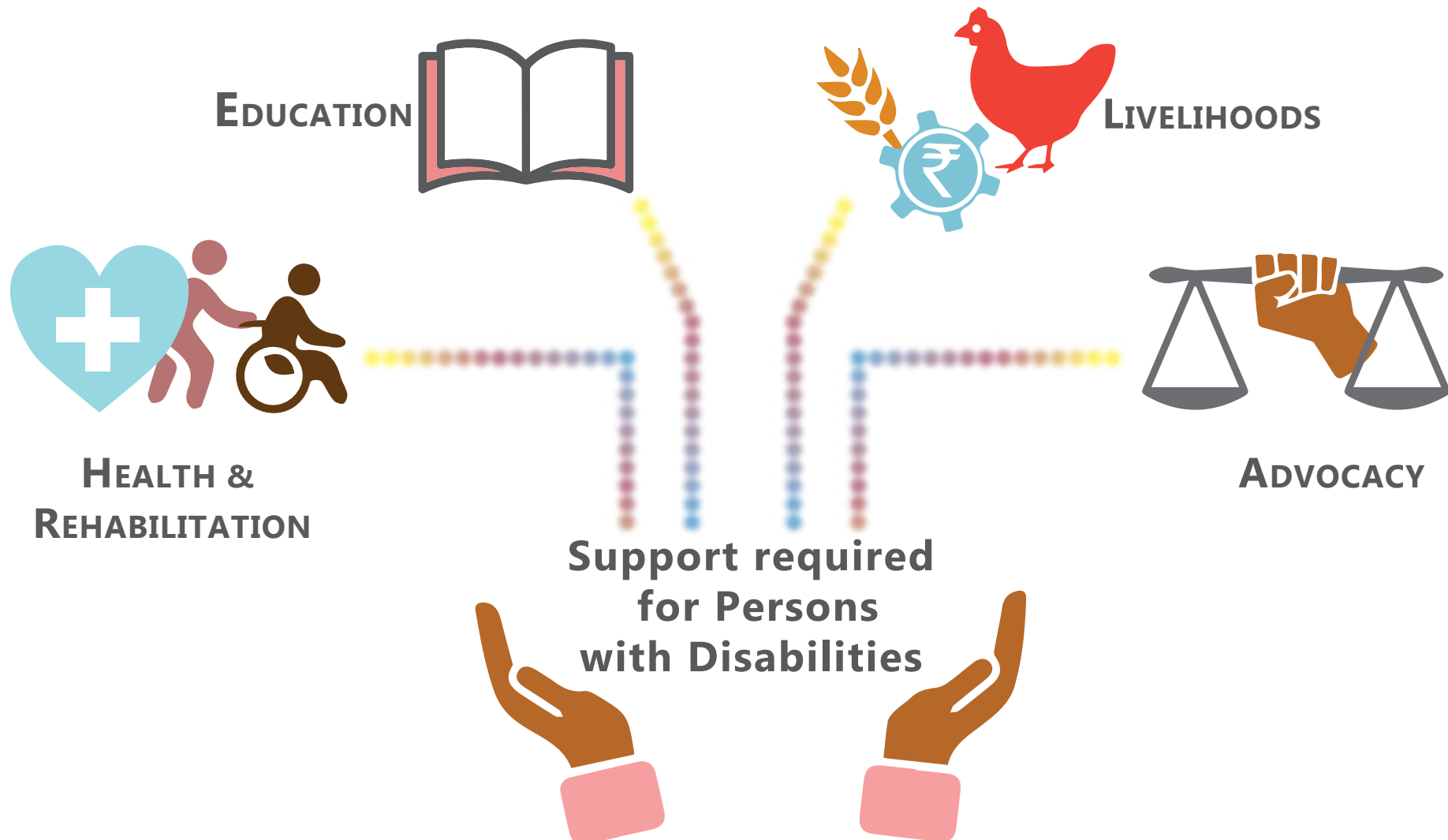


Case study 3: Savitha, Tailoring Entrepreneur



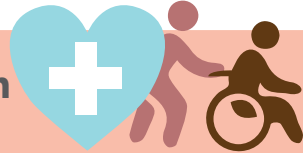
<https://www.bbc.com/news/disability-59042087>

When developing solutions and programs for Persons with Disabilities, it is critical to have a holistic approach. Support should be extended on every aspect which includes health care, education, livelihoods, counselling, skilling, financial support, innovations amongst other. Partnering with various organizations and stakeholders in the ecosystem is required to ensure that the end users are supported in all the aforementioned aspects.



