



# CLEAN ENERGY JOURNEYS

## STORIES OF CHANGE AND EMPOWERMENT



Energising  
Development (EnDev)

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Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn  
Germany

T +49 61 96 79-0  
F +49 61 96 79-11 15  
E [info@giz.de](mailto:info@giz.de)  
I [www.giz.de](http://www.giz.de)

**Contact**  
Shahbina Nahid Labib  
[shahbina.labib@giz.de](mailto:shahbina.labib@giz.de)

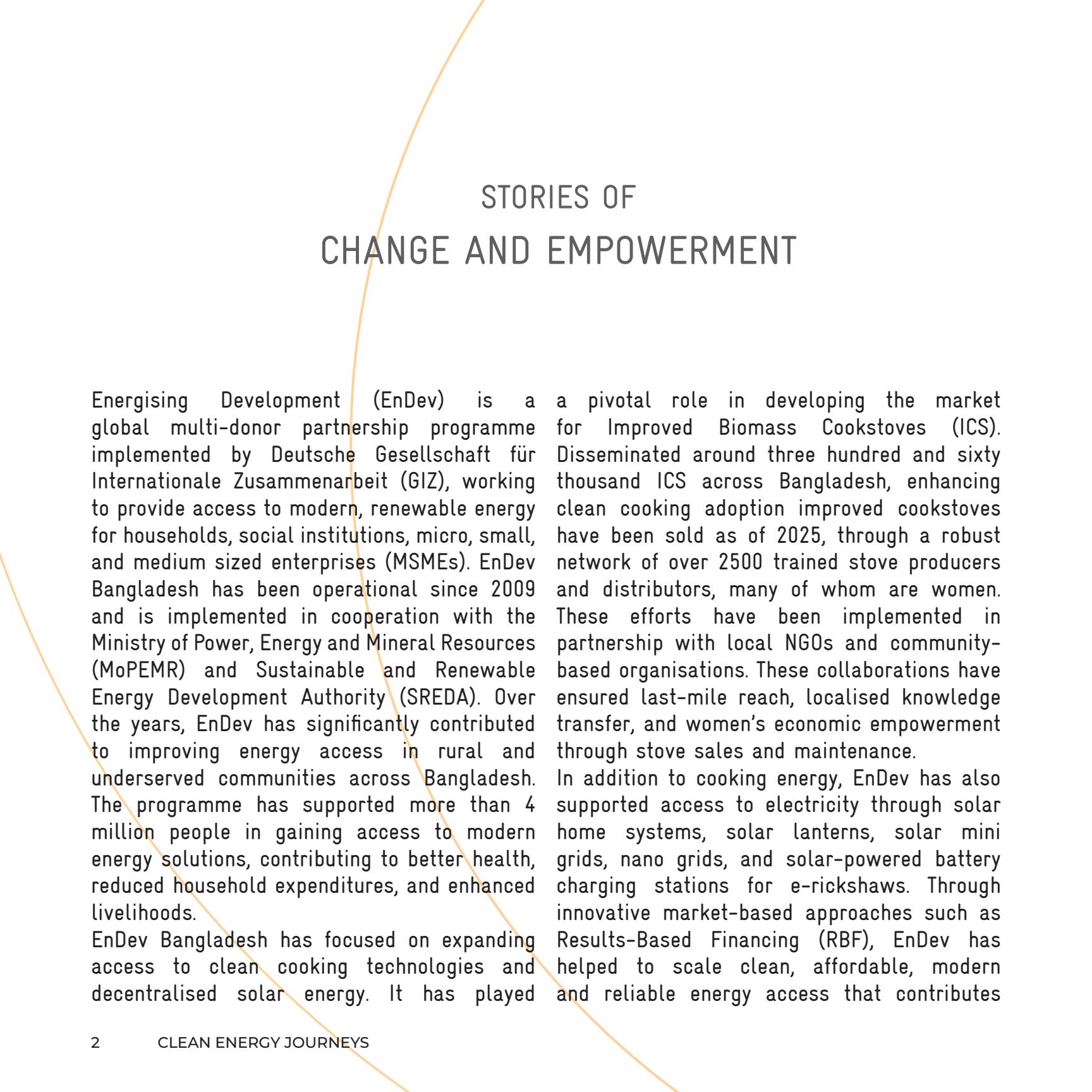
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**Authors:** Fowzia Nowsheen and Puja Saha

