Supporting last-mile women energy entrepreneurs: What works and what does not

Women at the heart of energy access

ENERGIA
INTERNATIONAL NETWORK ON GENDER & SUSTAINABLE ENERGY

Coverphoto: Judith Quax/ENERGIA

Supporting last-mile women energy entrepreneurs: What works and what does not

Experiences from ENERGIA's Women's Economic Empowerment (WEE) programme in Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda

Soma Dutta

Photo: Judith Quax/ENERGIA

Foreword

Two of the greatest challenges facing the world in meeting the UN's Sustainable Development Goals for Agenda 2030 are universal energy access (SDG7) and gender equality and women's empowerment (SDG5). Can SDG7 and SDG5 mutually support one another? This review of ENERGIA's Women's Economic Empowerment (WEE) programme makes it clear that, first, women's energy entrepreneurship should indeed be adopted as an essential strategy and added to national policy and programme toolboxes for achieving "last-mile" energy access. Second, that gender equality and women's empowerment, of both female entrepreneurs and women energy users, can be an important additional outcome of the WEE approach in the energy sector.

The ENERGIA approach will be of considerable interest to both energy and gender policymakers and practitioners because it offers a practical and operational roadmap to what works – and what doesn't work – in developing women's enterprises in the renewable energy sector. Together with its five partners in Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda, ENERGIA has supported, between 2014 and 2018, more than 4,000 women in launching and growing small-scale clean energy businesses. These women-led enterprises have delivered clean energy products and services to more than 2.9 million consumers, mostly in rural areas and in low-income communities.

This document is unique in its approach by presenting a self-reflection on ENERGIA's four-year journey, undertaken collectively by the WEE programme coordinator, the partner organizations and the ENERGIA International Secretariat. As a learning document, it analyses and draws out common features of the most promising strategies, as well as lessons from efforts that did not go so well – or even failed completely. These findings have been documented using a robust results-based monitoring and evaluation system, and are crosschecked against lessons from women's entrepreneurship in other sectors.

There is a huge global market opportunity for the private sector in energy access. The WEE programme is an example of the new approaches and business models needed to overcome market barriers and tap into these markets in the last mile of energy access. Momentum around this space is growing and encouraging greater awareness, interest and commitment to women's energy entrepreneurship from decision-makers in the private and public sectors. ENERGIA is committed, through its 2018 – 2022 Strategy, to expanding its current activities and to continuing to promote targeted programmes to strengthen women's economic development in energy value chains through its advocacy programme at the national level, and through its participation in international debates around the SDG Agenda 2030. Building on its experience with the WEE programme, ENERGIA will continue to convene, connect and coordinate partners as allies, and aim to amplify a common voice on women's energy entrepreneurship as part of the global agenda.

Elizabeth Cecelski
Co-founder ENERGIA and member Advisory Group

Photo: Adam Schultz/ENRGIA

Acknowledgements

This document is the result of an extensive consultation, collaboration and co-writing process, gathering four years of experiences working with micro- and small- scale women entrepreneurs.

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A special thanks goes to the lead author of this document, Soma Dutta, for her commitment to the programme and for creating the document that lies before you. Ms Dutta has been associated with ENERGIA since 2004 and was the programme manager for the Women's Economic Empowerment Programme from 2014 to 2017.

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We also wish to thank the ENERGIA International Secretariat staff members and members of the ENERGIA Advisory Group whose dedication, management and fundraising have contributed to the continuation of the programme for another four years from 2018 to 2022.

And last but certainly not least, we want to put the more than 4,000 women entrepreneurs, as well as the social mobilisers and mentors, with whom we have worked over the past four years in the spotlight. We have gotten to know these women as fighters and as hard workers with great potential, enthusiasm and perseverance; determined to make changes for themselves, their families and their communities. We feel privileged and proud to have been able to walk with them and support them during their journey, and we hope to continue doing so.

"If we walk together, we can do it!"

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Endorsements

"The release of the WEE Publication is a timely and useful development for actors who share the passion and vision for gender mainstreaming in energy access. In particular, the strong evidence base and innovative approach applied serves as an armour for a fresh perspective that is necessary in building the desired momentum. Working with ENERGIA and partners has been both fulfilling and invigorating eye-opener towards numerous developmental issues that are often taken for granted."

Faith Wandera, Deputy Director of Renewable Energy, Ministry of Energy, Kenya

"It is inspiring to see that women's entrepreneurship in the energy sector is gaining momentum. ENERGIA, together with its partners, has supported more than 4,000 women to develop clean energy businesses and deliver clean energy products and services to more than 2.9 million consumers. As we applaud for this outstanding effort, all stakeholders must raise ambition and scale up actions to accelerate the achievement of the Sustainable Development Goals."

Minoru Takada, Team Leader Sustainable Energy, Division for Sustainable Development Goals, Department of Economic and Social Affairs, United Nations Development of Economic and Social Affairs (UN DESA)

"EnDev very much welcomes ENERGIA's latest publication that provides hands-on, practical lessons from developing both new business models for women-led energy SMEs and support approaches for implementers such as EnDev. The report confirms that transformations take time, that solutions have to be contextual, and that partnerships in the market are crucial for success. It rightly identifies access to finance as a major bottleneck, but also that the complexity of women's entrepreneurship is much broader, and that sustained coaching and mentoring is critical. The report will strengthen the gender approach of both ongoing and new energy access programmes."

Marcel Raats, Co-director EnDev and Senior Energy Advisor Netherlands Enterprise Agency (RVO)

SEforALL is delighted to see this publication. It's the culmination of ENERGIA's four-year journey supporting women-centric energy enterprises that deliver critically needed energy access to low-income consumers at the 'last mile'. The self-reflection provides an honest account of what has worked and, significantly, what hasn't — which, in the field of international development, is all too rare. ENERGIA's lessons learnt contribute to the global community's understanding of how to take a strategic, ecosystems approach to empowering women entrepreneurs as agents of change. Crucially, the entrepreneurs reached by ENERGIA and its partners are on the front line for meeting SDG7: delivering universal energy access that leaves no one behind.

Sustainable Energy for All (SEforALL)

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Acronyms

ADB Asian Development Bank
AfDB African Development Bank
ANCAR National Agency for Rural Agriculture, Senegal
BDA Business Development Associate
CREE Community Rural Electrification Entity
CRT/N Centre for Rural Technology Nepal
Enda Tiers Monde Environment and Development Action in the Third World
EOWS Energy Opportunities for Women in Senegal
ESCAP The United Nations Economic and Social Commission for Asia and the Pacific
ESMAP Energy Sector Management Assistance Program
EYB Expand Your Business
FAO Food and Agriculture Organization of the United Nations
GACC Global Alliance for Clean Cookstoves
GDP Gross Domestic Product
GSMA Global System Mobile Association
HLPF High Level Political Forum
ICS Improved Cookstove
IFAD International Fund for Agricultural Development
IFC International Finance Corporation
ILO International Labour Organization
LFI Local Financing Institution
M&E Monitoring and Evaluation
MFI Micro-finance institution
NACEUN National Association of Community Electricity Users Nepal
NGO Non-governmental organization
Norad Norwegian Agency for Development Cooperation
NTB West Nusa Tenggara
NTT East Nusa Tenggara
ODI Overseas Development Institute
OECD Organization for Economic Cooperation and Development
PAC Practical Action Consulting
PAPIL Small Local Irrigation Programme, Senegal
PMSD Participatory Market Systems Development
SCODE Sustainable Community Development Services
SDG Sustainable Development Goal
SEforALL Sustainable Energy for All
SEM Fund Social and Ecological Management Fund
SHS Solar Homes System
Sida Swedish International Development Cooperation Agency
SIYB Start and Improve Your Business
SME Small and Medium-sized Enterprise
UNDP United Nations Development Programme
VSLA Village Savings and Loan Association
WEDF Women's Entrepreneurship Development Fund
WEEK Women in Energy Enterprises, Kenya
WEE-Nepal Women's Economic Empowerment – Nepal project
WEE programme Women's Economic Empowerment programme
WEF Women Enterprise Fund
wPower Partnership on Women's Entrepreneurship in Renewables

Summary

The Sustainable Development Goals (SDGs) are poised to address key challenges such as eradicating poverty and hunger, eliminating inequalities and violence against women and girls, and combating climate change. Gender equality and women's empowerment are prerequisites for achieving these and other goals. Women's economic participation, and their ownership and control of productive assets, is reported to speed up development, help overcome poverty and reduce inequalities. In the energy access space, women's entrepreneurship is gaining momentum with a number of actors including national and international NGOs, private sector organizations, donors and governments starting to work on women's entrepreneurship in energy.

ENERGIA has been working on the intersection of energy access and women's economic empowerment through its Women's Economic Empowerment (WEE) programme. The WEE programme, implemented between 2014 and 2018, focused on developing women's enterprises in the renewable energy sector and we will continue to work on this issue in the coming years. The programme was implemented in seven countries: Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda. The leading partner organizations were the Centre for Rural Technology Nepal (CRT/N), Energy 4 Impact, Kopernik Solutions (Kopernik), Practical Action Eastern Africa and Solar Sister.

Together with our partners, we have supported more than 4,000 women to launch and grow clean energy businesses in seven countries. These women-led, largely micro-level, enterprises have delivered clean energy products and services to more than 2.9 million consumers, mostly in rural areas and in low-income communities.

Why this document

This document presents ENERGIA's four-year journey to create and upscale women-centric energy enterprises that sell safe, reliable and affordable energy solutions to low-income consumers in underserved areas. ENERGIA works with partner organizations in seven countries in an effort to develop and test new, disruptive business models and approaches that promote women as energy entrepreneurs. This document is a self-reflection, undertaken collectively by the WEE programme coordinator, the partner organizations and the ENERGIA International Secretariat. As a learning document, it seeks to analyse the various strategies with which we have worked in different contexts. It draws out common features of the most promising ones, as well as lessons from efforts that did not go so well, or even failed completely. Since documentation on women's energy entrepreneurship is only beginning to emerge, wherever relevant, we have crosschecked our lessons with those from women's entrepreneurship in other sectors.

It is our hope that these findings will be helpful for other organizations working on women's enterprise development, for development partners and governments, and especially for practitioners like ourselves who are working with, or interested in working with, women entrepreneurship models in the energy access space.

The WEE programme

The WEE programme design is centred on ENERGIA's belief that, because the factors limiting women's entrepreneurship are manifold and intertwined, integrated measures are needed to realize women entrepreneurs' potential. In line with this belief, the programme's strategy encompasses a comprehensive entrepreneurship development process that entails a careful identification of the barriers facing women in starting a business and then systematically addressing them. Women entrepreneurs have been trained in technical, managerial, leadership and empowerment aspects of energy businesses. They all also receive customized support from designated mentors who are trained by the relevant partner organization. The mentors help the new entrepreneurs on an ongoing basis to identify new market opportunities, develop marketing strategies, identify and transact with suppliers, interact with local government authorities, prepare business plans, and approach and negotiate with financial institutions. The mentors take the support package right to the entrepreneurs' place of work and demystify 'business' for them. In addition, the project supports the partner organizations to set up and strengthen product supply chains using the private sector. It also builds partnerships with the private sector and financing institutions, as well as with local government.

Five lessons we learnt from implementing the WEE programme

In the document, we share lessons on specific approaches in various strategic areas within women's energy entrepreneurship. In this summary, we highlight a few broad lessons that go beyond individual strategies and may be relevant as we move forward.

Setting up a comprehensive WEE programme requires time, commitment and core resources. Designing and implementing women's enterprise development programmes does not follow a single, preferable and predetermined path. Business models and advocacy strategies need to be contextual, trust needs to be built before one can engage with policy- and decision-makers, and it takes time to set

up efficient and effective business models together with the women entrepreneurs. ENERGIA's multiyear funding helped the partners to plan for the longer term and learn what is required to expand such a programme into the hard-to-reach target locations, to provide continued support to women entrepreneurs, and to drive the overall organization forward. Even though the WEE programme was built on the solid base of our partners' experiences, our donors gave us substantial flexibility that enabled us to innovate, learn and make course corrections as we went along.

When programming, aggregating efforts is important. ENERGIA and the WEE implementation partners fulfilled this role on multiple levels. In approaching local financial institutions, the partners aggregated demand for credit from a number of entrepreneurs, making it a viable packet for the financial institution; they also aggregated demand for energy products when approaching product suppliers, thereby negotiating better prices. At the level of ENERGIA, aggregating the services provided to our partners enabled us to optimize resources significantly. At the same time, aggregating the collective experiences of our partners enabled us to generate credible evidence and data from the field, which has been useful in our global advocacy.

An enabling environment is as important as direct support to the entrepreneurs. Alongside addressing the 'immediate' challenges that women face in starting and expanding a business, the enabling environment, including policies and resources available, must ensure that structural barriers that create bias against women within policy are overcome, and that the markets and institutional environments in which governments, financiers, energy companies and consumers operate support such initiatives. A conducive, enabling environment that supports women's enterprise development in renewable energy technologies and products includes (a) enabling fiscal policies for off-grid clean energy products, (b) industry standards and certification of quality-assured market products and (c) ease of doing business for women, including streamlined processes for business registration and licensing, easy access to information, guidance, application submission and follow up.

An ecosystems approach is central to women's enterprise development. In promoting women's enterprise development, practitioners have to bring together a number of stakeholders who need to operate in tandem: entrepreneurs, specialized support organizations, financial institutions, civil society organizations (i.e. women support groups) and the public sector. Together, they need to perform multiple functions: to provide a conducive policy and regulatory environment; to facilitate access to funding; to provide business development support and mentoring; to link entrepreneurs to markets and to strengthen the value chains as a whole.

Access to capital is critical, but must be accompanied by a combination of other measures. The lack of availability of capital for entrepreneurs has been identified as a major bottleneck. In our experience, access to capital must necessarily be accompanied with a host of complementary services, such as leadership and agency development, investments in financial literacy and in the ability of entrepreneurs to manage cash flows, and continued mentor support, all of which have been seen to increase women's direct control over resources and increase their self-confidence.

Looking ahead: What is next?

Today, there are huge global market opportunities for the private sector in energy access, with untapped markets in many countries. Looking at current market barriers, it is clear that new approaches and business models are needed to overcome these barriers and create viable investment opportunities. The WEE intervention was ENERGIA's first foray into on-the-ground implementation. For ENERGIA, it is encouraging to see the momentum around this space as reflected in the growing awareness, interest and commitment to women's energy entrepreneurship from decision-makers in the private and public sectors, placing it in a good position for strong progress over the coming years.

Building on the WEE programme's implementation, ENERGIA will continue to convene, connect and coordinate partners as allies, and help amplify a common voice on women's energy entrepreneurship as part of the global agenda. We will strengthen the capacity of organizations working in this area to develop technical, business and leadership skills and advocacy capability, and expand women's access to finance by developing financing instruments, mechanisms and specific loan products, including microfinance and mobile banking, for women. We will also engage with manufacturers, suppliers and distributors to partner women's formal and informal networks as distributors/resellers, and support governments in reforming the business environment for women, including tax administration and regulations, especially for smaller, informal-sector firms.

Photo: Judith Quax/ENERGIA

1 Introduction

The 2030 Agenda for Sustainable Development provides an ambitious roadmap to eradicate poverty and achieve sustainable development for all. The Sustainable Development Goals (SDGs) seek to change the course of the 21st century by addressing key challenges facing us, such as eradicating poverty and hunger, eliminating inequalities and violence against women and girls, and achieving sustainable and modern energy for all. While the SDGs recognize separately the importance of both gender equality and energy access, in reality these are inextricably linked, and addressing them together can offer multiple development gains. Gender equality and empowered women are known to have a catalytic impact on development efforts across the board and investments in gender equality are reported to yield the highest returns of all development investments (OECD, 2010a).

ENERGIA has been working at the intersection of energy access and women's economic empowerment through its Women's Economic Empowerment programme (the WEE programme). The programme was implemented in seven countries: Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda. The leading partner organizations were the Centre for Rural Technology Nepal (CRT/N), Energy 4 Impact, Kopernik Solutions (Kopernik), Practical Action Eastern Africa and Solar Sister. It received financial support through a co-funding arrangement from the Swedish International Development Cooperation Agency (Sida), the Norwegian Agency for Development Cooperation (Norad) and the Ministry of Foreign Affairs, Finland (MoF). The WEE programme focused on developing women's enterprises in the renewable energy sector and was implemented between 2014 and 2018, and we will continue to work on this issue in the coming years.

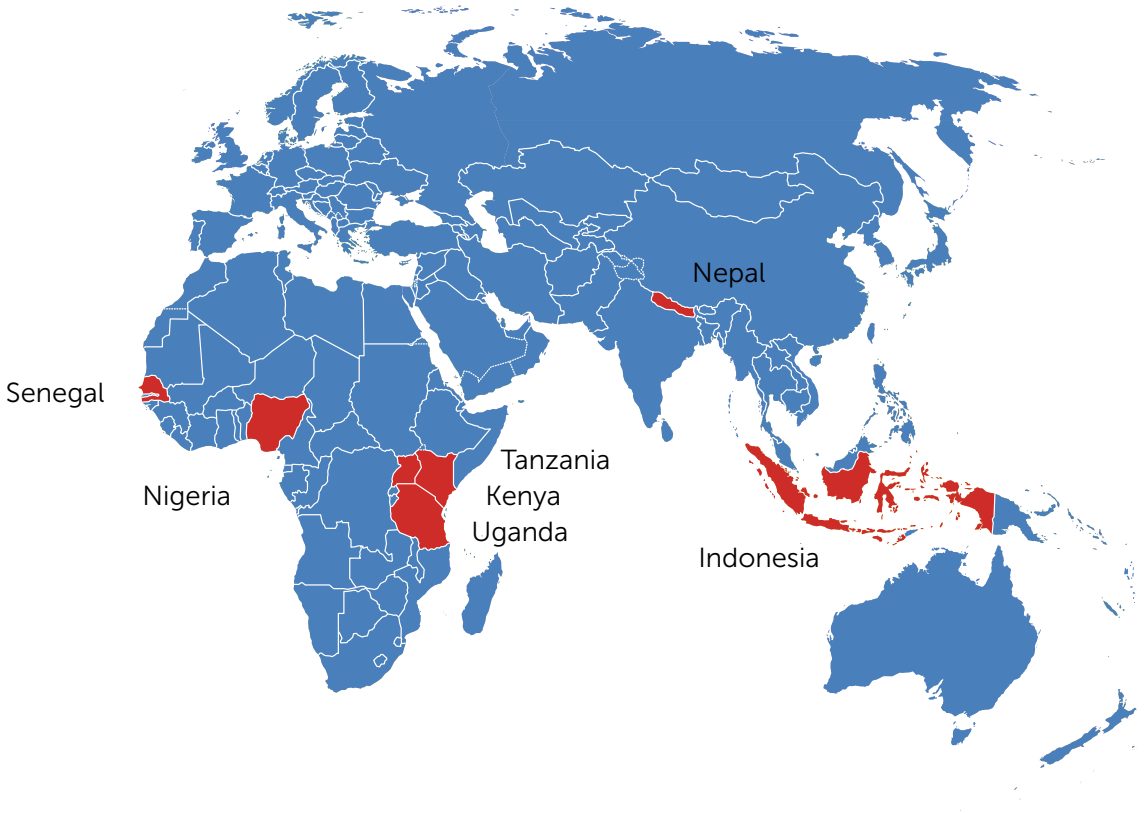
In the last few years, a number of other initiatives and organizations have also ventured into the space of women's energy entrepreneurship, and are collectively starting to build a sizeable body of work around the theme of expanding energy access through women's entrepreneurship. These new, emerging solutions have the potential to deliver modern energy services in a sustainable manner to those without access. Nevertheless, despite this groundswell of new approaches, engaging women as entrepreneurs is yet to be viewed as a "mainstream" strategy for last-mile energy access. National governments, private sector and development partners are yet to invest in these at a scale that can make a meaningful dent in the projected access gap. In 2030, more than 2.7 billion people are projected to still be reliant on traditional fuels for their energy needs, and over one billion people will still be without access to electricity (largely in rural Africa and Asia).

1.1 Sharing experiences to inspire

This document presents our four-year journey to create and upscale women-centric energy enterprises that sell safe, reliable and affordable energy solutions to low-income consumers in under-served areas. During this time, ENERGIA has worked with partner organizations in seven countries in an effort to develop and test new, disruptive business models and approaches that promote women as energy entrepreneurs. Together with its partners, ENERGIA has supported more than 4,000 women to launch and grow clean energy businesses in seven countries. These women-led enterprises – largely on the micro-level – have delivered clean energy products and services to more than 2.9 million consumers, mostly in rural areas and in low-income communities.

This document is an effort at self-reflection, undertaken collectively by the WEE programme coordinator, the partner organizations and the ENERGIA International Secretariat. The WEE team views this process as a learning methodology. Spread over more than six months, the process involved a comprehensive mapping of strategies

Fig 1 Map of countries the WEE programme works in



adopted by each partner; the classification of strategies under different themes such as finance, sales and promotion; and analysis of each strategy, separating out what worked from what did not. Overall lessons were then drawn. The text has undergone several iterations, with valuable contributions from each partner. It also draws on numerous progress reports, mission reports, webinars, blogs, PowerPoint presentations, Skype calls and face-to-face learning events and meetings.

As a learning document, it seeks to analyse the various strategies with which we worked in different contexts. We aim to draw out common features of the most promising ones, as well as lessons from efforts that did not go so well – or even failed completely. We examine common obstacles that women entrepreneurs in general face, and those particular to those operating an energy business. We share possible strategies to counter these obstacles, while at the same time capitalizing on the unique strengths and assets that women entrepreneurs offer. Since documentation on women's energy entrepreneurship is only beginning to emerge, wherever relevant, we have crosschecked our lessons with those from women's entrepreneurship in other sectors.

In presenting this document, we should emphasize that the good practices and lessons presented are based on our own experiences, and may not necessarily, or in total, match what others may have experienced. Each context is different and, hence, so should each approach. For this reason, even data on commonly agreed indicators from different countries have to be viewed in their specific context. However, we hope that the experiences, examples and lessons in this document will inspire, enrich and perhaps even guide others who want to engage in last-mile women's entrepreneurship in the energy sector.

It is our hope that these findings will be helpful for other organizations working on women's enterprise development, development partners and governments, but especially for practitioners like ourselves who are working with, or interested in working with, women entrepreneurship models in the energy access space.

> We see women as change agents. By selling, servicing and financing energy products, they can generate positive changes in the lives of their families and communities.
>
> ENERGIA

1.2 Our journey

Set up in the wake of the Beijing Conference, ENERGIA, the International Network on Gender and Sustainable Energy[1], is an informal network that is working towards promoting policies and actions to recognize, validate and support women's roles in sustainable energy development. Until a few years ago, ENERGIA's work focused mainly on supporting energy sector players to mainstream gender in their projects and programmes, and on influencing energy policies at all levels.

Introduction

In 2012 – 2013, two major developments took place in the energy sector: the United Nations General Assembly declared the 2014 – 2024 decade as the Decade of Sustainable Energy for All, and SEforALL was launched as a global partnership. Around the same time, the High Level Political Forum (HLPF) was established as the main United Nations' platform on sustainable development, with a central role in the follow-up and review of the 2030 Agenda for Sustainable Development at the global level. All of these events emphasized the importance of energy issues in sustainable development and that access to sustainable energy services is essential for social inclusion and gender equality. ENERGIA's work on gender mainstreaming in energy projects and the economic empowerment of women through engaging them in energy supply chains and in using energy to increase productive activities has been aligned with these global developments.

In recent years, there has also been a growing conviction that women and their networks can contribute effectively in energy access interventions, especially when it comes to bringing energy services to the poor and un- or under-served communities, popularly termed the "last-mile". This belief was the take-off point for the WEE programme, which ENERGIA launched in 2014. Prior to this, in 2012, ENERGIA, with

Photo: Arley Mardo/ENERGIA

support from the Asian Development Bank (ADB), had implemented a grant project in Bhutan, Nepal and Sri Lanka, and supported the strengthening of women's energy-based enterprises in those countries. In both the ADB grant and the WEE programme, ENERGIA has worked closely with a few key partners, providing them with financial and technical assistance in supporting women's energy enterprises. These two programmes marked a clear departure from ENERGIA's earlier role of advising energy sector programmes on mainstreaming gender, to a more implementation-focused approach in which we support partners in implementing on-the-ground programmes.

