

POINTS OF VIEW



Reaz Ahmad, The Daily Star
I would like to congratulate IDCOL on behalf of The Daily Star that they decided to partner with us to arrange such a forum on such an important and crucial issue. My mother came from a village in a rural neighborhood where the traditional cook stove would generate smoke. It may be difficult for residents of Dhaka to imagine the situation of rural people who rely on traditional cook stoves. 100% households can't be covered in gas supply system. The question is how to ensure improved cook stoves for all the people.



Dr. Salehuddin Ahmed, Adjunct Faculty, IUB & Moderator of the Session
IDCOL has commendably succeeded in spreading 1.3million improved cook stoves (ICS) with the support of its well-known partner organizations. Today's discussion would revolve around four topics: Program Structure under ICS program, Research & Development for Product Development, Major Results achieved under Phase I, and IDCOL's approach in next five years. IDCOL is a government institution with social responsibilities. As most development projects benefit upper 50% of population, it is necessary to consider how to benefit the bottom 50%, especially the ultra-poor with initiatives like improved cookstoves. Another question is how to utilize the next generation technologies in cookstoves. Bangladesh might also consider exporting the ICS in the coming years.



Mahmood Malik, ED & CEO, IDCOL
IDCOL is a government-owned institution that works in areas like infrastructure, energy efficiency and renewable energy. As a development-oriented financial institution, IDCOL seeks positive social and environmental impact and conducts activities like capacity building, awareness-raising. The ICS program is intended to generate positive social impact. IDCOL is implementing the program with World Bank support. While the promotion of improved cookstoves has been there for more than two decades, IDCOL's initiative has sought to significantly improve the thermal efficiency level of cookstoves. In 2014-15, IDCOL worked with the Chemical Engineering Department of Bangladesh University of Engineering and Technology (BUET) for research and development (R&D) of cleaner cookstoves that are affordable to the rural poor. The R&D led to development and adoption of tier III ICS. Stakeholder feedback is now necessary to improve the effectiveness of the program.

KEYNOTE PRESENTATION



Md. Enamul Karim Pavel, Head of Renewable Energy, IDCOL
Around 89% of households in our country use biomass fuels in traditional cookstoves (TCS). In these cookstoves, the biomass is not burnt efficiently and causes indoor air pollution. According to a BCSIR study, the traditional cookstoves have thermal efficiency of 5-15% that is below tier-I Cookstoves. The pollution contributes to 85,000 premature deaths per year, especially affecting women and children. The objectives of the IDCOL program are to create awareness about benefits of ICS, reduce indoor air pollution, reduce use of cooking fuel, and establish strong capacity base for achieving 100% ICS coverage by 2030 as per Bangladesh Country Action Plan for Clean Cookstoves. The World Bank-supported initiative was inaugurated in 2013 by the Honorable Prime Minister. Target for the first phase was installation of 1million ICS by 2018, but it was achieved as early as in January 2017. The target for next phase is to install 4 million ICS during 2017 to 2021. Currently 290 out of 490 upazillas are covered. 66 partner organizations (POs) - selected through a competitive process - promote and sell the ICS to households. A technical standards committee regulates the kind of technical specification and approves CSs for installation. IDCOL maintains a web-based central database and its own monitoring team inspects the ICS in sample household units. There are five categories of cookstoves: tier 0 (below 15% energy efficiency), tier I (15-25%), tier 2 (25-35%), tier 3 (35%+) and tier 4 (45%+). IDCOL tested the cookstoves independently and found the efficiency level is 35%+. The tier 1 cookstoves have been discontinued since July 2016. There is also a call center for customer support. The program saves 1.68m ton of fuel and reduces CO2 emission 2.82m ton per year.

PRESENTATION 1 Stove development under R&D contract between IDCOL & BUET



Md. Mominur Rahman, Associate Professor, Department of Chemical Engineering, BUET
Under the agreement between IDCOL and BUET, six models have been developed to raise baseline thermal efficiency to at least 30% that are cost-effective for lower income households. BUET experts developed and tested the cookstoves. A person could install two traditional cookstoves a day, while s/he could install 30 to 50 improved 10-9 inch double pot chimney stoves and the 8 inch portable stoves developed by BUET. Thermal performance improved manifold. Carbon monoxide (CO) reduction is 85 to 99%. PM 10 reduced by 88-97%. BUET conducted controlled testing found that fuel consumption was reduced by 48-72%.

