Country Action Plan for Clean Cookstoves

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Power Division
Ministry of Power, Energy and Mineral Resources
Government of the People's Republic of Bangladesh

Contents

ACRONYMS

A2I	Access to Information Programme
ARECOP	Asia Regional Cookstove Programme
BASA	Bangladesh Association for Social Advancement
BCC	Behavior Change Communication
BCSIR	Bangladesh Council of Scientific and Industrial Research
BDT	Bangladeshi Taka
BDRCS	Bangladesh Red Crescent Society
BSTI	Bangladesh Standards and Testing Institution
BUET	Bangladesh University of Engineering and Technology
CAP	Bangladesh Country Action Plan for Clean Cookstoves
CAGR	Compound Annual Growth Rate
CBO	Community Based Organization
CCAC	The Climate and Clean Air Coalition
CCEB	Catalyzing Clean Energy in Bangladesh
CCT	Controlled Cooking Test
CCTF	Climate Change Trust Fund
CDM	Clean Development Mechanism
CO2	Carbon Dioxide
CSR	Corporate Social Responsibility
DALY	Disability-Adjusted Life Years
DGIS	Directorate-General for International Cooperation, Govt. of Netherlands
DFID	Department for International Development, Government of UK
DNA	Designated National Authority
DOE	Department of Environment
EE&C	Energy Efficiency and Conservation
EJAG	Esho Jati Gori
GACC	Global Alliance for Clean Cookstoves
GBD	Global Burden of Diseases
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIZ	German Technical Cooperation
GOB	Government of Bangladesh
GVEP	Global Village Energy Partnership
HAP	Household Air Pollution
ICS	Improved Cookstoves
IDCOL	Infrastructure Development Company Limited
IFC	International Finance Corporation
IFRD	Institute of Fuel Research and Development
ISO	International Organization for Standardization
IWA	International Workshop Agreement
Kg	Kilogram
KPT	Kitchen Performance Test
LGED	Local Government Engineering Department
LPG	Liquefied Petroleum Gas
MDG	Millennium Development Goal
MFI	Microfinance Institution
MOEF	Ministry of Environment and Forests

MW	Megawatt
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
PKSF	Palli Karma-Sahayak Foundation
PMO	Prime Minister's Office
PO	Partner Organization
PoA	Program of Activities
PPP	Purchasing Power Parity
RDF	Resource Development Foundation
RFP	Request for Proposal
R&D	Research and Development
SEFA	Sustainable Energy for All
SHS	Solar Home Systems
SLCP	Short Lived Climate Pollutants
SMC	Social Marketing Company
SME	Small and Medium Enterprise
SNV	Netherlands Development Organisation
SREDA	Sustainable and Renewable Energy Development Authority
TBD	To be determined
TOR	Terms of Reference
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Development
VERC	Village Education Resource Center
WB	World Bank
WBT	Water Boiling Test

EXECUTIVE SUMMARY

Bangladesh Country Action Plan for Clean Cookstoves (CAP) defines what is needed to kick-start and develop the Bangladesh clean cookstove market. The CAP makes the case for taking immediate action towards achieving the goal of 100% clean cooking solutions by 2030.

It identifies key barriers to the large scale adoption of clean cookstoves and fuels, the desired outcomes if these barriers are removed, as well as potential intervention options and mechanisms for quickly and effectively taking action. Stakeholders have incorporated their thoughts and understanding and have tailored this CAP for Bangladesh's cookstoves and fuels market, social customs, infrastructure and for the task of combating challenges like deforestation, indoor air pollution etc.

The target of this CAP is to disseminate cookstoves to over 30 million households in Bangladesh by 2030: current market penetration represents just 3% of the target potential, indicating the scale of the challenge and the critical need for a more coordinated, innovative and integrated approach. An approved national action plan is a key step to strengthen overall planning (avoid duplication), coordination (share best practices) and collaboration (increase synergies and capitalize on economies of scale) amongst relevant sector actors with the ultimate goal to create a sustainable market and to scale up current interventions.

In light of the above, Power Division, Ministry of Power, Energy and Mineral Resources, Government of Bangladesh has taken the lead in developing a CAP through involvement and input from wider stakeholders of the sector with technical and financial support from the Global Alliance for Clean Cookstoves (GACC) (see annex 5 for more information on GACC's market enabling approach) and SNV Netherlands Development Organisation. GIZ Bangladesh also facilitated the initiative, along with USAID and the World Bank.

The CAP presents a comprehensive summary of priority intervention options necessary to affect change, and provides interested parties (existing and potential donors, entrepreneurs, NGOs and policymakers) with a menu of intervention options to undertake in order to scale up the widespread adoption of clean cooking solutions in Bangladesh. This CAP represents the consensus of a wide variety of stakeholders, within the Bangladesh market, committed to saving lives, improving livelihoods, empowering women and protecting the environment.

Successful implementation of the priority interventions in this CAP are aligned to the Government of Bangladesh's (GoB) priorities and will strongly contribute to the GoB's vision of smoke-free kitchens by 2030. The CAP focuses on sector harmonization through priority interventions on the demand, the supply and the enabling environment pillars of the cookstove and fuel sector.

There are 32 interventions outlined in the Bangladesh CAP, which is primarily designed to cover the period from 2013-2018 and will be reviewed on a bi-annual basis. Recognising that not all can be done at once, the stakeholders and coordinating partners identified the following ten priority interventions, which can and should be implemented immediately:

1 Develop a coordination mechanism, the Household Energy Platform, to ensure sector players and facilitators are working towards a cohesive coordinated strategy and are learning from each other, leveraging each other's work, not duplicating efforts, and are able to advocate for the sector with one unified voice.

2 Utilize local institutions, conduct R&D to improve the existing local models and potentially create new cookstove models in order to increase the quality of products available and offer a variety of technologies to consumers.
3 Develop a national network of suppliers that are able to widely produce and/or disseminate locally produced or imported technologies, increasing the quality and distribution of available technologies over time.
4 Identify strong non-cooking product distribution channels and add improved cooking solutions into the already successful, wide-reaching distribution chains.
5 Increase awareness of clean cooking solutions among consumers through a national awareness campaign.
6 Build the capacity of individual suppliers and distributors to effectively market their products.
7 Increase access to finance for cookstove and fuel entrepreneurs.
8 Better understand Bangladeshi consumer preferences through applied research studies and pilots to ensure products meet consumer needs and are in high demand.
9 Establish a national cookstoves testing and knowledge centre for laboratory and field testing.
10 Include cookstoves and fuels as a critical priority in achieving reductions in short lived climate pollutants (SLCPs), improvements in exposure to household air pollution, improvements in maternal and child health, women's empowerment and other key Government priorities.

There are several major stakeholders working to scale up clean cooking solutions in Bangladesh. For a full list of stakeholders, see annex 1: Mapping the players.

Sector coordination via the Household Energy Platform

The Household Energy Platform will be a semi-formal structure led by Power Division (subsequently by SREDA) and developed in consultation with the stakeholders. It will not be a decision making body for the sector, but will discuss and send information/ recommendations through the focal person of Power Division, where it will be hosted. Major stakeholders such as BCSIR, DOE, GACC/SNV, World Bank, GIZ, USAID, IDCOL, CCEB, Grameen Shakti, and others will be members. The Platform will also incorporate representative members from the private sector, civil society and academic institutions and line ministries (Forestry and Environment, Women and Children Affairs, Social Welfare, Health and Family Welfare, Housing and Public Works, Energy and Mineral Resources Divisions, Rural Development and Cooperative Division, Finance Division, Economic Relations Division etc.) and representative of the National Board of Revenue etc.

The Household Energy Platform will serve several objectives, including but not limited to the general coordination of the many varied activities ongoing in the sector. Some of these objectives include:

Coordination of the sector/regular meetings	It is critical to share ongoing work across the sector, avoiding duplicate initiatives, collaborating to implement national standards and launching national awareness campaigns.
Sharing of best practices/knowledge hub	Members collectively have a wealth of knowledge and information that they can organise and share with the sector to help all participants increase their chances of success and scale. The Household Energy Platform will arrange expert workshops and lectures for stakeholders to learn from those in and outside the sector on critical issues such as demand generation, carbon finance, SME financing, etc.
Advocacy	The group of unified stakeholders is uniquely positioned to represent the sector to the GoB and advocate for policy interventions that remove key barriers to growth and enable the sector to move forward with cleaner technologies
Harmonize donor funding and resource mobilisation	While there has been increasing donor interest in the sector, there are still large funding gaps in what is required to implement the full CAP. The Household Energy Platform will provide an opportunity for stakeholders to jointly fundraise and advocate for the necessary resources to fully implement the priority interventions outlined in the CAP

1 MACRO ENVIRONMENT

1.1 Demography

Bangladesh has 150 million people[1] living in 32 million households. It is the sixth most densely populated country in the world with 1142 people per sq. km on average. 72% of the population (25,012,806 households) lives in rural areas[2]. Bangladesh will reach its first United Nations-established Millennium Development Goal, that of poverty reduction, two years ahead of the 2015 deadline. Bangladesh's poverty rate is now at 26% of the population.[3] With a population growth rate (CAGR) of 1.59%[4], the Government expects the population to grow to approximately 265 million by 2050, putting increasing pressure on already scarce resources. Notably Bangladesh has been ranked as the most vulnerable country in the world to tropical cyclones and the sixth most vulnerable to floods.[5]

Average household size (2011)	4.35
Literacy rate[6]	56%
Life expectancy[7]	70.36
Urbanization rate[8]	3.5%

1.2 Political environment

Bangladesh is divided into seven divisions, 64 districts and 493 upazilas (sub districts). Dhaka, Chittagong and Khulna are the most populated urban areas. Chittagong, Dhaka and Sylhet are the most populous and prosperous divisions. There is a vast network of roads and waterways connecting major towns and cities.

Bangladesh is already ahead of reaching its Millennium Development Goals (http://www.thedailystar.net/beta2/news/bangladesh-two-years-ahead/).

Local Government is well-represented throughout the country to implement and monitor Government programmes and facilitate the wellbeing of the people. In this context, cookstove programmes can expect to benefit from a supportive national Government.

