

Weaving Social Sustainability into Solution-making: examining the MOVEUP Alternative Temporary Shelter Strategy

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Abstract.

Urban poor communities in the Philippines face the greatest risk from two converging trends: 1) disasters are increasing in frequency and intensity due to climate change, ecosystem degradation, and conflict; 2) rapid urbanization that often out-pace planning and management efforts. The nexus of these two trends results in the displacement of millions. Not accounting for small, chronic, but low-intensity, under-the-radar disasters such as small but frequent urban fires and the forced displacements of indigenous people due to conflict and violence, the Philippines ranked 2nd in terms of displacement in 2021 (IDMC). While Philippine laws mandating the government to lead disaster risk reduction and management efforts have been in place for over a decade, recent disaster events reveal major gaps in preparedness and response mechanisms – among which is emergency shelter capacities. Difficulties and dire conditions inside the evacuation centers such as health, security, protection, and gender-based violence along with considerations on safeguarding livelihoods and assets are among the leading reasons for the refusal of at-risk households to evacuate preemptively-- placing them and their rescuers in grave danger during disasters. Beyond mere survival and physical protection from the elements, shelter is necessary to maintain human dignity.

The Moving Urban Poor Communities Towards Resilience (MOVEUP), which started in 2016, works with communities, local government units, and other agencies to increase communities' preparedness and risk reduction capacities. The MOVEUP alternative temporary shelter (ATS) posits an emergency shelter approach that recognizes the inherent expertise in these affected communities by placing the urban poor at the center of interventions. Without undermining the knowledge and technical expertise that shelter practitioners bring with them, or the local governments that have political jurisdiction over their constituents, the ATS co-production rollout in various localities and contexts demonstrated that strengthening the capacity of local actors and improving access to resources can significantly improve the agency of communities from being objects of design to becoming active participants engaged in their emergency shelter response. This paper examines the ATS approach vis-a-vis the following elements of social sustainability: 1) social cohesion, 2) inclusion, 3) resilience, and 4) process legitimacy.

By foregoing the common technocratic, top-down approaches that generate dependencies and often fail to generate long-term sustainable results, the MOVEUP ATS approach highlights how: (1) improving participation and empowering communities to generate better results, (2) technical standards on the implementation of temporary shelters can be negotiated to adapt to local conditions and environmental settings, and (3) future replication of the ATS and its adaptation to other contexts is better assured through a sustained and consistent partnership between the right holders and duty bearers. Examining the ATS approach also shed light on the contribution of design professionals in the achievement of the Philippines' resilience vision.

Keywords: *Alternative temporary shelters, emergency shelter response, community-based disaster risk reduction, and management (CBDRRM), community resilience, social sustainability*

1. Background of the Study

According to the International Federation of Red Cross and Red Crescents (2020), 83 percent of all disasters in the past ten years were triggered by natural hazards; particularly by extreme weather- and climate-related events, such as floods, storms, and heatwaves. The 2020 World Disaster Report noted that climate- and weather-related disasters have increased since the 1960s and almost 35 percent since the 1990s. The proportion of all disasters attributable to climate and extreme weather events has also increased significantly at the same time, from 76 percent of all disasters during the 2000s to 83 percent in the 2010s. Loss of natural resources, food insecurity, direct and indirect health impacts, and displacement are rising. Many communities are being affected by concurrent and consecutive disasters, leaving them with little time to recover before the next shock arrives (IFRC, 2020). In 2021 alone, the Internal Displacement Monitoring Centre (IDCM) reported that over 59.1 million people were internally displaced worldwide. Conflict, violence, and disasters triggered 38 million internal displacements across 141 countries and territories. Disasters triggered more than 60 percent of the internal displacements recorded; of which more than 94 percent resulted from weather-related hazards such as storms and floods. The same report indicated that the global economic impact of internal displacement was estimated to be more than \$21 billion in 2021; or an average of USD 360 per IDP. This amount accounts for the cost of providing every internally displaced person (IDP) with support for their housing, education, health, and security and their loss of income for one year of displacement (IDMC, 2022).