PRESENTATION 2 Indoor air pollution study under IDCOL ICS programme



Dr. Bilkis Ara Begum, Head, Chemistry Division, Bangladesh Atomic Energy Commission
While pollution has come down in the transport sector with the introduction of CNG, certain sources of pollution such as brick kiln, rice parboiling mill, and indoor air pollution remained. The question is how improved cookstoves could reduce air pollution. Pollution includes carbon monoxide as well as particulate matter, such as PM 10 and black carbon that stay in air from few hours to days and we may inhale it. We conducted field testing in rural areas and found that ICS could reduce PM10 by 20%, PM 2.5 is 20%, black carbon by 30% and CO by 90%. The BUET study was a controlled study in campus using definite fuel. In the village where we did the test, the houses are congested and gas may spread from one house to others. In our findings, reduction in emission other than for carbon monoxide was not as good as found in the BUET study.



Dr. Ainun Nishat, Professor Emeritus, Centre for Climate Change and Environmental Research, BRAC University
BCSIR began working on ICS since 1976. The question is how the IDCOL program can reach the target of 100% coverage by 2030 encompassing 32 million households. In this regard, the main question is why the ICS are not adopted by households. Are the ICS sustainable and repairable? People are risk-averse and clear demonstration of benefits and sustainability is needed for adoption. Local practices have to be considered, e.g. people cook in their yards in the winter. People cook with varied levels of heat, hence heat should be adjustable. Chimneys are easily damaged. These have to be taken into account by designers. A study is needed on experience of customers. We also need to find out reasons of non-adoption based on social and anthropological studies.

IDCOL has become National Implementing Entity (NIE) and the vehicle for climate change mitigation projects, while PKSF is NIE for adaptation. GOB has approved USD 40 million from Green Climate Fund. The ICS program should not be limited to households, but also extended to cover hotels, following the example of India. We should broaden horizon from only biomass and lakri in household cookstoves and include solar and other technologies.



Prof. Dr. Dil Afroza Begum, Chairman, Technical Committee, ICS Program IDCOL and Member, University Grants Commission of Bangladesh

Our research has improved the cookstoves models and grew efficiency by 35%. Bangladesh is an energy-hungry country which is heavily reliant on gas. Petrobangla's current data shows that the potential for on-shore gas discovery is low. So off-shore gas exploration is needed. The energy crisis is growing. LNG price is too high, while LPG has high sulfur content. The energy needs of rural people have to be addressed. 65% of renewable energy from agricultural residue in the form of loose fuel like rice husk, straw, leaves, etc. Future research should focus on using modified fuel, not loose fuels. Briquetting is needed. The current model of pressurized briquetting is not affordable for rural people. My research focuses on creating hand-pressed briquetting. In the future, with increasing reliance on mixed and imported energy, electricity prices will go up. We need to supply energy to rural people with increased efficiency. The national industrial sector, such as the RMG sector, are reliant on low-cost energy. Energy efficiency needs to be strengthened for cost reduction and supply of power to the rural areas. Media should be used more effectively for creating awareness among general people. The BTV and the print media for example should showcase the benefits of using ICS.



Dr. A M Hasan Rashid Khan, Former Director, IFRD, BCSIR
I have been working on clean cookstoves since 1982 as part of the BCSIR project. The challenge of efficiency and affordability were difficult. The solution to the difficulty of developing affordable clean

cookstoves lied in learning from the local women adept in making traditional cookstoves. Bangladesh Television (BTV) broadcast some of the key achievements of improved cookstoves, which at that time generated rapid growth in demand. The bottom line is that product development and marketing is an iterative process building upon user feedback. The ICS model should be such that poor people can build and repair it themselves.