Support required for Persons with Disabilities

Health and Rehabilitation



Gaps

- Participation from end users or community is less
- To see society and its barriers as an issue and not the end user
- To have access to health care and rehabilitation at the doorstep
- To make health care spaces more accessible with better designs

Opportunities

- Innovation on mobility based assistive technologies, aids and appliances (DRE)
- To better design built spaces for improving access
- Participatory approach to be incorporated
- To conduct training, awareness and mobility camps

Education



Gaps

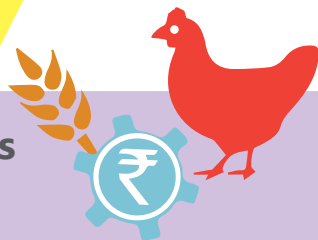
- Lack of mainstreaming of special education
- Lack of support to special schools in aids and built spaces
- Lack of appropriate learning aids for specific disabilities
- Lack of energy infrastructure to use learning aids and technologies

Opportunities

- Bringing inclusivity into schools at every level (school education, higher education and formal and informal education)
- Supporting special schools with aids, technologies and appropriate built environment designs
- Innovation on learning aids and technologies
- Decentralised Renewable Energy improving access to the above

Support required for Persons with Disabilities

Livelihoods



Gaps

- Lack of support to disabled entrepreneurs and group based livelihoods
- Lack of need-based innovations for disabled entrepreneurs
- Lack of financing for asset ownership and capital costs
- Lack of training, capacity building and handholding

Opportunities –

- Providing handholding support, building market linkages and confidence in starting livelihoods
- Providing need-based solutions and innovations to disabled entrepreneurs to start and diversify their livelihoods with friendly built spaces
- Providing financial linkages for asset ownership and working capital

Advocacy



Gaps

- Lack of advocacy and policy building for enabling access and mainstreaming opportunities for Persons with Disabilities
- Lack of linkages to policies and schemes provided by the government

Opportunities

- Building networks and consortiums of organizations working with Persons with Disabilities at every level
- Building and providing better linkages with schemes and policies under various levels of government departments
- Providing financial linkages for asset ownership and working

ABCDE Approach



A Assistive Technologies

These technologies are customized, need-based and support Persons with Disabilities for their physical mobility as well as hardware, software and peripherals to access information technologies for education and livelihoods. These technologies are also enabling channels for accessing different forms of livelihoods and markets.

For example: a visually impaired entrepreneur could use a voice-activated or auditory assistive device to carry out computer-based livelihoods.

B Built Environments

Need-based, customized designs in built environment spaces can enable Persons with Disabilities in better accessing their spaces for their well-being and livelihoods. This includes cognizance of ergonomic needs, active and passive cooling technologies to prevent health risks in heat stressed regions.

For example: Wheelchair bound persons require ramps, shelves at an appropriate height to access with ease, technologies placed in a certain manner for convenience.

C Counselling

With social barriers and exclusion impeding their lives, it is critical to have counselling support, motivation and guidance for Persons with Disabilities at every step.

D Data management

Along with interventions, it is crucial to collate and analyse data to ensure better solutions are designed and scaled for communities in need

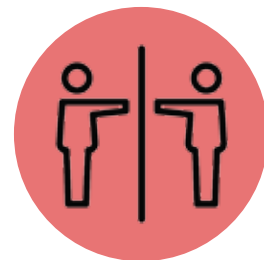
E Energy

Assistive technologies and other technologies used for livelihoods require reliable energy access constantly and particularly during work hours. Decentralised Renewable Energy can enable this access and improve comfort, well-being and livelihoods.

This approach was co-developed with The Association for Persons with Disabilities (APD)

DISABILITY AND LIVELIHOODS

In order to strengthen, bring self-resilience and self-respect for Persons with Disabilities, it is critical to develop and make inclusive livelihood solutions accessible. Presently, due to barriers, lack of accessible solutions, opportunities and support, communities tend to take up low investment businesses which also offer low returns.