Climate change will amplify existing risks and create new risks for natural and human systems, including urban systems. The Sixth Global Assessment Report (GAR 6) (2022) warns that climate change will exacerbate disaster risk by increasing climatic hazard events' likelihood, frequency, and intensity. It will also affect vulnerability to all hazards due to long-term socioeconomic stresses and impacts such as displacement, and altering exposure patterns as climatic conditions change and hazards emerge in new localities. Citing climate projections provided by the IPCC Sixth Assessment Report, GAR 6 points to increased heatwaves, more intense floods and droughts, and a 7 percent increase in extreme daily precipitation events to 2030 (UNDRR, 2022).

The 2022 World Risk Index echoes earlier reports that global disaster risks are unevenly distributed and strongly linked to poverty and inequality. The new model results show that risk hotspots are located in the Americas and Asia, reflected in the ten countries with the highest risk values. Seven Asian countries are in the ten countries with the highest risks: the Philippines, India, Indonesia, Myanmar, China, Bangladesh, and Pakistan. Regarding vulnerability, only Afghanistan and Yemen are in the top group, but both are closely followed by Syria, Myanmar, the Philippines, Pakistan, India, Bangladesh, Iraq, and Indonesia. The risk profiles of these countries are characterized by complex interactions of multiple exposures and high intensities, as captured by the new model. A common feature of these countries is having high or mostly very high deficits across all three vulnerability categories. The same report indicated that the Philippines ranked highest in disaster risk (WRI 46.82) due to its high exposure to various hazards and very high vulnerability. The lack of social protection and individuals' inability to cope and manage their surroundings because of poverty and lack of knowledge, combined with a degraded and precarious environment, can turn existing hazards into a major disaster (IFHV, 2022).

Figure 1. Informal housing along the Tangos River. (Source: UAP EA.)

Figure 2. Overcrowding, lack of privacy, and exposure to the elements are commonly observed in ad hoc spaces used for emergency evacuation. (Source: UAP EA.)



*Figure 3. Access to WaSH facilities can be difficult in ad hoc evacuation centers, and long queues to gather clean water are common.
(Source: UAP EA.)*



*Figure 4. Interviews with school administrators often cite damage to equipment and amenities due to wear and tear from protracted use of evacuees sheltering in schools during emergencies.
(Source UAP EA/ ACCORD)*



The Philippines is uniquely exposed to a plethora of hazards, including recurrent typhoons, earthquakes, and active volcanoes. Between 1900-2014, the Disaster Risk Reduction in the Philippines Status Report (UNDRR, 2019) indicates that typhoons in the country exhibit extreme spatial variability, uneven distribution of frequency, and extent of impact. The same report also notes that each year, about 20 tropical cyclones enter the Philippine territory on average, with approximately eight or nine making landfall— making them the largest contributors to disaster damage in the country. Disaster records in the country show that cyclones resulting in landslides, storm surges, and floods have caused the largest losses of life and property. Eighty (80) percent of these disasters were caused by six super-scale events, ST Haiyan included (UNDRR, 2019). Along with a projected temperature increase of 1.8°–2.2°C and an increase in precipitation, with some days exceeding 300 mm of rain in 2050, sea levels are also expected to rise 48-65 cm by the year 2100 in the Philippines. This rate is faster than the global average pegged at 30 cm (USAID, 2017). The country ranked second within Southeast Asia regarding displacement in 2021, registering more than 5.7 million IDPs (IDMC, 2022). Given the foregoing, there is a strong impetus to accelerate risk reduction efforts and reduce systemic risks by building on existing risk reduction know-how and developing enhanced approaches to address many of its characteristics (UNDRR, 2022).

The lack of appropriate shelter in urban poor communities is a perennial problem in the Philippines. These vulnerable communities oftentimes reside in high-risk areas that include creeks, rivers, and other coastal areas that are prone to natural as well as man-made hazards (Fig.1). The Philippine Disaster Risk Reduction Law (R.A 10121 of 2010) mandates local governments to lead risk reduction and resilience building of communities, as well as facilitated efforts of LGUs to reduce casualties and enable preparedness and response actions. Despite this, past events have indicated vast discrepancies in their ability to fulfill this mandate as limited by

various resources, manpower, and capacity constraints. While much has been accomplished regarding DRR efforts, much more can be done to uphold the dignity of the displaced population and cater to their needs inside evacuation centers, especially in urban areas where space is limited.

