OPENING DOORS

MAPPING THE LANDSCAPE FOR SUSTAINABLE ENERGY, GENDER DIVERSITY & SOCIAL INCLUSION

SUSTAINABLE ENERGY FOR ALL

WALLACE GLOBAL FUND
For a sustainable future

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FOREWORD

People all over the world are still living without reliable, affordable energy services, such as basic electricity and clean fuels and technologies for cooking. Efforts to close these gaps are not moving fast enough.

Women, children, and the most marginalized, living in urban slums and rural parts of Africa and Asia, are being left behind as a result. They are especially prone to illnesses and premature deaths from cooking with kerosene, animal dung, wood, or charcoal. They are also the most vulnerable to the impacts of climate change, including extreme weather, failing crops, and spikes in food prices and disease.

This needs to change. Now.

Without new strategies to give vulnerable groups a stronger voice on energy issues, we risk continuing to leave them behind in the move to reach the Sustainable Development Goals and the ambition of the Paris Agreement on climate change.

By demanding that women have an equal role in decision-making in the global modern energy transition, we can accelerate progress in providing sustainable energy services—services that will improve their lives and livelihoods. By adopting "leave no one behind" approaches, we can better understand the unique challenges that marginalized populations face in securing—and taking advantage of—sustainable energy.

Research and studies across Africa, Asia, and other emerging economies show that empowering women changes energy decisions. Women hold significant sway in household decisions related to the purchase of energy technologies—and even more in cooking technologies and fuel provision. They make or influence 80 percent of buying decisions and control $20 trillion in global spending.

As more women are connected to modern energy services, entire communities benefit. Women reinvest 90 percent of their income in their families and communities. They are also more likely than men to invest a large proportion of their household income in the education of their children, including girls. A recent study from Brazil, for example, showed that in rural areas with access to electricity, girls are 59 percent more likely to complete their primary education.

We are strong believers in Aristotle's thought that, "the whole is more than the sum of its parts." By identifying and leveraging promising efforts already underway on gender equality, social inclusion, and women's empowerment, we can make a far bigger difference—collectively—in ensuring energy services for all and ensuring that no one is left behind in securing sustainable modern energy.

Before traveling down this path together, however, we need to understand the landscape we are entering. This report is a first-of-its-kind mapping of this landscape, with a focus on 45 countries where there are significant challenges in providing sustainable energy services to all, including access to electricity, clean cooking, renewable energy, and energy efficiency.

Our research captures data from 174 organizations, pro-

grams, and policy instruments that are already engaged in gender equality, social inclusion, and women's empowerment at the intersection with sustainable energy and climate change. Their activities are wide ranging, including renewable energy production and distribution, energy financing, energy policy, and on-the-ground capacity building. There is also a big spread geographically, with most of the programs being in Sub-Saharan Africa (35 percent), followed by South Asia (18 percent), Latin America and the Caribbean (15 percent), and East Asia and the Pacific (11 percent).

The data are by no means yet comprehensive, but they already reveal important, immediate challenges for those stakeholders working to get energy services to those without them, both quickly and cleanly. These challenges include: a lack of funding, especially multi-year funding; low awareness of the importance of integrating gender and social inclusion—as well as climate change considerations—in the design and delivery of energy services; and a very low number of policy instruments addressing these overall issues.

This report highlights 10 promising projects that are underway—from Mexico and Indonesia to Burkina Faso and Bangladesh. These projects are examples of success; but to go beyond incremental improvement to wide-scale success, far bigger shifts are needed towards approaches that integrate gender equality, social inclusion, and women's empowerment.

We hope that this mapping report will help identify opportunities to build on successes and form new partnerships for action—providing a push in the right direction.

At Sustainable Energy for All, we are launching a new platform with our partners—the People-Centered Accelerator—to advance and strengthen gender equality, social inclusion, and women's empowerment across the vast global energy value chain. By engaging with grassroots groups, corporations, and international platforms, we hope to turn these ideas into reality.

RACHEL KYTE
Chief Executive Officer of Sustainable Energy for All (SEforALL), and Special Representative of the UN Secretary-General for Sustainable Energy for All.

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EXECUTIVE SUMMARY

Women, girls, ethnic minorities, indigenous people, people with disabilities, and migrants are being left behind in human development gains that have been achieved over the past 25 years. They are being short-changed when it comes to sustainable energy.

Whether on basic energy access in emerging economies or C-suite representation at modern energy companies, these groups tend to lack autonomy, authority, and decision-making power. In 2016, women still represented just 40 percent of the global labor force and 23 percent of national decision-makers.

Further, the poorest and most marginalized people—a heterogeneous group facing an array of multidimensional challenges—typically live beyond the reach of conventional markets and urban economies. They require channels and energy services that can provide sustained social gains—such as education, healthcare, or public infrastructure—that might not be market-based or financially sustainable in the short term.

These are trends that the international community cannot accept as it pushes for universal access to clean energy by 2030 and decarbonization of the global economy in the second half of the century. Access to energy is a basic human right, with modern energy services—such as lighting, cleaner cooking fuels, refrigeration, medical services, pumped water, and communication technologies—being a necessary condition of economic well-being. Without new innovative approaches, unacceptable trends will continue—such as women in developing countries suffering more than men from widespread energy poverty, including lack of access to basic electricity and clean cooking.

But the tide is turning. The proliferation of actors working at the intersection of gender, social inclusion, sustainable energy, and climate change is a promising development. The legitimacy of gender inclusion and energy access as an interrelated issue area is now well established; numerous studies show positive benefits when these issues are tackled together. A global movement is taking shape to create a more inclusive approach to expand energy access, with women and marginalized people taking center stage—no longer as victims, but as agents and accelerators of change. The Sustainable Development Goals (SDGs)—specifically, SDG 7 on energy and SDG 5 on gender—support this movement by creating a platform for collaboration, investment, and action.

Momentum is also building for a rights-based approach to energy access for women and marginalized people—who need to be involved in the planning, design, and execution of energy services—to ensure that creative approaches with the common themes of empowerment and equality reflect their context and maximize the benefits to all. This can help create a world where men and women enjoy equal access to modern energy services; women participate more fully across the entire energy access paradigm; finance is unlocked for greater gender equality, social inclusion, and women's empowerment in the energy sector; and partnerships form or strengthen that bring new perspectives and a wider range of stakeholders to achieve a more gender-responsive and socially inclusive energy sector.

UNDERSTANDING THE LANDSCAPE OF SUPPORT FOR WOMEN AND MARGINALIZED GROUPS IN SUSTAINABLE ENERGY

There is great diversity and significant activity in initiatives, organizations, policy instruments, and businesses that are taking a proactive approach to gender and social inclusion. But where they are working, with what focus, and how they are connected to each other is not well understood or catalogued in a systematic way.

This gender- and energy-mapping report, *Opening Doors*, is a first-of-its-kind effort to systematically catalog the wide-ranging universe of stakeholders and initiatives that are addressing energy poverty and accelerating the global clean energy transition by empowering women and promoting gender equality and social inclusion.

This research maps the landscape of what is happening around the world on gender and social inclusion, on who is doing it, and how funds are flowing. Its data support learning on the experience base and the actors working on gender, energy, and sustainable development at the local, regional, and national levels. It makes the case for strengthened engagement on these issues by providing evidence for the transformative effect of gender equality, social inclusion, and women's empowerment, as it influences the sustainable energy and climate change agendas. And, finally, it informs the implementation of international frameworks.

TRENDS IN GENDER-RESPONSIVE AND SOCIALLY INCLUSIVE APPROACHES TO SUSTAINABLE ENERGY

The trends described here reflect data collected through desk research and structured interviews on 174 programs, on the organizations and policy instruments focused on energy poverty, and on the clean energy transition in seven geographic regions.[1]

The analysis centers on the geographical distribution of these entities, their primary focus, the types of activities they are engaged in, the characteristics of those funding and implementing programs, and the drivers for their adoption and success, as well as innovations and barriers to progress. This research is a starting point for creating a more comprehensive mapping that will hopefully pave the way for expanding the community of players working on gender and social inclusion and sustainable energy issues, and for driving significantly more capital into sustainable energy solutions.

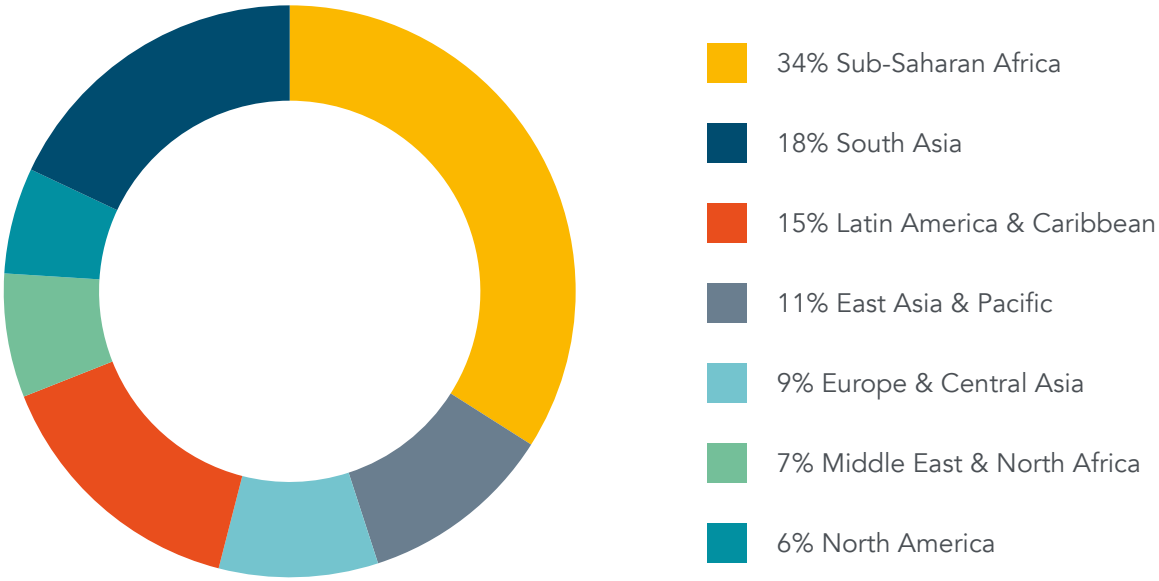
The region reporting the largest number of activities was Sub-Saharan Africa, where 34 percent of programs, businesses, and organizations reported working (Figure ES.1). South Asia, the second highest, was the focus of 18 percent of activities. These two regions have significant energy access and poverty challenges and account for most of the 1.06 billion people living without access to electricity globally. Moreover, Sub-Saharan Africa has the lowest human development index worldwide (0.523 compared to 0.887 in OECD) as well as the highest rate of gender inequality (0.572 compared to 0.194 in OECD).[2]

Just over half of the entities included in the research identified their primary focus as energy poverty (28 percent) or accelerating the clean energy transition (24 percent) (Figure ES.2). Common trends exist between regions with similar socio-economic profiles. In Sub-Saharan Africa, South Asia, and East Asia and the Pacific, energy poverty initiatives are more prevalent. They focus on electrifying remote areas, making renewable energy technologies accessible to last-mile customers, supporting improved cookstoves and modern cooking fuels, and moving capital in the sector. This reflects the low incomes and low levels of energy access in these regions. In Latin

[1] *East Asia and the Pacific (EAP), Europe and Central Asia (ECA), Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), North America (NA), South Asia (SA) and Sub-Saharan Africa (SSA).*

[2] *UNDP (2016), Human Development Report: http://bit.ly/2nJ2t6c.*

FIGURE ES.1 REGIONAL DISTRIBUTION OF INITIATIVES INCLUDED IN THE RESEARCH



America and the Caribbean, and Europe and Central Asia, programs focus primarily on accelerating the clean energy transition through energy efficiency, research, technology transfer, and funding. This is indicative of higher incomes and levels of access to electricity.

Women's empowerment (WE) and gender and social inclusion (GSI) were reported less of a primary focus, at 22 percent and 15 percent, respectively. Women's empowerment, primarily in Europe and North America, is delivered by associations and networks that focus on increasing women's leadership and coaching a new generation of leaders. In Sub-Saharan Africa and Asia, however, the emphasis is on the economic development of women.

Just 12 percent of organizations are focused on moving capital into sustainable energy solutions that address gender and social inclusion. There are three key funders in this space: development institutions, government institutions, and foundations/charities. Most are based in the US and Europe and move capital to Sub-Saharan Africa, Latin America and the Caribbean, and the Asia-Pacific regions.

Development institutions and governments fund 45 percent of the programs. They have traditionally led the way in funding innovative development approaches in low-income countries and are the key pioneers in funding gender and social inclusion initiatives. Government funders are predominantly foreign governments supporting developing countries through cooperative agreements, but some national governments are also providing finan-

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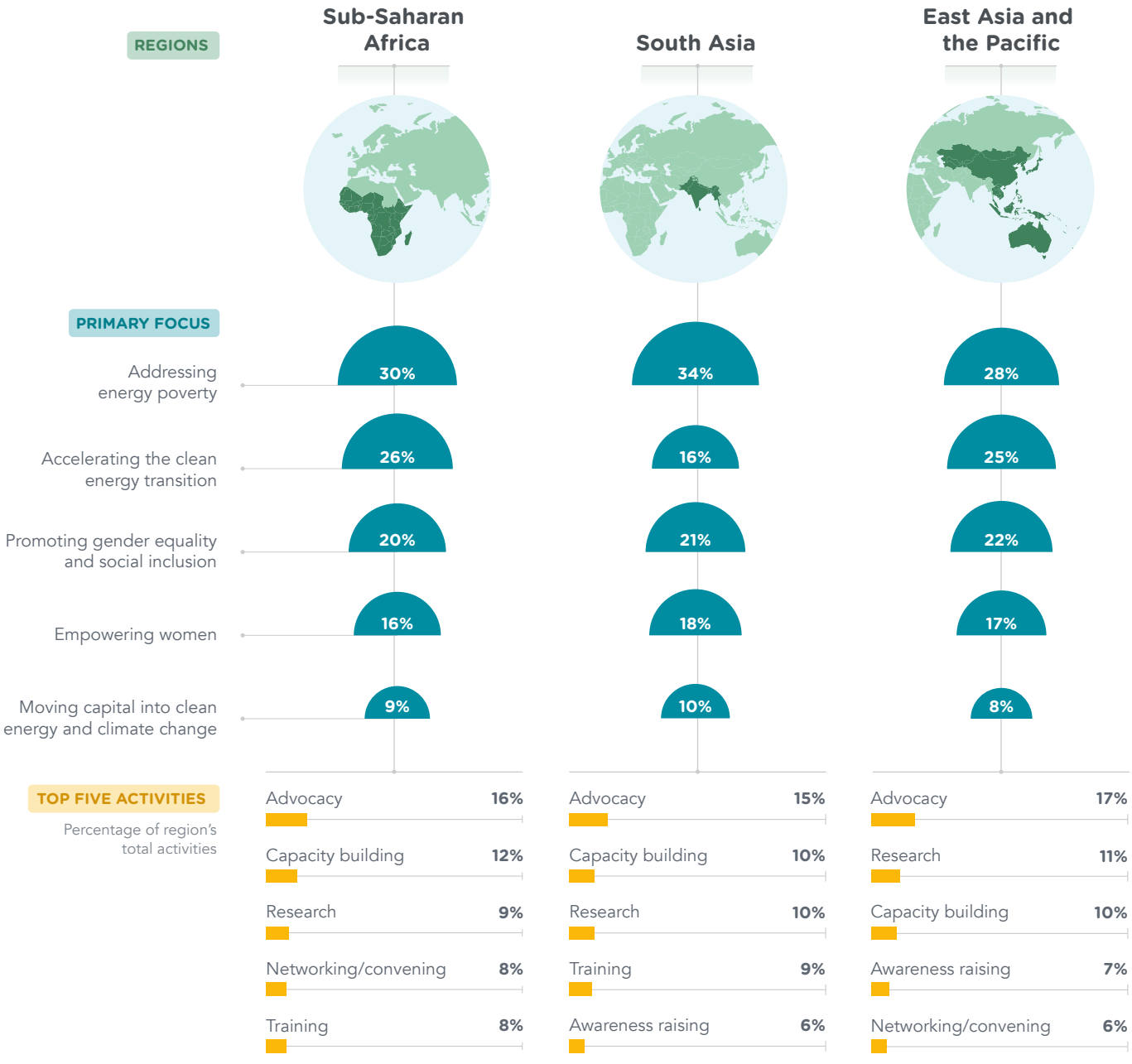
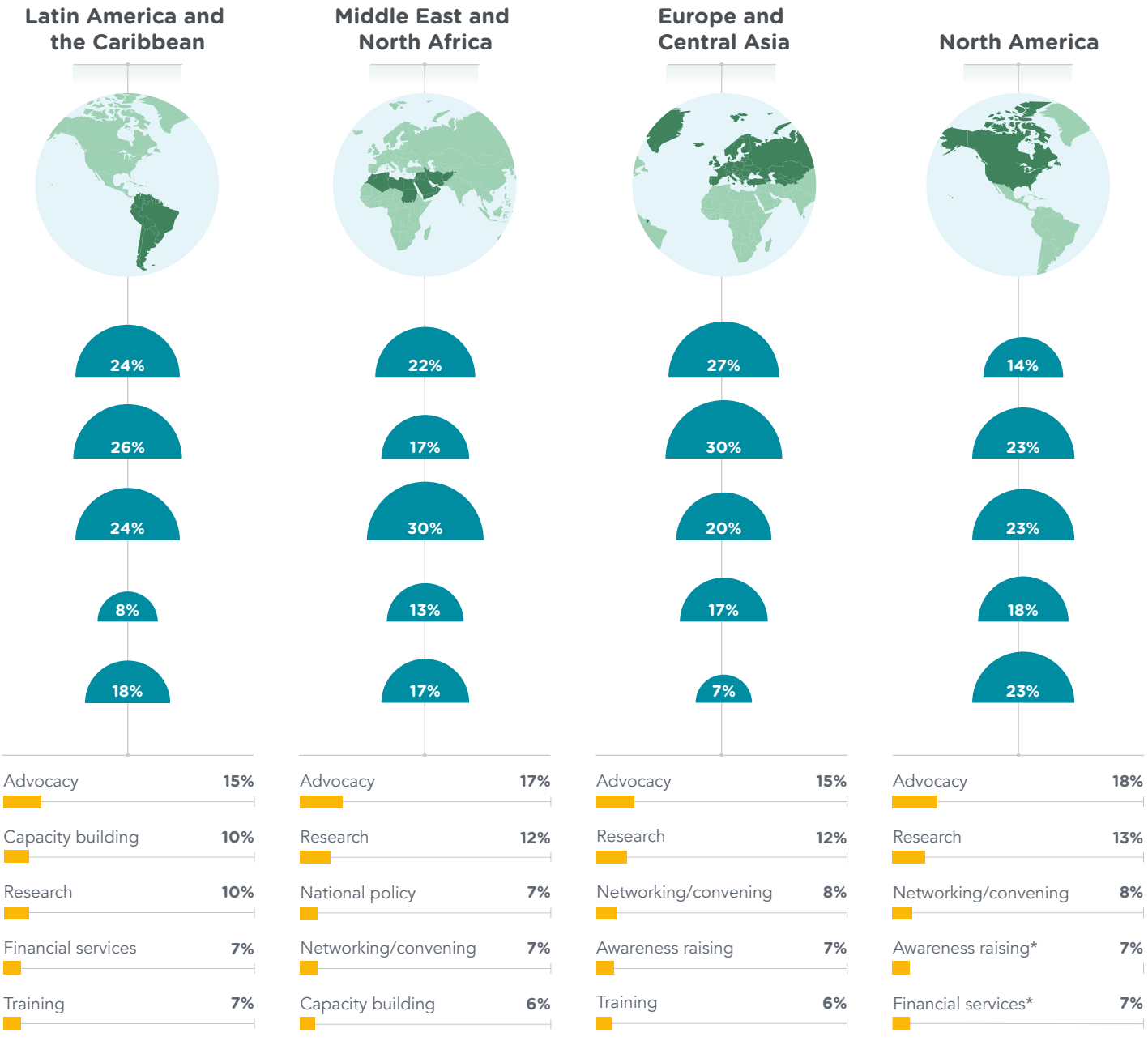
FIGURE ES.2 REGIONAL PRIORITIES AND APPROACHES



Source: Sustainable Energy for All database (as of November 1, 2017).



Notes: 1. Percentage total may not add up to 100 due to rounding errors. 2. The dotted line represents approximately the Line of Control in Jammu and Kashmir by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. 3. This map was produced by SEforALL. It is based on the UN Map of the World, which can be found here: http://www.un.org/Depts/Cartographic/map/profile/world.pdf. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of SEforALL, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

**Awareness raising and Financial services are tied with Grant-making at 7%.*

cial support to initiatives in their countries. The most commonly cited government funders are those in the European Union.

Foundations and charities contributed funds in 20 percent of the cases, but it should be noted that the sample size in the database is very small.

Funders typically work in partnership, each contributing to the overall funding or stepping in at different stages of an organization's growth. 36 percent of the initiatives in the database have received funding from development institutions, government institutions, and foundations. The funding provided is overwhelmingly grant-based (66 percent).

Corporate funders are active in Europe and Central Asia, and in North America, where they provide more than 20 percent of overall funding. Latin America and the Caribbean, and South Asia, also benefit from 12 percent and 16 percent of corporate funding, respectively, while Sub-Saharan Africa receives only 5 percent.

The most common activities are advocacy, research, capacity building, training, networking/convening, and awareness raising. This is consistent with the nascent nature of the gender and energy field, which initially struggled to gain acceptance and legitimacy. Thus, the focus is on early-stage activities to build a strong foundation for action.

Advocacy is the most widely reported activity across all regions, whereas networking and convening are more pronounced in Europe and Central Asia, the Middle East and North Africa, and North America. Networking and advocacy bring like-minded people together to increase their power for influencing policymakers and changing behavior. In the last 10-15 years, there has been a noticeable shift in the international discourse on the connection between the energy and climate change agendas and gender and social inclusion. This is in part because of the tireless efforts of early advocates. These efforts are reflected in the recent uptick in visibility and available funding, although the latter is still relatively small. International norms around gender equality are very gradually making themselves felt in the private sector and among public utilities, with benefits for business in meaningful financial and non-financial terms.[3]

Training and capacity-building activities are more prevalent in Sub-Saharan Africa, South Asia, Latin American and the Caribbean, and East Asia and the Pacific. Capacity building helps create the know-how to implement programs and build an enabling environment for additional investment and overall growth. Whether gender related or not, the trend among large financial vehicles is to add a capacity-building component to any project they fund in developing countries.

The encouraging signs revealed in the database are that other actors, offering a range of perspectives, are joining the movement and focusing on issues such as manufacturing, distribution, service and installation, financial services, monitoring, and auditing (Box ES.1).