It is generally recognized that women and children are often disproportionately affected by a lack of energy access, in that large amounts of their time and labour must then be spent on meeting daily needs (for example gathering biomass for cooking or manually processing grain or other food in the absence of machines) (ENERGIA, ESMAP and UN Women, 2018). The WEE programme envisages a role for women that goes beyond them being only users of energy services, victims of energy poverty and bearing the brunt of a lack of access to energy. We see women as change agents: by selling, servicing and financing energy products services, in their own, surrounding and distant communities, they can engender positive changes in the lives of their families and communities. The WEE approach involves empowering women in the overall energy value chain, from energy generation to its end uses, by offering an integrated package to these women entrepreneurs while, at the same time, creating an enabling environment for them to thrive.

The WEE approach involves empowering women in the overall energy value chain, by offering an integrated package to women entrepreneurs and at the same time creating an enabling environment.

1.3 Operationalizing the programme

In 2014, through an open call for proposals, we identified five partner organizations in Africa and Asia. These organizations were already working on energy access with women and had the interest and capability to innovate and scale-up women-centric energy entrepreneurship models through the newly launched WEE programme. The WEE programme intended to facilitate the development and further strengthening of existing business models that work with women-led micro- and small enterprises. From the outset, we determined that our activities would support women-led micro- and small enterprises in clean energy as well as women entrepreneurs using energy for their businesses (productive use of energy)[2].

Under the programme, women entrepreneurs are supported through a comprehensive package of support, including capacity-building on technology, business skills and leadership; marketing, promotion and distribution support; financial intermediation through financial institutions, savings associations, loan guarantee funds; and one-on-one coaching, all of which will be explained further in subsequent sections.

Throughout the programme, we have worked to understand consumer demand for energy products, link entrepreneurs with potential markets and with technology suppliers, train them on technology products, business skills and marketing, and develop their confidence and leadership to service these markets. In each country, we have tried alternative approaches, assisted the entrepreneurs to tap new markets,

and the partners to forge linkages with relevant local, national and global partners. In some locations, in spite of our best efforts, women's businesses remain fragile, while in others, they have grown rapidly. We also learnt that each of the partner organizations had specific capacity needs that needed to be addressed, and strengths from which other partners could learn. In this document, we explore such variations, identifying good practices as well as lessons learnt on our journey.

1.4 Going beyond implementation

ENERGIA views the WEE programme as a part of its larger mission "to increase women and men's equal and equitable access to and control over sustainable energy services as an essential right to development". The results of the on-the-ground work with entrepreneurs under the WEE programme feed into ENERGIA and its partners' national and global policy work. ENERGIA aligns its work closely with international 'allies', including the Energy Sector Management Assistance Program (ESMAP), the Global Alliance for Clean Cookstoves (GACC), the SEforALL People-Centered Accelerator, the High Political Forum on Sustainable Development on Energy, the Hivos Green and Inclusive Energy Partnership, the Partnership on Women's Entrepreneurship in Renewables (wPower) and Power for All. By doing so, ENERGIA engages normally siloed groups of public and private decision-makers, and innovative on-the-ground implementers (including civil society). At the same time, ENERGIA's presence in high-level bodies, such as the High Level Political Forum on SDGs (HLPF), allows us to channel collective inputs into the highest level of global decision-making. This holistic approach to its engagement in the energy sector makes ENERGIA's approach distinctive from those of other similar networks.

1.5 What you can expect to find in this document

In recounting and analysing the WEE programme, this document is organized in eight chapters. We start by introducing the document to our readers in Chapter 1 and laying out the context in Chapter 2, where we also share ENERGIA's motivation for starting and implementing the programme and explain how the programme is laid out in terms of its broad themes, partnerships and overall strategy. After this, we dive into specific strategies, each chapter dealing with one aspect of the programme. The strategies start with the recruitment of women entrepreneurs (Chapter 3) and training and mentoring (Chapter 4). We then move on to the strategies for sales, marketing and promotion (Chapter 5), and supply chain development and management where we focus on distribution (Chapter 6). Chapter 7 looks into the major bottleneck for women-run enterprises: access to finance. Each of these chapters start with identifying the core issues that need to be addressed, then the approaches and strategies we worked with in the different countries, and finally draw some lessons. We close this document with some thoughts on broader lessons that go beyond individual strategies, and ENERGIA's plans for taking this movement forward.

Footnotes

1 *www.energia.org*

2 In this document, we use the term productive use of energy to mean "utilization of energy – both electric and non-electric energy in the forms of heat or mechanical energy – for activities that enhance income and welfare." (Kapadia K, 2004)

Photo: Bunu Dhungana/ENfRGIA

2 Scaling energy access through women's economic empowerment: context and themes

Today's energy access gap presents a large market opportunity for clean energy. Even though 80% of the people without energy access have incomes of less than USD 3 per day, together they are spending USD 37 billion per year on meeting basic energy needs (World Economic Forum, 2013). However, conventional private sector actors find it difficult to tap this potential as setting up and operating distribution channels to reach last-mile markets is a challenge. Customers in remote areas do not shop through standard retail channels, local distribution chains are fragmented and sales volumes are low. At the same time, opportunities for energy entrepreneurship are increasing as off-grid energy service companies are fast emerging as a disruptive force, marketing household solar electricity systems that can support varying bundles of LED lights, mobile phone chargers, radios, fans and/or high-efficiency televisions (SEforALL, 2018) and clean cooking solutions. As such, decentralized solutions are expected to provide the majority of new access connections in the period up to 2030.

In this context, women's entrepreneurship in energy is gaining recognition as an emerging strategy to bring energy products and services to unserved and underserved communities, that collectively also represent a huge economic growth potential (ENERGIA, ESMAP and UN Women, 2018; SEforALL, 2018; OECD, 2010b). The new global initiatives driving women's energy entrepreneurship include the High-Level Panel on Women's Economic Empowerment launched by the UN Secretary-General in 2016 (UNHLP, 2016 cited in SEforALL, 2018), SEforALL's People Centered Accelerator on Advancing Gender Equality, Social Inclusion, and Women's Empowerment in the Sustainable Energy Sector, as well as more general women-focused investment mechanisms such as the Calvert Foundation's Women Investing in Women (WIN-WIN) initiative[3] and the Goldman Sachs' 10,000 Women initiative[4].

2.1 Why work with women's energy enterprises?

Women's enterprises provide a ready springboard for energy access interventions

Across the globe, a large number of women are engaged in small and medium-sized enterprises (SMEs); and females own 30% to 37% of all SMEs (8 million to 10 million women-owned firms) in emerging markets (ENERGIA, ESMAP and UN Women, 2018). Further, the number of female-owned enterprises is growing at a faster pace than that of male counterparts—with no evidence that women-owned enterprises fail at a faster rate (Niethammer, 2013). All of this suggests that women's SMEs provide a ready springboard for selling and servicing energy products and services, and hence offer a great opportunity.

Women bring a unique value proposition in sales and distribution to the table

Women are well positioned to become last-mile distribution points for energy access. They are able to leverage existing social networks and form trusting relationships with potential customers, especially women (Karlsson cited in Pailman, 2016; SEforALL, 2017b). Through them, companies can tap into local distribution networks and reach last-mile customers. Due to cultural norms in many settings, women may be better positioned to gain entry into homes and access female consumers than male sales agents. Further, since women are often the primary users of energy technologies and fuels, they are at an advantage when discussing the benefits and features of the products they are promoting. Reaching women as customers is important since women play a key role in spending decisions in many homes, although this does vary from place to place. Women make or influence 80% of buying decisions and control USD 20 trillion in global spending. It is projected that, by 2028, women will control close to 75% of discretionary spending worldwide (Ernst & Young, 2012, cited in SEforALL, 2017).

Improving a woman's income has a "multiplier effect" that is critical to reducing poverty and driving economic growth

Women are known to spend, save and invest money in ways different from men. A crucial difference is that when women have discretion over their earnings, they prioritize spending on their families. Women tend to invest more of their money in education, healthcare and children's welfare, and it has been asserted that they may reinvest 90% of their income in their families, while men reinvest only 30% to 40% (Pazarbasioglu, 2017; Iskenderian, 2017; OECD, 2010b; Borges, 2007). As noted by Mastercard's Group Head for Asia, Pacific and the Middle East and North Africa, "women are better at managing the budget and better at making key financial decisions that impact the family such as a child's education" (Mastercard, 2013). According to the International Labour Organization (ILO), women's work, both paid and unpaid, could be the single most important poverty-reducing factor in developing economies and a significant contributor to economic development (IMF, 2013; Borges, 2007; World Bank, 2012).

However, in spite of this recognition, the opportunities surrounding women's energy enterprises are far from being realized. Promoting women as entrepreneurs is difficult, mainly because, compared to their male counterparts, they just aren't on a level playing field. Globally and across sectors, women's businesses need to overcome greater hurdles than their male peers. These bottlenecks include discriminatory cultural and gender norms, lower levels of education and business experience, competing demands of household and family responsibilities, a lack of financing and poor access to productive resources such as land (Mastercard, 2017; Global Entrepreneurship Monitor, 2017 cited in SEforAll, 2018; (FAO, IFAD and ILO, 2010). In Nigeria, women are involved in 70% of agricultural work and in 90% of husbandry, however less than 14% of females have land in their name (FAO, undated). Women have sole ownership of only about 3% of the land area owned or accessed by households in Nigeria; and men's land plots are on average 2.3 times larger (Doss, Kovarik, Peterman, Quisumbing and Bold, 2015). In many countries, women's extremely limited land ownership translates into a lack of collateral for starting a business.

"Gender equality is a core development objective in its own right—and also smart economics"

World Development Report 2012: Gender Equality and Development

What hinders the growth prospects of women's energy enterprises?

- *Discriminatory laws, regulations and social norms prevent women from starting and consolidating viable businesses*
- *Barriers to education, training and information translate into weaker business skills and low confidence*
- *Limited access to financial and business services affects the growth of rural women's businesses*
- *Women's businesses are largely informal, and hence are left out of extension and business development services*

Photo: Solar Sister/ENERGIA

2.2 ENERGIA's Women's Economic Empowerment (WEE) Programme

In 2014, ENERGIA launched its Women's Economic Empowerment (WEE) programme, which aims to empower women economically through supporting their energy enterprises. For ENERGIA, the programme was "an opportunity to test models for empowering women as clean energy entrepreneurs (and customers) to truly understand (and document) what it takes to design, sustain, and scale viable solutions for delivering modern energy services to last mile communities" (Sustainable Energy Solutions, 2017).

What do we mean by economic empowerment?

There are several definitions of empowerment: Kabeer (2001) defines empowerment as "the expansion in people's ability to make strategic life choices in a context where the ability was previously denied to them." It involves individual agency, i.e., the idea of acting on one's own behalf, and collective actions to engage in a process of transformative change.

Economic empowerment has been defined by the OECD as the capacity of women and men to participate in, contribute to and benefit from growth processes in ways that recognize the value of their contributions, respect their dignity and make it possible to negotiate a fairer distribution of the benefits of growth. Economic empowerment includes increasing women's access to economic resources and opportunities including jobs, financial services, property and other productive assets, skills development and market information (OECD, 2010). Our notion of economic empowerment encompasses all of these. A critical element of empowerment is agency which means being able to make and act on decisions, as well as to control resources and profits.

Under the overall umbrella of, and with funding from, ENERGIA's WEE programme, five partners have implemented their own women's energy entrepreneurship projects in seven countries. In addition to funding from ENERGIA, each of these partners secured co-funding from other sources. Each of these projects has evolved in its own way and followed its own trajectory, responding to the local context.

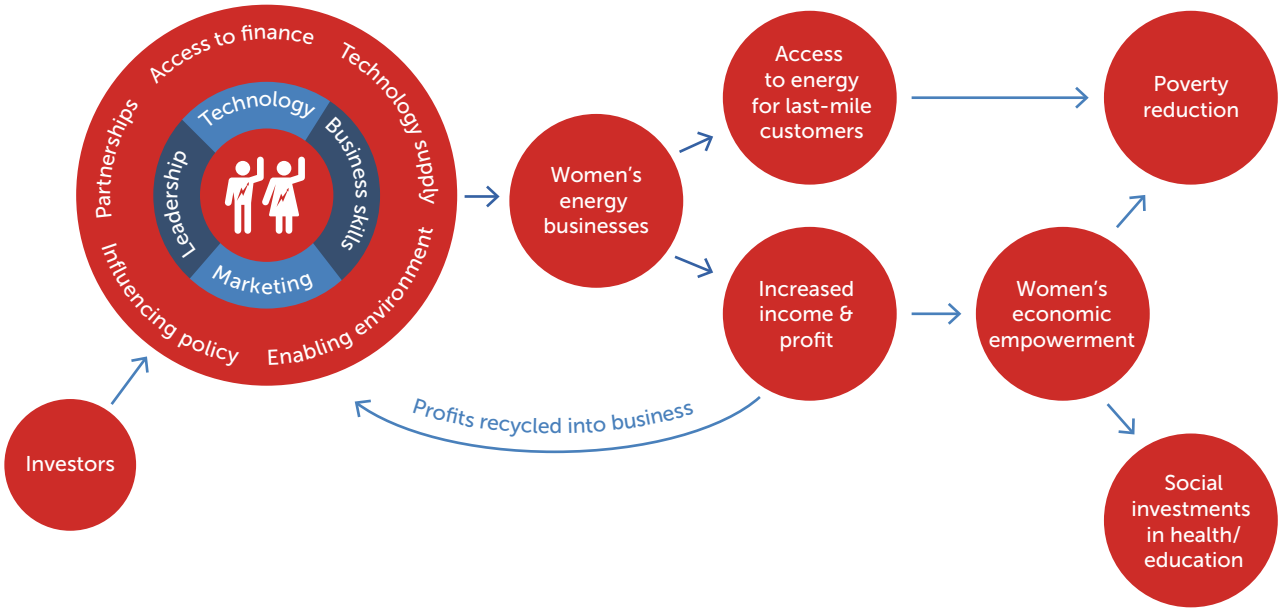
- **Indonesia:** Kopernik Solutions, implementing the Wonder Women programme.
- **Kenya:** Practical Action, with Sustainable Community Development Services (SCODE) as co-partner, implementing the Women in Energy Enterprises, Kenya (WEEK) programme.

- **Nepal:** Centre for Rural Technology in Nepal, with the National Association of Community Electricity Users Nepal (NACEUN) and Practical Action Consulting as co-partners, implementing 'Promoting Women-led Enterprises for Energy Access and Local Production' (WEE-Nepal Project).
- **Nigeria, Tanzania, Uganda[5]:** Solar Sister, implementing the "Solar Sister – A Green Energy Revolution Powered by Women's Enterprise" project.
- **Senegal:** Energy 4 Impact, with Social and Ecological Management Fund (SEM Fund) and Environment and Development Action in the Third World (Enda tiers mode) as co-partners, implementing the Energy Opportunities for Women in Senegal (EOWS) project.

In all these countries, the partners are working on upscaling proven business models to strengthen women-led micro- and small energy entrepreneurs. The programme design is centred around our belief that, because the factors limiting women's entrepreneurship are manifold and intertwined, integrated measures are needed to realize women entrepreneurs' potential. In line with this belief, the partners provide:

- an integrated support package including skills development on technical, business and leadership aspects;
- ongoing mentoring and financial advice on business planning, growth and capital access; and
- partnership-building between various actors in renewable energy value chains supporting women-led renewable energy businesses.

Fig 2 The WEE approach



The overall programme's strategy encompasses a comprehensive entrepreneurship development process that entails a careful identification of the barriers women face in starting a business and then systematically addressing them (see figure 2). Women entrepreneurs are trained in technical, managerial, leadership and empowerment aspects of energy businesses. Each of them also receives customized support from designated mentors, who are trained by the partner organization. The mentors help them on an ongoing basis to identify new market opportunities, develop marketing strategies, identify and transact with suppliers, interact with local government authorities, prepare business plans, and approach and negotiate with financial institutions. The mentors take the support package right to the entrepreneur's place of work and demystify 'business' for them. In addition, the project supports the partner organizations to set up and strengthen product supply chains through the private sector. It also builds partnerships with the private sector and financing institutions, as well as with local government.

Photo: Arley Mardo/ENERGIA

Technologies and products that the entrepreneurs sell

Energy technologies for productive uses of energy, including solar water pumps and solar refrigerators.

Pico-solar systems, including solar lanterns and charging systems for powering additional small appliances.

Solar Homes Systems (SHSs), a step–up from pico-solar systems as they provide a more comprehensive energy service, including lighting and powering a range of larger appliances. Smaller SHSs typically cost between USD 150 and USD 300 and come in a range of pre-designed combinations from 20 Wp to 150 Wp (Bardouille, 2012).

Biomass fuel briquettes, as a biofuel substitute for coal and charcoal, mostly made of green waste and other organic materials, including rice husks, bagasse, ground nut shells, municipal solid waste and agricultural waste.

Improved cookstoves (ICSs), as an alternative for people who use traditional three-stone open fires or inefficient cookstoves. Improved cookstoves use biomass or other cleaner fuels, are more efficient and reduce carbon emissions as well as indoor air pollution.

2.3 Results: What were we able to achieve?

The WEE programme supported 4,153 entrepreneurs working in clean energy businesses and in productive use of energy between 2014 and 2017[6]. These women have sold clean energy technologies and fuels (such as fuel-efficient cookstoves, solar lights and biomass briquettes) to 2.9 million people who previously did not have adequate and affordable energy services. The programme's results have been demonstrated on two levels:

A. **Entrepreneur level:** Women operating growth-oriented clean energy enterprises. In 2017:

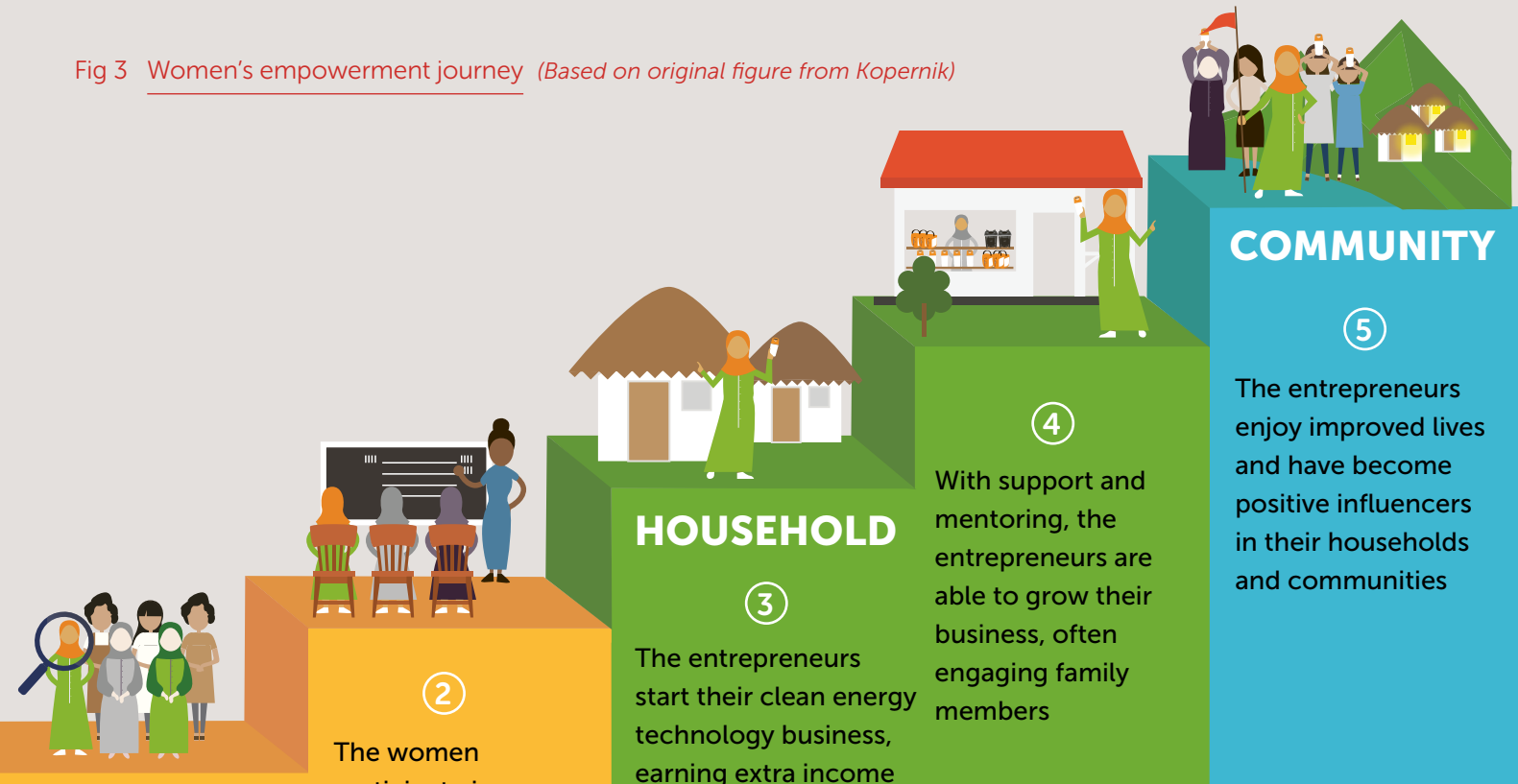
- 70% of the entrepreneurs receiving programme support recorded a positive profit margin in each quarter;
- more than 95% of the entrepreneurs who had taken out loans or consignments have not defaulted on loan repayment instalments;
- 82% of the entrepreneurs were involved in decisions on major household purchase decisions; and
- 72% of the entrepreneurs were actively taking business decisions for their enterprises.

Starting with almost nothing or a small energy business, many of these entrepreneurs become social leaders in their communities. They are role models for other women in their communities, and show that women like them can run successful businesses, and negotiate and advocate for their interests (see figure 3).

B. **User level:** Through these enterprises, poor and difficult-to-reach populations have gained access to clean energy products and services, such as solar task lights, lamps and home lighting systems; improved cookstoves and fuel briquettes.

In addition to the above programme-level results[7], tables 1 - 4 provide a more nuanced presentation of the results at the level of the various partners. The data presented in these tables are from multiple sources such as sales records of entrepreneurs, annual surveys and end of project evaluations.

Fig 3 Women's empowerment journey *(Based on original figure from Kopernik)*



INDIVIDUAL

1

Women are recruited to the programme

2

The women participate in training sessions on technology, finance, marketing, business skills and leadership, to kickstart their journey

HOUSEHOLD

3

The entrepreneurs start their clean energy technology business, earning extra income and contribute to their family's welfare.

4

With support and mentoring, the entrepreneurs are able to grow their business, often engaging family members

COMMUNITY

5

The entrepreneurs enjoy improved lives and have become positive influencers in their households and communities

IMPACT

CLEAN ENERGY

INDIVIDUAL

- **Income and profits**
- **Knowledge and skill set**
- **Self-esteem**
- **Well being**

HOUSEHOLD

- **Asset ownership**
- **Financial security**
- **Bargaining power**
- **Decision making**

COMMUNITY

- **Participation in community**
- **Employment**
- **Change agent**

Table 1 **Entepreneur level impact 1:**

Entrepreneurs report increased income and life improvements for their families

Solar Sister	Practical Action/ SCODE
• *A Solar Sister entrepreneur reports average monthly sales valued at USD 77 (Solar Sister, 2017a).* • *90.6% of parents in off-grid households reported that their children's academic performance had improved since their households starting using solar lighting.* • *Reinvestment of business income to meet household needs and education expenses (Solar Sister, 2016a).* • *92% of entrepreneurs report having decision-making power when it comes to deciding how the money they earn will be used (Solar Sister, 2017b).*	• *53% increase in the number of women contributing to the family income.* • *USD 49 to USD 195 earned as stable monthly income.* • *Over 79% of the entrepreneurs reported full involvement in decision-making over household assets, children's schooling and how income is used in the family.*

Data source: Oenga and Nekesa, 2018

Photo: Solar Sister/ENERGIA

Table 2 **Entrepreneur level impact 2:**

Entrepreneurs feel empowered and in control of their lives. They play a role in decision-making, albeit together with their husband or business partners.

CRT/N

- *80% of the entrepreneurs report making their own decisions in the enterprise. Those entrepreneurs that called their enterprise a family business said that their husband or other family members helped them make business decisions.*
- *67% of the entrepreneurs said they are involved in decision-making at the household level, either solely or jointly with their husband.*
- *94% of the entrepreneurs reported increased confidence in doing business as the most important change they have observed in themselves, while 48% think it is their increased ability to maintain books and records (some were of the opinion that while the businesses are small, they are able to track inventory and sales without formal account books).*

Data source: Scott Wilson Nepal, 2017

Energy 4 Impact[8]

- *More than 80% of the entrepreneurs identify personal empowerment as a major outcome of the project. During interviews, they fully agree with at least one of these statements about themselves: that they feel confident speaking in public or to strangers, that they can fix a problem they face at work, they set realistic work goals for themselves and meet them, and are able to find new customers. In each case, the percentage of people who disagreed with the statement was around 10%.*
- *The entrepreneurs are the primary decision-makers in majority of the businesses supported by the project. 90% state that they are directly involved in the decisions of the business. Sometimes, women take those decisions independently, sometimes together with the group in which they participate. Husbands were the sole decision-makers in only 10% of the business cases.*

Data source: Clowes and Benigni, 2017

Table 3 **User level impact 1:**

Last-mile communities gain access to energy products and services.

