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Global Alliance for Clean Cookstoves

Bangladesh Market Assessment

Intervention Options

Accenture Development Partnerships

April 2012

Introduction

- This Market Assessment was conducted by Accenture Development Partnerships (ADP), the not-for-profit arm of the global management consultancy, Accenture, on behalf of the Global Alliance for Clean Cookstoves (the Alliance).
- It is intended to provide a high level snapshot of the sector that can then be used in conjunction with a number of research papers, consumer surveys and other sources (most published on the Alliance's website) to enhance sector market understanding and help the Alliance decide which countries and regions to prioritize.
- It is one of sixteen such assessments completed by the Alliance to:
 - Enhance sector market intelligence and knowledge.; and
 - Contribute to a process leading to the Alliance deciding which regions/countries it will prioritize.
- Full slate of market assessments include studies in: Bangladesh, Brazil, Colombia, East Timor, Ethiopia, Ghana, Indonesia, Kenya, Mexico, Nigeria, Peru, Rwanda, South Africa, Tanzania, Uganda and Vietnam.
- Each assessment has two parts:
 - Sector Mapping – an objective mapping of the sector.
 - Intervention Options – suggestions for removing the many barriers that currently prevent the creation of a thriving market for clean cooking solutions.
- In each Alliance study a combination of ADP and local consultants spent 4-6 weeks in country conducting a combination of primary (in-depth interviews) and secondary research. They used the same Market Assessment 'Toolkit' for each country so that comparisons can be made. The Toolkit is available free of charge to all organizations wishing to use it in other countries.
- **The Alliance wishes to acknowledge the generous support of the following donors for the market assessments: Barr Foundation, Dow Corning Corporation, Shell Corporation, Shell Foundation, and the governments of Canada, Finland, and Spain.**

This market assessment was produced by Accenture Development Partnerships (ADP) on behalf of the Alliance. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the Global Alliance for Clean Cookstoves or its partners. The Alliance does not guarantee the accuracy of the data.

Approach in Bangladesh

- This Market Assessment is unique amongst others completed by the Alliance in that it was developed working in close collaboration with USAID, an Alliance founding partner.
- USAID completed a detailed Bangladesh Cookstoves Market Assessment in Jan 2011; to avoid reinventing wheels the two organizations agreed to integrate their two market assessments and ensure they emphasized different areas of interest.
- The Alliance's Sector Mapping and Intervention Options papers should therefore be viewed in conjunction with USAID's Market Assessment.
- In particular, readers will see that the Intervention Options paper first lists the interventions identified in the USAID report, before contributing additional recommendations where applicable.



Executive Summary

Project Approach and Background

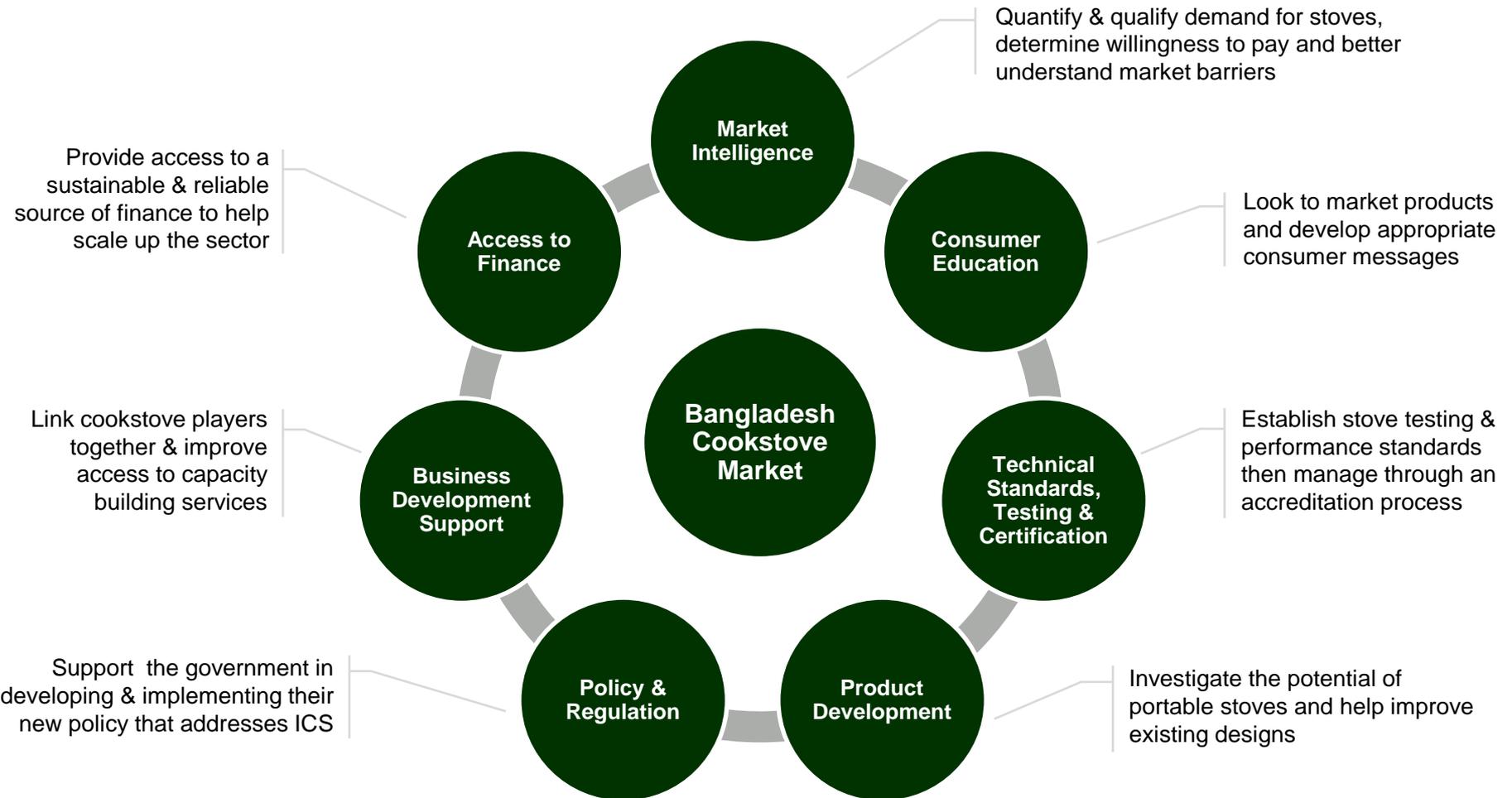
Intervention Options

Roadmap

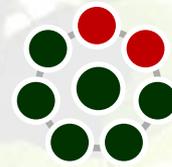
Appendix

Context of Intervention Categories

This assessment builds on the recent USAID report and follows the 7 areas identified below for potential interventions in the cookstove sector in Bangladesh



Summary of Intervention Options (1/3)



Executive Summary

This summary of Intervention Options contains recommendations from both this Market Assessment and the USAID report

Market Intelligence

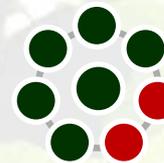
- Quantify and qualify the demand for improved cookstoves
- Assess the main market barriers to building a thriving market
- Establish key customer segments and profiles then share with the main players

Customer Demand

- Work with Social Marketing Company to market products and develop messages for consumers
- Link in with existing programmes around biodiversity, conservation, health, sanitation and gender
- Pilot awareness campaigns to measure marketing effectiveness and build evidence base
- Help build a 'social coalition for cookstoves' and lead towards a national campaign

Note: For a more detailed summary, please refer to the separate Executive Summary document attached to this Assessment.