Cfr. annex 3 for further clarity on the GOB institutional framework, relevant to the ICS sector.

[1] Bangladesh Bureau of Statistics, *Population and Housing Census- Bangladesh at a Glance*. http://www.bbs.gov.bd/WebTestApplication/userfiles/Image/Census2011/Bangladesh_glance.pdf
[2] Source: Power Division
[3] "After Much Heartbreak, Some Good News at Last for Bangladesh". Time World. 18 July 2013. Retrieved 22 July 2013. http://world.time.com/2013/07/18/after-much-heartbreak-some-good-news-at-last-for-bangladesh/
[4] CIA World Factbook, *Bangladesh*. https://www.cia.gov/library/publications/the-world-factbook/geos/bg.html
[5] GACC Bangladesh Market Assessment: Sector Mapping, Accenture Development Partnerships, 2012.
[6] Bangladesh Bureau of Statistics (BBS) Statistics and Informatics Division (SID) Ministry of Planning. Population and Housing Census 2011: Socio-Economic and Demographic Report. National Series.
[7] CIA World Factbook
[8] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+co for USAID, Jaunuary 2012, p8

1.3 Economic environment

Bangladesh's Gross Domestic Product (GDP) per capita Purchasing Power Parity (PPP) stands at $2100[9]. Over half of the GDP is generated by services and 45% of the population works in the agriculture sector. The economy has grown by an average of 6% over the past decade while inflation in July 2013 was 7%.

1.4 Gender

The National Policy for the Advancement of Women, which is implemented by the Ministry of Women and Children Affairs, aims to promote and protect women's rights across a number of areas such as health, employment and poverty reduction. While Bangladesh ranks 112 out of 146 countries in the UNDP Gender Equality Index 2011, there are signs that Bangladeshi women are becoming gradually more empowered. One success indicator is the literacy rate, which is 58.1% compared with 48.4% for men.

Women in their role as primary cooks spend approximately one third of their day focused on cooking and food preparation,[10] so they are far more likely to be exposed to Household Air Pollution (HAP). They are said to be involved in major household purchasing decisions but men often have a greater say. Women are commonly seen as integral to any consumer awareness or education campaign, but personal security has been cited as an important reason for not involving women in the sales and distribution of improved cookstoves. Cookstove programmes must be sensitive to these factors if they are to involve and empower women throughout the sector

1.5 Energy

Energy shortage is the most critical infrastructure constraint on Bangladesh's economic growth. The Government's vision is to supply electricity to all households by 2021. With 60% of the population currently having access to electricity (including off-grid renewable energy)[11], mainly through Government efforts, there is still much to do for the remaining population, especially rural people. According to Government statistics[12], the gap between electricity supply and demand in July 2012 was still 500-800 MW.

Biomass supply/demand accounts for 68% of primary energy consumption, and over 90% of household energy needs. In other words, only about 10% of Bangladeshis have access to modern fuels.[13] Annual household biomass consumption is 44 million tonnes, or 79% of the country's total biomass consumption (LGED, 2006). Fuelwood constitutes 41% of total biomass cooking energy with some 84% of households using fuelwood for cooking[14].

The Government still prioritizes utility scale energy development over household energy development for economic reasons and the biomass market in Bangladesh is likely to exist for many years.

The United Nations Secretary-General initiative, Sustainable Energy for All (SEFA), has marked Bangladesh as a priority country for promoting sustainable energy access. SEFA brings all key actors to the table to make sustainable energy for all a reality by 2030.

[9] CIA World Factbook
[10] http://www.cleancookstoves.org/blog/the-backstory-on-my.html
[11] Ibid
[12] System Planning Directorate, Bangladesh Power Development Board
[13] Fuel for Life: Household Energy and Health, WHO, 2006
[14] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+Co for USAID, January 2012, p.8-9

1.6 Climate and environment

Bangladesh is one of the most vulnerable countries to climate change. From 1980 to 2000 nearly 60% of worldwide deaths from cyclones occurred in Bangladesh alone.[15] The effects of climate change are likely to increase, causing more frequent and severe cyclones and other natural disasters. Deforestation and the burning of biomass continue to contribute to the climate challenge in Bangladesh with the coastal areas experiencing the worst effects.

Burning solid biomass is inefficient at converting energy to heat for cooking, and releases a toxic mix of health damaging pollutants that contribute to climate change at regional and global levels. In particular, some of these pollutants, such as black carbon and methane, have short life spans but significant consequences for the climate. Black carbon, which results from incomplete combustion, is estimated to contribute the equivalent of 25-50% of CO2 warming globally[16]. Methane emissions are the second largest cause of climate change after carbon dioxide. It is clear that inefficient household energy use has adverse consequences for the environment, air quality and human health.

[15] http://www.cleancookstoves.org/resources_files/bangladesh-climate-change.pdf
[16] Factsheet: Cookstoves and Climate. Global Alliance for Clean Cookstoves. http://www.cleancookstoves.org/resources/fact-sheets/cookstoves-and-climate-1.pdf

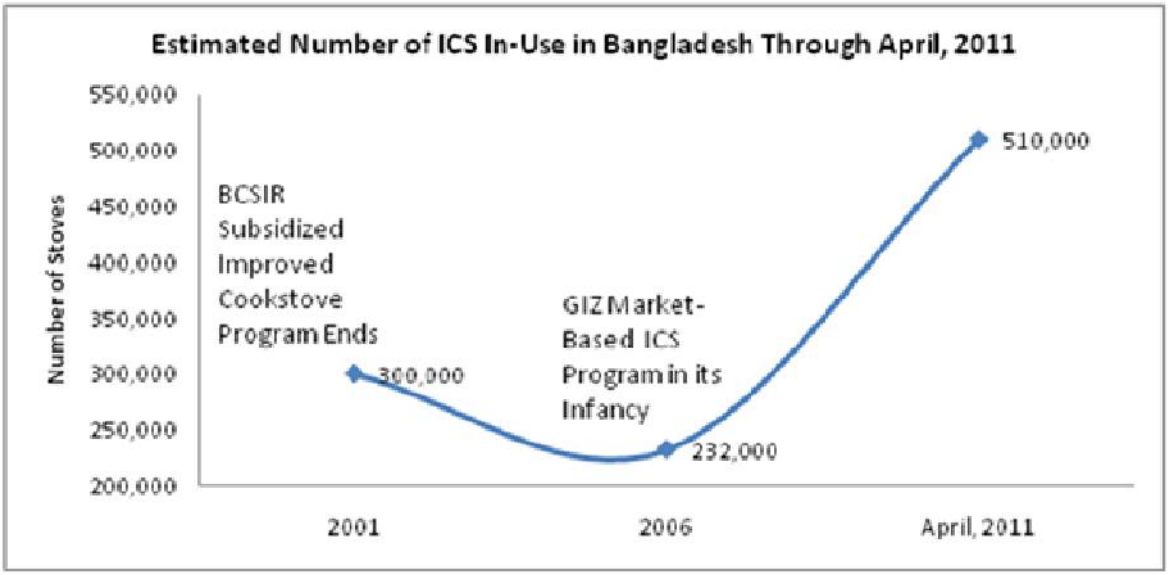
2 THE COOKSTOVE SCENARIO IN BANGLADESH

2.1 The cookstove market

More than 90% of people use solid fuels for cooking (60% of urban households vs. almost all rural households). The rapidly expanding population and heavy reliance on biomass has put pressure on Bangladesh's limited forest resources. Fuelwood is becoming increasingly scarce and more expensive, which has pushed many consumers towards other forms of biomass such as crop residues, rice husk briquettes and cow dung.

At present, about 1 million stoves are thought to be in use, a penetration rate of 3%. To date, efforts in the sector have not yet succeeded in creating a sustainable market for stoves. Grameen Shakti and GIZ operate two of the largest improved cookstove (ICS) programmes in the country (see annex 1) and have projected further growth in the years to come. However, anecdotal evidence suggests that many other stove producers struggle to overcome limited consumer awareness and low demand for ICS.

A rough estimate of market size suggests that, as of April 2011, there were 510,000 ICS in use, up from 424,000 in June, 2010.[17]



Past evidence suggests that market based approaches can be effective in Bangladesh as the Government Total Sanitation Campaign and IDCOL Solar Home System programmes have proved. Their success is largely attributable to the fact that they coupled innovative financing, Government support and sector wide collaboration to drive uptake.

With an urbanization rate of 3.93%[18], the decreasing availability of gas in urban areas is increasingly felt. This represents an opportunity for higher end fuel efficient stoves[19] to enter the market (3 million households that may adopt cleaner stoves in urban areas, according to GIZ).

[17] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+Co for USAID, January 2012, p.14
[18] Source: GIZ Bangladesh
[19] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+Co for USAID, January 2012, p.25

Overall, Bangladesh has a great market potential for ICS, estimated at more than 29 million households. With 67% of households using more than one stove, this could increase the total number of stoves to over 50 million.

Beyond this major market potential, there are several other factors at play that justify the large scale promotion of ICS in Bangladesh:

High incidence of household air pollution related deaths	Creates a strong case for cleaner cooking methods.
Economic benefits	Compelling case for improved cookstoves due to reduced fuel consumption and reduced health burden.
A well-established distribution network	Bangladesh is home to some of the world's largest and most successful NGOs, with distribution networks extending across the country. Many of them have consumer finance capabilities.
Strong and diverse cookstove sector (NGO, CBO and SME),	Entrepreneurial culture with established market players as well as new entrants (see annex 1).
A supportive macro environment	The Government recognises the broad benefits of ICS.
Carbon finance	High potential to support the market.

2.2 Household air pollution (HAP)

Wood-fired cookstoves and open fires emit small particles, carbon monoxide and other noxious fumes in quantities up to 100 times higher than the recommended limits.[20] The Global Burden of Disease (GBD) estimates that exposure to smoke from the simple act of cooking constitutes the fourth worst risk factor for disease in developing countries and causes almost four million premature deaths per year.[21] Worldwide, the illnesses caused by smoke lead to serious problems for the health and livelihoods of the families concerned, hampering their ability to escape grinding poverty. Exposure to these toxic fumes is greatest among women and young children. Penetrating deep into the lungs of its victims, this smoke aggravates a range of potentially fatal conditions such as pneumonia, lung cancer, chronic obstructive pulmonary disease, heart disease and low birth-weights in children.[22] Frequent exposure to cookstove smoke can also cause disabling health impacts like cataracts, which affect women more than men, and is the leading cause of blindness in developing countries.

