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GICHD

A Study of Scrap Metal Collection in Lao PDR

Geneva International Centre for
Humanitarian Demining
Centre International de
Démunage Humanitaire - Genève



landmine action



Australian Government
AusAID

The **Geneva International Centre for Humanitarian Demining** (GICHD) supports the efforts of the international community to reduce the impact of mines and unexploded ordnance. The Centre is active in research, provides operational assistance and supports the implementation of the Mine Ban Treaty.

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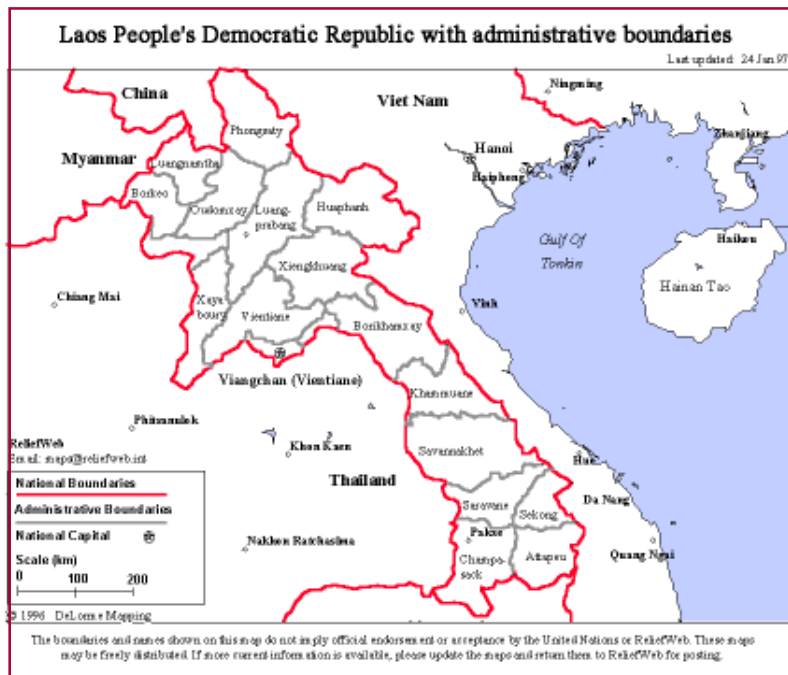
This report has been written by Richard Moyes, Policy and Research Manager, Landmine Action, UK, and Lamphane Vannachack.

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Executive summary

This study was commissioned by UNICEF – the United Nations Children’s Fund – in the Lao People’s Democratic Republic (Lao PDR) in response to an increase in 2004 in the number of reported unexploded ordnance (UXO) casualties and an increase in children as a proportion of these casualties. It was suspected that these changes may be linked to an expansion of the scrap metal trade – an expansion attributed in turn to the availability of cheap metal detectors, a growth in the market for scrap metal and improved road transport facilitating trade.

This report sets out a basic analysis of the components of the scrap metal trade, the relationship between the scrap metal trade and UXO accidents, and the different forms of response that currently work to mitigate such accidents. It also examines the humanitarian, economic, administrative and legal context that must necessarily frame any response to this issue. The study identifies certain key areas around which decisions will need to be made in any determination of the way forward.

Key recommendations for the development of a strategy relate to the following areas:

- **Understanding the reality of the problem**
There is insufficient data on the frequency of scrap-related casualties and on the economic value of the scrap metal trade to rural communities.
- **Definitions of ordnance**
There is a need to agree to a common definition of what forms of scrap metal/ordnance are, or should be, subject to controls.
- **Banning detectors**
There are a range of issues associated with the growth of metal detector use among the rural population and different options could balance safety and local economic demands in different ways.
- **Commercial obligations**
Controls over businesses present an opportunity for greater regulation of the scrap metal trade and control over the risks it generates.
- **The structures of ordnance disposal**
The availability and responsiveness of ordnance disposal capacity has a bearing on how people choose to interact with ordnance contamination.

- **Safety messages and community level solutions**
Within the framework of an agreed strategy, more relevant safety messages could be developed for risk education purposes. However, it should be recognised that “message based” approaches are likely to have little impact. Greater emphasis should be placed on supporting communities to manage these risks for themselves.
- **Alternative incomes**
Provision of alternative incomes could reduce reliance on scrap metal collection. However, the scrap metal trade is economically very strong, making it difficult for alternatives to compete.
- **The role of UNICEF**
There is a valuable role for UNICEF in promoting the development of strategic responses to this issue in Lao PDR and in the region.

