

BUILDING COHESION BY BUILDING MARKETS: REFLECTIONS ON A LAST MILE DISTRIBUTION PILOT IN RURAL MYANMAR



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Distribution of affordable, innovative technology - such as clean stoves, solar lights, and water filters - among low-income households has become a mainstream development intervention in Asia and Sub-Saharan Africa in recent years. A typical product distribution program is initially funded by philanthropic money, with the aim of market forces eventually upholding a sustainable supply chain. Such programs often rely on a cadre of micro entrepreneurs. The innovation of these programs is their multidimensional nature: not only do the end-users benefit from the innovative technology, but the intervention boosts micro entrepreneurs' income and positively impacts the environment through clean energy products.

Despite the widespread implementation of this type of program around the world, with the exception of a few examples, Myanmar is not yet fully in the fray. Emerging from decades of conflict and isolation, and undergoing significant political and economic reform, Myanmar is relatively new to implementing market-driven approaches to poverty reduction. In this context, the United Nations Development Programme (UNDP) in partnership with Mercy Corps initiated a 16-month pilot program named "Innovative Technologies for Rural Communities" targeting 100 villages in Kayin, Mon, and Shan states. Kopernik provided technical advice at key points of implementation, sharing comparative experience from similar interventions in Indonesia but also offering an insider-outsider perspective on the initiative's features, strengths and weaknesses. This article delves into the key lessons learned from the Myanmar pilot and offers key insights into market system development efforts in emerging, post-conflict economies.

A model for achieving different ends

The beauty of last mile distribution programs is that they can be framed in many different ways such as micro entrepreneurship, market development, women's empowerment, climate change, clean energy, etc. For example, Solar Sister in Nigeria and Tanzania, and Kopernik in Indonesia implement such programs to promote women's economic empowerment, while Pollinate Energy runs a comparable intervention to tackle energy poverty in urban India. While their emphases may differ, the basic model - to train people to become retailers and promoters of innovative products - remains a constant.

In the case of the Myanmar initiative, UNDP's aim was to strengthen social cohesion in target communities. It is also important to note that this particular initiative was part of UNDP's broader portfolio of work in the same target locations, where livelihoods assistance was used either as an entry-point or a strategy to reduce socio-economic disparities, empower vulnerable groups and improve intra- and inter-community relations.

These aims, broadly understood within the rubric of social cohesion, make sense in the historical context of Myanmar, and especially in the target areas. The three states covered by the pilot are home to various ethnic groups and continue to struggle with deeply rooted tension, mistrust as well as competition for natural resources. At the community level, decades of military rule manifest in low levels of social capital. Notwithstanding a strong rhetorical respect for women, women don't share equal political and economic status as men. The same is true for young people, given a strong culture of deference to seniority. As an agency working towards greater social development UNDP envisioned this initiative as an opportunity to increase participation of marginalized groups – specifically women and

and youth - in market and community activities and to strengthen interaction and dialogue within and between communities, thereby improving social cohesion.¹ In other words, the pilot was designed for market forces and livelihood opportunities to transform social relationships and status.

Thus, the objective of the pilot was not simply to sell thousands of innovative technology products to rural households. The bigger, more important challenge was to prepare communities to better engage in market-based transactions so that the market transactions themselves could achieve social empowerment of marginalized groups, especially women and youth, and contribute to improving interaction and trust in communities emerging from long-lasting conflicts and mistrust. The pilot approached this in a number of ways.

- 1 First, Myanmar is host to numerous ethnic groups, especially in the conflict-affected areas. Many of these communities, even though they live in close geographical proximity, have little social contact with each other. This creates basis for stereotyping, misunderstanding and conflict. The pilot responded to this social setting by applying a cluster approach when selecting villages and sales agents, meaning that one sales agent was assigned a geographical area containing a small number of villages often of different ethnicities.
- 2 Second, it targeted women and youth from target communities and provided them with the skills to become successful entrepreneurs.
- 3 Third, the program's product selection was informed by how these could benefit marginalized groups or have the potential to reduce local conflicts. For example, a feasibility mission conducted at the beginning of the program, recommended that fuel-efficient cook-stoves could help reduce community conflicts around scarce firewood. Fuel efficient-cookstoves could also address women's exposure to harmful emissions from wood burning when cooking over open fires and basic cookstoves.² Furthermore, solar lights and chargers could improve the physical safety of women and girls at night.
- 4 Fourth, entrepreneurship training was combined with leadership and peace-building skills training, helping sales agents recruited for the program to envision larger roles for themselves as decision-makers and peace-builders in their communities.
- 5 Fifth, alongside the market distribution system, each village received for free a set of 'collective last-mile technologies', such as water purifiers for the local school or solar systems for the village monastery. These locations were identified and the technologies were to be maintained together, thus benefiting entire communities in an inclusive manner instead of targeting privileged segments or specific ethnic groups.