With low general awareness of the problems associated with household air pollution and more than 90% of the total Bangladeshi population using biomass fuel for cooking, the health burden of household air pollution (HAP) exposure is one of the largest in the world. It is estimated that more than 24 million rural people and nearly 6 million urban people in Bangladesh are exposed to HAP due to solid fuel use. Complications of HAP are more likely to result in serious illnesses or death (46,000 casualties per annum). Household air pollution is the fourth most significant risk factor for deaths in Bangladesh, and it is the second most significant risk factor for disability-adjusted life years (DALYs). Despite these significant health

[20] "Indoor Air Pollution and Health." World Health Organization, 2011.

[21] Wang, Haidong, Laura Dwyer-Lindgren, Katherine T. Lofgren, Julie Knoll Rajaratnam, Jacob R. Marcus, Alison Levin-Rector, Carly E. Levitz, Alan D. Lopez and Christopher J. L. Murray. "Age-Specific and Sex-Specific Mortality in 187 Countries, 1970-2010: A Systematic Analysis for the Global Burden of Disease Study 2010." The Lancet 380, no. 9859 (2012): 2071-2094.

[22] Smith, Kirk, Sumi Mehta, and Mirjam Maeusezahl-Feuz: The Global Burden of Disease from Household Use of Solid Fuels: A Source of Indoor Air Pollution. In: Comparative Quantification of Health Risks: The Global Burden of Disease due to Selected Risk Factors. Geneva, World Health Organization, 2004.

risks, women in rural Bangladesh still prefer inexpensive, traditional stoves for cooking over modern ones, according to a Yale study in the *Proceedings of the National Academy of Sciences.*

2.3 Relevant Government policy framework

Policy / strategy	Relevance to cookstove sector
National Energy Policy	Provides a comprehensive outline of the energy issues in Bangladesh, some development options and the policies recommended to address them. This sets the scene for all other energy related policies.
Renewable Energy Policy	Outlines the context for the establishment of the Sustainable and Renewable Energy Development Authority. Also outlines the aims of the Government in creating an enabling environment and legal support to encourage the use of renewable energy.
National Women Development Policy	This policy outlines the GoB's intention to improve women's rights in Bangladesh. It aims to "provide women with full control over their right to land, earned property, health, education, training, information, inheritance, credit, technology and opportunity to earn, ..., and enact necessary laws to put these rights into practice."
Bangladesh Climate Change Strategy and Action Plan	This impressive strategy document was endorsed by the Prime Minister and describes Bangladesh's plans for the adaptation and mitigation of climate change. It offers a wide-ranging overview of the environmental challenges facing Bangladesh and also outlines the initial six pillars of interventions that have been identified.
Sustainable and Renewable Energy Development Authority (SREDA) Act	Provides clear priority to household energy.
Energy Efficiency Action Plan	Government guideline and vision on promoting household and industrial energy efficiency.
Energy Efficiency and Conservation (EE&C) Rules	Government priorities and regulations on energy efficiency, including household aspects.
The Climate and Clean Air Coalition (CCAC)	Originated as a partnership between Bangladesh, Canada, Sweden, Mexico, Ghana and USA. This group is focusing on the reduction of short-lived climate pollutants such as black carbon and methane by promoting new environmentally friendly technologies and processes such as improved cookstoves, brick kilns and rice parboiling systems. Detailed discussions for cooperation have taken place in Toronto, Stockholm, Paris and Bangkok recently. Improved cookstoves is one of the identified intervention areas under CCAC.

2.4 Standards and testing

There are currently no national standards for stove performance in terms of efficiency and emissions or quality. This lack of standards and absence of a recognized independent testing body means there is no accountability regarding the durability or performance of stoves in the market. Stronger laboratory capacity

for evaluating stoves and conducting research and development on ICS technology is needed, as are accredited organisations to carry out field level testing including water boiling tests, controlled cooking tests and kitchen performance tests as well as emission testing.

BUET, Grameen Shakti, GIZ, VERC and BCSIR all have components of laboratory testing, but the facilities need to be updated, with training of research staff and new equipment to continue to perform testing functions, including emissions testing.[23]

Bangladesh stakeholders discussed the role of standards and testing during a meeting in June 2013. Recommendations from this discussion included:

- Independent laboratory testing services that are accessible to all stakeholders in Bangladesh
- Additional field testing capacity to provide independent testing services and to provide capacity building for organisations to conduct their own field testing
- Bangladesh to join the ISO international standards process
- BSTI, the national standards authority, to be involved in the ISO process along with other sector stakeholders.

[23] Assessment of the Improved Stove Market in Bangladesh, p.17

3 TACKLING THE MAJOR BARRIERS

Sector stakeholders have identified the primary gaps in awareness, investment, research, standards, technology, distribution and other key areas. In response, they have outlined the steps needed to enhance demand, strengthen supply and foster an enabling environment for strengthening the market for clean cookstoves and fuels in Bangladesh. The subtopics addressed in each pillar include:

Strengthening supply of acceptable stoves	By attracting more finance and investment, providing access to diverse and modern global technologies, accessing carbon finance, enhancing market intelligence and creating inclusive value-chains.
Enhancing demand	By understanding and motivating potential users, developing better and more attractive technology, providing consumer finance and creating innovative distribution models to reach remote consumers.
Fostering an enabling environment	By engaging national and local stakeholders, building the evidence base for the benefits of stoves, promoting standards and testing protocols corresponding to international settings and enhancing monitoring and evaluation.

Based on the above three categories, stakeholders identified major issues and the main barriers associated with them. They then developed the requisite intervention options to overcome the challenges outlined. Each intervention is accompanied by the rationale, immediate actions (if any), and input provided by the stakeholders to be considered when implementing each intervention.

An overview of these intervention options is provided over the next pages.

3.1 Strengthen supply

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Develop a national network of suppliers in order to strengthen their capacity to produce and/or distribute cookstoves and their ability to share best practices, challenges and innovation.**	A strong network of cookstove and fuel suppliers will allow seamless sharing of best practices, access to latest technology and production/distribution methods, and encourage them to easily advocate for themselves as a cohesive group.	CCEB will convene meeting with major suppliers and interested development partners to discuss strategic plan and specific objectives for this network.	• Network may be formed as cluster of regional suppliers. • The network could have representation from regional clusters and facilitate national level partners. National level workshop can be held on recommendations and best practices from regional workshops. • GIZ is already supporting regional networking of its own suppliers. Their regional network and suppliers may feed into this broader network of all suppliers in the country. • The network can advocate for specific lending priorities, tax exemptions and financial incentives for cookstove manufacturers/suppliers and speak as a cohesive group. • Several incentives for joining the network should be outlined for potential members, including ability to access finance, such as through IDCOL's programme, ability to access testing services, and capacity building workshops on various topics, such as marketing, consumer finance, etc. • Information on global and local activities can be disseminated quickly to the network. • Ensures availability of cookstoves and accessories at grass-root level.

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
2	**Add improved cookstoves, fuels and other clean cooking appliances to existing non-cooking product distribution / wholesale chains (such as grocery shops etc.).**	Leverage Bangladesh's far-reaching distribution networks to diversify and scale up distribution of improved cooking technologies and fuels.	GACC will commission mapping on the existing non-cooking product distribution chains that could be linked to cookstove and fuel distribution, with distinct recommendations for bringing established distribution chains on board to sell ICs.	• GACC will share results so that major implementing and development partners can utilize the recommendations from the mapping to develop strategies and design programmes that bring in existing non-cooking distributors. • Focus on bringing in women's distribution networks and leverage women entrepreneurs' ability to reach female consumers directly. • Develop advocacy strategy for Government to create private sector incentives for non-cooking distributors to come into the sector. • Link the non-stove product distribution networks to cookstove suppliers and provide information on selecting most appropriate technologies, best practices in marketing, etc. • Link networks to financing mechanisms, such as IDCOL's finance scheme.
3	**Access to finance for clean cooking SMEs.**	Provide necessary finance for cooking SMEs to build their businesses.	IDCOL may take the lead in providing access to finance for SMEs, their partner organisations and interested parties to scale up their businesses.	• Develop incentives for businesses to improve their technology and meet higher tiers of performance. • Market development incentives. • Introductory as well as follow-up training for the entrepreneurs. • Institutional grant might be encouraging. • Entrepreneurs in upazillas, unions etc. are encouraged to work with partner organisations of IDCOL. • Another approach could be for IDCOL, or others, to provide SME loan guarantees to be sourced through

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				private banks. This would strengthen private sector participation and be more sustainable than a fund. • SME Foundation (see annex 3) could also be involved in this agenda.
4.	**Work with private sector financiers to provide additional financing options.**	Finance gaps identified by cookstove entrepreneurs, to scale up the sector.	Medium term option, as private financiers do not yet see a mature cookstove market.	• Map potential financing options and organisations that are interested in clean energy as part of their mainstream activity. Include CSR and various investing efforts from local partners. • Link financiers to IDCOL fund, creating a cohesive investment pipeline. • Identify banks that are interested in SME finance and MFIs and include them in knowledge sharing activities. CCEB is interested in working with IDLC, MIDAS. • Ensure stakeholders are aware of the GACC's access to finance initiatives and opportunities such as the Spark Fund, Pilot Innovation Fund, working capital funds, etc. • Leverage Bangladesh's long history of successful MFI programmes. • Establish knowledge network with investors regarding market transformation and growth; invite potential private sector financiers to cookstove meetings where the market potential and best practices are shared. • Track investment in local businesses and share successful investment cases with financiers. Coordinate tracking with GACC efforts. • Lobby Government to put passive pressure on them to extend financing in the cookstove sector, or to create

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				financial/ tax incentives to invest in the sector.
5	**Promote access and utilisation of climate change and carbon funds.**	Increased access to climate change and carbon funding will help strengthen the sector and provide additional finance options to cooking SMEs and projects.	Initiate dialogue with Ministry of Environment so that it can take the lead.	• Set up a revolving fund that SMEs and projects can tap into to register for carbon finance. They would then pay back their loan amount once the carbon revenues were received. • Ensure stakeholders are aware of GACC's carbon portal and have access to latest information on carbon markets, best practices in accessing carbon finance, and connect them with leading carbon financiers, etc. • For stakeholders interested in accessing these funds conduct trainings with global carbon finance experts and local organisations that receive carbon finance. • CCEB may link between carbon buyers and local ICS implementers. • Work with SZ Consulting/ Grameen Shakti to ensure continuity between new strategies and existing efforts with carbon finance markets in Bangladesh. • Support Ministry of Environment to facilitate smooth approval from DNA, to house institutional memory and to develop a core team to provide related technical support. • Explore Climate Change Funds through Ministry of Environment and other development partners.
6	**Leverage Government fund to finance women-led businesses in cookstove sector.**	Women empowerment and gender inclusion in cookstove business.	Appraise women business entrepreneur groups/ associations.	• Link women-led companies/ business entrepreneur groups to existing Government funding channels.