Although this paper was commissioned by UNICEF, a response to these issues must necessarily involve the coordinated efforts of a number of key institutions. The development of a coherent strategy is probably more important than rushing to undertake some form of response. While a multi-sectoral approach would be most effective, the different programmes being pursued need to be coherent and mutually supportive.

Introduction

This study was commissioned by UNICEF, the UN Children's Fund, in the Lao People's Democratic Republic (Lao PDR) in response to an increase in 2004 in the number of reported unexploded ordnance (UXO) casualties and an increase in children as a proportion of these casualties. It was suspected that these changes may be linked to an expansion of the scrap metal trade – an expansion attributed in turn to the availability of cheap metal detectors, a growth in the market for scrap metal and improved road transport facilitating trade. Put simply, a growing market for metal was thought to have caused an increase in deliberate or accidental engagement with UXO, resulting in an increase in accidents.

This report sketches out the broad parameters of the subject; it sets out a basic analysis of the components of the scrap metal trade, the relationship between the scrap metal trade and UXO accidents, and the different forms of response that currently work to mitigate such accidents. It also examines the humanitarian, economic, administrative and legal context that must necessarily frame any response to this issue. The study identifies certain key areas around which decisions will need to be made in any determination of the way forward.

Background

As part of its broader national strategy, UNICEF has been working in Lao PDR to reduce accidents arising from UXO, particularly accidents to children. These activities fall under the umbrella of its work on "child protection". UNICEF's activities have sought to ensure that "children have access to information to protect themselves from the dangers of UXO in the most heavily affected areas".¹ This has been pursued through work with community groups in partnership with the Lao Youth Union and work in schools in partnership with the NGO Consortium and the Ministry of Education.

The recent rise in UXO casualties in the face of these ongoing activities (and the work of other organisations seeking to reduce the impact of UXO) has precipitated a number of plans for action and for further research. This report suggests that programme planners need to be very sure of the problem to address before a coordinated and

coherent strategy can be developed. The structures of humanitarian intervention can act as a strange lens – identifying and magnifying certain problems while other considerations go unseen. It is hoped that this initial study will serve to focus attention on specific elements about which more needs to be known if responses to this issue are going to proceed effectively and on a rational basis.

Terms of reference

The terms of reference (ToR) for this project were developed by UNICEF Lao PDR. They provided the following framework:

To review and assess:

- the impact of the scrap metal trade on accident rates;
- the impact of the scrap metal trade on villagers' and children's capacity and willingness to implement UXO risk reduction messages and strategies;
- the ability of project partners to tailor risk-reduction strategies to the increasing risk from the scrap metal trade;
- the attitudes of those involved in the scrap metal trade including the scrap metal factory owners, traders and village authorities; and
- community-based solutions to reduce risk from the scrap metal trade.

To recommend:

- a strategy for reducing the impact of the scrap metal trade on UXO accidents.

Other important elements that form part of the frame of reference for this report are the *UN Convention on the Rights of the Child* (to which Laos acceded in 1991), the Asia Development Bank *Participatory Poverty Assessment* (ADB 2001) and the Lao Government's *National Growth and Poverty Eradication Strategy* (GOL 2004a), the Provincial Authority Decrees relating to the scrap metal trade and metal detectors and the Lao Penal Code.

Methodology

This report is based on two weeks of field work conducted together by Richard Moyes and Lamphane Vannachack in May 2005. Field work was conducted in Savannakhet, Khammouane and Xieng Khouang Provinces with further meetings in Vientiane. Meetings were held with provincial and district-level authorities, including representatives of the police. However, much of the research consisted of discussions with people involved in scrap metal collection, the scrap metal trade or the processing of scrap metal. Further meetings involved international NGO managers and key United Nations Development Programme (UNDP) representatives concerned with the problems of UXO contamination in Laos.

This field research was also supported by review of primary and secondary literature. Of particular importance was the collation and informal translation of Provincial Authority Decrees relating to the legal status of the scrap metal trade and metal detectors. Also important was the translation of original UXO accident report forms from Savannakhet, Khammouane and Xieng Khouang to provide a more detailed understanding of the actions resulting in accidents (and also of the limitations of current data gathering) – summaries of this information are attached as Annex 1.