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## STORIES OF CHANGE AND EMPOWERMENT

Energising Development (EnDev) is a global multi-donor partnership programme implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), working to provide access to modern, renewable energy for households, social institutions, micro, small, and medium sized enterprises (MSMEs). EnDev Bangladesh has been operational since 2009 and is implemented in cooperation with the Ministry of Power, Energy and Mineral Resources (MoPEMR) and Sustainable and Renewable Energy Development Authority (SREDA). Over the years, EnDev has significantly contributed to improving energy access in rural and underserved communities across Bangladesh. The programme has supported more than 4 million people in gaining access to modern energy solutions, contributing to better health, reduced household expenditures, and enhanced livelihoods.

EnDev Bangladesh has focused on expanding access to clean cooking technologies and decentralised solar energy. It has played

a pivotal role in developing the market for Improved Biomass Cookstoves (ICS). Disseminated around three hundred and sixty thousand ICS across Bangladesh, enhancing clean cooking adoption improved cookstoves have been sold as of 2025, through a robust network of over 2500 trained stove producers and distributors, many of whom are women. These efforts have been implemented in partnership with local NGOs and community-based organisations. These collaborations have ensured last-mile reach, localised knowledge transfer, and women's economic empowerment through stove sales and maintenance.

In addition to cooking energy, EnDev has also supported access to electricity through solar home systems, solar lanterns, solar mini grids, nano grids, and solar-powered battery charging stations for e-rickshaws. Through innovative market-based approaches such as Results-Based Financing (RBF), EnDev has helped to scale clean, affordable, modern and reliable energy access that contributes



to both economic development and climate mitigation. The programme's recent focus has included higher tier cooking technologies, including electric cooking (E-cooking), as well as promoting energy access for vulnerable populations under the Leave No One Behind (LNOB) framework.

As EnDev Bangladesh moves into the 2023–2025 period, the programme intends to consolidate its achievements and communicate

its long-term impact. Capturing and promoting success stories, documenting implementation achievements, and producing high-quality outreach materials are central to ensuring visibility and support for future energy access interventions.



# The ICS produces very little smoke, keeps the kitchen clean, and uses much less fuel.

Shanti lives in Naogaon, Rajshahi, with her family. Like many rural women in Bangladesh, she used to spend a large part of her day cooking on a traditional stove that produced thick smoke and consumed a lot of firewood. The constant smoke made her eyes burn and caused breathing discomfort, forcing her to step outside the kitchen frequently while cooking.

For years, Shanti faced these daily struggles spending hours preparing meals, collecting or buying firewood, and working in a kitchen filled with smoke. It affected not only her health but also the cleanliness and comfort of her home.

She learned about the ICS and decided to

bring one home. The change was immediate and visible. The ICS produces very little smoke, keeps the kitchen clean, and uses much less fuel. Now, Shanti can cook comfortably without leaving the kitchen, and the air inside her home stays fresh and clear.

She shared that her family's health has improved since they started using the stove, no more coughing or eye irritation from smoke. The cleaner air has also made the home a better place for her son, James, to study.

Shanti believes that the Improved Cook Stove has truly changed her life. By reducing smoke, saving fuel, and improving the home environment, it has brought comfort and health to her family while also helping protect the environment.



Financial independence has brought her confidence and pride, along with respect from others in her community.



Sita Hembrom lives in Naogaon and has always been determined to build a better life for her family. For years, she struggled to manage daily expenses and often worried about how to achieve financial stability. She dreamed of earning her own income and becoming self-reliant, but opportunities were limited.

Sita received training from ASHRAI under the ICS Program, which changed her life. Through the training, she gained the skills and confidence to start promoting and selling Improved Cook Stoves in her community. She began visiting nearby households, explaining how the stove helps reduce smoke, save fuel, and keep kitchens clean. Her sincerity and effort soon earned the trust of local families, and more people began purchasing the stoves.

As her sales increased, Sita started earning

a steady income. This was the first time she could contribute significantly to her family's finances. With her savings, she bought cows and goats, expanding her income sources and creating greater security for the future. Financial independence has brought her confidence and pride, along with respect from others in her community.

