

Elements of a National Clean Cooking Strategy for Myanmar

Energy Briefing Paper

There is strong evidence and a clear need to improve access to clean, safe and environmentally sustainable methods of cooking in Myanmar. This discussion paper outlines existing usage patterns of cooking fuels and stove types, and lays out possible elements of a National Clean Cooking Strategy for Myanmar that could help accelerate progress in this area.

Introduction

Firewood and charcoal account for over 80% of total fuel consumption in Myanmar – one of the highest shares of any Asian country.¹ This is due largely to the widespread use of firewood (and to a lesser extent charcoal) for cooking. Cooking using inefficient firewood and charcoal stoves has many negative impacts. These include health and safety risks, productivity losses (due to the significant time spent collecting wood) and localised deforestation, which can cause habitat loss, increase soil erosion and contribute to global climate change if firewood is unsustainably harvested. Women and children are the main groups affected by these negative impacts.

The development of a National Clean Cooking Strategy could help to accelerate progress on clean cooking by raising the political profile of

the issue, improving co-ordination of the various actors involved and facilitating funding of clean cook stove programmes. In addition to access to finance and technology, changes in behaviours and increased knowledge and awareness amongst government, the private sector, civil society organisations and the general public will be needed to achieve lasting results. The aim of this paper is to spark discussion by proposing possible elements of such a strategy.

Existing use of fuels and stove types

Policies to promote clean cooking need to be evidence-based and take into account existing trends and distributions of fuel uses and stove types. Figure 1 shows heat maps by township of the fuel used for cooking based on the 2014 census

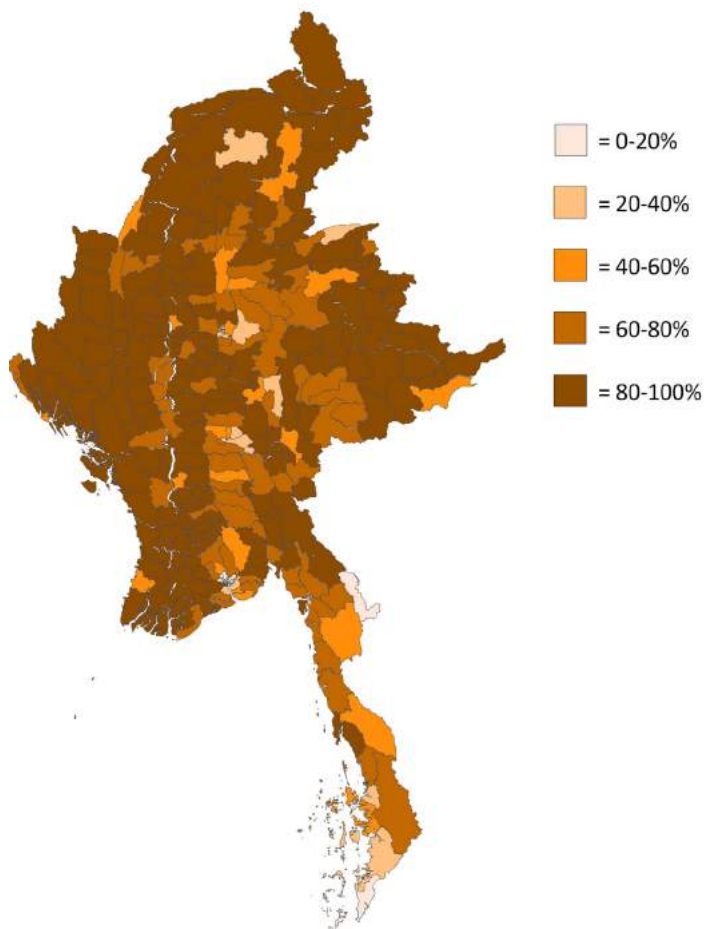
results. Firewood is the main fuel used for cooking in most parts of the country, with particularly high rates of dependency in rural areas in the North, East, West and South West. Firewood availability is lower in the central dry zone. Use of charcoal is generally far less common than firewood and its use is concentrated in urban areas and some townships in Kachin State, Kayin State and Tanintharyi Region.