Social Barriers



Lack of opportunities for livelihoods



Limited options for formal employment



SECTOR WISE LIVELIHOODS AND OPPORTUNITIES

SELF-EMPLOYMENT ACTIVITIES DONE BY PWDS		COMPUTER TRAINING CENTRE /OPERATOR		DRE SOLUTION		ROTI MAKER AND SELLER		DRE SOLUTION		PETTY SHOP OWNER		DRE SOLUTION
SECTOR / SOLUTION		Education and Training		Solar powered computer, printer, scanner, solar powered lighting and fans		Food and Retail		Solar powered roti rolling machine, solar powered lighting and fans		Retail		Solar powered lighting, fans, fridge, printer
PHYSICAL DISABILITY		✓		Ergonomically friendly physical set up		✓		Ergonomically friendly redesigned technology based on need		✓		Better designed built space for comfort and ease in work
VISUALLY IMPAIRED- TOTALLY BLIND		✓		Braille keyboard						✓		Braille if required and better designed spaces
VISUALLY IMPAIRED- LOW VISION		✓		Focus light		✓		Focus light		✓		Focus light
HEARING IMPAIRMENT						✓				✓		
INTELLECTUAL DISABILITY -MILD										✓		Access to energy to ensure work hours are not disrupted
SPINAL CORD INJURY		✓		Ergonomically friendly physical set up						✓		Better designed built space for comfort and ease in work. Redesigning technolo- gies for ease of use

SECTOR WISE LIVELIHOODS AND OPPORTUNITIES

SELF-EMPLOYMENT ACTIVITIES DONE BY PWDS	POTTERY MAKER AND SELLER	DRE SOLUTION	TAILORING	DRE SOLUTION
SECTOR / SOLUTION	Manufacturing and Retail	Solar powered pottery wheel, blunger, pug mill, BE work space	Service	Solar powered sewing machine
PHYSICAL DISABILITY	✓	Ergonomically friendly physical set up	✓	Ergonomically friendly physical set up and innovations for ease
VISUALLY IMPAIRED- TOTALLY BLIND				
VISUALLY IMPAIRED- LOW VISION				
HEARING IMPAIRMENT	✓		✓	
INTELLECTUAL DISABILITY -MILD			✓	
SPINAL CORD INJURY				

This mapping was co-developed with Enabled India

ECOSYSTEM FRAMEWORK For Disabled Entrepreneurs

Enabling Livelihoods For People With Disabilities Through Energy Access



DECENTRALISED RENEWABLE ENERGY

- Efficient optimized energy systems for productive use technologies, lighting and cooling
- Increased accessibility, reliability, opportunities resulting in productivity and ease in work



FINANCE

- Appropriate financial linkages and support for disabled entrepreneurs
- Increased linkages to formal financing, schemes, policies resulting in asset ownership and working capital



TECHNOLOGY AND BUILT ENVIRONMENT

- Conducive need based built environment spaces
- Improved accessibility, improved incomes, reduce physical strain
- Long term impacts, ease of movement, health benefits
- Efficiency of technology
- User friendliness of technology
- Increased livelihood opportunities and scope for diversification



CAPACITY BUILDING

- Offering training and capacity building for disabled entrepreneurs by working with partners, grassroots stakeholders and institutions
- Hand holding support, motivation and building a know-how of running a business



Decentralised Renewable Energy

Decentralised Renewable Energy bringing accessibility, reliability, opportunities resulting in productivity and ease at work.

This allows for increasing reliability on the existing livelihood as well as helps in diversification resulting in increased incomes. Disabled entrepreneurs require a certain level of mechanization in order to bring ease into their work. With increased mechanization, there is also increased reliability on energy. Decentralised Renewable Energy can improve productivity, reliability and accessibility to livelihoods for said entrepreneurs across geographies.



Sridevi Mellavanki, a disabled entrepreneur running a solar powered printer/photocopying business from her home

CASE STUDY 1 ILLAYARAJA PRINTING AND PHOTOCOPYING ENTREPRENEUR

Illaiyaraja lives in Madurai district, Tamilnadu with his wife and two school going children. He earns a living by filing application forms for people, in the campus of Madurai collectorate. By doing so, he used to earn INR 6000 per month, approximately. His wife worked as a daily wage labor in a flour mill and earned INR 5000 per month. He also gets INR 1000 per month as a disability pension from the state government. Earlier, he was only able to offer services for filling the forms and online applications. For photocopy of the required documents, people had to step out of the collectorate campus to access the service. He envisaged it as a potential opportunity. But carrying a xerox machine in his vehicle with a reliable power source was a hurdle.