Today, Sita stands as a shining example of how the ICS Program can empower women to take control of their financial future. What began as a simple training opportunity has transformed her life, turning her determination into success and showing that when women are given the right support, they can build strong, independent, and prosperous lives.



With lower fuel costs, Minoti began saving a good amount each month.



Minoti Rani Pahariya, a member of an indigenous community, lives in Lalpur, Natore with her large family, including her children and grandchildren. Although she works hard in the fields every day, her family's income is limited, and much of what she earned, used to go toward buying firewood for cooking. Managing daily expenses, ensuring proper meals, and supporting her children's education often felt like a constant struggle.

Minoti learned about the ICS with Chimney through a local initiative and decided to install one in her home. The change was immediate. The new stove required much less fuel, and the smoke that once filled her kitchen now escaped safely through the chimney, keeping the air clean and making cooking far more comfortable.

With lower fuel costs, Minoti began saving a small amount each month something she had never been able to do before. Over time, these savings grew, allowing her to buy a

goat and even start raising a few rabbits as a hobby. Her children now attend school regularly, and the overall quality of family life has improved. She no longer worries as much about daily expenses and feels proud that her hard work is finally paying off.

Minoti's story reflects how the Improved Cook Stove with Chimney can bring real financial and social empowerment to Indigenous families. By reducing fuel expenses and improving living conditions, the stove has helped her achieve stability, independence, and hope for a better future.

The new stove consumes much less fuel, helping her save money and reduce the constant worry of collecting or buying firewood.



Srimoti Binota Rani lives in Natore with her husband and their young daughter, Bristi. Her husband is the only earning member of the family, and Binota carefully manages their household expenses to make ends meet. Each day, she prepares meals for her family while ensuring that Bristi gets to eat fresh, warm food before returning to school.

Before, cooking on a traditional stove was time-consuming and required a large amount of fuel. The rising cost of firewood made it even harder for Binota to balance their limited income. However, everything changed when she started using the Portable ICS. The new stove consumes much less fuel, helping her save money and reducing the constant worry of collecting or buying firewood.

Binota says the Portable ICS has made her daily routine much smoother. It heats up

quickly, cooks food faster, and produces very little smoke. The stove's portability allows her to move it easily and cook wherever she feels comfortable. With less smoke and soot, her cooking area stays cleaner, and the air feels fresher.

Thanks to the Improved Cook Stove, Binota now spends less on fuel and more time caring for her family. The savings she makes each month have lightened her financial burden, giving her peace of mind. Her experience shows how the Portable Improved Cook Stove can help rural families like hers achieve both comfort and economic stability through simple, sustainable change.



Maya has sold many stoves, earning enough to bring financial stability to her family.

Maya Rani lives in Baraigram Upazila, Natore. She is around 26 years old and has a physical disability. Despite her challenges, she manages her household work, including cooking, on her own. Maya lives with her husband and in-laws. Her father-in-law earns a small income as a van driver, and her husband, who previously worked in the Border Guard Bangladesh (BGB), left his job to stay home and support her.

After her husband left his job, the family's income dropped sharply. They had to rely solely on her father-in-law's earnings only 100 to 200 taka a day, which made it difficult to meet basic needs. During this difficult time, Maya learned about AVA's two-day training program on Improved Cook Stoves (ICS), which began in August 2023. She decided to attend the training to explore a new way to earn income.

After completing the training, Maya started selling Improved Cook Stoves in her area. The stoves quickly became popular for saving fuel and producing less smoke. Through hard work and dedication, Maya has successfully sold 25 stoves, earning 12,500 BDT. This new income has brought stability to her family, reducing their financial dependence on her father-in-law's limited earnings. Her husband now supports her in

managing orders and deliveries, making it a true family effort.

Maya also provides after-sales support to customers, ensuring they use the stoves properly and remain satisfied. Her honesty and commitment have helped her build strong relationships in the community, attracting more buyers through word-of-mouth.



Today, Maya Rani is recognised as a determined entrepreneur in her village. Through the opportunity provided by AVA's ICS training and her own perseverance, she has transformed her family's livelihood and inspired others proving that with courage and the right support, anyone can build a better future.

# Khalek Mahmud Abdullah, the Bondhu Chula doctor bringing clean cooking solutions to communities.



At 56, Khalek Mahmud Abdullah is a proud father of two sons and a daughter. Khalek himself has built a remarkable career promoting clean energy solutions across Bangladesh.