Note on currency: during the research period the Lao Kip was valued at approximately 10,500 to the US\$.

Report layout

The report is structured as follows:

- Introduction to the scrap metal trade in Lao PDR – this provides an overview of the trade and frames of the problem this study was commissioned to analyse.
- An analysis of the structures of the scrap metal trade – this provides more detailed investigation of different components of the trade and different considerations that relate to the trade at these different levels.
- An analysis of the casualty data available and its relation to the scrap metal trade – this provides a better understanding of where specific risks arise.
- A short summary of attitudes towards UXO as a threat.
- An overview of efforts already being undertaken to respond to UXO casualties – although necessarily a summary, this provides an important part of the context for recommendations.
- Discussion of the way forward – an analysis highlighting the key questions that should form the focus of discussion on how best to respond to the scrap metal trade as an economic force and as a source of risk.

1. Introduction to the scrap metal trade in Lao PDR

Nine years of aerial bombing and sustained ground fighting during the Indochina war resulted in large quantities of metal being scattered throughout wide areas of Lao PDR. These remnants derive from the full range of metal military paraphernalia, from vehicles and oil drums through to bullet casings and large unexploded aircraft bombs. The bulk of the remaining metal is ferrous scrap, but there are also smaller quantities of non-ferrous metal such as aluminium, tin and copper.

Since the cessation of conflict, local populations have exploited the commercial and practical value of these materials on an ongoing basis. The practical integration of war remnants into everyday life has been well documented elsewhere.² Notable examples include the use of aircraft fuel tanks as boats, the use of cluster munition canisters as legs for rice stores and as small vegetable planters, and the use of certain defused cluster submunitions as paraffin lamps. In Xieng Khouang almost all guest houses and restaurants proudly display empty large aircraft bombs in an effort to attract the attention of tourists. Such immediate uses of war scrap have also been augmented by local level metal-working – generally producing tools for domestic use and for local markets.

Alongside such activities there has existed an ongoing cash-based market for scrap metal and it is the changing economics of this trade and industry on which we focus here. From the beginning of humanitarian ordnance disposal and awareness projects in Laos in the 1990s, scrap metal collection has been identified as one of a number of economic functions that can result in risk-taking behaviour. Efforts to extract economic value from metal can lead people to take deliberate or inadvertent risks with live ordnance – and the extent of this behaviour can change over time in relation to broader social and economic circumstances.



Figure 2. A rural blacksmith making machetes for domestic use and local sale.

Seb Taylor, analysing UXO accidents in Xieng Khouang,³ associated high casualties in the mid-1980s with the prominence of the scrap metal trade at that time:

“Disaggregating accident report figures for all years between 1973 and 1995 we find significant increases shortly after the war (around 1975), and then again around 1985. Analysis suggests that these increases in UXO accidents were the result in the first case of the resettlement, and massive construction/agricultural revival, coming with the advent of peace in Xieng Khouang. In the second case (1985), we find a period in which the trade in scrap metal was at its peak (it has declined significantly since then). In both cases, a significant change or opportunity in social and economic organisation was accompanied by a rise in the rate of accidents.”

As Taylor predicts, the recent (2004) rise in accidents can also be linked to significant changes in social and economic organisation. As we will examine, these include very visible changes in the technology of the scrap metal trade and industry: the use of metal detectors among rural populations and the establishment of substantial metal processing facilities (foundries/mini-mills) within Laos. An expanding cash economy and changing economic aspirations, coupled with constricted agricultural productivity, are driving metal collection and sale at a local level. At a national level, urbanisation and construction are creating a market for locally produced reinforcing bar (rebar) which is the primary product of the foundries. At the same time, greater cross-border trade is supporting the export of Lao ferrous scrap to Viet Nam. This combination of domestic structural circumstances, coupled with high international metal prices (see below), has created and allowed for a significant revival, transformation and expansion of the industry.

The scrap metal trade displays numerous slight differences of organisation from place to place depending on specific local circumstances. Generally these differences arise from adjustments in the interaction of the following groups:

- *Scrap metal collectors*: people picking up metal from the rural environment and selling it for cash – generally rural villagers supplementing agricultural activities and only partially engaged with the cash economy.
- *Local brokers*: people providing a local market for scrap metal, usually having sufficient land to build up a small stockpile and situated in proximity to larger roads – generally small business people working substantially in the cash economy.
- *Scrap metal processors*: people owning or working in facilities for processing metal (usually into rebar) – big businesses with wealthy owners employing wage labour.