Less than 40% of households have access to grid electricity and use of electricity for cooking is mainly confined to urban areas. The share of households using kerosene or other liquid fuels for cooking was less than 2% in all townships in 2014 except three townships on the western border of Rakhine State.

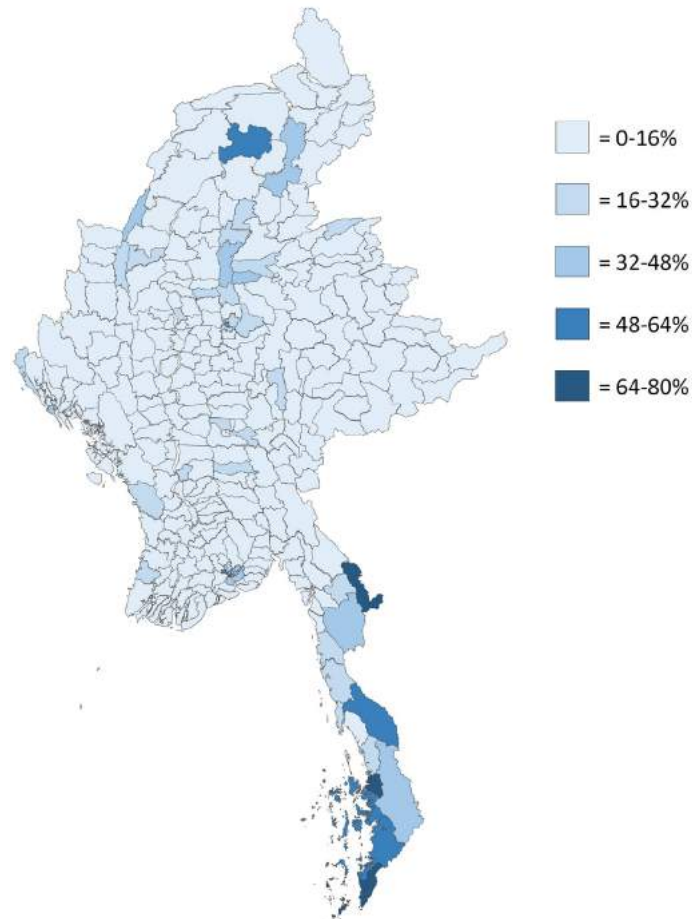


Figure 1: Township-level maps of energy sources used for cooking

