

# **Beyond the appliance - a journey of access, experience, and change**

**Prabhat Education Foundation**

**(2024 - 2026)**



## Cooking through disruption: Participant experiences during the LPG shortage

This section was added following a short follow-up interaction held on 25th April 2026 with a few participants who were able to attend. The discussion focused on their experiences during the ongoing global disruptions, particularly how these were affecting everyday cooking practices.

### Reduced dependency during LPG shortage

Participants shared that the shortage of LPG cylinders, attributed to global supply disruptions, had created challenges across households. Delays in booking and long waiting periods were common. However, those using electric cooking appliances experienced significantly less anxiety. As Mumtaz succinctly put it, *“If we don’t get a gas cylinder, it’s okay, we have EPC and induction, so no tension.”*

### Shift from LPG consumption

A noticeable reduction in LPG usage was reported across participants.

- Mumtaz shared that her family’s LPG cylinder, which earlier lasted a month, now lasts three to four months.
- Geeta mentioned that a cylinder filled during Diwali (October 2025) was still in use, as most cooking had shifted to induction.
- Saraswati said, after having booked for a refill it did not turn up for more than 15 days and during that time all her meals were being prepared on the induction.
- For many, LPG use had been limited to making rotis, with all other cooking subzi, dal, khichdi, chai, being done on electric appliances.

### Adaptation and integration into daily use

Participants have actively adapted to the appliances:

- Some invested in induction-compatible tawas to further reduce dependence on LPG.
- Appliances were being used across family members, including children, indicating ease of use, especially the induction.
- Soni’s household continues the use the induction to support their small food business, linking the appliance directly to livelihood.

#### From the news

1. <https://www.indiatoday.in/information/story/lpg-cylinder-shortage-in-india-why-booking-problems-are-rising-2881491-2026-03-13>
2. <https://www.livemint.com/news/india/lpg-shortage-over-half-of-indian-households-report-delivery-delays-black-marketing-finds-survey-11773377421818.html>
3. <https://indianexpress.com/article/cities/ahmedabad/gujarat-hardlook-menu-shrink-footfall-down-lpg-crisis-ahmedabad-eateries-10621406/>
4. <https://timesofindia.indiatimes.com/city/ahmedabad/lpg-violations-surface-in-state-amid-supply-concerns/articleshow/129640488.cms>
5. <https://www.thehindu.com/food/features/hybrid-kitchens-how-families-are-cooking-with-less-lpg/article70744568.ece>

## **Economic relief and market response**

The shift also brought financial benefits:

- Reduced LPG consumption translated into direct savings, especially in the context of rising fuel prices.
  - During the shortage, there was increased demand for induction cooktops, with market prices rising sharply. Participants who already owned these appliances were better positioned.
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This document brings together the qualitative insights from a two-year journey on access to energy for people with disabilities, conducted in collaboration with the MECS department at Loughborough University, UK. It has been developed to share the nuanced learnings from this research process, which has also been an eye-opening experience for us at Prabhat.

Certain sections of this document, particularly the quantitative aspects, draw from the extensive and thoughtfully prepared research report by Dr. Amita Bhakta, the Principal Investigator of the study. The link to the final report will be shared soon.

While only a few team members were directly involved at the forefront of the study, its successful execution was made possible by the sustained efforts and support of many others at Prabhat, who worked behind the scenes to ensure the process ran smoothly.

## Prabhat's evolving journey into research

The access to energy research marks an important step in Prabhat Education Foundation's growing journey into the space of practice-led research. Rooted in its long-standing engagement with communities, Prabhat's work has consistently focused on understanding lived realities, whether through its interventions in education, or child development for children with disabilities. This study builds on that foundation, extending inquiry into an area that directly intersects with everyday life, yet remains underexplored.

What makes this research significant is how it draws from, and in many ways reinforces, learnings from Prabhat's earlier studies. Across projects, a consistent thread has emerged: that access, whether to education, technology, or services, is never neutral. It is shaped by social, economic, and physical contexts, and often requires an intersectional lens to fully understand its impact. The findings from the access to energy study echo this, highlighting how factors such as disability, gender, household dynamics, and infrastructure influence adoption and use.

At the same time, the research reflects Prabhat's approach of placing participants at the centre, not just as respondents, but as active contributors to knowledge. Similar to previous studies, lived experiences have challenged assumptions, added depth to data, and shaped the direction of inquiry.

The access to energy research does not stand alone, it strengthens Prabhat's evolving research practice, one that is grounded in the field, responsive to emerging needs, and committed to building evidence that can inform both programmes and policy.

To understand more about the work Prabhat does, please log onto:  
[www.prabhateducationfoundation.org](http://www.prabhateducationfoundation.org)



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## Executive Summary

*Equity cannot be approached with a broad brush. It requires an intersectional lens, rigorous analysis, and the humility to keep asking harder questions of ourselves.*

Access to energy is often understood in terms of availability and infrastructure. This study looks at it differently. For persons with disabilities, access is also about whether energy can be used safely, independently, and with ease in everyday life.

This two-year research, conducted by Prabhat Education Foundation in collaboration with the MECS programme at Loughborough University, focuses on the role of e-cooking appliances in the lives of persons with disabilities living in low-income settlements in Ahmedabad. It brings together both the process and the lived experiences that shaped the journey.

At the centre of this study is participation. Participants were not just part of the research, they helped shape it. From selecting appliances to co-designing cooking diaries, their involvement remained consistent throughout.

What emerges clearly is that the continued use of appliances was not driven by novelty, but by how well they responded to everyday realities. Participants engaged more when the appliances reduced physical effort, allowed them to sit while cooking, or made the process safer by removing the open flame. For some, this meant returning to cooking after years. For others, it meant doing it with greater ease and control.

Time emerged as an important resource. The time saved was used in different ways. For some, it allowed rest. For caregivers, it made it easier to manage multiple responsibilities. In some cases, it supported livelihood activities. Even small amounts of time were described as meaningful.

The transition to e-cooking was not the same for everyone. It was gradual and shaped by individual context. Fear, hesitation, and dependence were part of the early stages. Over time, with support, many participants built confidence and began to engage more independently. Family played an important role in this process, both as support and at times as a barrier.

The study also highlights that the appliance alone is not enough. Its use depends on a larger ecosystem. Accessible infrastructure such as plug points, continued handholding, and reliable maintenance systems are essential for long-term use. Without these, adoption remains uneven.

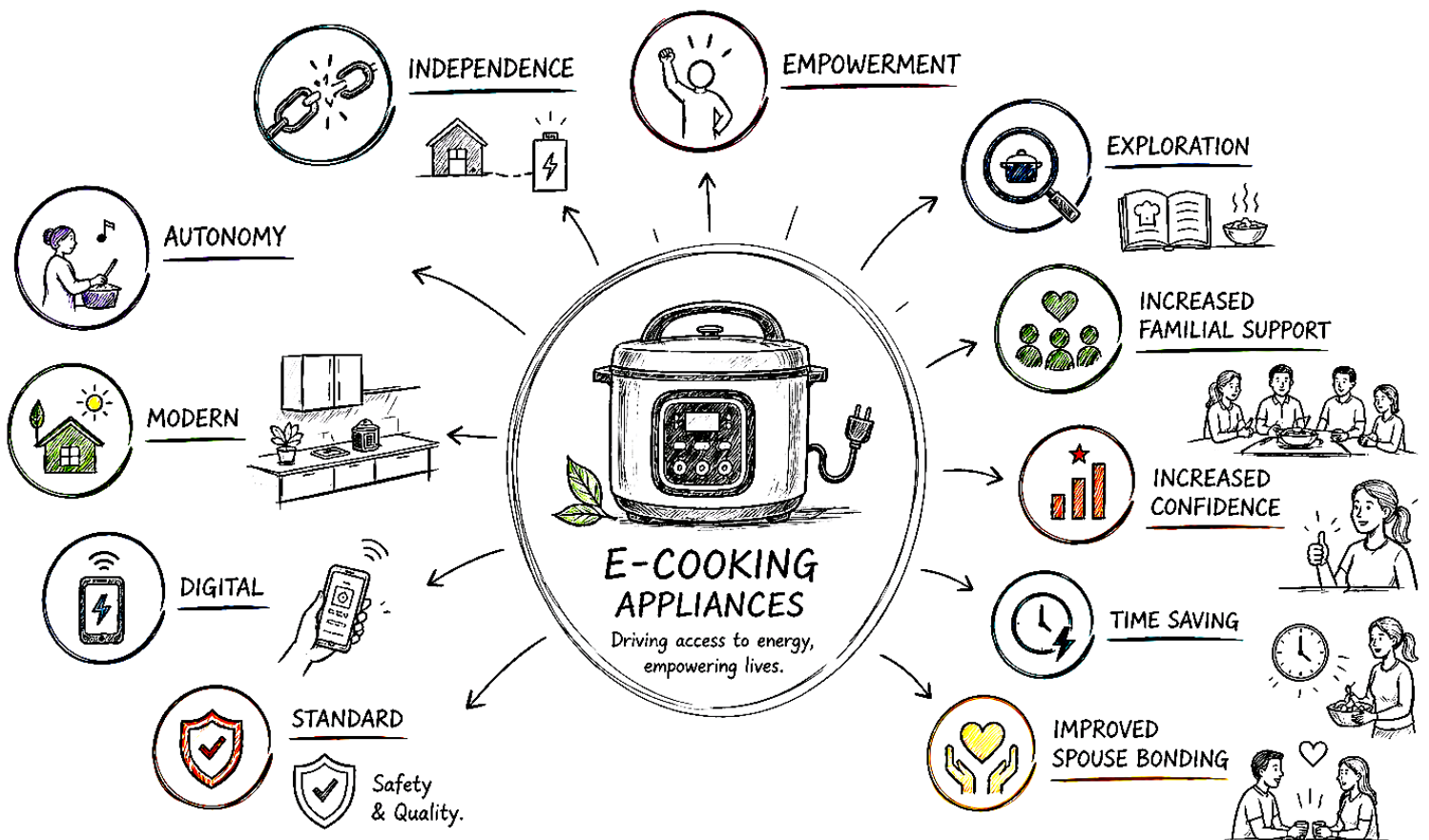
Beyond functionality, there were shifts in how participants saw themselves. Kitchens were described as more modern. Participants spoke about feeling capable and independent. For caregivers, there was a sense of relief as everyday routines became more manageable.