Solar Sister	Kopernik
• *A 2017 survey showed that Solar Sister customers are mostly living in communities physically far removed from the main highway, and hence represent the last-mile (CITE, 2018)*[9].	• *The Wonder Women programme worked in the Indonesian provinces of West Nusa Tenggara (NTB) and East Nusa Tenggara (NTT). Both these provinces are islands distant from the capital, and are literally and figuratively last-mile communities. NTB and NTT have the lowest regional GDPs per capita in Indonesia, USD 1,785 and USD 1,216 (Statistics Indonesia, 2016) respectively. Both have large gaps in energy access: 41.07% and 22.78% of households are un-electrified in NTT and NTB respectively, far above the national average of 8.84% (Ministry of Energy and Mineral Resources, 2016).*
• *97.8% of Solar Sister's customers in Tanzania were dependent on kerosene before purchasing a solar product from Solar Sister, and 81.2% of customers were dependent on a farming-related activity for their income. Of the customers who purchased solar lights, 91.6% no longer used kerosene (Santa Clara University, 2017)*[10].	• *Before using ICSs sold by Wonder Women, 80% of the households cooked with a three-stone fire. After acquiring the stove, 47% have reduced their use of an open fire, and 15% have stopped using it completely. A frequent reason given for not completely abandoning their three-stone-fire is because one stove (the newly acquired ICS) is insufficient to fulfil all their needs of cooking meals, heating water and preparing animal feed*[11].
• *In Tanzania, off-grid households that started new businesses with solar lights increased their income by an average USD 13.08 per week. Off-grid households that strengthened existing businesses increased income by USD 7.37 per week.*	• *72% of the solar light users used kerosene lamps before they purchased the solar technologies. Six-months later, 23% continued to use kerosene lamps, and all users, regardless of their fuel use, reduced their monthly lighting expenditure by an average of 32%.*

Table 4 **User level impact 2:**

Users save time and money on fuelwood (through using improved cookstoves) and kerosene (through solar lighting devices)

Practical Action / SCODE	Energy 4 Impact
• *Households using ICSs reported saving over 40% in the cost of fuel and a 50% reduction in quantity of wood used for cooking after adopting and using ICSs and fuel briquettes*[12].	• *On average, households using solar lamps sold by the entrepreneurs spent a fifth (USD 0.60 per month) of those using grid power for lighting (USD 3.11 per month).*
• *Before the project, women would collect one load of fuelwood each day taking 2-5 hours. After installing ICSs, a load lasts up to 3-4 days (Siaya, Kisumu, Kakamega counties).*	• *Households using solar lamps or an SHS use them for more hours each day (6.2 and 5.4 hours respectively) than those who use grid power for lighting (4.6 hours per day). Those relying on candles and battery-powered devices have the fewest hours of lighting per day.*
• *Users of solar products for lighting report a reduction in the cost of fuel for lighting (kerosene) of up to 100%. This was after offsetting the cost of acquiring solar appliances.*	• *Those using three-stone stoves travel twice as far to collect fuel for cooking than users of ICSs or other cookstoves. In so doing, they spend 2 to 3 times longer than ICS users per week.*
• *Those who adopted briquettes for cooking reported a 30% reduction in the cost of fuel for cooking.*	
Data source: Oenga and Nekesa, 2018	*Data source: Clowes and Benigni, 2017*

Photo: Arley Mardo/ENERGIA

2.4 Partner overview

The WEE programme works with five core partner organizations, each of which has teamed up with several partners in the countries they work in. While the core partners are social enterprises and civil society organizations, their in-country partners represent a wide range of organizations ranging from national and county governments; equipment suppliers, non-government associations; cooperatives; local financing institutions including micro-finance institutions (MFIs), women's associations and other community-based organizations.

Centre for Rural Technology, Nepal (CRT/N)

CRT/N is a non-governmental organization engaged in developing and promoting appropriate rural technologies effective in meeting the basic needs and improving livelihood of rural people.

Started in 1989
Partners for WEE-Nepal project: *National Association of Community Electricity Users-Nepal, (NACEUN) and Practical Action Consulting (PAC)*
Area of operation: *Six districts in Nepal*
Women entrepreneurs: *805*
Population reached: *182,219 since 2014*
Technologies promoted under WEE-Nepal project: *ICSs, productive uses of energy*
https://www.crtnepal.org/

Photo: Bunu Dhungana/ENERGIA.

Photo: Judith Quax/ENERGIA.

Energy 4 Impact

Energy 4 Impact is a non-profit organization working with businesses to eradicate energy poverty in Africa

Started in 2006. *Operations in Senegal started in 2012.*
Partner for WEE project: *SEM Fund*
Population reached: *17 million people in all countries*
Technologies promoted under WEE project: *ICSs, productive uses of energy, pico-solar and SHSs*
https://www.energy4impact.org/

Photo: Arley Mardo/ENERGIA

Kopernik Solutions

Kopernik is a non-profit organization headquartered in Indonesia that finds what works to reduce poverty in the last mile.

Population reached: *Over 600,000 people since 2010*
Technologies promoted under WEE project: *ICSs, solar lights (lanterns and home systems), water filters*
https://kopernik.info/


Photo: Sven Torfinn/ENERGIA.

Practical Action, Eastern Africa

Practical Action is a global charity that uses technology to challenge poverty in developing countries. Through innovative thinking and technical knowledge, they enable poor communities to produce practical solutions to their most pressing needs.

Started in 1966. *Operations in Eastern Africa started in 1984*
Partner for WEE project: *Sustainable Community Development Services (SCODE)*
Population reached: *between 2016 and 2017, reached 2.8 million people globally*
Technologies promoted under WEE project: ICSs, pico-solar and biomass briquettes
https://practicalaction.org/east-africa

Photo: Solar Sister/ENERGIA

Solar Sister

Solar Sister is a social enterprise business empowering women to deliver clean energy products to last-mile communities in sub-Saharan Africa.

Started in 2010
***Area of operation**: Nigeria and Tanzania*
***Women entrepreneurs:** over 3,000*
***Population reached so far:** 1 million*
***Technologies promoted under project:** solar lanterns, solar home systems, cookstoves (ICSs)*
https://www.solarsister.org/

2.5 Partner business models

In working with entrepreneurs, the partners are working with a range of business models and continually evolving their strategies. As summarized in the table below, the strategies can broadly be organized under the themes of recruitment, training and mentoring; promotion, sales and marketing; distribution; and access to finance.

In the chapters that follow, we take each of the above themes and discuss the various strategies adopted, and analyse what worked and what did not, extracting good practices and lessons learnt from these.

Footnotes

3 https://www.calvertimpactcapital.org/initiatives/gender
4 https://www.goldmansachs.com/citizenship/10000women/#
5 In late-2016, Solar Sister's operations in Uganda were wound up.
6 In this document, we use the term productive use of energy as "utilization of energy – both electric, and non-electric energy in the forms of heat or mechanical energy – for activities that enhance income and welfare." (Kapadia K, 2004)
7 Compiled from data collected by each partner as part of the common monitoring framework.
8 The data presented are from the final evaluation study of the EOWS project. The final evaluation study assessed the level of capacities built for the entrepreneurs through their responses to six key indicators/questions: (a) I feel confident speaking in public or to strangers, including people I deal with in my business; (b) I am confident I can fix a problem I face at work; (c) I set realistic work goals for myself and meet them; (d) I support other entrepreneurs and/or sales agent peers; (e) I am confident that I am able to find new customers; and (f) Who is responsible for making decisions in your business.
9 In 2017, with the support of the US State Department's wPOWER program, Solar Sister partnered MIT's Comprehensive Initiative on Technology Evaluation to study last-mile customer preferences and evaluate the reach of Solar Sister's women-centred distribution chain. MIT conducted over 600 interviews in Tanzania with both Solar Sister customers and non-customers, resulting in the report, "Reaching the Last-Mile: Women's Social and Sustainable Energy Entrepreneurship." The study created a customized framework to evaluate the "last-mileness" of interviewees. MIT combined poverty level, grid access and remoteness to form a Last Mile Index (LMI).
10 In June 2017, the Miller Center for Social Entrepreneurship conducted action research to study the social and material impact of Solar Sister's model on end customers. The report, Turning on the Lights, assessed the impact of solar lanterns on education, health, productivity, finances and women's economic and social empowerment. Sample size: 257
11 M&E data collected over three years (2014-2017) through household interviews with randomly sampled Wonder Women and technology users Sample size 100.
12 Based on interviews with 67 entrepreneurs and 296 users of technologies.

Table 5 **Partner strategies**

Addressing themes that require attention when working with micro- and small-scale women entrepreneurs

	Practical Action	Solar Sister	CRT/N	Energy 4 Impact	Kopernik Solutions
Recruitment	• *Through existing groups such as Village Savings and Loan Associations (VSLAs)* • *Community meetings used to spread information about the project*	• *Women with background in nursing, teaching, farming and business* • *Recruitment using Community Champion model*	• *Members of MFIs and those endorsed by community based organizations are preferred* • *Community meetings used to spread information about the project*	• *Members of existing women's groups preferred.* • *Community meetings used to spread information about the project*	• *Women with social and/or community services are encouraged to join as entrepreneurs* • *Community meetings used to spread information about the project*
Learning & practicing entrepreneurship: training & mentoring	• *In-session start up and refresher courses (technology, business skills and leadership)* • *Mentoring through technology and business mentors*	• *Start-up and refresher courses (technology, business skills, agency empowerment and leadership), provided through sisterhood groups*	• *In-session, start-up and refresher courses (technology, business skills and leadership), separate for starting and existing businesses*	• *In-session start-up and refresher courses (technology, business skills and leadership)* • *Mentoring through technology and business mentors*	• *In-session start-up and refresher courses (technology, business skills and leadership)* • *Mentoring through technology and business mentors*
Promotion, marketing & sales	• *Market assessments used to develop focused marketing strategies* • *Women supported to register businesses, brand products; local networks to sell products*	• *All entrepreneurs are kitted out with a shirt, backpack and marketing materials, with clear branding* • *Entrepreneurs use sales techniques such as Site Seller for personal, one-to-one selling*	• *Generic promotion on ICSs done through linking with local government programmes and channels*	• *Village chiefs and local community leaders are informed about the project and activities.* • *Organization of customized marketing events and support to entrepreneurs*	• *Entrepreneurs are trained in conducting technology fairs* • *Village chiefs and local community leaders are invited to Tech Fairs.* • *Wonder Women are kitted with Wonder Women shirt, totebags & marketing materials*
Reaching the last mile	• *Women as members of VSLAs make own sales reaching out to other counties* • *Women are hired as commission agents to sell in distant locations*	• *Solar Sister entrepreneurs live and work in last-mile communities*	• *ICS Entrepreneurs in a district hire other women as sales agents on a commission basis*	• *Women as members of women's groups each make sales, reaching out in distant locations*	• *Entrepreneurs hire other women, friends and relatives to reach distant locations and other islands*
Finance facilitation	• *Utilizing community-based savings groups that are empowered to lend to members*	• *Entrepreneurs are provided with start-up kits but encouraged to purchase inventory in small batches in line with their affordability*	• *For productive use applications, entrepreneurs are linked to local financing institutions* • *Women's Entrepreneurship Development funds set by local Community Based Organisations*	• *Loan guarantee fund utilized to ease loan terms and buy down interest rates to provide equipment on credit to entrepreneurs* • *Support supplier credits*	• *Early in the programme, technology was provided on a consignment basis* • *Later, entrepreneurs were linked to local financing institutions but made little use of the credit functionality*

Photo: Solar Sister/ENERGIA

3 Recruitment matters

For organizations looking to work with entrepreneurs, an early question in an entrepreneurship development programme is: who is likely to be a "successful" entrepreneur? Defining success for an entrepreneur is difficult, and varies from context to context. For the WEE programme, being a successful entrepreneur means more than starting a new venture. It means starting and sustaining energy businesses that have steady (and preferably growing) sales, it means developing the self-confidence to manage business relationships with customers, suppliers, banks etc.; an ability to expand into new markets and products; and the grit to innovate and adapt to changes as required.

For an entrepreneurship development programme, selecting the "right" people is important, not only to minimize the dropout rate among entrepreneurs, but also to ensure that precious project resources are spent on those who are likely to benefit most meaningfully from the effort.

When we started the WEE programme, most of our partners did not have concrete selection criteria for recruiting entrepreneurs. Basing recruitment criteria on initial enthusiasm proved not to be enough. As time went by, and the number of entrepreneurs increased, we started to see diminishing interest and sales among many, which eventually caused them to leave the programme despite receiving the same training and mentoring as the more successful and active ones. Over time, however, the partners developed context-specific criteria to work with.

In seeking out potential women to be entrepreneurs, an obvious approach is to work with women who already have "relevant" experience, either in terms of formal entrepreneurial experience in energy or similar products, and/or access to credit, important for starting a business. However, this may limit who is able to participate in the programme, and is often particularly limiting for women. Selection criteria (such as prior sales experience, owning an enterprise or a shop, a minimum education level, and access to credit and networks) reduce the number of women who are eligible for these opportunities. Additionally, it may end up excluding women working in informal economies who potentially stand to gain significantly from formal training, market access and peer support. In Nepal, when identifying potential women to engage in stove businesses for the Women's Economic Empowerment (WEE-Nepal) project, the first choice was women who had previously received some training on ICSs under various projects and programmes. However, the strategy was mostly ineffective because, firstly, there were not that many women who had received such stove training, and secondly, a number of women who had received training some time back had left the stoves business and were not interested in restarting.

Dropouts are inevitable

In an entrepreneurship development programme, it is inevitable that there will be dropouts. In order to prepare for attrition during project implementation, Practical Action and SCODE in Kenya recruited 811 entrepreneurs rather than the targeted 730. Out of these 811 recruited entrepreneurs, 247 dropped out, while 537 entrepreneurs were mentored for at least 15 months by the end of the project. Most of the entrepreneurs who dropped out did so because of factors beyond their control such as illness, relocation, other business demands and inability of the entrepreneur to provide regular records and make themselves available for mentoring sessions.

3.1 Who is likely to be a "successful" entrepreneur?

Women who are part of social networks make good businesswomen

In rural areas, most women entrepreneurs work on several things and our experience is that they use the energy business as one of many revenue streams, at least during the start-up period. This is understandable given that they want to minimize their risks while starting a new, in this case energy, business. It is only after the business grows beyond a certain level that they might focus entirely on the energy business, and give up others.

In the Solar Sister project, the entrepreneurs come from a variety of backgrounds including nursing, teaching, farming and business. Most have mentioned that their "other" occupation benefits from working as a Solar Sister entrepreneur and vice versa. Most teachers and nurses are strongly networked, since this is inherently built into their occupations, making it easier to sell products in their communities.

Kopernik's 2016 annual programme review in Indonesia covered 55 high performing Wonder Women[13]. The analysis showed that a background in social and/or community services provides women with a network of potential customers due to the trust they enjoy (Nakamura, 2016a). A wider network means more "warm" contacts, which typically lead to a higher sale-conversion rate compared with 'cold' contacts. Further, a higher level of trust eases introducing new and unknown products into a community. Women with networked backgrounds are noticeably better performers in terms of selling energy products: in a survey of 140 Wonder Women, 78% of the 55 highest performing entrepreneurs made extensive use of their social networks as NGO workers, teachers and public servants (ibid).

Using social and professional networks to bring energy access
Esupati Abraham Materu, Arusha, Tanzania

Esupati (left) is a nurse and a Solar Sister entrepreneur. Her experience working in rural Tanzania—where nurses struggle to care for patients after dark—inspired her belief that every hospital should have access to reliable energy. Esupati joined Solar Sister in 2013. Since starting her business, she has sold 1,067 solar products and ICSs, bringing improved clean energy access to over 5,300 people. She sells her products through her patient network.

Photo: Kopernik

Building on name, trust and respect

Maria Nogoused, East NUsa Tenggara, Indonesia

One of Kopernik's high-performing Wonder Women, Maria Nogoused, has been a village instructor for a government family-planning programme for decades. Now she has retired, she leverages her network and influence to promote clean energy technologies. Thirty years as a community worker helps Maria in introducing clean energy technologies to communities in remote East Flores since most of them already know, trust and respect her. When she visits the villages to introduce the solar lights, water filters and clean cookstoves, people welcome her with enthusiasm.

Women who show some kind of resourcefulness are likely to be good candidates. This can be demonstrated in various ways

- **Ability and willingness to make an initial investment and using the product themselves are highly desirable.**
  To begin with, the ability and willingness to purchase and use some of the technologies themselves is a useful criterion as it demonstrates the entrepreneur's commitment to the programme. Once an entrepreneur has used a technology herself, she is clearly better positioned to present it to a potential customer and answer questions about it. Once she has knowledge of the product and knows how it works, she is able to provide good service if it breaks down. In all our programmes, the entrepreneurs start their businesses small, buying and selling a few systems (maybe only three or four), and using the profits to purchase more inventory. This initial investment is necessary.

- **Some experience in running a business or sales experience, however small, is useful.**
  Some selling experience, however limited, is an early indicator of a drive to succeed. It helps in eliminating non-starters from the onset. The project recruited entrepreneurs who – even though they had no demonstrated entrepreneurship experience – were willing to invest their own resources, including time and money, to start an energy business. Entrepreneurs who did not have the financial resources to make an initial investment, but had some sales experience, also performed well.

Being mobile helps tremendously

As local markets saturate and entrepreneurs need to expand their consumer base, access to a vehicle becomes critical. Apart from the convenience, it saves precious time waiting for public transport. Motorbikes are preferable to public transport as they go further, both in reaching rural communities and in reaching a specific venue (e.g. a customer's house). In practice, if the women entrepreneurs are not able to expand the reach of their businesses to communities outside their own communities (either themselves or with the help of others), then they will not be able to upscale their businesses, because their market will be soon saturated.

In Kopernik's experience, Wonder Women who have access to a motorbike sell double the quantity of technology units as those who do not (Nakamura, 2016b). Kopernik collected data on the attributes of 55 Wonder Women with the highest sales records to identify any commonalities. Among others, data on household asset ownership were mapped against sales performance data. While women without a motorbike were selling an average of 3.6 technology systems a month, those with access to a motorbike were selling eight, more than double. The group that did not own a motorbike earned on average USD 9.97 per month while, for the group owning a motorbike, this amount was USD 22.16[14].

Data from Solar Sister also show that mobility, specifically access to motorbikes, is a major success factor for Solar Sister entrepreneurs serving last-mile communities. In Nigeria, Solar Sister entrepreneurs who have access to a motorbike outperform all other entrepreneurs, even those with access to a private car or bicycle (see figure 4). The average sales of these entrepreneurs were 60% higher than those using other forms of transport (Mackey, 2018).

Fig. 4 Impact of transportation access on entrepreneur sales

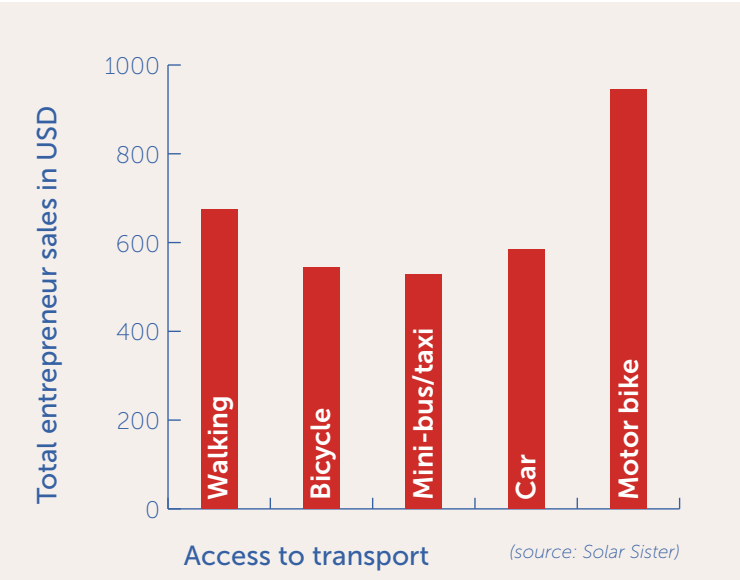


Photo: Bunu Dhingana/ENERGIA

Level of education is not a deciding factor in women's entrepreneurial success and neither is knowledge of energy technologies

The majority of the entrepreneurs that we are working with have, at best, a few years of basic schooling. Neither the lack of education nor a lack of knowledge of energy technologies has been an insurmountable obstacle in any country. In Kenya, 53% of the entrepreneurs that Practical Action and SCODE work with have only primary school education. However, this has not been a hindrance for the project: the entrepreneurs' knowledge of the national language, Kiswahili, has been sufficient for them to understand the training concepts and to engage with customers and suppliers. In the few cases where an entrepreneur faced a challenge with Kiswahili, the project team paired her with someone else who understood the language to aid interpretation. Training sessions are as practical as possible (with little reliance on reading and writing). The only challenge has been maintaining records for the less-literate entrepreneurs. In such cases, they have found family members who could support them with recordkeeping.

Support from other family/household members is an added advantage

Women entrepreneurs are generally more successful if their spouses and/or other household members support their activities. This can be in the form of putting money aside to invest in their businesses, using their own network to increase the outreach of the businesses and/or helping with the distribution of the products, as well as recordkeeping help. As the business grows however, there may be the risk that the male family member takes over the business but, so far, this has not been a problem.

3.2 How to locate entrepreneurs who are likely to be successful?

Social and professional networks are a great pool of women with good networks, and hence a good way to find likely entrepreneurs

Recruiting through social and professional/business networks and one-on-one connections is a low-cost and effective strategy. It does not involve substantial costs, eliminating the need for meeting rooms or venues to gather women for recruitment drives. Local networks with their intrinsic knowledge about the community are also likely to know local women well and can advise on who is likely to be a good candidate. In Kenya, women who are part of social groups such as VSLAs readily came forward to join the WEEK (Women in Energy Enterprises in Kenya) project. The VSLA route also helped overcome some of the other challenges such as securing finance for initial investment since the VSLAs have an ongoing system of savings and loans within the group, and are able to pool funds. Solar Sister works with local women's savings groups, church groups and farmers' cooperatives to reach out to potential entrepreneurs. In Nepal, members of micro-finance institutions (MFIs) proved to be a good pool of entrepreneurial women. Further, community-based organizations such as the CREEs[15] (Community Rural Electrification Entities) also helped in recruiting appropriate candidates and selecting the right businesses to promote.

In recruiting, one-on-one connections and referrals work well

Solar Sister's main strategy to expand its network is to recruit through its *Community Champion Model*. Community Champions are local leaders that have close ties to their communities and have strong connections to women's groups and networks. Instead of approaching possible recruits in large groups and at community events, Solar Sister's field staff work with Community Champions to target potential recruits on a one-on-one basis. From there, these new recruits introduce Solar Sister to their own groups to bring more women into the programme. This works well for the women who are more comfortable grasping opportunities that come from people they know and trust, rather than from strangers.

Fig 5 Recruitment technique vs. Average monthly entrepreneur sales

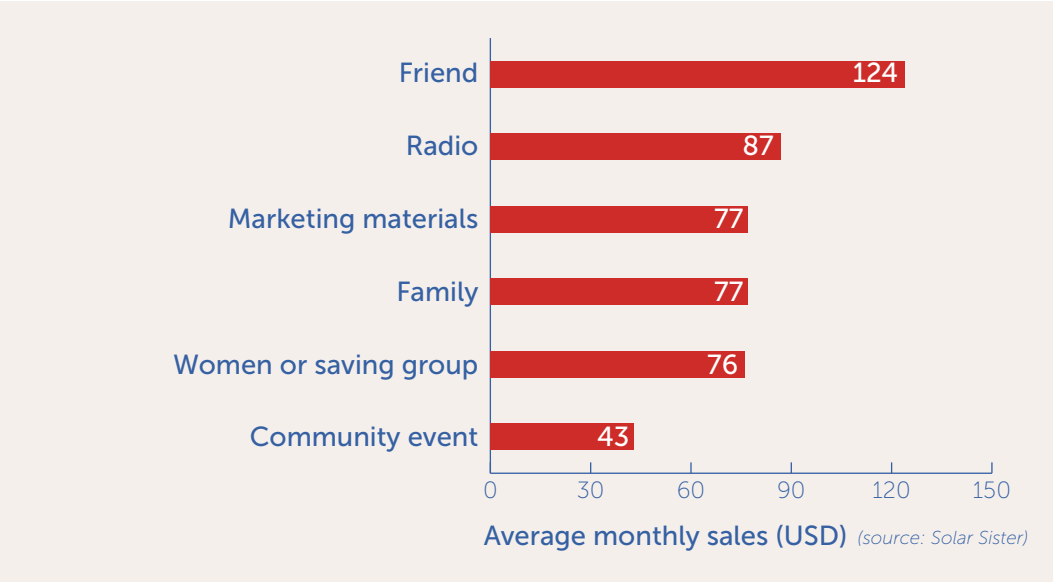


Photo: Solar Sister/ENERGIA

Entrepreneurs recruited through friends sell close to three times as much as entrepreneurs recruited through community events and also have a longer average business life.