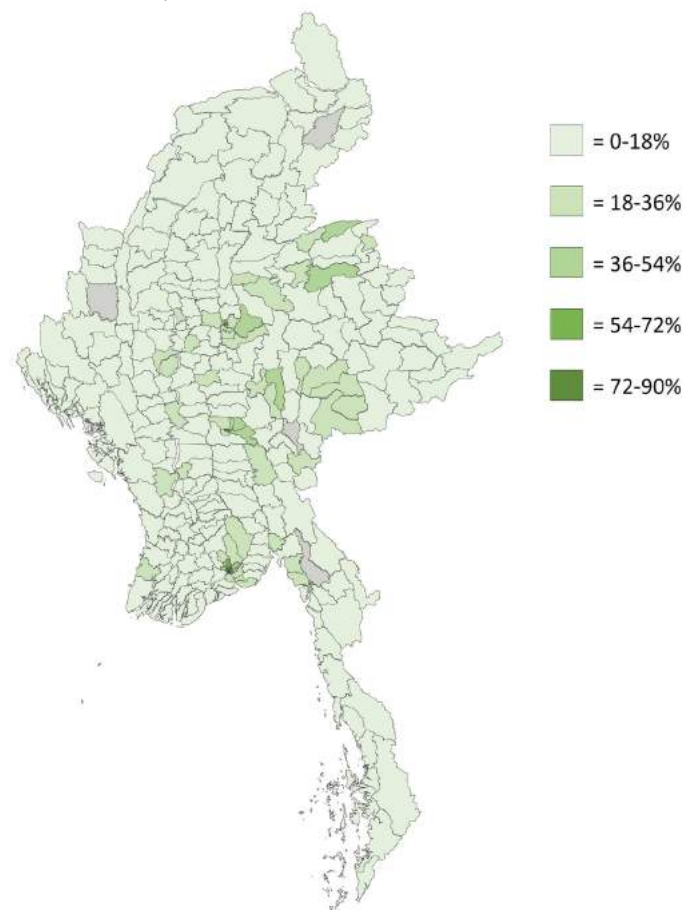
(a) Firewood



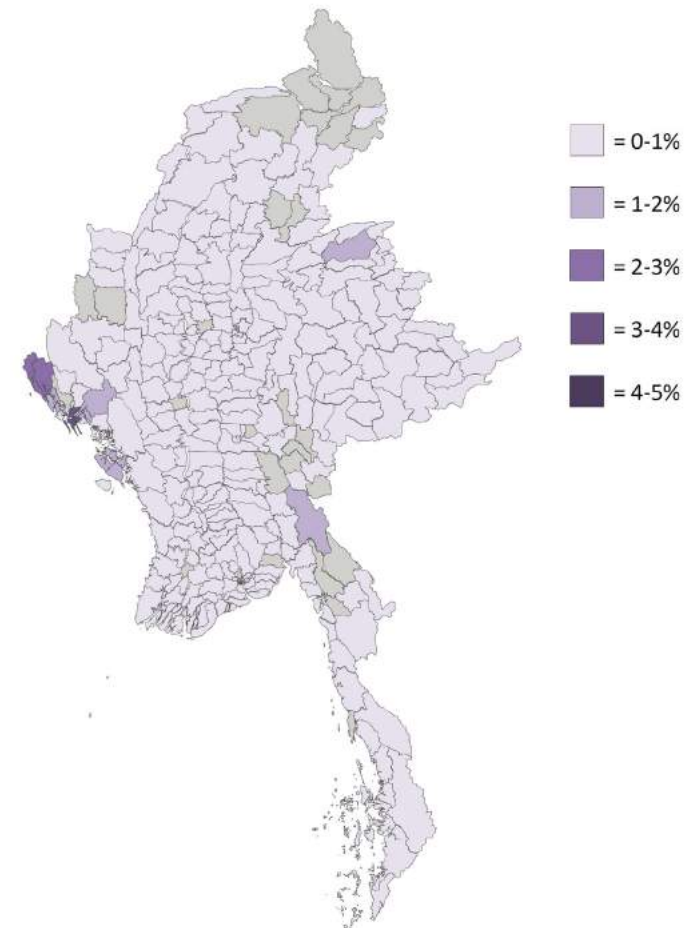
(b) Charcoal



(c) Electricity

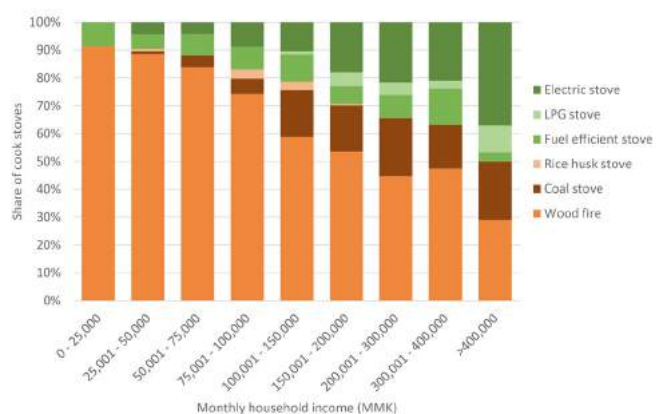


(d) Kerosene



Source: Created using the 2014 census results and the MIMU heat mapping tool

Figure 2: Types of cook stove used by income group



Source: Based on data from ADB (2017)