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
7	**Lobby the Government and international donors to provide additional financing options at lower rates to address gaps in current interventions**	Promote sector transformation efforts.	Set up a task force under the Household Energy Platform.	• Become an ongoing agenda item of the Household Energy Platform. • Power Division to account for the donor funding for the existing programmes (WB/USAID/GIZ) and for the future programmes as per phased implementation plan. • Power Division to use CAP to raise additional funding from international donor community. GACC will continue to offer global grant and financing initiatives that support Bangladeshi entrepreneurs. • Power Division to lobby the Ministry of Environment to establish more Climate Change Funds for the cookstove programmes. • Implementers in this area will plan a long term strategy to avoid institutionalization of subsidies.
8	**Strengthen after-sales services to consumers by developing guidance for cookstove and fuel suppliers/distributors on warranties, repairs and maintenance etc.**	Ensure consumer satisfaction by providing quality after-sales services and options for warranties, as well as raise the level of supplier/producer accountability and strengthen their customer relationships.	Collect best practices on after-sales service guidelines and implementation mechanisms under existing cookstove interventions.	• WASHplus and BCSIR experiences may be taken into account. • Lessons learned from carbon monitoring should be taken into account. • Establish an additional incentive structure for retailers and manufacturers who comply with after-sales service guidelines. • Link after-sales service requirements to CAP financing initiatives. • Incentive measures can be financed from the programme fund of WB/CCEB/GIZ. • Power Division can support developing conducive regulations. • Provide customers with limited warranty card, explain

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				their rights and process to follow in case of dissatisfaction. • Organise periodic and random monitoring visits. Involve third party in periodic monitoring.
9	**Train producer entrepreneurs on how to improve quality of products, better understand consumer preferences and act on their feedback, attract investment, market their products etc.**	Building the capacity of entrepreneurs to focus on client-based product development and promotion.	All major stakeholders who have entrepreneur capacity building and/or training elements in their programmes will convene to discuss a cohesive strategy.	• Power Division may lead the efforts with support from Household Energy Platform, SNV, CCEB, IDCOL, GIZ, WASHplus, and others that can provide technical support. • WASHplus will develop 4 P (Product, Place, Price and Promotion) marketing and behaviour change strategy. • WASHplus may conduct consumer segmentation study to identify the early adopters of different clean cookstoves. • CCEB may organise quality control and business plan development trainings for entrepreneurs. • Utilize CCEB's Trade Facilitation Platform and leverage the network of suppliers' capacity building training to reach out to potential entrepreneurs. • Link into GIZ's existing and planned trainings and utilize their expertise in capacity building for SMEs that are part of their network. • Train the cookstove users on best utilization of the technology and cookstove maintenance. • Biannual workshop may be held on understanding consumers, new technologies, finance options and other topics of importance. • Link businesses that have successfully completed trainings to financing initiatives such as IDCOL fund.

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				• Ensure stakeholders are aware of GACC's globally available capacity development opportunities. • JITA Social Business Bangladesh with its rural market expertise and research experience can provide information on consumer preference-demand. This feedback can be used to improve quality of cook stoves.

3.2 Enhance demand

3.2.1 Understanding, motivating and meeting the needs of the consumer

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Conduct a Bangladesh consumer preference study to determine the technology features and preferences of consumers, understand willingness to pay and identify marketing messages and techniques that may tap into the primary motivating factors (for both men and women) behind cookstove purchases, as well as determine the existing barriers to purchase.**	Meeting consumer preferences in cooking technologies is the most critical component in scaling up the sector.	WASHplus Phase 1 (consumer needs, preferences and willingness to pay) is complete and Phase 2 (consumer segmented marketing strategy) is underway.	• WASHplus has already conducted the first phase of its work in Bangladesh, namely the consumer needs, preference and willingness to pay assessment, which included in-home stove trials of five imported stoves. Ideally additional trials should be conducted in other geographic regions and with additional stoves, including a truly aspirational stove like the Biolite Home Stove and the current default ICS, the Bondu Chula. • Widely share the learning from USAID/WASHplus study on consumer preference and USAID/Winrock Sector Assessment Report (2012). • WASHplus Phase 2 is underway, using Phase 1 research

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				findings to identify a few "early adopter" consumer segments for ICS in Bangladesh, and develop a marketing strategy based on a 4Ps model for each early adopter segment (product, place, price and promotion). • WASHplus will develop core materials for stove manufacturers /distributors that incorporate this strategy and will undertake in-country dissemination of a complete package of tools, including marketing materials, survey instruments, data entry screens and more. JITA Social Business Bangladesh will provide input on the consumer preference study.
2	**Launch a national awareness campaign.**	Increasing awareness of health, environment, economic, gender and other impacts of traditional cooking practices.	Through support of the Household Energy Platform, the Power Division may convene a meeting to identify organisations interested in being involved in the national awareness campaign and determine specific next steps. Create a pool of funds	• Through support of Household Energy Platform, Power Division may form a task force to develop a national awareness campaign strategy. • JITA, with its experience and understanding of rural market education and creation (previously done for sanitary napkins, solar lamps, seeds and fortified yogurt), can be a part of the task force. • Review market assessments that have outlined steps to replicating successful campaigns, specifically the Total Sanitation Campaign. • Look into possibilities of integrating awareness raising and distribution into existing immunization programmes. • Develop a mascot such as 'Meena'[24].

[24] http://www.unicef.org/bangladesh/media_2140.htm

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
			from major development partners for campaign development, design and implementation.	• Create a forum of communication experts to provide inputs for designing the promotional materials. • Be technology neutral in promotion, focus on impact. • Convene support to distribute printed materials. • Involve local Government agencies in distribution and promotion. • Involve popular celebrities as 'ambassadors'. • Power Division to launch a coordinated campaign with other relevant Ministries such as the Ministry of Women and Children Affairs/ Environment/ Health. CCEB will support. • A Biomass Conservation Week should be observed every year, similar to Tree Plantation Week.
3	**Create a portfolio of open source behaviour change and marketing materials** (videos, brochures, flip charts, radio and TV commercials, billboards, etc.), as well as guidelines and best practices on effective marketing strategies and techniques, such as household-level demonstrations.	SMEs need access to high quality, professional marketing materials and techniques to reach consumers effectively and create demand in their communities.	WASHplus and CCEB may take the lead in sharing results with implementers and integrating their findings into stakeholder strategies. GIZ, CCEB, Grameen, VERC, and others in the National Supplier Network	• Analyze WASHplus study to further hone marketing messages that resonate with consumers and develop specific marketing strategies. • As per above, WASHplus will develop core marketing materials for stove manufacturers/distributors based on a 4 P (product, place, price and promotion). marketing and behaviour change strategy as part of Phase 2 activities. • Conduct trainings on marketing techniques and strategies and how to utilize the open source awareness raising materials. • Provide grants to increase the capacity of large distributors to market their products effectively.

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
			can integrate those into their marketing strategies.	• GIZ will document and present its existing household demonstrations campaign to other donors/ implementers. • Develop a training manual that can be disseminated to the existing ICS programme implementers. Look at possibility of developing a short film for behaviour change communication. • JITA is interested in utilizing its rural marketing expertise by contributing to material design and SME marketing training.
4	**Establish information centre at the union level for consumers to learn about ICS, product options, prices and benefits.**	Facilitate access to information, best practices, technology, approaches, etc. in remote locations and throughout the entire country.	Establish dialogue through Power Division with PMO for integration opportunity with the A2I project.	• Establish Ministry level coordination to use existing Union information centres. • Develop ICS information portal with support from development partners (CCEB may be interested in supporting this initiative as part of its planned activities). • Establish a procedure to periodically update the portal. • Develop a mobile information centre that can make road trips throughout the country.

3.2.2 Consumer finance

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Develop a series of financial instruments to increase affordability for consumers**	Providing consumer finance through microcredit, subsidies and other mechanisms to enable more Bangladeshis to be able to afford to buy good quality, clean cookstoves.	Develop a TOR for the study of existing financial instruments and possible new options, with recommendations on how to implement these instruments. Work closely with WASHplus to integrate its results regarding willingness to pay.	• Consider consumers of all income groups. • Consider gender specific instruments. • Consider specific consumer segments and their particular financial needs according to income, age, participation in women's self-help groups, etc. • WASHplus report on consumer preference to be taken into consideration in preparing TOR and during study. • The study should incorporate institutional mechanisms to leverage financial support. • Share the study findings with relevant stakeholders. • Develop and revisit financial instruments through Household Energy Platform. • Identify next implementation steps. • Leverage Bangladesh's successful history of consumer finance to apply best practices in addressing affordability issues. • Utilize the Household Energy Platform and national network of suppliers to share the results of the study and start to pilot approaches.