TECHNOLOGICAL SOLUTION: A solar powered photocopy/printing machine was installed in his vehicle along with a steel box. The box with the photocopy/printing machine weigh around 16.5 kg together which is convenient for him. Sponge has been placed inside the box to avoid the effect of vibration, due to vehicle's movement. The position of the printer is designed as per the needs and desired ergonomics of Ilayaraja. The panels have been installed at his home along with 2 portable batteries and the batteries get charged at his house which he uses alternatively. He connects a smart phone to the printer for taking printouts.

CASE STUDY 1 ILLAYARAJA PRINTING AND PHOTOCOPYING ENTREPRENEUR



"I was aware of the opportunity of earning through a photocopy/print out business in the Collectorate office campus, but I did not know how to tap it. This concept of portable printer/photocopy machine has helped me in increasing my income. I am confident that once, situation is back to normal, I will be able to make more money from this business. I am also planning to buy a second-hand laptop, to make my work easier."

The intervention has helped the entrepreneur in expanding the range of service in his existing business. He is getting more orders from employees of collectorate through e-mail and WhatsApp. His income has increased by INR 6000-7000 per month because of the intervention.



Technology and Built Environments

Sustainable energy supported technology and workspaces for

- Drudgery reduction
- Reduced physical stress as per the disability

While building livelihood opportunities, it is important to consider inclusive and assistive technologies. In order to reduce drudgery and improve accessibility to livelihoods, it is critical to innovate based on needs. Considerations need to be made on the ergonomics in the machines, the built spaces to ensure reduced physical stress as per the disability, increase overall wellbeing and ease in working. This also improves opportunities in livelihoods which were earlier inaccessible to Persons with Disabilities.



Ramachandra is a blind potter from Kumta who lost his eyesight 25 years ago. He moved from a manual wheel to a solar powered pottery wheel and blunger which has aided him in reducing drudgery, increasing his productivity, incomes and ease in working.

CASE STUDY 2 HANUMANTHAPPA BHUJANG KORBAR (ROTI ROLLING ENTREPRENEUR)

Hanumanthappa resides in Balligere village of Athani Taluq in Belagavi district, with his family. His father is a marginal farmer and his mother used to work as a daily wage labor. In 2003, he met with an accident, which led to a severe spinal cord injury and was bedridden for 10 years after. The income of the whole family was less than INR 1,00,000 per annum and due to limited mobility, Hanumanth did not get access to any livelihood opportunity.



TECHNOLOGICAL SOLUTION: A solar powered roti rolling machine was implemented for Hanumanthappa to have a home-based livelihood. The machine design was modified to make it disabled friendly, catering to his specific needs. A traditional roti rolling machine can be operated only with legs. Since the end user is wheelchair bound, the machine handle was installed in a way, so that it can be operated with hands. Hanumanthappa was trained by a technician from the vendor for operating the machine.

CASE STUDY 2 HANUMANTHAPPA BHUJANG KORBAR (ROTI ROLLING ENTREPRENEUR)



"The intervention has proved to be a boon for me and my family. Now, my mother doesn't need to go to a strenuous job of daily wage labor. My confidence level has also increased. In the future, I am planning to open a printer xerox shop near the highway. In that Kendra, I will provide service of filling forms for the government schemes."

The intervention has helped the entrepreneur in gaining access to a sustainable source of income and is helping the family in meeting ends. As his house is quite close to the highway, there are 2-3 dhabas (eateries) near the highway. The dhaba owners are the major regular buyers of the rotis that he prepares. Apart from that he also gets orders during local functions. He supplies 300 rotis per day and makes INR 900 per day. Due to this, his mother has stopped going for daily wage work and supports him in the business. She makes dough and roasts rotis. His father delivers rotis to the customers/eateries, as per the order.

CASE STUDY 3 SAVITHA, TAILORING ENTREPRENEUR

Savitha, a resident of Kapanimbaragi village under Bijapur district is a motivated entrepreneur. She was engaged in farming prior to her mobility getting restricted. Keeping up with her entrepreneurial spirit, Savitha took up tailoring as a home-based business.

