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Cash for work road repair, Bilin township, Mon State

BRIEFING PAPER 6: THE HUMANITARIAN – CLIMATE CHANGE NEXUS

This Briefing Paper considers how the Gulf of Mottama Project supported coastal communities in preparing for and responding to “rapid onset” disasters – that is, floods, tidal surges, droughts, and storms. The Covid-19 pandemic was also a rapid onset disaster to which the project responded, although not an occurrence attributable to climate change. The paper covers all project activities related to WASH and cash for work – both of which were conducted as part of humanitarian assistance, although WASH activities were also addressed as development activities.

WATER, SANITATION AND HYGIENE (WASH)

Access to drinking water

Outside homes in the coastal area, rows of ceramic pots filled with water attest to the importance of drinking water availability, as do pots positioned strategically at roadsides from which passers-by can drink. The hot, dry period of February – May is a particularly difficult time, when sometimes water must be bought at considerable expense from external vendors. Rising temperatures as a result of climate change are making access to water during this period even more problematic.

The GoMP was designed to improve coastal livelihoods based on agriculture, fisheries, and alternative employment – linked to sustainable natural resource management. WASH did not originally feature in the project concept. However, over the course of phase I villagers specifically requested support for household water supplies. Water sources vary between and within villages, and over the year. More fortunate villagers have access to

wells. Others rely on rainwater harvesting during the monsoon and subsequent months; once this is exhausted, water is collected from domestic or communal ponds (often hand-dug). The water quality from such ponds is often quite poor, especially as they start to dry up in the hot months; diarrheal diseases are, unsurprisingly, quite common. In a few places tube wells have been installed; however, in many places this is not an appropriate intervention as extracting groundwater runs the risk of saline seepage.

In accordance with community requests, WASH was integrated into the phase II design, becoming part of project activities from 2018 onwards. To organize work in a systematic, prioritized manner (recognizing that the project could not fund everything), the project facilitated a Water Use Master Plan (WUMP) in each village, then integrating these village plans into cluster level plans. Developed in Nepal, this participatory planning method has been successfully replicated in many other countries. A WUMP identifies and maps all water sources and services in a given area and, in discussion with the communities concerned, ranks the importance of interventions according to need. Interventions identified included pond rehabilitation, pond construction, drinking water tanks (some fed by rainwater harvesting), water purification units/filters, deep tube wells, and drainage channels. Based on the WUMP the villagers first decide what can be done with their own resources. The prioritized interventions requiring additional resources are included in the annual Village Action Plan. Some are proposed for support through the project, while others are proposed to other potential funders. This process was completed in 52 villages.

The first WASH interventions supported through the project focused on ensuring a safe, reliable drinking water supply through the installation of drinking water tanks and purification units. In two villages that were particularly vulnerable to coastal erosion, the Lifestraw water filter system was selected due to its transportability; the plastic water tanks, filters and pipes can be quickly disassembled and reassembled in a new location, as appropriate. However, this system is expensive, so in 10 other villages, a locally assembled sand filter system was used with 2,000-liter water tanks. The number of tanks installed ranged from 10 to 20 according to the size of the village population.

“The [project-supported] water distribution system is of huge benefit to us. Every household has a tap; this means that water wastage is reduced as everyone takes care of his or her supply. We have enough water for the whole year. And, of course, we save a lot of time as we don’t have to go and collect water.” Middle-aged woman, VDC member and Peer Educator on WASH, Sai Pa Lar village, Chaungzon township

Wherever a piped drinking water system was installed, the project ensured that all participating households formed a water user group and paid a small monthly subscription to a maintenance fund. The monthly fee varies according to the system, but ranges from an affordable MKK 2,000 – 4,000 per household.

“Drinking water is crucial. We are thinking about increasing the production of purified water and selling it to other villages. In this way we can raise money for maintaining and improving supplies. We have a little money from the water users fund but on its own it will not be enough for excavating a new pond or renovating the old one, and upgrading the purification system.” Middle aged man, VDC accountant, Thein Chaung village, Bilin township.

In the third phase of the project, from 2021 onwards, water supply provision was also taken up under cash for work – most notably, pond renovation (see later section). Through a combination of cash for work and contracted work, all-year access to drinking water (from ponds, rain-water harvesting and storage, or tube well) was assured in 41 out of the 60 project villages.