Finally, the pilot mobilized village-level steering committees (these were largely the same mechanisms used by UNDP for its previous livelihood assistance activities) which voluntarily supported and mentored the sales agents. The program invested substantial effort to set up coordination committees between villages as well as to introduce the sales agents in order to generate support from community leaders. Initial hesitation among community leaders soon turned into widespread support, as they witnessed high levels of enthusiasm for the new products from community members. . As a result, many community leaders ended up investing substantial effort into supporting the sales agents in their daily business activities such as helping with the transport of products, announcing tech demonstrations in their villages and even collecting orders on behalf of the sales agents.

The bigger, more important challenge was to prepare communities to better engage in market-based transactions so that the market transactions themselves could achieve social empowerment of marginalized groups.

¹ UNDP defines social cohesion as the glue that binds society together. It comes about when people buy-into and interact with each other based on a common set of political, economic and social institutions.

² A recent WHO reports that these pollutants cause the premature death of 2 millions people per year, mostly women and children.

Some of these features are unique in a last-mile distribution program. Usually, the focus is predominantly on setting-up the distribution system and preparing the sales agents for success. In this case, the additional community outreach and linkages helped the broader community perceive more direct benefits and a sense of ownership of the program, which in turn helped to increase sales and the performance of the sales agents. These approaches offer important lessons and potential for replication in similar initiatives elsewhere.

How successful was the pilot in achieving its social cohesion aims? While admittedly, these are long-term processes and need to be measured across longer-term timeframes, the pilot's evaluation demonstrated some encouraging results. Approximately 90% of sales agents, all of whom were female or youth, reported improved confidence and leadership skills at the end of the pilot.³ 65% of sales agents reported becoming involved in new village-level activities including community development activities, parent-teacher associations and youth development - all of which contribute to greater social cohesion.

When it comes to social change, stories are as important as numbers. Anecdotal evidence pointed to some successes, for example, a female sales agent shared that “I’m now respected and trusted by my community. People listen to me when I speak. In community meetings, I’m always asked to serve as a discussant and advisor”. On social cohesion, a village leader from Mon state captured the essence of what many stakeholders in this pilot experienced: “Now there is more trust and cooperation among villages. When one village struggles with bookkeeping or other issues, people from other villages come together to share their experiences and help”.

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Products and product sourcing

For last mile distribution programs, product selection is a critical factor of success. It determines the value proposition for low-income communities who have never seen such products; it also sets price points for potential buyers who have very little money to spare. Some organizations such as Living Goods in East Africa market a large basket of goods that include not only ‘durables’ like solar products, water filters, etc. but also fast-moving consumer goods such as soap, condoms, and medicine.

In the Myanmar initiative, based on a number of considerations including market demand⁴ and product availability, UNDP and Mercy Corps decided to distribute and sell clean cook-stoves and high quality solar products. These technologies were not available in the market system until the pilot. Interestingly, the two product types differed significantly, not only in terms of suppliers and payment terms but also, as it turned out, in terms of actual demand.

As for solar products, two national-level suppliers of the Sun King and Schneider brands were connected with township-level distributors, who then supplied village-based entrepreneurs selected and trained by the program. With these solar products, Mercy Corps served as the market facilitator. With clean cook stoves, however, Mercy Corps was also a market actor, directly involved in business transactions. Mercy Corps itself was the importer and national supplier of Envirofit stoves and thus provided them to township-level distributors on a consignment basis.

