

Evaluation Report

Evaluation of the ECHO Actions in favour of the Burmese refugees in Thailand

Sector: WATER AND SANITATION

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EXECUTIVE SUMMARY

1 Description of evaluation

After many years of assisting the Burmese refugee population in the Thai-Burmese border area, the European Commission's office for humanitarian assistance – ECHO, in keeping with its mandate, commissioned an independent evaluation of its funded actions of its partners, Malteser Hilfsdienst Germany (MHD), Aide Medicale International France (AMI), in two specific areas, namely:

- Health
- Water and Sanitation.

Between February 21st and March 21st 2002 the consultants Thomas Bowyer, Team leader and Water and Sanitation expert – GFE Consulting Worldwide, and Dr. Pascal Crépin, Medical expert - Prolog Consult (separate report), undertook the field mission to Thailand.

The objective of this mission was to obtain the necessary information for improvement of actions and future strategy of ECHO in favour of the Burmese refugees in Thailand. The focus was four camps:

- Mae Ra Ma Luang
- Mae Kong Ka
- Umpiem Mai
- and Nu Po.

2 Relevance

Objectives of the Operation

The objective of the ECHO financed part of AMI's and MHD's operation is to provide basic health care, and water and sanitation, to mainly Karen refugees located in campsites along the Thai-Burmese border. The implementation approach going some way to reduce aid-dependency, and at the same time help preserve the refugees' own culture and life-style, making eventual return to their homes less problematic.

Identification of Needs

The needs of the target population and the current level of support provided is justified by the facts that:

- No status is given to the refugees/displaced people by the Thai authorities.
- The refugee communities in the camps are not given the possibility to generate income up to the self-sufficiency level.
- No important agricultural activities are permitted.
- No funds in the refugee communities are available to take care of basic medical care and the provision and the maintenance of sanitation facilities.
- Predictability of the future situation including the influx of new caseloads is very low and emergency measures have to be taken
- The ever-present severe security situation for the refugees is improved by the presence of international organisations and their staff in the camps, (passive security measure).

The mentioned justifications comply with the basic justification of humanitarian operations, as the objective is to save and preserve life in emergency and post-emergency situations. Since new arrivals and future developments are unpredictable, the presence of ECHO-funded NGOs in the camps is useful to prevent further suffering of people.

Targeting Criteria

The ECHO-financed operations in Thailand focus on the ethnic populations, which fled Burma and are living in the refugee camps along the Thai-Burmese border. This situation is seen as temporary by the Thai authorities. The refugees are not given the possibility to generate income up to self-sufficiency level. These circumstances lead to the result that the entire refugee population is the target for food aid, health, and water and sanitation.

3 Effectiveness

The ECHO funding in the water and sanitation sectors remains effective in overall terms. With the passing of time, the programme of assistance has changed from what was in the early years, an emergency situation, to what is more like today, that of development, though not in the true sense of the term. Equality, independence, and the escape from poverty remain distant goals for the refugees caught up in this particular struggle. In the emergency situation phase, the priority was to provide safe water. Had there been no intervention, the refugee population would have used by necessity polluted river water for example, and in all likelihood, succumbed to sickness and death.

At the present time the refugees benefit from a reliable and potable supply of water, and have basic sanitation systems and solid waste collection and disposal systems equal to, or in some cases, of a higher standard to that of local villages. As with any community however, changes occur, populations increase, hardware deteriorates, and environmental conditions change, making the need for continued input as vital now as in the emergency phase.

4 Efficiency

The effective collection, and recording of data to measure, efficiency is at best in “normal” situations problematic. Given the restrictions on the movement of personnel, type of equipment available, etc, the notion becomes even more problematic. There are however performance indicators that can be used to gain at least an overall view. For example, does everyone have access to clean water, is it available for at least most parts of the day, have people enough water to be able to wash clothes on a regular basis? Such indicators are standard tools used by agencies in the field of water and sanitation, and are elaborated in publications such as the “Sphere Project” Minimum Standards, and the RedR: “Engineering in Emergencies” handbook, which also gives practical guidance in the construction of tanks, etc.

With regard to the camps visited during the evaluation, it can be stated that all camps funded by ECHO were supplied with clean and safe water, piped close to each dwelling. The NGOs operating the systems have limited funds with which to work, but generally speaking, provide value for money. One exception to this is the lack of co-ordination and overlapping that is currently taking place. In one camp Mae Ra Ma Luang, for example, where two NGOs were seen to be operating independently in the water and sanitation for the camp. Another observation, which also impacted on the longer-term sustainability in the water and sanitation sector was the general lack of up to date training of the refugees involved in water sector activities, again Mae Ra Ma Luang camp was an example of this.

5 Impact

The impact of ECHO funding in the water and sanitation sectors has over the years developed into a long-term, positive action in the sectors. The building in both theoretical and physical terms of a sound infrastructure is plain to see. It has lessened human suffering, and had a direct effect on the health of the community. This can clearly be seen in the low rates of disease both waterborne and otherwise throughout the camps.

An unplanned impact has been the benefit gained by local villagers. The surrounding villages, which for many years had unreliable sources of water, have been supplied with piped water, which has come about in

some instances through the co-ordination of water schemes planned for the camps, to include nearby villages. A typical example is that of Nu Po, where a gravity supply was created some 4 to 5 kilometres away from the camp, by the NGO responsible for water and sanitation (ARC). This project incurred fairly high capital costs in terms of materials etc, which the village could not meet. Co-operation however in the construction resulted in water also being piped to the village.