This research reinforces a simple but important point. Access to energy is not just about providing a solution. It is about ensuring that the solution fits into people's lives. When it does, even small shifts can lead to meaningful change in how people live, work, and see themselves.

A visual journey of the movie is available at:

<https://www.youtube.com/watch?v=8V8kPdJw2Kw&t=3s>

**Words participants used to describe their e-cooking appliances, and the shifts they experienced in confidence, identity, and daily life through its use.**



## **I. Key learnings from the study**

What emerges across these journeys is that sustained use was not driven by how new or appealing the technology felt, but by how meaningfully it fit into everyday life.

1. **Fit within everyday constraints**  
Adoption was strongest where appliances addressed real pressures -time, physical effort, or safety.
2. **Ecosystem of support, not just the appliance**  
Sustained use depended on family involvement, accessible infrastructure, and ongoing support.
3. **Reduction in physical strain**  
Participants reported less standing, easier handling, and reduced exposure to heat.
4. **Safety and confidence**  
The absence of an open flame reduced fear, particularly for visually impaired participants and caregivers.
5. **Time as a meaningful resource**  
Time saved translated differently -for income, rest, or caregiving, but was consistently valued.
6. **Non-linear and varied transitions**  
Adoption followed individual pathways, shaped by context and confidence.
7. **Role of family support**  
Encouragement and shared engagement strengthened usage.
8. **Need for maintenance systems**  
Reliable repair and support systems are essential for long-term sustainability.
9. **Shifts in identity and confidence**  
Participants began to see themselves as capable, independent, and technologically confident.
10. **Expansion of possibility**  
Cooking became accessible again for some, and newly possible for others.
11. **Gendered realities with emerging shifts**  
Women continued to lead cooking, but support from men and children increased.
12. **Social visibility and dignity**  
Appliances sparked curiosity and engagement within communities.
13. **Design strengths and gaps**  
Features like portability were valued, but further accessibility improvements are needed.

*A quick glimpse into Heera ben's journey. Heera is visually impaired and lives alone. She is independent, loves to cook, and enjoys hosting people for meals.*

*She carried her induction stove to her brother's home in the village to help with cooking there. She shared that it was easy to carry, and everyone was delighted to see the digital cooking device in use. She has experimented with several dishes on both appliances – the induction and the rice cooker.*

*Getting a plug point installed in her home was a bit challenging. Although it is a pucca house, the walls are quite thin. However, with the support of an experienced electrician, this was made possible, keeping her convenience and safety in mind. You can watch Heera ben's story here: <https://www.youtube.com/watch?v=yCqNIX4iBE&t=14s>*



1. Phase I - Showing the team how she makes rotis on her gas stove
2. Unboxing her new appliances
3. Exploring together with her neighbour friend, also visually impaired
4. Connecting the appliance to the new plug point
5. Learning how to use the appliances
6. Exploring the appliances in her own way
7. Excited to prepare tea on her new induction stove
8. Sipping her masala chai made on the new induction!



## II. Background

Conversations around clean cooking and energy access often carry assumptions. One such assumption is that induction cooking is elitist. This study challenges that notion, while also grounding it in lived realities.

From a purely efficiency perspective, induction cooking is significantly more efficient than LPG. While LPG stoves convert a smaller portion of fuel into usable heat, induction transfers energy directly to the vessel, reducing wastage (International Energy Agency reports - induction efficiency at around 84% and gas stoves around 40–55%). In practical terms, this can translate into cost savings over time, especially in urban settings where electricity tariffs in lower slabs remain relatively affordable.

At the same time, affordability cannot be viewed in isolation. Upfront costs, access to compatible cookware, and reliability of electricity all influence whether such a transition is feasible.

This is precisely where the study situates itself, not in debating which technology is better in absolute terms, but in understanding what works, for whom, and under what conditions.

The opportunity to explore this came through a collaboration with Dr. Amita Bhakta, an independent researcher, and Loughborough University's MECS programme, UK. The focus was on a segment that remains largely invisible in energy discourse, 'access to energy for persons with disabilities'.

The study began in October 2024 with a series of exploratory discussions. As the team progressed, it became evident that this was an under-researched area. The absence of existing frameworks required the team to build its own pathways, tools, and methods.

A mixed-method approach was designed to capture both quantitative indicators and lived experiences, ensuring that the findings reflect not just access, but usability and agency.



**Photo 1:** *Shaheen in phase I showing the way she accesses the plug point in the kitchen.*

**Photo 2:** *Shaheen in phase II with her EPC and induction and accessible plug point*



### III. Phase I: Understanding the Landscape (A brief)

*(October 2024 to March 2025)*

The study investigated the intersection of disability, gender, and energy access in Ahmedabad, India. It highlights a significant "blind spot" in the development sector where the specific energy needs of persons with disabilities (PwDs) are often overlooked in policy and urban planning.

Research Scope and Methodology - the study engaged 78 participants, including PwDs, caregivers, and experts. It employed a mixed-methods approach to capture lived experiences, utilizing a Multi-Tier Framework (MTF) survey, semi-structured interviews, and participatory visual tools such as PhotoVoice, storytelling, and drawing workshops.

Phase I made it clear that energy access cannot be understood in isolation. It is deeply tied to questions of design, awareness, affordability, and intra-household dynamics.

#### Key Findings

- **The Myth of Universal Electrification:** While technical connectivity exists, functional access is often lacking. The study found that 62% of surveyed PwD households required caregiver assistance to operate switches or meters, and 45% could not independently read bills.
- **Accessibility and Physical Barriers:** Built environments, including kitchens and public utilities, frequently lack universal design. Elevated switchboards and standard kitchen platforms force PwDs into unsafe practices, such as floor-level cooking or using sticks to operate appliances.
- **Energy Dependency and Vulnerability:** PwDs have higher energy needs for life-sustaining equipment (e.g., nebulisers, suction machines) and assistive devices (e.g., electric wheelchair chargers). Power instability disrupts these critical routines and can lead to health emergencies.
- **Economic Constraints:** Affordability is a major hurdle. Families often resort to energy rationing, prioritizing medical needs over cooling or light, and are frequently unaware of existing government subsidies like PMUY or Saubhagya.



- Gender and Caregiving: Female caregivers shoulder a disproportionate burden of managing energy needs and adapting routines around power availability. Women with disabilities face "double exclusion," enduring unsafe cooking conditions and restricted autonomy in household energy decisions.

### Key Recommendations

- Policy Reforms: Revise national electrification and housing policies to include mandatory accessibility audits (e.g., tactile switches, audible meters) and link energy subsidies directly to households with PwDs.
- Data Integration: Incorporate disability-disaggregated data into national surveys (like the Census or NSS) to inform inclusive urban planning.
- Grassroots Innovations: Subsidise adaptive technologies (voice-controlled switches, non-slip tools) and promote decentralized solar solutions for charging medical and mobility aids.
- Gender-Responsive Measures: Implement targeted subsidies for women caregivers and provide safe cooking training and accessible stoves for visually impaired women.

The report concludes that inclusive energy access is a human right. To bridge the gap between global sustainability goals and reality, India must move beyond technical connectivity to address the dignity, safety, and intersectional marginalization of its disabled citizens.

**The detailed report on phase I is available at:** <https://mecs.org.uk/wp-content/uploads/2025/07/Energy-Disability-and-Everyday-Life-in-Ahmedabad-Final-Report.pdf>



## IV. Phase II: From Understanding to Action

*(September 2025 to February 2026)*

Phase II was designed as an action research process, where intervention and inquiry happened simultaneously. This allowed real-time learning, iteration, and adaptation. It sought to respond to the gaps identified in Phase I by introducing accessible electrical cooking solutions and studying their integration into everyday life.

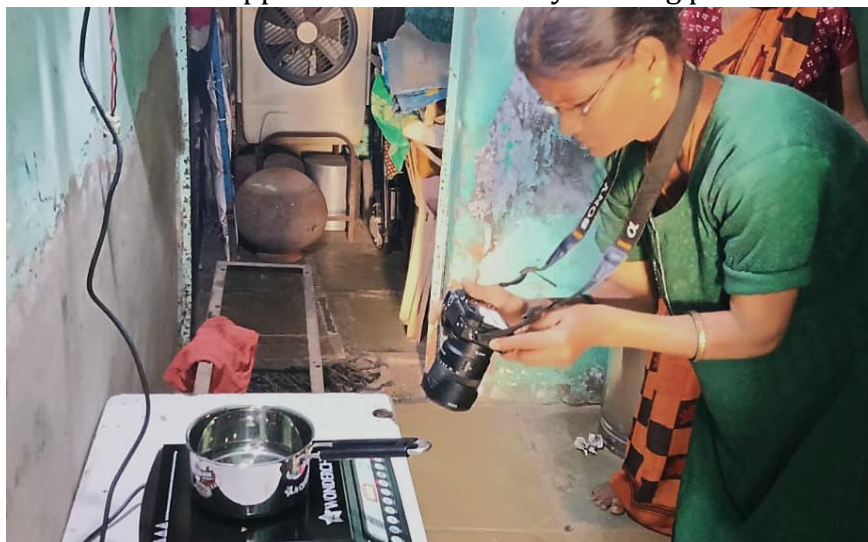
Twenty participants (from the 78 in phase I) were selected to ensure diversity across disability, income levels, age and family structures along with including primary caregivers. The reduced number allowed for deeper engagement, continuous follow-ups, and sustained handholding.