³ Mercy Corps 2016 Learnings from the Innovative Technologies for Rural Communities Pilot Project

⁴ Assessed through both a feasibility mission and technology fairs before implementation

Figure 1: Comparison of solar products and stoves

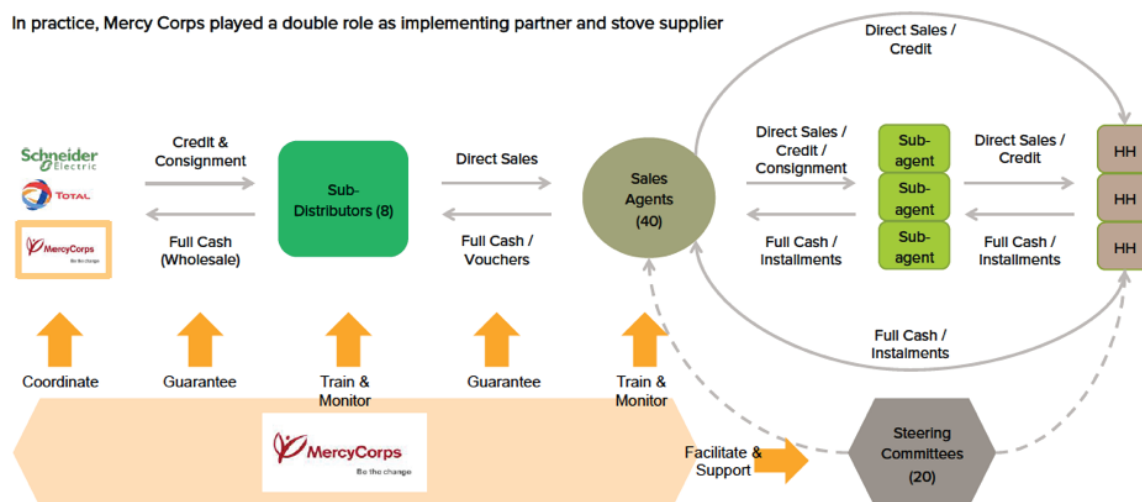
	Solar	Stoves
Products	<ul style="list-style-type: none"> • Sun King brand distributed by Awango (Sun King Eco, Sun King Mobile, Sun King Home) • Schneider brand (Mobiya TS 120S) 	<ul style="list-style-type: none"> • Envirofit stoves distributed by Mercy Corps (M5000)
Terms offered to township-level distributors	<ul style="list-style-type: none"> • On credit (4-10 weeks) 	<ul style="list-style-type: none"> • Consignment

It is worth reflecting on this hybrid role that Mercy Corps played in this program. In a typical last mile distribution program, the implementer would either be a market facilitator or a market actor, not both. The former - market facilitator - prioritizes staying out of the game and building a sustainable supply chain, so that the eventual exit strategy will be simpler: whether or not the market system can uphold itself without the presence of the facilitator. The latter - market actor - is a more hands-on approach in which the implementer controls at least a segment of the supply chain. While the exit strategy becomes more complex with the market actor engrossed in business relationships, this approach can ensure immediate results in less mature marketplaces.

Figure 2: A Conceptual Diagram of the Hybrid Market-Facilitator & -Actor Model

Hybrid Market-Facilitator & Market-Actor Model

In practice, Mercy Corps played a double role as implementing partner and stove supplier



Given the differences in the two approaches, Mercy Corps' hybrid role in the Myanmar pilot is a rare combination and perhaps one of the few examples of such engagement around the world. It must be noted that Mercy Corps itself stepped into this role because they saw a market gap that needed to be filled in the short-term. The hybrid role worked well in this case considering the high sales volume of stoves and securing of a practical future for the pilot, which will be explained below. Given Mercy Corps' relatively reduced engagement in the solar supply chain, a natural question would be: Do the solar product sales reflect Mercy Corps' reduced engagement? While arguably there may be some causal link here, the key drivers of product sales involved other factors such as price and competition. This will also be discussed further in the next section.