6 Recommendations

In all four of the camps the actors had widely differing approaches to the services they provided. In part, this was due to the geographical and topographical nature of the particular sites, but also to the style of management, and the technical expertise employed. It is fortunate that the sources of raw water used in each of the camps proved to be reliable, within easy reach, and generally of good quality. However, with the ever-increasing size of the camps, water storage is seen as an important factor. The ad-hoc methods used for water storage at the present time require rationalisation and co-ordination.

At the time the camps were initially established in the early 90s, the refugees were advised to boil all water before use. This was sound and practical advice. However, with the introduction of new water sources, the use of filters, disinfecting of the water, and water testing, this may now not necessarily be the case. Any change in procedures however, would require careful monitoring.

For example, the contact time of the disinfecting agent with the raw water would need rigid procedures, but could for example, lead to a significant reduction in the use of charcoal currently used as the fuel for boiling water. The standardisation and issue of screw top water containers to each household is another area, which needs to be addressed. The issue of such containers reduces the risk of contamination of supplied water within the household itself, and supports the argument of not necessarily boiling water before use.

The use of PVC pipe and its protection from direct sunlight is another area of concern that needs to be addressed. The simple use of split bamboo as a covering adopted by MSF in the Mae La camp, being one cost effective solution.

From a management point of view the situation becomes more complex. Historically, changes in agency responsibility in certain camps has had the effect of making the geographical inputs of the actors less than ideal, leaving some of the players with only minor inputs compared with the original requirement. This in turn has led in some instances to overlapping, and a lack of co-ordination. The input of expatriate staff, particularly on short-term missions, and not necessarily matched to the needs of the job, has had a demoralising effect, in some instances, on the local staff this was particularly noticeable in Mae Ra Ma Luang camp.

Training, which as the report suggests was carried out initially by the agencies at the time of the establishment of the camps, was at the time sound and the results speak for themselves. However, time has moved on and with it changes in technology and operational procedures. Added to this is the large population increase in the camps, which makes the need for standardised approaches and upgrading of skills a priority for those refugees employed in the water and sanitation sectors of the camps.

Unfortunately, in the present context, water and sanitation come under the general banner of health. The general impression one gets is that water is just an add-on; this is made more poignant by the fact that a professional input in the sector may in some cases be missing. The need for common standards, and co-operation by all the actors in the water and sanitation sectors is essential if progress in the continually expanding camps is to be made, and in a safe and professional manner.

Whilst, in theory, a platform for the co-ordination of NGO's activities exists in the form of the Committee for Co-ordination of Services to Displaced Persons in Thailand (CCSDPT), at the present time it does not appear to meet the need for co-ordination and information sharing within the water sector. It would be advantageous for one agency to become the lead agency in the field, and to provide training where necessary to other agencies working in the sector. The selection of bulk water storage units is a major problem in the camps visited during the evaluation, and is a typical example of each actor doing his own thing. It is

appreciated that the choice of materials is limited, and that to purchase materials outside Thailand may incur heavy surcharges in terms of taxes. It is, however, an option that is worth considering for the future. It is recommended to use sectional tanks, which are easily transportable and quick to install or dismantle

7 Lessons Learned

In GFE's opinion the present ECHO funding in the water and sanitation sectors is well justified in the two camps visited, namely Mae Ra Ma Luang and Mai Kong Ka. However, there does need to be a rationalisation of common goals and practises. Unless the present situation of the refugees in Thailand does not change significantly, continuing support at broadly the same level is recommended. With the passing of time the infrastructure in the water and sanitation sector is showing signs of deterioration.

The need for replacements in terms of pipes, tanks, etc. should be discussed with the proposed lead agency – with a view to preparing detailed estimates for submission to ECHO, thus ensuring a smooth and effective upgrading of vulnerable water systems.

Training which was initially carried out in the camps has taken less of a role in more recent times, this was particularly evident at the Mae Ra Ma Luang camp. To illustrate this, during an interview with one of the local refugees in the camp, a discussion took place on the subject of irrigating a small plot of land for crops, and which, the authorities would have appeared to have turned a blind eye to. Rightly so the refugees were not allowed to use valuable drinking water, there was however a river nearby at about the same hydraulic level. The evaluator made a suggestion, that a small basic water wheel could lift water from the river to irrigate the plot. The refugee then asked who could advise him on how to construct it, what materials he would need etc. Judging from this conversation it could be argued that very poor contact existed between the refugees working in the water sector and the expatriate staff in control.

MAIN REPORT

1 BACKGROUND

The Burmese military junta, the SPDC, has ruled the country by force and repression since 1998, with no form of democracy and total disregard for human rights. Ethnic minorities are the most vulnerable and, particularly in the border areas, the Burmese junta sees them as a major problem. The junta considers them to be supporters of the rebel movements, giving shelter or backing to elements of resistance. They are therefore maltreated and suffer violent repression at the hands of the military. Local populations in these areas live in fear of their leaders.

Refugees arriving at the Thai border belong to these Burmese ethnic minorities (Karen, Karenni and Mon) and say that they have fled to escape oppression, forced labour, and financial extortion. They have had their homes destroyed, their crops burnt and other goods confiscated. Hunger and fear force them to flee to the Thai border.

New candidates to obtain refugee status cross the border in small groups in order not to attract the attention of the Thai authorities. Many of them don't obtain this status because they don't comply with the strict requirements imposed by the authorities and are, therefore, forced to live clandestinely around the camps to obtain aid from the humanitarian organisations. Officially refugees receive no aid from the Thai authorities. They are forbidden to work and only authorised NGOs may run humanitarian programmes to support them. Refugees are not permitted to leave the camps and if they are caught breaking the rules they risk being imprisoned. They have no economic independence; they cannot return to their place of origin and are therefore increasingly dependent on humanitarian aid for their survival.