International non-governmental organizations (NGOs) and grassroots organizations are taking the lead in implementing programs, usually by working in partnership. Training and research institutions are involved in 16 percent of the programs and the private sector is involved in 15 percent of them. This make-up is typical of development projects that don't expect financial returns.

The diversity of activities operating at the national and local levels suggests that adapting ideas to site-specific gender contexts and energy situations remains important, together with the growing view of framing energy access for women as a human rights issue. Across all pro-

[3] *EY, 2016. Diversity and disruption in utilities: How four disconnects prevent greater gender diversity and innovation in power and utilities companies: https://go.ey.com/2haw7zN.*

BOX ES.1 HIGHLIGHTING INNOVATIONS FROM ALL CORNERS OF THE WORLD

Learning about different approaches for promoting gender equality and social inclusion that can help address energy poverty and accelerate the clean energy transition is a core objective of this mapping. The report highlights ten innovative examples in detail. A sample of these innovations is summarized here:

Energy Entrepreneurship: Energia's novel approach to Women's Economic Empowerment

Energia's Women's Economic Empowerment program works closely with women energy entrepreneurs in hard-to-reach areas across Nepal, Indonesia, Kenya, Nigeria, Tanzania, Uganda, and Senegal. The "last-mile" distribution model, centered around women-led micro- and small-scale businesses, has led to a robust program with 4,000 women entrepreneurs involved in selling and distributing clean energy products or adopting clean energy to boost the productivity of existing businesses.

Fuel Switching Using Biomass Gasification: Burkina Faso

Cashew nut facilities in Burkina Faso are usually 90 percent staffed by women who are tasked with shelling, cleaning, and sorting the nuts, but local production is limited. Biomass gasification of the waste cashew shells has led to the elimination of fuelwood and LPG in the processing and created a way to dramatically expand local production. This is expected to lead to increased income and more widespread fuel switching.

Gender Mainstreaming for Energy Policies and Regulations: ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) at the Forefront

Heads of State in the Economic Community of West African States (ECOWAS) adopted the first-ever regional policy on gender-responsive energy development in June 2017. The ECOWAS Policy for Gender Mainstreaming in Energy Access commits the 15-member state governments to: increase general awareness of gender and energy within government, academia, and at large; mainstream gender into all public-sector energy activities; achieve gender balance in public sector energy-linked jobs and decision-making roles; and ensure women have equal opportunity to participate in the private energy sector. There is now an accompanying ECOWAS regulation mandating gender-impact assessments for energy projects under consideration. ECOWAS is also influencing change across Africa, with similar efforts now being taken up in East Africa (East Africa Centre for Renewable Energy and Energy Efficiency) and Southern Africa (Southern Africa Centre for Renewable Energy and Energy Efficiency).

***Shine* Campaign: Bringing together resources and commitments to universal energy access**

A new global campaign called *Shine*: Investing in Energy Access for All calls on international partners to: pledge ambitious, sustained, and collaborative action on energy access through programs, grants, and investments; and to actively participate in a community of practice committed to ending energy poverty. Partners include the Wallace Global Fund, Sustainable Energy for All, GreenFaith, IKEA Foundation, Mott Foundation, and others. Particular attention is paid to gender equality and social inclusion in catalyzing distributed clean energy development at scale to meet the 2030 goal of universal energy access.

grams, the presence of well-informed local champions invested in inclusive outcomes—and willing to raise the visibility of these issues—has been a key success factor.

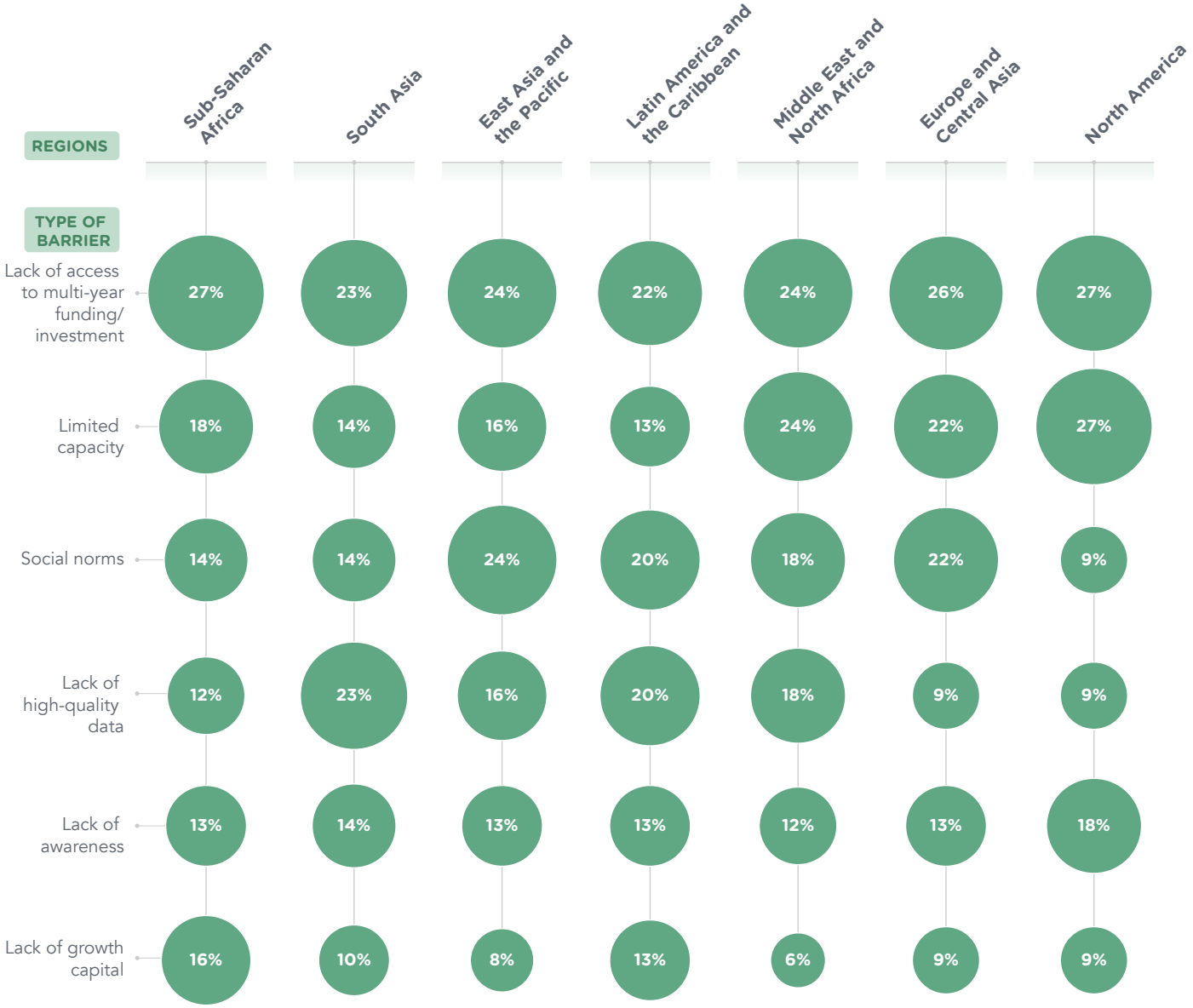
The three most prominent barriers identified in this research are: 1) lack of access to multi-year funding, 2) limited capacity, and 3) inhibitive social and cultural norms (Figure ES.3).

Across all regions, and independent of the type of organization, access to multi-year funding is reported as the top barrier—even in North America where funding is seemingly more accessible. Access to multi-year funding may be particularly challenging, given that philanthropic and development models are evolving towards shorter-term grants and increasing competition for funds.

Limited capacity is the second most reported barrier. The gender and energy sector is specifically challenged by the lack of women in technical fields, limiting their participation in energy companies and their involvement as entrepreneurs, beyond the retail segment of the value chain. Limited capacity also reflects difficulties faced by local implementing partners and limited understanding of how to incorporate gender and social inclusion in energy programs.

Barriers related to cultural and social norms are inherent to gender and social inclusion initiatives. At the root of this constraint is the subordination of women to men in many cultures, whether in energy projects, education, or decision-making.

FIGURE ES.3 MOST COMMON BARRIERS IN EACH REGION



Source: Sustainable Energy for All database (as of November 1, 2017).

Notes: 1. Percentage total may not add up to 100 due to rounding errors. 2. Multiple barriers could be selected. Percentages based on total number of barriers reported within each region.

Notably, "limited awareness" was one of the lowest-ranked barriers, perhaps indicating that issues of energy, climate, and gender and social inclusion are beginning to be recognized more widely.

Also worth noting, and spanning all aspects of this agenda, is the lack of gender-disaggregated statistical data, without which the extent of unequal access and opportunity cannot be grasped. Data collection is particularly difficult in isolated, rural areas of developing countries or with small, grassroots organizations that do not have the capacity to focus on data collection.

MOVING FORWARD

Moving capital into gender-responsive and socially inclusive sustainable energy solutions: The research shows a wide range of activities, including advocacy, research, capacity building, training, networking, and convening, which have laid an important foundation for growing, maturing, and delivering greater gender and social inclusion impact as the energy sector attracts more investment and private-sector engagement. Grants need to be increased in amount and tenor to respond to the most frequently cited barrier of a lack of "access to multi-year funding" and used to leverage more and varied types of sustained funding, including commercial investments. More methodical inclusion of women-centered funds into existing sustainable energy financing vehicles is a key need, recognizing that there are both rights-based and efficiency-based arguments for doing so. Evidence continues to emerge for the efficiency case.

Partnerships, learning, and collaboration: The research shows great variety and creativity of entities working on gender and social inclusion as it relates to sustainable energy. There is significant opportunity to connect the dots between groups entering through various "doors" of gender, environment, human rights, climate, energy, development, business, and finance. Champions must be connected to one another across geographies, both South-South and South-North, across disciplines, and across levels of action to leverage and scale innovations for greater and more sustained impact.

Further, where natural sectoral connections exist, they can be important in building wider coalitions of interests. It would be useful to make connections between sustainable energy and sectors that disproportionally affect women and disadvantaged groups, like cooking or end-user finance, but also less obvious areas like maternal health, food security, clean water, entrepreneurship, agriculture, education, and others. This can promote interdisciplinary learning and tap into new, joint opportunities and funding.

Advocacy, community mobilization, and political change: Against a backdrop of declining production costs for renewable energy technologies and international targets on energy and climate change, the time is ripe to build a more cohesive and impactful movement on gender, social inclusion, women's empowerment, and sustainable energy. Platforms that bring together diverse actors and elevate the profiles of locally grounded individuals and groups should be generously supported. Resources are needed to support aggregation of lobbying demands, message coordination among groups, and a high-level strategic mobilization plan to build gender and social inclusion more firmly into sustainable energy opportunities, financing, and services. When sustainable energy becomes widely viewed in political spheres not just as an issue area, but a human—and women's—right, the door will be opened for follow-on actions, budgeting, and policy reform.

NEXT STEPS

It is hoped that, armed with this information, stakeholders can engage in new opportunities, such as the creation of partnerships for implementation and funding, and learn from approaches that may not be well known but offer great potential.

The following **four immediate next actions** are proposed for philanthropic donors and development finance insti-

tutions over the next three-to-six months to enhance the integration of gender and social inclusion in sustainable energy.

- Publicize and continue to expand this database as an online tool to provide global audiences with information on who is doing what, to help identify gaps in programming or funding, and to foster linkages across and within the energy and other development sectors.

- Link the findings from this mapping to ongoing efforts to design or implement programs that advance gender and social inclusion in sustainable energy. The aim would be to support those efforts to build a larger constituency for action; gain a deeper understanding of ongoing activities that they have synergies with—or could connect to—for accelerated action or greater scale and impact; and both raise the visibility of important or innovative efforts that are underway and provide lessons for other initiatives.

- For energy access, lead a participatory, grassroots effort to create a unified strategy to unlock barriers for greater gender-responsive and socially inclusive approaches in sustainable energy. The strategy should articulate the resources needed to implement this strategy, including the overall funding types and amounts to meet key global goals by sub-sector and the sources of funding. It could thus provide a rallying point for raising capital. Collaterally, this document could help funders better coordinate and plan their activities in a sustained way.

- Support a movement that brings together the diverse set of actors around common issues and needs highlighted in the mapping to cross boundaries (geographic and sectoral) and coalesce in ways that build momentum around sustainable energy access as a women's right.

ABBREVIATIONS

BGEF	Bright Green Energy Foundation
CC	Clean cooking
CERO	Carbon Emissions Reduction Obligation
ECO	Energy Company Obligation
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy efficiency
EL	Electrification
EY	Ernst and Young
GACC	Global Alliance for Clean Cookstoves
GHG	Greenhouse gas
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit
GSI	Gender and Social Inclusion
GTC	Green Technology Centers
GTF	Global Tracking Framework
HHCRO	Home Heating Cost Reduction Obligation
IUCN	International Union for Conservation of Nature
LDCs	Least Developed Countries
LPG	Liquefied Petroleum Gas
MDG	Millennium Development Goal
MW	Megawatt
NDC	Nationally Determined Contribution
NGO	Non-governmental organization
OECD	Organisation for Economic Cooperation and Development
PSR	Priority Service Register
PV	Photovoltaic
RE	Renewable energy
REN21	Renewable Energy Policy Network for the 21st Century
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All

SEWA	Self Employed Women's Association
SNV	Stichting Nederlandse Vrijwilligers
STEM	Science, Technology, Engineering, and Mathematics
UK	United Kingdom
UN	United Nations
UN STATS	United Nations Statistics
UNDP	United Nations Development Programme
UNU-GEST	United Nations Gender Equality and Training Programme
US	United States of America
USAID	United States Agency for International Development
WEE	Women's Economic Empowerment

1. BACKGROUND

It is technically and economically feasible to meet the objectives of the Paris Agreement, to limit global warming to well below 2°C, and Sustainable Development Goal 7 (SDG 7), to provide affordable, reliable, sustainable, and modern energy for all by 2030. However, business-as-usual efforts—in policies, philanthropy, investments, and business models—are not enough. Concerted action by governments, civil society, investors, and businesses is needed to decarbonize the global economy in the second half of the century, while ensuring economic development and energy access for all. Energy access is a basic human right that should be available equally to men and women.

The world is taking notice: it is now recognized that **universal access to sustainable energy services and related business opportunities can be done in a more inclusive way to ensure that no one is left behind**. Against a backdrop of 1.06 billion people without electricity and 3.04 billion people without clean cooking options in 2014, it is imperative that women and other marginalized people's voices are recognized and heard to tackle these problems.

Several recent international agreements are guiding the work on gender and energy issues. The **Istanbul Programme of Action** for 2011-2020 charts out a path for Least Developed Countries (LDCs) highlighting energy access as a priority area for action, along with gender equality and the empowerment of women. The three pillars of Sustainable Energy for All (SEforALL), launched by the United Nations Secretariat in 2012, incorporate gender-inclusive approaches to, by 2030: ensure universal access to modern energy services; double the global rate of improvement in energy efficiency; and double the share of renewable energy in the global energy mix.

More recently, the **2030 Agenda for Sustainable Development**, adopted in 2015, ensures governments' commitment to leave no one behind and affirms their pledge to focus efforts on those furthest behind to achieve the 17 Sustainable Development Goals (SDGs). Universal access to modern energy (SDG 7) is important in elevating energy as a development priority and recognizing the important role that energy plays in sustainable development and inclusive growth. Energy is linked to 15 of the SDGs, especially as a fundamental service supporting SDG 1, ending poverty in all its forms everywhere, and SDG 5 that supports women's rights to economic and natural resources, the enhanced use of enabling technology, and the prevention of violence against women and girls in public and private places.

The 2016 **Paris Agreement on Climate Change** formally recognizes the intersection of climate change and gender equality, empowerment of women, and realization of their rights, and mandates gender-responsive adaptation actions and capacity-building activities. A Gender Action Plan is now under development.

We are at a breakthrough moment with gender and energy issues recognized for their importance at the global and grassroots levels. There is now momentum building for a movement that highlights the need for a rights-based approach to energy access for women and marginalized people. In seeking to achieve the interlinked goals of the Istanbul Programme of Action, SEforALL, the SDGs, and the Paris Agreement—and reach the poorest and most

marginalized people—new and innovative approaches are needed for energy service delivery. Women, men, and marginalized people need to be involved in planning, designing, and executing creative approaches to maximize the benefits to all. This will require tailored solutions for different regions, demographics, and challenges—all with the common themes of empowerment and equality.

The common threads around the more progressive gender and social inclusion agendas that are now being put forward in international agreements, in the programs of multilateral and bilateral development institutions, in the private sector, and at international and local NGOs and Civil Society Organizations can be framed as follows:

1. Ensuring that there is equal access to modern energy services for all women and men that is easily accessible, affordable, and contributes to high levels of standards of living and economic development.

2. Increasing the participation of women across the entire energy access universe—from the grassroots to the international levels, and from private to public sectors.

3. Unlocking capital for gender equality, social inclusion, and women's empowerment in the energy sector.

4. Bringing together and strengthening partnerships to bring new perspectives and a wider range of stakeholders to generate momentum for creating a more gender-inclusive energy sector.

The range of initiatives, organizations, policy instruments, and businesses that are part of a more proactive approach to gender and social inclusion are not well understood or catalogued in a systematic way. A comprehensive mapping of the gender and social inclusion, energy, development, and climate change landscape is needed at the regional, national, and local levels to inform the implementation of international frameworks. Without such information, it is difficult to make the case and provide evidence for the transformative effect of gender equality, social inclusion, and women's empowerment as these issues influence the sustainable energy and climate change agendas.

This research is a first step towards a more complete picture of the different stakeholders, initiatives, and breakthroughs in these areas. It maps out what is happening around the world on gender and social inclusion, who is doing it, and how funds are flowing. It is hoped that armed with this information, stakeholders can engage in new opportunities—such as the creation of partnerships for implementation and funding—and learn from approaches that may not be well known but offer great potential.

2. PURPOSE

A mapping at this scale is the first-of-its-kind to focus specifically on gender and social inclusion in the context of energy and climate change. It aims to spur the development of strategic interventions and partnerships. It includes a focus on countries where the biggest impact can be made towards achieving SDG 7.

A wide net was cast to explore how—and with what focus—different programs, policy instruments, businesses, and organizations are incorporating gender equality, social inclusion, and women's empowerment into their activities to address the pressing problems of energy poverty and accelerate the clean energy transition.

It is hoped that this mapping will create new opportunities to unite voices, provide greater visibility for innovative approaches, identify gaps, and provide evidence for what is happening around the world.

3. RESEARCH QUESTIONS

This mapping of stakeholders and initiatives is based on data, intelligence, and insight gained through desk research, interviews, and questionnaires that were designed to answer the following questions:

1. What is the range of stakeholders and initiatives engaged in gender equality, social inclusion, and women's empowerment at the intersection of the sustainable energy and climate change agendas? Where are they working, how, and with what focus?

2. What are the drivers of adoption and success factors for gender-responsive and socially inclusive energy services, programs, and policies?

3. Where could funding from public and private sources be deployed for greater impact or accelerated action at the nexus of sustainable energy and gender, and climate change?

4. What opportunities are there for stakeholders to unite their voices and find common goals to accelerate action on gender and energy?

5. What activities and/or actors are setting new trends, moving faster than their peers, or achieving scale or innovating where others are not?

This research is premised on the fact that there is a diverse set of stakeholders operating at a range of scales on energy poverty and the clean energy transition from the vantage point of gender equality, social inclusion, and women's empowerment. Data and evidence gathered during this research and captured in a database are meant to be a starting point for further investigation and expansion. This report represents a snapshot in time of stakeholders and initiatives engaged in this agenda.

4. APPROACH

The research design considered the following five dimensions: 1) viewing women and disadvantaged groups as change agents, leaders, technical providers, entrepreneurs, advocates, and consumers; 2) looking for opportunities for meaningful expansion of financial resources directed to this sphere; 3) ensuring inquiries were balanced across different geographies and demographics; 4) capturing demonstrated and meaningful actions to create an evidence base; and 5) raising awareness of the challenges and barriers that need to be addressed to advance implementation of SDG 7 and the Paris Agreement.

The three main phases of the research include:

4.1 PHASE 1 - CAPTURING DATA ON STAKEHOLDERS AND INITIATIVES

The research focused on developing the architecture and methodology for a database to map the stakeholders, initiatives, programs, businesses, and policies that are focused on the nexus of gender equality, women's empowerment, and social inclusion as they pertain to sustainable energy and climate change. The aim was to use a well-tested and flexible architecture to easily capture data on what is happening, who is doing it, and where it is happening—based on different search parameters that are tagged in the data. Details of the 21 different data fields collected for each entity are provided in Annex 2.

At the time of writing, a fully operational Microsoft Access database is available with 174 unique data entries. This database is continuing to evolve with the ongoing addition of more entries. The long-term aim is to transform this into a web-based platform to allow wider access for researchers, practitioners, and policymakers around the world. The web-based platform will be designed so that it is an easy process to add and refine the entries in the database.

4.2 PHASE 2 - IDENTIFYING AND CATALOGING PROGRAMS, POLICY INSTRUMENTS, BUSINESSES, AND ORGANIZATIONS

4.2.1 SELECTION CRITERIA

The mapping targets stakeholders and initiatives engaged in gender equality, social inclusion, and women's empowerment at the intersection of the sustainable energy and climate change agendas. The following three criteria had to be met to be included in the mapping:

1. Be engaged in sustainable energy—from the perspective of energy poverty or the clean energy transition. Climate change initiatives not related to energy were not considered. For access to energy (or energy poverty), initiatives that use Liquefied Petroleum Gas (LPG) or other fossil fuels were considered.

2. Be active in at least one of the various sustainable energy activities, including: energy production, distribution, consumption, financing, and policy; advocacy; knowledge management; awareness raising and networking. Full details are provided in Annex 3.

3. Programs, policy instruments, businesses, or organizations must focus on gender equality, to include women and/or target marginalized groups (e.g., the poor, the handicapped, ethnic minorities, religious minorities). Programs that address energy access in underserved areas fit the "social inclusion" criterion.

4.2.2 RESEARCH AND DATA COLLECTION

The mapping used primarily three main channels to capture a wide range of programs, policy instruments, businesses, and organizations around the world.

- **Desk research** included a review of the literature on gender and energy as well as SEforALL program documents, data, and preliminary drafts of recent ongoing work on related topics (e.g., energy access investment landscape analysis, clean cookstove investment analysis). This information provided a preliminary set of organizations, initiatives, and key contacts for more detailed research and data collection.

- **Consultation with network hubs** of leading gender, climate change, and energy organizations to solicit recommendations of programs, organizations, and businesses to include in the database and help identify on-the-ground actors and initiatives. Among these, the SEforALL regional hubs in Africa, Asia Pacific, and Latin America and the Caribbean, provided insights into the regional strategies and relevant work in high-impact countries. A list of networks consulted can be found in Annex 4.