Dr. SM Nasif Shams, Assistant Professor, Institute of Energy, DU
BUET's study on ICS performance was done in controlled environment. I did kitchen performance test at the field level. The study found that people do not know how to repair ICS and when it breaks down, it becomes unusable. Within one year, ICS performance becomes worse than that of traditional cookstoves. Rather than chasing numerical targets, sustainability and quality of the implementation should be stressed. People who use wood or leaves don't care much about fuel saving. Maintenance is very important. The chimney, insulation materials, and other basic components of ICS are not easily available. When these break down, people

revert to traditional cookstoves.

Waste material could be used for hand-operated briquettes. GIZ engages physically disabled people for producing briquettes. IDCOL should promote research on utilization of waste such as saw dust. The number of premature deaths due to indoor air pollution must be ascertained, i.e. whether it is 85,000, 78,000 or 122,000.



Dr. M. Khalequzzaman, Senior Advisor, GIZ

The main goal of GIZ is to install ICS in every house and ensure continued use of it. GIZ gave 2.5m ICS and IDCOL installed 1.3m. One missing element in the current scene is coordination and harmonization among different actors working on the issue.



Salima Jahan, Member (Energy Efficiency & Conversion), SREDA

The work of SREDA focuses on renewable energy, energy efficiency and energy conservation. Under SDG-7 and Country Action Plan for Clean Cookstoves, the target is to install 100% clean cookstoves replacing traditional ones.

SREDA has taken the step to study reasons for non-adoption. SREDA is also considering issues related to rice parboiling system, waste heat recovery, commercial utilization and so on. Hand-pressed briquettes don't have high demand. Improved cooking solutions include both cleaner cookstoves and cleaner fuel. Pellets and briquettes have 5/6 varieties. The Household Energy Platform coordinates all the clean cookstoves initiatives. ICS should be spread in Chittagong Hill Tracts and other remote areas. Rahimafrooz has developed Tier-4 pellet-based Shurjo Chula. IDCOL should learn from and adopt the new ideas and technologies.



Asna Towfiq, Country Manager, GACC

Global Alliance for Clean Cookstoves (GACC) is an initiative of UN of which Bangladesh is one of the eight focus countries. The global target is to cover 100m households by 2020. Clean cooking is directly related to Sustainable Development Goals (SDGs). Clean cookstoves support ten SDGs. Bangladesh is committed to the goals related to ICS. Non-adoption of ICS is a global problem. Four billion people use traditional cookstoves and over 3million deaths occur around the world due to the pollution caused by these cookstoves. There is a huge investment gap in cooking energy efficiency, requiring USD 4 billion. So far only around USD 30 million investment is available. Bangladesh has the strength of having no financing deficit. But we have to be careful about using the financing properly. Regarding lack of adoption at household and reversion to traditional cookstoves, it needs to be understood that cooking involves complex behavior and behavioral change needs to be seen from multiple angles. In research and development, technology is moving very fast. Not only thermal efficiency of stoves, but overall emissions level and technology need to be considered. There are many private sector actors. The clean cookstoves sector is dominated by donor agency. Time has come to facilitate more private sector role. The grants and subsidies should be limited and transition should be made into low-cost financing for private sector. We met with SMC for behavioral change campaign. They said people are getting used to after sales service for electrical appliances. They would expect after sales service for clean cookstoves as well. The Household Energy Platform seeks to bring together ministries and actors for better coordination and harmonized advocacy on the issue.



Munawar Misbah Moin, Managing Director, Rahimafrooz Renewable Energy Limited

From a private sector perspective, the main issue is the energy delivery model. As a partner organization of IDCOL, the success of Rahimafrooz in this sector is enhancing access to energy. From a private sector perspective, the phase I of the IDCOL program was a significant learning opportunity for Rahimafrooz. IDCOL enlightened us about how energy efficiency could improve health, nutrition, etc. The next question is how to move from piloting to commercial stage. From loose fuel to pellet to no-fuel solar induction and so on. Reaching 100% households by 2030 is feasible with everyone's cooperation. That needs (1) Consistent technology innovation, (2) evolution of the business model, and (3) last-mile delivery business model, and (4) access to finance at business level and for consumers. The basket of energy delivery is expanding. For the private sector, it is a new area and the goal is to create consumer satisfaction. Solar Home Systems are widely adopted as its benefits are clear, and the same should be the case for ICS.