Summary of Intervention Options (2/3)



Executive Summary

This summary of Intervention Options contains recommendations from both this Market Assessment and the USAID report

Technical Standards, Testing & Certification

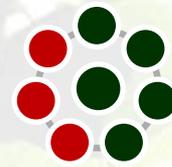
- Provide support for performance testing and certification of stoves
- Form a technical committee to establish technical ICS standards and accredit labs
- Partner the new labs & technical body with other international testing centres

Product Development

- Investigate the feasibility of introducing an attractive, portable model to market
- Set up technology and knowledge sharing between Bangladeshi and international organisations
- Invest in local product development with expert international guidance
- Facilitate better links between stove performance & the sector's product development

Note: For a more detailed summary, please refer to the separate Executive Summary document attached to this Assessment.

Summary of Intervention Options (3/3)



This summary of Intervention Options contains recommendations from both this Market Assessment and the USAID report

Policy & Regulation

- Work with Government to implement Renewable Energy Policy
- Work with Government to increase their advocacy and support for ICS market development, standards and any national consumer campaign
- Investigate potential funding opportunities through the Government's Climate Change fund

Business Development Support

- Link actors from the sector together
- Help improve their access to entrepreneurship education & advisory services
- Establish and support capacity building across the sector for both NGOs and SMEs

Access to Finance

- Grant enterprises access to finance to help manage capital requirements
- Develop or identify a private organization to kick-start and fund large scale market development

Note: For a more detailed summary, please refer to the separate Executive Summary document attached to this Assessment.

Executive Summary

Project Approach and Background

Intervention Options

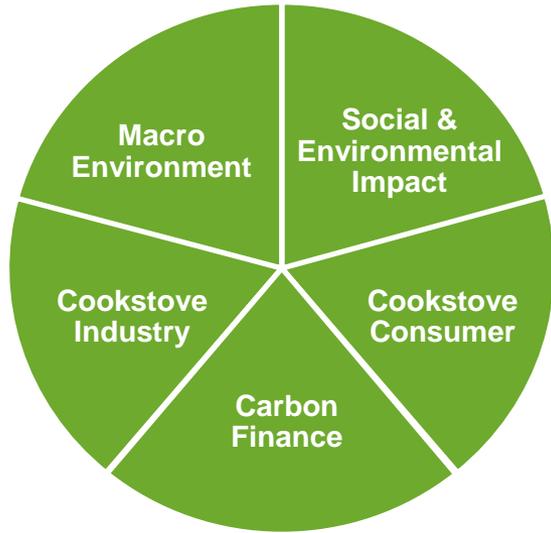
Roadmap

Appendix

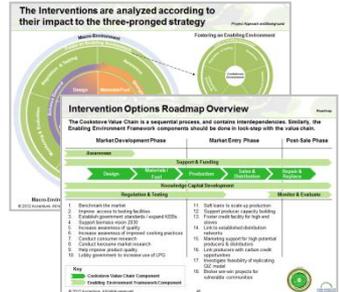
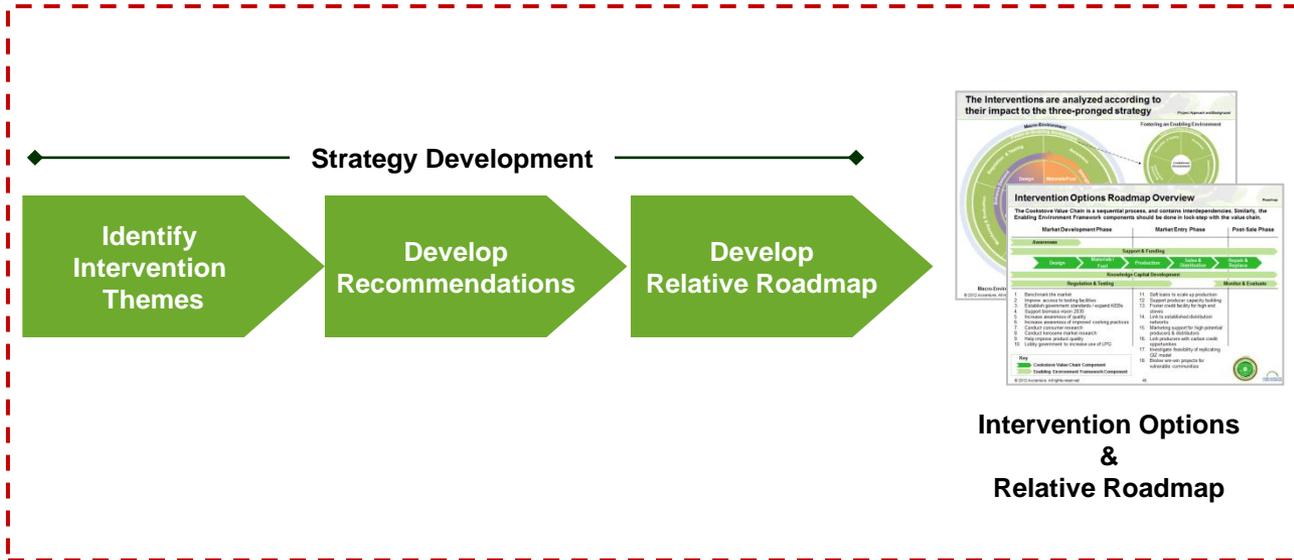
Project Approach

A structured approach first assessed the market for a cookstove industry and then used the Sector Mapping output to develop the Intervention Options and Relative Roadmap

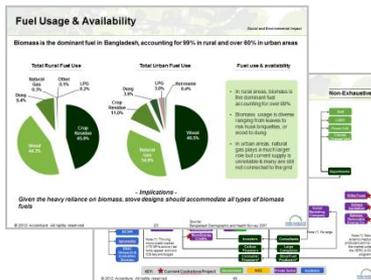
← Sector Mapping →



Focus of this Report



Intervention Options & Relative Roadmap



Sector Map

Sector Mapping Summary (1/2)

With ~150 million people, Bangladesh is the 9th most populous country in the world and one of the most densely populated country in the world. Upwards of 70% of its population lives in rural areas while 50% of the entire country live below the international poverty line. In both urban and rural areas, more than 90% of households depend on biomass as a fuel source, leading to major health and environmental issues. An estimated 46,000+ people die from the effects of IAP every year while 3.5% of Bangladesh forests have been destroyed in the last 20 years.

Bangladesh has a large potential market for ICS, estimated at greater than 30 million households; however, only 510,000 stoves are thought to be in use, a penetration rate of less than 2%. 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 ICS programs in the country 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 amongst certain segments.

Bangladesh is home to some of the worlds largest and most successful NGOs, with distribution networks reaching all across the country. In addition, many of these organizations have mature consumer finance capabilities given Bangladesh's position at the forefront of the modern micro-credit movement. This finance has been integral to the growth of both Solar Home Systems (SHS) and biogas plants. However, the low price of improved biomass stoves often sits just below the amount necessary to make these loans commercially feasible. Access to finance also appears to be an issue for many stove businesses due to the prohibitively expensive nature of commercial loans available in the market.

Past evidence suggests that market based approaches can be effective in Bangladesh as the 'Total Sanitation Campaign' and SHS program have proved. These programs were successful largely because they coupled innovative financing, government support, and sector wide collaboration to address the issue. The cookstove sector shows promise but appears to be lacking some of these vital ingredients to follow in their footsteps and grow at a similar pace.