The present evaluation includes the assessment of a performance of ECHO partners active in the Water and Sanitation sector in Thailand and included in the evaluation of the assistance network set up by the ECHO partners. As a result of the evaluation recommendations are given stating the future needs and regions for intervention and the introduction of possible measures and adaptation to increase the efficiency of the operation.

The organisation ICCO/BBC were entrusted by ECHO with the implementation of humanitarian assistance operations for food supply; ECHO will financing covers 100% of the rice, yellow beans, cooking oil, and cooking fuel needs of Maela and Umpien Mai camps, for approximately 57,200 Karen refugees.

The organisation AMI – Aide Medical International, MHD – Malteser Hilfsdienst Germany, were entrusted by ECHO with the implementation of a humanitarian assistance operation for Health, Water Sanitation aspects for approximately 51,400 Karen refugees located in four camp sites along the Thai-Burmese border. The total value of the operational contract amounts to Euro 4,500,000 for the provision, purchase and distribution of food and relief items in the period 1 January 2001 to 31 December 2001.¹ Whilst BBC is not specifically targeted by this evaluation study, it was noted at site inspections, and meetings with camp leaders, that the agency was stable, professionally managed and run in an effective and efficient manner.²

¹ The projects financed by ECHO were covered by the following contracts:

ECHO/THAI/210/2001/01001 Aid Medicale International (AMI) €800,000 - Humanitarian assistance for displaced persons on the Thai-Burmese border 1 January – 31 October 2001

ECHO/THAI/210/2001/01003 Malteser (MHD) €495,000 - Medical emergency programme for Karen and Burmese refugees along the Thai-Burmese border

² ECHO/THAI/210/2001/01002 ICCO/BBC €3,205,000 – Food relief to Burmese population in Tak province, Thailand 1 March – 31 December 2001

2 METHODOLOGY

This report focuses on the Water and Sanitation sector of the evaluation. In addition to the specific focus, visits were made to local Thai villages, to assess needs in a wider context. Two of the actors funded by ECHO in the camps, being also involved in AIDCO-funded projects targeted at the Thai Village Project. Taken in the wider context of linking relief rehabilitation and development (LRRD), these projects form an important element in a holistic approach to the area as a whole.

The evaluation project began with a two days briefing at ECHO premises in Brussels. The evaluation expert was provided with all necessary information on ECHO's funding of the relevant projects. He undertook a comprehensive desk study and had intense discussions with the ECHO Desk Officer for South-East Asia and the evaluation unit.³ The relevant Desk Officer of AidCo was also present, as the LRRD issue was an essential part of the evaluation.

Directly after this briefing session, the evaluation team began its field mission in Thailand. During the first days further information about the relevant projects was gathered at the EC delegation and NGO headquarters in Bangkok. The evaluation team attended a number of meetings with representatives in charge of the refugee assistance. ECHO's representative in Bangkok substantially supported the two experts, so that the detailed planning of the trip could be finished and the team could leave to the eastern border region.⁴

The following 18 days were spent in the northeastern border regions. The team visited the following camps⁵:

Camp	Population
Mae Ra La Luang	9,830
Mae Kong Ka	15,385
Umpiem Mai	16,800
Nu Po	9,744

The assessment covered water sources, distribution points and waste disposal places within the camps. This evaluation report focuses on the findings within these camps, although, as requested, the experts examined as well the overall situation of the refugees and the local population in the region.⁶ Therefore the team visited villages and held meetings with further NGOs providing assistance in the region.⁷

The mission ended with final discussions with actors in Bangkok.

3 RELEVANCE

Objectives of the Operation

The objective of the ECHO financed part of AMI's and MHD's operation is to provide basic health care, and water and sanitation, to mainly Karen refugees located in campsites along the Thai-Burmese border. The implementation approach going some way to reduce aid-dependency, and at the same time help preserve the refugees' own culture and life-style, making eventual return to there homes less problematic.

³ See briefing note in Annex 1

⁴ See Schedule of visits and appointments in Annex 9 and 10

⁵ See camp layouts in Annex 5-8

⁶ According to UNHCR there are 11 camps spread along the 2,400 km border

⁷ In addition to registered refugee figures, thousands of displaced persons live in Thailand outside the camp structure. The number of internally displaced persons within Burma's eastern border region – although very difficult to determine accurately – is thought to be around 500,000.

Identification of Needs

The needs of the target population and the current level of support provided is justified by the facts that:

- No status is given to the refugees/displaced people by the Thai authorities.
- The refugee communities in the camps are not given the possibility to generate income up to the self-sufficiency level.
- No important agricultural activities are permitted.
- No funds in the refugee communities are available to take care of basic medical care and the provision and the maintenance of sanitation facilities.
- Predictability of the future situation including the influx of new caseloads is very low and emergency measures have to be taken
- The ever-present severe security situation for the refugees is improved by the presence of international organisations and their staff in the camps, (passive security measure).

The mentioned justifications comply with the basic justification of humanitarian operations, as the objective is to save and preserve life in emergency and post-emergency situations. Since new arrivals and future developments are unpredictable, the presence of ECHO-funded NGOs in the camps is useful to prevent further suffering of people.

Targeting Criteria

The ECHO-financed operations in Thailand focus on the ethnic populations, which fled Burma and are living in the refugee camps along the Thai-Burmese border. This situation is seen as temporary by the Thai authorities. The refugees are not given the possibility to generate income up to self-sufficiency level. These circumstances lead to the result that the entire refugee population is the target for food aid, health, and water and sanitation.

4 EFFECTIVENESS

The ECHO funding in the water and sanitation sectors remains effective in overall terms. With the passing of time, the programme of assistance has changed from what was in the early years, an emergency situation, to what is more like today, that of development, though not in the true sense of the term. Equality, independence, and the escape from poverty remain distant goals for the refugees caught up in this particular struggle. In the emergency situation phase, the priority was to provide safe water. Had there been no intervention, the refugee population would have used by necessity polluted river water for example, and in all likelihood, succumbed to sickness and death.