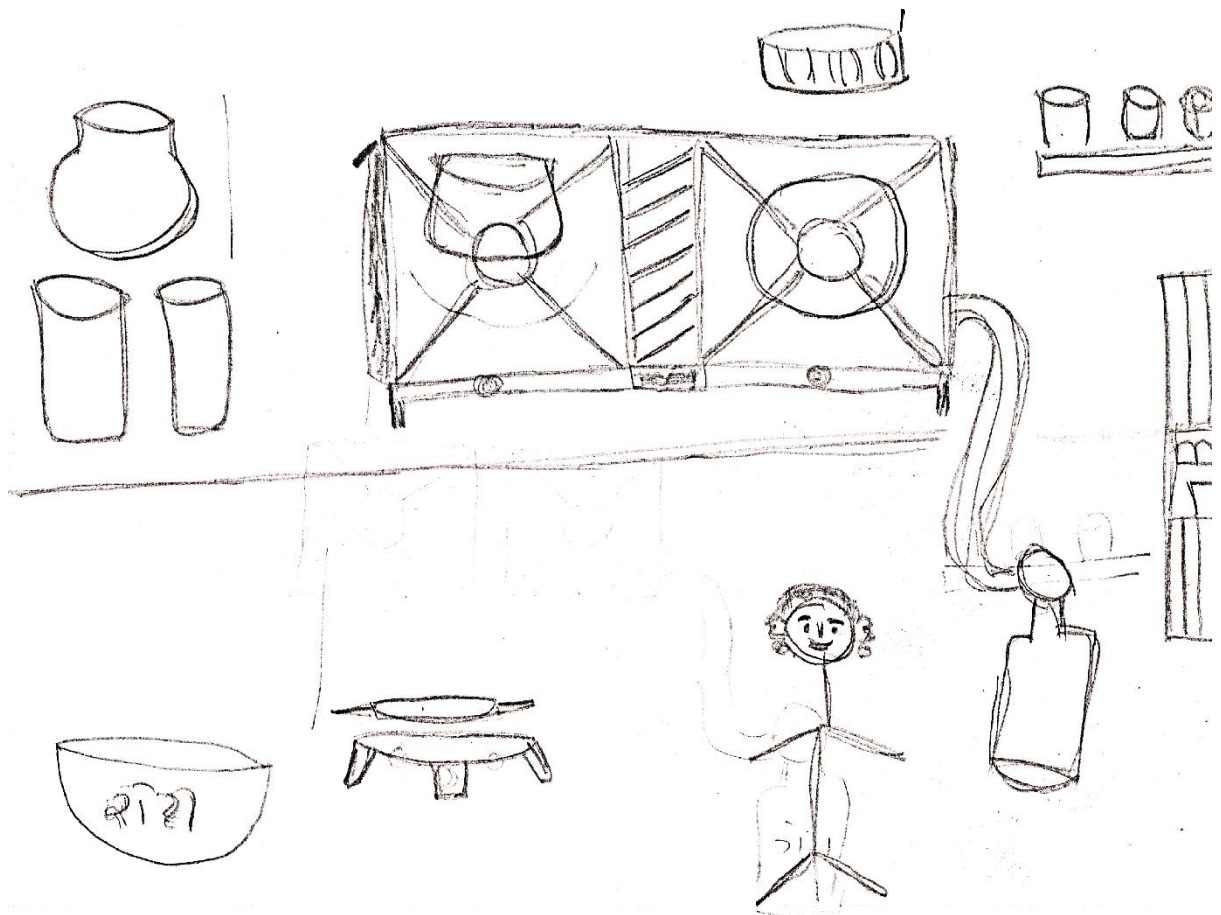
## V. Methodology

Through Prabhat's experience, it has been observed that when a process adopts a multidimensional approach, outcomes are stronger. The study combined structured tools with open-ended engagement to capture both measurable outcomes and experiential narratives.

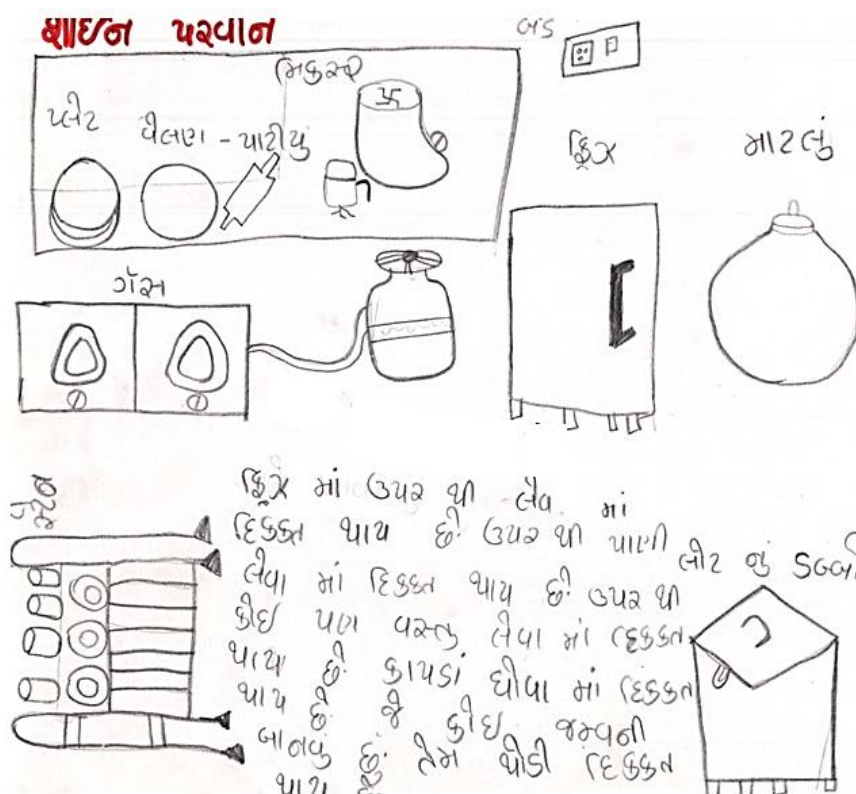
- **Workshops:** three workshops were conducted across the study period. Including - the orientation, workshop, which included kitchen mapping and spatial analysis through drawing. Prabhat's approach ensured that participants were not passive recipients but co-creators, the second workshop was organized for co-designing a cooking diary. The third was a collective workshop where representatives from the government, educational institutions, experts from disability sector and PwDs including but not limited to the participants attended, shared and recommended the future pathways.
- **Surveys:** Two sets of surveys were conducted, with about 7-9 participants in each batch. These were designed to gather specific responses on design ergonomics, any health implications, efficiency of the appliances, usability, and overall experience.
- **Semi-structured interviews:** Two sets of semi-structured interviews were conducted with 7-8 participants to delve deeper and gather qualitative insights on the efficiency of the appliances, usage patterns, overall experience of use, family and societal responses, and the level of assimilation into everyday cooking practices.
- **Photovoice:** A tool that was used for the first time during Phase I, where participants captured photographs of aspects they liked, found challenging, and did not like with regard to the appliances, and shared their reflections on the same. Participants had the choice of clicking the photographs themselves or having a member of the research team do so on their behalf. This tool was implemented twice during the course of the study, with three participants each time.
- **Daily cooking diaries:** A tool developed to capture everyday cooking data from participants, in order to understand cooking patterns, ease of use, and the level of assimilation of the appliance into their daily cooking processes.



*Geeta during a photovoice session.*



**Geeta's kitchen.** Geeta is Hearing Impaired. She lives in a joint family, with her mother, brother and his family along with her husband and one son – Aman, who has down syndrome.



**Shaheen's kitchen.** Shaheen described the layout to her niece and she drew it for her. Shaheen has orthopaedic impairment.

## Methodology at a glance

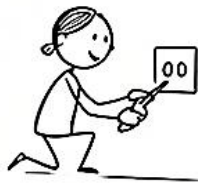
### 1 First Workshop



- Orientation
- Demonstration
- Appliance selection

We came together to learn about the study, explored the appliances, and selected the ones that best fit our needs.

### 2 Plug Point Fixing (19 Homes)



Plug points were successfully installed in 19 homes to ensure safe and reliable use of the appliances.

### 3 Distribution & One-on-One Training of Appliances



Appliances were distributed and each participant received one-on-one training to build confidence and ensure proper usage.

### 4 Hand-holding Process



We provided continuous support and troubleshooting to help participants feel confident and supported throughout.

### 5 First Round of Surveys and Interviews



We conducted the first round of surveys and interviews to understand initial experiences, expectations, and needs.

### 6 Follow-ups



- In-person visits: Every 4 days
- Phone check-ins: Every 2 days

Regular follow-ups helped us monitor usage, address issues, and stay connected.

### 7 Second Workshop



- Feedback on appliances (focus on challenges)
- Peer learning
- Addressing concerns
- Discussion on impact
- Co-designing cooking diaries

We shared experiences, learned from each other, and co-created the cooking diaries together.

### 8 Formation of Peer Learning Platform - WhatsApp Group



A WhatsApp group was created to enable continuous peer support, sharing, and community building.

### 9 Development of the Physical Cooking Diaries



We co-designed the physical cooking diaries to make them easy, relevant, and meaningful for everyday use.

### 10 Distribution of Cooking Diaries



Cooking diaries were distributed to all participants to begin documenting their everyday cooking journeys.

### 11 Course Correction for the Cooking Diaries



Based on feedback, we refined the diaries to make them more user-friendly and practical.

### 12 Gathering Cooking Diary Information through the WhatsApp Group



Participants regularly shared their cooking diary entries, photos, and reflections in the WhatsApp group.