3.3 Foster an enabling environment

3.3.1 Standards and testing

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Form a national technical committee on cookstove standards and testing.**	Facilitate development of standards and testing in Bangladesh to ensure performance and quality as well as drive improvement over time. Participation in ISO international process ensures that international standards address Bangladesh needs.	All stakeholders send letter to BSTI to request formation of standards committee. Establish mirror committee in Bangladesh to discuss cookstove standards needs in the country	• Involve BSTI and BSCIR in the process. • Organise and identify relevant stakeholders. Standards discussions should be inclusive, therefore relevant public and private sector stakeholders must be identified to participate in standards development. • Involve stakeholders in the process. • Coordinate Bangladesh standards development timeline with international standards development process, including the upcoming ISO meeting in November 2013. • Participate in ISO technical committee meetings to present Bangladesh context. • Send delegation to participate in international committee and working group meetings on standards and testing. • Since international standard development may take a year, develop a Bangladesh standard in line with current national benchmark and international best practices. • After international standards are developed, customize national standard accordingly. • Establish a complementary consumer rights group to monitor quality and price uniformity at the grassroots level. The role of the consumer rights group can be to provide periodic feedback to technical committee through meetings/workshops and participate as a

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				stakeholder in the mirror committee. • Adopt IWA's (International Workshop Agreement) 2012 four tier specifications for ICS until national/international standards are in place.
2	**Establish a national cookstoves testing and knowledge centre**	To communicate stove performance and quality	GACC and IDCOL/World Bank & GIZ may evaluate the existing capacity available in-country and build from current capacity.	• GACC, CCEB and IDCOL/WB may take the lead. • Build from existing assessments of laboratory testing capacity and address gap for field testing capacity assessment. • Equip the host institution with infrastructure and human resources to meet ISO/IWA standards and conduct laboratory and field testing. • When support is provided to build capacity in centres, share updates with sector, so that organisations can partner with the testing centre. • There can be more than one testing centre, depending on capacity, availability of funds and different areas of focu.s • Stakeholders should coordinate to ensure that capacity building addresses existing needs and different centres are addressing different needs. • Train staff to ensure uniform and sustainable technical knowledge. • Participate in international consortium of testing centres that are collaborating to share best practices and ensure comparable results. • Participate in international and regional standard discussions. • To ensure high quality testing, the testing centres should coordinate with the global network of experts to stay up

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
				to date, and accept feedback from organisations. • Test and compile the technical parameters of stoves to measure level of compliance with possible national and international standards.
3	**Develop and enforce a labeling system and/or serial numbers to be used by stove producers to distinguish stoves that meet standards (as certified by the testing centre).**	Communicate which technologies adhere to the minimum standard.	This is a medium term option, after the standards and testing centres have been established.	• Developing a labeling system is complex and requires consideration of users and regulations. • Multiple stakeholders should gather to discuss their perspectives, capabilities and needs for labeling and enforcement. • Incentives for entrepreneurs to adopt labeling system should be considered. • The labeling system may be tied to a consumer awareness campaign. • One possibility is to use different colours to distinguish stoves according to efficiency and/or IAP reduction.

3.3.2 Fuels and technology

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Provide access to national /global technologies and encourage technology transfer.**	Introduce modern and more efficient technologies into the market.	Set up private sector support committee under Household Energy Platform.	• Stakeholders may consider both local and global developments for technology and fuel options. • Policy and regulatory support (e.g. import tax holiday, reduction of duties) may be needed to facilitate access and incentives. • Information about options can be disseminated through country and global websites, trade shows and study tours

				when relevant. • Envision step by step uptake of higher technologies and efficiencies in existing and upcoming ICS programmes.
2	**Promote research and development on promising new technologies and fuel types**	Promote more efficient new technologies and fuel types.	Establish funding opportunities that will support these R&D activities.	• Channel opportunities for support to competent academic and research institutions such as BUET and BCSIR, BSTI, DOE, etc. with facilities to develop and test fuels and cookstove technologies. • Monitor progress and disseminate research findings. • Establish monitoring and evaluation (M&E) systems throughout the value chain and develop a national M&E plan.

3.3.3 Monitoring and evaluation

		Rationale	Immediate actions	Prospective and ongoing actions
1	**Improving M&E system and develop a national M&E plan**	M&E is critical to understanding impact and effectiveness of projects and approaches.	Through the Household Energy Platform the Power Division will convene a process to define M&E targets and indicators as well as a guideline for strengthening M&E for all projects in the country.	• The Household Energy Platform M&E Technical Committee should develop national guidelines, taking into account best practices. • Commission a quick study on existing M&E practices and methods, including M&E procedures for technical measurements (ISO criteria) and business effectiveness (i.e. # of stoves sold). • Develop M&E toolkit that can be utilized by wide variety of stakeholders. • Ensure all M&E data is sex disaggregated. • M&E should evaluate health, environment, social and economic benefits.

2	**Develop incentives for encouraging M&E under the national plan.**	Ensure that all cookstove programmes have minimum impact on the ground.	Medium term option after developing national M&E plan.	• Conduct periodic assessment and survey. • Results can be reported during Household Energy Platform meetings and should be discussed and evaluated. • Adhere to monitoring reporting as per procedure, linked to funding and Government endorsement. • Involve 'third party' in periodic monitoring. • Explore community based monitoring approach (could be supported by WB/IDCOL).

3.3.4 Build the evidence base (research on impacts and benefits)

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Commission and disseminate research to build the evidence base on the relationship between cookstoves and health, livelihoods, environment and women's empowerment**.	Rigorous research demonstrating the serious impacts of traditional cooking practices attracts donors and draws investors to the sector. It is also critical for understanding the impact that different types of technologies have on health, livelihoods, gender, the environment and economy.	Further develop the research agenda through Bangladesh Energy Research Council and identify donors/partners willing to support.	• Bring in local academic institutions with research expertise in these areas to help develop the research strategy. • Develop RFPs to conduct research in priority areas of health, livelihoods, environment and gender. • Involve Bangladesh Energy Research Council in coordination. • Household Energy Platform to host regular local/regional seminars to present some of the cases. • Consider a national cookstove innovation award. • Rely on existing research before conducting more since much has already been done in other countries. • Union Parishad (office) can be awarded from Government (Power Division or SREDA) once more than 90% of households in that union adopt clean cookstoves.

3.3.5 Champion the sector

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Establish a partnership with media to prompt discussion.**	Disseminate information on the benefits of clean cookstoves.		• Journalists can be invited to workshops/seminars. • A press tour can be arranged to demonstrate and measure impact locally. • Power Division to promote the sector to the press.
2	**Develop an online Bangladesh knowledge portal for collecting and disseminating information on impact based evidence, clean cookstove technologies and fuels.**	Disseminate knowledge on the sector to the interested stakeholders.	Develop a country based web portal with support from GACC at www.cleancookstoves.org.	• Stakeholders can post progress and results on website. • Broker relationships between investors, donors and SMEs. • Power Division website to link to the online knowledge portal. • Stakeholder agencies may be invited to post a weblink to this knowledge portal on their websites.

3.3.6 Engage national stakeholders and the Government of Bangladesh

	Intervention	Rationale	Immediate actions	Prospective and ongoing actions
1	**Launch and convene the Household Energy Platform, led by the Power Division**	The Household Energy Platform will facilitate sector coordination so that stakeholders are able to implement the activities identified in the CAP effectively and can scale up the sector.	Circulate draft concept note to stakeholders for comment and convene first meeting. SNV and GACC may extend support and coordinate together with Power Division.	Objectives include: • Coordination of the sector/regular meetings. • Sharing of best practices/knowledge hub. • Advocacy. • Harmonized donor funding and resource mobilization.

2	**Lobby and sensitize key national and regional political leaders, Government stakeholders and other Ministries on the benefits of clean cooking for health, environment, gender and economy**.	The involvement of all Government Ministries is critical to addressing all issues associated with traditional cooking practices. Their involvement will help scale resources, access expertise in impact areas and leverage the reach of different Government agencies.	Power Division will get input and approval of CAP from all relevant Ministries and have CAP approved at Cabinet level.	• Initiate dialogue between Power Division and line Ministries. • Include Household Energy in SREDA institutional mechanism, to retain capacity and institutional memory. • Before the SREDA is officially developed, an inter-ministerial committee may ensure coordination between the relevant ministries. • Assist Power Division in developing a Household Energy Guideline. • GACC/SNV to coordinate support with other development partners such as WB, CCEB and GIZ.
3	**Reduce or eliminate import tariffs for clean cooking technologies that meet Government standards.**	Current import duties are up to 65% of the cost of the product and prohibit the importation of newer, higher quality products.	Private sector committee may study and provide useful recommendations to Power Division for implementation.	• Power Division will launch a process to reduce import tariffs and conduct necessary advocacy among other Government agencies. • CCEB can facilitate linkage between international manufacturers and local stakeholders including Government and Power Division.
4	**Link into UN's Sustainable Energy for All initiative and leverage Bangladesh's status as a priority country.**	The effort will avow Bangladesh Government political commitment to international community.	Set up coordination with Power Division and Government focal person/ agency for UN SEFA.	• Inform UN Forum about Government initiatives in cookstove sector.
5	**Work with the Climate and Clean Air Coalition (CCAC) through the Ministry of Environment and Forests to address black carbon and other climate issues.**	There is not much information on black carbon emissions from stove use. Collaboration with CCAC will strengthen the capacity to design and implement projects that better address climate issues.	Inform CCAC and Ministry of Environment and Forests about the stove initiatives.	• Set up mechanism to coordinate with CCAC through the Ministry of Environment and Forests.

4 Key performance indicators for Bangladesh

As per the National Energy Efficiency and Energy Conservation Interim Action Plan, the Government set the vision of achieving 100% clean cooking by 2030. Although some households already use improved cookstoves, biogas stoves, LPG or piped natural gas, it is estimated that the Bangladesh market still has the potential to empower 24-27 million households to adopt clean cookstoves by 2030.