Sector Mapping Summary (2/2)

	Findings
<i>Macro Environment</i>	Bangladesh is one of the most densely populated and poorest countries in the world, it is prone to severe ecological issues such as cyclones and flooding and experiences severe energy shortages across the country. The government is heavily focused on development, both socially and economically and is key to the support of the ICS sector.
<i>Social and Environmental Impact</i>	Cooking styles are similar across Bangladesh with women responsible for most of the cooking. Biomass use is more than 90% for the entire country while free fuel sources such as cow dung and rice husk are common in rural areas. Health affects of IAP are significant and women need to play an integral role in the sector particularly in community outreach and sales.
<i>Consumers</i>	The ‘villager’ segment (defined later), rural populations and those above the international poverty line appear to show the most promise for market based ICS approaches. Consumer research is limited but from what is known, awareness of IAP and the benefits of ICS appears to be low so consumer education is essential. Humanitarian efforts and financial assistance will be needed to address the more vulnerable, lower income segments.
<i>Cookstove Industry</i>	The Bangladesh market is dominated by the ‘Chulha’ stove design. The three largest programs (Grameen Shakti, GIZ and VERC) all utilize this design, although it is available in different sizes and materials. Basic capabilities exist across the value chain to support programs, but there appears to be a lack of product diversity, enterprise financing and larger private sector participation.
<i>Carbon Financing</i>	There is an established DNA, an existing PoA and different CDM registered cookstove projects in Bangladesh. However, the sector’s heavy reliance on carbon credits and rigorous M&E processes pose a risk to the growth of the market.

Implications for Intervention Options

1. A cookstove intervention can serve a large market size in both rural and urban areas but many of those lie below the international poverty line
2. The extremely high number of DALYs and deaths attributable to IAP presents a strong case for cookstove interventions in Bangladesh
3. IAP is recognized as an important health issue but low per capita health spending and other pressing priorities, mean large scale government intervention based on health is unlikely
4. The large biomass market is likely to exist for many years due to poor access to electricity & clean fuels. If gas supply or price becomes an issue, consumers may start reverting to biomass
5. As is often the case, the cultural & historical attachment to traditional stoves will be challenging to overcome. Any new stove design should fit with existing cooking habits
6. The potential target market for a cookstove intervention in Bangladesh is approximately 30 million households
7. Given the heavy reliance on biomass fuels, any successful product must either target a specific fuel or accommodate all types of biomass
8. Although improvements are required, the strong involvement of women in the sector improves its ability to connect with end consumers and increases its potential for growth

Implications for Intervention Options

9. The free supply of biomass means that not all cookstove initiatives can focus on the economic benefits
10. There appears to be little 'wholesale' price variation amongst biomass stoves but further research is needed to test price sensitivity and consumers' willingness to pay
11. The Chulha model is the only ICS addressing the vast biomass market. This suggests there may be an opportunity to introduce other ICS designs to the market
12. The lack of academia and large private sector organizations suggests there is an opportunity to bring in outside institutions to encourage growth and innovation
13. No institution is currently responsible for promoting research, testing and standards for cookstoves
14. The full vertical integration & vast reach of NGOs is a huge advantage for the sector that presents an ideal environment for ICS distribution & consumer education
15. Bangladesh ranks very highly on the high-level market attractiveness criteria to support a potential cookstove program; however, carbon market volatility is a high risk as current programs are heavily reliant on carbon finances revenues to achieve scale
16. The heavy reliance on carbon finance revenue and burden of rigorous M&E are two major risks to the long term success of the Bangladesh market

The Case for Action Now

The sector is ramping up with the support of carbon finance but market penetration remains low. Concerted action across the sector could help stimulate consumer demand and market growth.

- The Case for Action -

What's Happening?

IAP is a serious health issue causing 46,000 deaths each year¹.

There is a huge untapped ICS market of ~30M HH, potentially 50M² stoves but market penetration is currently less than 2%³

For biomass stoves, there are several established players with varying approaches & distribution models but similar designs and prices ranges.

So What?

The Government and NGOs in Bangladesh have incredible reach throughout the country, reaching every district and upazila.

This vast distribution network is ideal for reaching rural communities yet penetration is still lower than 2%.

Where firewood is bought, the economic benefits of ICS are compelling.

Why Now?

Established market players rapidly expanding their footprint whilst several others are keen to enter.

Many NGOs & businesses are active in the sector but consumer awareness and adoption remains a significant challenge.

Assumptions and Perspectives

Intervention Options have been suggested based on the following assumptions and perspectives

- Clean cookstoves does not pertain to a particular stove or fuel type. Any improvement upon the status quo is recommended, whether it is moving from open fire to improved biomass stove, or traditional biomass stove to biogas plant.
- Intervention Options are purely illustrative and not tailored to any particular organisation. They intend to provide a high level view of the interventions that will help strengthen the cookstove market in Bangladesh.
- The Intervention Options are focused on encouraging a market-based solution, that promotes sustainability.
- Intervention Options are based on a preliminary market assessment using a combination of both primary and secondary research. Any market interventions would need to be developed in collaboration with stakeholders from the Bangladesh stove sector.