Beyond mere survival, shelter is necessary to maintain human dignity and provide protection. Internally displaced persons (IDPs) have reported having experienced secondary disasters and death because of the difficulties and dire conditions inside the evacuation centers arising from exposure to other risks such as health, security, protection, and gender-based violence. These issues, including safeguarding livelihoods and assets, are the leading reasons why at-risk households refuse to evacuate preemptively, placing them and their rescuers in grave danger during disasters. Many of these evacuation camps and evacuation centers often go through extended weeks of use, causing damage to equipment and amenities due to wear and tear from 24-7 occupancy, and has resulted in the disruption of children's learning, especially during the onset of an evacuation (Fig. 4). Because of this, section 5 of R.A. 10821 limits the use of schools for evacuation only in cases where there are no other options left. In effect, this constrained evacuation in covered courts and other government-owned assets.

2. The Alternative Temporary Shelters (ATS)

Urban poor communities, especially in hazard-exposed countries such as the Philippines, face the greatest risk from two converging trends: 1) disasters that are increasing in frequency and intensity due to climate change, ecosystem degradation, and even conflict, and 2) rapid urbanization. The nexus of these two trends underscores the urgent need for effective urban risk reduction and resilience strategies, and approaches that put the urban poor at the heart of solution-making. To contribute to resilience and disaster risk reduction mechanisms among urban poor communities in the Philippines, the European Commission Civil Protection and Humanitarian Aid (ECHO) funded the Moving Urban Poor Communities Toward Resilience (MOVE UP Project) being implemented by a Consortium of non-government organizations (NGOs) composed of Plan, Action Against Hunger, CARE and local partner ACCORD (Assistance and Cooperation for Community Resilience and Development).

The MOVE UP Project started in 2016, and works with communities, local government units, and other agencies to increase preparedness and risk reduction capacities of communities, through 1) Alternative Temporary Shelter (ATS) Systems, 2) Resilient Livelihoods, and 3. Social Protection. Recognizing that resilience building is a long and complex process involving many different components and stakeholders, the project focused on two strategies that will serve as both entry points and catalysts for strengthening urban resilience: 1) the Alternative Temporary Shelter (ATS) System, and 2) Resilient Livelihoods. By centering on improving shelter conditions during emergencies and making livelihoods more resilient to shocks and stresses, MOVE UP sought to strengthen the capacities of urban poor communities and their respective local governments (ACCORD, 2021).

*Fig.5 ATS Strategy linkage to urban resilience and disaster preparedness mechanisms
(Source: ACCORD, Inc.)*