At the present time the refugees benefit from a reliable and potable supply of water in all the camps visited. Both funded by ECHO and others, and have basic sanitation systems and solid waste collection and disposal systems equal to, or in some cases, of a higher standard to that of local villages. As with any community however, changes occur, populations increase, hardware deteriorates, and environmental conditions change, making the need for continued input as vital now as in the emergency phase.

5 EFFICIENCY

The effective collection, and recording of data to measure, efficiency is at best in “normal” situations problematic. Given the restrictions on the movement of personnel, type of equipment available, etc, the notion becomes even more problematic. There are however performance indicators that can be used to gain at least an overall view. For example, does everyone have access to clean water, is it available for at least most parts of the day, have people enough water to be able to wash clothes on a regular basis? Such indicators are standard tools used by agencies in the field of water and sanitation, and are elaborated in

publications such as the “ Sphere Project” Minimum Standards, and the RedR: “Engineering in Emergencies” handbook, which also gives practical guidance in the construction of tanks etc.

With regard to the camps visited during the evaluation, it can be stated that all camps funded by ECHO were supplied with clean and safe water, piped close to each dwelling. The NGOs operating the systems have limited funds with which to work, but generally speaking, provide value for money. One exception to this is the lack of co-ordination and overlapping that is currently taking place. In Mae Ra Ma Luang camp, for example, where two NGOs were seen to be operating independently in the water and sanitation for the camp. Another observation which also impacted on the longer -term sustainability in the water and sanitation sector was generally a lack of up to date training of the refugees involved in the water sector, an exception to this however was seen in the Mae La camp operated and funded by MSF. The local staff in this camp had an enthusiasm and commitment, fostered by the regular attendance in the camp of the expatriate engineer.

6 IMPACT

The impact of ECHO funding in the water and sanitation sectors has over the years developed into a long-term, positive action in the sectors. The building in both theoretical and physical terms of a sound infrastructure is plain to see. It has lessened human suffering, and had a direct effect on the health of the community. This can clearly be seen in the low rates of disease both waterborne and otherwise throughout the camps.

An unplanned impact has been, the benefit gained by local villagers, The surrounding villages which for many years had unreliable sources of water, have been supplied with piped water, which has come about in some instances through the co-ordination of water schemes planned for the camps, to include nearby villages. A typical example is that of Nu Po, where a gravity supply was created some 4 to 5 kilometres away from the camp, by the NGO responsible for water and sanitation.(ARC). This project incurred fairly high capital costs in terms of materials etc, which the village could not meet. Co-operation however in the construction resulted in water also being piped to the village.

Overview ECHO Evaluation Criteria

CRITERIA	FINDINGS	RECOMMENDATIONS
Relevance	The assistance to Burmese refugees in the border region in water & sanitation meets the needs of the target population.	Changes in the refugee situation are not very likely within the next years. Assistance should continue.
Effectiveness	The assistance is effective, as all refugees have access to clean and safe water within the camps.	The present ad-hoc methods used should be rationalised and better co-ordinated.
Efficiency	The organisations provide value for money, with the exception of some organisational deficits in Mae Ra Ma Luang camp.	The organisational management of Mae Ra Ma Luang camp should be revised. Training of local staff and co-ordination in the sector should be increased.
Impact	Due to the funding the water & sanitation situation in the camps and in the surrounding villages is favourable.	Continuing support to refugees and local population is recommended.

7 The Camps

7.1 Mae Ra Ma Luang - Mae Hong Song Province - Population: 9,830

7.1.1 Background

This camp is located in a natural river valley and can be accessed from either end only by 4- wheel drive vehicle. The poor condition of the access road limits vehicular access to the dry season, as a result stock piling of foodstuffs and other necessary items takes place as a matter of necessity. In turn, the difficult access makes it virtually impossible for the NGO staff to visit the camp as regularly as would be ideal. The knock

on effect of this situation means that the refugees in the camp working for the NGOs in the water and sanitation sectors must be well trained and organised.

7.1.2 Water

In common with many refugee camps, the initial installation of water and sanitation services are installed at a time of great urgency, the responsible agencies working under pressure to ensure at least a minimum supply of water reaches the refugees. Unfortunately this often-unavoidable approach causes problems at a later stage of the camps life.

The water supply for the whole of the camp is derived from natural spring sources located on the upper slopes of the valley. What started as a simple system when the camp was first established has grown with the passage of time, and the need to supply water to an ever-increasing number of refugees. The result is that a number of separate water systems have evolved. This by default rather than design has benefits in terms of being able to isolate sections of the system in cases of operational emergencies. The down side is that a great deal more pipes and fittings are required to be used.

At the time of the evaluation the spring sources were not fenced off, raising the potential for water contamination. It was also noted that the hardness of the water was over a period of time, causing the pipes to block due to a build up of lime scale within the pipe. Whilst this is not harmful to the individual in terms of health, it does give rise to additional costs in terms of pipe replacement.

From the spring, water is then piped, via in some cases sand filters, to holding tanks. Sodium Hypochlorite is then dosed by means of liquid solution before the treated water is piped to supply taps adjacent to the dwellings. At the time of the evaluation, water testing was not being carried out in the camp as essential reagents needed for the portable test kit were out of stock. Samples had subsequently been sent to Mae Sariang, but no test results received.

The whole water treatment process gave rise for concern. In order for disinfection to be effective, the dosing agent must have a contact time with the water before it goes into supply of at least 20 minutes. This means that the holding tanks have to be of a capacity to cater for this requirement, at the present time they are clearly not.