### 13 Second Round of Surveys and Interviews



We conducted the second round of surveys and interviews to measure changes, experiences, and impact.

### 14 Third Workshop - Culmination



- Shared the findings of the study
- Engaged with peer organizations, government representatives, and universities to recommend action points
- Provided a platform for participants to voice the changes and impact the appliances have brought in

We celebrated our collective journey, shared our stories, and co-created pathways for future action.

## VI. Participant selection

Representation across different types of disabilities, income levels, and age groups was central to this research, to better understand how the appliances performed across varied contexts. Participants were from the geographical areas of Lambha, Vatva, Bhaipura, Ambawadi, Narol, Isanpur, Gomtipur, and Odhav.

Type of disability	Number of participants
Visual Impairment (VI)	4
Orthopaedic impairment (OI)	11
Hearing impairment (HI)	2
Caregivers	3

Under visual impairment, we had three participants who were completely blind and one participant with low vision.

Under orthopaedic impairment, we had the maximum number of participants. However, even within this group, the nature of challenges and the severity of impairment varied across participants.

The role of caregivers at Prabhat is considered especially important, as they are an integral part of all processes while working with children and persons with disabilities. For this study as well, the caregivers selected were primary caregivers, most of whom were mothers of children with intellectual disabilities, where caregiving is physically, emotionally, and mentally demanding.



**Study participants, from top left to right:** Aruna, Asma, Bhiki, Geeta M, Geeta P, Heera, Kala, Mumtaz, Naseem, Nazeera, Ramila, Rekha, Saraswati, Savitri, Shabeer, Shaheen, Sheela, Soni,

## VII. From plan to practice: The process on ground

This section traces how the study unfolded on ground, moving from design to implementation. It brings together the steps, interactions, and adaptations that shaped the process in practice.

### - Selection of the appliances:

As a part of the orientation workshop the appliances were showcased and also demonstrated. More than uncertainty there was an air of curiosity among the participants, they were each asked to select the appliance they would want to try barring the induction cooktop, which everyone had to take. The participants selected the appliances on the basis of convenience, some for ease of use and some also wanted to explore more digital appliances like the EPC. Induction though was mandatory for all, and some also selected assistive appliances like the food processor and chopper.

Appliance	Number of selections
Induction	19
Rice cooker	7
Electric Pressure Cooker	4
Roti maker	1
Food processor	7

*“Yeh toh bada mast lag raha hai madam, lekin button bahut hai, mere liye toh thodi dikat ho jaayegi”* (This looks really nice, madam, but there are too many buttons, it might be a bit difficult for me) – Saraswati’s (VI) reaction towards the EPC

*“Madam mujhe toh yeh kaafi acha lag raha hai, halaki bahut button hai, lekin mey toh try karna chahongi”* (Madam, I really like this, although there are many buttons, I would still like to try it). – Shaheen’s (OI) reaction towards the EPC

*“Yeh food processor bahut acha hai, kitna kuch kar deta hai, khaas kar aata goondh na, jo sabse time wala kaam hota hai, aur mere haath ki wajah se mujhe toh bahut mushkil hoti hai”* (This food processor is really good, it does so many things, especially kneading dough, which is the most time-consuming task, and because of my hand I find it very difficult to knead) – Asma (OI)



*Asma with her food processor*

## - Access Points:

One of the most immediate and powerful interventions was the installation of accessible plug points. This simple change transformed how participants engaged with both new and existing appliances. It reduced physical strain, eliminated unsafe practices, and enabled independent use.

The process of installing the plug points involved an initial round of assessments at each household, conducted along with an electrician, to identify and mark convenient and accessible spots. This was followed by the final installation. The entire process was completed within 10 days, with the team working continuously to ensure timely implementation.

For many participants, access was not about the appliance itself, but about whether they could reach and use it safely. A plug point became more than infrastructure. It became a marker of dignity and independence. A blog highlighting the need for accessible plug points is published at: <https://meecs.org.uk/blog/the-power-of-a-plug-point/>

While getting the plug points fixed, several concerns emerged. Although many houses were pucca, the quality of construction was often questionable, and there was a constant concern about whether additional wiring and drilling would cause any damage.

The team therefore engaged an experienced electrician who had previously worked with Prabhat and was familiar with the nature of the settlements the organization works in.

A progressive mother-daughter duo - Kala Ben began sharing her experience of using the induction. Kala Ben, is visually impaired, shared that she could not read what was written on the induction switches and was scared to use it, thinking she would spoil it. Her daughter Poonam, who has low vision, taught her patiently. Gradually, Kala Ben learned to use the appliance independently. The mother-daughter duo are now making their kitchen more progressive together.



### - **Distribution of the appliances:**

The distribution process was extensive, as it included one-on-one training on the use of the appliance. If a rice cooker was being given, the team would demonstrate the entire process through actually preparing rice and likewise for the EPC, food processor, induction. These sessions were usually longer with VI participants, as the team had to get them used to all the buttons. The hand-holding process as were more frequent for them, especially Heera ben as she lives alone.

During the distribution, the team observed that in almost all houses except Savitri ben's, a male member was always present, whether a husband, son, or brother-in-law. This seemed to stem from an underlying assumption that women may not be able to handle the technology on their own. But this assumption was put to rest soon after!

**Note:** After the distribution, one participant dropped out owing to poor health and family commitments. The study had built in the flexibility for participants to withdraw at any stage, without the need to provide a reason.

### - **Data Collection:**

The data collection process began soon after distribution to understand the initial responses of participants and their families. There was a mix of excitement and hesitation. As Poonam, Kala ben's daughter, shared, "*Madam idhar aisa toh kissi ke ghar mey nahi hai, sirf humare ghar mey hai, mujhe toh bahut acha lagta hai.*"

At the same time, some participants were unsure. Sheela, who is hearing impaired, initially preferred her routine and was hesitant to try the appliances. With consistent support from her sister-in-law, this gradually changed. By the second round, she was comfortably using the induction alongside her gas stove and shared that the food processor is a very useful assistive device. The process of data collection helped the team understand early challenges around adoption, confidence, and everyday use, shaping the support provided going forward.

### - **Co-designing:**

Prabhat as an organization has always believed in building ownership from within the community so that processes are sustainable. Being a need-based organization,

Each visit to the participants' homes was warm, and the team was often welcomed with offers for meals, or a hot cup of chai. These small gestures are what allowed the study to go beyond its intended scope and strengthened the sense of community.



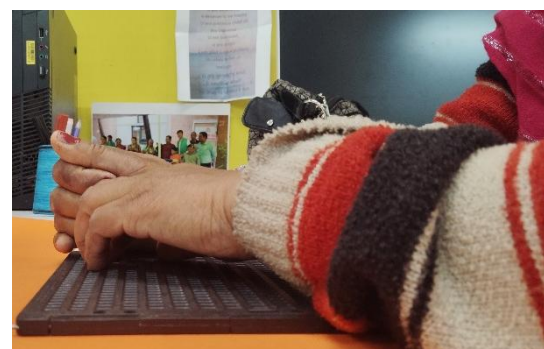
interventions are allowed to organically develop, and these principles were carried into this study. The second workshop, in particular, was conducted to co-design the cooking diaries, ensuring that participants could share what they were most comfortable with for daily cooking logging. Participants collectively decided to log their entries on sheets. These cooking diaries were initially designed with the support of a designer from NID. The sheets were made colourful to make the process engaging for participants and to encourage involvement from other family members, especially children.

For participants with visual impairment, the tools were further adapted to suit their needs. Audio-tactile stickers were used, which participants could tap and listen to using a device called the sonic labeller (<https://enablemart.in/shop/sonic-labeler-speak/>). They would then select the appropriate response chits (provided to them) and place them in designated boxes. The team collected these sheets every two days.

For those who could read Braille, the sheets were prepared accordingly. Participants used this method for daily logging for about 10 days. However, it was later observed that this format did not support strong data triangulation. Based on this learning, the process was adapted to audio, video, or call recordings, depending on each participant's preference.

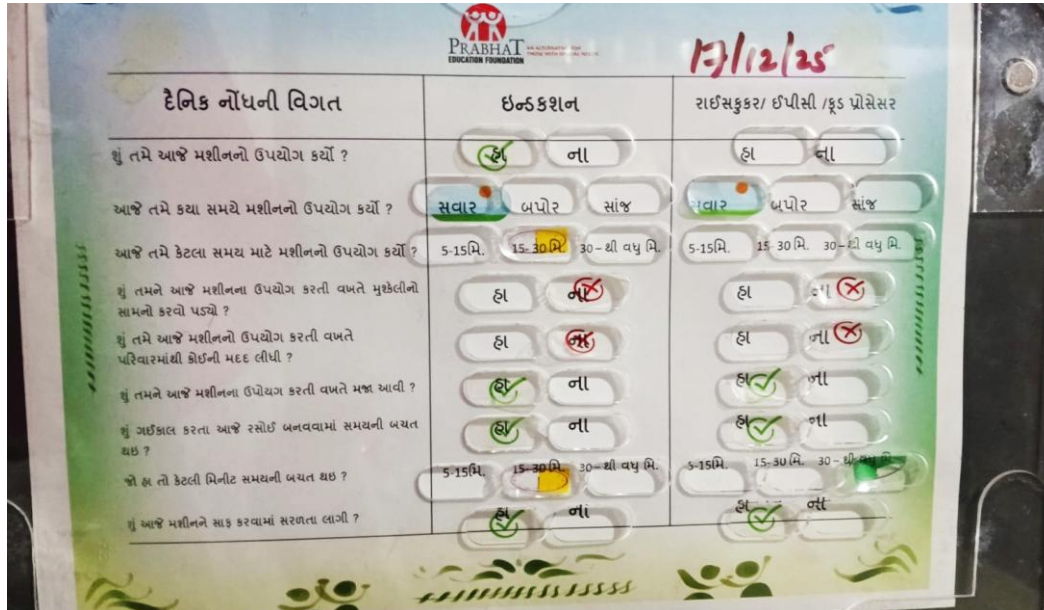
The WhatsApp group that had been formed earlier became an important platform during this process. Participants began sharing their daily cooking experiences through this group, which also encouraged others, especially those who were initially hesitant, to participate. Over time, the group transformed into a community and a support system. Participants started sharing recipes, resolving challenges related to the appliances, and even exchanging small everyday experiences. The group came alive, and there was a strong sense that everyone wanted to be heard.