3.3 Lessons on recruiting potential women entrepreneurs

The above lessons on selection and recruitment are guided by partners' experiences and also specific studies and programme reviews carried out by Kopernik and Solar Sister. While some of these selection guidelines are used by the implementing teams as a heuristic tool to help identify women who are likely to succeed, the field teams also mostly review potential candidates on a case-by-case basis. Although some of the best performers might strictly not meet all of these desirable attributes, we nevertheless see this list of criteria as a valuable starting point and guide to consider when selecting potential entrepreneurs. While these criteria do inform the selection, the partners do not discriminate in the recruitment process, for example between those who have access to a motorbike and those who do not, rather the programme tries to facilitate the acquisition of a vehicle for a potentially good entrepreneur. In the case of mobility, we realize the challenge is more complicated than binary options of "having" or "not having" a vehicle. The bottom-line is the project managers need to work towards improving the mobility of the entrepreneurs, regardless of whether the women initially have access to motorbikes. The key lesson for designers and managers of energy entrepreneurship programmes is to assess what targeted support, beyond access to products and training, can support entrepreneurs in their challenging local contexts.

When recruiting potential women, ensure that they understand fully what they can expect from the project and what they are committing themselves to.

Lydia Muchiri, Practical Action's project manager for the Women's Economic Empowerment Kenya (WEEK) project, emphasizes that the expectations of project beneficiaries are not always in line with the project's goals. This can lead to misunderstandings and low project uptake. For this reason, it is important that all involved parties, the organization and the entrepreneurs, know exactly what they can expect from each other and what their commitments would be if engaging in the activity. In the WEE programme, this is also the time to allay any doubts among the potential entrepreneurs about their ability to succeed. It is important to convey that the project intends to offer continued support in order for the enterprises to survive and thrive.

Footnotes

13 Kopernik's women's entrepreneurship development programme is called the Wonder Women programme.

14 Estimates based on average margin per technology sold.

15 CREEs are community-based organizations that purchase electricity in bulk from the grid and retail it to users within their command area.

Photo: Arley Mardo/ENERGIA

4 Learning and practicing entrepreneurship: What is needed?

When women entrepreneurs enter a clean energy business, they start working with unfamiliar technologies, reaching out to new customers and having to negotiate with suppliers. They need continued support until their enterprises are mature and they are confident of running them independently. Organizations adopt different ways to provide this support. In the WEE programme, the mantra has been *recruit, train and mentor* (see figure 6). This means that all entrepreneurs are recruited through a systematic process after which they participate in training sessions. The initial training sessions usually take several days, and are followed by shorter refresher sessions over the course of the programme. Parallel to the refresher training sessions, the women receive one-on-one support from a designated mentor for at least a year, either individually or in small groups.

Fig. 6 The recruit – train – mentor approach *(Based on original figure from Kopernik)*

Photos: Bunu Dhungana/ENERGIA, Energy 4 Impact, Solar Sister/ENERGIA, Sven Torfinn/ENERGIA, Arley Mardo/ENERGIA

4.1 Teaching and practicing entrepreneurship: Start-up and refresher training on technology and business skills

Education and training are not only about raising skill levels, but also about building confidence and changing women's perceptions of themselves.

One of the main issues in working with women entrepreneurs is that most lack confidence in themselves. Not having seen many such businesses in their neighbourhood, they do not consider clean energy business as a viable opportunity for profitable and full-time self-employment. When women start new energy businesses, apart from their lack of business and technical skills, their lack of confidence and inadequate marketing skills, characterized by hesitation in holding sales discussions with potential customers or negotiating with suppliers, are important areas that need to be worked upon. Hence, education and training are not only about raising skill levels, but also about confidence building and changing women's perceptions of themselves.

Fig. 7 Training compentencies

Before they start out, the entrepreneurs are trained in technology use and maintenance, sales and marketing, bookkeeping, public speaking, and agency and empowerment. Training involves everything from teaching entrepreneurs how to leverage existing community networks to understanding and managing finances (see figure 7). In general, the sessions include the following topics:

- Skills in the technical, managerial and business aspects of commercial operations
- Sales approaches
- Information on market and legal requirements
- Purchase of equipment and inputs, and inventory management
- Counselling on credit opportunities
- Leadership, agency and empowerment aspects

Strategizing training

A number of good enterprise development tools are readily available, so there is no need to develop new ones. Tools developed by the UN's International Labour Organization (ILO) are particularly useful open-source materials. Our partners have adapted them to their specific contexts, literacy levels, native languages and demographics for their training sessions.

- The Start and Improve Your Business (SIYB)[16] programme is a management-training programme that focuses on starting and improving small businesses as a strategy for creating more and better employment in developing economies and economies in transition. The long-term overall SIYB objective is to contribute to economic growth in general, and to the creation of more and better jobs in micro- and small enterprises in particular.

- The Expand Your Business (EYB)[17] offering is an integrated business training and support package for small- to medium-scale enterprises that have growth objectives in mind. These small and medium enterprises with growth potential are called Growth-Oriented Enterprises (GOEs). The EYB programme is "integrated" in that it provides a number of interventions that are important for the growth and expansion of businesses. These include both training and non-training interventions.

- The Empowered Entrepreneur Training Handbook[18] by the Global Alliance for Clean Cookstoves (GACC) provides business skills, empowerment and leadership training curricula and tools that can be implemented to support women sales agents and entrepreneurs with whom you work.

Using existing training materials, the partners have developed a number of training tools to suit their own context. Solar Sister, for example, developed Solar Sister's Business Development Associate Handbook, a training tool for Business Development Associates (BDAs) that covers the Solar Sister basics and the roles

of BDAs in supporting entrepreneurs. Kopernik developed three training modules, Basic I, Basic II and Advanced, which are imparted at different stages of the Wonder Women's journey as entrepreneurs.

Who conducts the training is as important as the training content.

Engaging trainers who speak the local language/dialect is necessary. Some partners outsourced the training component to specialized organizations that have the capacity and technical expertise to deliver training and ongoing support to the entrepreneurs. In Nepal, the capacity building was implemented in two steps: *business development training* at the beginning, when the entrepreneurs were recruited; and *skills training* after they had gained some experience with their businesses. Both training events were used as opportunities to link up the entrepreneurs with the local business environment, as well as with government agencies. Experts from local agencies – government as well as private – such as CTEVT (The Council for Technical Education and Vocational Training) were engaged.

Training sessions are a good occasion to engage local leaders.

It is a good idea to invite community leaders to part of the training, for example to open the training sessions, so that they are aware of the training and carry a positive message about the work done by the entrepreneurs. Community leaders in all countries play a crucial role in supporting the entrepreneurs, and also in linking them with ongoing initiatives and possible financing sources.

In the WEE programme, training is seen as an *investment* that the entrepreneurs must make. Participants do not receive compensation for revenue or wages lost.

Paying entrepreneurs to attend training programmes is not recommended

Historically it has been a practice in many developing countries for trainees to receive monetary compensation to make up for the revenue or wages lost when they attend training programmes. However, in the WEE programme, the time invested in attending training sessions is seen as an investment that the entrepreneurs should be willing to make if they find the training useful. The training programmes are offered free of charge and the entrepreneurs should be motivated to attend by the quality of training and interest in growing their businesses. What does help is if snacks and food are provided during the training, given the fact that training sessions generally last a number of hours. As we saw in Chapter 3, women who are willing and able to make an initial investment, are more likely to succeed.

4,2 Invest in building entrepreneurs' self confidence

Being an entrepreneur calls for scaling new mountains every day, right from opening a stall in the local market, to crossing county borders in search of new customers, dealing with monetary transactions, administering inventory and managing employees. All of these require substantial self-confidence and the courage to step out of one's comfort zone. Early on, we realized this was a gap and found that the entrepreneurs need to go through a process to discover and then utilize their own inner strengths, to grow their businesses and improve their lives. As Solar Sister Hilaria Paschal from Tanzania explained, "In business, there are times for growth and times for challenges. There are times that you fall... I would like to tell my fellow

Training women entrepreneurs: effective classroom techniques

✓ ***Engage.*** *While training, involve the trainees. For example, ask participants to share their experiences on the topic. All trainees will get more out of sessions by hearing about their co-participants' experiences with the subject – and not just the trainer's lecture points. Hearing different voices also keeps sessions varied and interesting.*

✓ ***Improvise.*** *Always be on the lookout for what works best. When you discover a technique or method that clicks with the group, note it on your training materials so it can be incorporated into the training outline to be used in future sessions.*

✓ ***Set clear objectives for each session****. Share these with participants so that they are aware of the objectives, can validate them and work towards achieving the commonly agreed/set objectives.*

✓ ***Visualize.*** *Reduce dependency on the written word during training: use business games, role-plays, open discussion, breakout groups and practical work – learning-by-doing. Use pictures, slide shows, charts.*

✓ ***Track.*** *Solicit feedback on the sessions. Trainee input is vital for making the next session – and the overall training programme – more effective.*

Organizing entrepreneur training for women: Some practical details

✓ **Training venue and time**

- *A location that is easy to reach, safe, can be used free of charge and is socially acceptable to all, e.g. a community hall, school or church/ mosque.*
- *Near home and at times when they are free from their household chores. When feasible, mentoring and group meetings can be conducted for several entrepreneurs who are close neighbours.*
- *Avoid sowing and harvesting seasons.*

✓ **Duration and flexibility**

- *Enquire what training schedule works well for most entrepreneurs (number of hours each day, number of gatherings, etc.). You may need to spread the training over a longer period and ask women to be present only for half a day. In some cases, non-residential training schedules may work better as these allow women to undertake and fulfil their tasks at home.*
- *Flexibility for women entrepreneurs to bring young children and their minders to the training.*

✓ **Group size**

- *Ideally 15—25; certainly not more than 25.*

entrepreneurs, first of all, to take risks. They should try and they will succeed"[19]. Hilaria is a talented weaving artist, producing colourful woven baskets and jewellery. She also runs a small business, marketing and selling her own wares and those made by her women's group. Hilaria started out by buying a dozen solar lights, a mix of small portable lights and the larger phone charging lights. In her first month, she sold 25 products, and hasn't looked back.

In 2015, all the partners in the WEE programme participated in the Empowered Entrepreneur Master Trainer training organized by Winrock International and Johns Hopkins University. Practical Action saw this as a potentially much-needed boost that their women entrepreneurs needed, and adapted the course to fit in with their existing training curriculum. Picking up the most relevant topics, they incorporated modules on agency empowerment and self-leadership in the regular technology and business development training services curriculum. A total of 811 entrepreneurs enrolled in the agency empowerment, technology and business development course. Virtually all the participants say that this training programme helped them build their self-confidence, much needed to succeed in business. Most of them remember the "Tree of Life"[20] as a life-changing experience. Indeed, it was only after this training that several of the women decided to come together and form VSLAs, which eventually

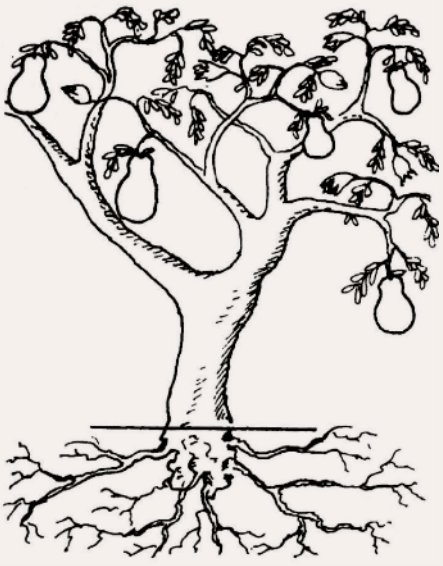
Photo: Judith Quax/ENERGIA

became the financial mechanism for the WEEK project in Kenya. The end-of-project impact assessment for the WEEK project, carried out in 2017, noted that there was evidence of increased self-confidence and self-respect among the entrepreneurs: "The women are able to negotiate their terms for credit and in marketing their products. The confidence has helped them expand their market penetration as they can approach new customers and freely and effectively communicate."

Imagine your're a tree...

Lachana Shresthacharya from CRT/N explains the Tree of Life exercise.

"The training is about personal behaviour. About what limiting beliefs you have and how you want to change that. One such exercise is The Tree of Life. You close your eyes and think of yourself as a big, tall tree. The roots in the earth relate to your past. The trunk is the strongest part. It relates to the present. The branches are your future plans and the fruits represent everything that you have achieved up till now. You have to reflect on each part of the tree. Be proud of what you have achieved and don't be afraid to dream about your future and go after those dreams." After a short pause she continues; her tone is softer now. "It is also about letting go. You have to stand in two lines, facing each other, holding hands. Then you have to think about the people who have hurt you in the past and try to forgive them. The trainer leads you through this. It can be very emotional. But these negative things hold you back. You have to let go before you can move on."



In 2015, Shankar et al. conducted a random control study of 257 male and female cookstove entrepreneurs in Kenya; one group completed a four-day entrepreneurial training (control) and the other a four-day empowerment training (intervention) and were followed for about eight months. Compared to the traditional training, the empowerment training saw a doubling of sales for both men and women cookstove entrepreneurs and about double the level of commitment to the business over time. Importantly, the researchers reported that "women outsold men by a margin of nearly 3 to 1 and were more likely to continue to pursue leads despite limited sales." Very few studies have ever compared men and women entrepreneurs within the same industry, selling the same product. These findings support the importance and potential of addressing psychological factors in socially disadvantaged populations through training interventions, with a particularly strong potential impact on women entrepreneurs.

"...Being in a group has improved our networking: we recommend each other to potential customers, exchange ideas and support one another. We are now friends and that is important..."

Photo: Sven Torfinn/ENERGIA

Lakeside Energy Women Group – Kisumu County

In 2015, Practical Action organized a training session on agency, leadership, technology and business skills for the women entrepreneurs. A few months later, a significant development took place in that a number of these women came together to form the Lakeside Energy Women Group. Prior to its formation, each energy entrepreneur was working alone. Starting from nothing, the newly formed group started group saving and loan activities. The group has since been registered and runs a bank account with Kenya Commercial Bank (KCB). The group's main unifying activity is table banking and supporting members in accessing loans for their energy businesses.*

***Table-banking** is a group funding strategy where members of a particular group meet once every month, place their savings, loan repayments and other contributions on the table, then immediately borrow as either long-term or short-term loans.*

" ... Organizing ourselves into a group has helped us to consolidate our strengths and achieve something we couldn't as individuals. For example, we had to be in a group to qualify for the Women Enterprise Fund loan..."

" ...In the future, we plan to transform into a Savings and Credit Cooperative Organization (SACCO). We also want our members to expand and diversify their businesses...we should look beyond our backyards for markets..."

4.3 Mentoring: Taking services to where the entrepreneurs are

While definitions about *mentoring* vary, enterprise mentoring generally refers to a mechanism which involves (Lowbridge, 2012):

- A one-to-one relationship, usually over a set period of time, in which an established business person or an expert (mentor) provides consistent support, guidance and practical help to a less experienced person (mentee).
- A two-way process in which the mentor shares their personal skills, knowledge and experience with the mentee to enable him or her to explore their personal and professional situation, and in which the mentor and mentee work together to achieve predetermined goals and objectives.
- A way of enabling the mentee to gain the skills, knowledge and confidence required to perform at a higher level, and of giving them access to impartial guidance and support.
- And takes place on the basis of a one-to-one relationship or in small groups.

In the WEE programme, mentoring has been a critical element of the strategy to enhance the business skills of the women entrepreneurs who often live in distant locations. The mentor visits the mentee in order to provide specific, customized and timely support to each person. In the WEE programme, we learnt that:

- **Setting up a mentorship programme is an expensive and time-intensive business, particularly during the start-up phase of businesses.**
  Most entrepreneurs have never run a business and have limited education. Hence, at the beginning of their journey as energy entrepreneurs, the needed frequency of visits is high. Added to this, most live in rural locations and often in remote areas with poor public transport. Both the required frequency and remoteness make the mentorship programme expensive and time-intensive. One needs to budget sufficient time for mentors to reach each person, and for their transportation and communication costs.

- **As businesses grow, the needs of the entrepreneurs evolve and, thus, the mentoring inputs must evolve as well.**
  The WEEK project in Kenya configured the mentoring process to optimize available resources. In the beginning, when the enterprises were in a nascent stage, both business and technical aspects needed equal attention, so both a technology and a business mentor visited the entrepreneurs at least once per month. As the businesses grew, the technology mentorship was scaled back and the business inputs scaled up. In addition, when the capacity needs of the various entrepreneurs became more similar towards the end of the project, a group mentorship approach was adopted, where entrepreneurs were mentored together in clusters while learning from each other's experiences.

In the nascent stage, both business and technical aspects need equal and frequent attention. A technology and a business mentor visit the entrepreneurs at least once per month. As the businesses grow, the technology mentorship is scaled back and the business inputs scaled up.

- **When businesses operate as groups, it may not be sufficient to mentor one person.**
  In Senegal, working with women's associations, Energy 4 Impact found they had to mentor three people from each group (the president of the group, the secretary and the treasurer) rather than just one person:
  - The president of the group, because she is responsible for the group's internal organization;
  - The secretary of the group, because she is responsible for communication within the group and deals with administrative matters; and
  - The treasurer of the group, because she is in charge of managing the income generated by the activities.

  Furthermore, in most countries, family members, especially husbands who are involved in the businesses, are also mentored.

- **Goal setting and action planning are useful tools.**
  In discussions with the entrepreneurs, all our mentors are encouraged to set time-bound goals and make an action plan of the activities that are necessary to keep the entrepreneur on track. Action planning also helps to map out clearly where the mentee needs support, to agree on goals that they can work towards, to gauge how they are doing and celebrate when a goal is achieved.

- **Mentorship can be a useful monitoring mechanism.**
  In all the countries, the mentors were required to submit monthly progress reports, which help the programme to track the progress of the entrepreneurs. In the Women's Economic Empowerment – Nepal project (WEE-Nepal), the mentors submit monthly reports, reporting on a set of quantitative indicators for each entrepreneur, along with an overall narrative report. Indicators include details of monthly sales, whether financial records are in order, status of loan repayments (if a loan has been taken), status of business registration, agreed follow-up action and a timeframe for the same. These help track their progress as well as making programmatic decisions such as which government agencies should WEE-Nepal pursue, what kind of support does each entrepreneur need and how best to provide it, and which products are in good demand and which are not.

How many entrepreneurs can a mentor support?

This question does not have a simple answer and there is no one number that we can recommend. A range of factors such as geography, remoteness of entrepreneurs' homes, whether some can be clustered and the quality of public transport will determine the number of entrepreneurs that can be assigned to a mentor. In Nepal, each mentor initially tried to support as many as 60 or 70 entrepreneurs. However, given the distances and travel involved, very soon this was seen as impractical. At times, in order to complete the assigned number of visits, the quality of the mentoring also became a matter of concern. Further, in many cases where family members were involved in the businesses, they also had to be engaged, further lengthening the time for discussions. Eventually, the optimum number came down to 25 – 30 entrepreneurs being mentored every month

provided they could be clustered. In remote locations, the number fell to as low as 15 visits a month. In the Kenya WEEK project, a mentor was able to mentor 30 mentees per month within one county. After each interaction, the mentees are given a month to implement the agreed action points before the next visit, during which time the mentor is able to visit the other mentees.

"... our experience is that out of the 20 working days in a month, five days are spent in non-mentoring activities such as training, staff meetings and public holidays. On average, a mentor will need a minimum of 15 days per month for one-on-one mentoring sessions. The mentor sees 2 – 3 mentees per day with each mentorship session lasting 1 – 2 hours. This means mentoring around 30 mentees per month. The travel time is 2 – 3 hours per day covering a 20 – 60 km return trip travelled using public transport on main roads and hired motorcycles (boda-boda) on village access roads."

Mr John Maina, SCODE

Peer support and "Sisterhoods": A different mentorship model

For Solar Sister, a central strategy is to work with "Sisterhoods", or groups of entrepreneurs that meet regularly (typically monthly) as a team. During these meetings, entrepreneurs receive training from Solar Sister's field staff and connect with each other directly. They exchange tips and good practices with each other, work together to support each other in sales (e.g. supplying products to fellow entrepreneurs when they are short of inventory), refer customers and, most importantly, form strong friendships (Soria, Farley and Glinski, 2016). These meetings are also the time for entrepreneurs to collect their products from the Solar Sister Business Development Associate, for which they place orders in advance. By structuring its training through monthly Sisterhoods, Solar Sister is able to build flexibility into scheduling training sessions. It is also able to meet the needs of its women entrepreneurs who have other responsibilities and demanding schedules. Some of the other benefits of this approach have been:

Creating Business Habits: The consistent, monthly engagements, through Sisterhoods, introduce new skills and lessons to the entrepreneurs, while also revisiting past topics. Sisterhood meetings are also paired with one-on-one mentorship and business coaching throughout the month to provide customized support where needed to each woman. The majority of the Solar Sister entrepreneurs had been in some selling activity before joining Solar Sister, and two-thirds of them kept rudimentary records for their business. A survey of 278 entrepreneurs showed that after going through Solar Sister's training programme, this increased to 83% of entrepreneurs keeping business records.

Building sisterhood and trust: As entrepreneurs share both personal and business struggles with each other, relationships become stronger, going beyond being purely transactional. They learn from the successes and mistakes of their fellow entrepreneurs, and can strategize based on their unique communities and surroundings. Solar Sister has also found that entrepreneurs often use this time to resolve any competition among themselves and divide different regions/customers that they will target.

Nanbet Magdalene (right) and Mercy Paul (left) are friends and Solar Sister entrepreneurs in Plateau State, Nigeria.

"Solar Sister helps me a lot in different corners and angles of my life. It is not just the income. I made friends with Mercy through Solar Sister. We advise each other on how to sell products and on the challenges. Sometimes we visit each other. We rub our minds together and arrive at answers." – Nanbet

Photo: Solar Sister/ENERGIA

Visibility of the group: The sisterhood groups often become the hub of social activity. A group of women meeting regularly (all wearing the same t-shirts) increases the visibility of the group and the work of its members, and makes it special to those who are members of the group and intriguing to others who may want to join the group.

The sisterhood-based mentorship works well, where:

- The entrepreneurs are located reasonably close to each other and can conveniently come to one central location.
- Training modules are built around concepts included in other modules but are stand-alone (in that an entrepreneur can miss a training session, but still understand the concepts covered in the next one).
- Trainers have a relationship with entrepreneurs in which the entrepreneurs feel comfortable seeking help and mentorship during meetings.
- Women entrepreneurs have limited time and cannot commit to overnight or multiple day training sessions.
- Trainers have financial support and the ability to travel monthly to meet entrepreneurs.

A typical Sisterhood meeting

- *Five women meet at 10 am, with the Business Development Associate (BDA) leading a general chat on how the entrepreneurs are doing on the home front with family and life generally.*
- *She welcomes them and introduces the module for the day, describing how they will benefit from the module to be treated.*
- *Starting with feedback on the previous month's meeting, she introduces the module and opens up the module activity and shows a sample of how the activity should be done.*
- *The BDA gives out the materials needed to do the activity and asks the entrepreneurs to begin. While they are on it, she checks up on each person to ensure they are doing it properly.*
- *For those who cannot write/draw, the BDA assists, explaining it to them individually.*
- *There are usually about 2-3 activities, and each activity takes about 10-15 minutes. After their activities, the entrepreneurs all form a circle. Each entrepreneur shares what she has learnt from the activities and how she will use her knowledge in growing her business.*
- *Afterwards the BDA responds to specific questions. She also takes orders for new stock and gives the entrepreneurs the previously requested inventory.*

The total duration of the meeting is 40 – 45 minutes

4.4 Lessons in training and mentoring

To summarize, the training and mentoring package will vary considerably depending on the context. Some of the key ingredients of an effective training and mentoring strategy can be summarized as:

- Well-qualified trainers and mentors who are flexible and able to relate to the strengths, weaknesses, needs and constraints of the women entrepreneurs (e.g. speak their language, understand their working environment, and able to adapt the required support).
- A good communication support system that enables mentors and trainers to effectively support the women entrepreneurs, follow up on their inquiries and monitor their activities.
- An organization or company willing to fund and execute training and monitoring initiatives.