The holding tanks mentioned earlier which could possibly provide the necessary storage, were of local construction and gave rise for further concern, as they contained no reinforcing and are built on the steep slopes of the hillside. The sheer weight of water contained, and the potential of landslides, during heavy rains could dislodge these tanks if they are not properly designed and constructed. Personal injury to the refugees as a result, must be borne in mind.

7.1.3 Sanitation

All dwellings have individual latrine facilities, up to 50 % being pour flush, the remainder being earth closets.

7.1.4 Waste

Domestic waste is collected throughout the camp in re-cycled cooking oil tins, and either sorted and re-cycled, or incinerated. No evidence of vermin infestations were observed or reported in subsequent interviews with the refugees.

7.1.5 Control and Management

AMI have maintained a presence in the camp since its original construction in 1994 and have been responsible for health, and water and sanitation. Recently, however, a decision was made which resulted in MHD taking over approximately 10% of the camp.

At the time of the evaluation AMI did not have any expatriate expertise in country in the field of water and sanitation, the expatriate co-ordinator being given the responsibility for the overall management of the sector. Given the difficulties and the practical nature of the work, this situation is far from ideal. Day to day

activities in the water sectors in the camp are carried out and planned by the locally trained refugees, and it is a credit to earlier training programmes that this is possible.

MHD, in keeping with their management structure, has introduced working practices and operational controls used in their other centres of responsibility in the water sector.

7.1.6 Recommendations

The construction of in-situ water holding tanks gives rise for concern. At the time of the evaluation these tanks were being constructed using local stone and cement mortar. No reinforcement in any of the construction work was seen to be used. Given firstly, the weight of water the tanks could eventually contain, (this could amount to several tons), and secondly the steep slopes on which they were sited, together with the potential for considerable run-off and land slips in the rainy season, a potential life threatening situation for the refugees living in close proximity to the tanks could occur. The use of sectional, easily transported water tanks, as an alternative should be investigated. If this recommendation should be impractical, then professional guidance should be sought in the construction of water holding tanks.

Careful thought should be given to the water disinfection process. It is essential that regular water quality takes place. Based on the records of such testing, rational decisions can be then formulated as to whether disinfection needs to be carried out at all, and whether water has to be boiled before consumption.

Rationalisation of the management of water and sanitation within the camp should be considered based upon the expertise of the actors involved.

Exposed plastic pipes should be suitably covered to protect them from direct sunlight, as at Mae La camp.

7.1.7 Conclusions

From a water and sanitation point of view, the major part of the camp lacks guidance and control, and as such, is not conducive to efficient operation. The camp, with the added pressures of an increasing population, must adapt rapidly to change and hence be flexible and operationally sound to meet these challenges. The local refugee workforce does not have the skills to embark on major construction schemes at this time, without proper guidance, training, and control.

7.2 Mae Kong Ka - Mae Hong Song Province - Population: 15,385

7.2.1 Background

This camp follows the natural line of the river and was established in 1994. The geographical location divides the site into two logical areas: sectors 1 – 5 being approached from the south and sectors 6 – 12 from the north. It is necessary to walk to sector 5. Vehicular access is possible to sector 6 from the north side.

7.2.2 Water

As a result water and sanitation is organised and managed in the two distinct sectors. Water supply is provided by natural springs on the upper slopes of the valley. Water is then piped to concrete water tanks, via slow sand filters, where it is dosed with Sodium Hyper Chloride. Supply taps are arranged adjacent to dwellings, often with flexible piping leading directly into the dwelling. Water quality is routinely tested every three months and monitored more frequently, if health conditions dictate.

7.2.3 Sanitation

All dwellings have individual latrine facilities, 50% being pour flush, the remaining being earth closets.

7.2.4 Waste

All domestic waste is collected in bins positioned adequately sited throughout the camp. Plastic and glass is recycled, all other waste is incinerated. Fire protection plans are in operation throughout the camp, each dwelling being supplied with basic fire fighting equipment.

7.2.5 Control and Management

Overall control comes under the remit of the MHD Water and Sanitation Program Officer. The officer is Thai, and speaks the local languages, and has an in depth experience of the type of work carried out in

refugee situations. At the camp level, a team of sixteen well-trained local staff headed by a working supervisor carries out day-to-day activities. Regular training sessions take place between staff as a result the camp team are able to work as an efficient and confident team.

7.2.6 Recommendations

Much of the equipment used is over 10 years old, as a result pipes and fittings deteriorate. The current system of using plastic cement joints, whilst cost efficient, is difficult from a maintenance point of view. It would be worth considering the use of re-usable compression joints on a limited scale. The use of concrete holding tanks could also be re-evaluated given the success of easily transported and constructed sectional galvanised tanks as mentioned for the other camps visited during the evaluation. Exposed plastic pipes should be suitably covered to protect them from direct sunlight, as at Mae La camp.

7.2.7 Conclusions

From the water and sanitation perspective, the camp is run in a business like and efficient manner, this is a result, firstly of good management, and secondly, a commitment to training of local staff. The current training inputs reflect the dedication of all concerned, and should be continued to be supported and encouraged. A positive advantage in achieving this position is in GFEs view, the use of local staff, who understand the culture of the refugees, and of course the language.

7.3 Umpiem Mai - Tak Province - Population: 16,800

7.3.1 Background

Umpiem Mai was established in 1999 and currently has a population of approximately 16,800. Refugees were moved from two old camps, namely Huay kalok, and Morger, located near the border. For security reasons these camps were closed and the population moved to Umpiem. Health services in the camp were handed over in 2001, from MSF, to AMI (funded by ECHO) and to ARC international who are separately funded by others. ARC international is responsible for the water and sanitation aspects of the camp, and part of the health programme.

