

# Consensus Reached by Participants at the International Workshop on Rural Energy, Stoves, and Indoor Air Quality in China\*

Beijing, January 17, 2005

This workshop brought together representatives and experts from universities, research institutes, non-government organizations, provincial and national government agencies, rural energy industries, and international organizations from China, South Asia, Europe, North America, and Africa to discuss the results of an independent study and evaluation of the Chinese National Improved Stove Program (NISP) conducted by the University of California, Tsinghua University, Renmin University, and the Centers for Disease Control of China. The Ministry of Agriculture and its affiliated agencies as well non-governmental organizations briefed the participants of the workshop on the achievements in extending improved stoves and other advanced rural energy technologies in China, and demonstrated on the spot a number of high-efficiency stoves with crop stalks and wood residues as fuel. Participants from India, Nepal, Kenya, Tanzania and the Nature Conservancy of the United States briefed the workshop respectively on relevant issues of their own.

The workshop reached consensus on the following points and proposed recommendations to the relevant agencies of China.

- As with other developing countries, most of the Chinese rural population relied on biomass fuels (wood, crop residues, and animal dung) for their household energy about 20 years ago.
- Such fuels are traditionally used in inefficient stoves that waste resources and produce substantial amounts of indoor air pollution.
- NISP, which operated from the 1980s through the 1990s, was the largest and most successful improved stove program ever implemented anywhere in the world. Similar successful programs were also initiated at the provincial and local levels in many parts of the country.
- Nearly a billion rural Chinese citizens have benefited from improved efficiency and reduced indoor air pollution from the improved stoves promoted by these programs.

*Recommendation 1* The successful undertaking initiated and implemented by the Ministry of Agriculture and its Rural Energy Offices should be widely acknowledged and highly praised.

---

\* Contacts for further information are listed at the end.

- Biomedical research in recent years in China and elsewhere, however, indicates that indoor pollution caused by incomplete burning of solid fuels – both biomass and coal – is still an important factor threatening the health of rural residents.
- Thus, although the high pollution levels caused by traditional biomass stoves seem to have decreased, remaining pollution from coal and biomass stoves needs to be brought down further to reach health standards, including the new national indoor air pollution standard.
- Since solid fuel will continue to dominate energy supplies to rural households for many years, improving the way solid fuels are used is a key part of rural energy strategy, in addition to widening access to and use of higher-quality forms of energy.

Recommendation 2 Participants of the workshop noted that there were many new technologies developed largely by the private sector in China, offering possibilities for using biomass fuels in a much cleaner and more efficient way. Such advanced biomass stove technologies should be encouraged, and new policies should be formulated to deploy such technologies on a larger scale.

Recommendation 3 As China is different than at the initial stage of NISP in the early 1980s, there is a need now to find ways to promote sustainable commercialization of the stoves in the private sector rather than relying on direct intervention by the government, except in the poorest areas. The China Association of Rural Energy Industry (CAREI) can play an important role in this effort.

Recommendation 4 As important players, the central and local governments certainly need to continue their efforts in many areas, including the development and enforcement of energy efficiency and environmental standards, protection of intellectual property of advanced technologies, public education regarding health hazards, training of technicians, and support for focused health and environmental studies.

- Unlike other developing countries, a significant and rising portion of Chinese rural households use coal for cooking and/or heating.
- Many households in China use coal stoves without chimneys, which cause even more serious indoor air pollution than the current generation of stoves that use biomass as fuel.

Recommendation 5 From the viewpoint of health concern, it is necessary to speed up the development and dissemination of improved coal stoves with chimneys if coal is to be used as fuel for rural communities for a prolonged period.

- In China, poor-quality local coal generates severe pollution during burning, and such coal is not suitable for use in households, even with advanced stoves.

Recommendation 6 As time goes on, and expectations of rural residents for environmental and health protection continue to rise, there will be a need to provide high-quality coal to all users, which can be efficiently and cleanly burnt in household stoves.

- An astonishing finding reported to the workshop was that tens of thousands of households in dozens of poverty-stricken counties in China still rely on local coals that are heavily contaminated with toxic elements. Such elements as fluorine and arsenic pose serious health hazards, including inducing cancer, to local populations.
- The participants were pleased to learn that the Ministry of Health is making efforts to introduce improved stoves to the above-mentioned areas. Meanwhile participants were concerned that the use of such poor-quality coal is expanding. Furthermore, the public health sector has not implemented timely and forceful intervention measures in line with the expansion of pollution.

Recommendation 7 There is an urgent need to address the serious problems created by use of poisonous coals in the country through an inter-ministry effort of the Chinese Government:

- in the short term by immediately providing improved stoves with chimneys, and
- as soon as possible banning sale and use of coal from the most poisonous coal deposits and providing access to alternative clean fuels to the local populations.
- The international workshop participants noted the impressive signs of modern development in Beijing and elsewhere in the country, with the most modern hotels, airports, roads, factories, universities, and other infrastructure comparable to those of highly developed countries.
- The participants were concerned, however, that China is not fully able to be proud of its great modern advances until it finds ways to bring its poor rural population into the modern world as well.

Recommendation 8 Taking advantage of significant progress made by NISP and other past success, China should re-emphasize the importance of modern energy supplies, especially gas fuels and electricity, for all households as part of its laudable efforts to bring the benefits of economic development to all of its people.

- The participants noted the great advances that China has made in developing and deploying improved rural energy systems in the country, and the potential China thus has to help other countries trying to assist their poor rural populations with sustainable, clean, and efficient energy systems.

Recommendation 9 The participants of the workshop agreed that China should work collaboratively with other developing countries to assist them in achieving similar successes, including providing an ongoing compendium of new biomass and coal stove technologies and working to share those technologies and lessons for organizing development and dissemination programs. The participants also expressed their appreciation to the Department of Science and Education of the Ministry of Agriculture for its successful organization of a workshop that provided all participants with an opportunity for exchange and learning.

Recommendation 10 The participants expressed a strong vote of thanks to the Shell Foundation for supporting the workshop and for promoting clean household energy solutions for the world's poor.

For further information contact:

- Madam Deng, Keyun (China Association of Rural Energy Industry)  
<dkk@public3.bta.net.cn>
- Professor Smith, Kirk R. (University of California Berkeley)  
<krksmith@berkeley.edu>
- Professor Zhang, Xiliang (Tsinghua University)  
<xiliang@dns.inet.tsinghua.edu.cn>