In October 2011, Khalek trained as a Bondhu Chula (biomass-based improved cookstove) doctor in the Rangpur zone. With dedication and technical skill, he soon became one of the most active advocates for the eco-friendly stove. Over the past seven years, he has sold 20–30 stoves per month, earning around 30,000 BDT while helping families and businesses adopt cleaner, more efficient cooking methods. Khalek's customers include households, hotels, restaurants, sweet shops, and garment factories. The bondhu chula uses wood or furniture waste and can save up to 50% of fuel, producing far less smoke than traditional stoves—making it both

economical and environmentally friendly. Starting in Gaibandha, he later expanded to Rangpur and now operates in Ashulia, Dhaka, receiving orders from distant areas. Known for his honesty and customer care, Khalek personally advises buyers on suitable stove types and provides after-sales repair services to ensure satisfaction. His work has not gone unnoticed. Bangladesh Television (BTV) featured him in a 42-minute documentary on climate change, dedicating 15 minutes to his contribution to pollution prevention. Moreover, GIZ officials from Germany have visited him three times to discuss the role of Bondhu Chula in reducing environmental pollution. Through persistence and service, Khalek Mahmud Abdullah has turned a simple idea into a sustainable livelihood—proving how clean energy entrepreneurship can benefit both people and the planet.

# Farhana's success story shows how women's leadership and solar innovation can light the way toward a greener, more inclusive future – one charge at a time.

Farhana Tasnim, a 38-year-old resident of Rajshahi, is a mother of three – two daughters and a son. Farhana has graduated in Electrical and Electronic Engineering (EEE).

After her studies, Farhana devoted several years to her family life. As a homemaker, she took care of her children, managed the household, and supported her husband, Mr. Mamun, in every possible way. Yet, deep down, she always aspired to do something meaningful with her education- something practical, impactful, and beneficial for both her family and her community.

That aspiration took shape when she established an e-rickshaw charging station in Rajshahi. Using her technical knowledge and strong determination, she set up the station to serve local rickshaw drivers, offering a convenient and reliable place to

charge their vehicles. The service quickly gained popularity due to its affordability and efficiency.

One day, officials from NESCO (Northern Electricity Supply Company) visited her charging station along with an expert team to assess its technical setup. They were impressed by her well-managed operation and the potential it showed for sustainable energy integration. As part of a pilot initiative under EnDev's Solar E-Rickshaw Charging Station Project, NESCO selected Farhana's station for the installation of a 25 kWp solar power system with a net metering connection.

This partnership marked a turning point for Farhana's business. With the new solar system in place, her station could now run primarily on clean, renewable energy. The shift brought immediate benefits like-



operating costs dropped significantly, as running a charging station solely on electricity was much more expensive compared to solar energy. For example, while conventional electricity-run stations charge around 220 BDT to fully power a rickshaw battery, Farhana's solar-powered setup offers the same service for only 190 BDT.

The new system not only reduced expenses for rickshaw drivers but also promoted sustainable energy use in the community. Farhana's monthly income now ranges

between 30,000 and 40,000 BDT, which she uses to support her children's education and household needs. Her husband continues to assist in managing the business, making it a true family venture rooted in teamwork and trust.

Farhana's journey from homemaker to clean energy entrepreneur is a powerful example of how education, determination, and opportunity can combine to create lasting impact.

The kitchen is now much cleaner, with noticeably less smoke in the air.



MD. Altaf Hossain lives in Satkhira with his wife, son, and a daughter who is studying in her first year of HSC. Like many rural families, cooking has always been a central part of daily life, and for years, they relied on traditional firewood. The thick smoke from the firewood made the kitchen uncomfortable and unhealthy, and preparing meals required a large amount of fuel and effort.

Altaf switched to Pipe Wood, a cleaner and more efficient cooking fuel, and immediately noticed a difference. The kitchen is now much cleaner, with significantly less smoke filling the air. Cooking has become easier and more convenient, and the healthier environment has made a noticeable impact on the family's comfort and well-being.

By using Pipe Wood, Altaf has reduced



fuel consumption and created a safer, cleaner space for his family to cook and eat. His experience shows how adopting more efficient and cleaner cooking fuels can transform daily life, providing both a healthier home environment and greater ease in managing household tasks.