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A household with several water pots for rainwater collection
Bilin Township, Mon State



Handwashing, Kyiekhto township, Mon State

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Behavior change on WASH

Although no detailed survey of WASH behaviors was conducted when the project began WASH interventions, anecdotal evidence suggests that latrine use was sporadic, open defecation quite common (especially along the shoreline), handwashing rare, and an awareness of the pathways of contamination low. An external project evaluation of WASH activities in late 2023 broadly substantiated this assessment. International experience in similar situations has shown that improving drinking water supplies has little impact on health unless this is combined with behavior change. The project first addressed this challenge by awareness-raising conducted by the local staff (Community Facilitators). However, it soon became clear that this was insufficient, and the decision was taken to train WASH Peer Educators (PE). Selected through the VDC as respected individuals within the communities, these women and men (an equal mix was chosen deliberately) underwent WASH a two-day training on a wide range of WASH issues. They were then expected to train their fellow villagers in meetings organized through project assistance.

The importance of handwashing was given further prominence when the Covid-19 pandemic arrived in 2020. In total, well over 100 WASH PE were trained in successive training events, usually one woman and one man per village in 51 of the project villages (see Briefing Paper 1 for the reasons not all villages could be covered). The external WASH evaluation noted that villagers reported their WASH behavior to have improved. Nevertheless, in the villages sampled, the review found that the majority of people still do not regularly wash their hands properly with soap and water before preparing food, eating food, feeding children, going to the latrine, handling faeces, or touching garbage. A lack of soap, and especially of knowledge of how to make it, was cited as a particular issue. Unfortunately, soap must be purchased; following the change in government the main raw ingredient for domestic soap manufacture, bicarbonate of soda, has not been locally available.

The disappointing findings of the review highlight the need for regular, tailored messaging to achieve behavioral change. The review noted that messaging was more effective when conducted in small groups rather than large village meetings, and that WASH PE persons needed additional communication skills to be able to put across their message in a convincing manner. A further finding – in contrast to the tendency of men to dominate village meetings - was that women were the main participants in WASH training sessions and, as a result, understood hygiene issues better than men. This is positive from the perspective that it is mainly women who prepare and cook food and care for children; however, men need to change their practices too. They apparently did not attend trainings because the timing clashed with their livelihood activities – and they either did not listen to or were not informed by their wives about the training content.

In the light of the review recommendations, in the last year of project operations (2024), WASH awareness-raising was organized in smaller groups and followed up in person by the WASH PE. The timing of the sessions was modified according to participant availability, and WASH awareness sessions were organized with other events such as VDC meetings and other trainings in which men generally participate.

Flood-resilient latrines

Information collected in WUMPs showed that villages varied with regard to the existence of latrines, with provision being less common in the poorer villages and amongst poorer households within a given village. Although on average 70 – 80% of households in the coastal villages had access to a latrine (the average hides considerable variation between villages), a high proportion of these did not meet sanitary standards. It was (and in many cases, remains) common for latrines to be located by stream sides, so that faeces drop into the water. In coastal areas, seasonal flooding often renders standard latrines unusable. The project therefore introduced sanitary, flood-resilient latrines, built on a raised plinth that ensures

they remain above normal floodwaters. Budgetary considerations meant that this could not be done in all villages; rather, the intervention focused on five selected villages that would serve as models for others. These villages - Thein Chaung, Kyauk Seik, Kyun Tone, Kha Lat Su and Aung Myay - were identified in WUMPs as having need for and interest in better sanitation. Of note is that in Kyun Tone, 70% of households practiced open defecation before WASH activities commenced in 2019; in other villages, the percentage ranged between 14 to 30%. In all five villages, the uptake of sanitary latrines following the intervention was good, although it did not reach 100%. Four latrines were also constructed in schools and health centers. The external review found that, as might be expected without additional support, poor households were the least likely to adopt; it was also questioned whether the uptake that occurred was directly linked to the project demonstration, or more to a general increase in income allowing for investment in a sanitary latrine. Unfortunately, the demonstration effect was found to have very little impact beyond the five selected villages. This may be in part due to mobility restrictions during the Covid pandemic and then the military takeover; whatever the reason, WASH PE did not manage to incorporate information on sanitary latrines into their communication messages. Here it can be concluded that far greater project investment into the matter would have been needed to significantly improve the situation.