- **Structured interviews** were conducted over phone/skype with a total of 71 stakeholders to gather information and validate data on their organizations and programs. These interviews provided more detailed and nuanced insights into the gender linkages and further perspectives on current challenges and future opportunities. The interviews were shown to be a better way to validate information on each of the entities.

Data was gathered and entered on more than 180 entities. In addition to the 71 stakeholders interviewed, 109 organizations and programs were identified through a web search or contacted via e-mail. This included a focus on the Global Tracking Framework's 45 high-impact countries for access to clean cooking, access to electricity, renewable energy, and energy efficiency (IEA and World Bank, 2017). The dataset was reviewed for quality, relevance, and accuracy to reach the 174 entities at the time of writing. This core dataset is the starting point for systematically gathering this type of data to allow for a more rigorous and evidence-based look at gender and its linkages to sustainable energy and climate change. The findings and key takeaways presented in this report are based on this dataset. As the dataset grows, with more entries being added over time, it will become even more valuable to practitioners, policymakers, and investors.

4.2.3 STAKEHOLDER GROUPS

The data collection drew on outreach to a cross-section of stakeholders relevant to the research. This included the following stakeholder groups: the public sector; financiers and funds; businesses and social enterprises; non-governmental, grassroots, and civil society organizations; and research institutions and academia. Further details on these stakeholder groups can be found in Annex 5.

4.2.4 DATA LIMITATIONS

This mapping breaks new ground as the first-ever attempt to systematically gather and catalog information on gender equality, social inclusion, and women's empowerment as they link to sustainable energy and climate change. It is important to remember that this is a first step. Ongoing efforts will continue to refine and deepen the research design and extend the breadth of coverage of stakeholders and initiatives. It is hoped that this will improve understanding of the wide range of programs, initiatives, businesses, and policy instruments engaged in this agenda around the world.

The trends discussed in this report reflect only the data from the first 174 entities recorded in the database at the time of writing. Therefore, they will not necessarily reveal the situation in all 45 of the high-impact countries or the world at large. The mapping and the trends that are revealed here are a starting point for continued research and expansion of the associated database. This analysis offers a window into what is possible with a more rigorous investigation of the current situation and will ideally lead to increased visibility, understanding, and opportunities for greater impact.

Specific limitations to be noted with the data presented in this report are:

- Selection bias of entities in the database due to a focus more on existing knowledge, networks, and contacts, as well as language limitations.

- Funding and funder types are biased towards grants, likely due to a private sector tendency not to share financial information or planning documents.

- Funder/funding information is not necessarily fully represented for each entity because there may be many different funders providing support, especially businesses/organizations.

- Annual budget and revenue data were not easily found or inferred for the mapping. For example, it was hard to break out the energy/gender budget component of larger organizations or programs.

- Country focus was not always identified for each entity. For example, some larger organizations and programs are present in many different countries and, therefore, could only be identified by the regions they were operating in.

- Primary focus, when gathered via web research (rather than interviews), could be subjective. For the highest-quality data, it is preferable to conduct brief interviews (20 minutes, on average), to ensure that all the information is accurately reflected according to the entity.

- Sectoral initiatives with different entry points that may have energy linkages—including, for example, health, agriculture, water, environmental protection, education, and others—were not well-captured in the database because it was not easy to identify those that also had a gender perspective. For example, a maternal health program may not necessarily consider energy as part of its program, but indeed reliable energy services are required to make the program work. More in-depth research is needed to consider the cross-cutting sectoral initiatives.

4.3 PHASE 3 - DATA VISUALIZATION AND SYNTHESIS

The database—which includes 174 entities, with 15 unique fields for each one—was examined to determine key findings and trends. It is structured in a way to allow for different queries to visualize the data and answer the research questions. The data resulted in the development of five key concepts presented in Section 5. This was used to synthesize the data and make recommendations—presented in Section 6—on how to promote broader uptake of gender-responsive and socially inclusive initiatives, programs, and businesses for sustainable energy and climate change.

Ten short narratives highlight a range of interesting and innovative programs, initiatives, businesses, and policies that were identified in the mapping. These are based on research and interviews with the key people behind these examples, to illustrate the range of innovation and actors working to move the needle on this agenda.

The analysis of data collected from 174 organizations, programs, and policy instruments looks at the geographical distribution of gender and social inclusion initiatives in the sustainable energy and climate change space, their pri-

mary focus, the type of actors involved in these initiatives, similarities and differences between regions, and barriers hindering progress in stakeholders' activities.

5. KEY FINDINGS

5.1 GEOGRAPHY

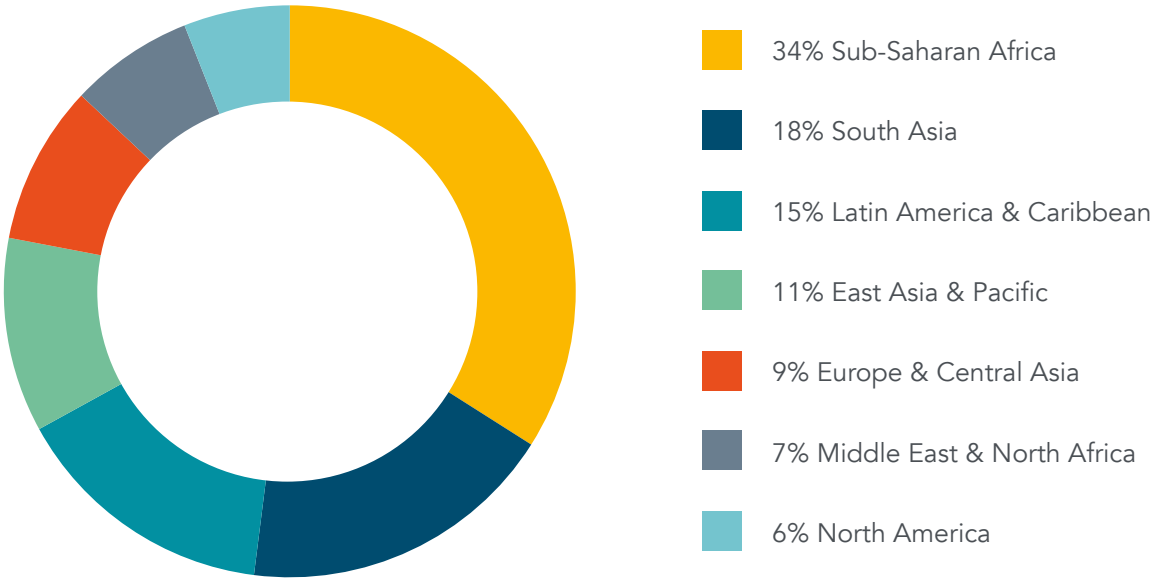
The mapping exercise cast a wide net for reaching stakeholders but largely focused on the high-impact countries identified in the Global Tracking Framework for access to electricity, access to clean cooking, energy efficiency, and renewable energy. The 45 countries were divided between seven regional groups: East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle East and North Africa, North America, South Asia, and Sub-Saharan Africa.

Reflecting supply and demand, the data show that there are more initiatives in Sub-Saharan Africa, where the need is greatest. The data show that most programs and organizations are active in Sub-Saharan Africa (34 percent), followed by South Asia (18 percent), Latin America and the Caribbean (15 percent), and East Asia and the Pacific (11 percent). The larger representation of Sub-Saharan Africa in the dataset reflects the convergence of many factors: worldwide, the region has the lowest electricity access rates; the second-lowest clean cooking access rates; the lowest human development indices; and the highest rates of gender inequality (UNDP, 2016). Sub-Saharan Africa, therefore, has some of the biggest challenges and is viewed by the international community as needing the most support. The mapping showed that most stakeholders included in the database have active programs in Sub-Saharan Africa (Figure 5.1).

The most common activities that programs are engaged in are advocacy, research, capacity building, training, networking/convening, and awareness raising. These activities are typical of nascent sectors (like gender equality and energy access) that must build a strong foundation to advance action. Networking and advocacy bring like-minded people together to increase their power for influencing policymakers and changing behavior. Research builds evidence to justify the need for intervention and capacity building creates the know-how for implementing programs. Even though organizations such as Energia have been working on the gender and energy agenda for more than two decades, the movement is unarguably still at a phase of laying foundations. The encouraging signs revealed in the database are that other actors, offering a range of perspectives, are joining the movement. A look back at the environmental movement within the energy sector in the US shows similar evolution when environmental activism led to state policy reform and entrepreneurship in the wind energy sub-sector (Sine, et al, 2009). Other activities reflected in the database include awareness raising, manufacturing, distribution, service and installation, financial services, monitoring, and auditing.

Advocacy is the most-represented activity across all regions. This is surprising at first glance, since the attitudes and social norms regarding gender equality and social inclusion vary widely across the regions. The data show deficiencies in understanding and acceptance by various decision-makers of the relevance of GSI within the sustainable energy and climate change debate. There are examples of international NGOs advocating to the highest level of climate change gatherings to make sure that world leaders don't overlook women's needs and roles in climate mitigation and adaptation; grassroots organizations focusing on national and local governments to influence

FIGURE 5.1 REGIONAL BREAKDOWN OF DATA



energy policies; and trade associations targeting the private sector to bring more women on the corporate ladder.

Research activities are more pronounced in Europe and Central Asia, Middle East and North Africa, and North America, where research institutions have a higher presence and are typically better funded. Some institutions conduct research on sustainable energy solutions that is then shared with practitioners, others track data on renewable energy uptake worldwide, and others study the impact of sustainable energy projects on women in developing countries. Similarly, these regions have more organizations and programs involved in networking/convening. This would follow from a higher level of gender equality typical in advanced economies where there has been some focus on increasing women's leadership in the energy sector. Higher instances of networking/convening than in other regions could also be a function of better financial means (e.g., charities, corporate sponsorship) and more developed convening channels (e.g., internet, webinars, conferences, etc.), which make this activity easier to conduct.

Training and capacity building, together, are more targeted in Sub-Saharan Africa, South Asia, Latin America and the Caribbean, and East Asia and the Pacific. This result is expected, particularly in programs that transfer clean energy technologies from Europe and North America to those regions with initiatives that support anything from women-led businesses to policy reform. Training and capacity building cover a wide range of activities—from teaching women how to manufacture charcoal briquettes, to coaching women on public speaking, to educating energy ministries' staff on gender mainstreaming. Capacity building is an integral part of creating an enabling environment for additional investment in the sector and its overall growth. Whether gender-related or not, the trend among large financial vehicles is to combine a capacity-building component with any project they fund in developing countries. For instance, the Climate Investment Fund's "Scaling up Renewable Energy in Low Income Countries Program" (SREP) supports the scaling-up of renewable energy technologies, but almost never does so without earmarking some of the funds for capacity building. This may take the form of training and providing financial support to a national standards bureau to develop quality standards for

small solar appliances, developing the management skills of local small and medium enterprises, training personnel at utilities in new technical standards, and reforming policies.

Awareness-raising activities are most reported in South Asia, East Asia and the Pacific, but also in Europe and Central Asia and North America. Although the socio-economic profile of these regions differs greatly, the main goal of changing the behavior of the target audience is the same. What varies is the type of change expected. In South Asia, and East Asia and the Pacific, it might be the acceptance of new energy technologies, innovative financial models, or even letting women embrace new job opportunities (e.g., Lighting a Million Lives (Pakistan), SELCO Foundation (India), SEWA (India)). While in Europe and Central Asia, and in North America, it may be making the general population aware that fuel poverty can still be an issue in a developed country (e.g., National Energy Action in the UK) or that climate change is a real threat—the purpose being to put the issues on the political agenda or to mobilize more funds from the public.

Although not common in all regions, reforming national policies, offering financial services, and grant-making were reported among the top five activities in the Middle East and North Africa, Latin America and the Caribbean, and North America, respectively. Actors that reported these activities conduct the same activities in other regions, therefore it is not clear if the need is greater in these regions or if the result is just a function of the limited dataset. It could also be that these activities are not reported more widely in other regions because they are embedded in other larger activities (e.g., advocacy for policy reform) or that they are considered as tools for reaching an objective (e.g., grant-making for capacity building).

5.2 ACTOR TYPES

Each entry in the database is identified as a "business/organization," "program," or "policy instrument." Among the businesses and organizations included in the mapping, 28 percent are grassroots organizations, 23 percent international NGOs, 17 percent private sector, 12 percent training and research institutions, 9 percent trade associations, 9 percent foundations and charities, and 3 percent development organizations (Figure 5.2). For each program and policy instrument, the research looks at the type of implementer and the type of funder. This approach helps capture peripheral actors that may not identify themselves as stakeholders in the gender equality, social inclusion, and women's empowerment debate, even though they have supported initiatives related to this agenda. Many development institutions and government institutions fall in that category.

Twenty-four percent of programs reported that they were funded by development institutions.Table 5.1 and Figure 5.3 show the different types of actors that are funding programs on gender and social inclusion in sustainable energy and climate change. Development institutions are playing an important role in funding programs, which is not surprising, since they have traditionally been the first movers in supporting innovative approaches to economic development in low-income countries. Development institutions are active in all the regions, but they are most represented in Sub-Saharan Africa, where they provide 46 percent of program funding; they are also the largest supporter of capacity-building activities.

It is now possible to think about how to bring in new actors to support gender and social inclusion in sustainable energy and climate change—particularly from the private sector—that can build on the programs being done with other forms of support. Parallels can be drawn with the early days of off-grid electrification, when development institutions and government institutions funded pilot projects that then became learning grounds for the private sector. As a result, many entrepreneurs are now running successful solar PV businesses in rural Sub-Saharan Africa, Latin America, South Asia, East Asia and the Pacific.

Twenty-one percent of programs have been funded by government institutions. They are predominantly foreign

FIGURE 5.2 BREAKDOWN OF BUSINESSES ORGANIZATIONS INCLUDED IN THE RESEARCH

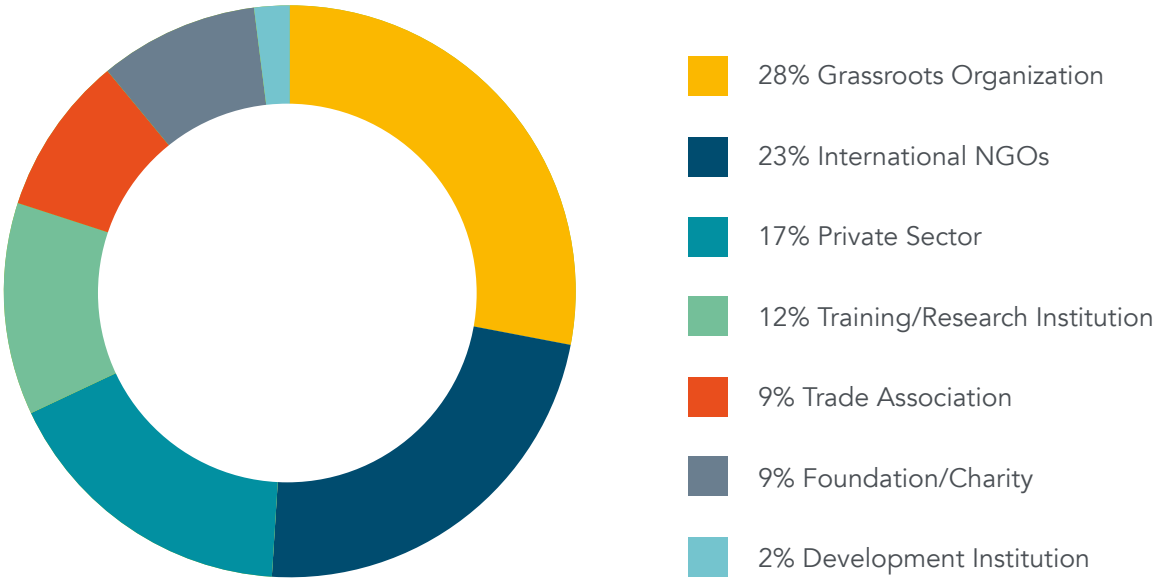
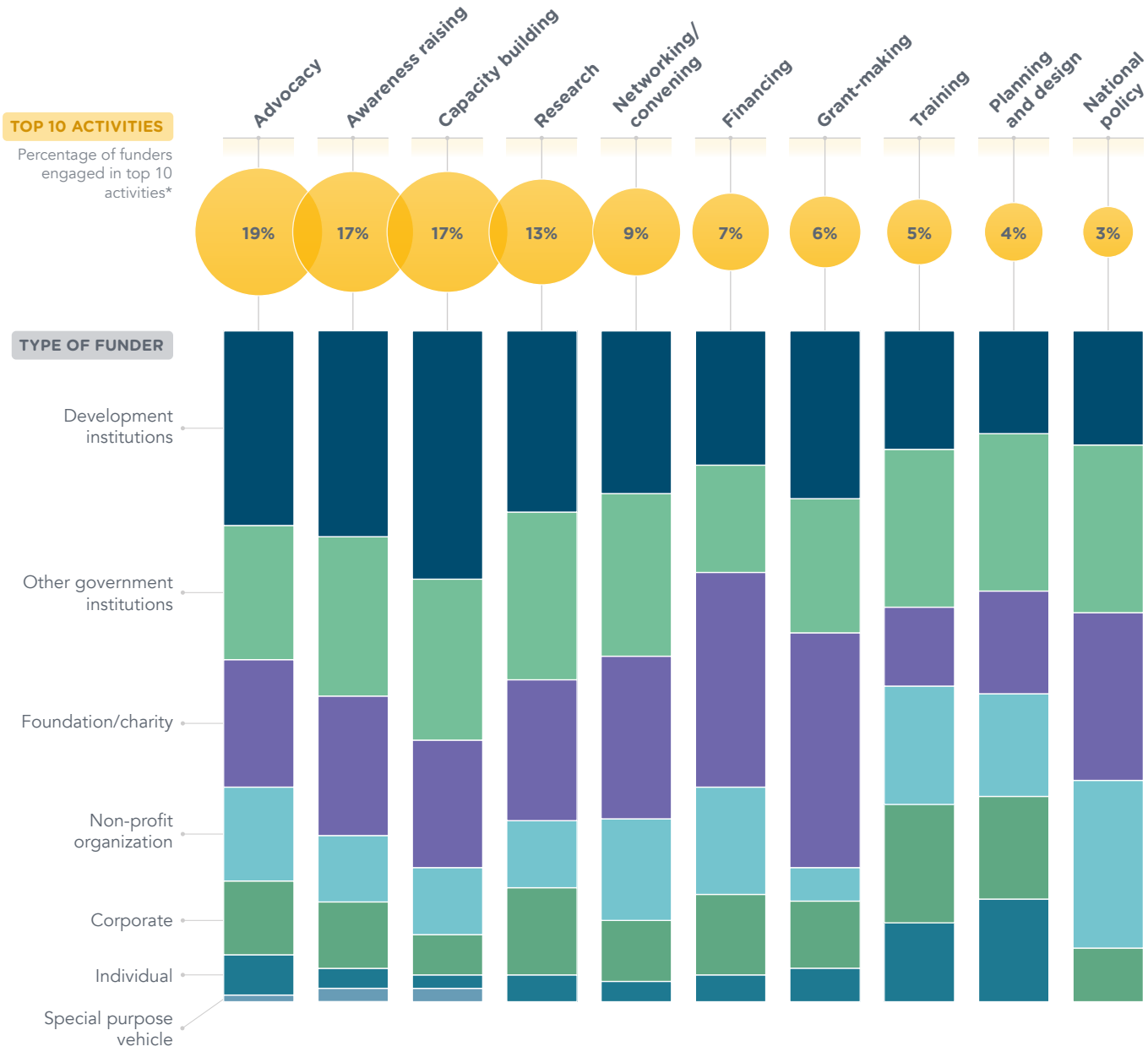


TABLE 5.1 BREAKDOWN OF FUNDING PROVIDED BY EACH FUNDER TYPE

Actor type	**Involvement in program funding**
Development institutions	24%
Government institutions	21%
Foundation/Charities	20%
Non-profit organizations	12%
Corporations	11%
Individuals	5%
Other	5%
Special purpose vehicles	1%
Total	**100%**

FIGURE 5.3 ACTIVITIES SUPPORTED BY FUNDERS



Source: Sustainable Energy for All database (as of November 1, 2017).

**This reflects the number of times a funder was cited in the database across the top 10 activities.*

governments supporting developing countries through cooperation agreements, but some national governments are also providing financial support to initiatives in their own countries. The most commonly cited governments active on this agenda are those in the European Union. Government institutions are the top funders in South Asia and Latin America and the Caribbean, and the second most important funders in Sub-Saharan Africa, after the development institutions.

Foundations and charities are almost as active on this agenda as government institutions (20 percent of funding). They range from small family funds to large corporate foundations. They are the top funders in East Asia and the Pacific and one of the top two funders in North America, along with the corporations.

Funders typically work in partnership, each contributing to the overall funding or stepping in at different stages of an organization's growth. Thirty-six percent of the initiatives in the dataset have received funding from both development institutions and government institutions, as well as from foundations. The type of funding provided is overwhelmingly grants (66 percent), but some non-profit organizations and foundations have provided equity (10 percent) and debt (3 percent). Other types of funding include convertible grants (3 percent), consulting fees (12 percent), and "friends and family" contributions (7 percent).

Other funders are non-profit organizations (12 percent) and corporations (11 percent). Foundations and non-profit organizations include some of the impact investors identified in the mapping.

International NGOs and grassroots organizations together implemented more than 50 percent of programs. Two models of program implementation are revealed in the data. In the first, a funder commissions an international NGO to manage a program and the NGO, in turn, partners with grassroots organizations to implement the program. In the second, the funder works directly with the grassroots organization to manage and implement the program. However, some development institutions, such as GIZ and USAID, are also involved in project management and implementation. Other important actors are training and research institutions, which generally support capacity building in programs, and a few private-sector actors who are pioneering gender integration in their businesses (e.g., Optima Energia in Mexico and Lagazel in Burkina Faso) and taking renewable energy technologies to last-mile customers (Box 5.1 and 5.2).

A breakdown of involvement of each actor type in program implementation is provided in Figure 5.4. Development institutions, government institutions, and foundations channel funds to international NGOs and grassroots organizations, but are typically not involved in program implementation.

5.3 ACTION/PRIMARY FOCUS AREA

Organizations typically have a core mission and then address gender equality and social inclusion through their core mission. The research explored the entry point organizations and programs use to address these two topics.