7.3.2 Water Supply and Distribution

Of all the camps visited by the evaluation team, in terms of water supply, Umpiem is the most technically challenging, with a total number of 66 operators working in the sector. Water has to be pumped from a holding reservoir near the entrance to the camp, through a vertical lift of 400 ft. It is then stored in holding reservoirs before passing through sand filters, break pressure tanks, and chlorine dosing, and finally into the distribution system to tap stands situated at strategic locations throughout the camp. Each household is supplied with two screw top water containers, one for drinking water, and the other for household use.

The average supply to each person is in the range of 30 litres per person per day, with little or no variation in supply or consumption during the wet or dry period.

7.3.3 Sanitation

At the present time 90% of the camp population have access to water-seal toilets. Materials for the manufacture of slabs, vents, etc. for household construction are supplied by ARC, and the manufacture supervised by trained local staff. Natural decomposing of the sewage takes place, and was seen to be working well, no odours were observed, or any unusual presence of flies or insects in the vicinity of the latrines.

7.3.4 Waste

Solid waste collection in the camp is undertaken by COERR. Initially a re-cycling programme was introduced, with the positioning of three different coloured bins in strategic position around the camp. The idea was that the refugees would put certain waste items into particular bins. However, the scheme floundered with only glass bottles being salvaged. At the present time all the waste is collected, with

burnable waste being incinerated outside the camp and organic waste being buried in plastic sacks in deep pits within the camp.

7.3.5 Vector Control

In keeping with the other camps visited during the evaluation, dwellings are sprayed annually by the Thai authorities with insecticide to prevent the spread of communicable disease. A noticeable problem within the camp is the large number of rats and dogs present. The dogs are currently vaccinated by a Karen refugee vet living in the camp against rabies, which poses a potential threat to the human population. An incentive scheme introduced in the camp to reduce the population of rats, whereby two rats' tails handed in for one egg has proved popular, although some modification to the system is presently being made to avoid circumnavigating the system.

7.3.6 Control and Management

Overall control and management of all water and sanitation activities in the camp come under the control of ARC. The engineers at the office level are Thai, and able to speak the local languages. A continuous programme of training is carried out and has resulted in a well-disciplined and motivated workforce.

7.3.7 Recommendations

The training programme in the camp should continue and be expanded to take in to account new products that become available within the water sector. Self-closing taps, sectional steel tanks etc., should be evaluated in selected locations in order to reduce both costs and water losses. The disposal of solid waste should be further investigated. Lessons could be learned from the Mae La camp where solid waste is disposed of by different methods, and is outlined in the respective paragraphs of the evaluation.

7.3.8 Conclusions

The camp environment poses distinct problems in terms of the supply and distribution of water, due to its topographical nature. Sound training and the correct equipment has paid dividends in ensuring a good and potable water supply. Further research is needed in the disposal of solid waste and of the possible connection to the large number of rats within the camp.

7.4 Nu Po - Tak Province - Population: 9,744

7.4.1 Background

Nupo was established in 1997 and, unlike the other camps visited during the evaluation, lies on flat ground. Being close to the border security at the camp is both visible and strict. The camp, as at Umpiem Mai, is assisted by two principal agencies. AMI is responsible for curative care within the camp and ARC is responsible for preventive care, and water and sanitation. AMI up until 1997 had the responsibility for all health and water sanitation activities within the camp. It was only in 2001 that ARC undertook the responsibility for preventive health and water sanitation.

7.4.2 Water

Water supply for the camp is piped from natural springs, some 2 to 4 kilometres distant from the camp, and located in the higher ground within the surrounding forest. At the time of the evaluation one spring was being used. A second installation was nearing completion and was due to be ready for service in the coming weeks. The combined water sources were estimated to deliver in excess of thirty litres per second and were not affected by the dry season. Water quality is tested on a regular basis and has been found to be potable. Chlorination does take place and, in addition, a large proportion of the population also boil water. Water is collected in supplied water containers from well-distributed tap stands within the camp. In addition to supplying water in the camp, the new main will also provide water to the adjacent village.

7.4.3 Sanitation

The majority of the dwellings, in keeping with the rest of the camps visited, have water seal toilets and a programme is underway to provide this service to all. No odours or flies were observed and the installations were seen to be clean and well managed.

7.4.4 Waste

Similar problems exist in this camp as in Umpien with the disposal of solid waste. Pits are dug within the camp, and organic waste buried, as in Umpien, rats are a major problem.

7.4.5 Control and Management

ARC is the responsible agency for water and sanitation in the camp, and as such does not fall within the remit of the ECHO evaluation, as the funding of its activities is the responsibility of others. Having offices reasonably close to the camp and good roads means that the office based staff are able to work effectively in the camp. It was, informative and useful to compare the management and standards employed. by ARC and the work they were carrying out in the water sector. Solid waste collection as in Umpiem Mae, comes under the remit of COEER.

7.4.6 Recommendations

As with the other camps visited during the evaluation, water storage within the camp presents a problem. The use of small concrete water tanks is far from ideal. Firstly they give an impression of permanency, which from a political point of view could be giving the wrong signals, and secondly, and perhaps more importantly, the tanks do not allow enough contact time for the chlorine to be effective. Given these factors, it is recommended that the supply of alternative tanks be pursued.

7.4.7 Conclusion

The water and sanitation elements of the camp were seen to be operating in a sound and practical way. The management at the office level of ARC were Thai, and able to communicate with the field workers in the camp in an efficient manner, allowing the day to day running of the sector to operate successfully. Problems with solid waste disposal were seen as at Umpiem Mai, to be an issue of some concern.