Executive Summary

Situation

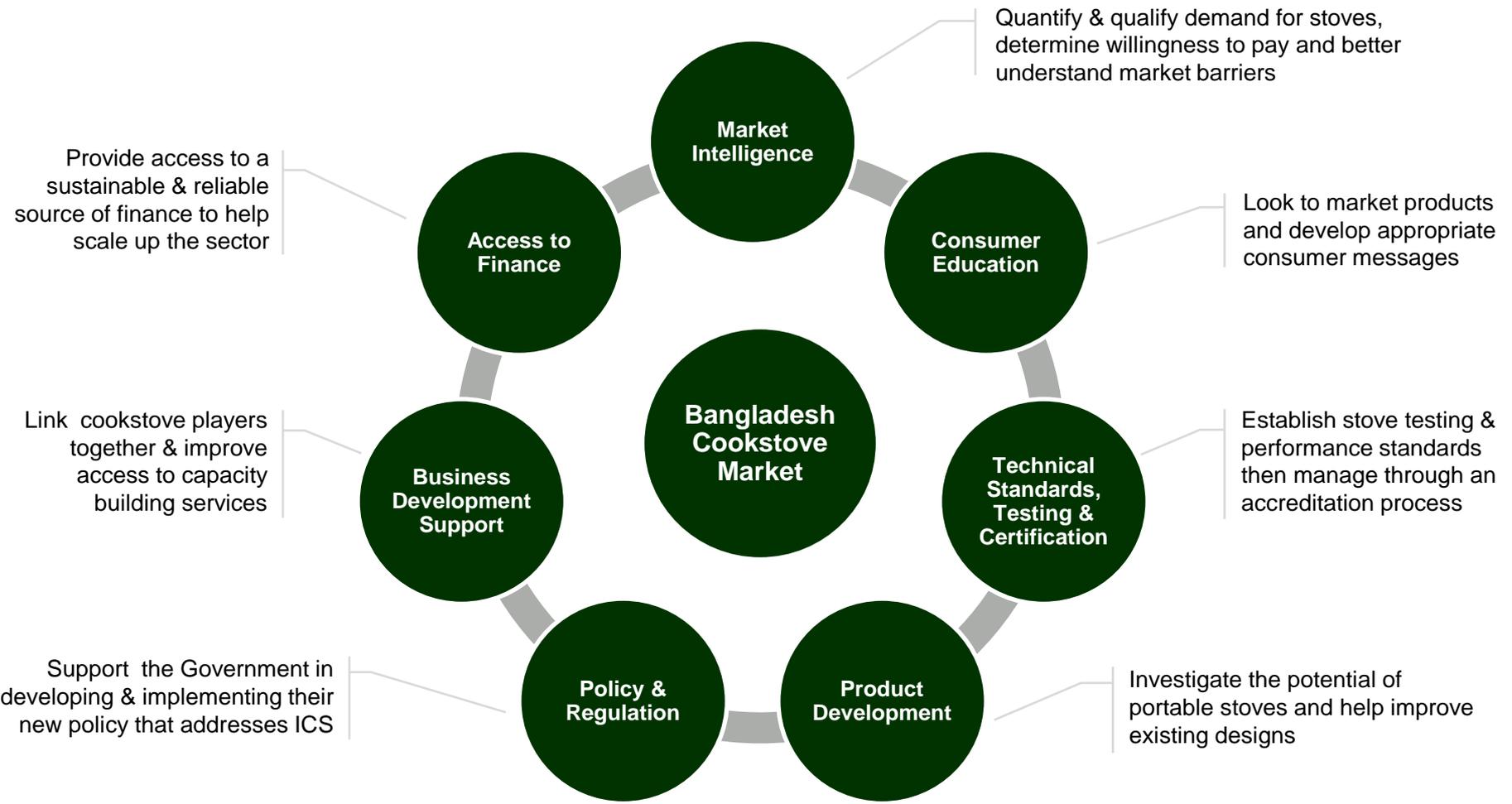
Intervention Options

Roadmap

Appendix

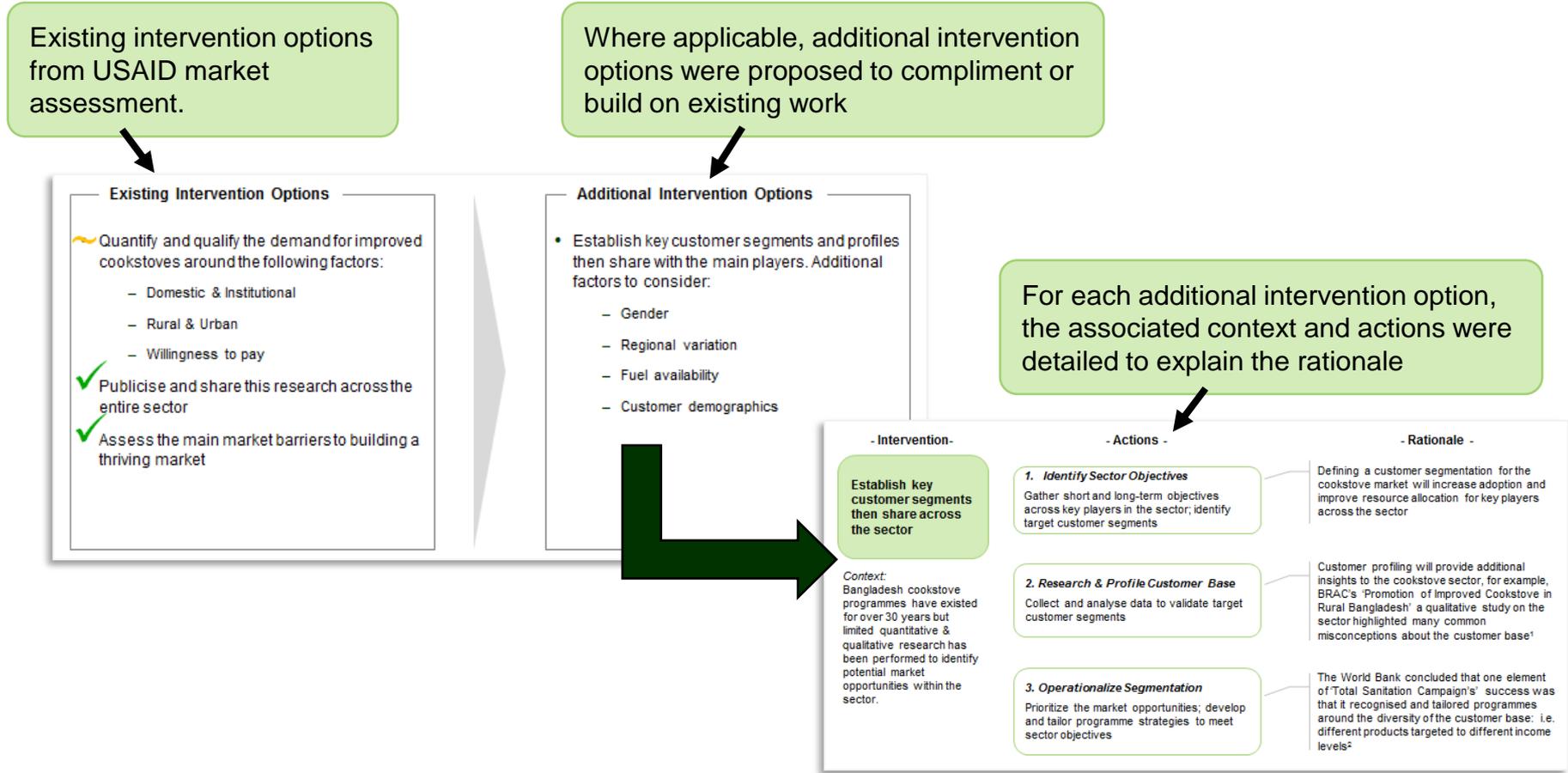
Context for Intervention Options

The following interventions build on the 7 areas below as identified in the recent USAID report



Structure of Intervention Options

The Intervention Options were structured to compliment the existing recommendations contained in the USAID market assessment.



Note: For the full analysis behind the existing intervention options, please refer to the USAID Cookstove Market Assessment.

High Level Review of USAID Assessment Recommendations (1/2)

The interventions posed in the USAID Market Assessment were on the whole sound. They identified many of the major issues facing the sector and proposed a holistic approach to developing the sector. Much of this makes sense, however, there are certain areas where further clarification is required

Technical Standards, Testing & Certification

The concept of forming a technical committee is much more likely to work in a program setting rather than operating across the sector. For that type of technical body to work across the sector, it is likely that it would need to be tied to some type of incentive for stove producers to adhere to the committees recommendations. The IDCOL model utilizes a technical committee to ensure the quality of Solar Home Systems (SHS) consistently matches expectations otherwise it could jeopardize funding arrangements. The stove sector would likely have to follow suit to ensure that any stove standards stood for something and were backed by solid enforcement policies. Furthermore, it would be vital for any technical body to operate in a swift manner so as not to provide a bureaucratic drag on the sector's growth

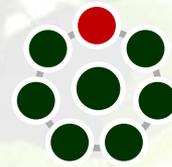
Product Development

It is clear that the portable stove design is practically non-existent in Bangladesh today (excluding traditional designs) so there may be an opportunity to stimulate demand given the popularity of these in other, similar markets such as India. Moreover, the presence of portable traditional stoves indicates that certain consumers desire the flexibility to move their cooking location depending on the season and the weather. However, this must be approached with caution to ensure that it is based on solid consumer research (that proves demand) rather than a generic recommendation based on other countries.

High Level Review of USAID Assessment Recommendations (2/2)

Finally, the USAID report proposes a holistic approach due to the interrelated and interdependent nature of their recommendations. Whilst this has a strong degree of truth and holistic approaches are often highly effective, there are many individual interventions that could impact and influence the sector on their own. One example would be the provision of low cost, reliable finance for smaller stove businesses. This emerged as a particular 'pain point' for many young, growing stove producers so addressing that issue upfront would free these businesses up to invest more in marketing and stimulating consumer demand. Interventions such as these would obviously have a much greater effect with additional interventions to create a more supportive environment, however, they are still likely to provide a real boost to the sector in isolation.