Towards achieving this goal, key performance indicators will be as follows:

Milestones towards success		TARGET		
Sub area	**Indicators**	**Phase 1: 2014-15**	**Phase 2: 2016-17**	**Phase 3: 2018**
Clean cookstoves sold, adopted and used	• Sales by emissions, fuel efficiency and safety tiers • Extent of adoption and use • Field verification of use and performance.	2 million stoves	3 million stoves	2 million stoves
Health Improvements	• Reduced incidence of exposure, burns and injury; • Impacts on severe pneumonia, adverse pregnancy outcomes, and markers of non-communicable disease • Perceived benefits / reduced discomfort from smoke.	•↓exposure •Modeled health impacts	•↓ exposure •Modeled health impacts •50% ↓ in burns and injuries	•↓exposure •Modeled health impacts •50% ↓ in % of major cookstove-related illnesses •75% ↓ in burns and injuries
Livelihoods improved	• Increased employment / income generation across the cookstove and fuels value chain • Increased wealth / assets • Increased workforce education and training levels.	• Define baseline • Set targets for indicators	TBD	TBD
Women empowered	• Reduced drudgery, i.e. time/ labour savings, reduced distance to fuel • No. of stove businesses that adhere to gender-informed best practices • Self-perceived ability to make decisions.	•Define baseline • Set targets for indicators	TBD	TBD
Environnent preserved	• Biomass fuel savings • Reduced deforestation • Emissions mitigated.	•30% ↓ fuel / stove •Baseline to be defined and quantitative targets to be set	• 30-60% ↓ fuel / stove •TBD	• 60% ↓ fuel / stove • TBD

The set of interventions outlined in the CAP demonstrate a plan of action for immediately addressing the market barriers to reaching scale in the Bangladesh clean cooking sector.

ANNEX 1: MAPPING THE COOKSTOVE PLAYERS

Segment	Who	What	Remarks
NGO	VERC	VERC is a national NGO that has been working in the ICS sector since 1987. It disseminates primarily clay 1, 2 & 3 pot stoves. Currently VERC has started to use the same concrete design as GIZ and Grameen Shakti. VERC now runs integrated ICS programme from its own fund and another one is carbon finance driven. It recruits, trains and supports local female entrepreneurs in each community in selected areas. In 2000, VERC formed a national network named "Improved Cookstoves Programme in Bangladesh" with the support of ARECOP-Indonesia. The Network involves 93 NGOs working across 28 districts. Very recently, VERC developed ICS testing facilities and it has a skilled tester for conducting WBT, CCT and KPT. In addition to that VERC has accomplished several studies along with World Bank, USAID, Winrock International and ARECOP. Moreover, it has developed several video documentaries, BCC materials and training modules on ICS.	So far installed more than 42,000 ICS through various networks. 20 demonstration centres have been established in different areas of the country. 864 staff and community people have been oriented on ICS technologies. It has offices in over 40 districts. Scaling up is still a major challenge.
Int. Org.	GIZ	GIZ is a German organisation that implements projects that promote sustainable economic development on behalf of the German Government. Its ICS programme has been running since 2004. Its current model of 'Bondhu Chula' focuses on supporting more or less 100 NGO partners and more than 3900 sanitary shops to manufacture and sell stoves. These NGOs and SMEs are trained and supported by GIZ. They are using a more robust concrete version of a BCSIR model.	The durability of concrete stoves is still unproven but a sustainability study on this and other aspects of the programme is foreseen for early 2014. Original use of sanitary shops for distribution seems promising. Scalability has been improved through the introduction of a pre-fab concrete design, allowing mass production with more consistent quality. Though penetration rate is increasing, that's also making M&E processes more challenging. GIZ is currently continuing the BCSIR tradition of promoting only chimney stoves, while the plan is to develop or improve additional stove models from local production. Its preference is currently for the 1- or 3-pot stoves since there is a significant likelihood

Segment	Who	What	Remarks
			of lowering stove efficiency if the second pot hole (in the 2-pot stoves) is left open.[25]
NGO	Grameen Shakti	Grameen Shakti is the renewable energy, non-profit arm of the Grameen Group of organisations. It has huge reach across Bangladesh and has run an ICS programme since 2006. It uses the same concrete design as GIZ, but has terminated its partnership with it. It is seeking carbon finance accreditation.	Designs, manufactures and sells stoves through its vast network. It is currently investing resources to help support marketing and sales. Still working hard to develop a sustainable business model.
NGO	BRAC	World's largest NGO, founded in 1972 and looking to address poverty through a variety of programmes. Established climate change and health programmes. Potentially interested in ICS distribution.	Its research division performed some initial customer research with valuable results. It is deciding on the correct approach before piloting and testing. Any 'scaling up' will occur after that process. Choosing the right approach to its ICS programme and fine tuning it to ensure effectiveness are the challenges.
NGO	Bright Green Foundation	This is a Partner of GIZ, founded and run by Dipal Barua, ex MD of Grameen Shakti and primarily focused on Solar Home Systems (SHS).	A relatively small NGO with a growing interest in cookstoves. Its influential connections and valuable experience in SHS make it an important and growing player in the sector. Much of its success will rely on the success of the GIZ approach and its own ability to bundle or sell ICS directly to the communities in which it operates.
Int. org.	SNV	International development organisation and founding partner of the GACC. Active across much of South Asia. Through SNV's advisory services 23,000 biogas plants have been installed across Bangladesh by 30 partner organisations.	Cookstoves is one of the priority areas of SNV. In Bangladesh SNV is working with GACC towards a sector development approach on cookstove dissemination.
Int. Org.	UNDP – UN Habitat	It has partnered with GIZ and fully subsidised the stoves. Over 42,000 subsidized stoves installed and UN Habitat is preparing a follow-up programme for another 400,000 stoves.	UNDP has focused on providing ICS to the ultra-poor populations that are most vulnerable to natural disasters such as cyclones and floods. Little market distortion has been found.
NGO	Bangladesh Red Crescent Society	BDRCS is part of the International Federation of Red Cross and Red Crescent Societies. It is focused on disaster management and preparedness and health interventions for	Trained 40 community volunteers in the Kushtia district to install and maintain low cost mud stoves.

[25] Assessment of the Improved Stove Market in Bangladesh, p.36

Segment	Who	What	Remarks
	(BDRCS)	vulnerable communities. It had installed 100 ICS by December 2011 and plan to start installing biogas plants.	
NGO	Bangladesh Association for Social Advancement (BASA)	BASA's major areas of work include microfinance, water and sanitation, renewable energy, carbon reduction and generation of green energy. BASA has installed 6673 domestic ICS and 27 commercial ICS.	Its ICS programme operates among tribal communities in the country. BASA faces the challenge of overcoming the social and cultural barriers around the use of traditional stoves.
NGO	Practical Action	International NGO involved in capacity building and implementing ICS dissemination projects in Bangladesh since 2001 in collaboration with BCSIR, Climate Care, DFID, DGIS, GVEP. Together they have provided training for many NGOs and people.[26]	2001-2011: expansion through full time and part time entrepreneurs.
NGO	Hilful Fuzul	Local NGO involved in dissemination of improved cookstoves and biogas technology with support from GIZ. It has installed around 16,000 household and institutional ICS since December 2008.[27]	It has moved away from the NGO approach to a "social business" one, where products are sold on a market based approach but are chosen in terms of their social benefits. It also works in increasing access to finance for rural women. Profits are used only to further develop the organisation (a not-for-profit company).[28]
Private	Rahman Renewable Energy Co.	Local private company involved in installation of more than 500 household biogas plants and 1200 improved cookstoves with support from SNV and GIZ.[29]	
NGO	Resource Development Foundation (RDF)	Local NGO working as a development partner for GIZ in dissemination of ICS (Bondhu Chulha) and training local technicians. It has installed more than 5,000 ICS since 2009.[30]	
Private	SZ Consultancy Services Limited	One of two local CDM project participants in the JP Morgan registered PoA on ICS with the responsibility to aggregate and monitor results of GIZ's 200 POs.[31] and over 4000 union based Partner Entrepreneurs (PEs). SZ is managing over 600,000 ICS (Bondhu Chula) installed by the POs and PEs.	
Private	SMC	Social marketing company and product manufacturer / distributor, it has worked in the	Keen to enter ICS market and working with CCEB towards market

[26] Assessment of the Improved Stove Market in Bangladesh, p.42
[27] Assessment of the Improved Stove Market in Bangladesh, p. 41
[28] Assessment of the Improved Stove Market in Bangladesh, p.37
[29] Assessment of the Improved Stove Market in Bangladesh, p.42
[30] ibid.
[31] ibid.

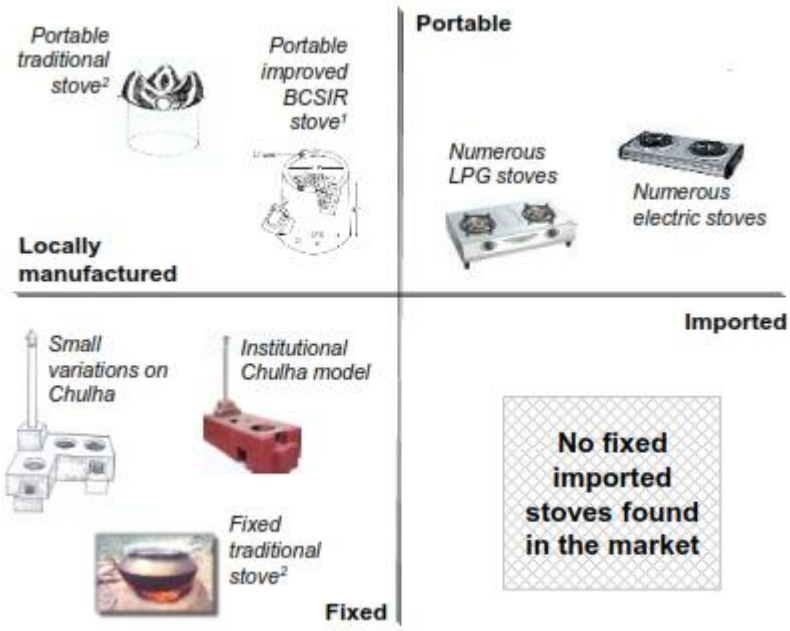
Segment	Who	What	Remarks
		past with USAID in reproductive health social marketing campaigns.[32]	development.
Private	Sidiqqi Sanitation	Medium size company, engaged in the production and distribution of ICS. It has been involved in many of the existing ICS programmes and has tried to build up a network of manufacturing local plants to reduce structural costs.	
Int. Org.	IFC	IFC has been decisive in advocating before the Central Bank for concessional rates for farmers to have access to improved energy production via the installment of biogas plants, which has driven the RE market and opened opportunities for other technologies.[33]	
NGO	Esho Jati Gori (EJAG)	Local NGO working to raise awareness on improved cookstoves (through GIZ support) and biogas.[34]	
Int. Org.	World Bank	Worldwide involvement in household energy projects. In Bangladesh it has funded IDCOL to implement a large ICS programme.	
Int. Org.	USAID/ CCEB[35]	USAID's Clean Energy programme is targeted at building a sustainable market for improved cookstoves to reduce energy consumption and household air pollution	CCEB aims to expand the market for improved biomass cookstoves by developing sources of finance for consumers and/or businesses; strengthening businesses involved in the cookstove supply chain; and better understanding consumers in order to generate market demand. CCEB will work closely and coordinate with the Government of Bangladesh (GoB), the Global Alliance for Clean Cookstoves, other donors, the private sector and civil society to establish a thriving market.
Private	JITA Social Business Bangladesh	JITA Bangladesh is a joint venture social business partner of CARE International and Danone Communities dedicated to empower women through a series of enterprises to reach the lowest socio economic groups of consumers with hygiene-nutrition-household energy items.	Currently JITA is working in 200 sub districts of Bangladesh where 6000 women are door to door selling multi company products such as solar lamps, nutrients, anti bacterial soap, shampoos etc. to 3 million underserved consumers.