This whatsapp group has emerged as one of the most valuable aspects of the study, sustaining engagement even beyond formal interactions. In Phase II, it was essential for participants to walk alongside the research team at every step, as there were frequent visits to their homes for handholding and implementation of the research tools. Each visit was never seen as a burden and often felt like visiting homes rather than conducting research.



*Saraswati ben one of our participants helped us in developing the cooking diary questions in braille.*

*Punita explaining to Ramila how to fill in the first prototype of the cooking diary.*



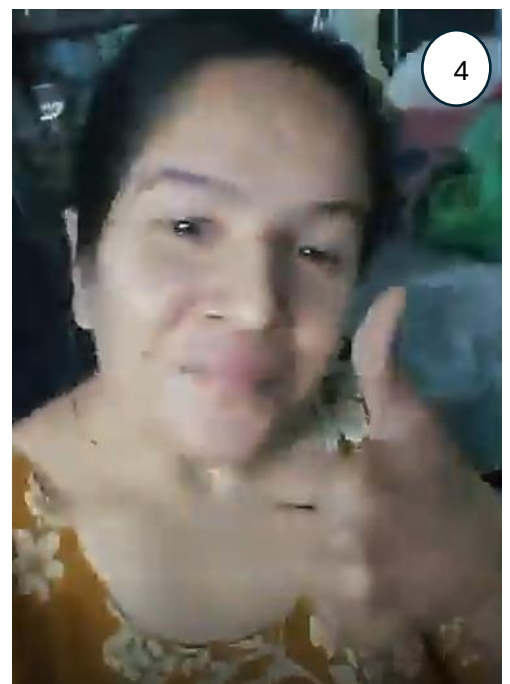
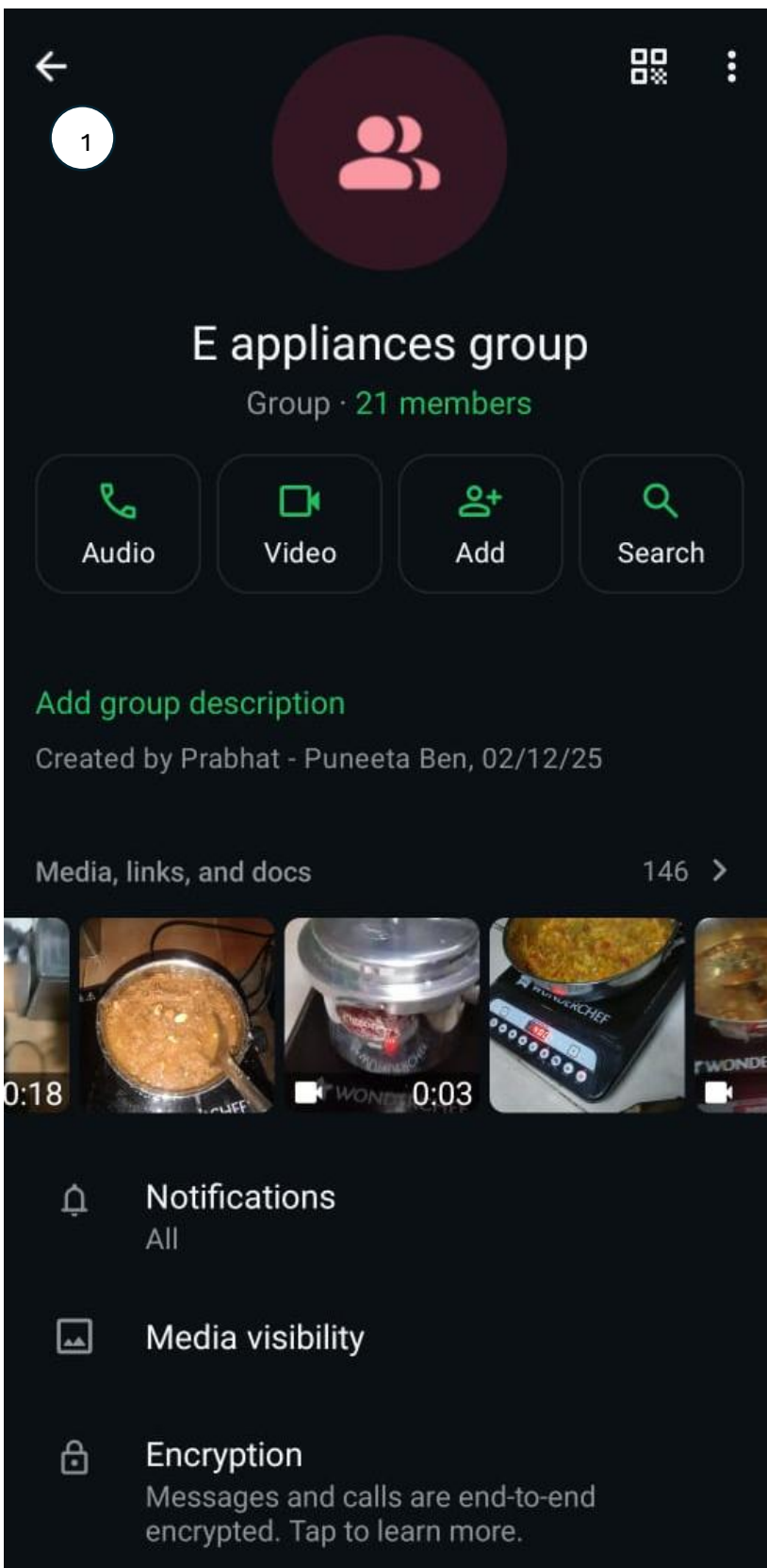
A sample of how the cooking diary looked once filled in. While it was colourful and interactive, the process gradually shifted to audio and video diaries.



I had never worked on an assignment like this before. It pushed me to think beyond and reflect on things we often take for granted in our daily lives. There was so much learning packed into this week of engagement. While the final product was definitely a highlight, what stayed with me most was watching Saraswati ben write in Braille. It is an experience I will carry with me for a long time.

Biplab, NID Student who helped design the cooking diary





**Photo1:** Screenshot of the WhatsApp group, which later evolved into a platform for sharing cooking diaries.

**Photo 2& 3:** Videos, such as Kala's daughter Poonam cooking a dish, were shared as part of the cooking diaries.

**Photo 4:** Sheela who is HI, shared videos of herself preparing different dishes. Ending it with a thumbs up, indicating she was happy!

**Note:** The screen shot photos will appear blurry as they have been taken from videos shared by the participants.

## - Collective voices:

Towards the end of the study, it became important to bring together a wider group of stakeholders to share the findings in a way that could move towards meaningful, policy-level change. The closing collective workshop was designed not only to present key insights and analysis, but also to create space for participants, now far more confident and comfortable with technology - to share their own experiences and perspectives.

The conversation extended beyond cooking appliances, opening up a broader dialogue on accessibility as a holistic and everyday concern. It also reinforced an important learning, that this work cannot move forward in isolation. There is a clear need for collaboration across sectors, particularly with universities, policymakers, the private sector, and organisations working in similar spaces.

The workshop brought together diverse voices, including representation from the Government through Dr. Ajith Singh, Director at the Composite Regional Centre (CRC) under the Ministry of Social Justice and Empowerment, Govt. of India along with academic institutions such as the National Institute of Design (NID), Nirma University, and CEPT University. It also included experts from the disability sector like Sense International and organisations like Finovista, working on sustainable development and clean cooking, and Torchit, which focuses on designing accessible everyday products for people with disabilities.

With participants at the centre of these discussions, the space allowed for rich exchanges, peer learning, and sharing of lived experiences. More than a closing event, the workshop helped build momentum around an area that remains largely unexplored, setting the stage for continued dialogue and action.

Dr. Ajith Singh, Director at CRC, shared his appreciation for Prabhat taking up research in an area that remains largely unexplored, even within government systems. He noted that the study has the potential to build momentum and inform policy-level changes that can make the lives of persons with disabilities easier,

Arunaben (OI), spoke about her initial struggles with induction cooktop when she received it: plug points, weight of the appliance, and stiff buttons posed real challenges. Over time, through self-encouragement and practice, she adapted. The ability to cook independently, without fear of burns or reliance on family members, significantly boosted her confidence. Her experience illustrated that accessibility is not static and it evolves through design, training, and time

Other participants also those with hearing and visually impairment stressed on the role of demonstrations, training and handholding which helped them work through their fears and gain confidence while using the e-cooking appliances.



*Dr. Ajith Singh*

Sheetal, reiterated that electrical cooking appliances should be understood as a need rather than a luxury,

safer, and more comfortable. He also expressed his willingness to extend full support and indicated that CRC would be available to take this work forward in any way required. He outlined the potential role of government schemes, particularly the ADIP (Assistance to Disabled Persons) Scheme, which has been operational since 1981 to support access to assistive devices through agencies such as ALIMCO. He proposed that if e-cooking appliances are recognised as assistive tools that enhance independence, safety, and wellbeing, they could be systematically included within existing frameworks. He suggested that he will personally see to it that the Diwali kit distribution will include an induction cooktop along with compatible utensils.

Dr. Amita Bhakta emphasised that cooking is a multi-sensory and embodied activity, particularly for persons with disabilities who rely on touch, smell, sound, and timing in the absence of sight or hearing. Through the research, it became evident that kitchens and cooking technologies are rarely designed for bodily diversity, resulting in everyday workarounds, dependence, and safety risks.