In conclusion, the USAID report offers a robust and wide-ranging view of the sector so many of the additional interventions proposed in this paper build on this sound work. As always, these interventions are merely illustrative and any real market interventions would need to be developed in close collaboration with stakeholders from across the Bangladesh cookstove sector.



Gathering additional insight on the cookstove market in Bangladesh will identify the gaps and opportunities which the sector should focus on

Objective and Outcomes

Inform key players on customer behavior and profiles in Bangladesh. Identify and define market opportunities and gaps in the cookstove sector to facilitate broader adoption and efficient allocation of resources.

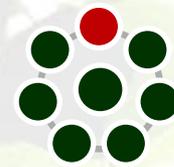
Existing Intervention Options

- Quantify and qualify the demand for improved cookstoves around the following factors:
 - Domestic & Institutional
 - Rural & Urban
 - Willingness to pay
- Publicise and share this research across the entire sector
- Assess the main market barriers to building a thriving market

Additional Intervention Options

- Establish key customer segments and profiles then share with the main players. Additional factors to consider:
 - Gender
 - Regional variation
 - Fuel availability
 - Customer demographics

Market Intelligence



Limited quantitative and qualitative research has been conducted on the cookstove sector in Bangladesh. Building on existing studies, such as BRAC's, and operationalizing a customer segmentation will increase cookstove adoption and improve resource allocation across the sector

- Intervention -

Establish key customer segments then share across the sector

Context:
Bangladesh cookstove programmes have existed for over 30 years but limited quantitative & qualitative research has been performed to identify potential market opportunities within the sector.

- Actions -

1. Identify Sector Objectives

Gather short and long-term objectives across key players in the sector; identify target customer segments

2. Research & Profile Customer Base

Collect and analyse data to validate target customer segments

3. Operationalize Segmentation

Prioritize the market opportunities; develop and tailor programme strategies to meet sector objectives

- Rationale -

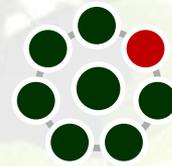
Defining a customer segmentation for the cookstove market will increase adoption and improve resource allocation for key players across the sector

Customer profiling will provide additional insights to the cookstove sector, for example, BRAC's 'Promotion of Improved Cookstove in Rural Bangladesh' a qualitative study on the sector highlighted many common misconceptions about the customer base¹

The World Bank concluded that one element of 'Total Sanitation Campaign's' success was that it recognised and tailored programmes around the diversity of the customer base: i.e. different products targeted to different income levels²

Note 1: Refer to appendix for detailed case study of BRAC's 'Promotion of Improved Cookstove in Rural Bangladesh'

Note 2: Refer to appendix for detailed case study of 'Total Sanitation Campaign'



A broader form of consumer education could help increase demand for the sector and in turn, reduce the financial burden that marketing and sales currently place on ICS programmes

Objective and Outcomes

Increase awareness of cookstoves amongst the mass public and help establish the case for potential health, economic and environmental benefits.

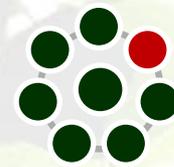
Existing Intervention Options

- Work with Social Marketing Company to market products and develop messages for consumers
- Link in with existing programmes around biodiversity, conservation, health, sanitation and gender

Additional Intervention Options

- Pilot awareness campaigns to measure marketing effectiveness and build evidence base for any broader campaign
 - The relationship between gender and marketing effectiveness could be also be assessed
- Help build a 'social coalition for cookstoves' and lead towards a national campaign

Consumer Education



Intervention Options

The cookstove sector has shown impressive creativity and diversity in its social marketing efforts but there is little evidence around the effectiveness of these activities

- Intervention -

Pilot awareness campaigns to measure marketing effectiveness and build evidence base

Context:
VERC, GIZ, Grameen and thousands of other organizations are actively marketing ICS across Bangladesh yet campaigns are based on intuition with little analysis to prove which campaigns have the biggest impact.

- Actions -

1. Choose Pilot Campaigns

Choose pilot campaigns to fund and partner with local organisations based on target segments and key issues such as gender

2. Monitor and Measure Impact

Measure the campaign's impact on consumer attitudes & market demand

3. Evaluate & Refine Approach

Evaluate the results and improve the approach for further pilots

4. Scale on the Basis of Evidence

Based on evidence, seek to expand successful campaigns into other areas

- Rationale -

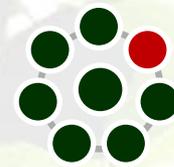
GIZ & VERC use some innovative marketing methods so there are already a broad range of potential approaches to pilot. Gender is so far an area that has yet to be fully addressed

Marketing effectiveness must be measured to ensure that time & resources are being invested wisely. So far, there is little evidence to show the impact of existing campaigns on consumer behaviour or market demand

A series of 'one time only' campaigns does not follow marketing best practices. The pilots should be multi-stage, allowing for the approach to be improved & refined over time

To provide a valid basis for any broader, national campaign, successful pilots should be expanded into different locations and consumer segments

Consumer Education



Intervention Options

There has never been a broad, coordinated consumer campaign in recent times highlighting the potential benefits of cookstoves. Learning from sanitation, such a campaign could be one approach to help stimulate demand and dramatically increase the rate of consumer acceptance

- Intervention -

Help build a 'social coalition for cookstoves' and lead towards a national campaign

Context:

Cookstoves have compelling consumer benefits in Bangladesh but have yet to penetrate more than 2% of the potential market. Marketing & sales remain a significant financial burden on many of the larger players with much duplication of effort.

- Actions -

1. Assess campaign feasibility

Assess the campaign feasibility and which aspects of the 'Total Sanitation Campaign' are in place.

2. Validate industry capacity

Validate the sector capacity & product reliability to support increased demand.

3. Form campaign steering group

Identify key partners and form a sector steering group for the campaign.

4. Contract implementation partner(s)

Identify and select organisations such as SMC to plan, design and run the campaign.

- Rationale -

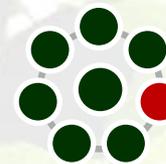
The World Bank has already shown the many similarities between the 'Total Sanitation Campaign' & a potential national ICS programme. Their work could provide the basis for this campaign feasibility analysis

The Social Marketing Company highlighted product quality as paramount to the success of any awareness campaign. Any flaws in the sector's ability to cope with demand or maintain product quality will jeopardise both the campaign and the market

GIZ have already expressed their desire to form a 'social coalition for cookstoves'. Such a coalition would form the backbone of any national campaign

Bangladesh's impressive track record of successful public health campaigns (e.g. birth control, diarrhoeal medication) could be utilised as a framework for any national ICS programme

Technical Standards, Testing & Certification



Intervention Options

Bangladesh lacks the necessary facilities, equipment and central body to effectively monitor stove performance and manage standards across the industry

Objective and Outcomes

Establish a clear, agreed set of stove performance and emission standards that all stove designs are certified against. Build the technical capacity in country to test, accredit and measure stove performance.

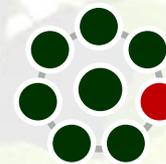
Existing Intervention Options

- Provide support for performance testing and certification of stoves
- Form a Technical Committee that:
 - Consists of academics, industry player & international advisers
 - Establishes the technical ICS standards (aligned with the global movement) that stoves must meet to be accredited
 - Accredits stove labs qualified to perform test & certification
 - Decides performance standards for fuel

Additional Intervention Options

- Partner the new labs & technical body with other international testing centres to provide expert guidance and mentorship

Technical Standards, Testing & Certification



Intervention Options

The local stove expertise is hampered by historic lack of investment and limited facilities, guidance from successful international centres could improve the effectiveness of any future capacity building

- Intervention -

Partner the new labs and/or technical body with other international testing centers

Context:
BCSIR's stove testing facilities were established in the 1970s but currently lack equipment, funding and the overall capacity to operate effectively.