Johra was able to purchase two goats and a cow, creating new sources of income for her family.

Johra Khatun, a widow from Bashghata in Satkhira, lives with her daughter Nuri Khatun, who is an abandoned woman, and her young grandson. For years, Johra struggled to manage her household expenses. Cooking with traditional firewood consumed a large portion of her income and time, leaving her with little opportunity to earn extra money or improve her family's living conditions. Everything began to change when Johra started using biomass briquettes as a cooking fuel. The briquettes burned efficiently, required less quantity, and cooked meals faster than traditional wood. As a result, her monthly fuel expenses dropped significantly, bringing noticeable financial relief.

With the money saved, Johra was able to purchase two goats and a cow, creating



new sources of income for her family. The shorter cooking time also allowed her to work as a day labourer in the fields, further improving her financial stability.

Today, Johra manages her household confidently. Her daughter and grandson are well cared for, and she no longer worries about meeting their daily needs.

Johra Khatun's story reflects how the use of Biomass Briquettes can empower rural women, helping them save money, gain independence, and build a more secure future for their families.

Using an electric kettle powered by solar energy has significantly reduced fuel expenses and increased daily earnings.



Md. Khairul Bashar lives in Satkhira and runs a small tea shop, which is his only source of income. For a long time, he relied on traditional fuel to boil water and prepare tea, and the high cost of fuel consumed most of his profit, leaving little to support his family.

The situation changed when Khairul installed a solar panel in his shop. Using an electric kettle powered by solar energy has significantly reduced his fuel expenses and increased his daily earnings. The solar panel also allows him to keep the shop open during storms and rainy weather, ensuring a steady flow of customers.

With the savings and extra income, Khairul was able to make improvements in his shop, including installing a television to attract and entertain customers. As a result, his business has grown steadily, and his family now enjoys better financial stability.

Md. Khairul Bashar's story shows how adopting solar energy can provide meaningful financial support for small entrepreneurs, helping them increase income, reduce costs, and improve livelihoods in rural communities.





It allows her to cook rice quickly and safely without need to stay beside the stove all the time.

Mst. Sumiya Khatun lives in Rajshahi. She is a homemaker, living with her husband and their two young sons. Her husband works outside the home, while she manages all household responsibilities on her own. One of her sons is just over a year old, and the other has recently started attending madrasa.

With two small children to care for, managing cooking and daily chores had become quite challenging for Sumiya. Preparing meals on a traditional stove required constant attention and took a lot of time, something difficult to manage while also looking after her children.

To make her work easier, Sumiya decided to purchase a Walton rice cooker. The rice cooker has brought her great convenience, as it allows her to cook rice quickly and safely without needing to stay beside the stove all the time. She can now take care of her children while the rice cooks automatically.

The Walton rice cooker also saves on

fuel and keeps the kitchen cleaner and cooler. It has made her daily routine more manageable and given her more time to spend with her family.



For Sumiya, this simple household appliance has been a true helping hand. It has turned a once-tiring daily task into an easy and efficient routine, bringing comfort and relief to her busy life as a mother and homemaker.



The change was immediate. Cooking became faster, cleaner, and far more convenient.

Md. Masud Alam lives in Godagari, Rajshahi. He is a dedicated primary school teacher and the father of one daughter. Due to his wife's illness, Masud has to manage both his professional duties and all the household responsibilities on his own, including cooking for his family every day. For a long time, Masud used a traditional wood-fired stove for cooking. However, the rising cost of firewood and the constant exposure to smoke made daily cooking difficult and unhealthy. The smoke often darkened the kitchen walls and created breathing discomfort. Looking for a cleaner and more efficient alternative, Masud decided to purchase a Walton induction cooker.

The change was immediate. Cooking became faster, cleaner, and far more convenient. The Walton induction cooker consumes less electricity, saving him money each month, while its smokeless operation has made the kitchen environment much healthier. Unlike a traditional stove, it does not make the room uncomfortably hot, which is especially helpful during the summer months.

Masud now enjoys spending less time cooking and more time with his daughter and schoolwork. The induction cooker has



not only made his daily routine easier but also reduced household expenses and environmental impact.

Through this small but meaningful change, Md. Masud Alam has set an example of how adopting energy-efficient, environment-friendly technology can improve both quality of life and sustainability in everyday living.

