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SYSTEMS THINKING FOR IMPROVED COOKSTOVE DISSEMINATION

Dr Muhammad Tayyab Safdar

Affiliated Lecturer, Centre of Development Studies, University of Cambridge and Post-Doctoral Researcher, Smart Villages Initiative

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SOLID FUEL DEPENDENCE ACROSS DIFFERENT REGIONS

Region	Rural Population (%)		Urban Population (%)	
	Solid Fuel	Modern Fuel	Solid Fuel	Modern Fuel
Sub Saharan Africa (SSA)	95	5	62	38
South Asia	88	12	27	73
East Asia	76	24	44	56
Southeast Asia	77	23	28	72
Latin America & Caribbean	58	42	8	92

Source: ESMAP (2015)

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ENERGY ACCESS AND THE CHALLENGE IN RURAL AREAS

- More than 3 billion people use solid fuels to meet their basic energy needs (WHO)
- Of these, 2.85 billion people use solid fuels for cooking
- Less than one-third of solid fuel consumers use improved cookstoves (ICS) (ESMAP, 2015)
- A majority of ICS are basic in nature and have limited health and environmental benefits

IMPACT OF SOLID FUEL BASED COOKSTOVES

- The continued use of solid cooking fuels and harmful ‘modern’ fuels like kerosene in inefficient and polluting cookstoves remains a major challenge facing public health
- The World Health Organisation estimates that 4.3 million premature deaths and 110 million disability adjusted life-years (DALYs) can be attributed to high levels of Household Air Pollution (HAP) produced by the combustion of solid fuels

CHOICE OF COOKSTOVES AND FUEL HAVE MULTIPLE IMPLICATIONS FOR THE POOR

- There are many economic, social, environmental, health and social aspects of the type of cookstoves and cooking fuels that are dominant within a society
- Firewood provides an example of these linkages:
  - Despite an overwhelmingly negative impact in terms of energy poverty, the wood value chain employs (directly or indirectly) a significant number of poor people in rural and urban areas
  - Across Asia and in many parts of Sub Saharan Africa, formal and informal charcoal and firewood markets are important sources of employment (UNDP and ESMAP)

IMPROVED COOKSTOVES DISSEMINATION PROGRAMMES

- Estimates suggest that less than one-third households using solid fuels for cooking utilise improved cookstoves
- Two-thirds of such households are based in China while around 20% are based in Southeast Asia
- One of the most successful improved cookstove dissemination programmes was implemented in China where between 1982-1992, 130 million cookstoves (Shrimali et al., 2011)
- The development of Rural Energy Companies has also been one of the hallmarks of the CNISP (Smith et al., 1993)

IMPROVED COOKSTOVES DISSEMINATION PROGRAMMES

- A large number of improved cookstove (ICS) dissemination programmes continue to focus on the issue of cookstoves and solid fuel use in primarily technical terms
- Lessons from the CNISP show that it is necessary to work in the field with local consumers to adjust stove design according to local conditions
  - Evidence from a project implemented in the Indawgyi Lake area of Kachin State, Myanmar suggests that the sustained use and adoption of particular cookstoves is driven by socio-cultural factors apart from the technical aspects of the cookstove and fuel used

SYSTEMS THINKING AND IMPROVED COOKSTOVES DISSEMINATION

- Systems thinking can help analyse the issue of dissemination and sustained use/adoption of improved cookstoves more comprehensively
- It will help institutions go beyond a narrow focus on price points in the case of market based dissemination projects and on simply distributing cookstoves as is the case in many humanitarian interventions
- Cookstoves dissemination projects need to take on-board heterogeneity that exists in the organisation of cooking systems in different local contexts

SYSTEMS THINKING AND IMPROVED COOKSTOVES DISSEMINATION

- Components of such a system include:
  - Better understanding of the local cooking habits;
  - Understanding the multiple functions performed by cookstoves for bottom-of-the pyramid consumers including providing lighting services and as a mechanism to repel insects; and
  - Household Air Pollution (HAP) and how location of kitchens/cooking areas within rural households has an impact on pollution and impacts health of vulnerable sections of the population especially women and children
    - In the absence of an analysis of household design it is unlikely that just providing an improved cookstove will reduce HAP

SYSTEMS THINKING AND IMPROVED COOKSTOVES DISSEMINATION

- Adoption of improved cookstoves, at the household level is not purely a technical issue
- There is a need to incorporate dynamic learning processes within cookstoves dissemination programmes
- Participatory methods aimed at working with local stakeholders is likely to be longer but evidence suggests that such projects are likely to be more sustainable and have a positive impact on adoption rates

CONCLUSION

- Benefits of improved cookstoves projects have to be clearly articulated and need to meet the cooking requirements of people and a systems thinking will help in doing so
- These benefits have to be in-sync with an understanding of attributes that people value:
  - Tools like choice modelling can be used at the preliminary project design stage to understand the variables that people value most
- Using local champions and involvement of women at an early stage in the design process is likely to contribute to the success of improved cookstoves programmes

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Thank you for your attention

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