- Actions -

1. Identify partners

Identify potential technical partners both locally within BCSIR, academia and the active market players, and internationally.

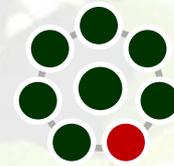
2. Build local technical capacity

Establish local facilities with expert guidance around testing approaches and stove standards.

- Rationale -

Aprovecho, amongst others, have set up several successful stove development centres that could share technical expertise. Centres in Guatemala & South Africa could guide this process with the right Bangladeshi partners

BCSIR partnered internationally with Eindhoven Technical University and has shown appetite to do this again, as have other organisations. However, no one currently has the knowledge or equipment to measure stove performance effectively



The lack of product diversity in the cookstove sector illustrates the limited choice for consumers. There may be potential to improve existing designs and introduce new designs to market

Objective and Outcomes

Facilitate the process of continuous product improvement by bringing international expertise to help develop existing stove models and introduce new designs to market

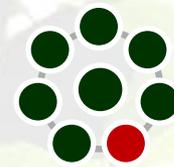
Existing Intervention Options

- Investigate the feasibility of introducing an attractive, portable model to the Bangladesh market. Once tested for affordability & cultural acceptability, promote it among existing stove programmes & general public.

Additional Intervention Options

- Set up technology and knowledge sharing between Bangladeshi organisations and international players to help stimulate product innovation
- Invest in local product development with expert international guidance
- Facilitate better links between the actual stove performance - via consumer research & stove testing - and the sector's product development cycle

Product Development



Intervention Options

The Bangladesh ICS market is dominated by one stove design and has very few products that cater for different consumer segments and their unique desires

- Intervention -

Set up technology and knowledge sharing to help stimulate product innovation

Context:
Despite the diversity of players & history of development, Bangladesh still only has one biomass ICS model active in the market. Only the material and pot size varies noticeably.

- Actions -

1. Share technical knowledge

Share stove designs & technology from similar regions with the sector's key technical players.

2. Establish technical partnerships

Twin international stove experts with Bangladeshi technical experts to stimulate the product develop process.

3. Enhance access to new products

Pilot a project to investigate the feasibility of other stove designs, e.g. portable

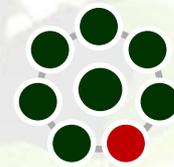
- Rationale -

Many organisations have shown desire to refine their products and embrace new design concepts. Sharing knowledge from similar environments such as Nepal or East India could help stimulate this interest

The huge international community of stove experts have had little involvement in Bangladesh as yet. Aprovecho's recent workshop shows promise, so these relationships could be deepened to help shine a light on stove standards, performance improvement and product development

World Vision, Food for Hungry & local producers have introduced the rocket stove to Kenya and observed very positive consumer feedback, reduced fuel costs for consumers & achieved their target of distributing ~6000 ICS stoves per month

Product Development



Intervention Options

The dominant ICS – the Bondhu Chulha – has been embraced across the sector but there are clear opportunities to improve its performance and durability

- Intervention -

Invest in local product development with expert international guidance

Context:

The Bondhu Chulha has been the dominant ICS since its inception in the 1980s and will likely remain the cornerstone of any market expansion in Bangladesh. Optimising its quality & performance will help drive further growth.

- Actions -

1. Benchmark against Best Practice

Thoroughly benchmark the Chulha against international best practice

2. Identify Development Opportunities

Based on testing, identify potential product areas to focus future development on

3. Prototype & Test New Models

Design, manufacture and test the improved Chulha designs to verify performance

4. Support Roll Out of Improved Designs

Support the roll out of pilot programmes across the industry supply chain

- Rationale -

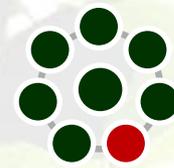
Stove testing has occurred but results remain inconsistent & ambiguous. To help identify any potential improvements, international examples can place the Chulha stove performance in context

Local technicians have extensive data on cooking habits, utensils, kitchens & the clay Chulha performance. International technical partners could bring complimentary product knowledge to help improve the Chulha & develop new models

Product designs will need a close partnership between international technical expertise and local consumer knowledge. Only close collaboration will develop the right products for the relevant communities

Once improved designs emerge, local organisations must receive support to pilot these in the market. Last mile NGOs should be supported through implementation

Product Development



The Bondhu Chulha has been refined over time but there appears to be a gap between consumer reaction and the product development within the sector

- Intervention -

Facilitate better links between stove performance & the sector's product development cycle

Context:

Questions remain around the performance and durability of stoves in the market. With the huge dependence on carbon finance, the commitment to continual product development may need nurtured.

- Actions -

1. Gather Performance Data

Work with partners to collect reliable stove performance data from both end consumers & the organisations themselves

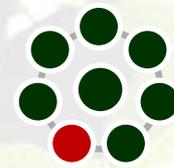
2. Assess & Share Insights

Work with partners to feed stove performance results back into their product development cycle

- Rationale -

BCSIR currently accredit stoves but have no power to enforce their findings & address poor stoves entering the market. A greater sense of collaboration between stove testing and product development should be fostered

Several main players have shown appetite to improve their products further so with reliable consumer data, new designs, materials & approaches can be piloted to enhance the overall quality of product in the market



With the government currently establishing an agency to implement their Renewable Energy Policy, the right counsel could help guide this process and establish a strong foundation for the sector

Objective and Outcomes

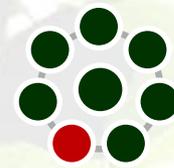
Work with the government to obtain funding, support and endorsement for the development of a cookstove sector.

Existing Intervention Options

- Work with government to implement Renewable Energy Policy (2008). Points to consider include:
 - GOB funding of new ICS programs to avoid market distortion (subsidies)
 - Endorse and provide mandate for a national level organization to coordinate market development. That may include:
 - Performance testing of stoves
 - Adoption targets & financing mandates
 - Remove customs from high efficiency imported ICS not currently manufactured in country

Additional Intervention Options

- Work with the Government to increase their endorsement and support ICS market development, establishment of standards mandate and support for any national level ICS campaign
- Investigate potential funding opportunities through the Government's Climate Change fund



Government endorsement and policy support is crucial to any large scale development funding and national cookstove campaign

- Intervention -

Work with Government to increase their endorsement and support for the cookstove sector

Context:
Government involvement in the cookstove sector to date has been limited. Several departments have shown interest but there is no clear ownership as yet.

- Actions -

1. Determine Government Champion

Identify and partner with the lead ministry to endorse cookstoves and coordinate any Government involvement.

2. Promote Standards Mandate

Encourage government to provide a mandate for a standards body to monitor the ICS sector.