Footnotes

16 *https://www.ilo.org/empent/areas/start-and-improve-your-business/lang--en/index.htm*
17 *https://www.ilo.org/empent/Publications/WCMS_143299/lang--en/index.htm*
18 *http://cleancookstoves.org/resources/342.html*
19 *https://solarsister.org/impact-story/hilaria/*
20 The Tree of Life tool helps the participants reflect on their own lives so they can better understand how they became the women they are today, and how they can continue to grow in the future. It enables them to examine the different stages in their lives in order to understand themselves, their strengths, weaknesses and support systems, which ultimately enable them to harness their personal power and their own resources to become better entrepreneurs.

Photo: Sven Torfinn/ENERGIA

5 Sales, marketing and promotion

5.1 Challenges in marketing clean energy products in last-mile communities

Creating a market for clean energy products in last-mile communities is the first and most difficult part of marketing and sales. So what makes it so difficult to build a market for clean energy products?

- Low level of consumer awareness of off-grid clean energy products, leads to low demand.
- Even when consumers know about clean energy alternatives, many potential customers do not know where quality-assured products can be purchased.
- Hesitation among consumers due to previous poor experiences with clean energy products. Regaining their trust is not easy.
- Absence of post-project service (repair, maintenance) and non-availability of accessories (to replace damaged ones) near to the settlements reduces consumer interest.
- When products are distributed under subsidized programmes, it may reduce the consumer willingness to pay for unsubsidized products.
- In the case of some products, including improved cookstoves, fixed mind-sets and cultural norms play a role in purchase decisions, and may hold people back from investing in them (Rosenbaum, Derby and Dutta, 2013).
- Local entrepreneurs often find it difficult to sell beyond their immediate networks of family, relatives, friends and acquaintances. They also face problems in acquiring working capital and in stock management.

There is no question that there is a good demand for improved energy products and services among the poor, and this represents an untapped market potential. The poor are already spending large amounts of money on substandard and expensive energy solutions. Even though 80% of the people without energy access and reliant on biomass for cooking have incomes of less than USD 3 a day, collectively they spend USD 37 billion per year on meeting basic energy needs (World Economic Forum, 2013). Analysis from International Finance Corporation (IFC) shows that more than 90% of households without access to clean lighting and cooking solutions could afford improved products and services (if they had access to them) since they already spend more on traditional energy than the commercial cost of superior, more modern energy. Based on current spending patterns and the cost of clean energy alternatives, some 256 million households could afford improved "lighting plus"[21] and

394 million could afford cleaner cooking solutions. These poor households already spend more than USD 1.25 each month on "lighting plus", and over USD 1.30 each month on wood and charcoal for cooking, and hence represent an untapped market potential (Bardouille, 2012).

Despite this, energy enterprises, no matter how good their products are, struggle to serve low-income markets. Building an appetite among risk-averse customers for renewable energy products, particularly in rural locations, and establishing sales and distribution channels to serve them hikes both costs and risks that can cripple their viability. For women trying to set up energy businesses, these challenges are even greater because of the additional constraints they have in terms of literacy, education, time and mobility.

When women do manage to serve last-mile markets as entrepreneurs, they can contribute to developing new markets and establishing trust (Bardouille, 2012). In Tambacounda region in Senegal, where Energy 4 Impact has supported 124 women's groups (representing 5,357 women) as energy enterprises in the Energy Opportunities for Women in Senegal (EOWS) project[22], the end-of-project impact study showed that, in areas where these women enterprises are operating, community members were:

- willing to pay over 40% more for a solar lamp or an ICS than in other non-project areas ;
- over twice as likely to be able to recall specific benefits of solar lamps or ICSs as compared to other areas; and
- fourteen times more likely to know where to buy a solar lamp or ICS than those in regions where the project is not active.

Furthermore, in project areas, 60% of respondents cited the project as a primary source of knowledge about solar lamps and ICSs, of which 50% recalled local advertisements and 10% national advertisements, both initiated by the EOWS project. All this points to the contribution of women's groups in building a market for clean energy products in last-mile locations.

When supporting women entrepreneurs to build markets for clean energy products at the last mile, one should keep the following in mind.

5.2 Start with a systematic market systems assessment

- One of the approaches the WEE partners tried for mapping the markets is the Participatory Market Systems Development (PMSD) one, a strategy for incorporating small businesses into market systems and connecting poor people to viable markets[23]. Going beyond a conventional mapping of market actors, the PMSD approach looks at a market as a system of interlinked and connected subsystems of interlinked actors, business support services and the enabling environment, and builds on existing market actors' capabilities. In the WEE programme, the PMSD approach was tried in Nepal and in Kenya, where participatory market mapping sessions at the project sites

brought together the various actors in order to:
- jointly assess market challenges and identify opportunities;
- identify market outlets and develop a market map and action plan; and
- analyse market trends in terms of market demand and supply, pricing, marketing and markets, supply chains and legislation.

For the WEEK project in Kenya, the starting point was to understand the roles and levels of engagement of the various actors in the solar products, improved cookstove and fuel briquette value chains. This helped to determine the support available for the entrepreneurs and potential areas that they could tap into to improve their enterprises. For the entrepreneurs, the process also highlighted market barriers for their products and identified opportunities within their respective markets.

For WEEK Kenya, the PMSD mapping sessions determined specific interventions for each of the counties, and helped take decisions on what kind of business training and marketing support would be most suitable based on the gaps and needs identified. The sessions also facilitated linkages between the entrepreneurs and the different service providers including government institutions and financial institutions. In Nepal, the mapping led to the identification of various community groups such as forest-user groups, savings and credit groups and groups associated with MFIs, all of which turned out to be effective partners in expanding the markets for ICSs.

5.3 Women need to be coached on how to reach out to new customers, beyond their comfort zone

As Katherine Lucey, Founder of Solar Sister says, "...when they start, women entrepreneurs run through their immediate market, which is their families, their friends, their neighbours, maybe their church group and then they hit a wall because now it's selling as a profession, which is a little bit different than selling as a hobby, you know, selling to your cousin or your sister... (Pailman, 2016)." Even though all are valuable sales, in order to be sustainable, the entrepreneurs need to push themselves to go beyond these contacts to sell in the next county and the one after that. This is where sales training and mentorship support helps, to step up to the next level of entrepreneurship, which is where they are selling to people that they do not know. What can be done to coach entrepreneurs to reach out?

- Train them in leadership and agency to increase confidence.
- Equip them with sales and communication tools and train in their use.
- Engage them in marketing events, initially organized by the project staff. After a few joint visits, the entrepreneurs must be encouraged to take over.
- Involve women in exchange visits or workshops to share experiences with each other.

In the following sections, we discuss the various sales techniques employed by the entrepreneurs.

Learning to sell improved cookstoves

Damaris, Kisumu County, Kenya

Damaris Ocholla is a young widow with three children who lives in Kisumu County, Kenya. To make ends meet, she opened a shop in 2002 selling general goods, liquid soap, firewood and charcoal. In 2010, Damaris learnt about improved cookstoves (ICSs) and enrolled in a course to learn how to install them. Soon after, she started installing stoves in people's homes and, installing 5-8 stoves a month, earning an additional USD 12 – USD 16. Nevertheless, she still could not meet her household's financial needs. She could only afford one meal a day, her eldest son had to drop out of college and she could not pay back the loan she had taken to buy a maize mill, with the creditor threatening to repossess the mill.

A turning point in Damaris's difficult situation came in 2016 when she learned about Practical Action's Women in Energy Enterprises in Kenya (WEEK) project. She enrolled and attended the training. ***"The training was very comprehensive. I learnt how to make briquettes, how to market my products, branding and many other things. While at the training, I decided that I would start making briquettes. During the training, a solar marketing company also came and made an offer to recruit marketers for their products and I enrolled. So, in 2016, I started making briquettes and distributing solar systems."***

Damaris concentrated on her briquette business and took a loan to purchase a briquetting machine from Practical Action, which she has paid back. The machine has been a game changer for Damaris as she can now produce and sell larger volumes of briquettes. ***"On average, I make between KES 30,000 and KES 50,000 (USD 250 – USD 450) every month. I no longer have to wait for neighbours to buy my products; I sell as far as Kibos, Kibuye and Kisumu City... I walk around, I market actively and this I attribute to all the new skills that Practical Action imparted to me."***

Damaris has a good business now, her daughter has completed her education and the son is back in school. The maize mill loan is fully paid off, and the mill is running well. Damaris is now so busy with her energy business that she has handed over her shop and other businesses to her youngest son.

Photo: Sven Torfinn/ENERGIA

"I am happy with my business, I am doing much better now…I can afford food which was very tough a few years ago. The way the business is doing, I will take another loan and build a better house."

5.4 It is not sufficient to hand out the promotional materials: entrepreneurs have to be trained in their use

At Kopernik, when a Wonder Woman joins the programme, she is provided a starting kit with promotional materials including product flyers and pamphlets, a set of demonstration products, a bag and a shirt. She uses these to conduct demonstrations, road shows and informal community meetings, popularly called Technology Fairs or Tech Fairs. As a marketing approach, Tech Fairs have been effective. She can demonstrate the technologies, explain them and answer questions, reaching a large number of people at the same time, thus saving time and leveraging social influence. They also help improve entrepreneurs' confidence and public-speaking skills. Before a Wonder Women starts conducting Tech Fairs, she goes through training and several practice sessions. For this, Kopernik uses its "How to Run a Tech Fair" training module that teaches how to demonstrate the technologies to communities, governments, at markets, and even on a commuter ferry. Initially, Kopernik staff conduct the Tech Fair while the new Wonder Women support them as apprentices and, after a few sessions, the entrepreneurs themselves take over.

Conducting successful technology demonstrations

- Organize product demonstrations during harvest or festival seasons, when people, especially farmers, have cash to hand.
- Organize them in areas where there is a large need for the technologies, such as off-grid areas.
- Even though it cannot always be controlled, the optimum size of a gathering for a Tech Fair is between 10-15 people at a time. Too many people make the event chaotic, and too few people limit interactions.
- Ensure the entrepreneur has a complete understanding of the product's features, including warranty and after sales service.
- The entrepreneur should have some technology stocks with her for selling on the spot.
- When possible, invite an influential figure (e.g. a village chief or government official) to attend the fair.

Showing what you sell: Tech fairs at night

Emiliana Kopa, East Nusa Tenggara, Indonesia

"A Technology Fair or 'Tech Fair' is a showcase event to introduce the technologies to community members. During a Tech Fair, people are able to test and try out the products themselves and choose which ones they want. It's a great way to sell the technologies! I managed to make a lot of sales tonight, as the solar lights shone brightly and attracted a lot of people."

Fig. 8 Equipping women entrepreneurs to conduct tech fairs.

Kopernik uses a standardized guide that includes a list of materials to carry to a technology fair; what personal traits and attitude to have (be confident, smile, communicate proactively, and understand fully the product specifications etc.); and the sequence of talking points to introduce the products and their benefits. The Technology Fair Guide reiterates points that have been covered in the initial basic training in a visual and easy-to-read manner.

Branding the business improves sales

In rural areas, where trust plays a major role in purchasing decisions, the brand value that the entrepreneur represents plays a big role; perhaps even more important than the product itself. Branding is a set of associations linking the name of a company, product or service to appealing traits and benefits in the customer's mind. It is a way to project one's identity, and to define one's business and what it stands for, both to oneself and to potential customers. It is critical that potential customers know the brand well and associate it with quality and reliability, especially since they may have purchased products in the past that ended up being fake or faulty. Good brand value elicits trust and other positive emotions by signalling quality, reliability, social status etc.

All the WEE programme partners equip each recruited entrepreneur with a T-shirt, a tote bag or backpack, a notebook and marketing materials (posters, flyers), all with clear branding. This initial start-up kit provides entrepreneurs with the essentials for running a professional, "recognizable" business. In Uganda, Solar Sister also provides the entrepreneurs with a bright orange hijab[24], the colour that is widely associated with Solar Sister. In Nepal, the Centre for Rural Technology, Nepal (CRT/N) provides

each of its entrepreneurs with an identity card, which certifies that they have been trained under the WEE-Nepal project. Strong branding builds a sense of credibility and trust. Kopernik also worked with social media to increase the visibility of its entrepreneurs and their products. They used Facebook to share information on the locations of the Wonder Women and their products.

So, how is a brand best built? First, as brand and identity have to do with trust and recognition, it does not happen overnight. It is a slow but, if done well, steadily growing process. Important elements of building a strong brand are:

- Identify your target audience and tailor all marketing and communication expressions to that audience.
- Research brands within your niche and define what makes your brand different. What are the key qualities and benefits that your brand offers?
- Create a simple, but distinguishable, brand logo, and tagline.
- Use one or two simple, uncluttered messages.
- Train entrepreneurs to tell customers succinctly what brand they represent, to convey this in 1-2 sentences (elevator pitch).
- Integrate your brand into all aspects of the business (in all marketing expressions, how to approach customers etc.).
- Consider developing testimonials from customers.
- Stay true to your brand and be your brand's biggest advocate.

5.5 Targeted, demonstration-based selling works better than general product campaigns

When starting the Wonder Women programme, Kopernik went through the commonly adopted marketing tools including product pamphlets handed out to the Wonder Women and posters. This however did not work that well. An internal programme review showed that the customers did not even remember having seen the pamphlets. Eventually, a social marketing specialist with experience in developing materials for last-mile communities was hired to undertake a systematic review of how different socioeconomic groups view the technologies, what aspect of the technologies are most appreciated, and what would be the most effective messaging to market each technology. Part of this assessment was to understand what the primary client looks like, and what is likely to appeal to them. This revealed that Kopernik products are most likely to be purchased by a women in the age range of 19 to 55, with a secondary school education, a monthly income of USD 35 – USD 80, living in a rural centre, who can read and write, but needs concepts explained in local languages. The profiling also showed that while children's health is a primary concern for the women, they do not link this to indoor air pollution (Kopernik Solutions, 2015). Based on this, new marketing materials were developed, field-tested and launched. Hence, for ICS promotion, it was decided not to use health or environmental-based messaging, even though these are important benefits. Instead the messaging focused on the convenience, and time saving, features that the potential users value in a

stove. In WEE-Nepal, the entrepreneurs are encouraged to visit the *Haat*, a weekly local bazaar, with at least three ICS models for the customers to choose from. As a demonstration, the entrepreneurs make tea on the displayed ICSs and offer it to the potential customers, which is highly appreciated and often converts into sales.

- If possible, target messages to align with the exact, specific concerns of local communities. You may, for example, emphasize the convenience and children's health and safety aspects when selling improved cookstoves, which are immediate concerns, rather than women's own health or environmental benefits.

- Targeting women works best when it comes to products (water filters, stoves) where they have decision-making power.

- Information on warranty and after-sales service must feature prominently on the final marketing materials. This should include details on who to contact when needing repair/replacement.

- Posters works better in rural than in urban settings due to the cluttered advertising landscape in the latter. In Indonesia, after a widespread poster campaign by Kopernik, more than half of the follow-up calls were received from Lembata, a rural and remote area where only 40% of the posters had been distributed. In comparison, an urban area (Kupang) that received 27% of the posters accounted for less than 19% of the calls. Community facilities that are frequented by women, particularly community health clinics, are good places to place posters.

5.6 One-to-one, trust-based selling works well

Clean energy products require people to change the way they consume energy and make a relatively substantial investment that will pay off over time. Therefore, traditional ways of selling need to be adjusted. Selling needs to respond to a market that has already been spoilt by cheap, but low quality, clean energy products. This market spoilage, which proved a major challenge for our entrepreneurs in all the countries we work in, is also highlighted by a number of previous studies (Koch and Hammond, 2013; Bardouille, 2012; Pailman, 2016; Lighting Africa, 2010; Overseas Development Institute, Global Off-Grid Lighting Association, Practical Action and Solar Aid, 2016).

"Rural customers appear to place considerable importance on the social aspects of a purchase, such as whether local after-sales service is available and whether a salesperson is someone familiar and trusted. This preference far exceeded even the financial consideration of paying for a product in installments, validating Solar Sister's approach to champion locally-embedded entrepreneurs."

Source: MIT Summary Report, Reaching the Last-Mile: Women's Social and Sustainable Energy Entrepreneurship. (p.1), Solar Sister

One strategy is for neighbourhood/community product demonstrations to be followed up with one-to-one conversations with potential customers. Women entrepreneurs are able to reach out to, and hold these conversations with, other women who are making the decisions about household energy purchases and are potential clients. 97% of Solar Sister entrepreneurs report selling to female customers, with 32% selling almost exclusively to other women (Solar Sister, 2016b)[25].

Entrepreneurs adopt Value-Based Selling, which is the process of understanding and reinforcing the reasons why the offer is valuable to the purchaser[26]. The process can be deconstructed into four steps: (a) Understanding the situation; (b) Defining the problem; (c) Clarifying the short-term and long-term implications of that problem; and (d) Quantifying the "need-payoff", or the financial and emotional benefits the consumer would experience after the resolution of their problem.

> "People don't buy products, they buy the results the product will give them."
>
> Brian Tracy
> Value Selling: How To Sell Value Rather Than Price (blogpost)

A key part of Solar Sister's training programme is to make the entrepreneurs see themselves as problem solvers, rather than product sellers. Solar Sister has developed a sales tool for this called CLEAR selling (Connect, Learn, Educate, Ask, Resolve). It teaches entrepreneurs to first connect with potential customers and find out how clean energy products can solve existing problems in their lives, while engaging on a more personal level with them.

Another tool that Solar Sister entrepreneurs are trained to use is the "Sight Seller" (see figure 9), which helps entrepreneurs to walk customers through the process of calculating the savings they will enjoy if they adopt a clean energy product compared to their current spending on energy and calculating the time to break even, or when the product pays for itself. The tool has proven to be successful and some other partners are now using it as well.

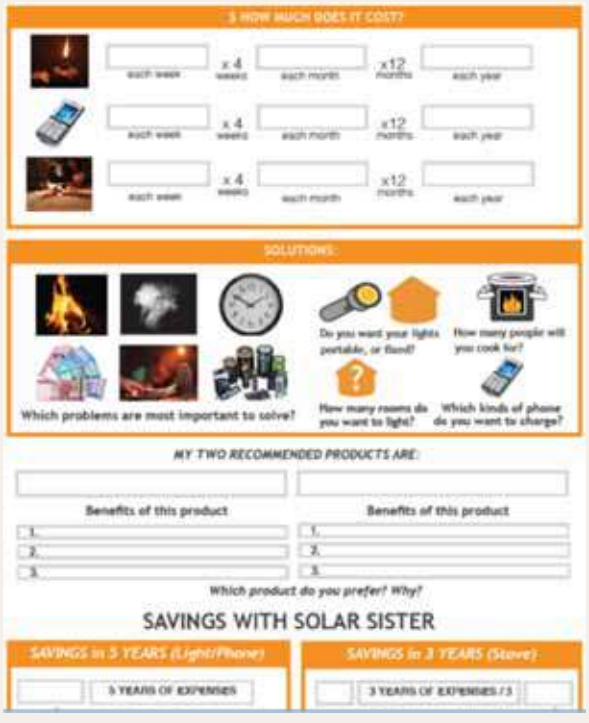


Fig. 9 Solar Sister's Sight Seller

The Sight Seller that entrepreneurs use to help customers gain insight to their savings when adopting clean energy products

In WEE-Nepal, the entrepreneurs made connections with local women leaders and Forest Users Committees, which proved to be useful links to a large number of people. Committee meetings were used for awareness creation and, after the meetings, the entrepreneurs make time for one-to-one clarifications and for collecting orders for their products.

5.7 Monitoring matters: The role of technology

In working at the last mile, keeping track of sales and other processes is nothing short of challenging. Some of our partners have experimented with and adopted data management tools that have helped in terms of real-time tracking of sales and, through that, guide project actions.

In 2013, Solar Sister adopted Salesforce, a cloud-based data management tool that helped in the storage and visualization of data and, in 2015, complemented this with Taroworks as a data entry system. Taroworks is a Grameen Foundation front-end software that has been built specifically for teams needing to input data in offline locations. The result is a paperless monitoring and evaluation (M&E) system, which Solar Sister calls the "Mobile Business Toolkit", that is user friendly, efficient and helps overcome issues of data collection over long distances and in remote locations.

How it Works: Solar Sister has a dispersed field staff that work remotely. Each field employee (Business Development Associate) is responsible for recruiting and supporting a network of entrepreneurs in their region, a task which includes delivering product inventories, providing training and one-on-one coaching, and developing the surrounding markets. Every Business Development Associate is equipped with a tablet that provides access to Taroworks and Salesforce. All operational and impact data are fed into the tablet which allows Solar Sister to track an immense amount of data in real time including entrepreneur recruitment, product sales, inventory, entrepreneur applications, trainings conducted by field staff, sales payments, deposits and impact surveys (see figure 10). This data is input into Taroworks in the field and then directly uploaded to Salesforce where it can be viewed at the Headquarters.

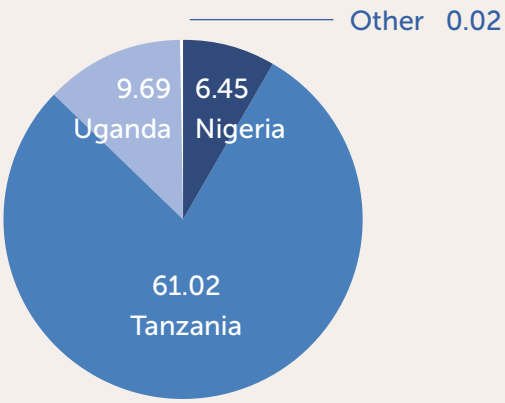
The main challenges when rolling out these new systems centred around training and cost. Solar Sister's Business Development Associates come from a variety of backgrounds including sales, charitable work and academia. For all of them, this was the first time they were exposed to these platforms. For this reason, Solar Sister has invested heavily in staff and internal capacity building to provide ongoing supervision and coaching.

Fig. 10 Salesforce examples

A snapshot of some of the reports that can be generated with Salesforce, including sales and entrepreneur data

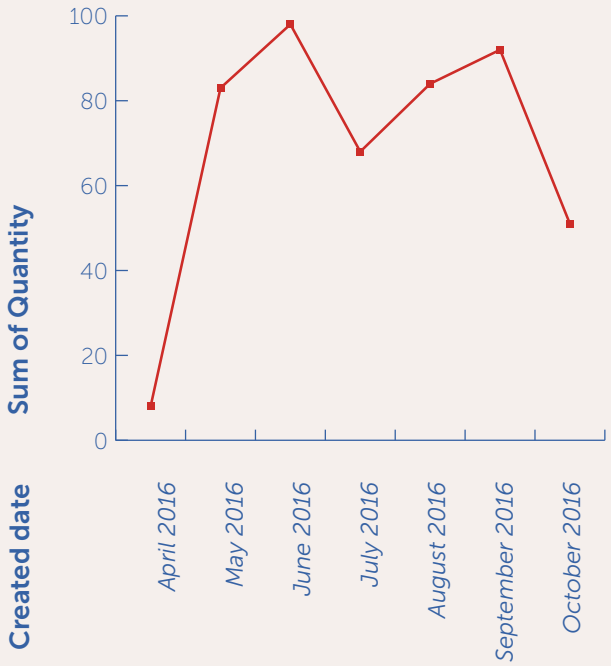
# of products sold basic lighting

Sum of quantity (thousands)

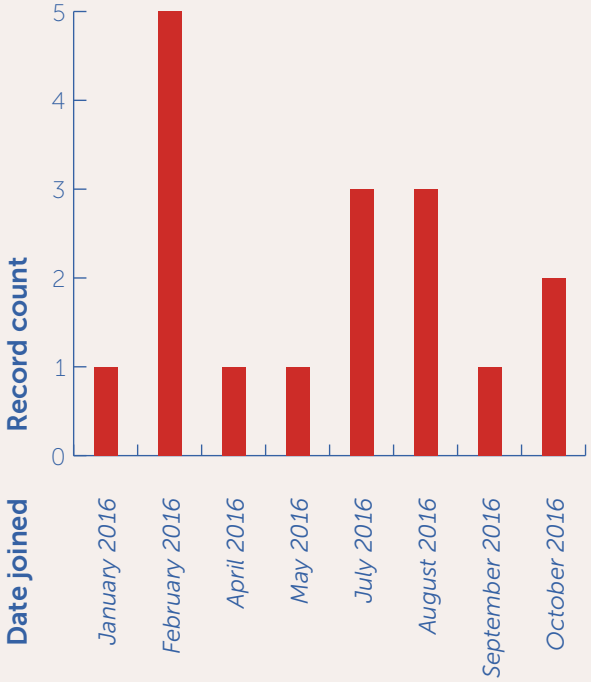


Number of units sold each month

Goal: upward sloping line



Recruits YTD



Providing technology-based customized support to entrepreneurs: Using the Mobile Business Toolkit, Solar Sister's team is able to analyse data in real time and quickly identify strategies that are not working and programmes/regions that require additional support. For example, by comparing entrepreneur sales data to access to mobility, Solar Sister found that having access to motorbikes is one of the top determinants of success for rural women across all geographies. Managers can now make better-informed decisions and provide tailored coaching to field staff based on their actual results in the field. Field staff can stay more organized by accessing their data whenever they need and scheduling activities online.