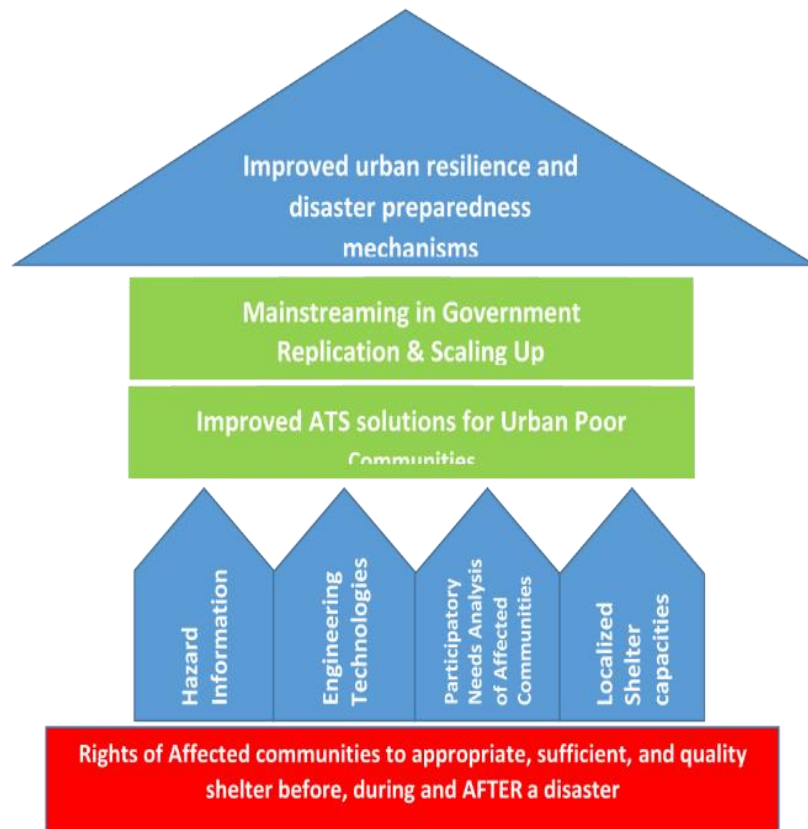
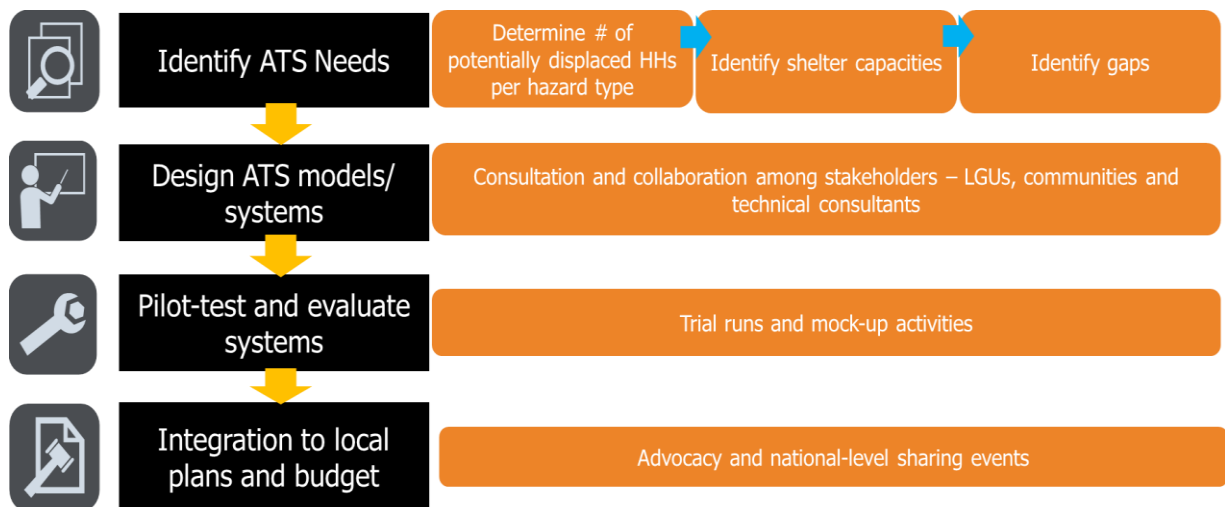


Fig 6. ATS Development Approach
(Source: ACCORD, Inc.)



The ATS strategy (Fig. 5) utilizes four important inputs: 1) hazard information/ community risk assessments, 2) engineering and technologies, 3) participatory needs analysis; and 4) localized shelter capacities. Stakeholders are engaged in varying capacities and roles in developing these inputs to arrive at solutions in a more democratic and participatory process. The MOVEUP project involved partner communities in varying capacities, from the identification of their needs, as well as during the design, fabrication, and integration of the ATS solutions into community-based contingency plans (Fig. 6). The intervention focused a substantial part of its efforts on bridging the design-engineering knowledge gap: (1) with the technical inputs from

building professionals (2) fusing with local knowledge and capacities in the community, and (3) enabled by policy and investment support from local government units, national government agencies, and non-government organizations.

Fig 6. To fit a wide variety of contexts, a menu of ATS designs that consider varying timeframes of occupancy, availability, and space configuration, as well as deployment conditions, was developed.
(Source: UAP EA and ACCORD, Inc.)



MOVE UP partnered with the United Architects of the Philippines – Emergency Architects (UAP-EA) to design ATS structures that cater to different evacuation scenarios and augment the temporary shelter capacities of LGUs. The UAP established this special committee as the “socio-civic arm of the UAP that serves as knowledge-builders in the field of disaster resilience; co-creators and co-designers of built environment solutions, advocating for the welfare of vulnerable communities.” The team co-developed the ATS as a range of substitute solutions that immediately address the urgent needs for sheltering affected populations in the evacuation stages of disaster response. With the aim of meeting the survival needs of disaster-affected population, the ATS can provide security and personal safety, as well as protection from the elements.