Ms. Sheetal Rastogi, Co-founder of Finovista, reflected on how the findings from this study, despite being conducted with a small and diverse group of persons with disabilities, closely mirror patterns they have observed in their work with other communities. She emphasised that accessibility is not limited to a specific group, but is in many ways universal, reinforcing the need to design with inclusion at the centre rather than as an afterthought. She highlighted that earlier generations of e-cooking appliances were often ill-suited to Indian cooking practices, but recent technological advancements have significantly improved efficiency, adaptability, and usability. Contemporary appliances, she noted, generate heat only at the vessel level, resulting in cooler kitchens which is an important health and comfort consideration, particularly for persons with disabilities.



*Ramila's father has been a strong support system throughout the study, encouraging and motivating her to transition to the appliances, he shares his thoughts about the appliances.*



*Ms. Sheetal Rastogi*





## Reflections from the panel discussion

- **Infrastructure and access:** Panelists highlighted that electricity access itself remains uneven, particularly in informal settlements where shared connections and safety risks are common. Kitchen accessibility, therefore, cannot be addressed in isolation from housing and urban planning systems.
- **Policy and codes:** The absence of kitchen accessibility within the National Building Code was flagged as a critical gap. Panelists noted that while guidelines exist for ramps and fire safety, kitchens remain excluded from accessibility discourse. Mandates, data, and enforcement were identified as necessary steps forward.
- **Universal design and manufacturing:** Industry representatives acknowledged the feasibility of incorporating audio cues and tactile interfaces, while also noting cost constraints. The principle of designing with users, not just for users was repeatedly emphasised.
- **Data and visibility:** Several panelists stressed the lack of disaggregated data on disability within household surveys (especially the national census). Without visibility, policy interventions remain limited. Capturing kitchen-related challenges was identified as a key data gap.
- **Livelihoods and health:** Discussions highlighted the potential of e-cooking for home-based livelihoods, reduced physical strain, and improved health outcomes, particularly for women and caregivers.

### Panel members included:

1. Akhil Paul, Founder Director, Sense International, India
2. Mumtaaz Hanif, Caregiver & Study Participant
3. Savitri Kalma, Secretary & Study participant, Blind People's Association
4. Sheetal Rastogi, Finovista, Co-founder
5. Dr. K. Kavitha, Physiotherapist, Prabhat Education Foundation
6. Prem Katar, HOD, Enablemart (Torchit Pvt Ltd)
7. Prof. Ravi, CEPT University

Moderator: Neeta Panchal, disability Rights advocate

Geeta (OI) shared: With e-cooking appliances, her relationship with cooking has transformed. Timers, controlled heat, and cool utensil edges reduced fear and fatigue. She spoke of regained confidence, experimentation with new dishes, and significant time savings – *“Garmi bhi nahi lagti, time bhi bach jaata hai”*.

Kaushik (Geeta's partner, also VI) added that induction cooktops reduced safety concerns for PwDs and aligned well with future goals of green energy.

**Collective Responsibility:** The panel concluded with a shared understanding that accessibility benefits everyone, not only persons with disabilities. Collaboration across sectors of government, academia, civil society, industry, and donors was identified as essential for sustained impact.

### Perception Mapping as a Starting Point

The perception mapping exercise was conducted at the very beginning of the workshop to understand the assumptions people carry around e-cooking, disability, and energy access.

While many have embraced the change, the study also acknowledged the challenges of shifting mindsets. Sheela, who is hearing impaired, shared her initial confusion and hesitation in moving away from traditional tools. The research highlights the importance of respecting this mental readiness and understanding the specific fears that might hold someone back and transition at their own pace.

If an electrical cooking appliance entered your kitchen tomorrow, what do you think would be its biggest *struggle*? (Space, cost, power, learning, habits?)

When you hear electrical cooking appliance, what pops into your head? (A word, an image, or a feeling!)

What's the *most adventurous* dish you've ever cooked using an electrical cooking appliance and which appliance helped you pull it off?

Do you see electrical cooking appliances as a *need* or a *luxury*? And what makes you feel that way?

*Above were the questions given to all the guests to be answered anonymously.*

Participants and other attendees were given different questions, allowing for a range of responses that captured their immediate, unfiltered thoughts. This helped establish a baseline of how e-cooking is perceived before any discussion or intervention.

What emerged strongly was that e-cooking was first understood through the lens of difficulty. Concerns around space, electricity costs, learning new technologies, maintenance, and changing habits dominated responses. Rather than being seen as a solution, these appliances were often viewed as an added complication in already stretched households.

Habit also played a significant role. Cooking was described as something deeply ingrained, built on routine, sensory familiarity, and muscle memory. The idea of shifting to a new appliance was not just a technical change, but a disruption of everyday practice.

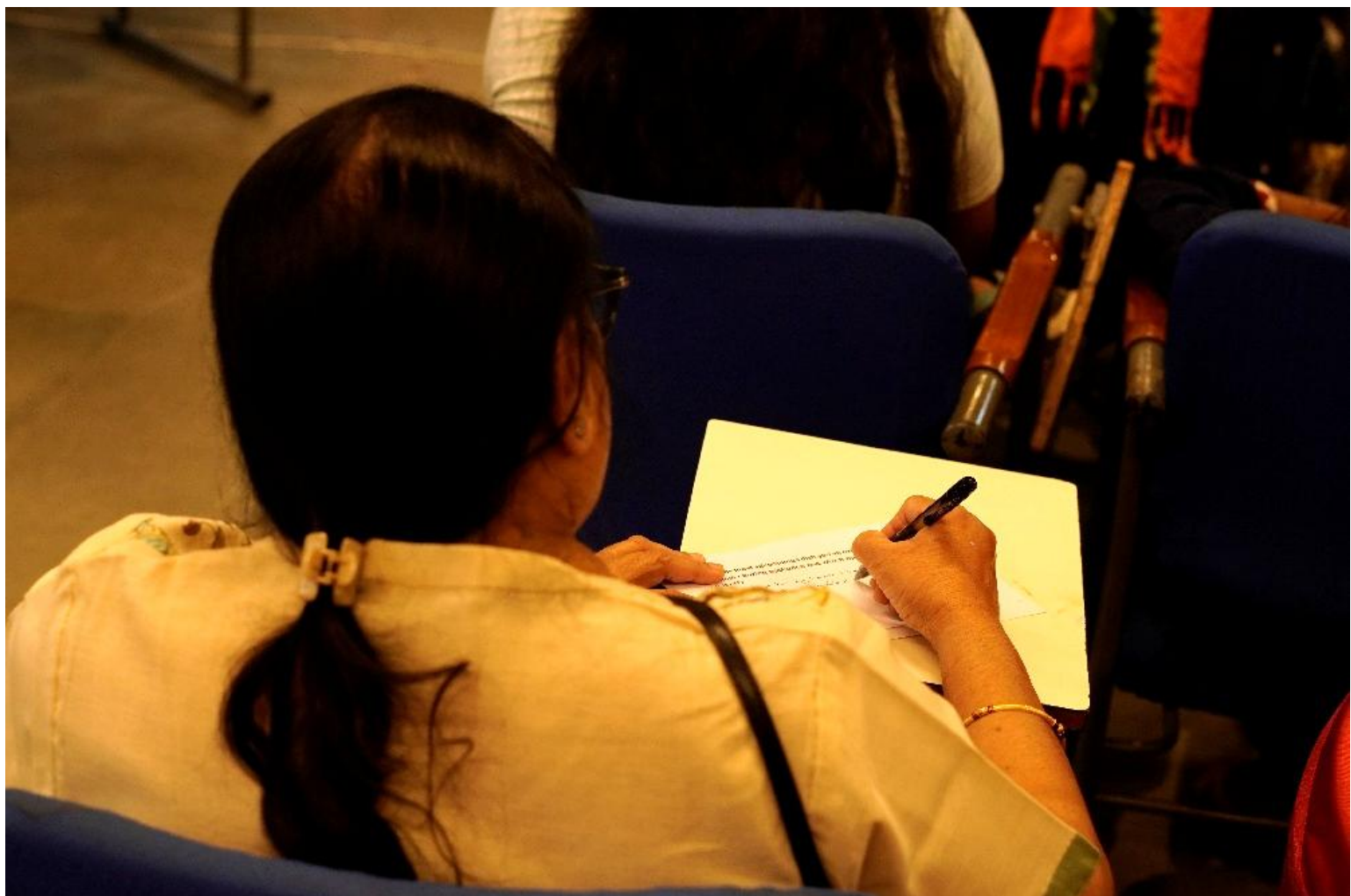
A notable pattern was how disability was often spoken about as someone else's concern. Even when questions were framed personally, responses shifted to "how people with disabilities would manage," highlighting how accessibility continues to be viewed as external rather than integral.

At the same time, there was a clear tension in how participants viewed e-cooking. While cost was a major concern, many also recognised its potential to reduce effort, improve safety, and make cooking easier. This suggests that the barrier is not a lack of perceived value, but the absence of enabling conditions that support adoption.

Importantly, participants who had direct experience with these appliances offered a different perspective. Their lived experiences challenged common fears, showing how features like controlled heat and automation can actually enhance safety and independence, particularly for persons with disabilities.

There was also a visible shift in how e-cooking was positioned from being seen as a luxury to being recognised as a need. However, this shift continues to sit within existing gender roles, where cooking remains a woman's responsibility, even in the context of disability.

Overall, the exercise highlighted a clear gap between perception and experience. While initial responses were shaped by fear, habit, and cost concerns, lived realities pointed towards e-cooking as a practical and enabling solution. This made the exercise a critical starting point for the discussions that followed.