The hybrid role worked well in this case considering the high sales volume of stoves and securing of a practical future for the pilot

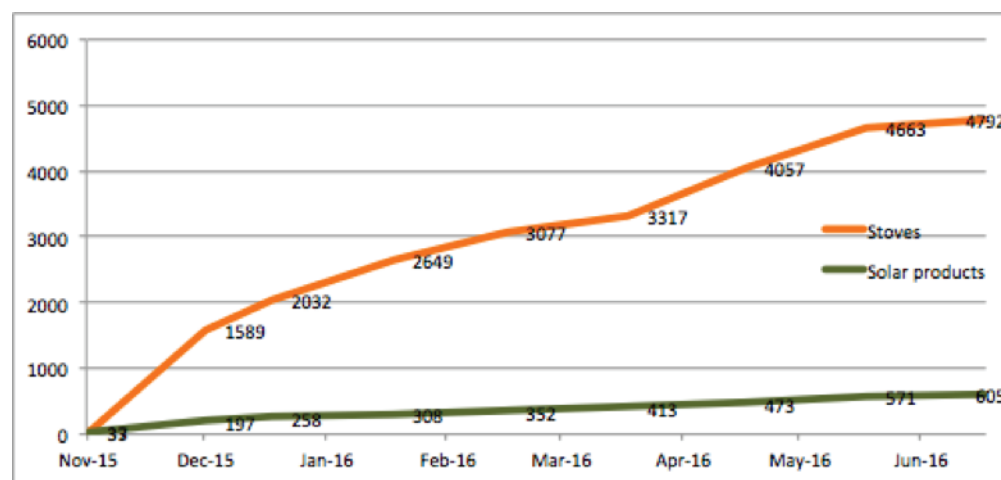
Demonstrable Demand

In addition to the social cohesion goals, the pilot aimed to establish a market system with demonstrable demand and smooth supply chain within 16 months. Against this goal, the pilot achieved success.

A total of 6,371 units of products passed through the system, while 5,397 (84.7%) were sold to end-users by August 2016. The almost 1,000 remaining remain in the supply chain and will either be sold or returned to the suppliers. Since the pilot had an initial set-up period of a few months and products were in the market for only 9 months, simple math indicates 600 units were sold each month by the 40 sales agents, which is essentially 15 units per month or 3.5 units per week on average per sales agent.⁵ In terms of market penetration, the program managed to cover as much as 25% of all households in some villages, meaning it directly impacted one in four households in these locations.⁶ These are impressive figures for a last mile distribution program.

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Figure 3: Cumulative sales figures from Nov 2015 to July 2016



As Figure 3 shows, stove sales dominated the pilot, with 88.8% (4,792) of all sales involving the cooking technology. The remaining 11.2% is more or less distributed equally among the four solar products, without a clear winner: Sun King Eco, Sun King Mobile, Sun King Home, and Schneider Mobiya TS 120S.⁷ While countless factors contribute to this divergent sales trend between the two technology types, price and competing products are arguably the key drivers of low sales.

All five products including stoves and solar lights enjoyed a generous subsidy provided by the pilot, reducing the final end-user price by 20%.⁸ For the stoves, however, Mercy Corps managed to leverage an innovative financing mechanism, namely carbon financing, to apply a large subsidy of 61% on each stove.⁹ This meant that the sleek, modern-looking Envirofit M5000 that would normally be sold at \$29.26 (38,040 kyat) in rural Myanmar, including transport costs and commission for sales agents, was actually sold at \$11.53 (15,000 kyat) to end users. The stoves became dramatically more affordable with the application of the subsidy.

⁵ Though the township-level distributors also sold products out of their shops, their proportion is negligible compared the volume sold by the sales agents.

⁶ These high penetration villages belong to Hlaingbwe township (24.8%) in Kayin state and Hopong township (24.2%) in Shan state. The lowest penetration levels were observed in the densely populated townships of Paung (7.8%) and Chaungzone (7.2%) in Mon state.

⁷ Actual sales of solar products: SunKing Eco 129 units, SunKing Mobile 115 units, SunKing Home 165 units, Schneider Mobiya TS 120S 196 units.

⁸ An exchange rate of 1 USD = 1,300 kyat is used in this article unless otherwise stated. Subsidy levels per unit: \$2.15 (2,800 kyat) on Sun King Eco, \$5.69 (7,400 kyat) on Sun King Mobile, \$18.38 (23,900 kyat) on Sun King Home, \$7.23 (9,400 kyat) on Schneider Mobiya.

⁹ Gold Standard is a standard and certification body offering certification of projects that combat greenhouse gas emissions. With a Gold Standard certification project developers may sell carbon credits to investors to help finance their project: <https://www.goldstandard.org/>

But, the question is: was that affordable enough for low-income families in rural Myanmar? To answer this question, let us look at the stove buyers' monthly income and compare the figures against a similar program in Indonesia implemented by Kopernik.¹⁰ The stoves in Indonesia were offered at full retail price, without subsidies.