Customizing support to entrepreneurs using monitoring data

One of the greatest benefits of adopting Salesforce and Taroworks has been the ability to provide more customized support to entrepreneurs. A key metric of success for Solar Sister is the number of active entrepreneurs that a Business Development Associate has each month, i.e. entrepreneurs that are growing their businesses by purchasing inventory. Each Business Development Associate has a personalized dashboard that they are able to access that provides data on the performance of individual entrepreneurs (last inventory purchase date, training attended etc.). As such, they are able to closely monitor the level of activity of each entrepreneur, identify struggling entrepreneurs quickly and then provide tailored coaching and attention as required.

For example, entrepreneurs who have not purchased inventory in the past 30 days are immediately flagged as "Needs TLC" (Tender Loving Care) in the system, meaning that BDAs should prioritize reaching out to these entrepreneurs and see what support, coaching or inventory they need for their businesses.

5.8 Lessons on sales, marketing and promotion

In conclusion, it is clear that a clean energy product is not likely to sell simply because it is well designed. It is critical to communicate the product's terms and benefits in a clear and simple manner in language that can be understood by clients. Given an increasingly competitive environment, with more institutions entering the low-income market, this task is becoming more challenging. The table below summarizes the various marketing and communication efforts that have worked for us at different stages of a product's journey. These stages include introducing the client to the product, ongoing engagement to increase product awareness, as well as awareness of how to use the products, and converting this into sales, and multiplying the sales.

Table 6 **Marketing and communication efforts**

Different stages of a product's journey

	Preparing to sell: **Getting ready to market**	**Awareness:** **Telling people about the product**	**Activation:** **Converting into sales**	**Advocacy:** **Getting consumers to tell others about the product or brand**
Objectives	• *Prepare entrepreneurs to face the market* • *Rally support from other stakeholders in the programme*	• *Build awareness about the product: show the benefits of the product*	• *Motivate people to buy by making it easy for them to use the product*	• *Inspire consumers to tell others about the product and refer new clients*
Sample strategies	• *Systematic market mapping, including identifying market opportunities, potential allies and likely threats* • *Preparing the entrepreneur: sales training, complete product knowledge including guarantees etc., leadership and agency training*	• *Building a brand value* • *Messaging based on product features valued by potential customers* • *Mass media such as radio and social media* • *Tech Fairs, including product demonstrations* • *Outdoor advertising such as posters* • *Key Influencers such as community leaders* • *Direct promotion such as door-to-door outreach and leafleting*	• *One-on-one selling* • *Product incentives and sales campaigns* • *Ready availability of product stock* • *Simple acquisition process* • *Sales tool with FAQs enabling entrepreneurs to answer any question*	• *Ensure that entrepreneurs are equipped to offer the right product every time* • *Consistently deliver on client expectations* • *Responsive after sales service: resolve complaints quickly* • *Use of mass media and social media to broadcast testimonials of users*

Footnotes

21 "Lighting plus" refers to modern lighting devices and small appliance-charging services.
22 Average of 48 members per group
23 https://policy.practicalaction.org/policy-themes/markets/participatory-market-systems-development
24 A hijab is a veil worn by some Muslim women in the presence of any male outside of their immediate family, which usually covers the head and chest.
25 Sample size of survey: 362 entrepreneurs
26 https://personalmba.com/value-based-selling/

Photo: Bunu Dhungana/ENERGIA

6 Managing the Distribution network

6.1 The challenges of distribution

Building a reliable supply chain that reaches remote and rural consumers is undoubtedly one of the most challenging aspects of distribution. In most countries, distributers of energy products have minimal, if any, distribution networks in rural and remote areas. In addition to the high transaction cost of operations, distributors struggle to raise finance, particularly working capital for inventory and consumer financing. It is costly and time-consuming to identify quality products and find reliable supply chain partners offering commercialized products. It is also difficult to recruit, train and retain an effective last-mile salesforce. When products have to be imported, import taxes can be high, and the importation processes can be difficult and time-consuming (Practical Action, 2017).

Another challenge is that, in response to a growing demand for solar energy products, cheaper, lower quality and faulty products have flooded the market. In most cases, the price sensitivity of these markets makes it difficult for entrepreneurs trying to sell good quality products at a higher price, even though they may be more reliable, certified and tested. This makes consumer awareness and education all the more critical. In addition, in rural areas and remote locations, the logistics of distribution is difficult: distances are long, road networks are poor, clean energy equipment and technologies may be bulky, and means of transportation are insufficient and expensive. Matters are further complicated by the fragility of some products such as ceramic improved cookstoves, which are prone to breakages on unmetalled, bumpy roads.

Women entrepreneurs are hampered by all of the above realities as well as societal norms and attitudes that often restrict their mobility, thereby stymieing their growth opportunities. An annual review at Kopernik revealed how some women in parts of Indonesia are discouraged from travelling by themselves, without their husband or a son to accompany them. Apart from safety concerns, there is an expectation that women should mostly stay home to keep an eye on the children and old parents. As one Wonder Woman commented, “People think I am irresponsible because I leave my children at home.” In many Wonder Women businesses, the women rope in their husbands to promote and deliver technology orders to remote distant areas.

Given these challenges, engaging women as part of the distribution chains to reach last-mile areas requires putting efficient systems in place: for transporting technologies and creating trusted points of sale; for ensuring reliable and ‘local’

repair and maintenance services; and encouraging a supportive family system that shares some of the entrepreneur's domestic responsibilities and also participates in the business. In our experience, for seamless distribution of energy products, a number of partners need to be engaged, from private sector technology suppliers to transporters, micro-entrepreneurs, sales agents as well as producers (especially for some technologies such as in-situ improved cookstoves). The WEE programme's partners have worked with existing retail infrastructures, built door-to-door entrepreneur networks, partnered with NGOs and community-based organizations, and experimented with micro-consignment models. We have learnt the following lessons.

6.2 Engaging other people, including family members in sales, works well

Given the mobility constraints women face, an effective strategy is a "relay system" in which the entrepreneur recruits agents or resellers who further distribute the products and are paid a commission by the entrepreneurs, agreed by both parties, on sales. Popularly known as Network sales, this sales methodology encourages the sales agents to tap into their personal and professional networks to find customers (Zaniewics, 2017).

In Indonesia, when Ibu Sekeda learned about the Kopernik programme, she was interested in joining but busy with other work. Consequently, she hired other women from among her friends to sell on her behalf. Kopernik calls these "downlines" and has introduced a downline incentive system to encourage such growth and initiative among entrepreneurs.

The so-called "relay" system helps entrepreneurs to increase their sales and, at the same time, creates jobs for other women and young people. The entrepreneurs are able to reach distant markets and a second layer of employment is created for others. For the agents, the main advantage is that they are able to participate in a business and earn an income without having to make an investment in the purchase of product inventory, which many find difficult to do. Thanks to this system, Oumy Ngom from Senegal was able to sell 346 solar lanterns through a network of 10 commercial agents in six localities, plus 278 ICSs with a network of five commercial agents over a period of 21 months. The average sales were 30 units per month. This system allowed Oumy to generate a profit of USD 1,000 and the agents about USD 680 as additional income.

The "relay" system helps entrepreneurs to increase their sales and, at the same time, creates jobs for other women and young people.

Solar Sister: A mother-daughter business

Felicia Abiola-Ige, Oyo State, Nigeria

Felicia Abiola-Ige, 46, a science teacher from Oyo State, Nigeria, heard about pico-solar products when a Solar Sister business associate came to demonstrate clean energy products at her school. She was surprised to learn that reasonably priced solar lamps, with their strong light, could eliminate the need for kerosene and batteries. She bought a small d.light solar lamp for USD 8 and gave it to her grandmother. Seeing how well it worked, Felicia bought a larger solar lamp with a phone charger. From there, she signed up to be a Solar Sister entrepreneur and has not looked back. She and her teenage daughter, Opeyemi, go to schools, churches, cooperatives, hospitals and homes to promote solar products and drum up business. As a teacher, she uses her networks in the education sector to talk about and sell solar products (Thompson, 2018).

The relay system in the ICS distribution network in Nepal

In Nepal, the WEE-Nepal project works in six districts. At the start of the project, when ICSs were being promoted through a few government programmes, there was a minimal distribution system in these remote areas. As part of WEE-Nepal, women were supported to develop themselves as district-level ICS distributors who then further employ other women and men as last-mile ICS retailers. The WEE-Nepal project linked the district-level distributers with city-based ICS suppliers. This arrangement helps a large number of women be part of the business without having to invest in purchasing inventory. As they gain experience as marketing agents, many gain confidence and start their own businesses employing others.

The distributors as well as marketing agents are supported by the WEE-Nepal project in many ways. The mentors help them make strategic business decisions, negotiate with suppliers, conduct promotional events and marketing campaigns, train them in sales and also facilitate interactions with local financial institutions. Using this approach, 292 entrepreneurs sold or installed 36,257 ICSs benefitting 181,345 consumers. Recognizing that, once the communities have bought ICSs, the distributors face the risk of market saturation, many have added other kitchen-associated products such as rice cookers and pressure cookers to their product mix.

For the "relay" system to work well, the following aspects need to be ensured:

- A reliable supply of products, so that orders placed with agents can be met and delivered to the customers in time, otherwise there can be a loss of credibility.
- A pre-agreed system of commission per unit of sale.
- Agents must be fully trained and knowledgeable about the products and after-sales services, in effect as well trained as the entrepreneur herself. This is an additional cost that may have to be built into programmes.

6.3 The channel sales strategy: local institutions are a good route to reaching new markets

Several of the WEE partners adopted a channel sales model, i.e. engaging third parties in the sales process (Frost, 2017). These could be affiliated partners, value-added providers (who bundle our product with their own), or a separate entity that does not work for the WEE partner directly. A number of the partners, including Kopernik and Solar Sister, have also been working with schools and other institutions such as health clinics to disseminate energy products. The feedback was positive in Indonesia. Children who see water filters at school go home and talk about receiving free and clean water at school. The parents contact the school and, through the school, the Wonder Women to find out where to buy a water filter, and how to use it.

A pioneer in cookstove enterprises - Kalpana Rai, Udayapur, Nepal

Kalpana Rai (right) of Udayapur district in eastern Nepal has been running an ICS business for three years. In 2015, she attended a technical skills and entrepreneurship training event on ICSs organized jointly by the WEE-Nepal Project and Winrock International's Nepal Office. Over the years, she has signed a formal agreement with Ajummery Bikas Foundation Pvt. Ltd., a national supplier of cookstoves, to supply cookstoves in her area. The WEE-Nepal Project also supported her through awareness and demonstration campaigns in the area. The mentor, assigned from the project, coached her in developing a business plan, streamlining business practices, including systematic account keeping, and in getting her business financed by a local financing institution (LFI), the Sahayogi Credit and Saving Cooperative. Over time, she has also secured loans from other organizations such as Forward, Sahara Nepal, and expanded her business further. Apart from directly approaching customers, she also sells ICSs through the government's Sunaulo Hazar Din programme.

In 2016, Kalpana participated in the Empowered Entrepreneur Training session, which further built her self-confidence and leadership qualities. Subsequently, she trained ten other women in her community, eight of who work with her as marketing agents.

Kalpana now has a registered business and sells her stoves through "Kalpana Kitchen Wares and General Stores," selling different ICS models and various other kitchen wares. In 2017, she was invited to speak at the Asia Clean Energy Forum, 2017 in Manila, Philippines.

Sunaulo Hazaar Din, which means "the golden thousand days", is a development project which works towards changing attitudes and practices for improving nutritional outcomes of women of reproductive age and children under the age of two.

Source: Lachana Shreshthacharya and Subarna Prasad Kapali, 2018

In Kenya, SCODE partnered with a tea factory to introduce improved cookstoves and solar lamps, as described below.

Stove entrepreneurs work with tea factories in Kenya to sell ICSs

Established in 1981, the Iriaini tea factory is in Nyeri County, Kenya. The tea cooperative has 7,137 member-farmers. They supply green leaf tea through 30 tea collection centres, which the factory processes, packages and sells to the Fairtrade market[27]. Iriaini receives the Fairtrade Minimum Price, or market price if higher, plus the Fairtrade Premium of USD 0.50 a kilo to invest in business development or community improvements. Fairtrade encourages good agricultural practices and environmental protection to help farmers ensure their businesses are sustainable. Besides this core function, the factory also trains farmers in environmental conservation, and grows and maintains tree nurseries from which seedlings are provided to institutions and farmers who wish to plant trees.

Sustainable Community Development Services (SCODE), the WEEK project partner in Kenya, entered into an agreement with Iriaini and other tea factories to promote ICSs and solar lanterns to its farmer-members through women entrepreneurs. The entrepreneurs, supported by SCODE, display their ICSs and solar lanterns at the collection centres on collection days. Farmers who come to deliver green tea can examine the products. Those interested can purchase them on credit after a quick vetting process by the factory, which involves assessing the grower's capacity to pay for the energy product(s). Once approved, the tea factory forwards the list to SCODE, and SCODE delivers the energy products to the tea factory to be passed on to the tea growers. On receiving the energy product, the tea grower signs a delivery note giving consent for the tea factory to pay SCODE from their tea earnings. That is, when paying farmers the monthly amount due for the tea leaves, Kenya Tea Development Agency (KTDA) deducts the amount owing for the energy product. The arrangement works well for all parties because of the shared value partnership:

- For the entrepreneur, it is a hassle-free process, as she delivers the ICSs to the collection centre from where the farmers collect them, and receives her payment directly from the tea factory. The biggest advantage for her is the access she gets to a large, untapped market as well as the products on credit from SCODE Ltd. based on the strength of the purchase order from the tea factory.

- The tea farmers' households get the ICSs and/or solar lanterns on credit and can pay for them when they receive their annual bonus.

- The risk to the tea factory is minimal as farmers already have a credit arrangement with them.

- SCODE gains new markets for their ICSs and solar products, and is assured of payment by the Tea factory when the bonus is paid.

Photo: Practical Action

Benefits of the channel sales model

Built-in trust: *Since the channel partner is already well-known, there is no need to do the work of establishing a brand presence. The product will automatically seem more credible because of their endorsement.*

Rapid testing: *Channel partners provide you with a customer base to test new products, packaging, promotions and/or marketing campaigns in a low-stakes environment.*

Customer success: *When it comes to repair and service support, since the customers have faith in the continued presence of the institution, they also do in you, since they have endorsed you.*

It is evident that, within a few years, this tea factory will reach a saturation point as far as the demand for improved stoves goes, and there will then be a gap of a few years until the next round of sales. Recognizing this, the WEEK project intends to diversify the range of products that the entrepreneurs can sell through their established distribution channels by adding other products, and has already started distributing water storage tanks. Further, there are a large number of other similar cooperatives, producing tea, coffee, sugarcane, fruits and other farm products, that are untapped markets.

Photo: Bunu Dhungana/ENERGIA

From door-to-door seller to wholesaler for an entire district

Niru Shrestha, Sindhuli, Nepal

Niru Shreshtha is a stove entrepreneur promoted by WEE-Nepal. Having started selling stoves door-to-door, she is now the ICS wholesaler for Sindhuli district. Niru invested more than USD 50,000, and her sales went up drastically. In the first nine months of 2018, she has sold more than 3,000 stoves. Niru's distribution chain comprises 22 women who sell the stoves in different villages in Sindhuli.

In addition to individual sales, Niru engages with ***Sunaulo Hazar Din*** *and other government programmes. This has helped her tap into the local government's awareness programmes. This year alone, she has received marketing support from the local government, including nine municipalities, who are promoting environmentally-friendly technologies, including improved cookstoves, as part of their work. Also, an NGO, the Village Women Consciousness Centre, Sindhuli, has allocated more than USD 4,000 for the stove programme. In addition, Niru engages with voluntary health workers who are assigned by the local government to visit rural households on a weekly basis. In the course of their visits, the health workers also talk about indoor air pollution and the benefits of improved cookstoves, thereby increasing demand for Niru's stoves. They also introduce Niru to the households, and this endorsement from health officials helps her tremendously.*

Do's and don'ts of working with local institutions

- It is important to ensure that partners have a shared value.
- Provide clear training on how to care for and maintain the technology and leave a pamphlet with do's and don'ts as well as instructions for basic troubleshooting.
- Provide contact information of the relevant sales agent and/or local office so that the institution is able to reach out with any issues or to procure replacement parts.

6,4 Harness the power of groups

One way of expanding the reach of entrepreneurs is for them to work in groups. In Kenya, while some women entrepreneurs work individually or with their families, others prefer to work in groups of 12 to 30 members, many of them linking to already existing Village Savings and Loan Associations (VSLAs). When working in groups, the entrepreneurs come together for specific tasks such as pooling individual contributions to purchase products and raw materials in bulk, renting a shared space for stocking inventory, sharing transport for bringing products to markets or sharing the costs of conducting promotional events. All of these enable them to reap economies of scale. In most groups, the selling is however mostly done on an individual basis, ensuring a "business-like orientation". Group members, through discussions, divide up areas among themselves so that they do not compete with each other. Women say that, by buying together, they are able to place larger orders, negotiate better prices with suppliers and transport their inventory in bigger batches. This reduces breakages and cuts the cost of transportation. This is a big gain in rural Kenya where the roads are bad and boda-bodas[28] are used to transport fragile equipment such as the ceramic liners of improved cookstoves. Working in groups also gives women confidence and much-needed peer support, both for the business and also more generally. Group members support each other, and most groups have set up a small fund, which they lend to members in emergency situations at zero interest rate for short durations.

In Senegal, Energy 4 Impact works predominantly with existing women's groups in its energy work. In Senegal, it is a common practice for women in rural areas to organize themselves into income-generating groups and work in the farming/processing and agriculture sector. Each group is led by a group leader who is usually literate, has some knowledge of accounting and an entrepreneurial spirit. According to Abdoul Dosso, the programme manager for Energy 4 Impact in Senegal, working with existing groups gives a good degree of assurance that the energy enterprises will build on a solid, existing base. It also helps that these groups are already experienced in business and hence accustomed to dealing with cash transactions. Most groups also operate as a savings group and hence have some savings that help finance some of the initial investment required.

When working with groups who will take on distribution functions, it is good to ensure that:

- *The groups have been in existence for some time, and have been engaged in some income-generating activity.*
- *Having a savings practice helps tremendously. It not only provides some investment capital, but is also an indicator of financial discipline (keeping records of members' savings, maintaining minutes of group meetings etc.) and basic financial and business management literacy.*
- *They have set in place systems to ensure all members understand and operate within the given requirements.*
- *When conducting commonly planned events, all members of the groups are given ample notice so that they can ensure they have enough products for on-the-spot sales.*
- *Group members understand that contributing towards shared costs is part of giving back to the business to ensure sustainability, as opposed to expecting the project to cover costs.*

Linking individual sales with ongoing government programmes

Typically, it is the entrepreneurs who are responsible for marketing their products and awareness-raising activities in the communities in which they operate. However, governments can play a key role in generic awareness creation about renewable energy products in last-mile markets, and stimulate their greater adoption and use. This has benefits across the supply chain and gives distributors greater scope to focus on local execution and customer service (Practical Action, 2017).

6.5 Careful selection of distribution partners is critical: lessons from Senegal

In Senegal, Energy 4 Impact works with 160 women's groups, who are being supported to develop as energy entrepreneurs. In order to supply solar products, Energy 4 Impact facilitated a commercial collaboration between Total[29] and the entrepreneurs. In this arrangement, Total would sell its products on credit: the entrepreneurs would advance 25% of the value of products ordered as an initial payment, and the balance could be paid within a period of 60 days from the start. The risk of default by the entrepreneur to Total was covered by a guarantee fund set up for this purpose. This appeared a good approach since, after the initial 25% payment for inventory, the

entrepreneurs could pay the balance over a period of 60 days. For Total, which sells its products mainly in urban areas and through petrol stations on the highways, and does not have a reach into rural and remote areas, this approach seemed like a good way to expand into rural markets.

Although this strategy did allow the distribution of approximately 1,800 Awango lamps, it did not achieve the expected results, and the arrangement was wound up after a few months because of the following challenges:

- Many of the potential entrepreneurs could not mobilize the 25% advance payment required.
- Mainly because products had to be imported by Total, the delivery procedures proved to be lengthy. This meant that there was a long gap between when the customers placed orders with the entrepreneurs and when they received the product. The lack of stock at the "right time" led many potential customers, who had saved the money ready, to buy other lamps.
- The high prices of lamps, even though they were of better quality than existing solar lamps, made it difficult to market the products.
- The range of products offered was narrow, and this limited the interest of customers.
- The long period needed to replace defective lamps that were under guarantee established a crisis of trust between entrepreneurs and customers.

From TOTAL's perspective, the dissatisfaction with the project came from the weak sales compared to the projected sales at the beginning of the project.

Photo: Energy 4 Impact

6.6 In-bulk product ordering

Several of the WEE programme partners found it useful to order renewable energy products in bulk and manage the supply chain themselves. This helped them negotiate prices with standardized terms and establish contractual relationships with product suppliers. In this way, they could overcome the "small volume" barriers that individual distributors face, streamline orders and reduce transaction costs. When Kopernik started working with Wonder Women, the time required to deliver imported renewable energy products to East Nusa Tenggara proved to be very long. From the time of placing orders, it took three months for the equipment to arrive in Kupang port, from where products had to be shipped to the various islands, and then transported to the Wonder Women in small trucks. It worked much better when Kopernik started using a third party import company, importing products in bulk, establishing efficient routes and warehousing the extra stock, so as to have it available for the Wonder Women when they need it.

6.7 Lessons learnt on managing the distribution network

To sum up, it is clear that the challenges of distributing clean energy products are difficult to overcome. When working with women entrepreneurs, our experience shows that the product suppliers need to demonstrate the following characteristics:

- **Locally based** with a **good distribution network.** A supplier should have local in-country offices and local storage/warehouse facilities. This is necessary to facilitate storage and helps in allocating logistical and human resources for better monitoring of the distribution of products in remote locations.

- Able to provide a **reliable supply** of high quality "certified" clean energy products. It is also an advantage if the supplier can provide a range of products in different price ranges to meet the varied needs, aspirations and affordability of consumers.

- **Guarantee prices** for the products for a specified period so that the prices do not continuously fluctuate.

- A business model that allows the supplier to **provide credit** to women entrepreneurs for a period of between 3 – 4 months (either directly or through linking with a financial institution).

- **Provide good support services** to the sales agents (e.g. if a product breaks down within the period of guarantee, the entrepreneurs can easily return the products).

- Willingness and budget to **support promotional activities and awareness raising** campaigns, and to **train entrepreneurs** in product features.

Footnotes

27 https://www.fairtrade.org.uk/Farmers-and-Workers/Tea/IRIAINI-TEA-FACTORY-Ltd

28 Boda-bodas are bicycle and motorcycle taxis, commonly found in East Africa.

29 With operations in more than 130 countries, TOTAL is an international oil and gas company and a major player in low-carbon energy. In 2012, Total introduced Awango by Total, a line of innovative, reliable solar lighting and phone charging solutions to enable off-grid, low-income communities to meet some of their most basic everyday needs *(https://www.total.com/en/our-expertise/renewable-energies/solar/infographics/awango-total-facilitating-access-energy-least-advantaged)* .

Photo: Solar Sister/ENERGIA

7 Unravelling access to finance: Mobilizing enterprise finance

It is well established that women in developing countries have limited access to financing. According to the African Development Bank (AfDB), only 16 – 20% of women in Sub-Saharan Africa are able to access long-term financing from formal financial institutions. Further, the average capital available to male entrepreneurs is more than twice that of women. In Kenya, women own 48% of small businesses, but access only 7% of the available credit (AfDB, 2016). The Global Findex database[30] shows that, globally, 1.1 billion women do not have a bank account, while hundreds of millions who do have a bank account do not have access to the full range of financial products (Iskenderian, 2017). In South Asia, where the gender gap is the largest, only 25% of women have a bank account, compared to 41% of men.