Energy poverty is the primary focus for 28 percent of the organizations and programs in the database. They demonstrate this by electrifying remote areas, making renewable energy technologies accessible to last-mile customers, building capacity, raising awareness, and moving capital in the sector. In doing so, most of them also contribute to social inclusion, since they generally target the underserved, underrepresented, low-income, and hard-to-reach populations. However, a more nuanced analysis shows that only half of these organizations and programs have gender equality as a target. One example of an organization that addresses both gender and social inclusion while addressing energy poverty is the Bright Green Energy Foundation in Bangladesh, which specializes in the sale and installation of solar home systems but also trains women in the assembly and repair of these systems (Box 5.3).[4]

[4] *http://www.greenenergybd.com/women.php.*

BOX 5.1 ÓPTIMA ENERGÍA: MEXICO

Óptima Energía is an energy services company (ESCO) founded in 1988 and based in Monterrey, Mexico. Its core business is the modernization of public lightning. To date, it has been engaged in over 60 energy efficiency projects with both the private and public sectors. Óptima Energía has a unique business model of providing upfront investment to the energy savings projects it implements and being paid from the savings generated. This helps municipalities save up to 60 percent of their regular electricity consumption and increase luminosity by up to 50 percent, without having to make the initial investment.

Óptima Energía is the first Inter-American Development Bank (IDB) private sector borrower to sign on to the CEO Statement of the United Nations Women's Empowerment Principles. Moreover, the company is certified under the Mexican Norm for Labor Equality and Non-Discrimination. Based on these commitments, the company is set to begin work on their Ensenada project by recruiting four women engineers for installation crew supervision, in-site budget control, and equipment assembly, as well as three interns to follow up on the project's operation. Per Enrique Gómez Junco, the company's CEO, the financial incentives provided by the IDB, the Canadian Climate Fund, and the Clean Technology Fund, were crucial in pushing the company to "let go of taboos and habits against hiring women;" but even without the incentives, companies should embark on these initiatives as results have been "far better than expected."

BOX 5.2 LAGAZEL: BURKINA FASO

Burkina Faso has one of the lowest electrification rates in West Africa, with only 19.2 percent having access nationally and a mere 3 percent in rural areas.[5] Kerosene lamps and flashlights remain the main sources of lighting for rural households, but over the past few years a wide variety of imported solar lanterns have found their way into local markets. These lanterns vary largely in price and quality and have, in some cases, given a bad reputation to solar PV technology.

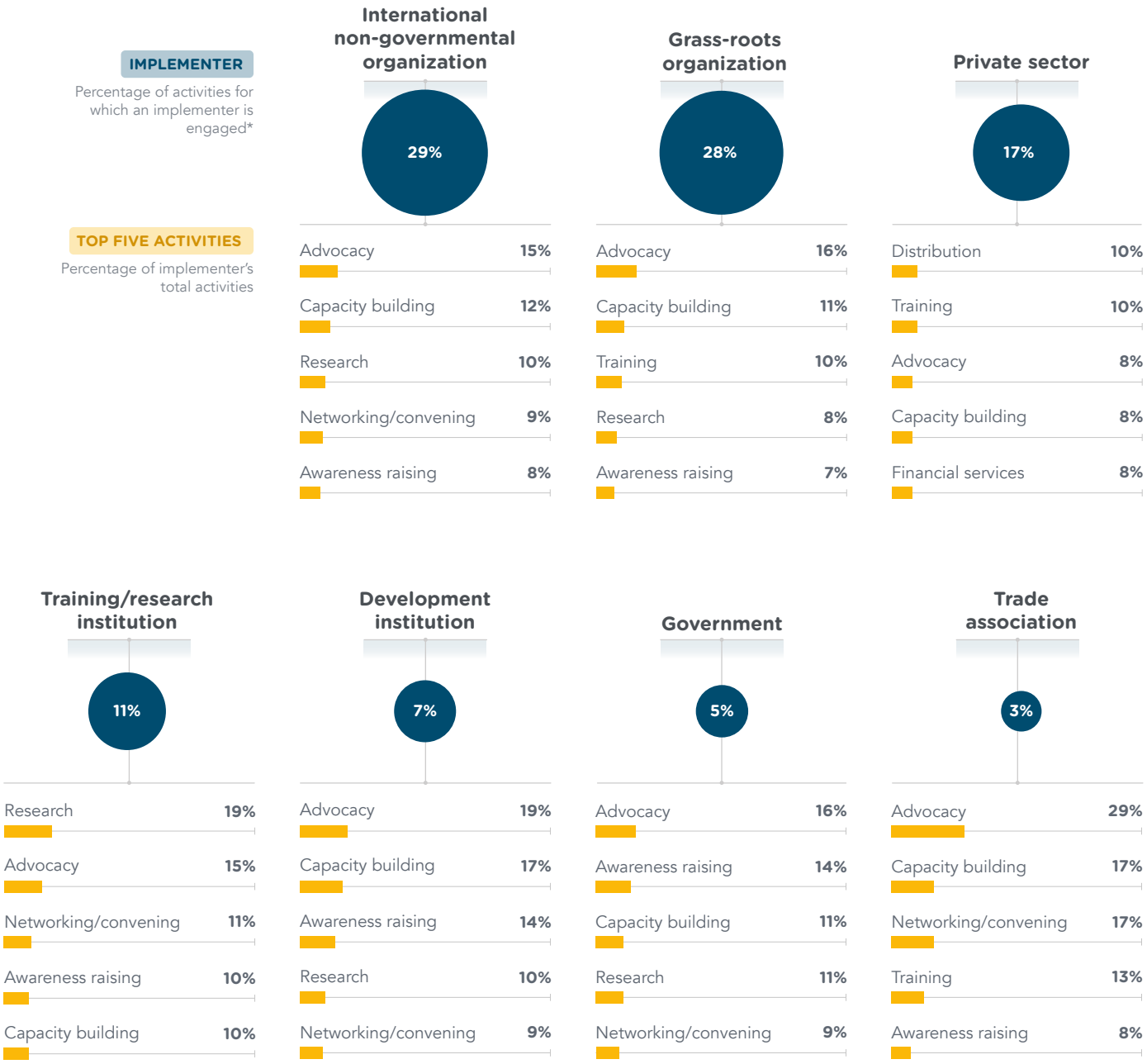
In 2015, two brothers—Arnaud and Maxence Chabanne—opened LAGAZEL, the first Burkina-Faso-based solar lantern manufacturer that offers high-quality lanterns, designed with input from the local population and providing a two-year warranty. The Chabanne brothers chose to open their factory in Dedougou, a small town located more than 200 km from Ouagadougou, the capital city. The distance from the capital made finding skilled labor a challenge. However, this challenge has become an opportunity to give men and women an equal chance to join the business. The recruitment process for LAGAZEL was done on the premises and no prior technical training was required to apply for a position on the assembly line.

In a sector that is generally dominated by men, this approach opened the door for women to join the ranks of technicians. "We knew that we had to provide full training to all new staff, so it didn't matter if the employee was a woman or a man. They all came in at the same level," said Maxence Chabanne. However, being in a country where technical jobs are usually associated with men, the brothers had to instruct their recruiters to be inclusive. Today, women comprise 35 percent of LAGAZEL's assembly line.

The main challenges facing the company are unfair competition from low-quality imported lanterns and a difficulty penetrating the West African market. The company has production capacity of 180,000 lanterns a year, which cannot be absorbed by the Burkina Faso market alone. The introduction and enforcement of quality standards for solar PV systems would help the company thrive.

[5] *https://www.se4all-africa.org/se4all-in-africa/country-data/burkina-faso/ (accessed September 6, 2017).*

FIGURE 5.4 TOP ACTIVITIES BY IMPLEMENTER TYPE

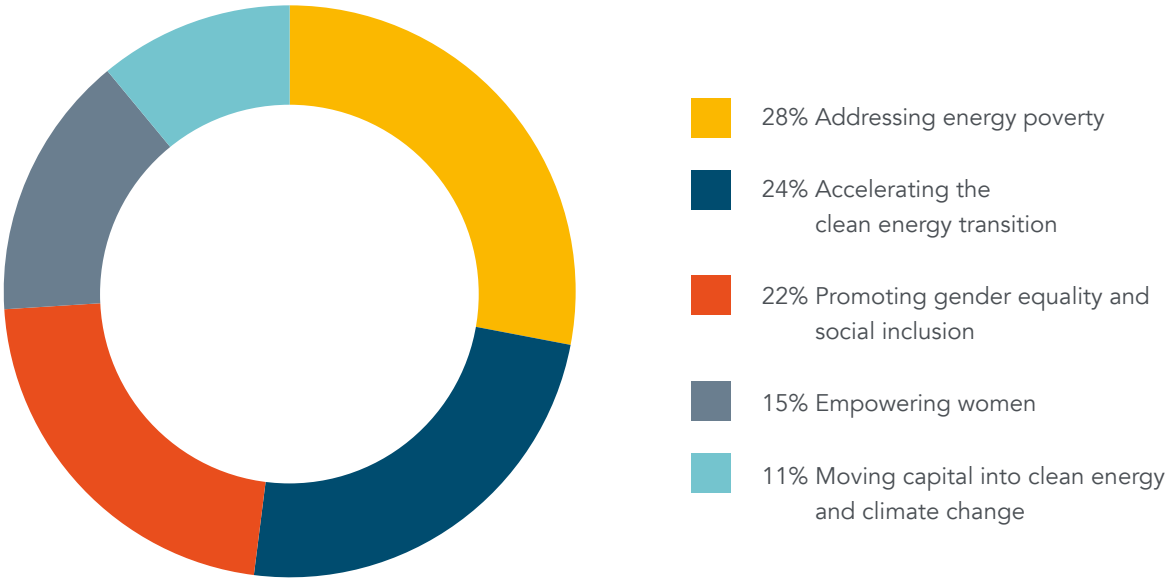


Source: Sustainable Energy for All database (as of November 1, 2017).

Note: Percentage total may not add up to 100 due to rounding errors.

**This reflects the number of times an implementer was cited in the database across all activities.*

FIGURE 5.5 PRIMARY FOCUS OF ORGANIZATIONS, PROGRAMS, AND POLICY INSTRUMENTS



BOX 5.3 BRIGHT GREEN ENERGY FOUNDATION TRAINING FOR WOMEN EMPOWERMENT: BANGLADESH

Bright Green Energy Foundation (BGEF) is a leader in providing green technologies to the underprivileged local communities in Bangladesh; it is sustained by an innovative monthly installment-financing model. The financing model, combined with technical training, has allowed BGEF to create numerous jobs for women entrepreneurs and technicians in the renewable energy sector of Bangladesh. The project aims to promote solar home systems through village-based women entrepreneurs and technicians. Furthermore, it hopes to create a social force that empowers rural communities to be self-sufficient with the aid of renewable energy. BGEF highlights the opportunity to engage women in the energy sector and the benefits of doing so in rural electrification and empowerment.

BGEF has started to utilize women technicians in assembling all kinds of solar accessories at four rural-based Green Technology Centers (GTC) under the Solar Home Systems project. Currently, all these GTCs are led by women and over 300 women were trained to be clean energy entrepreneurs. BGEF's concerted efforts in providing decent and well-paid jobs has allowed women to support their families, particularly in terms of their children's education and health. Furthermore, women's involvement in decision-making at the community level can be enhanced with this type of innovative gender-inclusive model.

BGEF has shown that tackling rural energy challenges through a women-centered training program, while implementing gender inclusive projects, can improve the quality of life of rural communities. International organizations could adapt this strategy—by focusing on training for women entrepreneurs and technicians—to address the needs of rural communities through increased use of renewable energy.

BOX 5.4 DAKORO FUEL SWITCHING: BURKINA FASO

Burkina Faso produces around 35,000 metric tons of cashew nuts annually, of which only 10 percent is processed locally.[6] The processing facilities are 90 percent staffed by women, who are usually tasked with shelling, cleaning, and sorting the nuts. A typical unit uses 200 kg of wood and 30 kg of LPG for processing 1 metric ton of cashew nuts. Heat from firewood is used to "weaken" the shell—a technique that helps separate the shell from the kernel—and LPG is used for the drying process. These two sources of energy are problematic on two fronts: first, 90 percent of the fuelwood consumed in Burkina Faso is considered non-renewable and therefore contributes to deforestation and GHG emissions. Second, the government provides a generous subsidy on LPG to entice households to switch from charcoal and fuelwood, but the fuel is being used by small businesses, thus reducing its availability for households and putting a financial burden on the government.

In 2013, a small processing facility in Dakoro, Burkina Faso, found a way to completely stop its fuelwood and LPG use by installing a gasifier that uses waste cashew shells as feedstock. The entire system consists of a gasifier, a boiler, and three dryers, as well as four fans and two pumps to circulate hot air and water. The steam produced by the boiler "weakens" the shells and the heat is blown towards the driers. The installation was part of the pilot project led by SNV, the Netherlands Development Organization, and WISIONS of Sustainability, an initiative of the Wuppertal Institute for Climate, Environment and Energy. The new installation led to a savings of about $3,000 per year in energy expenses and reduced the "weakening" time from eight hours to three hours. However, the cost of the system—estimated at $40,000—has been a major barrier to its adoption by other processing facilities. It would take more than 13 years for a small facility, such as the one in Dakoro, to pay-off the investment from energy savings. Since the pilot project, ISOMET, a local technology firm, has created smaller gasifier prototypes ranging in price from $4,000 to $5,000. Still, processing facilities have difficulties coming up with the capital investment upfront.

Twenty-four percent of the organizations and programs in the mapping focus on accelerating the clean energy transition. The clean energy transition includes solutions that promote improved cookstoves and other energy efficiency devices (e.g., LEDs) by introducing alternative fuels (sustainable biomass, biogas, LPG), providing training for renewable energy and energy efficiency technologies, influencing policies for the use of cleaner energy sources, and providing funding for renewable energy and energy efficiency initiatives (Box 5.4). The dominant technologies supported by this group of organizations and programs—particularly in Sub-Saharan Africa, South Asia, and East Asia and the Pacific—are improved cookstoves and modern cooking fuels.

Stakeholders included in this group are businesses (e.g., Nafa Naana in Burkina Faso, Oryx Energy, West Africa), grassroots organizations (e.g., Evergreen Group in Myanmar), and International NGOs (e.g., Global Alliance for Clean Cookstoves and SNV, the Netherland Development Organization). In Europe and North America, organizations that focus on the clean energy transition are mostly engaged in research (e.g., REN 21), technology transfer (e.g., Renewable Energies Transfer Systems), and funding (e.g., Ashden Awards) apart from government-sponsored programs that provide energy efficiency measures to low-income families (e.g., UK's Energy Companies Obligation) (Box 5.5).

[6] *http://www.ecodufaso.com/anacarde-le-burkina-faso-en-produit-35-000-tonnes-par-an/.*

Empowering women is the primary focus of 22 percent of the organizations and programs. This segment includes the various "women in energy" associations that mentor young women and advocate for a greater inclusion of women in the energy sector, as well as the programs designed primarily for women, whether by providing funding, promoting entrepreneurship, or alleviating manual agro-processing. The characteristics of these initiatives vary by region. In Europe and Central Asia, North America, and to a certain extent Latin America and the Caribbean, women empowerment is mainly done through associations and networks, the goal being to increase women's leadership in the sector and coach the new generation. In contrast, in Sub-Saharan Africa, South Asia, and East Asia and the Pacific (except Australia), the emphasis is on the economic development of women, whether through funding (e.g., SEWA Bank in India), training (e.g., CIRCODU in Uganda), or entrepreneurship (e.g., Rural Services Foundation in Bangladesh). Over 60 percent of the programs and organizations focused on women empowerment do so through economic development.

Some notable initiatives in this segment are the Energia Women's Economic Empowerment program, which provides training, technical assistance, and financing to women-owned small businesses in the energy sector (Box 5.6), and the UNDP Multi-Functional Platform rural agro-processing program, which has installed more than 600 electric-powered husking and milling devices in Mali, Senegal, and Burkina Faso.

Fifteen percent of the organizations and programs have gender equality and social inclusion as a primary focus. These initiatives push for gender-balanced and socially inclusive policies, greater participation of women and marginalized communities in decision-making, and a

BOX 5.5 ENERGY COMPANY OBLIGATION: UNITED KINGDOM

The Energy Company Obligation (ECO) is a government energy efficiency scheme in the United Kingdom that supports the reduction in carbon emissions and tackles fuel poverty. The scheme is implemented by the Office of Gas and Electricity Markets, or "Ofgem."[7]

It consists of two obligations. The first obligation is the Carbon Emissions Reduction Obligation (CERO) that requires energy suppliers to promote "primary measures" to reduce the need of a heating system and thus results in heat savings. CERO measures include roof and wall insulation and connections to district heating systems. The second obligation is the Home Heating Cost Reduction Obligation (HHCRO). Under this obligation, suppliers must promote measures that improve the ability of low-income and vulnerable households to heat their homes. This is a key feature in the plan, as it does not only focus on technical solutions but assures that the effectiveness of this scheme can reach extremely vulnerable households.

Ofgem has implemented over 700,000 measures to improve energy efficiency under the Energy Company Obligation since its inception in 2013. The main challenge remaining is to assure compliance of the industry. To overcome this challenge, Ofgem provides incentives to the energy suppliers by listing them on a Priority Service Register (PSR) if these companies provide "non-financial services free of charge for consumers who are in a vulnerable situation or have a certain characteristic," such as a disability, or other financial issues. Listing companies under the PSR gives them an incentive to assure that even customers facing hardships are protected.

The Energy Company Obligation emphasizes the role that policy and incentives can play in ensuring that vulnerable groups have access to energy services and in regulating social inclusion and compliance with industries delivering these services.

[7] *Ofgem. (n.d.-a). About the ECO scheme. Retrieved October 10, 2017, from https://www.ofgem.gov.uk/environmental-programmes/eco/about-eco-scheme.*

BOX 5.6 ENERGIA WOMEN'S ECONOMIC EMPOWERMENT PROGRAM: SEVEN COUNTRIES IN AFRICA AND ASIA

Energia Women's Economic Empowerment (WEE) program works closely with women entrepreneurs to help them become successful in providing energy products and services, especially in hard-to-reach areas spanning across Nepal, Indonesia, Kenya, Nigeria, Tanzania, Uganda, and Senegal. The first phase of the program—funded by Sweden (SIDA) and Norway (NORAD)—built capacity through training and technical assistance in the fields of finance, distribution, and business development. More than 4,000 female entrepreneurs in this program were either involved in supplying energy to their communities or adopting clean technology to boost the productivity of existing businesses.

By the end of the first phase, 433,000 products—mostly small-scale solar and stoves—and 181 metric tons of briquettes were sold by the entrepreneurs, serving 2 million people with improved energy. Part of the WEE's success can be traced back to its insistence on close outcome tracking, coupled with the flexibility that comes from multi-year funding commitments. Energia not only selected strong implementing partners but also worked together with them in a continuous learning cycle to constantly refine the approaches underway in each market.

Data collected on decision-making by the women entrepreneurs, business longevity, profitability, and growth were an important part of the program. One implementing partner, Kopernik in Indonesia, uses a highly detailed, computer-based tracking system to analyze not just business activity (e.g., sales, inventory) but also the effectiveness of their agent recruitment and training program, for instance correlating demographic characteristics to different measures of success. Kopernik was also able to view in near-real-time (and later predict) when their agents' markets were becoming saturated with products, permitting them to deploy resources elsewhere and investigate new strategies.

The "last-mile" distribution model, centered on women-led micro- and small-scale businesses, enables them to be on both the supply and demand sides. The WEE program embedded many different entrepreneurship efforts within broader contexts, offering diverse perspectives, forging alliances, and providing higher visibility platforms for action. Starting with just a small energy business, these women can develop their paths to become leaders in their communities.

The WEE program offers lessons about how gender and energy entrepreneurship approaches—though unique and tailored to each context—need not operate in silos. All five partners benefited from a common measurement and reporting framework, a networked model that facilitated learning exchanges, and the extension of their entrepreneur empowerment work into the advocacy and policy spheres. The multi-year funding allowed Energia and its partners enough focus to prove out the model in seven countries and systematically gather evidence to identify the barriers to be addressed in the next phase. These include supporting growth-oriented, female-led enterprises and making more systematic financial linkages to help entrepreneurs access capital.

broader recognition and respect of women rights in the energy and climate change debate. They are undertaken by a wide range of stakeholders, including international development organizations such as the UNDP, which is supporting countries to mainstream gender in their Nationally Determined Contributions implementation to grassroots organizations such as Pelita Desa in Indonesia, which is advocating for increased involvement of women in community-based energy projects (Box 5.7). Some of them offer practical tools for mainstreaming gender in projects (e.g., World Bank's Energy Sector Management Assistance Program), others provide evidence through research (e.g., World Resources Institute, Value for Women), and others advocate directly in the international arena (e.g., Women's Environment and Development Organization).

BOX 5.7 PELITA DESA: INDONESIA

Pelita Desa, which means "beacon of villages," is a grassroots organization founded by a group of Indonesian female researchers from several government and non-government institutions. Its goal is to promote gender inclusion in efforts to accelerate the deployment of community-based sustainable energy, the handling of environmental issues, and community development.

It is a small, local organization comprised of women from different walks of life with a common goal to accelerate the clean energy transition in Indonesia. They are trying something new in their communities, in which the gender dynamics are not in their favor and where awareness of climate change and renewable energy is limited. They believe that renewable energy should be available for everyone, particularly in the rural areas, which have been left behind. Pelita Desa further aims to develop more gender-inclusive energy projects and to raise awareness on climate change issues in rural settings. Moreover, the organization underscores the agency and capability of women as drivers of the clean energy transition. However, Pelita Desa is facing challenges in accessing finance, since government funding for community-based projects is limited.

Finally, only 12 percent of organizations focus primarily on moving capital into the clean energy and climate change sector. These are mostly impact investors (e.g., Acumen Fund, Root Capital), foundations/family funds (e.g., Swift Foundation, Wallace Global Fund), and a few international environmental funds (e.g., Climate Investment Fund). Most of them are based in the US and Europe and move capital primarily to Sub-Saharan Africa, Latin America and the Caribbean, East Asia and the Pacific. They invest in small energy businesses (e.g., Acumen Fund), support research (e.g., Wallace Global Fund), finance developing countries' climate change initiatives (e.g., Climate Investment fund), provide microfinance (e.g., FINCA), or simply contribute to the operating budget of advocacy organizations. For the most part, organizations that move capital in the sector provide equity, grant, and debt funding. However, it should be noted that 45 percent of program funding comes from development institutions and government institutions, provided mostly in the form of grants.

By focusing the mapping on the 45 high-impact countries, the expectation was that most stakeholders working on this agenda would be focused on either addressing energy poverty to close the electricity and clean cooking access gaps or accelerating the clean energy transition to increase adoption of energy efficiency and the uptake of renewable energy. It is therefore not surprising that these two focus areas comprise more than 50 percent of the initiatives. In fact, it is encouraging to see such a large portion of sustainable energy and climate change initiatives mainstreaming gender and social inclusion.