Designs range from tents made of bamboo or steel and tarpaulin, or partition systems made of pipes, wooden panels, or container vans. From this “ATS Menu of Options,” communities and local governments may select or customize ATS depending on their available spaces and facilities for sheltering IDPs (Fig 6). These ATS are intended to improve the shelter capacities of local governments to provide adequate space, privacy, and protection for affected populations and prevent cascading risks such as health, psychosocial, and other risks from occurring. Together with the ATS, creating safe spaces for livelihood assets in evacuation enters is conceived to encourage preemptive evacuation among vulnerable populations (ACCORD, 2021).

3. Examining the ATS Approach in the context of Social Sustainability

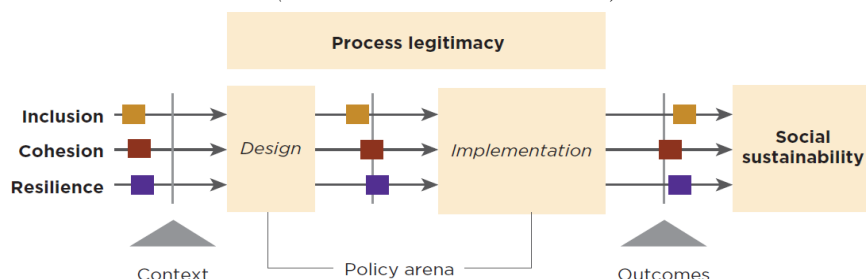
Among the three pillars of sustainable development, social sustainability is considered a more elusive and complex concept and has not been measured extensively as economic and

environmental sustainability. Yet, current disasters point to the need to address systemic risks rooted in social inequities. Integrating social sustainability into the forefront of development discourse, theory, and implementation is needed. Barron et al. (2023) noted that **social sustainability** “increases when more people feel part of the development process and believe that they and their descendants will benefit. Communities and societies that are more socially sustainable are more willing and able to work together to overcome challenges, deliver public goods, and allocate scarce resources in ways perceived to be legitimate and fair so that all people may thrive over time.” They identified the following as **critical dimensions or components of social sustainability**:

1. **Social cohesion**- a sense of shared purpose and trust, which allows communities and groups to work together toward a common good and respond to challenges such as climate change, pandemics, and natural disasters in a way that avoids conflict and war and drives real solutions, and sustainable compromises.
2. **Inclusion**- access to markets and services as well as political, social, and cultural spaces for all individuals and groups, which allows all members of society to thrive.
3. **Resilience**- includes the ability, capacity, and flexibility to avoid conflicts (including interpersonal violence) and to withstand, bounce back from, or absorb the impacts of exogenous shocks over time.
4. **Process legitimacy**- emphasizes not just outcomes but also the processes by which policies or programs are designed and implemented, within the context of existing norms and values, such that the decisions made and carried out are considered fair, credible, and acceptable by all members and groups.

These components– inclusion, cohesion, and resilience, interact and combine through process legitimacy to produce social sustainability (Fig 7).

Fig 7. Conceptual Framework for Social Sustainability
(Source: The World Bank 2023)



During emergencies, it is easy to provide ready-made shelter solutions and hand over pre-defined outputs to communities to save lives, stretch meager resources, and meet targets. Many actors fall into the trap of procuring emergency shelter units like foldable tents without undergoing the process of assessment, selection design, and planning (ACCORD, 2021). Yet emergency shelter service provision can serve as an effective entry point in improving disaster preparedness plans of local governments. It can also serve as a channel for disaster-stricken communities to claim ownership of the decision-making process that shapes shelter mechanisms and, by doing so, contribute to community-level social sustainability.

4. Results and Discussion

This study examined the dimensions of social sustainability vis-a-vis the ATS process, which involve: 1) Identifying ATS needs, 2) Designing ATS, 3) Integration to plans and budgets of local government units, 4) Facilitating implementation of ATS plans, and 5) Monitoring and evaluation, public awareness, and advocacy. Various secondary data generated since the implementation of the project in 2016, are reviewed to draw out replicable insights on social

cohesion, inclusion, resilience, and process legitimacy as applied in emergency shelter provision. Tables 1-5 summarize the results of the content review.