Securing finance to start and grow an enterprise through the various stages of the business lifecycle is among the greatest challenges facing entrepreneurs, including energy enterprises. The key financing needs of energy enterprises, as identified in the literature and by practitioners (Bardouille, 2012; Leeuwen, van and Erboy Ruff, 2014; SELCO Foundation, 2015 cited in Pailman, 2016) are:

- Start-up financing: Accessing start-up financing is challenging because investing during this stage (when a business model has not yet been proven) is risky. Women entrepreneurs often state that the banks ask for a credit record, an existing account with their bank and a business performance record, which they do not have simply because their business is new.

- Working capital: Securing working capital for enterprises during the mid-life phase is particularly challenging because businesses are no longer in the promising start-up phase but have not yet reached maturity where they have a proven track record. Further, the main need for working capital is for the entrepreneurs to manage cash flows, and banks typically prefer lending money for specific purposes, such as growth plans or equipment purchases.

- Investment capital, for scaling up production and for improving processes and efficiency of production.

- Workforce and market development capital: In addition to the above, in pre-commercial last-mile markets, there is a significant gap in funding for local workforce development and market development activities that need public and philanthropic support to address systemic barriers (Labruto and Diagne, 2018).

- Some of the difficulties in obtaining finance are that the interest rates set by local banks are high, that local private banks often have no or little experience on renewable energy financing and that collateral is needed. Even if foreign banks are involved, they work through local banks and, consequently, rates are still relatively high.

7.1 Barriers women entrepreneurs face in accessing finance

In 2016, the Financial and Digital Inclusion Project (FDIP) conducted a roundtable to facilitate dialogue and knowledge sharing on the issue of gender disparities in access to and usage of formal financial services. The roundtable identified a number of barriers to women accessing financial services, including the following (Lewis, Villasenor and Darrell, 2016):

- **Legal, regulatory and policy barriers:** The World Bank Group's 'Women, Business, and the Law' project found that about 90% of the 173 economies covered in the study had at least one law impeding women's economic opportunities (World Bank Group, 2015). In some countries, restrictions on opening a bank account, such as a requirement for a male family member's permission, hinder women's access to accounts (Isaac, 2014).

- **Documentation required:** Women are less likely than men to have the identification documents needed to open formal bank accounts. In Bangladesh, women need a birth certificate to open a bank account, but many poor women were not registered at birth – ID issues are a huge challenge for the poor (Cherie Blair foundation for Women, 2015). Worldwide, 42% of women are unbanked compared with 35% of men, and 18% of unbanked adults report lack of documentation as one of the reasons why they do not have a bank account (Dahan and Hanmer, 2015). Women entrepreneurs are also less likely than their male counterparts to have a history of interaction with formal financial systems (ESCAP, 2013).

- **Ownership of productive resources:** Restrictions on whether property can be titled in a woman's name can impede access to finance since titled land and ownership of a house is often a preferred form of collateral among banks.

- **Cultural barriers:** Cultural barriers are multiple and differ among countries, regions, communities and groups. One example of a cultural constraint is that many women are more comfortable utilizing formal financial services if they can interact with a female point of contact, which is often not a readily available option.

- **Technological barriers:** Digital financial services such as mobile money can help mitigate financial access barriers. They can enable women to open accounts more easily and to complete transactions through their phones. However, the gender gap in mobile phone ownership must be addressed if women are to fully take advantage of the benefits of digital financial services. The 2015 report of the Global System Mobile Association (GSMA) noted that the most frequently cited barriers to mobile phone ownership and usage were cost and cultural dynamics in which men prohibit women from owning or using a phone (GSMA, 2015).

Wherever women are engaged in the energy sector, it is mostly in small-scale off-grid systems. In developing countries, financial institutions are often unfamiliar with the off-grid energy sector and see small renewable energy technologies as an unattractive, high-risk, low-volume business. As a result, credit comes at high interest rates, together with demands for high levels of collateral. At the same time, financial institutions in developing countries do not readily identify the differentiated needs of women-led businesses and thus lack a value proposition tailored to that client base. A study interviewed over 30 CEOs and other senior bankers from financial institutions and found that many banks continue to think that male and female clients are the same and that there is no "business case" for serving the female market. In many cases, financial institutions believe they are "gender neutral" and do not give preference to any particular sex (Oxfam, Babson College and Value for Women, 2017). Even when women obtain finance, the barriers sometimes continue. For example, there is some evidence that micro-credit may not benefit women because the money can end up being diverted to the household or for other purposes than the one initially intended by the woman (ILO undated b). The woman then has to repay, even though she could not invest in her enterprise.

Before diving into specific approaches, it is important to make a distinction between the finance requirements for entrepreneurs selling energy products and those involved in productive uses of energy such as women in agricultural groups investing in solar refrigerators. For businesses selling energy products, the main requirement is for working capital to purchase an inventory of products (solar lamps, ICSs etc.). However, for productive uses of energy, the capital is required to invest in more efficient processes. Furthermore, in productive uses, the enterprises are typically already in business and hence inspire higher confidence among financial institutions than do new energy businesses which are considered riskier.

In this chapter, we now describe some of the financing models we have worked with, for both entrepreneurs selling energy products and those using energy for productive uses. We elaborate on what has worked and what has not.

7.2 Linking women entrepreneurs with local financing institutions (LFIs), Nepal

Globally, women are the primary clients of credit-based micro-finance services, accounting for almost 100% of micro-finance users in Asia and 70% in Africa (Glemarec, Bayat-Renoux and Waissbein, 2016). More generally, research shows that women are better at paying off their loans than men: a study of worldwide banks found that the nonperforming loan rate for women small-business customers is only 2.7%, 33% lower than the rate for men (Global Banking Alliance for Women, 2017). Despite this, women entrepreneurs face difficulties in obtaining loans for their energy businesses from local financial institutions, such as saving and credit cooperatives that do provide various commercial loan products but mostly remain unconvinced about the loan-worthiness of women's energy enterprises.

In Nepal, when WEE-Nepal started supporting entrepreneurs on productive uses of energy, access to finance was the biggest challenge for the entrepreneurs. It was also soon discovered that many of the women were in fact linked with the LFIs, as saving and credit members, but were not familiar with the procedural requirements for loans for energy businesses and were hesitant to approach them. The financial institutions, on their side, did not have the confidence to extend loans to them. In linking these women entrepreneurs with LFIs, the project had to work on two fronts. First, the entrepreneurs' businesses had to be strengthened to a level that the financial institutions would feel confident about lending to the women. At the same time, the LFIs had to be sensitized and assisted to design women-friendly loan products.

Finance facilitation for women entrepreneurs requires working on multiple fronts:

- *Training and continuous mentoring of the entrepreneurs to strengthen their businesses.*
- *Supporting the entrepreneurs to prepare bankable business plans.*
- *Assisting the entrepreneurs to approach the local financial institutions.*
- *Training the entrepreneurs to keep proper track of repayments.*
- *Building relationships with local partners so that they will recommend the entrepreneurs to the banks.*
- *Sensitizing LFIs to the bankability of the entrepreneur's energy businesses.*
- *Assisting banks in designing women-friendly loan products.*

Given this, a critical element of the strategy to access finance had to be building the trust of LFIs in the entrepreneurs. For this, the WEE-Nepal project sought the support of the Community Rural Electrification Entities (CREEs), community-based organizations that purchase electricity in bulk from the grid and retail it to its users within their area. The CREEs were asked to recommend entrepreneurs to the LFI. Since the CREEs would recommend only those entrepreneurs who they felt confident about, *CREE-promoted* entrepreneurs were seen as trustworthy clients by the LFIs. A recommendation from a CREE added the extra degree of assurance that the banks needed to provide loans for mostly unfamiliar energy businesses. In many cases, the CREEs were also able to negotiate some concessions for the entrepreneurs, for example a discount on service charges and lower interest rates. At times, the CREEs even provided a guarantee to the LFIs so that they could provide concessional loans to CREE-supported women entrepreneurs. A micro-finance development bank, Naya Nepal Laghu Bitta Bitiya Sanstha Limited, now extends the following additional support to women entrepreneurs:

- A good credit history entitles the woman to a larger loan.
- Even without collateral, loans up to a certain limit, on a group liability basis.
- Good clients are given a Green Identity Card and a 1% interest rate reduction.
- For Green Card holders, emergency loans of up to USD 85 upon submission of an application.

So far, 227 entrepreneurs have obtained loans worth EUR 223,056 through 35 different LFIs in Nepal. At the time of the external evaluation of the project, all 227 entrepreneurs were on track with the repayments. The LFIs report a high level of satisfaction since there were no defaults on loan repayments. Moving forward, the size of loans that LFIs are willing to finance could be a bottleneck. As of now, most loans are between USD 350 and USD 1,000. As businesses grow, the size of loans could become a barrier to further expansion or product diversification. The project will need to start working with more LFIs and larger commercial and development banks, who can provide cheaper loans or subsidize the interest charged to the entrepreneurs. In Nepal, as part of the "deprived sectors loan policies" of Nepal Rastra Bank, all commercial banks, development banks and finance companies are required to lend 5% of their total loan investment to disadvantaged sections of the population[31]. Moving forward, the project will address mobilizing such sources of finance for the entrepreneurs.

"Legitimacy is an important resource for entrepreneurs. Endorsements, guarantees, social connections, reputations, thoughtful business plans and financial assets, such as current sales rates, are all indicators that can help signal legitimacy for women."

Amanda Elam, Babson College

7.3 MFI-led equipment leasing models

In this arrangement, a micro-financing institution leases out energy equipment to the entrepreneur. It provides credit to an equipment supplier who passes on the credit to the final entrepreneur. In Senegal, as part of the EOWS project, Energy 4 Impact works with women's groups engaged in agriculture and agricultural processing. To provide credit to the entrepreneurs for investments in energy technologies, such as solar water pumps and refrigerators, Energy 4 Impact facilitated a loan guarantee arrangement with Caurie MicroFinance, a national MFI, PAMIGA, a French Financial

Institute, and Bonergie, an equipment supplier. Under this arrangement, Energy 4 Impact commits to providing the financial institution with a substantial pipeline of women clients, which it supports to produce a business plan. Once the business plan is approved, following a due diligence process by the financial institution, PAMIGA provides concessionary finance to Caurie MicroFinance, which in turn provides solar equipment (including solar fridges and solar pumps) to women's groups through Bonergie. The women's groups receive equipment on a leasehold basis at an interest rate of 15%. They deposit 10% of the total cost in a bank account (which acts as a guarantee for the lender until the loan is paid up) and commit to repaying the balance in 30 monthly instalments. If the entrepreneur is unable to repay the loan, the equipment is returned to Caurie MicroFinance. The supplier is paid 75% at the start, and so it is the MFI that carries most of the risk.

To help the women further enhance their agricultural productivity and profits, the project has integrated other partners, for example in the field of farming techniques, irrigation and product value addition. Two government agencies, the Small Local Irrigation Programme (PAPIL) and the National Agency for Rural Agriculture (ANCAR), have provided targeted technical inputs on agricultural techniques, ensuring that the credit is well utilized, and that the productivity and profit margins of the businesses grew (Moscadelli, 2017).

This business model has proved successful on multiple fronts:

- Women involved in traditional agricultural practices have successfully diversified their sources of income and set up new sustainable economic activities, thereby generating extra income and employment.
- Connections have been made between market actors along the value chain, which has strengthened their position within the market.
- Government agencies have provided technical training in productive uses of energy tailored to women involved in the agriculture sector.
- Adapted credit mechanisms have been developed, involving financial institutions and suppliers leasing solar-powered technologies.
- Financial institutions now better understand the energy sector and the needs of small businesses.
- The entrepreneurs are more aware of different types of financing for starting a business and which forms are most appropriate for the stages of business development.
- Suppliers have been able to access working capital that has enabled them to expand their market reach.

Photo: Energy 4 Impact

Increasing profits from banana growing

Germaine Dione, Senegal

Germaine and her group operate a banana plantation and have been running a banana-processing unit for years, but were limited to selling dry and powdered products due to a lack of storage facilities. "We started this processing unit to avoid leaving crops to spoil in the sun. Without the appropriate equipment we couldn't keep the bananas fresh and had to turn them into dry products", says Germaine. Through a partnership between Energy 4 Impact and solar equipment provider Bonergie, the group purchased a solar fridge and freezer in 2016 and quickly moved from producing and selling only flour, couscous, dried fruits and banana products to include fruit juices, milk and fresh water – more profitable products. "The arrival of the fridge, coupled with Energy 4 Impact's business development support, helped us better understand both our sales and our customers' needs. We are now selling more and have increased profits by more than 153 euros, right from the first month," says Germaine.

Source: ENERGIA, 2018

Working with this model of financing energy equipment has taught us a number of lessons that have a wider applicability.

- In this arrangement, the MFIs are reassured by there being a support system that recruits, supervises and monitors the activities of the entrepreneurs. In this instance, the support and follow-up was provided by Energy 4 Impact, an organization specializing in energy, and this was perceived as a risk reducer by Caurie MicroFinance. This was an important lever for the MFI, and reduced their perception of risks in lending to rural women entrepreneurs. Being far from where the entrepreneurs are, Energy 4 Impact's proximity to the entrepreneurs was reassuring for the MFI. In this way, the distances involved in monitoring the entrepreneurs and the loans are reduced for Caurie.

- Given the poverty levels in Tambacounda, the need to mobilize 10% of the product's cost as pledged savings to benefit from a loan proved burdensome for some entrepreneurs because of their low purchasing power. Moving forward, it would be useful to consider establishing a revolving credit system to support the women entrepreneurs in finding their contribution, which could probably be repaid after the first six months of productive use of the equipment.

Photo: *Judith Quax/ENERGIA*

7.4 Engaging equipment suppliers in financing

Energy 4 Impact has explored several arrangements for women entrepreneurs to work with energy equipment suppliers. In one arrangement, a deposit system was established with solar energy suppliers Total and Little Sun[32]. With Little Sun, the system does not require an initial deposit from the women and, in this sense, it is akin to the micro-consignment model. The entrepreneurs acquire the lamps on the sole basis of their performance record in terms of sales: the more they sell, the more opportunities they have to increase their stock without making an initial deposit. They reimburse the provider for products sold over a period of 60 days. This is how the system works:

- The entrepreneurs must have a shop or warehouse to stock the inventory.
- They are instructed to supply goods only upon an initial payment of 25% of the price by the customer, and the remainder must be paid within 45 days.
- Unsold products can be collected and redistributed to other entrepreneurs who are out of stock.
- The selling price is set by the supplier, who pays the entrepreneur a commission on each appliance sold.

A slightly different arrangement is in place with another supplier of solar products, Baobab+[33]: Baobab+ has trained Energy 4 Impact's network of female entrepreneurs in how to market and sell their products as agents, and engages them as sales agents for solar lamps. The sales agents are paid on a commission basis and receive performance-linked bonuses. In both of these arrangements, Energy 4 Impact provides business skills training and one-to-one mentorship, including developing business plans and advice on improving energy-use practices.

7.5 Micro-consignment as a financing model

The consignment model is another way to finance the inventory costs of an enterprise. In this model, inventory is loaned to entrepreneurs on consignment. The entrepreneur takes receipt of inventory without having to pay upfront, and makes a repayment after the first round of sales or, in another approach, as agreed. This mechanism reduces the risk to the entrepreneurs by allowing them to have a trial period in which to test product sales without having to make a capital contribution or obtain microfinance to purchase products (Dutt, 2012 cited in Pailman, 2016). This is a risk mitigation strategy, especially in the event that they are unsuccessful with product sales.

Two of the partners in the WEE Programme, Solar Sister and Kopernik, experimented with the micro-consignment model. However, after a few years, both moved away from this approach to a "cash and carry" model due to challenges in collecting due payments. There was also a conflict of interest in providing non-financial support and women's empowerment services while simultaneously involved in loan giving and debt collection. According to Solar Sister, despite initial success, the micro-

consignment model focused the relationship between the entrepreneur and the business development associate more on financial services and collections instead of on training, coaching and business building. A further challenge with the micro-consignment model was that some of the micro-entrepreneurs that took inventory on consignment from Solar Sister, then sold their inventory on credit to their customers. This did not work well, as some customers did not honour the deal, and the micro-entrepreneurs were unable to pay for the inventory they had taken from Solar Sister, which then lost money in the process (Pailman, 2016).

Moving away from the consignment model, entrepreneurs are now required to make a minimum investment in purchasing their inventory. The arrangement varies, depending on how much they can afford at a given time. The entrepreneurs then sell their products at a mark-up to the final consumers in the villages and regions where they are based. Both Solar Sister and Kopernik encourage the entrepreneurs to purchase their stock incrementally, using proceeds from past sales.

7.6 Activating community-based savings groups for enterprise finance

During the first year of operation of the WEEK project, Practical Action Eastern Africa explored working with formal MFIs, however this was fraught with multiple challenges. These included the poor reputation of some MFIs, high handedness in debt recovery, high interest rates and difficult collateral and guarantor requirements. Failing in this approach, the WEEK project explored setting up a guarantee fund but this did not work either because of the stringent collateral requirements by the FIs that made it impossible for any of the WEEK entrepreneurs to access credit. Practical Action's prior experiences with loan guarantee funds had also not been successful in Kenya. Even though Practical Action negotiated lower interest rates and deposited guarantee funds with the FIs, the FIs still insisted on a number of conditions that the entrepreneurs found difficult to satisfy. These were that they must belong to a registered group in order to qualify, must open an account and save with the FI and will only qualify for a loan after saving for six months. These were difficult conditions for the entrepreneurs to meet, and many WEEK entrepreneurs are not members of any group.

The project has since decided to instead work with Village Savings and Loans Associations (VSLAs) to facilitate entrepreneurs' access to affordable credit, and this approach has been more successful. A VSLA is a group of people (12 to 30 persons) with a common interest in pooling their financial resources through individual contributions. They extend micro-loans amongst themselves at affordable interest rates and with no collateral requirement. Members of the VSLAs deposit savings fortnightly or monthly with their group. Each member is entitled to receive a loan from the group, the amount depending on her share of the total deposit and the available money. Normally, VSLAs provide small loans, with the largest being about USD 200. The groups follow the "table banking" system. During a group meeting, each member

puts an agreed sum of money on the table for the purchase of individual shares in the group. These funds go into a pool that is given out in loans at the end of the meeting to members who are in queue for approved loan applications.

When working with the VSLAs, the WEEK project first builds their financial management capacity and then advances an interest-free loan (from project funds) to boost the VSLA's fund for lending to its members who run energy businesses. Such capital injection enables more members to access loans and to borrow larger amounts for their enterprises.

A locally accredited public accounting and audit firm has been engaged to support the credit fund, including ensuring that the VSLAs comply with the government's regulatory framework for running savings and credit schemes. The VSLAs receive training on all aspects of financial management and leadership, and are constantly monitored and mentored as part of the WEEK project. The firm undertakes due diligence on the VSLAs' capacity to absorb the loan from the WEEK project, tracks each VSLA's repayment performance and audits the group's accounts. In total, 107 entrepreneurs in five countries have benefitted from this.

This approach has worked well. It has enabled entrepreneurs to access business capital while mitigating the risk of fraud and misuse of revolving funds. Findings from the end-of-project impact survey in 2017 indicate that the entrepreneurs' access to credit and financial services improved from 18% in 2014 (baseline) to 62% in 2017, with over 80% of the entrepreneurs taking loans from the local VSLAs (Oenga and Nekesa, 2018).This is an impressive increase.

As the group progresses through a few rounds of loans and repayments, their confidence grows and they start taking larger loans. In 2017, after two years of operation, 66% of the Lakeside Energy Women Group members had obtained loans. Interestingly, 68% of those who took loans made the decision independently, while 24% made the decisions jointly with their spouses. Ninety per cent of the loans were for increasing business stock, and ten per cent to pay school fees. They also started approaching other agencies, mainly because they wanted larger loans.

While this approach to mobilizing community saving groups for raising enterprise finance worked well, it has some inherent constraints. Typically, the amount of savings that VSLAs can mobilize by themselves is small. In the Lakeside Energy Women Group, for example, the women meet twice a month. During each sitting, every member contributes between USD 1 and USD 10 to purchase shares. The money is then taken to the bank. A member can borrow money (take out a loan) but only up to a maximum of twice the value of her individual shares. Further, at times, the way the VSLAs operate may limit their ability to grow their capital base. For example, at the end of every year, the Lakeside Energy Women Group distributes the shares to members, instead of accumulating and growing their fund.

> The final WEEK impact survey report showed that at least 81% of the entrepreneurs belong to a VSLA that provides opportunities for accessing finance and seeking combined solutions to business challenges such as marketing
>
> (Oenga and Nekesa, 2018)

When working with VSLAs, one should take into account that:

- **Injection of external capital is needed for loans of meaningful size.** Typically, VSLAs have only low levels of savings. As long as the VSLAs only revolve their own money, they will only be able to provide small loans. In Kenya, this amount was in the range of USD 150 – USD 200. Thus, the injection of external capital is needed for growing larger enterprises.

- **When larger loans are given, it may be necessary to guarantee them.** When members find it difficult to furnish collateral, one alternative mechanism is for more than one member to stand guarantor for the loan. In the Lakeside group, for loans of more than USD 50, a member is required to have two guarantors from the other members. This is one of several other conditions that include assessment by the group members. In 2017, the group applied for and received a loan of USD 977 from the Women Enterprise Fund (WEF). This loan has since been fully repaid by the group. The members converted the loan into interest-free business capital to boost their businesses. The loan from the WEF was split between all the 17 entrepreneurs in equal amounts of USD 55 and repaid in monthly instalments by each beneficiary over a period of one year. This was a simple and affordable repayment plan, which enabled the entrepreneurs to expand their businesses through increasing stock and purchasing raw materials. They have since realised that it would have been more beneficial for the group if they had charged interest to members and used this to increase their savings.

- **When a revolving fund model is adopted to operationalize capital injection, it is important to agree the payment mode and period with the groups,** and to continuously review this based on the performance of the group as well as to build in a weaning-off process to minimize dependency and ensure the financing model's growth and sustainability.

- **Community savings groups will need training on financial literacy.** Along with capital, community savings groups such as VSLAs have to be trained in financial literacy, discipline and leadership. Some of the training needs can be met through identifying and establishing partnerships with public and non-profit institutions that offer training for free or at a small fee in different aspects of group management. The performance of the groups also needs to be tracked on a regular basis.

7.7 Piggybacking on local community-managed funds

In our work with local institutions, our partners, in some cases, tapped into already existing financial resources of their partners. In Nepal, the WEE-Nepal project worked with 15 CREEs in six districts and, through them, supported more than 500 woman engaged in production, service and trade enterprises. As a result of this support, 85% of the entrepreneurs supported under the project reported positive profit growth, 87% have started to keep accounts and 88% take business decisions for their enterprise.

Photo: Bunu Dhungana/ENERGIA

A Local Organization starts promoting women entrepreneurs as part of their operations

For the past 24 years, the Shree Bhumlu Salle Samaj Kalyan Samiti CREE has been supplying electricity to its 510 households. It has also been at the forefront of social activities in the remote Bhumlu village in Kavre district in central Nepal. Since its engagement in the WEE-Nepal project, the organization has supported 33 local women in enterprise development. Realising the difficulty for the entrepreneurs to get financing, the organization established a Women Entrepreneurship Development Fund (WEDF), setting aside a small amount from its own resources. Encouraged by this, the women entrepreneurs also started to deposit some of their own savings in the fund on a monthly basis. The effort is joined by the local Village Development Committee (VDC), who also made a contribution to further strengthen the fund. The fund is managed by the CREE and provides small loans at nominal interest rate to the women entrepreneurs.

Source: Basnet, Nepal and Kapali, 2017

Encouraged by these results, several CREEs decided to start supporting women entrepreneurs in their areas directly, and made a commitment to this as part of their three-year strategic plans. Many created a Women Entrepreneurship Development Fund (WEDF) to provide loans to women enterprises in their area. For example, the Lalitpur CREE allocated USD 3,393 to the WEDF and provides loans to the entrepreneurs at a 5% interest rate. It helps that the CREEs know the women closely and only provide loans after proper due diligence. As the enterprises grow, their electricity demand grows, generating higher revenues for the CREE. It is a win-win situation for both the entrepreneurs who receive concessionary loans and for the CREEs who can sell more electricity, making higher profits, and improve their financial health. This fund has helped some very small energy enterprises, enabling them to purchase inventory and equipment.