Figure 3: Cumulative sales figures from Nov 2015 to July 2016

	Rural Myanmar ¹¹	Rural Indonesia ¹²
Average retail price of stoves	\$11.53 (Envirofit M5000)	\$25.85 (UB 3.0 Regular)
Average monthly income of stove buyers	\$123.19 (n = 176)	\$233.13 (n = 57)
Average financial burden of stove cost as proportion of monthly income ¹³	11.7%	24.0%
Average stoves sales per sales agent per month	13.3 units	2.7 units ¹⁴

Before delving into the analysis, it should be noted that this comparison can only lead to indicative findings given the differences in products, program design, and socioeconomic background in each location. With that caveat, using household surveys of stove buyers conducted by Mercy Corps and Kopernik, the retail prices of stoves are placed in the context of the buyers' monthly income levels: a price of \$11.53 for households making \$123.19 per month in rural Myanmar; a price of \$25.85 for families earning \$233.13 in rural Indonesia. When we look at the individual household level, calculate the price-income proportion at each household, then take an average of that proportion across the sample, the analysis yields an average of 11.7% in Myanmar and 24.0% in Indonesia. This means that from the household perspective the stoves offered in Myanmar were less than half in terms of financial burden compared to the Indonesian case. This difference could have contributed to the significantly higher sales volume in Myanmar (13.3 units) relative to that of Indonesia (2.7 units).

Competition in Contrast

Relative affordability is certainly not the only reason behind the impressive sales figures, particularly of stoves, achieved in the program. A myriad of other factors - both internally controlled and externally influenced - contribute to the complex decision-making process of an individual buying something or not. But, among them, competition cannot be ignored. For stoves, the Envirofit M5000 presented a uniquely modern option at an affordable price point compared to the traditional, less sophisticated clay and cement stoves available almost everywhere in Myanmar. Put simply, it was an easy sell. Solar products, on the other hand, faced two sets of challenging competition: the widespread availability of cheaper, but lower quality products from China and Thailand; and free distribution initiatives by the government targeting off-grid communities. Both sets of competition were beyond the control of the pilot and will continue to shape the Myanmar solar marketplace. In sum, the competition facing stoves and solar products could not have been starker in difference. Therefore, in hindsight, the existing competition in the solar market should have been assessed more rigorously to test consumer willingness to buy higher-quality, but also higher-cost, solar lights.

¹⁰ For more information on Kopernik's program in Indonesia: <http://kopernik.info/page/wonder-women-eastern-indonesia>

¹¹ The 176 household sample cover the three states of Mon, Kayin, and Shan.

¹² These data points from rural Indonesia refer to 57 households interviewed in Nusa Tenggara Timur, one of the poorest provinces in the country.

¹³ These figures are not simple division of the above two numbers. This looks at the price-income proportion for each household in the sample and takes the average of the proportion.

¹⁴ This figure is derived from an average of 37 active sales agents selling an average of 99 stoves in the period of Nov 2015 to July 2016 (same as the Myanmar initiative) in East and West Nusa Tenggara.

Meticulous Marketing

Another noteworthy factor that contributed to the market expansion of the innovative technology was the program's marketing efforts in the form of village-level product demonstration events called "tech fairs". Their effectiveness in converting event participants to buyers on the spot was particularly surprising, compared to similar experiences from Indonesia.

The program conducted a total of 164 tech fairs covering all 100 target villages that attracted a total of 9,341 participants (57 people per tech fair on average) during the 16 month period. A typical tech fair lasts for a couple of hours starting with an overview of the pilot and explanation of the products, then ending with an interactive product demonstration. In the last months of the pilot, additional tech fairs were conducted to boost awareness and sales. Research has shown below-the-line marketing like tech fairs is the main way to engage with rural, low-income segments. In May 2016, the sales agents held 53 tech fairs involving 1,960 people and managed to sell 672 products (89% stoves), which translates to 12.7 units sold per tech fair. This is a solid figure when compared to Kopernik's experience in Indonesia where typically only a few units are purchased at the end of these events.