These three categories provide the structure for our more detailed analysis of the scrap metal trade in Section 2.

International context

The scrap metal trade in Laos also needs to be seen in a broader international context. Rising UXO-related casualties in Cambodia in 2003 precipitated research that highlighted the high price of scrap metal, and the market integration of the scrap metal trade, as powerful economic forces driving people’s engagement with ordnance (Moyes 2004.) Internationally *“salvaging metal ... is one of the most commonly reported motivations for people seeking out or engaging with ordnance. From the battlefields of the 1939-45 War to the abandoned ordnance stores of Iraq, salvaging scrap metal is ubiquitous*

in post-conflict environments. It is an international trade that links impoverished rural communities to international markets.”⁴

This latter point is particularly important in relation to the recent increases in ordnance casualties identified in both Cambodia and Laos. Demand for steel for construction in China has resulted in higher metal prices internationally. South-East Asian demand for shredded scrap has remained strong into 2005, supporting ferrous scrap prices in the rural environment. Lao mini-milled rebar prices were quoted at source at 3,600,000 kip (US\$343) per ton. Around the same time, Chinese produced rebar was being traded for export out of Singapore at US\$ 405 per ton and prices had been around US\$ 465 as recently as March 2005 (Recycling International 2005). This should serve to emphasise that a considerable margin exists between international prices and the domestic production prices in Laos. Local production for construction in Viet Nam, Thailand and Laos is creating demand for locally collected scrap which can be priced below the international markets – giving enhanced macro-economic momentum to the trade and industry in this region.

Scrap metal and ordnance — which is which?

The problem of UXO and scrap metal is in part related to telling one from the other. Laos is contaminated with a wide range of ordnance in many shapes and sizes. Items are then found in various states – from small fragments, fuses and other components to whole items. This is all in addition to other forms of scrap metal not derived from ordnance but from vehicles, storage containers, construction and the like. Buried items may be covered in soil or corroded, making them difficult to recognise.

Discounting accidents that result from people accidentally striking ordnance when digging for scrap metal (and we will come back to this in Section 3) there is, in the first instance, a problem of recognition and discrimination. If people are collecting scrap metal (or working in the scrap metal trade) can they tell if an item is derived from ordnance or not? If they can, are they able to determine if that item is safe or not? These two questions are related to how different bodies define what is considered UXO within the context of the scrap metal trade. The point of raising



Figure 3. Ordnance and fuses amid the jumble of assorted scrap metal (scrap metal foundry, Bolikamxai Province).

these questions now is to highlight these as ongoing issues throughout our analysis. On the one hand, it allows us to emphasise that when we discuss scrap metal collection and trade we are not talking solely about “UXO collection”. On the other hand, it emphasises that the separation of one from the other is not straightforward. Suffice to say that at all levels of the scrap metal trade people are making decisions about the status of items and deciding how to engage with them accordingly. The nature and quality of this decision-making is another area we highlight as worthy of further study.

Approaching the scrap metal trade: economics and risks

The scrap metal trade is an industry in Laos. The economic value of this industry to rural communities is not fully known and, although we sketch out some specific examples in the next section, it is not possible to know the extent of that value without further research.

At the same time, the actual number of casualties that result from scrap metal collection is not known either. The current casualty data is certainly partial and may well also mask the role of scrap metal in accidents from certain areas (see Section 3). However, the very fact that we collect data relating to ordnance accidents greatly influences the perspective we bring to scrap metal as an industry. We must not focus only on the casualties at the expense of appreciating the value of this industry to those who work within it.

This is not to suggest that nothing can or should be done to reduce ordnance accidents resulting from the scrap metal trade. Perhaps, more importantly, it should spur us to identify the particularly problematic elements – the high proportion of children involved in accidents, or the substantial proportion of people put at risk by the actions of others. This comparison is made here because it is useful to frame the issue differently if we are to get a more informative understanding of how the risk of UXO accidents and the economic opportunities of the scrap metal trade are being perceived at different social and economic levels in Laos. The warnings and exhortations of international organisations and institutions of the “centre” are at odds with ongoing practices of many people in the rural periphery. Differing conceptions of risk and differing appreciations of rural economics combine to create this divergence (a divergence that has a long history in the mine action sector).