## VIII. From introduction to everyday use: The impact

The appliance usage period was marked by a range of experiences, shaped by each participant's context, needs, and pace of adaptation. No two journeys were the same. For some, adoption was immediate, driven by ease and curiosity. For others, it was gradual, negotiated through hesitation, household dynamics, and moments of need such as illness, caregiving demands, or shifts in daily responsibility.

### - Shifts within the household

The introduction of appliances triggered subtle but important shifts within households. There was initial hesitation, particularly around safety and electricity usage. Questions around short circuits and costs were common. Over time, with repeated demonstrations and reassurance, these fears reduced. Interestingly, male members often showed curiosity and involvement from the time of distribution itself. While this reflected support, it also revealed underlying assumptions about women's ability to handle technology.

*Mey toh apne bade bete se pooch leti hoon jab bhi koi confusion hota hai, waise toh Jayada nahi hota kyunki humare whatsapp group se sab pata hi chal jaata hai, leki kabhi ho toh, usko thoda pata rehta hain na, isliye.* (I usually ask my elder son whenever I have any confusion. It doesn't happen very often because we get to know everything from our WhatsApp group, but if it does, I ask him since he understands these things a bit more). Shaheen (OI)

*Mey toh google lens se button samajh leti hoon, shuru mey jab aap log training dey kar gaye the, tab toh yaad tha, lekin jab maine 2 din baad use kiya toh kaafi bhul gayi thi, tabhi lens ka use kiya, aur ache se samajh aa gaya.* (I understand the buttons using Google Lens. In the beginning, when you all had given the training, I remembered it, but when I used it again after two days, I had forgotten quite a bit. That's when I used Lens, and I was able to understand it well.") Mumtaz (caregiver)

At the same time, for many households, this was the first instance where technology entered the home through the woman of the house. This created a visible shift in confidence and ownership.

*"Madam mere liye pehli baar aisi digital wali cheeze aayi hai, varna toh technology wali sab cheez mere husband aur beta hi soch ke late hain. Mujhe toh acha lagta hai, khaas kar rice cooker jaisi cheez".* (Madam, this is the first time something so digital has come for me. Otherwise, all such technology-related things are usually decided and brought by my husband or son. I really like it, especially something like the food processor"). Kala (VI)



Shaheen and her younger son trying a new dish.

*“Madam mera kitchen toh digital ho gaya hai, mujhe bada modern feel hota hai”.* (Madam, my kitchen has become digital now, I feel very modern”). Nazira (OI)

- **From hesitation to integration:**

Adoption did not follow a straight path. For most participants, the shift was gradual, shaped by moments of readiness rather than a single point of change. While many began using the induction regularly over time, others moved more slowly, navigating hesitation, household dynamics, and financial considerations. What became evident was that continued use was not driven by novelty, but by need. Periods of illness, caregiving responsibilities, or increased workload often acted as catalysts, pushing participants to engage more consistently with the appliances.

Rather than replacing traditional methods, participants found ways to weave these appliances into their existing routines. This coexistence allowed for a sense of comfort and control, enabling adaptation at an individual pace.

Sheela’s journey brought this process into sharp focus. Living with a hearing impairment, her daily routine was deeply structured, and any disruption was met with understandable resistance. Her initial hesitation and fear, particularly around the risk of short circuits, required careful attention and consistent reassurance. Progress came not through instruction alone, but through patience and sustained support.

A significant shift occurred when her sister-in-law stepped in, offering both encouragement and practical guidance. This support became the bridge between apprehension and acceptance. Over time, Sheela began exploring independently, using YouTube to understand the appliances better and even sharing her experiences with friends through video calls. What we witnessed was a steady transformation, where fear gave way to confidence.

As she began to recognise the time saved and the ease these appliances brought to her daily cooking, they moved from being unfamiliar tools to becoming meaningful additions to her kitchen. Today, they occupy a “special” place, not just in function, but in how they have reshaped her sense of independence.

- **When needs make the difference:**

Initial engagement with the appliances was often sparked by curiosity, a willingness to try something new and see how it fits. But what sustained their use over time was something far more practical. Like finishing cooking soon as the couple would need to get to work early. For caregivers taking care of their children became a little less hectic owing to functions like the timer, which facilitated them to multitask. *“Madam mey toh*



*Ameesha, Sumitra’s daughter makes tea independently for the first time!*

*subzi rakh ke induction par Muskaan ko tayar kar deti hoon school jaane ke liye”* (Madam, I just put the vegetables on the induction and get Muskaan ready) says Mumtaz, a caregiver to two children with intellectual disability. Naseem, who’s son is prone to frequent epileptic attacks, says the constant need to stand and keep an eye on the gas while also looking out for Aman was very taxing for me, but with the induction and the rice cooker this has been taken care off. I can now keep two things to cook at the same time without constant supervision. With the induction I can also tell my younger son to switch off as there is no fear of the open flame.

For the past seven to eight years, Bhikiben had almost stopped cooking because the kitchen was physically out of her reach. Her sister-in-law would complete all the cooking before leaving for work. Although no one intentionally created this dependency, circumstances had made Bhikiben reliant on others even for a simple cup of tea.

When the e-cooking appliances along with the plug point were installed within her reach, her journey from dependency toward independence began again. Though hesitatingly, it started with making a cup of tea first for herself, then for others. Once when her sister-in-law fell ill, Bhikiben quickly and easily stepped into the role of family chef.

Today, with the kitchen within her range, she enjoys her tea whenever she wishes along with being able to reduce her sister-in-law’s workload lovingly has also strengthened her self-esteem.

Every participant if this study have expanded their world by learning something new. While some still walk hand-in-hand with support, others have begun walking confidently on their own paths. This is only the beginning, but the steps taken so far are truly remarkable.



*Bhiki cooking her favourite subzi, the way she likes it – a little spicy and soft.*



*Mumtaz started teaching Muskaan cooking for the first time only after the induction arrived.*

Excerpts from an interview with Bhiki ben: You can watch this video at:  
<https://www.youtube.com/watch?v=N5QceKbGDmk&t=4s>



The Economic Dividend

Time saved in the kitchen is money earned at the factory. By gaining two hours a day, the couple can stay back at work to their sewing machines.

- **Safety and reduced physical strain:**

Safety consistently emerged as a key factor shaping both adoption and confidence. Features such as temperature control, timers, and the absence of an open flame helped reduce fear and anxiety around cooking. For many participants, this shift was not just about convenience, but about feeling more secure in their own kitchens.

Rekha shared how her constant fear of her saree catching fire has eased. Earlier, she would consciously keep a distance from the gas stove to avoid splashes or sudden high flames. Living with polio in her legs, moving back quickly is not always possible for her. Similar concerns were echoed by Geeta Patel, Shaheen, and others, where safety was closely tied to their physical limitations.

Geeta Patel spoke about the stiffness and weakness in her palms, especially during winters following a bout of chikungunya a couple of years ago. Handling hot vessels during this time becomes particularly difficult. With induction, since the vessels do not get excessively hot, she is able to manage them with greater ease. The EPC further simplifies this, allowing her to cook and serve in the same pot. As she puts it, *“cooking mere liye thodi aur easy aur bahut mazedaar ho gayi hai”* (Madam, cooking has become a little easier and much more enjoyable for me).

For Sumitra, a caregiver to Ameesha who has mild intellectual disability, safety has shaped how she allows participation in the kitchen. While she herself prefers to continue cooking on the gas stove, she sees induction and the rice cooker as safer options for Ameesha. Earlier, she would not allow her to cook at all, except occasionally switching off the gas. Now, with these appliances, Ameesha is able to make tea, khichdi, and simple vegetables. Sumitra believes cooking requires supervision, but she acknowledges that for people with disabilities, these appliances open up possibilities that were earlier difficult to consider.

Saraswati, who was initially sceptical about the impact on her electricity bill, now finds herself relying entirely on the induction after her gas cylinder ran out. With a quiet sense of satisfaction, she remarked, “Madam, now that I have the induction, getting the cylinder refilled can wait.”

For Shaheen ben, the shift has been deeply personal. Living with mobility challenges, she earlier had to depend on her husband or sons to refill the gas cylinder. If it ran out in their absence, cooking would come to a halt, often leaving her children waiting for meals after school. This carried a sense of guilt for her. With the induction and EPC, that dependence has reduced significantly. She now cooks and serves hot food as soon as her



*Aruna finds the appliances very safe and comfortable to use.*

children return, without having to wait for anyone. Over time, she has also become a strong advocate for e-cooking appliances, especially in how they support people with disabilities in managing everyday tasks with greater independence.

- **Everyday accessibility:**

Participants consistently noted that the appliances suited their physical capacities, significantly reducing strain and discomfort, particularly when supported by easily accessible plug points.



For Shaheen (OI), the biggest shift beyond time saved was being able to see into the vessel while cooking. With her gas stove on the floor and a tall cooker, visibility was previously impossible. The induction and EPC have restored this simple yet critical aspect of cooking, making the activity enjoyable again.

Aruna's (CP), the journey began with difficulty. Pressing the buttons on the induction was not easy at first, and she often needed assistance. However, her determination to manage it on her own kept her going. Over time, this effort translated into confidence, and today she independently uses the induction to cook two to three times a day.

Asma, who experiences difficulty in both her hands and legs, shared how standing for long periods while cooking was a challenge. She initially used a stool in the kitchen, but even then, having to reach for ingredients made the process tiring. She expressed a preference to shift the appliance closer to her. With a plug point installed in her room, she now places the induction on a table and cooks while seated. At present, as she recovers from a medical condition, she uses it to prepare tea, milk, and simple meals.