Less expected, is also the large number of gender equality and women's empowerment initiatives moving into the sustainable energy and climate change sectors, when they have traditionally been confined to issues of health, education, and gender-based violence. The research provides examples of businesses created specifically for women's empowerment (e.g., Ivy Kickstarter in Indonesia, Daasgift Enterprises in Ghana), funds carved out from larger programs to respond to women's needs (e.g., Calvert Foundation WIN-WIN), and larger organizations such as UNEP and UN Women initiating programs for women's entrepreneurship in sustainable energy.

5.4 TRENDS/COMPARISON BETWEEN REGIONS

5.4.1 PRIMARY FOCUS AREA AND TECHNOLOGY PROMOTED

There are many similarities between regions with concentrations of high-impact countries focused on access to clean cooking and access to electricity. For instance, in Sub-Saharan Africa, South Asia, and East Asia and the Pacific, addressing energy poverty is the main focus area and improved cookstove is the technology most promoted by organizations and programs, followed by solar home systems. Similarly, in these regions, 60 percent of the initiatives address social inclusion, while 40 percent address gender.

In Latin America and the Caribbean, and Europe and Central Asia, where there is a concentration of high-impact countries focused on energy efficiency and renewable energy, accelerating the clean energy transition is the primary focus area and energy efficiency devices are more prevalent.

The Middle East and North Africa region stands out for being the only region where promoting gender equality is the main focus. It is done through advocacy, networking, research, and awareness raising.

5.4.2 ACTIVITIES AND IMPLEMENTERS

As stated earlier, the most common activities conducted by organizations and programs are advocacy, research, capacity building, training, networking and convening, and awareness raising. International NGOs, grassroots organizations, training and research organizations, and the private sector are the most active program implementers.

In Sub-Saharan Africa, South Asia, East Asia and the Pacific, and Latin America and the Caribbean, advocacy, capacity building, and research are the top three activities undertaken by programs and organizations. In North America, Europe and Central Asia, and the Middle East and North Africa, networking/convening takes the place of capacity building. As stated earlier, these findings are in line with the challenges faced by each region.

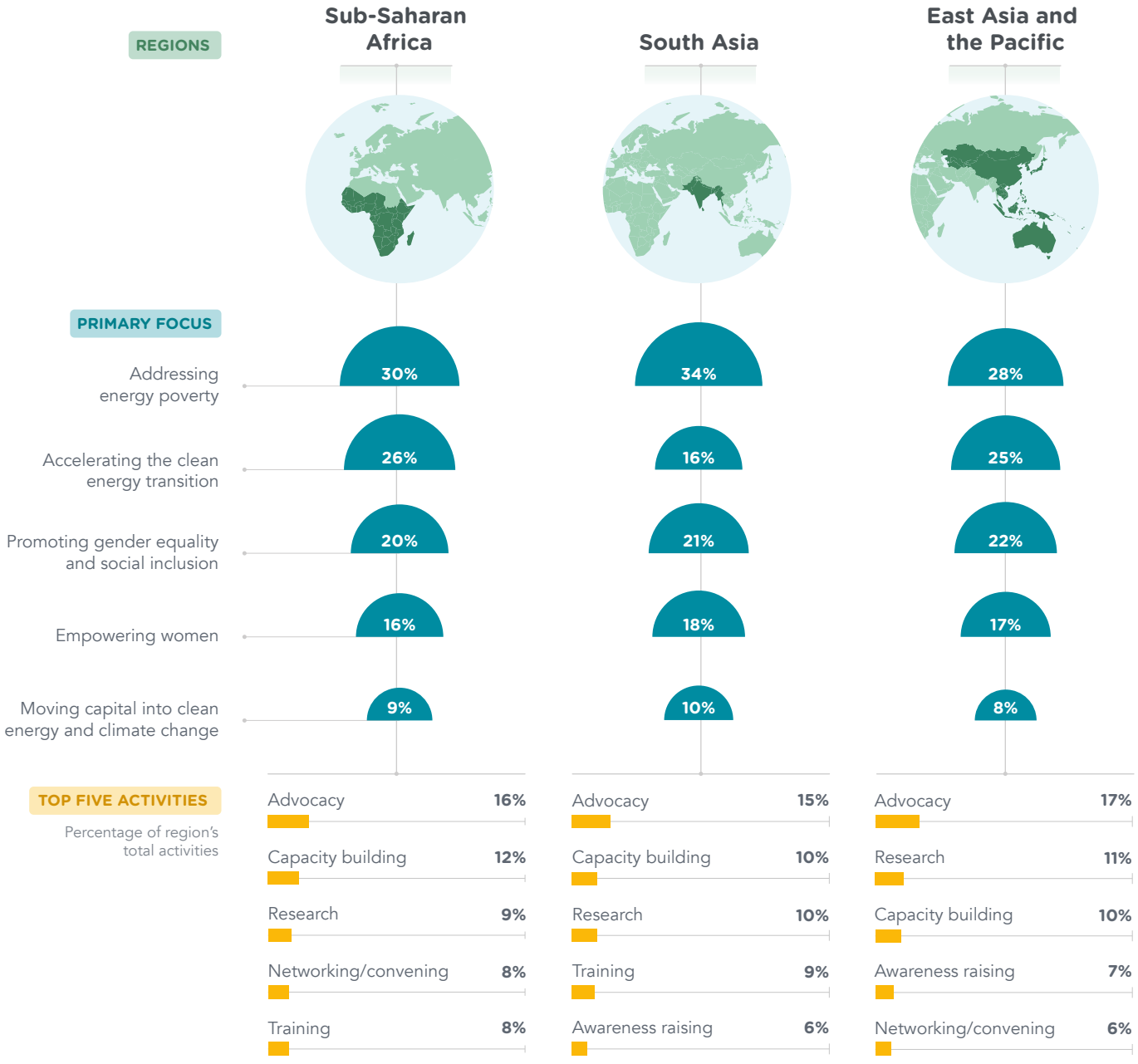
In Sub-Saharan Africa, East Asia and the Pacific, and South Asia, grassroots organizations are the second most active program implementers after international NGOs. This is in line with the on-the-ground, community-based characteristics of most programs in these regions. It also highlights the prevalence of partnerships between international NGOs and grassroots organizations in project implementation. In North America, Europe and Central Asia, and the Middle East and North Africa, training and research organizations are the second most active program implementers, which confirms the findings in Figure 5.6 that research is one of the more prevalent activities in these regions.

5.4.3 FUNDER TYPE AND FUNDING TYPE

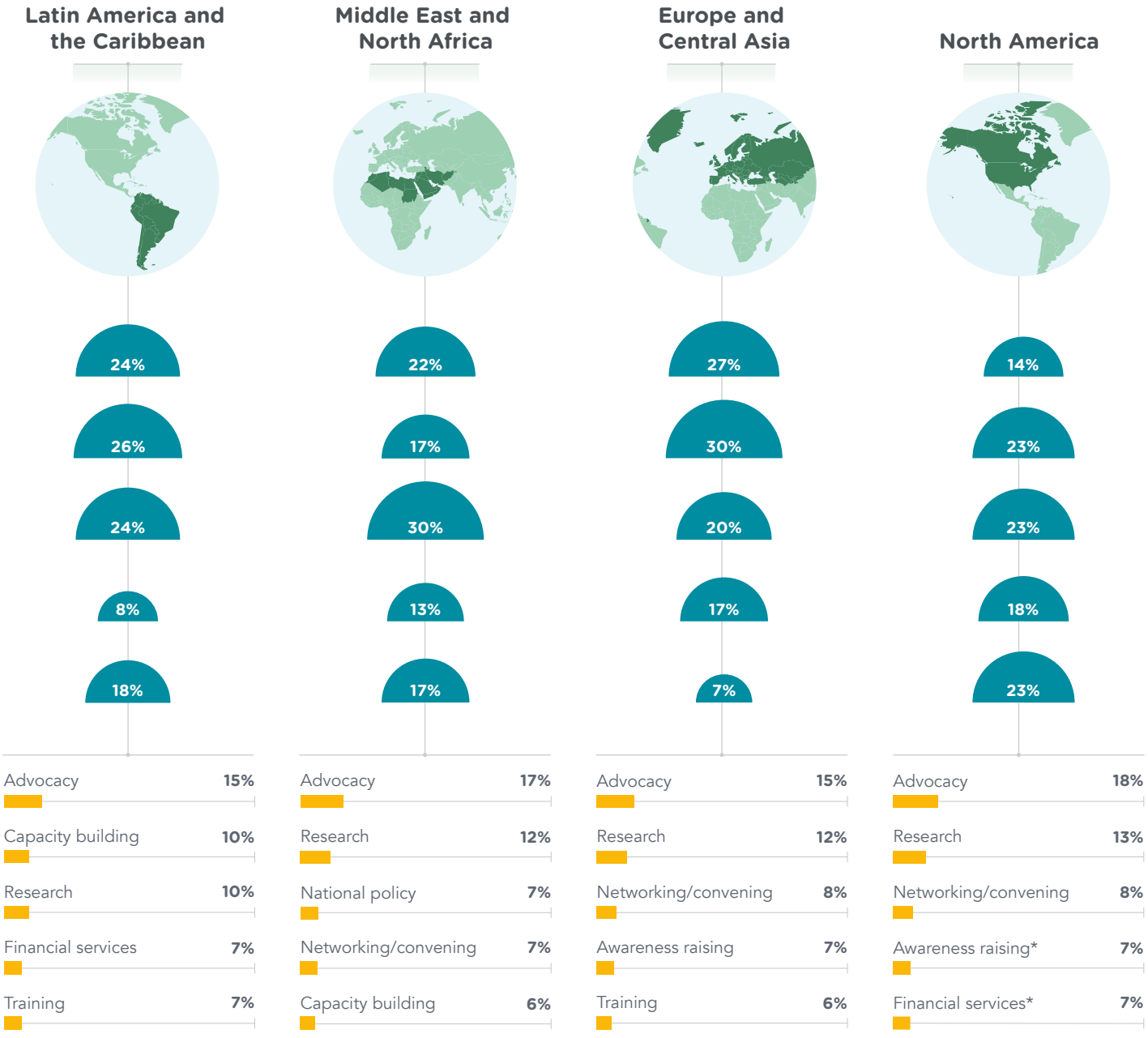
Data from entities in Sub-Saharan Africa, South Asia, and Latin America and the Caribbean, show similar trends in the type of institutions that are funding gender and energy programs. Together, development institutions, government institutions, and foundations/charities fund between 55 percent and 70 percent of all of the programs in these regions. More often than not, they all contribute funding into the same program. But, while Latin America and the Caribbean, and South Asia, benefit respectively from 12 percent and 16 percent of corporate funding, Sub-Saharan Africa gets only 5 percent of overall funding from corporations. Corporate funders include a wide range of actors, such as Philips, General Electric, Chevron, Exxon Mobil, Toyota Motor Company, and others. They may channel funding through their corporate social responsibility programs or through their own foundations (e.g., CITI Foundation, Tata Trust, IKEA Foundation).

Funding from corporations plays a bigger role in Europe and Central Asia, and in North America, where they provide 26 percent and 22 percent of funding, respectively.

FIGURE 5.6 REGIONAL PRIORITIES AND APPROACHES



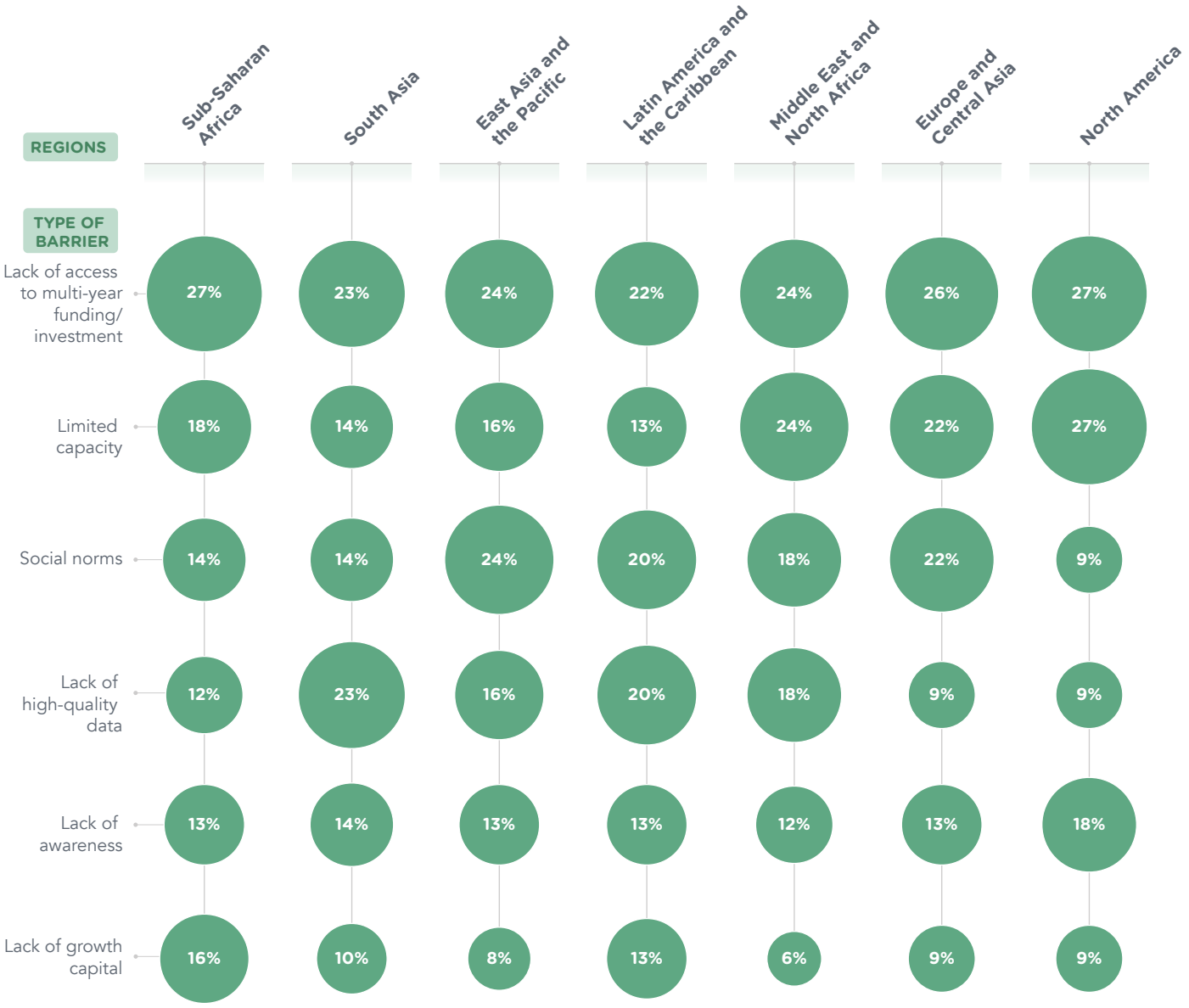
Source: Sustainable Energy for All database (as of November 1, 2017).



Notes: 1. Percentage total may not add up to 100 due to rounding errors. 2. The dotted line represents approximately the Line of Control in Jammu and Kashmir by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. 3. This map was produced by SEforALL. It is based on the UN Map of the World, which can be found here: http://www.un.org/Depts/Cartographic/map/profile/world.pdf. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of SEforALL, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

**Awareness raising and Financial services are tied with Grant-making at 7%.*

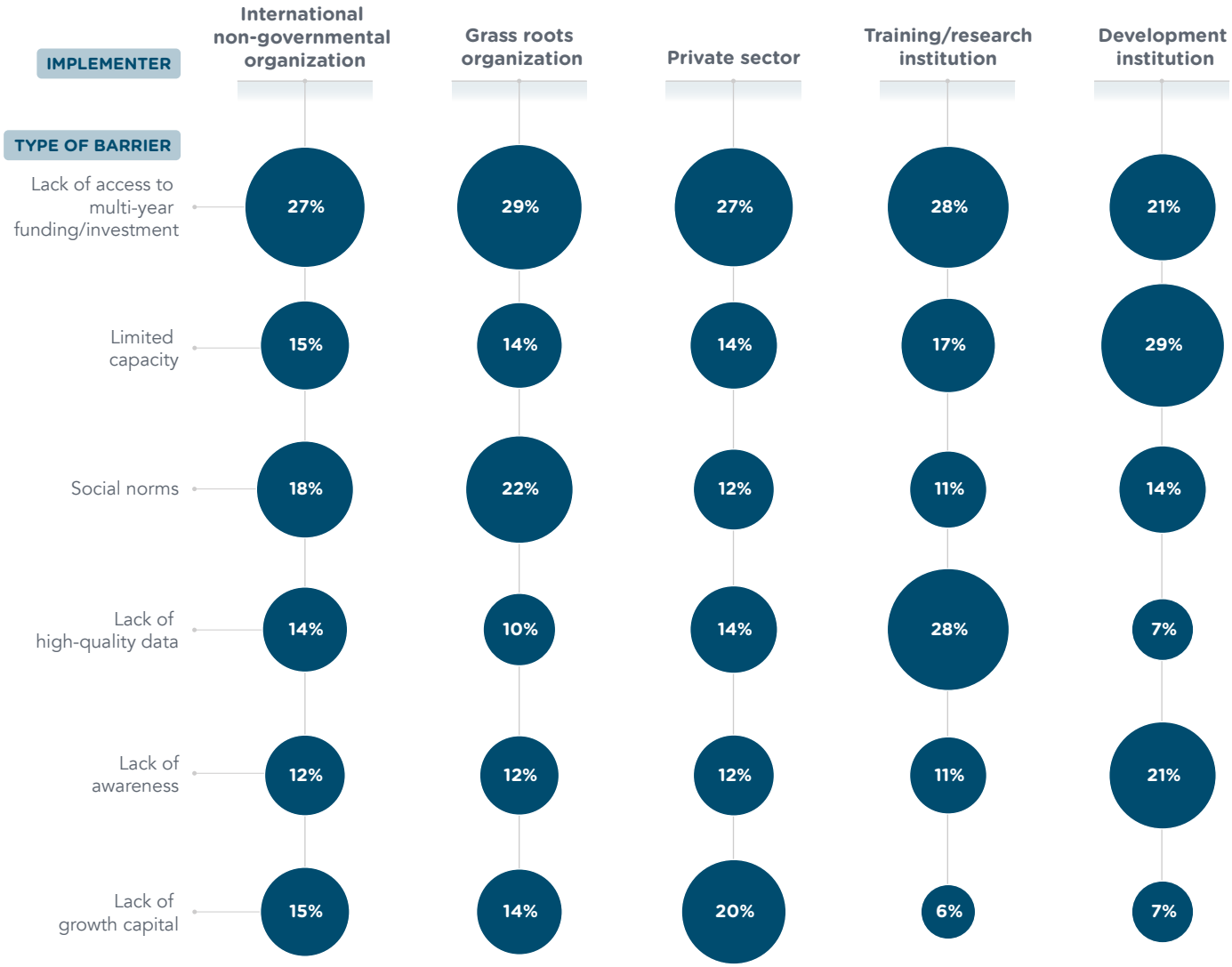
FIGURE 5.7 MOST COMMON BARRIERS IN EACH REGION



Source: Sustainable Energy for All database (as of November 1, 2017).

Notes: 1. Percentage total may not add up to 100 due to rounding errors. 2. Multiple barriers could be selected. Percentages based on total number of barriers reported within each region.

FIGURE 5.8 MOST COMMON BARRIERS FACED BY IMPLEMENTERS



Source: Sustainable Energy for All database (as of November 1, 2017).

Notes: 1. Percentage total may not add up to 100 due to rounding errors. 2. Multiple barriers could be selected. Percentages based on the total number of barriers associated with each implementer.

Even so, foundations/charities are important contributors, providing about 20 percent of overall funding.

In East Asia and the Pacific, foundations/charities are the lead funders. They provide 26 percent of funds while corporations, development institutions, and government institutions provide 17 percent each. In the Middle East and North Africa, foundations/charities contribute evenly, followed by corporations and individuals.

5.4.4 BARRIERS TO MAKING PROGRESS

The barriers reported by stakeholders were analyzed under two angles: the first sought to determine if barriers vary across regions; the second investigated if different types of program implementers were faced with different challenges. Although there are limitations in the database in terms of a fully balanced representation across the regions, the actors, and the initiatives, the two analyses pointed to four common barriers: 1) access to finance (multi-year funding and growth capital), 2) limited capacity, 3) cultural and social norms, and 4) information (lack of high-quality data and lack of awareness).

Finance: Across all regions, access to multi-year funding is reported as the top barrier, even in North America where funding is seemingly more accessible (Figure 5.7). Programs that can count on reliable funding for three to five years are better equipped to deal with changing dynamics during project implementation, build a stronger relationship with beneficiaries, scale-up activities more rapidly, and are able to direct more effort to project implementation, rather than fundraising. Closely related to access to multi-year funding is access to growth capital, which enables organizations to expand existing activities or enter new markets. Grant-makers are usually open to providing the first level of program funding but expect programs to find their way to financial sustainability. This often stunts growth, especially when the program is not designed to generate revenue or the business is not yet profitable.

The regional picture is the same when looking at the data from the vantage point of program implementers (Figure 5.8). Grassroots organizations, international NGOs, and the private sector all suffer from the lack of multi-year funding and growth capital; however, the issue is more noticeable in Sub-Saharan Africa and Latin America and the Caribbean, than in other regions. This is the common plight of grant-dependent initiatives and social enterprises in the energy sector, or elsewhere.

Capacity: Limited capacity is the second most-reported barrier, mostly in North America, the Middle East and North Africa, and Europe and Central Asia, and by development institutions, foundations, and international organizations. This is possibly linked to difficulties in finding grantees and implementing partners that can effectively deliver programs on the ground. Moreover, the gender and energy sector is specifically challenged by the lack of women in technical fields, limiting their participation in energy companies and their involvement as entrepreneurs, outside of the retail segment of the value chain. Women's familiarity with new technologies is also usually lower than men's, particularly in rural settings. Women's groups that can benefit from access to energy for productive use may not know what technologies are available to them or may not have the technical skills to use the devices.

Cultural and social norms: Barriers related to cultural and social norms are inherent to gender equality and social inclusion initiatives, given that gender inequality and discrimination are generally rooted in societal norms. At the root of this barrier is the subordination of women to men in many cultures. In energy projects specifically, the energy needs of women may be overlooked because surveys are usually addressed to heads of households (generally men) and community-wide decisions may be made by men without consulting women. Gaps in level of education between men and women and society's assumptions of which gender should perform which task can all be traced back to social norms, which negatively affect women's participation in the energy sector. Cultural and social norms also have set up several other historically

produced structural barriers, in addition to education levels, that are relevant in the clean energy sector. These include things like asset levels and land tenure, which can affect borrowing capacity, and the presence and strength of gendered professional and political networks needed to advance careers and action agendas.