The effectiveness of "tech fairs" in converting event participants to buyers on the spot was particularly surprising, compared to similar experiences from Indonesia.

The Future beyond the Pilot

Though the pilot itself will not be scaled-up in its current form in the near future, lessons from the experience will inform UNDP's continued work on inclusive development and partnerships under its next country programme currently under design. Mercy Corps continues to expand a separate stove distribution program that will essentially take over the 100 villages covered by the pilot. Therefore, the stove supply chain will stay intact with Mercy Corps as the main supplier at the national level. As for the solar products, the national-level suppliers have been engaged with the township-level distributors and will distribute them based on demand. Demand for high-quality solar products, however, remains low, therefore their future in Myanmar is less certain.

There is a saying that innovation emerges in the graveyard of pilots. In the Myanmar case, the good news is that innovative aspects of the pilot, such as using carbon credits as price subsidies, the hybrid product sourcing model, and importantly, using last-mile distribution for furthering social cohesion and peace-building aims, certainly emerged. More importantly, the key lessons have been documented and shared with other players in civil society, private sector and the government, ensuring the pilot will not be buried away.

Reflections

As one of the first attempts in the country to expand market-based distribution of innovative technologies to marginalized communities, the pilot achieved relative success and generated critical lessons for other similar initiatives.

1. Market actor vs. facilitator

As the implementing partner, Mercy Corps played both a market actor role (importing and supplying stoves) and a market facilitator role (training and supporting downstream market actors). Thus, the pilot was not a pure market facilitation model, despite its original intentions.

How did this hybrid role affect the pilot's outcomes? To answer this question, let's take a look at the two outcome areas: 1. Product sales, 2. Market sustainability.

In terms of product sales, I would argue that product selection, price affordability and grassroots marketing were the main drivers of success for stoves. Mercy Corps' role as the stove supplier probably added an extra push to the supply chain, but the effect of this on sales volume seems limited. Unlike the stoves, without carbon-finance subsidies to halve the price, solar products simply could not compete against much cheaper, lower quality alternatives. Thus, one should never underestimate the price sensitivity of such products in low-income groups.

With regards to market sustainability, the pilot saw a fortuitous ending given that Mercy Corps was able to expand its separate stoves program to continue work with the pilot's sales agents. If this didn't take place, the pilot's sustainability would have been considerably jeopardized. In fact, that was the only real exit strategy in place, apart from providing business development training to sales agents in the final months.

Regardless, perhaps the pilot was overambitious to recruit and train sales agents from scratch and expect them to be fully independent micro entrepreneurs in less than one year. Some sales agents were just beginning to understand the program and operate effectively as the pilot started to wind down. A much more realistic timeline should be formulated in the design phase when working with marginalized communities with limited experience in market-driven initiatives.

2. To subsidize or not to subsidize

That is a critical question for last mile distribution programs across the world. The fact of the matter is, without any subsidies, high-quality innovative products are not affordable to low-income consumers. But, with subsidies, implementers are using finite resources to shorten the longevity of distribution.

Fortunately for this pilot, the carbon finance used to subsidize the stoves is a long-term economic mechanism that will continue for the foreseeable future. Thus, the case for subsidies in this particular case is relatively strong. In another example of subsidy use, Kopernik utilizes grants and donations to support its operational costs in Indonesia, rather than using them to lower the end-user price. The hypothesis is that, even when Kopernik exits, the end-user price will stay more or less constant, therefore not leading to a collapse of demand as a result of a sudden price hike. Beyond Myanmar and Indonesia, there is a strong need to understand how subsidies can be used in a smart and effective way for the long-term benefit of business and social objectives.

3. Building cohesion by building markets

Finally, the pilot successfully demonstrated how entrepreneurship when promoted in a dual track with social leadership does allow marginalized groups to improve their social status and take active roles in their communities, thereby contributing to improved social cohesion. This mirrors Kopernik's experience in Indonesia with women's economic empowerment. With the continuation of economic activities, we can be certain that these social gains would continue to increase to a certain point, slowly plateauing over time. What remains to be seen is whether these cohesion and empowerment gains can be sustained if economic activities end up slowing down due to various factors. In other words, are the social gains resilient enough so that they won't be reversed? Further research from Myanmar and other geographies would be required to answer this important question.