Table 1: Elements of Social Sustainability in Step 1. Identifying ATS needs

Identifying ATS needs	
Social cohesion	Hazard Assessment to determine the community's hazard history and Timeline, nature, and behavior of hazards, determine high-risk areas and safe locations
Inclusion	ATS Household Survey and FGDs to determine: <ul style="list-style-type: none"> ○ Shelter conditions in urban poor communities (<i>Identify the population that will sustain significant damage to their houses or whose location would put them in harm's way and therefore would require safe temporary shelter assistance</i>) ○ Profile of potentially displaced population (<i>identifying who are the potential users of AT and, their capacities and vulnerabilities, in order to inform the design considerations e.g. households headed by persons with disability and other vulnerable sectors should have accessible and easily deployable ATS.</i>) ○ Duration of displacements and reason for going back to the place of origin (<i>Will help determine the appropriate type of ATS to be deployed</i>) ○ Evacuation center conditions from experiences of IDPs (Identify gaps in ATS and services in evacuation centers)
Resilience	Inventory of existing evacuation center and available spaces by jointly inspecting and assessing available and alternative spaces, superstructure, and facilities that can accommodate and service displaced population
Process legitimacy	Participatory and multi-stakeholder engagement in above-mentioned activities <ul style="list-style-type: none"> ○ <i>Primary Duty Bearers</i>: Representatives from relevant LGU departments and National Government Agencies involved in DRRM and emergency shelters. ○ <i>Secondary Duty Bearers</i>: MOVEUP NGO Partners ○ <i>Rights Holders</i>: Identified Potentially Affected Communities

Table 2: Elements of Social Sustainability in Step 2. Designing ATS

Designing ATS	
Social cohesion	The intervention focused a substantial part of its efforts on bridging the design-engineering knowledge gap <ul style="list-style-type: none"> ○ using the technical inputs from UAP Emergency Architects ○ fusing it with local knowledge and capacities in the community, and ○ enabling co-production by policy and investment support from LGUs, NGAs, and NGOs.
Inclusion	<ul style="list-style-type: none"> ○ For communities having a high incidence of female-headed households, children per family, and persons with disability, evacuation centers and ATS considerations identified the need to consider at least the following factors: accessibility, ease of deployment, and privacy. ○ Development of an ATS Menu of Options consisting of a range of ATS solutions that can be selected according to parameters and categorization such as varying time frames of occupancy, availability, and configuration of space, capacities of the LGUs investing in ATS, as well as deployment conditions. ○ Communities and local governments may opt to either adopt designs from the ATS Menu of Options and tailor-fit these designs in their context such as adjusting dimensions and using locally available materials, or if necessary, design a more applicable ATS.
Resilience	Stakeholders place significant weight on durability when selecting the ATS as they consider the duration of displacement and the frequency of displacement occurrences.
Process legitimacy	LGUs and communities develop a consensus on the design criteria for ATS selection considering the result of the needs assessment, <i>i.e. profile of the potentially displaced population, displacement pattern, and existing evacuation practices among the urban poor</i>

Table 3: Elements of Social Sustainability in Step 3. Integration to plans and budgets of local government units

Integration to plans and budgets of local government units	
Social cohesion	CCCM plans include protocols for ATS deployment and decampment in connection with