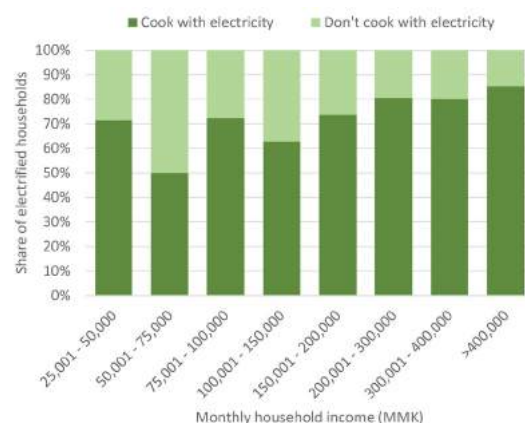
Figure 2 shows the types of cook stoves used by income group, based on the results of an energy consumption survey undertaken by the ADB in 2014. It shows that around 90% of households earning less than 50,000 kyats per month use inefficient firewood stoves, compared to less than 50% of households earning over 200,000 kyats per month. High income households are more likely to use electric stoves, liquified petroleum gas (LPG) stoves and coal stoves. A small proportion of households at all income levels use more efficient firewood stoves. This is likely due to previous initiatives to distribute efficient firewood stoves by the government and many organisations.²

Figure 3 shows that even among households connected to the national grid, many don't use electricity for cooking. This may be due to the presence of non-price barriers such as unfamiliarity with the technology, electrical safety concerns and taste preferences.³

Existing policies

While several of Myanmar's forestry and energy plans touch on the issue of clean cooking, there is no single

Figure 3: Share of electrified households using electricity for cooking



Source: Based on data from ADB (2017)

dedicated strategy for cooking and there seems to be limited co-ordination between policies from different ministries.

The objectives of the National Forestry Master Plan 2001-2031 include sustainable harvesting, protection of forests against degradation and environmental conservation.⁴ In the Comprehensive Plan for Dry Zone Greening 2001-2031, MOECF has a target to distribute 260,000 cook stoves between 2016 and 2031.⁵

Myanmar's REDD+ Readiness Roadmap notes that "a surprisingly large number of NGOs" have been involved in promoting more efficient firewood stoves but "after 15 years of promotion, the penetration of [clean cook stoves] is reported to be still limited".⁶ Myanmar's REDD+ Programme is considering policies and measures in areas such as rural electrification, distribution and adoption of alternative fuels, firewood plantations and charcoal production, production of cook stoves and use of wood from alternative sources.

The National Electrification Programme aims to achieve universal access to grid electricity by 2030. However, even if this is

achieved (which seems unlikely), access to grid electricity alone does not necessarily result in switching from firewood to electric stoves.

The Energy Efficiency and Conservation Policy, Strategy and Roadmap notes "the adoption of efficient technologies especially in cooking would make a significant contribution towards providing affordable and reliable energy supply to those living in rural areas and thus improving quality of life".⁷ The activities included in the roadmap include promoting more efficient firewood stoves and raising awareness of LPG stoves. The government has set a target to distribute LPG to one million households by 2020.⁸

One of the activities listed in the draft Myanmar Climate Change Strategy and Action Plan 2016-2030 is to "identify and promote energy-efficient technologies and practices - such as improved cooking stoves, off-grid and mini-grid energy and access to biomass - with a gender-sensitive approach".⁹



All these various plans mention clean cooking but limited real action has been taken to date to address the issue. As a result, most of the rural population continues to use inefficient firewood stoves on a daily basis.

Possible elements of a National Clean Cooking Strategy

Myanmar would benefit from a National Clean Cooking Strategy that sets clear goals towards which progress can be measured, together with transparent information about the policy measures that will be implemented to achieve those goals.