7.5 Mae La - Tak Province - Population: 35,000 to 40,000

7.5.1 Background

Mae La camp is the largest of the refugee camps on the Thai-Burmese border. It is run by MSF and funded mainly through private donations. As part of the ECHO evaluation, it was considered important that an overall view be taken of the situation in the camps both funded by ECHO, and others. Mae La is seen as a focal point for many of the visiting donors, politicians, aid groups, etc. as it is within easy reach by road from Mae Sot. The camp follows the line of the road and can be either driven through or walked through - making short visits possible. As with many of the camps along the border, Mae La has grown in size and population over an extended number of years, making the business of supplying water and sanitation problematic and always resulting in a catching up process.

7.5.2 Water

Water for the camp is supplied from a number of sources. Sixteen shallow wells are positioned throughout the camp and are sealed and fitted with hand pumps. The water is not chlorinated but regularly tested within the normal parameters. Water is also pumped from the nearby river and is the main source for the camp. A series of booster stations lift the water to strategic holding tanks and reservoirs, from which it flows by gravity in to the distribution system and to tap stands. The water from this supply is chlorinated on a continuous basis. A further source of water is that of natural springs on higher ground outside the camp. These springs have been tapped to provide water to the higher elevated sectors of the camp. The water supply and distribution system is run on a well-organised and efficient system by sixteen refugees, trained by MSF staff. The low number of workers in the sector, compared with the other camps visited, highlights the organisational efficiency of the operation as a whole.

7.5.3 Sanitation

Water seal latrines are in use in the camp, with adequate provision for the population to be served. A system of two pits, one in use and one digesting, is used in the majority of the camp. With the shortage of land available, however, due to continual expansion, other methods have also been employed. The use of a mobile suction tanker is now in operation, emptying and depositing the contents outside the camp

7.5.4 Waste

Waste collection and disposal is partly carried out jointly by MSF and COEER. The system was seen to be working fairly well, although it was mentioned that some problems existed within the COEER operation. Solid organic waste, unlike the system of open dug pits observed in the other camps, is disposed of in concrete ring pits, with fitted covers and removable access plates. This system allows for a clean and environmentally friendly method of disposal. Clinical waste, such as syringes, is disposed of in containers, which slot into a main sealed collecting tube, avoiding personal contact with the material.

7.5.5 Control and Management

The camp comes under the control of MSF and therefore does not come under the remit of the evaluation. It can be stated, however, that the meetings with the MSF project staff were both constructive and informative. The expatriate staff involved in the water sector were on medium term contracts of 12 to 18 months, and made it a policy to visit the camp every day to maintain a presence, and to boost and support the confidence of the local workforce

7.5.6 Recommendations

It is recommended that some thought be given to forming a forum in which information can be disseminated, particularly amongst the technical staff in the water and sanitation sector. Participating agencies could learn from each other, and not “re-invent the wheel”, when particular problems arise within their own areas of jurisdiction.

7.5.7 Conclusion

The visit to the camp was a useful tool in gaining an overall understanding and recognition of the disparities in management, operations, and co-ordination that exists between the various actors engaged in the water and sanitation sectors. Both formal and informal visits to the various camp locations could benefit individuals in terms of gaining experience, and perhaps be a step towards common standards and procedures

7.6 Overview

Camp	NGO	Water	Sanitation	Waste	Control and Management	Recommendations
Mai Ma Luang	MHD	Acceptable	Acceptable	Acceptable	Good system at MHD	Investigations in water tanks Improvement of plastic pipes
	AMI	No water testing Unsatisfactory water tanks No training of local water staff taking place			No specific WatSan officer at AMI	Rationalisation within the management
Mai Kong Ka	MHD	Acceptable. Sound training of staff in place.	Acceptable	Acceptable	Good system Training	Upgrading of pipe system and tanks
Umpiem Mai	WatSan ARC	Acceptable, although difficult terrain. Professional installation of the original system	90% covered	With insufficiencies Problem of rats	Good <i>ARC's responsibility</i>	Improvement of solid waste disposal system
Nu Po	Watsan, ARC	Acceptable. Regular testing	Acceptable	With insufficiencies Problem of rats	Good	New main for water supply Improvement of water storage
					<i>ARC's responsibility</i>	

8 Water Quality

Although discussed in the previous paragraphs, water quality is such a critical issue in the refugee context, it is felt that a more detailed synopsis should be given. The intention is to give a clear picture of what should happen when dealing with the issue, and why.

The majority of water supplied to the camps is groundwater, derived from natural springs. Generally speaking the water is uncontaminated and can be safely drunk without any form of treatment, including boiling.

During the evaluation discussions took place with the water experts from the various agencies involved in the water sector, and also with the refugees themselves on the issue of whether or not to boil water before consumption.

The messages received were unclear. Historically when the camps were first established, the refugees were instructed to boil all water before drinking. This is standard practise in an emergency situation, however as the organisation of the camps proceeded and water supplies were properly established other forms of treatment were introduced, as has been seen, this mainly took the form of chlorination.

One could argue that it is better to be safe than sorry, and therefore disinfect the water but to be on the safe side, advise the refugees to continue to boil the water. At the time of the evaluation it could not be established who was boiling water and who was not. It should also be noted that boiling water is not a 100% guarantee that the water will then be safe.

In order to boil water, energy is required, in the camps this is in the form of wood or charcoal. To effectively treat water by boiling, the boiling process must continue for a period of between 5 and 10 minutes. To give an illustration of how much fuel this would take to boil water for a camp the size of Mae Ra Luang. With a population of 10,000 people using 20 litres of water per person per day, making a total of 200,000 litres, and given the fact that it takes approx. 1kg of wood to boil 1 litre of water, the result is a staggering 200,000kg of wood per day. The cost savings by reducing or eliminating the boiling process are obvious.