The challenge is to produce an actual reduction in the risks that people take. In doing so we need to recognise that while people will continue to engage in risky behaviours there is potential to make those behaviours safer. This may seem very simple (it is a commonplace in almost all areas of health promotion) yet the mine action sector continues to struggle to formulate such mechanisms. Solutions to the current *impasse* regarding risk reduction within mine action would have a broader relevance to practice within that sector. In working to address the problems posed by the scrap metal trade in Laos, there is potential for the development of new project responses that would not only assist vulnerable populations in that country but would have implications for development assistance in many other post-conflict environments.



Figure 4. Family returning from work in the fields, with detector and bag of metal.

2. Collectors, brokers and processors — the key components of the scrap metal trade

In this section we look in more detail at the three interlinked areas of operation that make up the scrap metal trade in Laos. We focus in this section on the “positive” side of the trade — the economic relationships that support people’s engagement in this work. In Section 3 we go on to look at the negative side of the trade.

Scrap metal collectors

Scrap metal collection is generally a secondary economic activity undertaken by rural villagers. It is most common in the dry season and usually supplements wet season agriculture, herding and other activities. It generates cash income that can be used for immediate purchases or invested in livestock as a reinforcement of the domestic economic base.

Scrap collection may be a spontaneous response to finding metal while engaged in some other task (such as herding animals). However, in many areas it is also common as a planned and organised activity. People may go out on their own or with friends or family to local areas where they expect to find metal contamination. In some areas groups may stay away from their village for a few days while collecting scrap. If using metal detectors they will have to dig to unearth items buried under the ground (often using a *saem* — a narrow-headed shovel with a metal head). Otherwise, metal is simply collected from the surface. They will then either store the metal at their house awaiting the arrival of a trader in the village, or they will take the metal to sell — depending on trade patterns in that area and their own access to transport. Alternatively, people may climb aboard a truck and join a labour gang — driving to an area of known metal contamination, searching independently and selling their find at the end of the day to the truck owner (or his representative.)

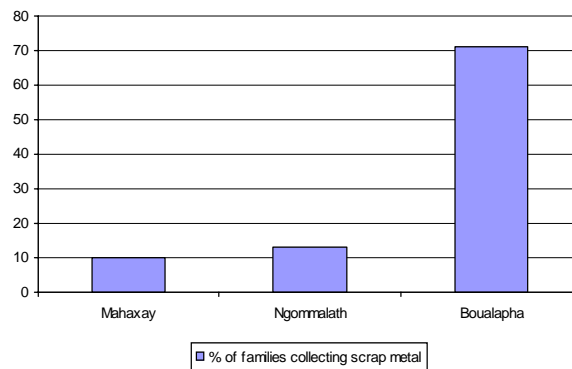
People do not need detectors in order to find and sell scrap metal. However, as we have noted the metal trade in Laos has been ongoing for many years and large amounts of easily visible surface-lying metal have already been collected and sold. Many people reported that in their area you needed a detector if you wanted to make a reasonable income from this work. We will look further at the specific issues regarding metal detectors later.

Prevalence of scrap collecting

Scrap metal collecting is undertaken both by adults and children. Although it seems to be primarily a male activity⁵, there were also reports of women using detectors and collecting metal. Scrap collecting may be undertaken by family groups working together.

It was not possible within the scope of this assessment to determine the prevalence of scrap metal collection as an activity within the rural population or (importantly) to determine the change in that prevalence over time. However, survey work conducted by MAG (Mines Advisory Group) (MAG 2005) in three districts of Khammouane Province has provided some interesting initial information:

Figure 5. Prevalence of scrap metal collecting in three districts of Khammouane Province (from MAG rapid assessment data).



This indicates that in certain districts scrap collecting can be very widespread as an economic activity. It also highlights that while it may be very prevalent in certain areas, it may be less significant in neighbouring districts. Jo Durham (MAG 2005:16) noted that, of the three districts, Boualapha (showing a high prevalence of scrap collecting) was “the poorest, least accessible and most UXO contaminated area in the MAG rapid assessment”.

Further research would need to be conducted to determine the broader prevalence of scrap collection as an economic activity: only from this could a realistic determination be made of the overall economic value of this activity to the rural population.