7.8 Lessons on mobilising enterprise finance

Overall, the WEE programme employed a number of financing approaches to meet the investment and working capital needs of the entrepreneurs. A major lesson is that access to capital is not a silver bullet. It must necessarily be accompanied with financial literacy, and the ability to manage cash flows, debts and assets, as businesses grow. In addition to access to the appropriate types of finance, entrepreneurs also need the financial knowledge and skills to feel confident starting and growing businesses with a high potential.

All the approaches have had their successes, but also came with their own challenges and highlighted prerequisites if the approach is to work. The table below summarizes each of the models described, highlighting the key factors that contributed to their success.

Footnotes

30 The Global Findex database is a comprehensive global dataset on how adults save, borrow, make payments and manage risk. Launched in 2011, the database is published every three years (*https://globalfindex.worldbank.org/*).

31 Nepal Rastra Bank, Unified Directives 2075,Nepal Rastra Bank, *https://www.nrb.org.np/*

32 Little Sun is a social business spreading clean, affordable solar energy around the globe (*https://littlesun.com/about/*)

33 *Baobab+*(*https://www.en.baobabplus.com/*) was launched in late 2015 by Microcred Group, a digital finance company focusing on financial inclusion in Africa and China. Baobab+ is developing access to energy in West Africa (Senegal, Ivory Coast, Mali) and Madagascar through classical loans for Microcred clients or through a Pay-As-You-Go model to make the solar products accessible to all.

Table 7 **Financial models**

key factors that contributed to their success

		Community-based savings groups	Micro-consignment: full credit	Microfinance	Local community managed funds	Supplier lease model	Supplier credit-deposit based
	Country	***Kenya***	***Uganda, Indonesia, Senegal***	***Nepal***	***Nepal***	***Senegal***	***Senegal***
Financing model details	***Purpose of credit/ products sold***	*Solar lanterns, ICSs, fuel briquettes*	*Solar lanterns, ICSs, water filters*	*ICSs, productive uses of energy*	*ICSs, productive uses of energy*	*Solar fridges, solar water pumps*	*Solar lanterns*
	Income for entrepreneur	*Individual sales-based*	*Commission on sales*	*Individual sales-based*	*Individual sales-based*	*Through improved productive activities*	*Commission on sales* *Bonus*
Financial risks	***Financial risk for entrepreneur***	*Low: the group bears a financial risk when taking on external loans*	*Low*	*Low: as loans are non-collateralized*	*Low: loans are non-collateralized and fund managers know the entrepreneurs*	*Medium: poor business means removal of equipment*	*Medium: poor sales will mean loss of deposit made*
	Financial risk for organization/ supplier	*High* *OR moderate, if guarantors are required*	*Very high* *OR low to moderate if products are returned*	*Moderate – High: only small loans but no collateral*	*Low*	*Low (because of guarantee fund)*	*High* *OR low to moderate if products are returned*
Cost of operating financing model	***Cost of operating financing model***	*High: groups need business development support and to be trained in financial literacy and discipline*	*High for the supplier who must wait about three months to collect the money for supplied goods*	*Low, as it is integrated within the MFI's regular business*	*Low, as it is integrated within the MFI's regular business*	*May require guarantee mechanism to cover supplier's risk, adding to the transaction costs*	*High for the supplier who must wait about three months to be paid for goods*

All models incur costs in providing business development support and training in financial literacy and discipline.

Photo: Bunu Dhungana/ENERGIA

8 Going beyond strategies: Some overall lessons

In the energy access space, women's entrepreneurship will increasingly matter: for communities, for businesses and the private sector, and for governments. Globally, several bilateral and multilateral donors are prioritizing women's economic empowerment. Increasing the role of women in the economy is viewed globally as critical for economic resilience and growth (OECD, 2010b). Women's economic participation, and their ownership and control of productive assets, is reported to speed up development, help overcome poverty and reduce inequalities.

While the reality is that women continue to face obstacles as entrepreneurs, there are now a number of organizations and businesses working with women in the energy sector. As a result, there is an emerging body of documentation around lessons and successful approaches for promoting women's access to finance, training and markets in energy businesses.

In the earlier chapters, we have shared lessons on specific approaches in various strategic areas within women's energy entrepreneurship. These lessons are in the specific context of the countries that the WEE programme has worked in, and should not be generalized without care, although we would expect these to be useful in other contexts. In this concluding chapter, we would like to offer a few broader lessons for further discussion, lessons that go beyond individual strategies and may be relevant as we move forward.

8.1 Five lessons we learnt from the field

An enabling environment is as important as direct support to the entrepreneurs

Most women's enterprise development interventions are focused on addressing the 'immediate' challenges that women face in starting and expanding a business, and this is an important area. However, larger systemic factors, or the "enabling environment", play an equally decisive role in shaping the circumstances within which these businesses have to operate. To improve women's energy access and their engagement in energy value chains, the enabling environment – including policies and resources available – must ensure that structural barriers that create bias against women within policy are overcome, and that the markets and institutional environments in which governments, financiers, energy companies and consumers operate support such initiatives.

The establishment, management and development of private enterprises occurs within the context of particular policy and legislative environments. A conducive, enabling environment that supports decentralized off-grid renewable energy technologies and products and women's enterprises is one that includes (a) enabling fiscal policies for off-grid clean energy products, (b) industry standards and certification of quality assured market products and (c) an ease in doing business for women, including streamlined processes for business registration and licensing, easy access to information, guidance, application submission and follow up. In particular, the need for quality standards and certification is an issue repeatedly faced by entrepreneurs, since substandard products, available aplenty in the markets, severely affect consumer trust and confidence. Even where quality standards for clean energy products are in place, these standards are not always enforced. For example, although Kenya and Uganda have adopted the International Electrotechnical Commission (IEC)-based standards of Lighting Global, they still face challenges with regard to enforcing these standards and consistency in the procedures used for certification (Pailman, 2016). There is therefore a need for development partners to work with governments to improve their policy procedures, as well as strengthen their capacity to assure product quality.

Aligning efforts with national priorities is critical for sustainability

By teaming up with a range of national and local institutions, the WEE programme partners were able to achieve what they would not have been able to achieve alone. In some markets, local institutions and governments played a proactive role in building product awareness in the market. In others, local institutions were able to provide the much-needed local "anchor", as the CREEs did in Nepal. In other markets, they were able to broker finance for the entrepreneurs and underwrite the risk for businesses. The best example of this is the WEE-Nepal project that works closely with local government programmes and agencies such as municipalities. As part of their regular work, local government institutions take the lead in raising awareness on issues of public interest such as indoor air pollution and solar energy. These information campaigns are important in communities where people are unaware of such issues. By raising awareness, such campaigns also increase the markets for the clean energy products for which the entrepreneurs are trying to build a market. Such roles can also be played by industry and trade associations. The improved stoves component of the WEE-Nepal project is highly valued by both the local and national governments, as it directly contributes to the government's "Clean Cooking and Lighting Solutions for All by 2017" national campaign. In some of the most remote districts, women entrepreneurs like Niru and her marketing agents have managed to build a supply chain for ICSs where none existed. For the productive use of energy component, the project forged a win-win relationship with a very important player in the Nepalese energy sector, the CREEs. After supporting the local entrepreneurs as part of the WEE-Nepal project, several CREEs went beyond the immediate project and started supporting women's enterprises as part of their regular business, thereby ensuring the sustainability of our efforts.

In Kenya, Practical Action has also been proactive in supporting government actions linked to mainstreaming gender in energy planning processes at national and county levels. The 47 county governments in Kenya are vested with administrative, resource allocation and service delivery functions, including being responsible for the county's energy planning, regulation and energy operations. At the national level, Practical Action successfully lobbied and supported the Ministry of Energy in mainstreaming the gender–energy nexus in Kenya's SEforALL Action Agenda (AA) and Investment Prospectus (IP), the key energy-sector planning documents for the period to 2030. Some of the key achievements include: prioritization of modern cooking services and solutions that reduce time poverty, enhancing the participation of women in energy development because of the role they play in energy provision, recognition of the various energy needs at the household and community levels including cooking, providing energy for essential public services such as health and education facilities and for productive use. At the county level, Practical Action has supported some counties in mainstreaming gender in their Energy and County Integrated Development Plans; and provided technical inputs during the development of county energy planning frameworks, an initiative led by the Ministry of Energy and Petroleum to develop a standardized framework to be used by all counties in developing their energy plans. All of these efforts ensured that lessons from the WEE programmes are integrated into the national policy processes. In doing all of this, we find that we are building the capacities of the government representatives we work with and, in the process, building allies for the cause of women's entrepreneurship in the energy sector.

Access to finance is important, but must be accompanied by a combination of other measures

Women's entrepreneurship development programmes have experienced that providing finance alone, particularly in the small amounts typically associated with microcredit, is insufficient to enable women micro-entrepreneurs to make long-term business investments or to overcome other constraints that may limit their businesses' growth potential (ILO undated a; UNDP 2008). Notwithstanding this, the entrepreneurs supported in the WEE programme have been unanimous in identifying finance as a major bottleneck. Nonetheless, we also learnt that neither access to finance nor training alone is sufficient for sustained business growth among women's micro-enterprises. Providing complementary services – such as leadership and agency development, mentor support and investments in awareness raising – are seen to increase women's direct control over resources and increase their self-confidence. These are critical ingredients for the sustainability of the enterprises they are establishing. Beyond developing their business skills, these services are also necessary to make them "loan ready", where this is an appropriate need, and better able to leverage credit from financial institutions. The entrepreneurs we work with receive bundled services including finance, business development, technology, vocational training and business skills, leadership, market development, and one-to-one tailor-made mentoring. Each of these elements contributes to business growth and sustainability. The importance of a comprehensive package of services

> Interventions that combine finance (especially grants) and business training, although more costly, seem to be more effective in supporting women's business start-ups than either finance or business training alone
>
> ILO "Effectiveness of entrepreneurship development interventions for women entrepreneurs"

is also reinforced by studies from the agriculture sector that show that interventions tackling only one dimension of the challenges facing women farmers – whether it be improved inputs, better market information through mobile phone platforms, or land rights – are not sufficient on their own to sustainably improve women's incomes (ILO, 2018; Centre for Global Development, 2016).

An ecosystems approach is central to women's enterprise development

The importance of an 'ecosystems approach' to energy access has been emphasized in the energy literature. An energy access ecosystem has been defined as an "interconnected network of organizations working on the supply of modern energy services to poor people. From national governments, donors, utilities and businesses, to NGOs, civil society, community groups, and individual consumers, all of these actors have a crucial role to play in creating universal energy access. No single entity can do this alone. Indeed, these organizations are interconnected and their success is linked both to each other and the system as a whole" (Practical Action, 2012). In promoting women's enterprise development, a number of stakeholders need to operate in tandem: entrepreneurs; specialized support organizations, financial institutions, civil society organizations (i.e. women support groups) and the public sector. Together, they need to perform multiple functions: to provide a conducive

Photo: Bunu Dhungana

policy and regulatory environment; to facilitate access to funding; to provide business development support and mentoring; to link entrepreneurs to markets and to strengthen the value chains as a whole.

For the WEE programme, such collaborations helped us fill gaps in our capacities; they also enabled scale and speed and, most importantly, brought fresh perspectives into our thinking. One of the roles that WEE partners have taken on is to act as a champion institution for the women's energy enterprise approach, and galvanize many actors into the actions required to sustainably bring about the changes in attitudes, practice and policy necessary to support women's energy entrepreneurship. The key partners in this set up include:

- The entrepreneurs, who bring energy products and services to last-mile communities. They also play a crucial role in increasing awareness concerning energy and environment issues in general and about available options.

- Renewable energy product suppliers, who benefit from increased distribution, sales and after-sales service networks as a result of their ability to extend credit to enterprises and to final consumers.

- Banks, MFIs, cooperatives and village savings and loan associations, who extend credit to a pipeline of potential clients (investment-ready women entrepreneurs, equipment suppliers).

- National government agencies and local authorities, who set the policy environment and the regulatory framework in which women's energy businesses have to operate, including issues related to taxes on energy products and quality assurance.

Engaging family members including men is critical to women's enterprise development efforts

When women entrepreneurs grow their businesses, the dynamics in the household and the family can change. Engaging husbands, partners and other family members to ensure their buy-in and support is critical. Men's engagement is needed to help women overcome some of the persistent barriers they face, such as mobility, and contribute to more sustainable businesses. For example, one of the reasons that women entrepreneurs do not perform as well as male entrepreneurs is because they are often the household's primary care-giver, which means that they do not have as much time as their male counterparts to devote to their businesses.

Men can benefit from greater gender equality, as when the pressure of being the household's main or only breadwinner is lifted (ILO undated b). However, there have also been instances where, once women's businesses begin to do well, the men take the reins out of the women's hands. We saw this in Indonesia where the most successful Wonder Women often involve their husbands (Baranova, 2017). In a couple of cases, we found that this led to the husband taking over the business entirely. At the same time, adding a "bread-winner" role to a woman with an already high workload

can burden her further, as she then has to share breadwinner responsibilities and continue to carry out household and caring work. Hence, it is important to understand the context-specific gender dynamics to ensure that men play a positive role in the entrepreneurial efforts of their wives. Finding a balance in engaging men, without allowing them to overpower women-focused programming, is essential.

8.2 Lessons in managing a women's enterprise development programme

As ENERGIA, and the anchor and manager of the WEE programme, we learned that setting up a comprehensive implementation programme requires time, patience, commitment and dedicated core resources. There is no single, preferred and predetermined path that can be followed. Business models and advocacy strategies need to be contextual, trust needs to be built before one can engage with policymakers and decision-makers, and network partners need time to set up efficient and effective business models together with the women entrepreneurs. From a programming point of view, some of our lessons have been as follows:

A multi-year commitment, along with flexible funding is necessary

In line with the above thinking, ENERGIA secured funding for the WEE programme, which was then provided, together with technical support, to five partners. The multi-year funding helped the partners to plan for the longer term and learn what is required to expand such a programme into the hard-to-reach target locations, to provide continued support to women entrepreneurs, and to drive the organization forward overall. Even though the WEE programme was built on the solid base of our partners' experience, our donors gave us substantial flexibility, which enabled us to innovate, learn and make course corrections as we went along. As the external evaluation observes, this flexibility allowed ENERGIA to "adopt a responsive, partner-oriented management style", listening and learning from the partner organizations, which uncovered new insights and techniques, helped mitigate risks, deal with setbacks, and ultimately deliver on results" (Sustainable Energy Solutions, 2017).

Aggregation of efforts is an important programming function

ENERGIA and the WEE implementation partners played this role on multiple levels. In approaching local financial institutions, the partners aggregated demand for credit from a number of entrepreneurs, making it a viable packet for the financial institution; they also aggregated demand for energy products when approaching product suppliers, thereby negotiating better prices. At the level of ENERGIA, aggregating the services provided to our partners enabled us to optimize resources significantly. At the same time, aggregating the collective experience of our partners enabled us to generate credible evidence and data from the field, which has been useful for global advocacy.

Along with the enterprises, the capacities of the partner organizations also need to be bolstered

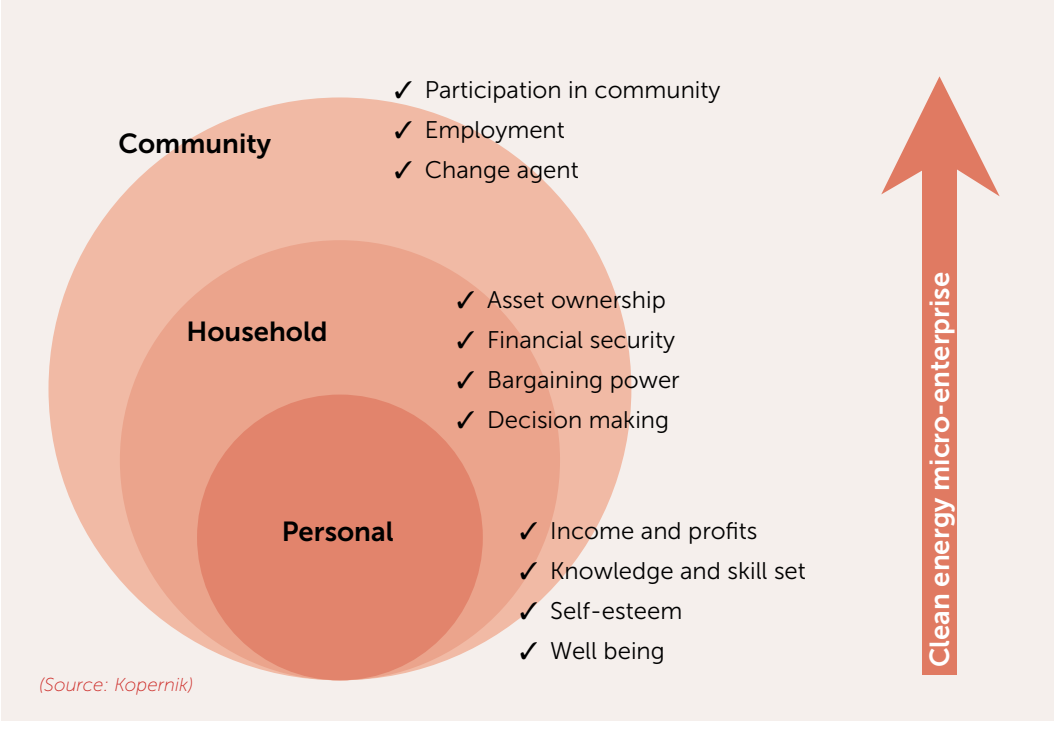
Early in the project, ENERGIA facilitated capacity building in business development, report writing, data collection and advocacy, and has worked alongside each of the partner organizations on the implementation of its strategy. Additionally, based on the capacity needs identified by the partners, one partner organized a training of trainers course on providing business development services, and training on empowerment and leadership was organized by the Global Alliance for Clean Cookstoves. Partners shared their specific expertise through periodic webinars, exchange visits were organized, and all partners met in programme meetings to learn and exchange ideas.

Monitoring must be participatory and aid decision-making

In the WEE programmes, results are seen at various levels, which need to be captured in monitoring. At the basic level, the results of the WEE programme are seen on three levels: individual, household and community (see figure 11). Additionally, we see results such as the enhanced capacities of the organizations involved, increased funding secured by partners and increasing interest and involvement of other stakeholders in WEE-like actions. The monitoring aspect of a multi-country programme like the WEE is critical for programme management and reporting, but most importantly to ensure that we are able to identify loopholes and plug them through appropriate course corrections. The WEE programme is supported by a Results Assessment Framework that aims to capture all of these facets and aid decision-making.

During monitoring missions, 80% of the time is spent in interacting with the entrepreneurs and other stakeholders on the ground. In four years, the ENERGIA International Secretariat interacted directly with more than 600 entrepreneurs.

Fig. 11 Impacts of the WEE programme



For ENERGIA, a central component of the monitoring process has been annual monitoring missions to each of the partner organizations, with an objective of gaining insight into the progress made by the partners and the strategies applied.

Peer-to-peer learning is invaluable.

The WEE programme adopted a to peer-to-peer learning approach, with ENERGIA facilitating a process in which the partner organizations shared and exchanged best practices and challenges with one another, and with ENERGIA, in order to improve on the various models and change course if needed.

Key elements covered during monitoring missions:

Detailed presentations from the partner on project strategy and the business model operating on the ground, including major deviations if any, and follow-up on earlier agreed actions.

Fieldwork, including meeting entrepreneurs (well-performing and not so well-performing ones), mentors and partner organizations in the product value chains, including financing institutions.

Progress updates (relative to stated objectives/work plan), including strategy for upscaling, update on last-mile documentation systems, strategy to assist entrepreneurs with raising investment capital, capacity-building strategies, challenges being faced, upscaling plans and exit strategy.

The ENERGIA Secretariat shares observations and feedback from fieldwork with the project team. Conclusions are drawn, and time-bound action points determined.

ENERGIA shares the overall WEE programme overview with the partner team, including latest updates, new approaches and lessons from other partners.

8.3 Looking ahead: What is next for the WEE programme?

The WEE intervention was ENERGIA's first foray into on-the-ground implementation. Moving forward, ENERGIA plans to strengthen its work in the areas below.

Deliver calibrated strategies to accelerate the growth of entrepreneurs

Many of the enterprises that the project has supported are now delivering promising results and have been running their businesses for a few years. Nevertheless, most continue to be in a growth phase and are far from fulfilling their market potential. At the same time, we have entrepreneurs who are still in their infancy and are vulnerable to the vagaries of the renewable energy market. Until these become financially viable, they will continue to struggle to attract much-needed finance, which in turn limits their ability to enter new markets or diversify into products and services that are attractive to consumers. As we move forward, we will need to have strategies and inputs in place calibrated to meet the varied needs of entrepreneurs in different phases of their growth trajectory.

Strengthen the capacities of, and support market-enabling measures for, our partners

We believe the success of our partners, who are all pioneers in the field of women's energy entrepreneurship, is essential, not only for them to bring energy services to more people, but also to encourage more such organizations and investors to join these efforts. We therefore see the need for continued support (including grants, social investment, business skills and market linkages) to our existing partners, in conjunction with leveraged private and public investment, to support them in scaling up and deepening their impact on last-mile markets.

Stimulate a conducive environment to improve women's energy access and their engagement in energy value chains

Building up from the WEE programme implementation, ENERGIA will continue to convene, connect and coordinate partners as allies, and help amplify a common "voice" on women's energy entrepreneurship. ENERGIA and its partners will use global and national advocacy, awareness campaigns and engaging with national energy actors to create a gender-responsive enabling environment in the energy sector. Moving forward, it will use its global partnership base, its vast network and its presence at high-level events to influence policy and maintain the current focus on combining international engagement with local advocacy approaches. It will also engage the private sector and financial institutions proactively, informing them of the benefits of being more gender-inclusive in their product design, marketing, hiring practices, management and workforce provisions, and work towards unlocking finance from the private sector, financial institutions and other donors for women's energy businesses.

Set up a robust, technology-aided programme management system.

An important programme component in our upscaling efforts would be to further strengthen the existing M&E system, especially to track social impacts, related to the expansion of economic activities for women, such as the creation of new wealth to support family investments in education and health, and leadership and contributions to local development. Learning from the experiences of some of our partners, ENERGIA will support all its implementation partners in digitizing not only the monitoring and evaluation data but also all programme-related such as sales transactions, accounting and inventory control.

8,4 Many have joined already, but more are needed. Who will follow?

There is a huge global market opportunity for the private sector in energy access, with an untapped market in many countries. Looking at current market barriers, it is clear that new approaches and business models are needed to overcome these and create viable investment opportunities. At the same time, women are becoming important change agents in the energy access space, leaders in the private sector, civil society organizations and social enterprises, as well as business owners and energy entrepreneurs. Recent developments reflect the growing awareness, interest and commitment to women's energy entrepreneurship from decision-makers in the private and public sectors, placing this area in a good position for strong progress over the coming years.

This document is an effort to share ENERGIA's experience in women's entrepreneurship. For ENERGIA, it is encouraging to see the momentum around this space. A wide range of actors, national and international NGOs, private sector organizations, donors and governments are starting to work on women's entrepreneurship in energy. We need to keep the momentum going and further scale up these efforts globally. At this point, we need to coordinate and harmonize our efforts to bring them to a level where they can make a meaningful dent in the energy access gaps. In doing so, we need to elevate women to become leaders at all levels, as entrepreneurs and business leaders, as financiers and as community leaders. Moving forward, we will continue to strengthen the capacity of organizations working on women-centric business models to develop technical, business and leadership skills and advocacy capability and expand women's access to finance by developing financing instruments, mechanisms and specific loan products for women, including microfinance and mobile banking. We will engage with manufacturers, suppliers and distributors to partner with women's formal and informal networks as distributors/resellers. We will encourage and support governments in reforming the business environment for women, including tax administration and regulations, especially for smaller, informal-sector firms. In addition, we will seek to amplify our efforts in energy access discussions as part of the global agenda.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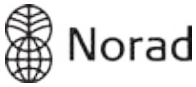

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ENERGIA, the International Network on Gender and Sustainable Energy is an international network of like-minded organizations, currently working with 36 partners in 18 countries in Africa and Asia. Our vision is that women and men have equal and equitable access to and control over sustainable energy services as an essential human right to development. To achieve this, we:

- contribute to energy access for all by scaling up the delivery of energy services through women-led micro- and small businesses;
- advocate for and provide technical support to the mainstreaming of gender approaches in energy policies and programmes;
- provide, through research, an evidence base for improving energy investment effectiveness;
- raise awareness and enhance knowledge of issues related to gender and energy through networking and knowledge products.

ENERGIA is hosted by Hivos, an international organization that seeks new solutions to persistent global issues. With smart projects in the right places, Hivos opposes discrimination, inequality, abuse of power and the unsustainable use of our planet's resources.

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