3. Gain Support for National Campaign

Win endorsement for a National ICS Campaign and ask key players to join steering committee

- Rationale -

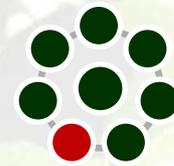
The World Bank identified the Local Government Division's support for the 'Total Sanitation Campaign' as a critical part of its success. Helping to increase sanitation coverage from 29% in 2003 to 88% in 2008¹

BCSIR currently monitors stove performance but does not have the authority to address what it considers sub-standard stove. No organisation has the necessary authority to enforce standards across the sector

The Government 's well planned advocacy support for the 'Total Sanitation Campaign' created strong motivation for local communities to participate and achieve results. E.g. awards for unions that achieved 100% sanitation coverage

Note 1: Refer to appendix for detailed case study of 'Total Sanitation Campaign'

Policy & Regulation



Intervention Options

The government's Climate Change Fund presents an ideal opportunity for the right cookstove programme to access funds

- Intervention -

Contribute Climate Change funds to the sector

- Actions -

1. Apply to Climate Change Fund

Work with Government and main players to assess the feasibility of accessing the Climate Change Fund

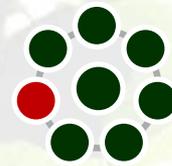
- Rationale -

The 'Total Sanitation Campaign' leveraged government funds for humanitarian and ecological efforts to reach the population & regions where the market was unable to¹

Context:

The government has funds available for Climate Change programmes that include mitigation and encourage actions such as conservation of fuelwood.

Note 1: Refer to appendix for detailed case study of 'Total Sanitation Campaign'



Many sector players are established and mature organizations but to scale up effectively, sharing of resources, approaches and best practices should become more widespread

Objective and Outcomes

Strengthen the ability of market players to effectively manufacture, sell and distribute stoves at scale. Improve their access to training, knowledge and tools to help build capacity within the sector.

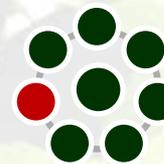
Existing Intervention Options

- Link actors from the sector together to foster B2B sales, collective political lobbying and peer-to-peer mentoring
- Help improve their access to entrepreneurship education and low cost/free business advisory, accounting and legal services

Additional Intervention Options

- Establish and support capacity building across the sector. This should occur across 2 levels:
 - Firstly, focused on large NGOs implementing national programmes
 - Secondly, addressing community engagement, M&E, gender and carbon finance

Business Development Support



Intervention Options

Coordination across the sector will help improve the allocation of resources and return on investment for areas such as community engagement, M&E, gender and carbon finance

- Intervention -

Establish and support capacity building across the sector

Context:
Sector players currently communicate but they lack formal coordination leading to duplication of effort.

- Actions -

1. Set up Sector Coordination Group

Form a forum where sector players can coordinate activities and establish common development needs

2. Identify & Share Best Practices

Identify & share the sector best practice around common areas such as community engagement and M&E

3. Share Gender Best Practice

Share both local and international best practice with industry players to highlight the benefits of involving women

4. Share Carbon Finance Best Practice

Convene international carbon finance experts to share best practices and share local lessons learned

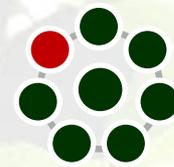
- Rationale -

Sharing & communication exists today but with new players entering the market, there is no clear forum to coordinate activities, share resources & identify common development needs

The World Bank attributed the advocacy of VERC pilot study, a community-led sanitation approach, across several key actors as a crucial factor to the success of the 'Total Sanitation Campaign'. This collaborative approach may be beneficial to the ICS sector

Several organisations have highlighted the benefits of involving women at key points in the industry, such as sales & marketing. Sharing best practice could help raise awareness around this topic

Share global program success for carbon finance, for example 'Gyapa Efficient Cookstove Project' in Ghana is largest GS approved cookstove program in the world



Reliable access to finance could help scale up the industry, kick start the market and ease the initial capital burden typically associated with cookstove programmes

Objective and Outcomes

Grant enterprises adequate access to funding needed to create a thriving cookstoves market in Bangladesh

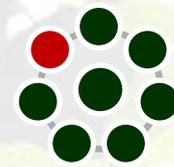
Existing Intervention Options

- Grant enterprises access to debit, equity, letters of credit, and overdraft facilities to manage capital requirements
 - Local or commercial banks or non-banking financial institutions
 - A large development finance institution, multi or bi-lateral agency
 - Impact investing platform and/or angel investing network

Additional Intervention Options

- Develop or identify a private organization to kick-start and fund large scale market development

Access to Finance



Much of the sector's current funding comes from upfront Carbon Finance investment & development funding. A low cost, reliable finance provider would help mitigate this risk & provide a more sustainable solution

- Intervention -

Setup or identify an independent financing organization to kick-start the sector

Context:
At present, the sector's financing is constrained and reliant on carbon finance. Smaller start ups also struggle to get the affordable seed funding they need to establish themselves.

- Actions -

1. Assess Market Needs for Financing

Identify the business needs for financing across the cookstove sector

2. Develop the financing model(s)

Developing appropriate financing models for both SMEs and larger NGOs

3. Identify the Financing Body/Bodies

Identify a body/bodies that can satisfy industry needs and grow the market

4. Pilot, Refine & Roll Out

Roll out the financing operation in a careful, step-by-step approach

- Rationale -

IDCOL's financing of Solar Home Systems¹ was a catalyst that helped push the market from the thousands to over 1 million homes. ICS programmes may benefit from the same secure access to finance as SHS & biogas

Many SME GIZ partners would benefit from start up capital but commercial loans are currently unaffordable with interest >30%. The model for this could be very different to the large scale programme that IDCOL operates

IDCOL's focus on large scale infrastructure development suggests another organisation would have to play this role of providing the financing necessary to scale the sector

To ensure that financing does not distort the market, a careful pilot approach to roll out is recommended initially. This would follow the theme of building an evidence base, refining the approach then expanding from there

Note 1: Refer to appendix for detailed case study of IDCOL

Executive Summary

Situation

Intervention Options

Roadmap

Appendix

Intervention Options Roadmap Overview

If these interventions were addressed holistically, a broad 3 stage approach would be recommended:

Stage 1: Lay the Foundations

Key Interventions:

- Quantify & qualify cookstove demand and identify market barriers
- Establish key customer segments and profiles
- Set up technical partnerships, build local capacity
- Support Chulha development & introduce new product concepts
- Pilot awareness campaigns to measure marketing effectiveness

Potential Outcomes:

- Greater understanding of consumer behavior & needs
- Compelling body of evidence (research & practical) that proves the potential for growth
- Strong local technical capacity, improved Chulha model & potentially new products in pipeline

Stage 2: Build the Coalition

Key Interventions:

- Work with Government to implement policy & promote further market dev.
- Establish capacity building for both NGOs and SMEs
- Form technical committee to establish ICS standards & accredit labs
- Grant enterprises access to finance
- Build a 'social coalition for cookstoves' & lead towards a national campaign

Potential Outcomes:

- Established technical standards
- New products brought to market
- Improved capacity & access to finance for both NGOs & SMEs
- Clear government ICS policy & broad support for national awareness campaign

Stage 3: Grow the Market

Key Interventions:

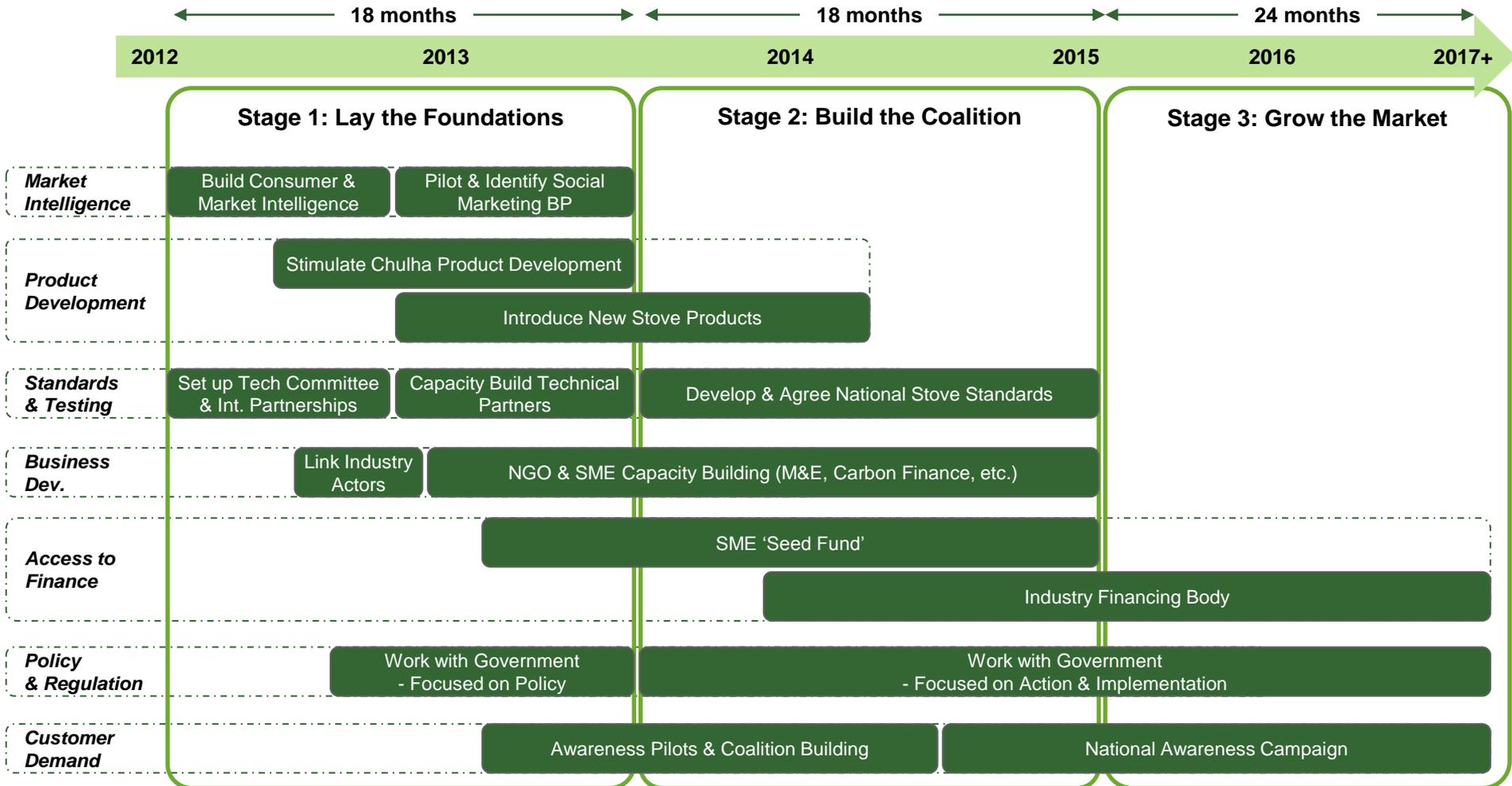
- Establish capacity building for both NGOs and SMEs (*Continued*)
- Develop or identify body to kick-start large scale market development
- Build a 'social coalition for cookstoves' & lead towards a national campaign (*Continued*)

Potential Outcomes:

- Large body providing finance to support market development
- Active national cookstove campaign with numerous participating partners

Illustrative Intervention Roadmap

Building on this roadmap, an illustrative breakdown & sequence of interventions is shown below:



Note: This roadmap only contains the recommendations from this Market Assessment not the USAID report.

Executive Summary

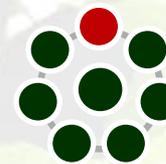
Situation

Intervention Options

Roadmap

Appendix

Market Intelligence – BRAC Case Study



Appendix

‘Promotion of Improved Cookstove in Rural Bangladesh’ used quantitative analysis to identify common misconceptions within the cookstove sector

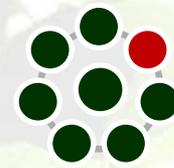
Methodology

- Conducted study in 58 randomly selected villages in the Jamalpur sadar and Hatia upzilas
- In total, surveyed 3,080 households
- 50 randomly selected households and 9 households of opinion leaders selected per village
- Offered two types of ICS
 1. Portable single pot
 2. Fixed double pot w/ chimney
- Intervention conditions included the following tests across the types of ICS:
 1. Full price vs. subsidized price
 2. Households told whether opinion leaders accepted stoves or not
 3. Men’s choice to purchase vs. Women’s choice to purchase

Insights

1. Households were usually aware of the effects of IAP but not so much so of the existence of ICS
2. Consumer perception was that ICS are better than traditional stoves at producing better tasting food, less smoke emissions, less cooking time, less fuel collection time, etc.
3. People chose portable ICS since they believed it would reduce fuel consumption while fixed with chimney pot would reduce pollution
4. Financial constraints was stated reason for choosing not to adopt ICS
5. Actual adoption of either type of ICS had no statistically significant differences in choices of men and women on actual adoption
6. Opinion leaders appeared to have a stronger impact on household decision when they decided against ICS as opposed to when they decided in favour

Consumer Education –Total Sanitation Campaign Case Study



The Total Sanitation Campaign was hugely successful in increasing sanitation coverage from 29% in 2003 to 88% in 2008

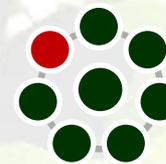
Background

- Bangladesh faced serious public health issues in the sanitation sector in the late 90s with over 125,000 children under 5 dying every year due to lack of facilities
- Coverage in 2003 was only 29% with a 1% annual growth rate. At that rate, it would've taken 60 years for full coverage
- Nationwide surveys showed that lack of money was the main reason for not installing a latrine
- Faced with these challenges & previous failures, the government committed to an ambitious 6 year target of eradication of open defecation by 2010
- Commitment from donors, NGOs & different ministries led to more than 90 million people gaining access, in less than 5 years, increasing coverage to over 88%

Insights

1. The key difference from previous failures was that this initiative focused on promoting an open defecation-free environment rather than on provision of latrines
2. A successful VERC community-led pilot project was eventually (after 1 year of advocacy) adopted across the sector to great effect
3. Over time, the government laid greater emphasis on the adoption of national policy and role creation for the local governments & NGOs
4. Commitment & ownership by the government was critical to the campaign's success – which was achieved by well-planned advocacy work
5. Empowering the local government allows for greater community-level participation and accountability for local adoption levels
6. Moving from a top down to an integrated participatory approach was hugely successful

Access to Finance – IDCOL Case Study



IDCOL has successfully kick-started the solar homes systems and biogas programmes by providing programme financing and governing of standards for partner organizations in Bangladesh

Background

- Established in 1997 by the government of Bangladesh as a non-bank financial institution
- Plays a major role in bridging the financing gap for medium and large-scale infrastructure and renewable energy projects in Bangladesh
- Market leader in private sector energy and infrastructure financing
- Responsible for maintaining standards and competence across the renewable energy sector, refinancing micro-credit provided by NGO's/ MFI's and channelling grants for rural energy development
- IDCOL brings together Bi-lateral & Multilateral agencies, private investors and implementing partner organization to support renewable energy projects

Insights

1. IDCOL has successfully kick-started the SHS programme with over 1 Million SHS's distributed by 29 different participating organizations across the country
2. A key difference in the successful monitoring & evaluation processes of SHS and biogas programmes is that IDCOL as a financing body governs the standards and competence of the programmes
3. IDCOL successful business model, commitment and support of the government has allowed IDCOL to access and distribute funds successfully from bi-lateral and multilateral organizations to the implementers in Bangladesh
4. IDCOL's current financing structure does not provide an economic benefit to finance cookstove projects given the smaller scale nature of the programs