The objectives of a National Clean Cooking Strategy for Myanmar could be:

1. Increase use of safe and more efficient firewood stoves.

Efficient firewood stoves can help mitigate the negative health

and environment impacts of inefficient firewood stoves. They also reduce the time that needs to be spent collecting wood (a task typically undertaken by women and children), which frees up more time for education or alternative income-generating activities.

2. Increase switching from firewood to alternative fuels for cooking, such as LPG and electricity.

Very few households use LPG at present. Progress to scale-up LPG distribution is likely to receive its biggest boost from industrial demand rather than households, at least initially. Uptake of electric stoves is constrained by grid expansion rates, which are likely to remain low in rural and peri-urban areas. However, falling solar panel and battery prices mean that the economics of cooking using solar energy are rapidly improving.¹⁰

3. Improve kitchen ventilation and change cooking behaviours.

The negative health risks of traditional firewood stoves can be significantly reduced by simple actions such as improving kitchen ventilation and designing buildings with a separate kitchen and a raised stand for the stove to keep it out of the reach of children. The common cultural practice of having outside kitchens in Myanmar is helpful in this regard.

4. Improve firewood management and sustainable harvesting of woodlots.

Firewood is widely available in most parts of Myanmar and is likely to remain the dominant cooking fuel for many years to come. If well managed it can be a carbon neutral, sustainable, safe and easily-stored fuel. A focus is needed on maximising the efficiency of firewood

use and minimising the local environmental impacts of firewood collection. Dry firewood collection and covered storage can help to improve efficiency. Increased use of woodlots and firewood plantations located close to rural villages together with co-cropping/agroforestry approaches could provide multiple local development benefits.¹¹

The actions and policy measures that could be implemented to achieve the objectives above could include:

Supply side measures

- a. Support innovation and research on clean cook stove designs that appeal to consumer preferences in terms of taste and appearance.
- b. Map target areas for residential LPG fuel transition programmes. These could include areas near

likely hotspots for industrial LPG demand (see Indonesia's LPG conversion programme), areas where households are currently using kerosene and areas where charcoal is being produced in sensitive locations.

- c. Tender government licenses for LPG distribution networks.
- d. Provide training for entrepreneurs and retailers of clean cook stoves.
- e. Provide access to finance and technical support for small businesses at all stages of the supply chain.
- f. Improve knowledge sharing and co-operation between domestic and international stakeholders.

Demand side measures

- g. Provide public education and raise awareness of the multiple

benefits of using clean cook stoves and changing cooking behaviours.

- h. Develop a standards and labelling scheme for efficient firewood stoves, to help influence consumer purchasing decisions. Facilitate technology demonstrations and trials to increase familiarity with clean cook stoves.
- i. Provide access to small loans to consumers for purchasing clean cook stoves. Experience from other countries shows that market-based approaches tend to work better in the long term than handing out subsidised cook stoves for free. (Alternatively, distributing free stoves that require consumers to purchase fuel can also work well – this was the approach taken for Indonesia's clean cook stove programme.)





The way forward

A possible way forward could be to develop a simple interim Clean Cooking Rapid Action Plan, followed by a more detailed and comprehensive National Clean Cooking Strategy later on. Consultations with relevant ministries, development partners, the private sector and civil society organisations would be important to ensure broad buy-in. Sharing stories of success with clean cook stove projects from within Myanmar as well as other countries could help to build momentum for the programme.

A National Clean Cooking Strategy would need to be underpinned by a strong evidence base. The case for action could be strengthened by undertaking further research in areas where knowledge gaps remain, such as:

- Likely future LPG prices and availability as well as the economics of distributing LPG, drawing on past experience with battery distribution networks in flatland areas. A study comparing feasible expansion rates of the LPG distribution network in rural areas with expansion of the national grid would also be helpful.
- Estimation of the improvements in air quality that could come from changing building

designs and improving kitchen ventilation.