Inclusion	Early Warning Systems of the community and local governments. This defines who, when, and where the ATS will be deployed, and on what cue. In the same manner, the decampment, or uninstallation of ATS also have clear criteria based on the JMC
Resilience	<p><u>ATS in Camp Coordination and Camp Management (CCCM) Plan</u></p> <ul style="list-style-type: none"> ○ CCCM plan includes a site plan of the evacuation center that provides details on what type of ATS is selected to be deployed, how many units can fit in the designated space, and how is the ATS positioned in relation to other facilities based on standards. ○ Selected or designed ATS are integrated into these plans as part of the basic facilities under shelter and accommodation that should be stockpiled or prepositioned to be readily available in the event of displacement. <p><u>ATS in Contingency Planning</u></p> <ul style="list-style-type: none"> ○ Integration of ATS in both the contingency planning process and in the actual contingency plan, especially in the most ATS-relevant clusters such as CCCM and IDP protection. ○ Alignment of barangay-level contingency plans with city or municipal-level plans to understand and fill in gaps in temporary shelters. <p><u>DRRM Plan and Annual Investment Plans</u></p> <ul style="list-style-type: none"> ○ In the DRRM planning, ATS is part of the CCCM plan and forms part of the preparedness and response pillars. ○ Budget allocation of ATS in the annual investment plans of LGUs will enable the DRRMO/CCCM Cluster/IDP Protection Cluster/ Evacuation Center Management team to make necessary arrangements, procurement, and pre-fabrication.
Process legitimacy	<ul style="list-style-type: none"> ○ The process of integrating ATS in various LGU plans is carried out in a transparent manner with the presence of NGO representatives in the local development councils. ○ UAP EA representatives can be called upon to serve as resource persons during DRRM planning sessions and budget deliberations to discuss the ATS options, modes of acquisition, and to provide technical services for procurement processes.

Table 4: Elements of Social Sustainability in Step 4. Facilitating implementation of ATS plans

Facilitating implementation of ATS plans	
The <u>pre-disaster phase implementation of ATS plans</u> integrated into the CCCM, contingency, DRRM, and Investment Plans is carried out through pre-positioning and stockpiling activities	The <u>post-disaster phase of implementing ATS plans</u> is the deployment of ATS in an actual emergency.
Social cohesion	<ul style="list-style-type: none"> ○ Capacity building of community members and local actors for setting up, pre-positioning, and storage of ATS ○ Capacity building of select community leaders to serve as force multipliers in evacuation center management.
Inclusion	<ul style="list-style-type: none"> ○ Harnessing local knowledge to improve ATS deployment <i>e.g., using local techniques, materials, and manpower.</i>
Resilience	<ul style="list-style-type: none"> ○ Procurement of ATS materials with a preference for local or community-based suppliers to support local livelihoods. ○ Fabrication of ATS through local builders or community mobilization to ensure that cash-for-work and food-for-work activities benefit local community members
Process legitimacy	<p>Participatory and multi-stakeholder engagement in the above-mentioned activities</p> <ul style="list-style-type: none"> ○ <i>Primary Duty Bearers:</i> Representatives from relevant LGU departments and National Government Agencies involved in DRRM and emergency shelters. ○ <i>Secondary Duty Bearers:</i> MOVEUP NGO Partners ○ <i>Rights Holders:</i> Identified Potentially Affected Communities

Table 5: Elements of Social Sustainability in Step 5. Monitoring and evaluation, public awareness, and advocacy

Monitoring and evaluation, public awareness, and advocacy	
Social cohesion	The approach veers away from treating the survivors as passive recipients of interventions. MOVEUP partner organizations work with communities by recognizing them as experts in their cultural contexts, local practices, and social dynamics. This, in turn, improves social positions within communities and fosters the inclusion of highly vulnerable members. The MOVEUP ATS approach also encouraged the participation and development of women community leaders.
Inclusion	
Resilience	<ul style="list-style-type: none"> ○ In all ATS deployment monitoring activities done by MOVE UP partners, user feedback is gathered and used to inform the improvements needed for the camp coordination and camp management (CCCM) services of communities, barangays, and

	<p>local governments, which in turn facilitates better turnout for pre-emptive evacuation.</p> <ul style="list-style-type: none"> ○ Mockups, tabletop exercises, and actual trial deployments of select ATS models allowed the translation of technical knowledge of built environment professionals to the local and visual language that communities and other stakeholders may easily comprehend and use. ○ Mockups and trial deployments of select ATS models were used to train DRRM teams during community drills to maintain and improve the skillsets required for emergency shelter deployment. ○ With the relative success of earlier shelter interventions, and as the LGU disaster response team became more confident in their abilities, they self-initiated the deployment of the ATS service where these are needed.
Process legitimacy	<ul style="list-style-type: none"> ○ Feedback mechanisms from various stakeholders were established by constructing mock-ups of the proposed designs and setting them up for public viewing. Alongside three-dimensional scaled models, LGU and NGA representatives, together with members from partner communities were able to tour these mock-ups and visualize their setup en masse. ATS exhibits with both mockups and scaled models have often been deployed during Disaster Risk Reduction and Management Council (DRRMC) meetings in partner cities where funding for emergency shelters is being deliberated. ○ Post-deployment surveys of ATS service recipients facilitate a better understanding of the service's user experience and how its delivery may be improved in the next round of deployments.