The table below illustrates the steps needed to be taken, in order to rationalise the approach to water quality, it is not exhaustive, but should be used as a guide and a tool by those involved in the water sector. The criterion would apply to all the camps visited during the evaluation, and to the camps outside the evaluation brief.

Treatment of Water

Water Source =>	Holding Tank =>	Tapstand or House =>	Treatment yes/no
Uncontaminated	Settle only	Uncontaminated	No
Contaminated	Disinfect	Check residual	No
Uncontaminated	Settle only	Contaminated	Yes: Boil or disinfect

8 RECOMMENDATIONS

In all four of the camps the actors had widely differing approaches to the services they provided. In part, this was due to the geographical and topographical nature of the particular sites, but also to the style of management, and the technical expertise employed. It is fortunate that the sources of raw water used in each of the camps proved to be reliable, within easy reach, and generally of good quality. However, with the ever-increasing size of the camps, water storage is seen as an important factor. The ad-hoc methods used for water storage at the present time require rationalisation and co-ordination.

At the time the camps were initially established the refugees were advised to boil all water before use. This was sound and practical advice. However, with the introduction of new water sources, the use of filters, disinfecting of the water, and water testing, this may now not necessarily be the case. Any change in procedures would require careful monitoring.

For example, the contact time of the disinfecting agent with the raw water would need rigid procedures, but could - for example - lead to a significant reduction in the use of charcoal. The standardisation and issue of screw top water containers to each household is another area, which needs to be addressed, to ensure the risk of contamination of the water within the household is at least limited. Similarly the protection of plastic piping exposed to direct sunlight requires attention, the example of MSF at the MAI La camp illustrates a simple but effective solution.

From a management point of view the situation becomes more complex. Historically, changes in agency responsibility in certain camps has had the effect of making the geographical inputs of the actors less than ideal, leaving some of the players with only minor inputs compared with the original requirement. This in turn has led in some instances to overlapping, and a lack of co-ordination, an example being the Mae Ra Ma Luang camp. The input of expatriate staff, particularly on short-term missions, and not necessarily matched to the needs of the job, has had a demoralising effect, in some instances, on the local staff.

Training, which as the report suggests was carried out initially by the agencies at the time of the establishment of the camps, was at the time sound and the results speak for themselves. However, time has moved on and with it changes in technology and operational procedures. Added to this is the large population increase in the camps, which makes the need for standardised approaches and upgrading of skills a priority for those refugees employed in the water and sanitation sectors of the camps.

Unfortunately, in the present context, water and sanitation come under the general banner of health. The general impression one gets is that water is just an add-on, this is made more poignant by the fact that a professional input in the sector may in some cases be missing. The need for common standards, and co-operation by all the actors in the water and sanitation sectors is essential if progress in the continually expanding camps is to be made, and in a safe and professional manner.

Whilst, in theory, a platform for the co-ordination of NGO's activities exists in the form of the Committee for Co-ordination of Services to Displaced Persons in Thailand (CCSDPT), at the present time it does not appear to meet the need for co-ordination and information sharing within the water sector. It would be advantageous for one agency to become the lead agency in the field, and to provide training where necessary to other agencies working in the sector. The selection of bulk water storage units is a major problem in the camps visited during the evaluation, and is a typical example of each actor doing his own thing. It is appreciated that the choice of materials is limited, and that to purchase materials outside Thailand may incur heavy surcharges in terms of taxes. It is, however, an option that is worth considering for the future. It is recommended to use sectional tanks, which are easily transportable and quick to install or dismantle.

On the subject of whether or not to boil water before use, careful monitoring and testing of samples of water from throughout the particular camp must be carried out on a regular basis. This would involve the purchase of further testing kits, and most definitely further training to be carried out, to enable the local staff within the camps to monitor and report on the findings. The potential cost savings in terms of charcoal use for boiling water, would far outweigh the costs incurred in the purchase of such equipment.

Overview Recommendations

- Upgrading of water storage
- Avoid boiling of water by introducing screw top water containers in households
- Protection of PVC pipes through bamboo-cover
- Upgrading of staff
- Establishment of lead agency for coordination

9 LESSONS LEARNED

In GFE's opinion the present ECHO funding in the water and sanitation sectors is well justified in the camps visited. However, there does need to be a rationalisation of common goals and practises. Unless the present situation of the refugees in Thailand does not change significantly, continuing support at broadly the same level is recommended. With the passing of time the infrastructure in the water and sanitation sector is showing signs of deterioration. The need for replacements in terms of pipes, tanks, etc. should be discussed with the proposed lead agency, with a view to preparing detailed estimates for submission to ECHO, thus ensuring a smooth and effective upgrading of potentially vulnerable water systems.

List of abbreviations

AMI	AID MEDICAL INTERNATIONAL
ARC	AMERICAN RESCUE COMMITTEE
BBC	BURMA BORDER CONSORTIUM
CCSDPT	COMMITTEE FOR COORDINATION OF SERVICES TO DISPLACED PERSONS IN THAILAND
COERR	CATHOLIC ORGANISATION FOR RELIEF AND REFUGEES
ECHO	EUROPEAN COMMISSION HUMANITARIAN AID OFFICE
EU	EUROPEAN UNION
KRC	KAREN REFUGEE COMMITTEE
LRRD	LINK RELIEF REHABILITATION AND DEVELOPMENT
MHD	MALTESER HILFSDIENST GERMANY
MSF	MÉDECINS SANS FRONTIÈRES
SMRU	SHOKLO MALARIAL RESEARCH UNIT
NGO	NON GOVERNMENTAL ORGANISATION
UNHCR	UNITED NATIONS HIGH COMMISSIONER FOR REFUGEES

ANNEXES

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