[32] Assessment of the Improved Stove Market in Bangladesh, p.44
[33] Assessment of the Improved Stove Market in Bangladesh, p.43
[34] Assessment of the Improved Stove Market in Bangladesh, p.41
[35] Adapted from www.cleanenergy-bd.org

ANNEX 2: Common cooking technologies and consumer information

2.1 Common cooking technologies

The diversity of cookstove products in the Bangladesh market is limited, with fixed stove models **(Bengali name: Chulha)** dominating. Penetration of portable stoves is still low as shown below[36] .



All biomass stoves are manufactured locally. However, the vast majority of people (more than 90%) still use traditional stoves. They are easy to construct with locally available materials and can use any biomass as fuel. The downside is that they burn inefficiently and also represent a potential threat for indoor air pollution and health.

[36] Adapted from GACC Bangladesh Market Assessment: Sector Mapping, Accenture Development Partnerships, 2012

New variations of the stoves have been emerging to address different fuel types.

The tradition of using all biomass available in Bangladesh as a cookstove fuel is still a major barrier/ challenge for customization of improved cookstoves in Bangladesh.

Improved clay and concrete stove models that are promoted in Bangladesh, are currently limited to:

BCSIR stove	Fixed mud stoves with chimney that may be 1, 2 or 3 pot. These stoves have been originally designed by BCSIR and are now being promoted by VERC. They are built in situ by trained technicians using a prefabricated mould.
Bondhu Chulha	Fixed cement stove with chimney which may be 1, 2 or 3 pot. These stoves are the concrete models of the same BCSIR stove mentioned above. They are being promoted by Grameen Shakti and GIZ partner organisations and partner entrepreneurs. Durability issues with the chimney arise when it is not cleaned frequently.

The Bondhu Chulha is currently priced within the following ranges depending on location and supplier (prices include stove installation and warranty[37]):

- 1-pot: BDT 800 to 900 2-pot: BDT 1,000 to 1,100 3-pot: BDT 1,200 to 1,300

 **Clay Chulha**	 **Concrete Chulha**
• 5 – 7 days to build and install • Any biomass fuel can be used	• Installed in 1-2 hours • Any biomass fuel can be used

Consumer research[38] suggests a lifespan of over five years for clay stoves and over three years for concrete stoves. The improved stoves have an impressive payback period of only two to three months, due to fuel savings.

In urban areas, LPG/natural gas and electricity stoves are not uncommon, with biogas stoves being present in relatively small numbers.[39]

 **Gas Stove**	 **Electric**	 **Biogas**
• Only for people with access to LPG or natural gas • Highly efficient and no HAP	• Increasingly used in urban areas, but only available for those with access to	• In limited use • Requires 40 -130 kg of cow dung on a daily basis, depending on plant size

[37] Assessment of the Improved Stove Market in Bangladesh, p.15
[38] Assessment of the Improved Stove Market in Bangladesh, p.14
[39] Adapted from GACC Bangladesh Market Assessment: Sector Mapping, Accenture Development Partnerships, 2012

• Relatively expensive compared with biomass stove	electricity • No HAP • Very expensive	

2.2 Consumer information

Fixed traditional stoves are commonly used in Bangladesh. Biomass use is incredibly diverse with families using whatever they can collect to fuel their stoves. For households with improved cookstoves, it is not uncommon to have a traditional 'backup' stove. In rural areas, more than 90% households use biomass to cook all or part of their meals. 76% of households using some form of 'leafy biomass' to cook, while 55% of households using dung cakes and sticks. Many households use both biomass and cowdung. Agricultural residues, leaves, and grass account for 39% of cooking energy, while animal dung makes up around 17% of the cooking energy. About 40% of all fuelwood is purchased from local markets. The price of dry woody biomass is five to eight Bangladeshi Taka per kg, depending on the quality, while the price of charcoal is six to ten Bangladesh Taka per kg.[40]

Most cooks are women, who spend on average four to five hours a day cooking, with six to eight hours a day being spent in the kitchen.

The type of food usually cooked and general cooking habits are identified below[41]:

Type of Food

- Rice is the mainstay of Bangladesh but various kinds of lentil (locally known as daal), wheat, meat, vegetable, fruit, eggs and milk are also common. However, there are also noticeable regional differences:
- *South* – being close to the sea, tend to have a larger use of fish in their dishes
- *West and North-west* - Vegetable curries are prominent
- *Dhaka/Central* - Dishes involving spiced rice and a lot of meat are common
- *North-east* – the large number of lakes around Sylhet encourages greater use of fish

Cooking Habits

- Most cooks are women
- Many families prefer traditional stoves due to ease of use & habit
- Fixed traditional stoves are the standard, and often placed in a semi enclosed annex to shelter it from rain & sunlight
- Biomass use is incredibly diverse with families using whatever they can collect
- In certain households, it is not uncommon to have a 'backup' stove choice where gas supply is unreliable or product quality is questionable

The majority cook indoors in the rainy season and outdoors during the summer.

In urban areas, natural gas plays a much larger role although current supply is unreliable and many are still not connected to the gas grid, hence commercial operations (hotels, food shops, bakeries etc.) mostly use rice husk and sawdust briquettes. Street food vendors use twigs, cow dung, leafy biomass and briquettes. Fuelwood traders sell wood in bundles (50-60 kg) costing around 250-400 Taka.

[40] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+Co for USAID, January 2012, p.8-9
[41] Adapted from GACC Bangladesh Market Assessment: Sector Mapping, Accenture Development Partnerships, 2012

Figure 1: Fuel use for cooking in urban and rural areas[42]

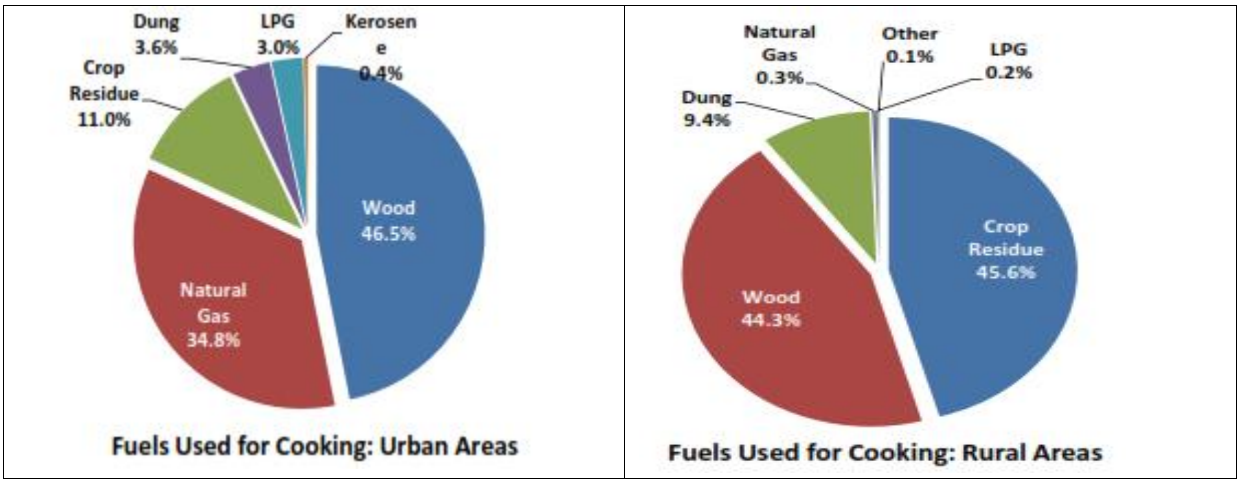


Table 1: Urban and rural consumer characteristics across income brackets[43]

Household income of more than Taka 100 per day ($1.25 / day)		
	Rural	**Urban**
HH numbers	12.1 million	2.9 million
Cooking device and fuel	• Traditional self-made mud stove • Fuel: firewood, sticks and cow dung	• Traditional, gas and electric stoves • Fuel: firewood, kerosene and electricity
Cooking location	• Outdoors during dry season • Indoors during monsoon season	• Indoors
Cooking frequency	Two to three meals per day	
Barriers to switch	Awareness and realized value proposition	
Purchase drivers	Fuel costs, ease of use and perception	

Household income of less than Taka 100 per day ($1.25 / day)		
	Rural	**Urban**
HH numbers	12.3 million	2.7 million
Cooking device and fuel	• Traditional self-made mud stove • Fuel: cow dung, crop residue, sticks and leaves	
Cooking location	Outdoors during dry season, indoors during monsoon	
Cooking frequency	One to two meals per day	
Barriers to switch	Affordability, access to financing and awareness	
Purchase drivers	Fuel costs, ease of use and perception	

[42] Source: GACC Bangladesh Market Assessment: Sector Mapping, Accenture Development Partnerships, 2012.
[43] Ibid.