Managed waste disposal (incinerators)

There was essentially no provision for waste disposal in the coastal villages when the project commenced activities. Collection is organized in towns by the township authorities, but in rural areas people generally burn rubbish (often in slow burning fires emitting toxic fumes) or dump it into streams, along roadsides or into the sea. Some reusable items, such as plastic bottles, are collected by poorer households for resale, but plastic pollution (also from non-local sources) is a major issue – injuring wildlife and negatively impacting the ecosystem in unseen ways through microplastics. Beyond plastic, the dumping of household waste is a general environmental hazard - contaminating water supplies, attracting flies and vermin, and generating noxious odors. As was the case for other WASH activities, the project sought to set good examples that could be copied. It called for proposals for waste management from VDCs and selected the best two, which came from the villages of Kyauk Seik and Hnyee Hmote. In both cases, the need for a waste incinerator had been identified under the village WUMP and CBDRM plan, and the village was willing to provide land and some of the labor. The activity is succinctly described by one participant below.

“We started the waste management system in 2019. We have a twice weekly collection in which waste is separated into plastic packaging, plastic bottles, paper, and metal. Some of this has a resale value; what does not, we burn in the incinerator, which we run at least once a week.



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Collecting water for household use, Bilin township, Mon State



Waste collection for recycling, Kawa township, Bago Region

We don't collect organic matter – that is fed to pigs or composted by households. For the rest of our lives, we will continue this waste management as we are convinced it is good; every villager gives MKK 1,000 per month towards it, so the system is self-sufficient.” Man aged around 60, VDC executive member, Hnyee Hmote village, Chaungzon township.

The waste incinerators were constructed following a recommended local design with a chimney 5m tall. The job of waste collection – paid at a fair local rate – is undertaken by individuals from poor households, but each participating household is also asked to conduct a pre-sorting themselves. Although there have been discussions over the collective composting of organic waste, this has not yet been put into practice.

In the seven villages that it assessed the WASH review found that waste disposal was perceived by villagers to have improved as a result of project interventions - although the level of participation varied between households. Thus, for example, in the village of Kyun Tone, the majority of households were found to be disposing garbage in their own garbage bins; some two thirds then burned it, whilst one third threw into a nearby stream. Nevertheless, the number of rats, cockroaches, and flies was reported to have decreased considerably – and the prevalence of diarrhea in children under five reduced from 70% to 20%. The latter trend was widely reported and is likely to have been the combined result of various WASH interventions. Unfortunately, data from health posts is unavailable to triangulate with villager perceptions.

CASH FOR WORK

Following the major economic downturn caused by the Covid pandemic and the 2021 military takeover, many households in the project area were in desperate need of additional income. Cash for Work became, and has continued to be up to project closure, an important source of household support and a major mechanism for delivering humanitarian assistance. Given the existing Village Action Plans that were developed for many villages (incorporating several sectorial plans such as the Livelihoods Plan, WUMPs, Conservation Action Plan and Community-Based Disaster Risk Management Plans), it was not difficult to identify and prioritize, through village level discussions, infrastructure in need of repair and/or construction.

Planning Cash for Work activities requires careful consideration of a variety of factors, not least the following:

- Work on small-scale rural infrastructure can only be conducted during the dry season from December – May – that is, four to five months per year.
- Seasonal farming activities such as the planting and harvesting of paddy and green gram must take priority over Cash for Work. During such periods of peak agricultural labor demand, no Cash for Work should be organized.
- All prioritization of infrastructure needs, planning and design activities should be conducted prior to the dry season to ensure work can start as soon as weather conditions allow.
- The own contribution of communities – including the provision of materials such as soil, laterite and stone – must be arranged to ensure timely availability.
- The wage labor should be set according to the prevailing market rate, with equal pay for women and men conducting the same work. It should not disrupt the market rate.

Road and path repair

Roads and paths in the coastal region are generally raised above the land around to minimize flooding. Nevertheless, monsoon rains and seasonal flooding, not to mention extreme weather events, cause significant damage to these essential transport networks. Government support for repairs is currently minimal, and although villagers try to conduct small repairs themselves, this is generally insufficient to maintain good condition. Reconstructing roads and paths by hand labor has therefore become an important means by which the project supports both crucial access to markets and services and an opportunity for wage labor. Since 2020 the project has supported the reconstruction of 30 km of road as well as 50 km of small paths and bridges – the latter being a network of footpaths used by children to go to school, and poorer villagers (those who own no motorbike or other vehicle) to move about.