# Cooking with Ease, Caring with Love.



At just 19 years old, Insana from Nilphamari is already balancing the responsibilities of motherhood and managing her household of five members. Every day, she prepares breakfast and dinner for her family, a task that once felt overwhelming when she

relied on a traditional wood stove. Cooking with firewood was time-consuming and exhausting, especially while caring for her small child. Managing smoke, collecting wood, and tending the fire made every meal a challenge. "I wasn't very good

at cooking while carrying my child," she recalls. "So, I decided to buy a rice cooker. It helps me cook and take care of my baby at the same time."

Encouraged by her relatives who were already using one, Insana purchased a rice cooker and quickly noticed the difference. Cooking became simpler, faster, and far less stressful. Even though the appliance sometimes heats up too quickly, it still works well and has made her daily routine much easier.

Now, Insana cooks two meals a day using her rice cooker and saves about BDT 500 each month on fuel. The extra time she gains allows her to finish other household chores without rushing, while also keeping a close eye on her child.

However, Insana also feels there's room for improvement. She mentioned that the stove bowls need to be stronger, and the switch could be better to make it easier and safer to use.

Pleased with the convenience despite minor issues, Insana has already recommended the rice cooker to her friends and relatives, hoping it can make their lives easier too.



Priya appreciated the support from the project that helped her and her family to achieve a better lifestyle.



Priya is a housewife residing in a remote village of Moulvibazar district. In her village, people had been living without access to electricity facility for a long time; and their source of light was kerosene lamp at night. They could not carry out many chores or tasks at night. Priya informed that she had to spend a hefty amount of money on buying kerosene, and to reduce fuel cost, they kept trying to minimise the usage of kerosene lamp. Her kids were unable to study at night and she felt insecure at night. But after getting connected with SOLshare grid in 2021 by spending only 100 BDT, her and her family's lifestyle improved a lot. She said, "Now I get to enjoy uninterrupted solar electricity service at night by spending only a little amount of money. Previously, I had to spend 200 takas for buying kerosene, but now I spend only 50 taka to recharge the SOLbox meter. My kids' study does not get hampered anymore and I can do the household chores easily and use the washroom conveniently." She also added that she can charge her mobile battery anytime now, for which she had to

travel 3.5 kilometres every day. Thus, the communication process became a lot easier as she did not have to wait for charging the mobile. Moreover, the security of her house also increased because she could light up a bulb in front of her house at night. She said, "My family sells betel leaf in market. Previously, I couldn't charge my phone while the battery got drained and couldn't monitor the market price by calling the vendor, so many times I had to sell goods at a lower price. But now I do not face such situation because I have access to solar electricity." She appreciated the support from the project that helped her and her family to achieve a better lifestyle.



# Empowering Local Innovation: Al-Amin and the E-Boat of Singra.

In Singra, a small town in northern Bangladesh, boats remain the main mode of transport for most of the year. The rivers and wetlands of the Chalan Beel region connect communities and shape

everyday life. When the 'Cholo' team, Singra Municipality's electric transport service, set out to extend their e-mobility initiative to water, they turned a simple idea into a meaningful innovation.

Supported by GIZ under the Transformative Urban Mobility Initiative (TUMI), the team had already established a locally operated battery lab for research and maintenance of e-vehicles. This lab, co-financed and technically supported by GIZ, became the foundation for their next breakthrough in developing an electric boat for Singra's waterways.

Among the team was Al-Amin, a young electrician and engineering student whose

and dedication made him indispensable. Working with fellow technicians, he spent weeks testing different combinations of batteries and motors in the GIZ-supported lab. Using a fibreglass boat manufactured in Bangladesh, they finally found the right configuration that was efficient, stable, and powerful.

The result was Singra's first locally assembled electric boat, a quiet, zero-emission vessel powered by clean energy.

"We wanted to prove we could build it

ourselves, that innovation can start right here in Singra," says Al-Amin.

For Al-Amin, it was a chance to apply his learning and contribute to something



lasting. For Singra, it marked a step toward cleaner mobility and local innovation. With GIZ's support, the 'Cholo' initiative continues to show how small towns can lead the way in sustainable, community-driven e-mobility, combining local expertise, renewable energy, and a shared vision for a cleaner future.

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