Sayeda Masuma Khanam, Deputy Secretary, ERD, World Bank Wing-VII

Women are the key agents of natural resource management. The IDCOL program focuses on western zone of Bangladesh. The haor region should be reached, where there is no connectivity. Partner organization selection is done based on eligibility. It should be need-based. Stakeholders and end-users are not well-represented in IDCOL meetings. The customer group should not be limited to only privileged people.

IDCOL should specifically identify and target women users, including female-headed house-

holds. Women are in decision-making in natural resource management: fuel collection, food preparation, and so on. End-users should be seen not as beneficiaries but as agents and consumers. Yard meeting or *Uthan-Baithak* might be a useful outreach tool. Women focal points should be engaged to ensure maintenance and repair. The suffering of mothers should be highlighted in promoting the ICS.

The numerous local towns, lacking gas connection, should be targeted. IDCOL should organize two meetings per year with end-users and women. R&D should not focus only on product development, but also on publishing the impact and theoretical research.



Mahfuza Khanam, Director IFRD, BCSIR

People don't want to repair ICS themselves. Poor people who collect fuel don't care about saving fuel, as opposed to middle class consumers who buy fuel.



Shaikh A Halim, ED, VERC

Planning with participation of the community is a critical requirement. We hold sessions and use various media effectively to highlight health benefits from ICS. People also ask for training that they could make ICS themselves.



Md. Khaled Hasan, Deputy Director, Department of Environment

Apart from successes, the failures of the programme should be identified. Free and subsidized products are not sustainable. An ICS would last a few years. IDCOL should consider life time, maintenance, back-to-back and after-sales service, and so on. IDCOL should conduct inspection and monitoring based on random sampling. Remote areas like haor, hilly regions, and so on should be covered. I think quality and sustainability of implementation is more important than meeting the deadline of 2030 as such.



Dr. M. Khaliquzzaman, Consultant, Environment Team, The World Bank

Social mobilization is the key to the current program. The purpose is to highlight multidimensional benefits of ICS: reduction of pollution, health benefits, fuel efficiency, forest protection, and so on. The project has a detailed social mobilization plan with support from the World Bank. Pellets are technically feasible but not economically affordable. Five pillars of IDCOL program are: cluster-based approach: meeting demand with supply chain development, resupply in cluster households, creating choices for household through offering variety of ICS models, quality assurance and certification, and zero subsidy to avoid market distortion. The main pillar is social mobilization.



Arun Karmaker, Senior Correspondent, ProthomAlo

The importance of ICS is clear. As poor people using biomass don't care much about fuel saving the health issue should be highlighted much more. The financial saving comes mainly from health benefits rather than fuel saving. Indoor air pollution also takes place in towns. Coordinated efforts are needed by Ministry of Health, Ministry of Environment and Forests, IDCOL, and so on.

Dr. Salehuddin Ahmed

The takeaways from the discussion include: developing the program itself, social mobilization, future strategy, research on acceptance, focus on quality rather than quantity, after-sales service, highlighting health benefits, inter-agency coordination, and clear understanding of the target group. Behavioral change takes time.

Local forums and different media including print and electronic media should be properly utilized. Key experts and practitioners with decades of experience could form a select group for strategic brainstorming to come up with a concrete action plan.



SM Monirul Islam, Deputy CEO, IDCOL

The goal of the roundtable discussion was to get feedbacks from all the stakeholders and experts about the current program and future plan. Many including BCSIR have prepared the field for IDCOL. For

Solar home System, at the beginning we had demonstrate production of electricity to end-users. For cookstoves, market players were already there. A big push with cooperation of all stakeholders is needed. In SHS program, there was a serious coordination problem. The same development partner might be seen simultaneously supporting SHS and power grid. Private sector participation is based on commercialization and coordination gap threatens private sector equity in the sector. Monitoring of the ICS program is done by IDCOL's own personnel. Out of 1.3m ICS, IDCOL team has physically verified 300,000.

Regarding geographic coverage, in the pilot phase, IDCOL allowed partner organizations the choice to see success based on cluster-based approach. As the phase II rolls out, IDCOL will get back to the stakeholders to demonstrate overcoming of the limitations of the program. We would like to thank The Daily Star for the opportunity to have a meeting with all relevant stakeholders.