ANNEX 3: GOVERNMENT INSTITUTIONAL FRAMEWORK

Government agency	Responsibilities	Work related to cookstove
Power Division, Ministry of Power, Energy and Mineral Resources.	Responsible for all sustainable and renewable energy endeavours of the Government. Recognizes cookstoves as a potential area to scale up as component of clean household energy.	Setting up new Sustainable and Renewable Energy Development Authority to implement Renewable Energy Policy. This policy has included provisions for stimulating market development for improved cookstoves.
Ministry of Environment and Forests (MOEF)	Administers the Climate Change Trust Fund.	No direct involvement but keen to be part of the conversations and perhaps even jointly lead the GoB engagement regarding national ICS programme. Can be potential partner to harness Climate Change Funds for the cookstove programme. Also focal agency for CCAC initiative.
Department of Environment (DOE)	Monitors outdoor air pollution, which could extend to household air pollution as well.	Illustrated in Annex-4.
Local Government Engineering Department	Entrusted for planning and implementing local level rural, urban and small scale infrastructure development programmes.	No active cookstove programme at the moment, but implemented a cookstove programme in 2005. Currently focused on solar home systems and biogas. It has strong presence at grassroots level, with over 500 offices at the district and sub district levels.[44]
Bangladesh Council of Scientific and Industrial Research (BCSIR)	Government institution that performs key research and development on behalf of Government. Early pioneers of cookstove programmes in Bangladesh since 1970s and 1980s. All current ICS products are based on BCSIR's original designs.	No active cookstove programme right now but still retains cookstove testing facilities. Requires investment to update and meet market demand, since it is keen to play a large role testing and monitoring quality.
Sustainable and Renewable Energy Development Authority (SREDA)	Government expects to establish this authority by end of 2013. As per Renewable Energy Policy, SREDA will serve as the focal point for sustainable energy development and promotion in Bangladesh.	Government renewable energy initiatives are likely to be channeled through this new body in the future. The cookstove sector must work closely with the GoB to align its plans with Government priorities and interests.
Infrastructure Development Company Limited (IDCOL)	The Government non-banking financial institution finances and implements infrastructure and renewable energy projects.	IDCOL is implementing World Bank funded ICS programme.
Bangladesh Energy Research Council	The Bangladesh Power and Energy Research Council Act, which is currently being	Research related to cookstove sector falls under the theme of 'energy

[44] Assessment of the Improved Stove Market in Bangladesh, Winrock International and E+Co for USAID, January 2012, p. 41

	approved, will pave the way for the establishment of the Bangladesh Energy Research Council. Power Division is hosting the initiative. The responsibility of the Council is to facilitate research collaboration in the area of sustainable energy and among local and international researchers/ research organisations, building the capacity of existing research centres and setting up new ones etc.	efficiency' under Bangladesh Energy Research Council.
SME Foundation	SME Foundation brings the grassroot entrepreneurs into the mainstream of economic development through employment generation, reduction of social discrimination and poverty alleviation.	SME Foundation can promote entrepreneurship in cookstove sector.
Palli Karma-Sahayak Foundation (PKSF)	The principal objective of PKSF is to provide funds to various organisations for their microcredit programme with a view to helping the poor who have no land or any credible material possession.	PKSF can promote market mechanism at BOPlevel.
Bangladesh University of Engineering and Technology (BUET)	BUET is one of the most prestigious institutions for higher studies in the country. At present, it has 16 teaching departments in five faculties and it has three institutes. Postgraduate research is now one of the main functions of the university.	BUET may be considered as a potential lab testing facility service provider for improved cookstoves. The World Bank is already considering developing existing testing facility of BUET.

ANNEX 4: DEPARTMENT OF ENVIRONMENT'S ICS INITIATIVE

Bangladesh has been working on solving the problem of indoor air pollution and fuel wastage of inefficient traditional stovesthrough improved cookstoves since 1970s. The Government-owned Institute of Fuel Research and Development (IFRD) under the Bangladesh Council for Scientific and Industrial Research (BCSIR) initiated research and development of improved cooking stoves during that period. After several years of research, IFRD developed several models of clay ICS, which could satisfy cooking habits, could be locally made, and be affordable for the people of Bangladesh. Some models were with chimneys, others without chimneys.

ICSs have been designed to increase heat transfer, while also matching the traditional utensils and cooking habits of the people in Bangladesh. The improvement in efficiency is achieved by properly adjusting the dimensions of the combustion chamber and ensuring effective air flow. The replacement of traditional stoves by ICS improves heat transfer, hence reducing the total amount of fuel required for cooking and reducing the amount of GHG emitted into the atmosphere. On average, these ICSs save 50% of biomass fuel compared with traditional stoves. IFRD also undertook extension activities for these ICS on a limited scale. Several thousands of people were trained in the production of these ICS. Over 300,000 were produced and sold. Unfortunately, the extension activities ended in 2001-2002.

In December 2005, GIZ started to promote the IFRD-developed ICS with chimney, which carries smoke out of the kitchen and thus provides significant health benefits. In 2010, GIZ introduced concrete as the material of choice for manufacturing ICS. This allowed mass production and significantly better adherence to quality standards. Currently, all ICSs being installed in Bangladesh are made of concrete. Over 800,000 have been installed and are in operation. In 2011, the ICS project of GIZ was registered as a CDM project under UNFCCC. For accelerated dissemination of stoves, GIZ is now working increasingly with sanitary shops and masons as they are already in the business of working with concrete.

The Department of Environment and GIZ is jointly implementing a project on ICS named 'Market Development Initiative for Bondhu Chula' with financial support from the Climate Change Trust Fund (CCTF) and GIZ . Under the 'Market Development Initiative for Bondhu Chula' Project, 500,000 Bondhu Chula (improved cookstoves) will be distributed and after sales service provided to keep the Bondhu Chula in good working order. Five thousand entrepreneurs (one for each Union Parishad) in Bangladesh have been created. The objectives of the project are to reduce pressure on forest-resources, reduce indoor air pollution, minimize health risks and reduce emissions of greenhouse gases. Phase II of this 'Market Development Initiative for Bondhu Chula' project will be undertaken after completion of the main project in March 2014.

ANNEX 5: MARKET ENABLING APPROACH OF GLOBAL ALLIANCE FOR CLEAN COOKSTOVES (GACC)

When the Alliance launched in 2010, it identified the creation of a thriving global market for clean cookstoves and fuels as the most viable way to achieve universal adoption. This principle was enshrined in its mission: 'to save lives, improve livelihoods, empower women and preserve the environment by creating a thriving global market for clean and efficient cookstoves and fuels.' Giving away stoves to half the world's population was simply not a viable option and past attempts to donate stoves had not resulted in sustained adoption and use.

The Global Alliance for Clean Cookstoves (GACC) Secretariat catalyzed the CAP development process in priority countries by hosting stakeholder consultations and strategic planning workshops. These meetings were part of the Alliance's broader process to convene partners and other key stakeholders in order to discuss the draft strategic business plan, identify and better understand the positive ongoing work in the cookstove and fuels sector, and detect key barriers and intervention options in the country. In each instance, the workshops also sought to understand the potential unique role the Alliance could play as a coordinated, cohesive global network of partners. Input from the workshops has been incorporated and expanded upon through the locally owned process of developing and implementing the CAPs.

This market-based approach was further developed and validated in *Igniting Change: A Strategy for Universal Adoption of Clean Cookstoves and Fuels*, the first sector-wide strategy to transform the sector based on the input of over 350 leading experts and practitioners across the globe. Coordinated and published by the Alliance, a thriving global market is the report's central tenet, along with a three-pronged strategy for creating such a market:

Enhance demand	By understanding and motivating potential users, developing better and more technology, providing consumer finance and creating innovative distribution models to reach remote consumers
Strengthen supply	By attracting more finance and investment, accessing carbon finance, enhancing market intelligence and creating inclusive value-chains
Foster an enabling environment	By engaging national and local stakeholders, building the evidence base for the benefits of stoves, promoting international standards and rigorous testing protocols and enhancing monitoring and evaluation.

This strategy is also the central tenet of the Alliance's strategic business plan. The priority now is to turn strategy into action.

Prioritization process

Through *Igniting Change* and the Alliance's draft Strategic Business Plan, the Alliance has already prioritized a range of activities on the global level to enable markets, which it is already starting to implement:

- Attracting more social investment into the sector (i.e. through the promotion of the sector and its viable business models at major global forums)
- Reducing barriers for stove enterprises to access carbon finance (i.e. through the creation of an informational, how-to online portal connecting businesses to critical information and expertise on how to apply for carbon finance)
- Increasing consumer awareness and demand (i.e. through supporting social marketing best practices)
- Driving technological innovation and enterprise development

In parallel, the Secretariat identified potential priority regions/countries, with the aim of selecting some for long-term Alliance engagement. Bangladesh is one of the priority countries of the Alliance. Following this prioritization process, the Alliance Secretariat endeavors to develop specific Country Action Platforms for each potential country in order to better assess and understand the specific sectoral needs of each.

ANNEX 6: ACKNOWLEDGEMENTS

Following is the list of Organisations (not exhaustive) who contributed to the contents of this document:

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- Bangladesh Council of Scientific and Industrial Research (BCSIR)
- Bangladesh Standards and Testing Institution (BSTI)
- Bangladesh University of Engineering and Technology (BUET)
- BRAC
- Bright Green Energy Foundation (BGEF)
- Department of Environment (DOE)
- Economic Relations Division (ERD)
- Energy and Mineral Resources Division (EMRD)
- Eso Jati Gori (EJAG)
- Family Health Initiative 360 (FHI 360)
- GIZ (German Development Cooperation)
- Global Alliance for Clean Cookstoves (GACC)
- Grameen Shakti
- Grameen Shakti Social Business Company
- Infrastructure Development Company Limited (IDCOL)
- JITA Social Business Bangladesh Ltd
- Ministry of Environment and Forests
- Ministry of Women and Children Affairs
- Ministry of Social Welfare
- Ministry of Health and Family Welfare
- Ministry of Housing and Public Works
- Ministry of Finance
- Nature Conservation Management (NACOM)
- Power Cell
- Prokaushali Sangsad Limited (PSL)
- Rahman Renewables Energy
- Resource Development Foundation (RDF)
- Rural Development and Cooperative Division, Government of Bangladesh
- SNV (Netherlands Development Organisation)
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- Village Education Resource Center (VERC)
- World Bank

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