Social norms are perhaps the most difficult barriers to overcome. Programs that have included the sensitization of men and community leaders on gender equality as part of their activities, and have designed their interventions within the boundaries of social norms, have shown some success. For instance, in cultures where women are not allowed to travel overnight without a male family member, bringing a training workshop near their place of residence may increase attendance. Due to their closeness to local communities, grassroots organizations, international NGOs, and the private sector are the most affected by this challenge.

Data: Lack of high-quality data and, more precisely, lack of gender-disaggregated data, is recognized as a major impediment to gender-related projects. Statistics on energy access are almost never available by sex. Additionally, many practitioners struggle to agree to and capture quantifiable measures of women's empowerment, either selecting overly broad or overly narrow indicators, trying to balance the efforts required to collect data with the usefulness of that data, and then finding that measurements are not directly comparable across organizations. This, in turn, makes it difficult to convincingly raise awareness on the topic. Judging from the level of advocacy that programs and organizations are engaged in and the presence of the activity in all regions, the level of awareness seems very low, even among the international community, national governments and the private sector.

It is important to recognize, however, that—compared to a decade ago—there has been noticeable progress on this agenda. More actors are taking on the issue; more development finance institutions have gender and social inclusion strategies and require fund recipients to conduct gender evaluations; more evidence on gendered impact of energy access is being built; and countries are slowly adopting gender-sensitive energy policies.

6. CONDITIONS FOR PROMOTING UPTAKE

The intersection of gender and social inclusion (GSI), sustainable energy, and climate change, has been shown to have many different entry points—whether energy poverty, the clean energy transition, social justice, or others. Though the mapping did not explicitly collect information about the drivers of change and predictors of success, an informal scan of many of the programs and organizations points to several important factors to consider.

6.1 INTERNATIONAL DISCOURSE, DEVELOPMENT AGENDAS, AND BUDGETARY ALLOCATIONS

In the last 10-15 years, there has been a noticeable shift in the international discourse regarding energy and climate change's connection to gender and social inclusion, in part because of the ceaseless efforts of early advocates. References to this sphere are increasingly common and even codified in foundational texts. The inclusion of energy in the Sustainable Development Goals (SDGs) as SDG 7, as well as SDG 5 on gender equality, was an important step in providing guidance and impetus for increased programming in this area. The SDGs, combined with the SEforALL initiative and, more recently, the Paris Agreement on climate change, all point toward a more informed discourse on gender and energy, with the hope that implementation will follow. Though still limited, one can guess that there has been an uptick in available funding compared to 10 to 15 years ago, judging from the growing percentage of development finance institutions energy and climate portfolios that include gender-informed activities. Somewhat higher funding levels have supported a larger number of new actors and offered measures of validation to organizations already at work, though there is still much to be done.

A plurality of the entities identified through the mapping are—not surprisingly—grant-dependent and trace their funding back to large development finance institutions and charitable foundations. Entities receiving grants from large publicly funded institutions are inherently easier to trace with web research, and thus are over-represented in the sample set in the database. However, it is still true that to the extent that such international funders include gender as a cross-cutting priority in their energy and climate change portfolios, the "demand" for certain gender-aware and socially inclusive activities has stimulated the "supply" of those activities by project developers and implementers. This frequently happens via specific requirements and prescriptions for gender-informed approaches in procurement notices and calls for proposals, either as stand-alone projects or as GSI aspects embedded within larger initiatives. Slightly less frequently, but still importantly, the reverse occurs and sustainable energy and climate change are incorporated as crosscutting issues in development portfolios primarily focused on gender and social inclusion.

Despite their active role in diverting funding to these causes and raising the visibility of gender and energy issues, donor-led approaches have on occasion fallen short of their potential and opened themselves to the criticism of possessing a "check-the-box" mentality. This has largely happened when donors either: a) devoted insufficient resources to energy and climate change GSI issues (relative to the overall project or portfolio size), b) lacked

sufficient in-house human resources to expertly manage project sub-components, or c) failed to identify and elevate champions within the affected communities and institutions where they were working (See Section 6.2 on "National and local-level engagement.").

International norms around gender equality are also making themselves felt in the private sector and among public utilities, albeit very gradually. The evidence is clear that greater gender diversity—particularly in board and other leadership positions—can benefit business in meaningful financial and non-financial terms, such as through improved profitability and innovation capacity (EY, 2016 - Diversity & Disruption). In more socially progressive countries, it has become problematic for some energy companies that are run and managed by predominantly male groups to continue in this fashion, as public (and investor) opinion increasingly views this as outdated, even damaging to competitiveness. Óptima Energía, a Mexican energy services company (ESCO) working in public lighting, was an early adopter by putting gender equality into practice (See Box 5.1 on Óptima Energía).

6.2 NATIONAL AND LOCAL-LEVEL ENGAGEMENT

The mapping has partially revealed a diverse set of programs, initiatives, and businesses working on GSI and sustainable energy that are operating at both the national and local levels. This suggests that adaptation of ideas to site-specific gender contexts and energy situations remains important. In numerous cases, locally driven issue identification, problem-solving, know-how, and mobilization capabilities have been key for progress. For example, the forms that discrimination can take vary by locale, as do appropriate energy access solutions and what it means to be "empowered," among other things. If there were a universal, one-size-fits-all solution to the challenges faced, it would have been discovered by now. And so, the findings show that in most cases where local-level engagement was absent, a gender and energy agenda did not fulfill its potential; local-level ownership should be considered a critical success factor.

One undeniably important aspect propelling local-level ownership is the growing view framing energy access for women as a human rights issue. In instances where the government implicitly subsidized every connection to the national grid, ever-larger numbers of those left in the dark are clamoring for their fair share of support, be it through the grid or alternatives. In cases where the effects of climate change are becoming increasingly obvious in everyday life, often with disproportionate impacts on women, people are mobilizing to defend their right to natural resources. As energy access—in particular, sustainable energy access—becomes viewed as a basic right, more and varied grassroots groups are drawn into the effort, capable of driving political change and holding leaders accountable.

When GSI, sustainable energy, and climate change initiatives originate from local demand and benefits, change can be potentially more transformational than when mandated by outsiders (e.g., international donors, multilateral development organizations). The common thread that appears to link successful initiatives being done by organizations, associations, businesses, and national and local governments is the presence of well-informed, local champions invested in inclusive outcomes and willing to raise the visibility of the issues. In policy arenas—whether for a policy, sector strategy, or regulatory change—national and local-level engagement manifests itself as buy-in and ownership, which translates to greater likelihoods of gender-sensitive provisions being put into practice. By way of example, this was certainly a key driver for the ECOWAS gender and energy policy and regulation (Box 6.1).

6.3 DATA AND METRICS

Gender disparities in energy and climate-sector work tend to remain ignored, even invisible, without disaggregated data. The biggest gap in achieving equal access to energy for men and women is the lack of gender-disaggregated statistical data, without which the extent of unequal

BOX 6.1 ECOWAS POLICY ON GENDER MAINSTREAMING IN ENERGY

On June 4th 2017, the Economic Community of West African States (ECOWAS), Heads of State adopted the ECOWAS Policy for Gender Mainstreaming in Energy Access—the first-ever regional policy on gender-responsive energy development. The development of the policy was led by the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), along with the Department of Gender and Social Affairs, with funding from the US National Renewable Energy Laboratory.

The aim of the policy is to combine energy regulation with the principles of gender equality. The gender-mainstreaming framework is meant to support the energy ministries across the 15 member states in achieving their energy-access goals in a way that enhances the role of women as energy users, community members, and entrepreneurs. The policy ensures that all energy initiatives are directed towards inequalities and that there are equal opportunities to enter and succeed in the private sector. It further aims to increase women's participation in technical fields and decision-making positions. The policy aims to establish and maintain a gender-responsive monitoring to ensure that all its objectives are met. Foreseen challenges for the member states to put the policy into practice include ensuring long-term budget support and accountability.

It is too early to know the full range of tangible effects the policy may be having, but it has already spawned a companion regional regulation mandating that gender-impact assessments be performed for certain types of energy infrastructure projects. This legal instrument directs ECOWAS Member States to select statutory authorities and design national processes to regulate energy infrastructure projects in a way so they are conceived and executed in a gender-sensitive and balanced way.

The ECOWAS policy and its accompanying regulation represent an important development. It attempts solutions at a regional scale, which are internationally coordinated. However, it is also firmly rooted in local realities, having been shaped and validated by each member state. A recent positive outcome of the ECOWAS process is an interest from their two sister organizations in East Africa (East Africa Centre for Renewable Energy and Energy Efficiency) and Southern Africa (Southern Africa Centre for Renewable Energy and Energy Efficiency) to take up gender mainstreaming for energy access in policies, programs, and entrepreneurship.

access cannot be grasped. Data collection is particularly difficult in the isolated, rural areas of developing countries or with small, grassroots organizations that do not have the capacity to focus on data collection. High quality, disaggregated data and collection practices, on the other hand, have permitted the setting and tracking of relevant targets and even paved the way to new action areas previously unconsidered. Data has variously been used in multiple contexts, for example: 1) rights-based approaches, where gaps in energy access or opportunities and ensuing impacts are documented, 2) business-case approaches, where better performance can be correlated to diversity, and finally 3) as an internal management tool to improve GSI outcomes. An example of the latter was when Reykjaivik Energy partnered with PayAnalytics to develop the first-ever, real-time tool to assess the effect of every hiring and promotion decision on its company-wide gender pay gap.

Organizations and businesses with gender-linked data and robust collection methodologies are often leaders on this agenda. They are enhancing and defending the credibility of the agenda with their impact-reporting and exerting a demonstration effect. Thoughtful data collection has also permitted some of the more progressive entities captured in the database to refine their techniques and effectiveness in promoting inclusivity within the sustainable energy sphere. Kopernik, for instance, a provider of last-

mile clean energy solutions through its Wonder Woman program in Indonesia—and a participant in Energia's WEE program—used detailed data on the performance of its female sales agents and household-level impacts to both build credibility as an advocate and improve operations internally.

6.4 SECTORAL APPROACHES

Many of the natural entry points to GSI work in sustainable energy and climate change have been sectoral in nature. This includes efforts to upgrade polluting and dangerous cooking practices in developing countries where, by cooking's association with women, efforts almost necessitate the use of gender-informed approaches. For cooking, the Global Alliance for Clean Cookstoves (GACC) has incorporated gender strategies throughout its efforts to meet its topline objectives around improving health outcomes, increasing incomes, and protecting the environment. The World LPG Association, recognizing the potential share of global demand constituted by women in developing countries, published a report on the issue. Also, many forest and watershed conservation efforts in the Global South have extended their activities into cleaner cooking, with women centrally positioned in programs as stewards of fuel resources and adopters of stove technology.

Another example of a sectoral connection is found in the work using microfinance institutions as multiplier entities in the race to supply last-mile clean energy products and consumer financing for those products. Where historically, many MFIs' clientele leaned toward poor, rural, or otherwise marginalized women, this work has often also taken on a GSI cast because most of the reliable clients are women. Cooking and end-user finance are the two sectoral approaches with the greatest representation in the database to date. However, as the database continues to grow, it is expected that other entry points will be included with greater frequency.

Where natural sectoral approaches exist, they have been drivers in the gender and energy space and important in building wider coalitions of interests. To the extent that there can be backlash to—or fatigue with—repeated calls for more gender programming in sustainable energy, moving the focus first to sectors that happen to disproportionally affect women and disadvantaged groups can be a productive way to reframe the debate and reengage. In addition, GSI and sustainable energy work is already happening in many other sectors, but without being clearly identified as such—and indeed this was a major data limitation in this first pass at database mapping. Sectoral approaches—like cooking or end-user finance mentioned above and less obvious areas like maternal health, food security, clean water, entrepreneurship, agriculture, education, and others—can benefit when networked to broader efforts for GSI, sustainable energy, and climate change to promote interdisciplinary learning and tap into new funding opportunities.

7. RECOMMENDATIONS

The nexus of gender and social inclusion, sustainable energy, and climate change continues to evolve past a paradigm where women and vulnerable groups are viewed primarily as victims and beneficiaries to one where they are increasingly included in the process of change. While the mapping did not attempt to quantify the degree to which women and vulnerable groups were considered as victims, beneficiaries, or agents of change, this aspect was brought up in interviews with practitioners with a long history of work in this area. A quick read through those entities included in the mapping shows numerous efforts that put excluded groups front and center as agents of change; yet the future holds room for an even-wider and more balanced spectrum of activities. Recommendations for getting there are summarized below.

Moving capital into gender-responsive and socially inclusive sustainable energy solutions: The mapping revealed a need for greater amounts and types of capital trained on gender equality, social inclusion, sustainable energy, and climate change challenges. Relative to the size of the large investments being made in the energy sector—both public and private—there is still very little funding allocated for gender and social inclusion. The good news is that donors and investors are now requiring companies and organizations to include gender considerations in program design and implementation (e.g., Millennium Challenge Corporation, Green Climate Fund, European Union, and others), but this is still a very small percentage of their overall budgets. Furthermore, these funds are heavily grant-based. This is not to say that much of this work will not need to remain grant-based for the foreseeable future, only that in many cases grants should be combined with—and used to leverage—more and varied types of funding. For example, awareness raising and capacity building in the service of market development, which will remain grant-based, should ideally be tightly linked with sources of credit for hiring, business expansion, and consumer finance.

Supporters of this work may want to investigate additional financial instruments and techniques—beyond grant-making—to drive on-the-ground implementation, especially in low-income settings. For example, women's bonds that invest in women-centered projects have been issued in recent years, so is it time for more women's climate bonds? If asset ownership is a major stumbling block to credit access that has more impact on women, could more be done with loan guarantees? This mapping uncovered very little debt and equity flowing for these issues, with the relatively small number represented in the database. As a bright spot, however, in 2014 the Calvert Foundation focused its Women Investing in Women Initiative (WIN-WIN) on the energy access challenge after finding energy was a key limiting factor in their other sectors of concern, namely health, education, and economic status. The foundation committed an additional $10-20 million just to energy access, much of it aggregated through small, online investments. This resulted in over 200,000 women gaining improved access. The mapping failed to uncover, however, an angel-investing group focused solely on women in sustainable energy (not that they don't exist), but more such efforts would be welcome developments.

Dedicated women's energy investment programs tend to be small relative to their mainstream counterparts, so

more methodical inclusion of women into existing sustainable energy financing vehicles is advisable. While female quotas are one way to increase gender balance within investment portfolios, they are often deeply unpopular. Other strategies around aggressive outreach and recruitment, pre-application capacity building (e.g., Wallace Global Fund's work to link women's groups to the Green Climate Fund), strengthening of professional networks and mentoring opportunities, and inclusion of more women on the other side of the table as transaction advisers, underwriters, investment committee members, fund managers, and equity shareholders is called for. Women in Oil and Energy South Africa Investment Holdings is one example of a company owned and managed by black women investing in the conventional and renewable energy sectors.

Lastly, national and local governments, via procurement processes, have within their control large percentages of energy-sector spending. If more public procurement guidelines adopted GSI preferential systems, it could stimulate the entry of greater numbers of women into energy- and climate-linked STEM fields, into the workforce, and into firm ownership.

Partnerships, learning, and collaboration: With such a multi-faceted challenge in creating stronger and more compelling links between gender and social inclusion, sustainable energy, and climate change, there is ample room for partnerships, learning, and collaboration. Primarily, this involves the sharing of techniques and strategies, both South-South and South-North. For instance, could lessons surrounding the structuring of high-income countries' pro-social grid programs or workplace anti-discrimination training be of use in low-income countries' contexts? And, could empowered self-help methodologies refined and perfected in low-income countries be applicable in high-income ones?

BOX 7.1 *SHINE* CAMPAIGN: INVESTING IN ENERGY ACCESS FOR ALL

A new global campaign called *Shine*: Investing in Energy Access for All calls on civil society to help scale progress towards Sustainable Development Goal 7. *Shine* seeks to bring together partners from the philanthropy, faith, development sectors to mobilize capital and generate momentum to achieve universal access to clean, affordable, and reliable energy by 2030.

Over one billion people in the world lack access to electricity. Over three billion people—nearly half the population—continue to rely on solid fuels to meet the energy demands of their homes. Women and children bear the greatest burden of energy poverty: each year, cooking without clean energy causes millions of premature deaths due to severe respiratory illnesses. In turn, access to clean energy brings interconnected, corollary benefits in gender equality, economic growth, education, and more. *Shine* will advocate for gender-lens investments that prioritize the lives of women and girls in off-grid regions of the world.

Shine's new, global campaign calls on international partners to pledge ambitious, sustained, and collaborative action on energy access through programs, grants, and investments, and to actively participate in a community of practice committed to ending energy poverty. Partners include the Wallace Global Fund, Sustainable Energy for All, GreenFaith, IKEA Foundation, the Mott Foundation, and more. By championing distributed energy solutions, advocating for enabling policies, increasing the flow of financial resources, and strengthening the capacity of communities, *Shine* will catalyze distributed clean energy development at a scale to meet the 2030 goal of universal energy access. Please reach out to info@shineinvest.org to learn more about the campaign's development and plans for formal launch in spring 2018.

Lessons and practice have value when shared across geographies: for example, not only in trying to build a cogent evidence base for advocacy, but also across disciplines and spanning the multiplicity of entry points uncovered through this mapping. Though many are working on women's empowerment, that empowerment looks very different in a household trying to climb the first rungs of the energy-switching ladder from women struggling to reach the final rungs of a career ladder in a multinational energy corporation.

How can a primarily energy-poverty-focused program use the tools and mindsets borrowed from women's empowerment to extend its impact even further? What can an organization with a background in social inclusion learn from a top-tier clean energy firm? Or better yet, how can they work together in complementary ways? There is unrealized value in fostering exchanges between those tending different plots across this landscape: Can they get their products to a central market?

One new such effort to do just that is the SEforALL People-Centered Accelerator. Many of the success stories involve partnerships, individual or organizational mentoring, and the use of networks to spread ideas, mobilize support, and provide encouragement. Examples include the Clean Energy, Education and Empowerment Initiative (C3E), Women of Renewable Industries and Sustainable Energy (WRISE), Women in Solar Energy (WISE), Entrepreneurial Women in Renewable Energy (EWiRE), and the Global Women's Network for the Energy Transition (GWNET), among others.

Gender and environmental causes have been systemati-

BOX 7.2 GRID ALTERNATIVES: WESTERN UNITED STATES

GRID Alternatives is a US-based non-profit organization that extends solar energy and job training to low-income, struggling, and marginalized communities (e.g., veterans, former inmates, and native peoples); it is now working internationally, as well. To date, they have installed 36 MW of power and trained 34,000 individuals. Some of the solar installations organized by GRID Alternatives have been installed by female-only crews.

Its financial and operating model relies on cleverly combining the complementary needs of many different stakeholder groups. At the simplest level, it matches customers in need of lowering their energy bills with individuals needing hands-on experience and training for future careers as solar installation specialists. (GRID Alternatives also matches newly minted trainees with solar-sector employers.) To make solar systems affordable, GRID Alternatives also blends philanthropic donations with payments from utilities or companies needing to meet renewable-energy quotas and investors who benefit from government energy tax credits and depreciation allowances generated by the solar equipment.

Of note is GRID Alternatives Tribal Program that works with over 40 Native American tribes throughout the Western US to complete solar PV projects for low-income tribal households. It does this through a participatory installation model that integrates hands-on training and capacity building for local workers looking to develop careers and small businesses in the renewable energy sector. GRID Alternatives also works to leverage US federal and state solar incentives and policies on behalf of its Native American tribal partners, who face significant barriers to accessing many of these policies. As of October 2017, it has installed over 550 solar PV on tribal lands.

GRID Alternatives is an excellent example of an initiative committed to equity and social justice that is connecting dots in the clean energy space. Doing so has enabled it to mobilize resources from multiple streams and focus on equity issues—both at the level of the consumer and the installer—gathering previously excluded groups to build an inclusive and diverse solar technology sector.

cally linked, by some, for at least a half a century. This alliance of interests supports and allies itself with work in sustainable energy and climate change throughout the world. Nowhere is this better exemplified, perhaps, than by the wPower hub, a Kenya-based advocacy partnership in women's entrepreneurship in renewables whose Director Wanjira Mathai is the daughter of Green Belt Movement (GBM, est. 1977) founder and Nobel Laureate Wangari Mathai; Wanjira Mathai also chairs the GBM board. With wPower, the lessons and tactics from decades of women's environmental campaigns and networking are directly available for use in the sustainable energy context. In developing and least-developed countries, the natural environment-gender-energy axes have formed most commonly around issues of deforestation and desertification, where cleaner-cooking approaches have been included on the menu of remedies. This will continue to be an important entry point, though there are others, as well, where more collaboration is called for.

Research, statistics, and reporting: Gathering gender-disaggregated data related to on-the-ground realities, activities, and results is of paramount importance; it can document problem areas where gender disparities exist, provide evidence for the comparative efficacy of various approaches, and establish the track records and credentials of involved actors. Additionally, reliable information is a special kind of currency in the work of learning, partnerships, and collaboration, as well as in advocacy endeavors.

BOX 7.3 THE SUSTAINABLE ENERGY FOR ALL (SEforALL) PEOPLE-CENTERED ACCELERATOR

The People-Centered Accelerator is a voluntary partnership aimed at advancing gender equality, social inclusion, and women's empowerment in sustainable energy, to enhance and complement ongoing efforts to achieve the Sustainable Development Goals and the Paris Agreement. The Accelerator's mission is to promote the inclusion of women and the poorest people in society within efforts to achieve universal access to sustainable energy services and related business opportunities, to help secure a just energy transition that leaves no one behind.

The Accelerator is working on an action-oriented work plan to:

- Demonstrate and help scale-up sustainable access pathways for the most vulnerable and hardest-to-reach people. Business-as-usual solutions are not working to deliver energy access to women and the most vulnerable, particularly those living in urban slums and rural parts of Africa and Asia.
- Help direct capital to gender-responsive and socially inclusive energy businesses to support faster delivery of sustainable access solutions. Finance needs to flow faster to support gender-responsive and socially inclusive energy access solutions along the entire value chain, but financiers, enterprises, and market participants face challenges in jointly developing bankable investments with the right risk profile and the ability to scale quickly.
- Empower women engaged in energy service delivery to achieve autonomy, authority, and decision-making power at work, and thereby accelerate progress on international climate change and sustainable energy goals. There is an opportunity to boost women's engagement in science, technology, and mathematics education, and in the energy workforce and its management through strengthened policies that leverage women's knowledge and capabilities as energy leaders and entrepreneurs.

The People-Centered Accelerator will be launched on Gender Day at the United Nation's Framework Convention on Climate Change's COP 23 in mid-November 2017.