Levels of income

The price of scrap metal is reported to have risen from between 400-500 kip (four to five US cents) per kilo in 2002 to around 1,700 kip (17 US cents) per kilo in 2004 and into 2005.⁶ The price of scrap metal is set externally and is not linked to scarcity or abundance in the local area. The actual price that people can get depends upon the layer of the trade into which they are selling (and this will usually be determined by issues of market integration and transport). Prices for people working in labour gangs were lower (1,000 kip per kilo) but this form of work has the advantage of being transported to an area where metal is thought to be abundant and sales guaranteed on the day.

The amounts of metal that people can collect depend on local abundance and the time they commit to this activity. In some areas, adults reported being able to collect 10-20kg per day in the dry season as a supplemental activity (which would provide an income of between US\$1 and 3 depending also on price). Average income in Sepon District was reported by the District Office as US\$216 per person per year.⁷ Basic labourers in scrap metal foundries were reportedly paid approximately US\$2 per day. Scrap collection, particularly when undertaken as a supplement to wet-season agriculture, can provide a significant income for rural families. As we noted above, scrap collection may have a greater priority for communities that suffer more sustained food insecurity and that lack capacity to respond to this insecurity.

Children were reported as earning 7,000-8,000 kip (72-85 US cents) per day from scrap collecting. This can be compared with pocket money rates reported by other families at 500-1,000 kip for five days to buy clothes, school materials, candy or ice-cream. The latter are new luxuries now being brought into some villages by Viet Nameese traders on bicycles. Children either keep the money for themselves or pay it back to their parents. One family reported that children would hand larger sums (20,000-30,000 kip) over to their parents to hold – but that this money remained theirs and they could draw upon it later.

Although many of the areas drawing heavily on scrap metal to generate cash income are considered poor we should not assume that this is an activity driven wholly by the necessities of subsistence. A UXO LAO study⁸ noted the increased demand for cash in parts of Khammouane Province:

“...demand for scrap has increased significantly during the last two years and this coincides with improved road access between Thakek and Viet Nam. The new road has also brought an increase in hawkers, traders and video shows which have contributed to an increase in demand for consumer goods, for example two girls reported collecting scrap in order to buy face powder. Another family use the money generated from scrap metal to buy goods in the district and provincial market, which they sell on to other villagers. With no micro-credit programme or interest free loans available, war scrap is a cash crop which enables families to supplement their income and may provide the necessary start-up cash for other economic enterprises.”

Recent expansion of the scrap metal trade in many rural areas is part of a broader improvement of market integration which is creating both economic opportunities and changing economic aspirations and demands. This enhances further the value of cash generating activities (rather than activities that serve to support the continuance or increase in the economic base of the household). It is also important to note that selling scrap metal provides very good terms for the local population by comparison with the sale of other agricultural produce. The ongoing investment of time, labour and risk appears at present to reap substantially greater output than is possible from other forms of activity. Although the rural population may be reliant on the market coming to them, and may lack “withholding power” in the face of price fluctuations, current prices and market access probably put scrap collecting ahead of comparable practices for



Figure 6. Two friends bringing back scrap metal in Khammouane Province. Their hair is dyed in a fashion that has developed from Thailand.

many people.⁹ An initial investment in a detector can be quickly recouped and some scrap brokers have been prepared to provide equipment as loans *in lieu* of payment. One man reported selling a cow in order to release cash to buy a detector (and other items). Others reported borrowing detectors in order to accumulate enough cash to buy their own.

Metal detectors

Over recent years metal detectors have started to be traded into Laos from Viet Nam. These detectors seem to have been embraced by the rural population as a new technology that they can quickly put to effective use. It was not possible within the scope of this research to state how widespread detector use and ownership are in the areas visited. Despite provincial decrees making these instruments effectively illegal they were openly available in markets in Savannakhet and Khammouane and people in these provinces were also seen carrying them and working with them in the fields. These detectors are a key component of the changing and expanding scrap metal trade of recent years. As we have already noted, in many areas people felt that detectors were now a necessity if scrap metal collection was to be worthwhile.



Figure 7. Detectors for sale in the market, Savannakhet Province.

The detectors are sold in soft cotton bags and batteries need to be purchased separately. Traders reported that they had started selling the detectors around three years ago when they began to be brought over by Viet Nameese traders.