Pond renovation

As already noted, ponds are crucial sources of freshwater for many households, especially during the hot, dry season. They too are regularly damaged by rains and floods and need to be de-silted from time to time. The trampling hooves of livestock also damage ponds and does nothing to improve water quality. Ponds renovated under cash for work schemes were not only improved in terms of their depth or width and thus the volume of water that they could hold. They were also cleaned and fenced to prevent the intrusion of livestock – and as a reminder to people to respect the cleanliness of the area. Pond renovation work has provided villagers with a total of 1,200 days of paid labor since 2019.

Embankment and irrigation/drainage rehabilitation

An assessment of the pattern of coastal erosion in the Gulf of Mottama, conducted by a Dutch consultancy firm in 2018, advised against the construction of massive sea walls and similar sea defenses. It argued that such infrastructure would be a poor investment and that coastal erosion was better accepted as a process, and adaptations made accordingly. What this means in practice is that embankments and channels must be constructed in the recognition that, although probably limited in lifetime, they should nevertheless serve their purpose for a significant period (at least a 15 – 20 years, but maybe more). Embankments are generally made of compacted earth, and channels are earthen rather than concrete lined. Renovating such structures is also well suited to cash for work, which has been undertaken over a total of 385 days of paid labor since 2019.

Tree planting: mangroves and wind breaks

Tree planting was also an activity sometimes conducted with support through Cash for Work. As a biodiversity conservation activity, this is discussed further in Briefing Paper 6.

RESPONSE TO SPECIFIC EMERGENCIES

Floods

“We now have a new drainage channel, thanks to the project – dug mainly by machine, so the work was quickly completed. Following the recent floods it became obvious that this channel was really needed.” Middle aged man from Kha War Chaung village (that was totally resettled in 2014), Kyaikto township.

In the case of sudden onset emergencies, the project conducted a Rapid Need Assessment (RNA) to determine the impact on the concerned communities. Based on the findings, it responded with both short term emergency support and longer-term recovery support. Emergency support included food, shelter (tarpaulins and plastic sheeting), drinking water and water purification tablets. Recovery support included cash transfer for investment in livelihoods, agriculture inputs (seed and fertilizers), and the renovation of damaged rural infrastructures such as



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Mangrove planting, Paung township, Mon State

bridges, irrigation canals, water system, road or retention walls. Advice on the protection and recovery of flood-affected crops was also provided to minimize any further damage.

Covid-19

In Myanmar, the outbreak of the Covid-19 pandemic in 2020 had a major negative impact on the economy given the halt to many exports (especially to China) and to tourism. The fishing industry in the Gulf of Mottama was particularly badly affected. However, significant numbers of deaths from Covid-19 only began in mid-2021 when the delta variant started spreading. Government health facilities were quickly overwhelmed - lacking adequate supplies (such as Oxygen tanks) or equipment to respond. Quarantine centers were established in schools, and it was on these that the project focused its support, reaching 96 in total. In 32 such centers, hand-washing facilities and Life Straw drinking water filters were installed; being of good quality, they are largely still in use now that the buildings have returned to their regular use as schools. In total, the project's COVID emergency response reached 96 quarantine centers in 60 villages with 19, 539 people (of them, 40% women) receiving emergency food supplies and protective materials (notably masks and soap). Cash for immediate livelihood needs was transferred to 2,768 families who were identified as being especially vulnerable.

Highlights of experience

•Humanitarian assistance has the potential to reinforce development activities. This is clearly seen in the Gulf of Mottama where earlier participatory planning processes allowed for the rapid identification and implementation of appropriate, necessary WASH and cash for work emergency interventions.

•As is widely known amongst WASH practitioners, behavioral change generally takes time and repeated messaging. The training of village Peer Educators is considered a good practice, but it is essential that they are selected for their communication skills as well as their interest, and that they are not only trained in WASH techniques but also in how best to communicate this to others. Nevertheless, this is easier to do in regular development contexts than in an emergency situation in which many individuals, especially young people, are either absent or hesitant to play any prominent role in the community.

•Whilst cash for work can be a vital source of income for people in emergency situations, it is usually seasonal in nature. It must be integrated into the local labor market in a manner that complements rather than competes with other demands for labor.

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ENDNOTES

ⁱEmpower Consultancy (2024) Assessment of Cash for Work and WASH Interventions. Unpublished internal report Gulf of Mottama Project. SDC, Helvetas, NAG and IUCN January 2024.

ⁱⁱArcadis (2018) Dealing with Coastal Erosion in the Gulf of Mottama. 31 December 2018. <https://gulfofmottama.org/en/resource/263>