Standardizing—to the extent possible—data collection and reporting, for purposes of impact evaluations and benchmarking, entails not only agreeing on a set of indicators and methodologies but also moving towards a state where long-term monitoring and evaluation are considered integral parts of program design and business operations, not optional add-ons. Government regulations may have a role to play in this area: for example, those requiring companies to report on hiring, promotion, and wage gaps, or requiring utilities to disaggregate their customer bases. Internal guidelines and protocols of development financiers can function in a similar fashion, shaping the way that programs collect and analyze data. Finally, there is a large amount of coordination still to be done on the academic side, connecting disparate efforts and working to translate and communicate scientific findings to field practitioners and policymakers.

Advocacy, mobilization, and political change: Advocacy was one of the most commonly cited activities captured in the database and it will continue to be important going forward. The present is a ripe time for those who want to continue to build momentum by drawing new voices to the agenda and connecting to each other those already engaged, but in separate corners. The dropping prices of renewables and increased financial flows to these sectors offer a precious opportunity for action. The appetite for a degree of conscientiousness in investment portfolios—either through negative screening and divestment or positive selection for triple-bottom-line returns—has been shaped, in large part, by advocacy and remains susceptible to public pressure.

Issues of gender equality and social inclusion in sustainable energy and climate change must continually be elevated at all levels—not just one or two—and in a coordinated way. The establishment and proper functioning of advocacy channels is critical for civil society, especially grassroots groups, to lobby for increased funding levels, GSI-responsive policies, accountability, and the enforcement of those rules already in existence. There is ample space to shuttle messages and amplify demands between the various possible levels and realms of influence—municipal up to supranational, private and public sector. Aligning the messaging and mobilization across these different spheres can make precious use of scarce resources and even result in harmonization of outcomes.

It is recommended to support platforms that increase the avenues for advocacy, especially those platforms that can bring together diverse actors and elevate the profiles of locally grounded individuals and groups that are typically less involved in advocacy on these issues. Funding could be well-deployed to supporting aggregation of lobbying demands, message coordination among groups, and a high level strategic mobilization plan for the sector.

7.1 CONCLUSIONS AND NEXT STEPS

The multiplication of actors over the last decade in the overlapping arenas of gender, social inclusion, sustainable energy, and climate change is a promising development and resulted in the materialization of the agenda. Their activities—heavily concentrated around advocacy, research, capacity building, training, networking, and convening—have laid an important foundation for the sector to now not only expand and mature, but to also address some gaps and challenges, as shown in the mapping (Table 7.1).

Four priority actions that philanthropic organizations and development finance institutions can take as immediate next steps and easy wins in the effort to consolidate and build on recently realized gains are proposed. This is not an exhaustive list of needed actions, only ones that are self-contained and realizable in the next three-to-six months, that would represent value-for-money, and that would serve to benefit the entire sector, not just narrower subdivisions within it.

1. **Mapping and information**: Expand the current database to achieve more exhaustive coverage. This should target: more grassroots and indigenous local groups, those without a web presence, and those operating in other languages; groups

active in other related sectors (e.g., health, agriculture, education) but perhaps lacking highly visible connections to energy and climate change; and countries outside the initial 45 classified as high-impact countries. The database should be made publicly available online to the benefit of a wider set of stakeholders. This online tool could provide global audiences with information to identify who is doing what, to help identify gaps in programming or funding, and to foster linkages across and with the energy and other development sectors.

2. **Advocacy**: Building on the above, link the results of the mapping exercise to ongoing efforts to design or implement programs that advance gender and social inclusion in sustainable energy. The aim would be to: support those efforts to identify and recruit additional voices, to build a larger constituency for action; gain a deeper understanding of ongoing activities around the world that they have synergies with, or could connect to, for accelerated action or greater scale and impact; and raise the visibility of important or innovative efforts that are underway and provide lessons for other initiatives.

3. **Finance and funding**: For energy access, philanthropic support is needed to lead a participatory, grassroots effort to create a unified strategy to unlock barriers for greater gender-responsive and socially inclusive approaches in sustainable energy, so that no one is left behind. This strategy should be created and validated in a fully participatory process, perhaps organizing the initiative from the foundation of several existing groupings—such

TABLE 7.1 HIGH-LEVEL TAKE-AWAYS FROM THE MAPPING

Most activities are taking place in Sub-Saharan Africa.
• The region is the focus of many development actors: it has the lowest electricity access rate; the second-lowest clean cooking access rate; the lowest human development index; and the highest rate of gender inequality.
Advocacy is the most common activity across all regions.
• There are still varying levels of understanding and acceptance by decision-makers of the relevance of gender and social inclusion within the sustainable energy and climate change debate.
Women's empowerment and gender equality are not always the primary focus of activities.
• Entities promoting gender equality and social inclusion in sustainable energy and climate change focus primarily on addressing energy poverty and accelerating the clean energy transition.
Only 12 percent of entities reported moving capital into gender-responsive and socially inclusive approaches in the energy sector.
• There is a wide gap between the number of fund providers and fund recipients. Access to multi-year funding is the most commonly reported barrier across all regions.
Development institutions and governments fund 45 percent of entities and programs working on gender and social inclusion in sustainable energy.
• They have traditionally been the first movers in supporting innovative approaches to economic development in low-income countries. They are once more pioneering gender and social inclusion in the sustainable energy and climate change sector.
International non-governmental organizations and grassroots organizations are the most active program implementers.
• They usually work in partnership. This make-up is typical of a sector that is largely non-commercial.

as the Energia Network, the Shine Campaign (Box 7.1), or the SEforALL People-Centered Accelerator (Box 7.3)—and extending participation to others identified through the mapping. The strategy should articulate the resources needed to implement it, including the overall funding types and amounts required to meet key global goals by sub-sector, and the sources of funding. A coordinated, "bottom-up" call for resources can then be credibly presented to the global donor, philanthropic, and impact-investment communities and provide a rallying point for organizations to lobby for resources and raise capital. It should also serve as a global yardstick by which funders and financiers should be able to measure and judge their contributions and coordinate around more sustained and strategic support.

4. **Capacity and local engagement**: The mapping creates the opportunity to "connect the dots" between the wide array of programs, initiatives, organizations, and businesses that are forging ahead to make a more gender-inclusive energy sector that leaves no one behind. Making connections through collaboration, learning exchanges, international fora, mentoring groups, or unified advocacy campaigns is an important way to strengthen engagement on these issues. It is necessary to bring together actors from all the diverse and sometimes only tenuously related backgrounds and work areas highlighted in the database, particularly grassroots groups—relatively more lacking in resources, to forge and strengthen personal connections and break through the silos that have formed. Philanthropic organizations and development institutions could support a movement that brings together the diverse set of actors around the common issues and needs highlighted in the mapping to cross boundaries—both geographic and sectoral—and coalesce in ways that build momentum around sustainable energy access as a women's right.

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ANNEX 1
GLOSSARY

Advocacy: Public support for, or recommendation of, a cause or policy.

Annual Revenues: The income generated from sale of goods or services, or any other use of capital or assets, associated with the main operations of an organization before any costs or expenses are deducted over a 12-month period. Revenue is shown usually as the top item in an income (profit and loss) statement from which all charges, costs, and expenses are subtracted to arrive at net income.

Business: A business is an organization or enterprising entity engaged in commercial, industrial, or professional activities. A company transacts business activities through the production of a good, offering of a service, or retailing of already-manufactured products. A business can be a for-profit entity or a nonprofit organization that operates to fulfill a charitable mission.

Capacity Building: Planned development of (or increase in) knowledge, output rate, management, skills, and other capabilities of an organization or individuals through acquisition, incentives, technology, and/or training.

Clean Energy Transition: A long-term structural change in energy systems, from fossil fuel to clean energy.

Convertible Grant: Grants with conditions that allow them to turn into loans once milestones are met.

Cultural Norms: Cultural norms are behavioral standards that a society adopts and follows when interacting with one another. They are different for each culture.

Development Institution: Specialized development banks or subsidiaries, United Nations agencies, and government agencies set up to support development in developing countries. They are usually majority-owned by national governments and source their capital from national or international development funds or benefit from government guarantees.

Distribution: Part of a distribution channel, a chain of businesses or intermediaries through which a good or service passes until it reaches the end consumer.

Education/Awareness Raising: A form of activism, that often takes the form of a group of people attempting to focus the attention of a wider group of people on some cause or condition. It often involves informing the populace of a public concern.

Energy Efficiency Devices: Energy consuming appliance or equipment whose overall energy efficiency rating either falls within the top 25 percent of ratings or is 10 percent better than a minimum standard.

Energy Poverty: A lack of access to modern energy services. It refers to the situation of large numbers of people in developing countries and some people in developed countries whose well-being is negatively affected by very low consumption of energy, use of dirty or polluting fuels, and excessive time spent collecting fuel to meet basic needs. It is inversely related to access to modern energy services, although improving access is only one factor in efforts to reduce energy poverty. Energy poverty is distinct from fuel poverty, which focuses solely on the issue of af-

fordability.

Equity: The amount of funds contributed by owner or the capital raised by selling shares of the company to the public, institutional investors, or financial institutions.

Financial Services: A professional service involving the investment, lending, and management of money and assets.

Foundation/Charity: A foundation is a non-governmental entity that is established as a nonprofit corporation or a charitable trust, with a principal purpose of making grants to unrelated organizations, institutions, or individuals for scientific, educational, cultural, religious, or other charitable purposes. A private foundation derives its money from a family, an individual, or a corporation. Public charities generally derive their funding or support primarily from the public, receiving grants from individuals, government, and private foundations.

Functional Descriptor: Activities associated with a business/organization, policy instrument or program.

Funder: The entity that is providing financing to support the activities of the organization/business, policy instrument, or program.

Gender Equality: Gender equality is achieved when women and men enjoy the same rights and opportunities across all sectors of society—including economic participation and decision-making—and when the different behaviors, aspirations, and needs of women and men are equally valued and favored.

Grant: Non-repayable funds or products disbursed or gifted by one party (grant-makers)—often a government department, corporation, foundation or trust—to a recipient, often (but not always) a nonprofit entity, educational institution, business, or an individual.

Grant-Making: The discretionary awarding of grants.

Grassroots Organization: A self-organized group of individuals pursuing common interests through a volunteer-based, non-profit organization. These groups focus on localized issues.

Growth Capital: Capital investment to expand or restructure operations in a company or to enter new markets.

High-Impact Countries: Countries whose efforts are critical to the achievement of the SEforALL objectives globally.

Implementer: The entity that puts an activity, plan, or procedure into effect.

Improved Cookstoves: Technology that aims to increase clean cooking practices. This usually consists of electric cookstoves, clean fuel cookstoves, and efficient biomass stoves.

International NGO: Any organization that is not established by inter-governmental agreement, including organizations that accept members designated by government authorities, if such membership does not interfere with the free expression of views of the organizations. These operate on an international scale.

Investment: A monetary asset purchased with the idea that the asset will provide income in the future or will be sold at a higher price for a profit.

Mini-Grid/Micro-Grid: A set of electricity generators and possibly energy storage systems interconnected to a distribution network that supplies electricity to a localized group of customers. They involve small-scale electricity generation (10 kW to 10MW) that serves a limited number of consumers via a distribution grid that can operate in isolation from national electricity transmission networks.

Modern Cooking Fuel: Fuel that is cleaner and more efficient for cooking.

Energy Audit and Monitoring: An energy audit is an ins-

pection, survey, and analysis of energy flows for energy conservation in a building, process, or system to reduce the amount of energy input into the system without negatively affecting the output(s). Energy monitoring and targeting is primarily a management technique that uses energy information as a basis to eliminate waste, reduce and control current levels of energy use, and improve the existing operating procedures.

Networking/Convening: To interact with others to exchange information and develop professional or social contacts.

Non-Profit Organization: A non-profit organization uses its surplus revenues to further achieve its purpose or mission, rather than distributing its surplus income to the organization's shareholders (or equivalents) as profit or dividends.

Pico Solar: Pico solar systems are much smaller and cheaper than traditional solar systems but have the potential to provide useful amounts of electrical power to charge the increasing number of low-power gadgets. Typically, pico solar cells have power outputs ranging from as little as 0.1 watts-peak (Wp) to 5 watts-peak.

Policy Instrument: Policy instruments are interventions made by government/public authorities in local, national, or international economies that are intended to achieve outcomes that conform to the objectives of public policy. They include strategies, white papers, action plans, and regulations.

Private Sector: Encompasses all for-profit businesses that are not owned or operated by the government.

Regulation: A rule or directive made and maintained by an authority.

Research: The systematic investigation into, and study of, materials and sources to establish facts and reach new conclusions.

Retail: Sales of goods to the consumer, as opposed to a wholesaler or supplier, which normally sells its goods to another business.

Service and Installation: To place in position or connect energy products for service or use and the provision of, or connection to, services required to make the installed equipment ready for operation.

Social Inclusion: The process of improving the terms on which individuals and groups take part in society—improving the ability, opportunity, and dignity of those disadvantaged because of their identity.

Social Norms: The rules of behavior that are considered acceptable in a group or society.

Solar Home Systems: Stand-alone photovoltaic systems that offer a cost-effective mode of supplying amenity power for lighting and appliances to remote off-grid households.

Special Purpose Vehicle (SPV): A subsidiary of a company that is bankruptcy-remote from the main organization (i.e., protected even if the parent organization goes bankrupt). The actions of a SPV are usually very tightly controlled and they are only allowed to finance, buy, and sell assets.

Sub-National Policy: Policies of a government of a region within a nation.

Training: Organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill.

White Paper: A government report giving information or proposals on an issue.

Women's Empowerment: The ability for women to enjoy their rights to control and benefit from resources, assets, income, and their own time, as well as the ability to manage risk and improve their economic status and well-being.

ANNEX 2
DATABASE DATA FIELDS

A Microsoft Access database was developed through this research to create a systematic way to catalog and query a range of different programs, initiatives, organizations, policies, and businesses that are working on gender and energy around the world. Below is an explanation of each of the data fields that form the SEforALL database.

1. **Entity descriptor**: program, policy instrument, and business/organization. Broadly captures how the entity is described to drill down into the different, specific activities for each type of entity. Businesses and organizations were combined into one category of entity since classes of activities could not simply be restricted to one or the other. The mapping exercise could be extended going forward by providing additional sub-descriptors to further refine the business/organization entity.

2. **Primary focus**: addressing energy poverty, empowering women, promoting gender equality and social inclusion, accelerating the clean energy transition, or moving capital into clean energy and climate change (the "what"). This is important to understand what is the primary entry point for the entity. It is recognized that entities may have more than one focus area, but it was instructive to define a clear and unique primary focus for each entity.

3. **Functional descriptor**: For each of the entities, a set of activities was defined for each program, policy instrument, or business/organization (the "how"). There was no limit to how many activities could be selected for each entity.

4. **Technology/fuel**: A range of different technologies and fuels (e.g., cookstoves, modern cooking fuels, pico solar, solar home systems, mini/micro grids, energy efficiency devices) relevant to the energy and development space were defined, and all relevant options could be selected. Based on the feedback and the size of the "other" category, future database entries could include an expanded technology selection.

5. **Annual budget/revenues**: Indicated in ranges (e.g., <$10,000, $10,000-$100,000, $100,000-$500,000, $500,000-$1M, $1M-$5M, >$5M) for the operational budget (programs and organizations) or revenues (businesses).

6. **Funding type**: To understand the types of capital entering the GSI and sustainable energy agenda for the program, policy instrument, or business/organization (e.g., debt, equity, grant, convertible grant, friends and family, and consulting).

7. **Funder type**: To understand the types of donors and investors active on the GSI and sustainable energy agenda (e.g., individuals, foundations/charity, development institutions, corporations, other government institutions, non-governmental organizations, and special purpose vehicles).

8. **Implementer type**: To provide an understanding of who is working on the ground to deliver the

program, policy instrument, or business/organization.

9. **Barriers**: A set of common barriers were defined that may be hindering a program, policy instrument, or business/organization in its ability to thrive (e.g., growth capital, long-term funding, capacity constraints, high administrative costs, lack of awareness, limited incentives, lack of high-quality data, unclear metrics, and political economy).
10. **Start year/end year**: This was important in ensuring that only recent and active entities are included in the database.
11. **Identifying information**: Includes contact information, website address, and a brief narrative about the program, policy instrument, or business/organization, as well as contact information.

ANNEX 3
SELECTION CRITERIA 2 FOR DATABASE INCLUSION

For inclusion in the SEforALL database there are three criteria based on focus area, types of activities in the energy sector, and engagement in gender equality or social inclusion. The second criterion required that the entity be active in at least one of the following activities:

- **Energy production**: For example, solar PV component manufacturing, hydro- or wind power plant operations, green charcoal production, biogas production/manufacturing, other clean cooking fuels production (e.g., gels, briquettes), manufacturing of improved cookstoves.

- **Energy distribution**: For example, off-grid electrification (with renewable energy), distribution/sales of clean energy products (e.g., pico solar, improved cookstoves, biogas units, cooking fuels).

- **Energy consumption**: For example, stakeholders/initiatives that facilitate the consumption of renewable energy and use of energy-efficient technology for domestic or productive purposes. Examples of facilitation activities include awareness raising, financing, and subsidy.

- **Energy financing**: For example, donors, investors, and multilaterals/bilaterals active in programs that facilitate and support increased deployment and uptake of sustainable energy.

- **Energy policy**: For example, multilateral, regional, and bilateral initiatives that facilitate and encourage energy policies to expand sustainable energy access. "Policy" includes strategies, action plans, regulations, etc.

- **Advocacy** for the issues/topics above.

- **Knowledge management** for the issues/topics above.

- **Capacity building, awareness raising, networking/convening** for the issues/topics above.

ANNEX 4
DATA COLLECTION HUBS

Below is a list of networks and organizations that were contacted in the first phase of the data gathering and desk research:

- Organizations and initiatives included in an initial mapping conducted by SEforALL and other SEforALL energy-related research efforts.
- Databases and listservs of network organizations:
    1. UN Foundation Energy Access Practitioner Network
    2. Energia
    3. Alliance of Civil Society Organizations for Clean Energy Access
    4. National Gender and Sustainable Energy Network
    5. Global Gender and Climate Alliance Climate Action Network
    6. UNFCCC gender network
    7. Women in Renewable Energy, Indonesia
- Multilateral and bilateral development agencies involved in gender, sustainable energy, and climate change that helped identify organizations working on-the-ground:
    1. UN Women's Women's Entrepreneurship for Sustainable Energy (WESE)
    2. UNDP Low Emissions Capacity Program
    3. ESMAP/World Bank gender and energy portfolio
    4. Power Africa
    5. IUCN
    6. Climate Investment Fund
- Regional organizations working in gender and energy:
    1. ECREEE
    2. SEforALL Regional Hubs
- Ashden Awards applicants and winners
- SEforALL researchers/consultants (Practical Action research covered Kenya, Ethiopia, Myanmar, Bangladesh, and Nigeria)
- Value for women
- WPower
- REN21
- E3 Analytics
- Global Alliance for Clean Cookstoves
- Self-Employed Women's Association (SEWA)

ANNEX 5
STAKEHOLDER GROUPS INCLUDED IN THE MAPPING

The database includes 174 entities from the following stakeholder groups that are active in addressing energy poverty and the clean energy transition through a gender and social inclusion lens:

- **Public sector**: The mapping included a range of government-led or initiated programs, initiatives, and policies that are supporting gender equality, social inclusion, and women's empowerment, with attention to the type of implementing partner.

- **Financiers and funds**: The mapping included actors across the financial landscape engaged in funding or investing in programs, initiatives, or businesses. This included philanthropic donors, development finance institutions, multilateral and bilateral funders, and social investors. Attention was placed on the type of funds being provided and how funds are channeled into implementation.

- **Businesses and social enterprises**: Local and international businesses and social enterprises that are manufacturing, selling, and servicing clean energy products and services to alleviate energy poverty or to accelerate the clean energy transition were included in the mapping. Of note were the funding types and sources and whether gender equality and social inclusion aspects are reflected in their approach.

- **Non-governmental, grassroots, and civil society organizations**: The mapping included international, regional, national, and local organizations and initiatives that are implementing programs and initiatives that incorporate gender equality, social inclusion, and women's empowerment, with a focus on addressing energy poverty or the clean energy transition. These organizations are the primary implementers for the work on the ground, especially in the hardest-to-reach areas. Grassroots organizations were the most difficult to reach, because they don't usually have a prominent online presence and the people running them can be difficult to reach in the field. Interviews in the field would be the best way to really capture the grassroots perspective, but that was not possible for this initial mapping.

- **Research institutions and academia**: Research organizations, think tanks, and academic institutions tackling the issues through evidence gathering, policy research, and monitoring were included in the mapping. These are operating at the international or local level to highlight data gaps, barriers, and opportunities in scaling action and impact.