She has been running the business for 5 years now and it is the primary source of income for her family. She has a family of four. Her husband works in farming.



NEED

Savitha's primary source of income is the tailoring business she runs. Savitha and her family used to receive a monthly allowance of INR 1500 under government's provision for disabled society apart from owning a small piece of agricultural land beside her house.

Consequently, limited by her disability, Savitha started her own business in tailoring to improve her income and well-being.

SOLUTION AND IMPACT

The solar power intervention has not only mechanized the sewing machines but also ensured continuous work hours during the day. The newly built workstation and storage have added value to her business. Both her income and productivity have increased. Her monthly income is recorded at INR 9000 post intervention.



Financial Linkages

Enabling Financial Linkages

A big barrier for entrepreneurship or in ownership of an asset is lack of financial linkages and innovations. Financial support and linkages are critical in order to enable uptake of productive use assets for Persons with Disabilities. Understanding business models, understanding and establishing market linkages, payability, hand holding support, linking communities to schemes and policies are all parts of the financial linkage process.



Nirmala, a disabled roti rolling entrepreneur was linked with SKDRDP, a Micro Finance Institution for a loan to own her own solar powered roti rolling machine

CASE STUDY 4 FINANCIAL LINKAGE FOR LIVELIHOODS THROUGH 14TH FINANCE COMMISSION SCHEME

NEED

In Raichur district, SELCO Foundation had met with a few people with disabilities who were keen to taking up livelihood solutions. They were struggling with lack of livelihoods, lack of market linkages and lack of support. They belonged to impoverished families who were landless, some people living in tin sheds, engaged in daily wage labour, being affected by drought and could not even migrate due to their disabilities. Most of the identified people would earn not more than INR 100-120 per day and had zero savings.

India



https://commons.wikimedia.org/wiki/File:Karnataka_Raichur_locator_map.svg

CASE STUDY 4 FINANCIAL LINKAGE FOR LIVELIHOODS THROUGH 14TH FINANCE COMMISSION SCHEME

SOLUTION

SELCO Foundation, mapped and identified the panchayat grants under the 14th Finance Commission as the appropriate funds to access. Nine panchayats and 30 end users were selected under this scheme. The proposed solutions for the 30 selected disabled entrepreneurs were solar powered efficient sewing machine (10), solar powered printer and solar powered roti rolling machine. These solutions are easy to use, can be run from their own homes or work spaces and are effective solutions for micro enterprises which the selected beneficiaries were keen on taking up.

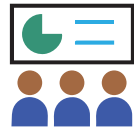


Mr Ramireddy Patil, Executive officer under 14th finance commission at the Taluk Panchayat, with the end user and her solar powered roti rolling machine

CASE STUDY 4 FINANCIAL LINKAGE FOR LIVELIHOODS THROUGH 14TH FINANCE COMMISSION SCHEME

LEARNINGS

- None of the end users were aware of this scheme and neither were some of the panchayat committee members. The scheme was being misutilized in many regions. Awareness creation is key
- Handholding was very important as persons with disabilities would not have been able to visit these offices repeatedly. Since a lot of them are daily wagers, they would have lost their wages due to having to visit these centres regularly
- The scheme was important to unlock as without the grant support, these end users would not have been able to start their own livelihoods. If using commercial connections, the end users would have had to pay INR 9.86 per unit as opposed to the INR 4.25 which is charged for home connections. However, due to solar there will be no electricity expenses



Capacity Building

Capacity building of disabled entrepreneurs needs to be a part of every program to ensure equity.

For example, SELCO Foundation partnered with Enable India which works closely with Persons with Disabilities. Enable India partners with RSETIs, RUD-SETIs and other grassroots actors by providing content for training in these centres. SELCO Foundation is providing solutions and content support. This enables opportunities to livelihoods along with appropriate trainings and exposure to ensure entrepreneurship. A Surya Mitra Lab is underway in CMSS, Hassan in partnership with Enable India where there can be a mix of candidate training with hands-on exposure through a demo lab.



Decentralised Renewable Energy has improved access to Moulali's printer photocopying business

SUSTAINABLE ENERGY DRIVEN LIVELIHOODS FOR PERSONS WITH DISABILITIES



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