These experiences also highlight the importance of portability. Appliances could be moved and adapted to suit individual needs and contexts. In one instance, Heera ben, who is visually impaired, carried her induction all the way to Vadodara for a family function. Being familiar and comfortable with it, she chose to take it along so she could actively participate in cooking

- **Adaptation over customisation:**

Majority of the participants did not feel the need for extensive customisation. Some requested additional plug points to run both appliances simultaneously, which was arranged at Nazira's home, in Mumtaz's case, her sister said she would get the additional plug point done for her! VI participants, in that Saraswati ben mentioned

audio cues would be of great help, as currently on the induction the on-off, temperature increase-decrease beep all sound the same, so for a VI individual that can be confusing even though they have memorized the button. But in Kala ben's household, only her daughter Poonam would use the induction, so she said navigating on the buttons was not difficult for her. Although once when her induction had to be taken back for repair and the team provided her another induction, she was not comfortable using it, even though it was the same make and model, she said the dents which had come on the buttons due to her usage would tell her exactly which one it was.

The braille stickers made by Saraswati ben was trialled on her induction itself, but it did not work for her as her son peeled it off, the same day.

For visually impaired participants, Braille stickers were trialled for Saraswati ben, though her son removed them. Other visually impaired participants reported memorising settings and navigating the appliance with confidence. While an audio feedback mechanism for temperature settings was discussed and recognised as potentially beneficial, it was not pursued due to high costs.

**- Adoption as a shared and negotiated process:**

The shift to e-cooking technologies did not happen in isolation. It unfolded within the dynamics of the household, shaped by relationships, conversations, and everyday negotiations. Across participants, adoption was influenced as much by encouragement as by scepticism, by hierarchy as much as by curiosity and shared experimentation.



In several households, family members played a key role in enabling this shift. Sons, fathers, and partners often became early supporters, encouraging participants to try new recipes and engage with the appliances. For many, these technologies were seen as exciting and modern, which helped reduce the perception of risk. In some instances, this also led to a subtle shift in roles, with male members beginning to participate more actively in cooking, gently challenging long-held gendered boundaries around domestic work.

At the same time, among participants with visual and hearing impairments, hesitation from within the family was not uncommon. Concerns around safety and ability surfaced frequently, especially in the case of Saraswati ben, her husband also blind was not confident in her usage of the induction and always feared she was pressing the wrong button on the induction. However, as participants began using the appliances with confidence and with support both physically and over the phone by the research team,



these perceptions were gradually changed. Their ability to navigate technology not only built their own confidence, but also shifted how they were perceived within the household, leading to greater recognition and trust.

- **Reduced burden of cleaning and maintenance:**

Ease of cleaning emerged as an unexpected yet significant benefit. What was earlier a time-consuming and often tiring task began to feel far more manageable with these appliances.

Saraswati shared that cleaning after cooking used to feel like a major chore. Spills of milk, oil, or food on a traditional gas stove would dry up, stick to the surface, and settle into crevices, making it difficult to scrub clean. With the induction's flat surface, this process has become quicker and more effective. For her, it is not just about saving time, but also the confidence of knowing that the surface is thoroughly clean.

Nazira captured this shift simply when she said, "Madam, my kitchen gets cleaned very quickly after I finish cooking."

Shaheen and Geeta echoed similar experiences, noting that cleaning requires very little effort. With the induction, most spills can be wiped away easily. In the case of the EPC, the inner pot can be removed and washed separately with ease, while the outer surface only needs a quick wipe with a damp cloth if required.

Across participants, what stood out was how this reduced effort in cleaning, though not anticipated at the outset, contributed meaningfully to their overall experience of cooking and was considered as 'Value addition'.

- **Accountability, ownership, and commitment to the process:**

Throughout the study, participants showed a strong sense of accountability in how they engaged with the process. Despite the repetitive nature of daily diary entries and recordings, many completed them consistently, often without reminders. This was not just a reflection of discipline, but of a deeper sense of ownership over the study and its purpose.

This ownership was visible in different ways. Shabbir, for instance, took the initiative to fix a technical glitch in the EPC on his own, and went a step further to show others how it could be done. In another case,

Shaheen, too, engaged actively, often questioning assumptions around increased electricity costs. She would point out that the overall expense balances out, as gas cylinders now last longer. Heera ben, during one of the workshops, extended support to participants who were finding it difficult to use the

Mumtaz, a caregiver, shared that she initially kept postponing the use of the appliances. However, during one of the workshops, she heard Heera ben, who is visually impaired, confidently extend support to others in using the appliances, that moment encouraged and motivated her deeply. Since then, she says she hasn't looked back, and the induction and EPC have become an integral part of her everyday cooking process.

induction or the rice cooker. Across these instances, what stands out is how participants did not remain passive recipients. They engaged, questioned, adapted, and in many ways, strengthened the process through their involvement.

### - **Confidence, Dignity, and Changing Mindsets**

The confidence and quiet pride visible among the women participants as they engage with these appliances is difficult to capture in words. Their growing ease with technology is reflected not just in how they cook, but in how they speak about their kitchens, their routines, and their ability to care for their families.

Alongside this, there is a subtle but important shift in mindset. The idea of teaching daughters to cook simply because they are girls is slowly giving way to a more enabling perspective, that they should learn so they are not dependent on anyone. For many participants, e-cooking represents a way of living that is both relevant and necessary for the future.

For those who have known Aruna ben's earlier situation, the depth of this transformation is especially evident. She was once entirely dependent on others for cooking, something that deeply affected her sense of self. Today, the dignity that comes with being able to cook independently is visible in her voice and presence. Her journey reflects a larger possibility, that when the right opportunity and support are provided, physical limitations do not have to define everyday life.

Across the study, technology has moved beyond being a functional tool. It has become a language of self-confidence, reflected in each participant's growing sense of agency. Bringing modernity into the kitchen has not only changed cooking practices, but has also shaped identity, strengthened self-belief, and influenced how participants see themselves and their place within the household.

In this sense, technology is no longer just a convenience. It has emerged as a powerful instrument of transformation.



## IX. Final takeaways and future pathways

The study opens up multiple directions for action and deeper engagement, cutting across policy, design, infrastructure, and lived experience. The following pathways build on the learnings and point towards areas that require continued attention and collaboration.

- **Policy integration:**

The dialogue initiated with the Composite Regional Centre (CRC), along with discussions around the ADIP scheme, points to a clear opportunity to recognise e-cooking appliances as assistive technologies. Moving this forward would require defining accessibility standards, identifying appropriate appliance specifications, and creating pathways for distribution through institutions such as ALIMCO. There is also a need to position e-cooking within broader conversations on energy access, disability rights, and social protection, ensuring it is seen as integral to everyday living rather than an add-on.

- **Universal design and manufacturing:**

Participant feedback highlights the need for universal design to move from concept to practice. Features such as audio cues, tactile markers, simple interfaces, and adaptable designs are essential. At the same time, conversations with manufacturers indicate both openness and constraints, particularly around cost and scalability. This underscores the need for continued engagement between users, designers, and manufacturers to ensure accessibility is embedded from the outset.

*Nazira & Shabeer, during an interview session;*

*you can watch this video at: <https://www.youtube.com/watch?v=X9KQN0r3o0k&t=4s>*



- **Built environment and housing:**

A critical gap that emerged is the lack of accessibility within kitchen design itself. Current building codes and housing policies rarely consider how cooking spaces are used by persons with disabilities. There is a need to bring kitchens into broader discussions on housing rights, urban planning, and fire safety, especially in low-income and high-density contexts where space and infrastructure are already constrained.

- **Data and visibility:**

The absence of disaggregated data on disability within household energy use remains a significant gap. Understanding who cooks, how cooking is managed, and what constraints exist is essential for designing responsive policies and programmes. Without this, the everyday realities of persons with disabilities remain largely invisible within energy and development frameworks.

- **Community and knowledge building:**

Building on the shift from participants as users to knowledge-holders, there is strong potential to nurture a sustained community of practice. Existing platforms such as the WhatsApp group, along with opportunities for peer learning through video sharing and calls, can be further strengthened. There is also scope to explore participant-led initiatives, such as a YouTube channel, to document and share experiences more widely. This can reinforce ownership, enable continued exchange, and support outreach to others with disabilities.

- **Strengthening household-level adoption:**

Adoption is shaped within the household rather than by the individual alone. Future efforts need to engage families more intentionally, building awareness and confidence among those who influence everyday decisions. Creating spaces for dialogue, demonstrations, and shared learning can help address hesitation and strengthen support systems within households, leading to more sustained use.

- **Recognising time as a meaningful resource:**

The ways in which time savings are experienced vary across participants. For some, it improves efficiency, while for others, especially caregivers, it creates moments of rest and relief within demanding routines. Recognising time as a resource linked to well-being can help shape more responsive programme design that reflects these diverse experiences.

- **Strengthening infrastructure as an enabler:**

Small infrastructural improvements, such as accessible plug points and reliable electricity, play a critical role in enabling the use of e-cooking appliances. Future efforts must integrate these elements alongside technology distribution. Ensuring that infrastructure and appliances are introduced together is essential for safe, independent, and sustained use, particularly in low-income settings.

- **Recognising identity and dignity as outcomes:**

The impact of e-cooking extends beyond functionality, contributing to participants' sense of independence, confidence, and dignity. Future efforts can build on this by intentionally recognising these as key outcomes. There is also an opportunity to further explore how these shifts influence participants' roles and perceptions within households and communities, creating more inclusive spaces for recognition and participation.

## **X. Closing Reflection**

This study began with a question on access to energy. It concludes with a deeper understanding that access is not just about availability. It is about whether a person can use that energy safely, independently, and with dignity.

The introduction of e-cooking appliances did not merely change how participants cooked. It changed how they experienced their own capabilities. A kitchen moved within reach. Time became negotiable. Fear reduced. Confidence grew.

These are not small shifts. They are foundational to building more inclusive and equitable systems. Technology, when introduced thoughtfully and supported by the right ecosystem, becomes more than a tool. It becomes a pathway to independence, self-belief, and a reimagined everyday life.