ANNEX 6

THE GLOBAL TRACKING FRAMEWORK'S HIGH-IMPACT COUNTRIES

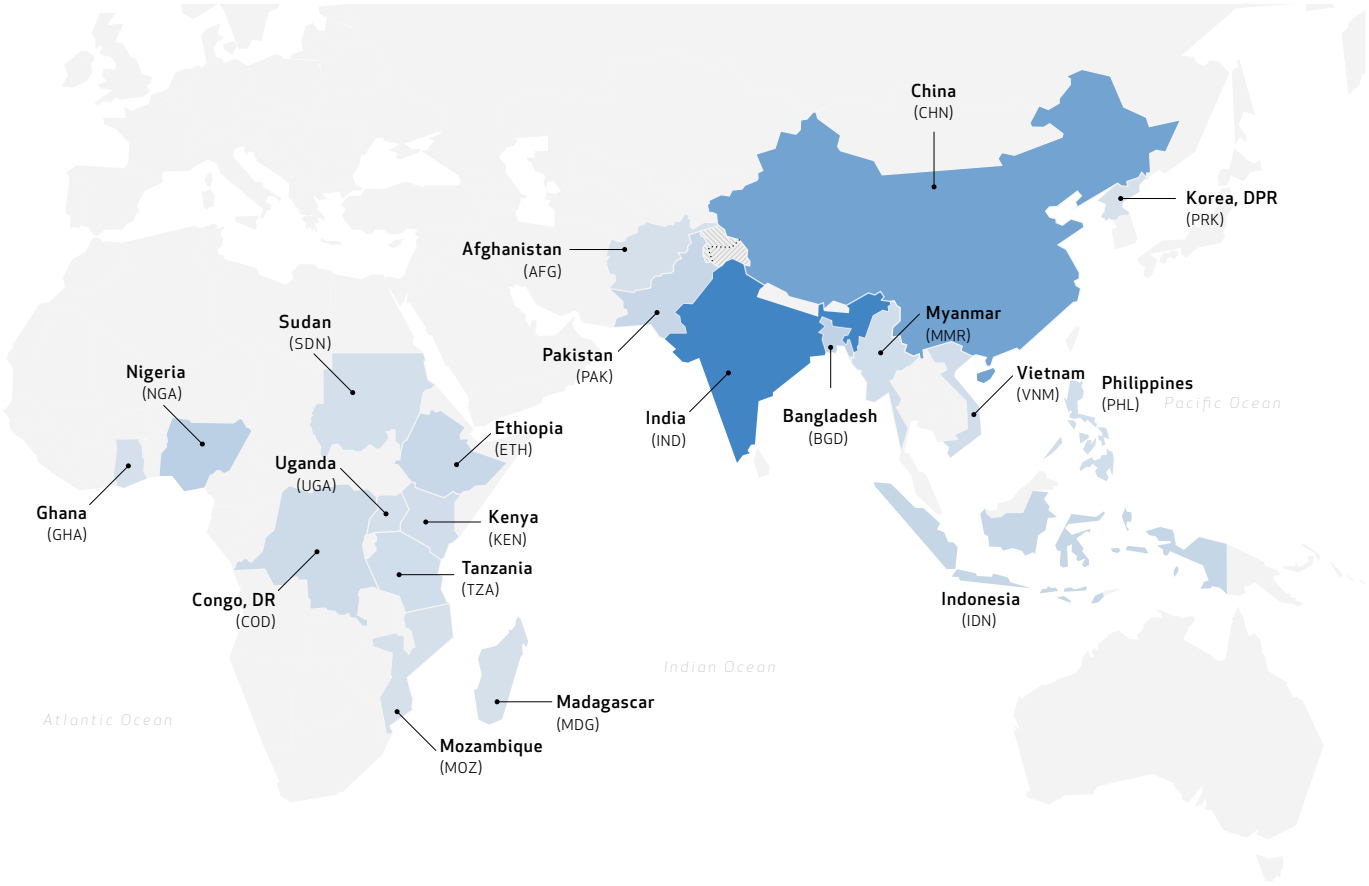
CLEAN COOKING

HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Ensure universal access to modern energy services

MILLION PEOPLE WITHOUT ACCESS TO CLEAN FUELS AND TECHNOLOGIES FOR COOKING, 2014



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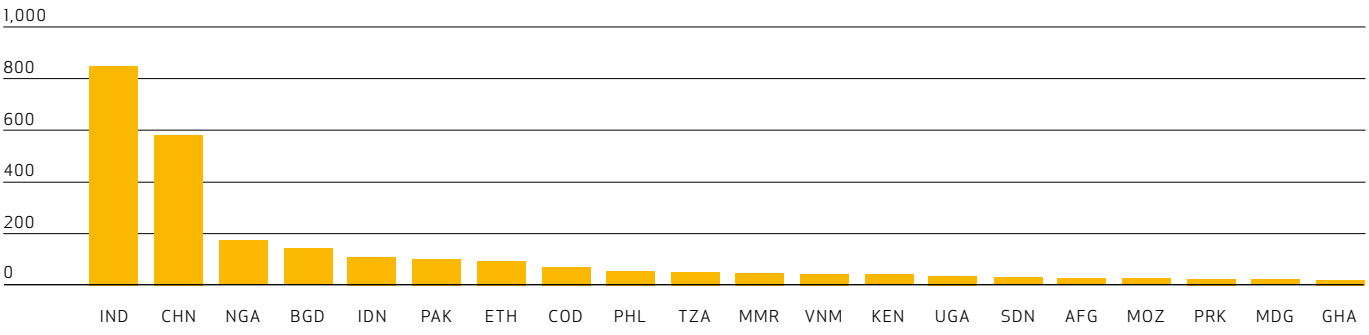


Notes: 1. The dotted line represents approximately the Line of Control in Jammu and Kashmir by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. 2. This map was produced by SEforALL. It is based on the UN Map of the World, which can be found here: http://www.un.org/Depts/Cartographic/map/profile/world.pdf. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of SEforALL, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

Sources: International Energy Agency (IEA) and the World Bank. 2017. "Progress Towards Sustainable Energy: Global Tracking Framework 2017" (April), World Bank, Washington, DC. Data extracted from http://gtf.esmap.org/ on 06/20/2017.

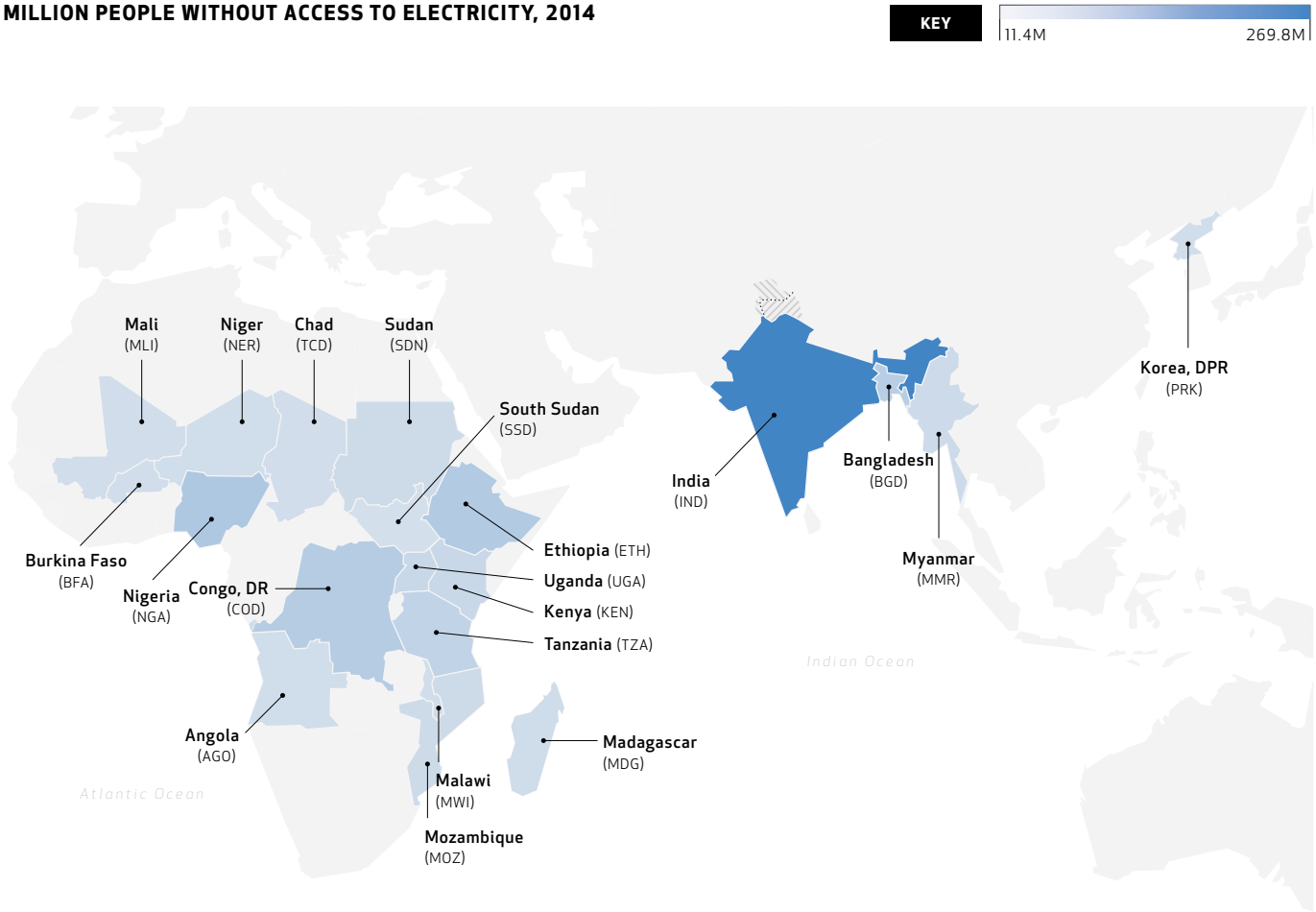
ELECTRIFICATION

HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Ensure universal access to modern energy services

MILLION PEOPLE WITHOUT ACCESS TO ELECTRICITY, 2014



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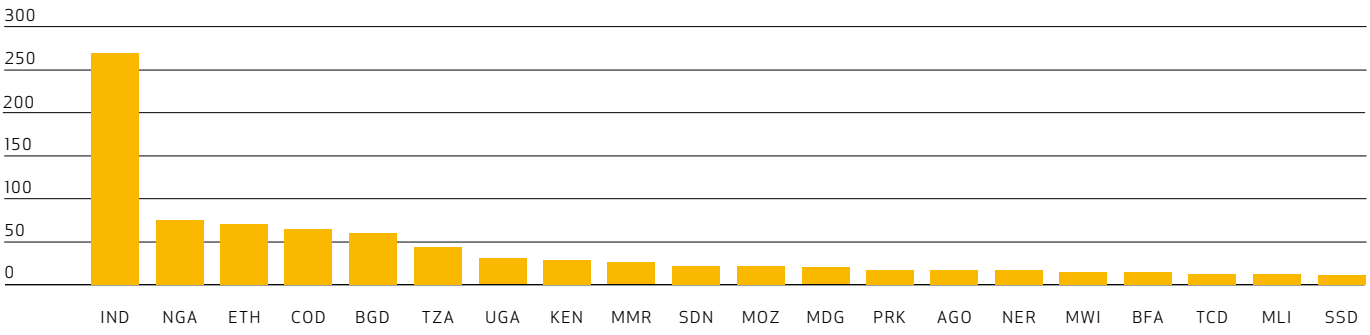

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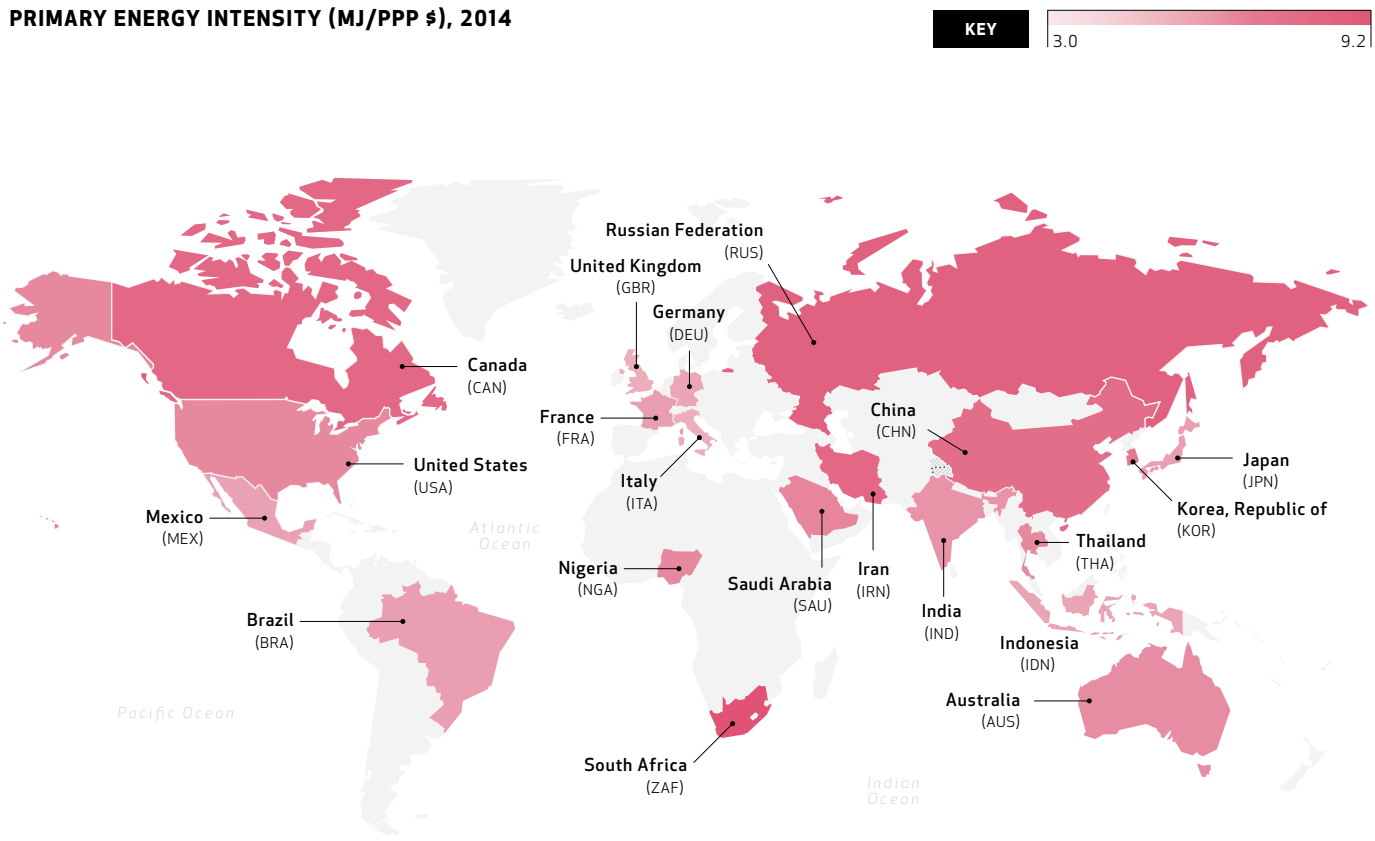
ENERGY EFFICIENCY

HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Double the global rate of improvement in energy efficiency

PRIMARY ENERGY INTENSITY (MJ/PPP $), 2014



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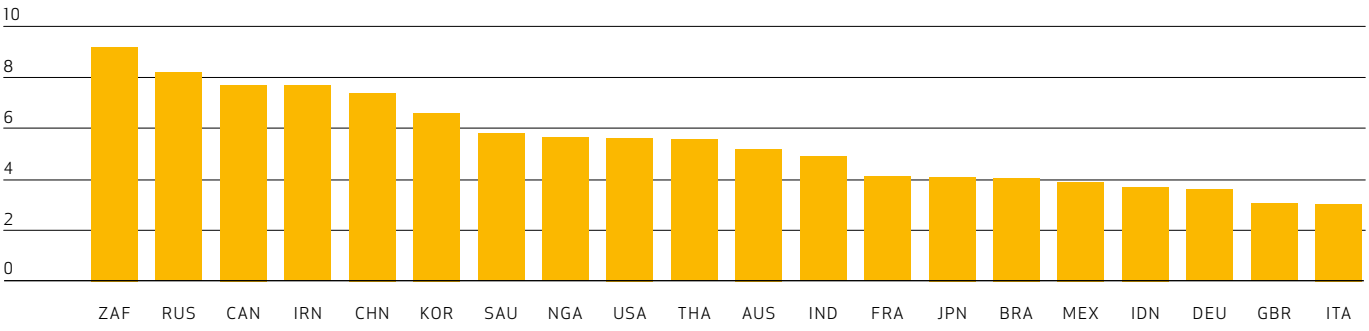

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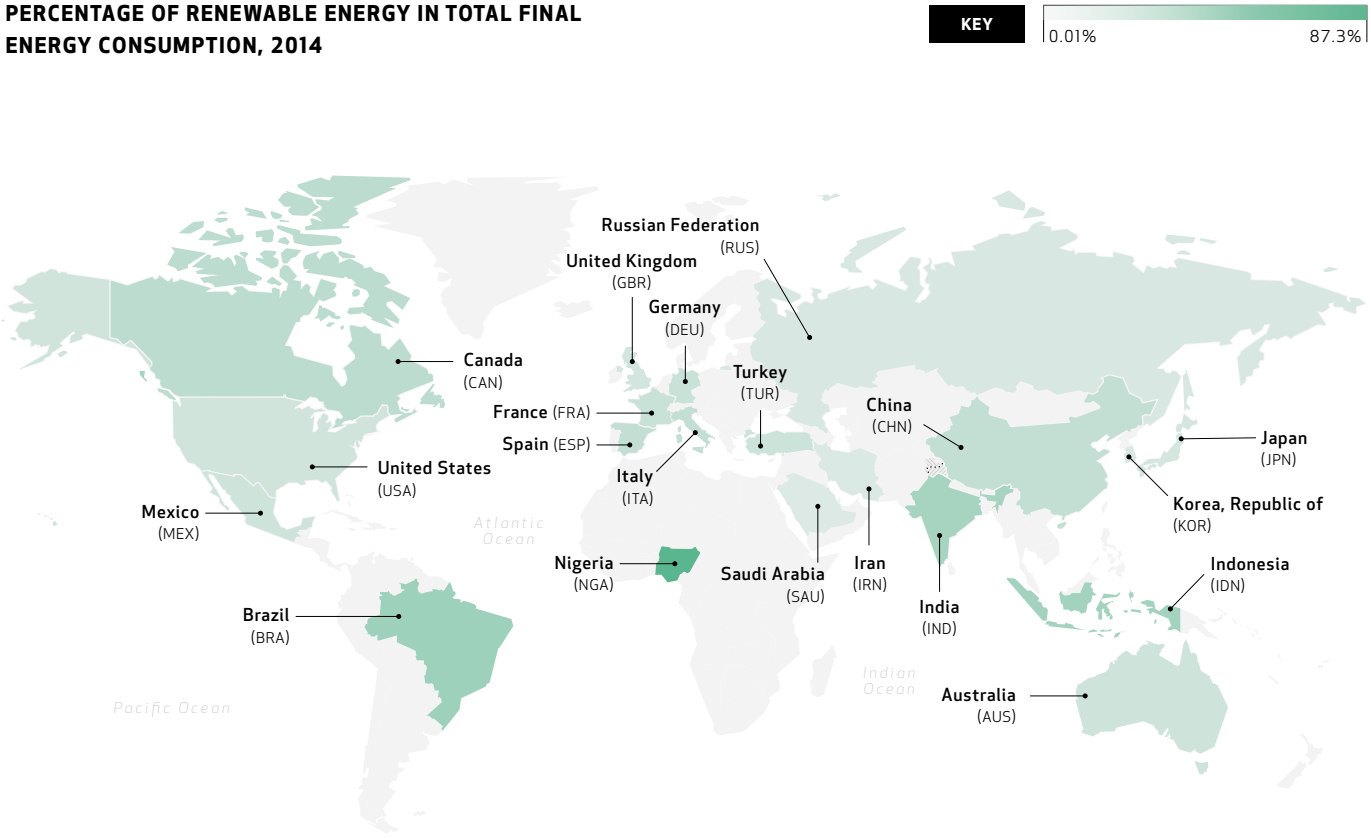
RENEWABLE ENERGY

HIGH-IMPACT COUNTRIES

Countries whose efforts are critical to the achievement of SEforALL objectives globally

Double the share of renewable energy in the global energy mix

PERCENTAGE OF RENEWABLE ENERGY IN TOTAL FINAL ENERGY CONSUMPTION, 2014



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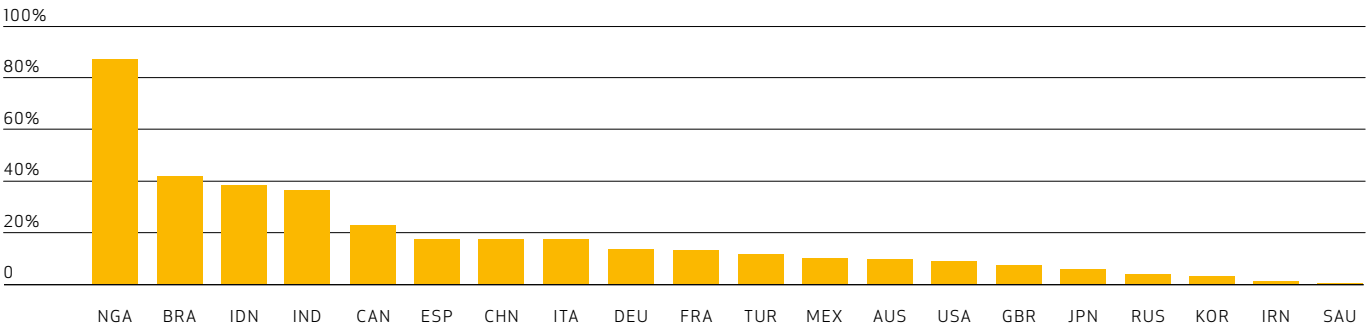

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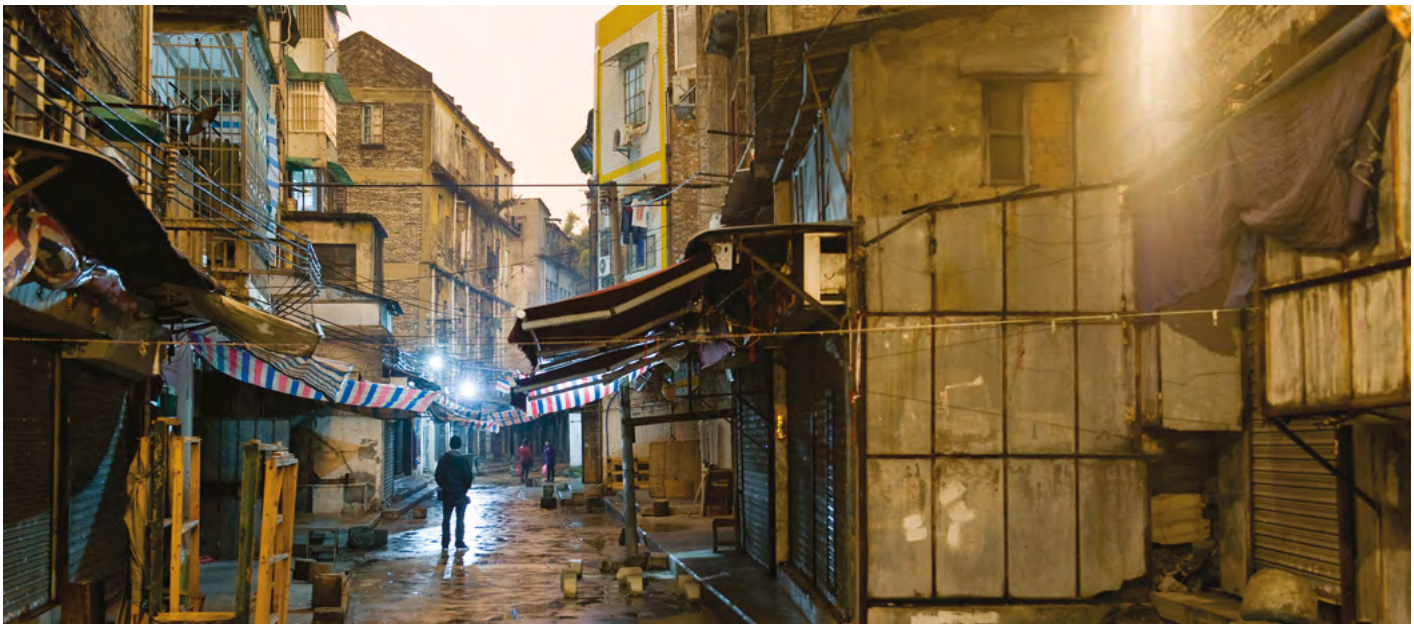

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