A number of larger, older types of detectors were seen – either in use or having been confiscated by the police in Xieng Khouang. However, almost all of the detectors currently on sale seemed to be of the same basic type. They consist of a search head, a two-piece hollow tube handle with the electronics in a box attached to the lower section, and a set of headphones. There is only an on/off switch and a sensitivity control. The detectors make a noise when no metal is present and the noise cuts out in the presence of metal. People keep the headphones around their neck, or around the detector to avoid the constant tone in the ears.

It was reported that they can find metal down to 20cm and perhaps down to 30cm if it is a large piece. As of May 2005, these detectors cost approximately US\$12, whereas previously they had been between US\$15 and US\$20. Operators reported

the batteries lasting approximately one month.



Figure 8. Modified metal detectors for use under water, Khammouane Province.

It was both reported and seen that the detectors were also being modified for use underwater (as illustrated in the photograph above). This simply involves disassembling the detector and extending its components over a length of bamboo, holding them in place with elastic bands and insulation tape.

There is some awareness among the rural population that these detectors may be illegal and it was reported that some people preferred to keep their detectors hidden in the forest or in rice field areas rather than at home. We discuss further the legal status of detectors, and issues relating to enforcement of the law, in Section 5.

Attitudes and misunderstandings regarding detectors

A significant number of authority figures, both Lao and expatriate, suggested that the poor quality of detectors presented a problem. The fact that they were cheap and made in China or Viet Nam was reported as if this made them dangerous. When one provincial police officer was asked what additional equipment he would need in order to enforce the Provincial Authority Decree regarding trade in UXO he replied "*motorbikes and detectors — but not the cheap ones used by the local people, the ones used by UXO LAO*". In reality both types of detector would be equally useless at finding live ordnance within truck loads of ferrous metal. Very commonly it was suggested that the detectors were dangerous because those using them had not had training.

An important element of these attitudes is a misconception of the difference between the goals of ordnance clearance and the goals of scrap metal collecting. The former works by checking *all* metal readings, down to a certain depth, and suggests on this basis that the land is safe to use. This requires reliable equipment and a methodical approach to ensure the whole area is covered. Scrap metal collectors simply want to find *some* metal and make no assertions regarding the subsequent safety of the land.¹⁰ Their equipment does not need to be reliable and their approach does not need to be methodical.

The imported detectors are ideal for the purpose to which they are generally being applied. They are cheap, easy to use and can be adapted locally if need be. The fact that they are so appropriate is a key reason for their rapid adoption in the areas where they are readily available.

The problem with the detectors does not come from any unreliability in the equipment, or lack of training in their use: the primary risk comes from the fact that they significantly increase the likelihood of people engaging with ordnance. It is the actions after the detector has successfully indicated a metal object that result in accidents. However, it is the use of the detector in the first place that makes these subsequent encounters more likely.

The future of scrap metal collection

It should also be noted that a number of people predicted a decline in the scrap metal trade in their local area in the foreseeable future. They see the metal as a finite resource that is being rapidly exploited now but which will become harder and harder to find in future years. This sense of the finite nature of this business is very important. The current conjunction of high prices, locally available technology and relative abundance of metal will not last. This knowledge may make it still more attractive as an economic

activity now. Despite its attractions, however, not all people see scrap metal collecting as the best economic option available to them and the threat of UXO can be an important factor in that.

Blaming outsiders

Another common feature of our conversations about the scrap metal trade was the tendency to blame outsiders, in particular the Viet Nameese. At all levels, people tended to suggest that the trade was driven by outsiders. Often people referred first to the Viet Nameese traders who come to the village but on further questioning they would admit that they also sold metal to Lao traders.

The extension of the cash economy is most apparent in the arrival of “outsiders” doing business in rural communities. The metal detectors so widely used in some areas have been brought to the market by Viet Nameese traders. At the same time, the trade is (in practice) being allowed by the Lao authorities, and the equipment is being used by Lao nationals. These narratives seem in part to be about avoiding accepting responsibility for the expansion of this business. As such they are expressive of anxiety about the scrap metal trade, but they must also be challenged in any effort to develop greater local responsibility for the practices.

Scrap metal brokers

The role of the scrap metal brokers is to provide a local market for the scrap collectors and to support collection and haulage of metal to foundries (either in Laos or Viet Nam). Brokers make the lowest margins per kilo on metal bought and sold of all those involved in the scrap metal trade. Some scrap brokers in Xieng Khouang reported buying at 1,800 and selling at 1,850 kip per kilo. These low margins were blamed on increased competition with three or four other shops all operating along a small stretch of road.