Fig 8. Stakeholders' feedback on shelter options is part of the ATS design process.
(Source: ACCORD, Inc.)



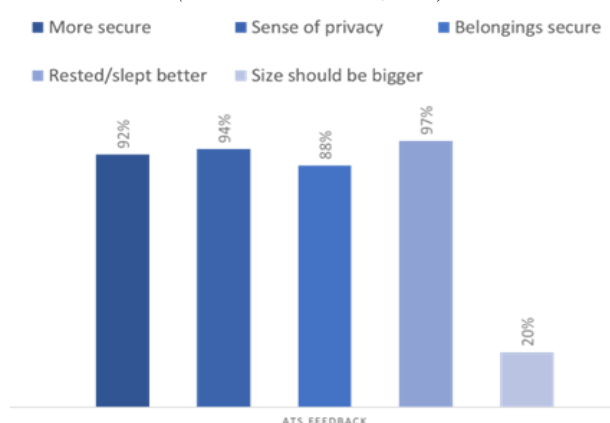
Fig 10. Barrel Vault Tent (BVT) mockup during community emergency simulation drills was used to facilitate a better understanding of its use.
(Source: ACCORD, Inc.)



Fig 9. Scaled models of the ATS were used to facilitate the visualization of potential evacuation setup.
(Source: ACCORD, Inc.)



Fig 11. User feedback was gathered through surveys and unstructured interviews with evacuees post-ATS service deployment.
(Source: ACCORD, Inc.)



5. Conclusion

By design, development is intended to change people's lives through improved capabilities, material well-being, and expanded choices. While engaging with partner communities, the ATS developers also learned that the issues and concerns revolving around the lack of dignified

evacuation spaces in times of crisis are strongly linked with other socio-economic and cultural factors. As such, the strategy went beyond the delivery of the outputs (*increasing the shelter capacities in the localities where the ATS was adopted*) but also improved the process of delivering the interventions (*multi-stakeholder collaborations, multi-directional communications*) and was conscientious of the outcomes (*striving to advance social inclusion relating to gender, ethnicity, age, and disability; increasing organizational capacity; and pushing for the equitable distribution of capital and assets*).

Carried out through a multi-stakeholder collaborative environment, national and local governments provide enabling policies as primary duty bearers, technical professionals as secondary duty bearers provide technical expertise, and civil society groups support and strengthen accountability mechanisms, partner communities are given resources and opportunities to reshape their emergency shelter service experience through awareness building and constant engagement.

An iterative dialogue between the stakeholders resulted in alternative temporary solutions (ATS) that are rooted in the local community's needs and maximize their use of available resources at their disposal. More than the physical protection these emergency shelters afford the evacuees, the democratic and participatory co-production process it resulted from celebrates and upholds human dignity.

The study recognizes that the path towards the overall vision of “*safer, adaptive and disaster-resilient Filipino communities toward sustainable development*”(NDRRPMP 2011-2028) is a long and complex process involving many different components and stakeholders and that significant changes cannot be accomplished within the timeframe of any single project. It also noted how placing people at the heart of solution-making can help incrementally build better mechanisms to cope with, bounce back, and recover from disasters. Although not exhaustive, the examination of the ATS approach also sheds some light on the contribution of design professionals toward less explored dimensions of sustainable development — social sustainability. By foregoing the common technocratic, top-down approaches that generate dependencies and often fail to generate long-term sustainable results, the MOVEUP ATS approach highlights how: (1) improving participation and empowering communities to generate better results, (2) technical standards on the implementation of temporary shelters can be negotiated to adapt to local conditions aided by local knowledge, and (3) the future replication of the ATS and its adaptation to other contexts is better assured through a sustained and consistent partnership between the right holders and duty bearers. Beyond structures and buildings, architects can effect meaningful change by approaching projects with a “leading from behind mindset” and weaving social sustainability dimensions into their solution-making process.

Acknowledgment

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