- Further work on the economics of firewood collection, in particular studying women's perceptions of the monetary value of time spent collecting firewood (in terms of forgone education for children and forgone income from alternative livelihood activities).
- Research into how much people are willing to pay for the convenience of using electricity or LPG for cooking.
- Better understanding of the various non-price drivers that influence women's choices of cooking fuel and stove type.

One of the main challenges would be to find sufficient funding to implement a National Clean Cooking Strategy. By clarifying Myanmar's goals and intended policies and measures for clean cooking, the preparation of such a strategy could make it easier to attract funding from bilateral sources as well as multilateral funds such as the Global Environment Fund (GEF) and Global Climate Fund (GCF).

Progress on clean cooking will not be easy and will partly depend on progress being made in other policy areas, such as improved transport infrastructure to get cook stoves and fuels to where they are needed

and improved access to financial services and loans in rural areas. Nevertheless, a National Clean Cooking Strategy could help to focus political attention on clean cooking and build domestic and international momentum to accelerate action on this important issue.

Notes and references

1. Ministry of Information (2017), *Wood-based fuel makes up 81% of fuel consumption in Myanmar*.
2. Ecoviv, Ever Green Group, FREDA, GERES, Mangrove Service Network, United Nation Development Program, Mercy Corps and World Vision International are some of the many organisations that have run or are still running clean cookstove programmes.
3. Spectrum (2018), *Women and clean cook stoves*, Energy Briefing Paper.
4. FAO (2009), *Asia-Pacific Forestry Sector Outlook Study II: Myanmar Forestry Outlook Study*.
5. MOECA (2015), *Myanmar's Intended Nationally Determined Contribution*.
6. UN REDD (2013), *Myanmar REDD+ Readiness Roadmap*.
7. ADB (2015), *National Energy Efficiency and Conservation Policy, Strategy and Roadmap for Myanmar*.
8. Myanmar Times (2018), *Government strengthens aim of distributing LPG to a million households by 2020*, 29 March 2018.
9. MONREC (2016), *Myanmar Climate Change Strategy and Action Plan (MCCSAP) 2016–2030*, Final draft.
10. Gamos (2017), *Solar Electric Cooking*.
11. UNDP (2013), *Accelerating energy access for all in Myanmar*.



Recommendations

- A National Clean Cooking Strategy could help to raise the political profile of clean cooking, improve stakeholder co-ordination and facilitate funding of clean cook stove projects in Myanmar. Women and children stand to benefit the most.
- The objectives of a National Clean Cooking Strategy could be to:
 1. Increase use of safe and more efficient firewood stoves.
 2. Increase switching from firewood to alternative fuels for cooking, such as LPG and electricity.
 3. Improve kitchen ventilation and change cooking behaviours.
 4. Improve firewood management and sustainable harvesting of woodlots.
- The actions and policy measures implemented to achieve these objectives could include market-based approaches, improved access to financial services, standards and labelling, research and development, and training, education and raising awareness regarding the multiple benefits of clean cook stoves.
- A possible way forward would be to develop an interim Rapid Action Plan followed by a more comprehensive National Clean Cooking Strategy. Stakeholder consultations and sharing success stories from Myanmar and other countries could help to kick-start the process.
- A map of LPG priority conversion areas could be prepared and publicised, as well as an LPG distribution strategy.
- Tracking climate finance developments and identifying funding opportunities for energy access projects via multilateral funds would be useful.
- Further research would be beneficial where knowledge gaps remain, such as LPG prices and distribution networks, the economics of firewood collection, and non-price drivers of women's cooking fuel choices.

Further reading

ADB (2017), *Myanmar Energy Consumption Surveys*, <https://www.adb.org/publications/myanmar-energy-consumption-survey>.

Geres and EMC (2015), *Myanmar Cookstoves Market Assessment*, <http://cleancookstoves.org/resources/404.html>.

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