However, the inputs required for this business are minimal – an area to store metal and cash liquidity to purchase metal when it is brought in by collectors. For these brokers the buying and selling of scrap metal is usually also a supplementary activity, running alongside farming or other commercial enterprises such as trading in agricultural produce or running a small shop, restaurant or guest house. Some brokers buy scrap metal along with other general scrap: plastics, glass, car batteries and the like. The economics of the business work best if it is undertaken in conjunction with other cash economy activities because cash liquidity is the only real requirement.

A number of times it was reported that the scrap metal foundries established prices in advance – with the price fixed at this level for a week or so. This greatly reduces the risks of trading at such low margins. In Cambodia, some local enterprises went out of business because they found the price given to them “from above” fell below the price at which they had been purchasing and amassing a stockpile over the previous few weeks (Moyes 2004: 89). The price setting arrangement reported in Laos removes this risk while promoting lower profit margins as local brokers compete for business.

Other brokers capitalised on their ownership of transport. Two brothers in Sepon District, Savannakhet, would get a price set from a foundry in Viet Nam. They would then drive out and pick up casual workers from the local area (up to about 20 of

them). The brothers did not pay a salary but took scales and paid each worker according to the metal they collected. Interestingly, these brothers also reported that they did not pick up children to work in this manner because they were “too difficult to control”.

Roving collectors

Another role within the scrap trade is taken by people who sometimes operate between the local collectors and the road-side brokers. Such people usually have access to a small form of transport and travel to remote villages to purchase metal and bring it back to the roadside brokers. These people may be attached to these brokers or they may be independent, selling metal where they can get the best price.

The roadside brokers generally sell metal to truckers operated or owned by the scrap metal processors (whether in Laos or in Viet Nam). In Chomthong village (Kam District, Xieng Khouang) we watched a Viet Nameese registered truck, owned by a metal foundry in Viet Nam, loading scrap from a Lao broker. With the truck was a woman administrator who tallied the purchase record with the sales record of the broker — confirming and recording each amount as it was weighed and then loaded. She sat beside the woman who owned the metal shop keeping their records in parallel. As well as purchasing the metal, the woman from the foundry also brought the money that paid a group of local men to load the metal onto the truck. The labour gang were paid 50,000 kip (about US\$5) for each ton that they weighed and loaded. In this instance some 15 men were loading the truck and it would be up to them to divide the money among themselves. A single truck was reported as taking 12 to 15 tons.



Figure 9. Keeping the accounts as metal is weighed and then loaded onto trucks.



Figure 10. Locally hired labourers

Another roadside broker in this area estimated that some 40–50 tons of scrap metal were being exported from the area every day.

Most of the scrap metal brokers visited had some items separated from the rest on the basis that they might be dangerous. However, almost all also had suspect items still mixed in with the general metal. MAG reported good relations with scrap brokers in some of their areas of operation and stated that they regularly attended some scrap yards to remove suspect items. Elsewhere, however, there seemed to be little engagement between ordnance disposal teams and the scrap trade.

Scrap metal processors

Recent years have seen the establishment of a number of foundries in Laos to process scrap metal. These foundries are “mini-mills” that use electric arc furnaces to process scrap into concrete reinforcing bar (rebar) for use in construction. Establishing a foundry requires substantial capital investment and the support of provincial authorities. The facilities require a large area of land for storage of the scrap metal, for offices and for the furnaces and other equipment. As well as the processing equipment most of the foundries visited also owned a small fleet of trucks for collection of scrap metal from brokers and for delivery of product to market.



Figure 11. Workers in a Lao foundry producing rebar for the construction industry, Bolikamxai Province.

Three foundries were visited during this research, one in Bolikamxai Province some 60km from Vientiane, another in Thakek (Khammouane Province) and the largest in Phonsavanh (Xieng Khouang). The Phonsavanh plant employed some 80 Lao workers and a further ten Chinese nationals who worked as technicians. This plant estimated its output at 10–20 tons per day. A smaller foundry in Bolikamxai Province employed some 40 people, most as casual labour. They can produce approximately 5–10 tons of rebar per day depending on availability of electricity. They buy metal at around 1,800 kip per kilo and they sell rebar at US\$320 per ton. Labourers get paid between 20,000 and 35,000 kip per day depending upon their skills.

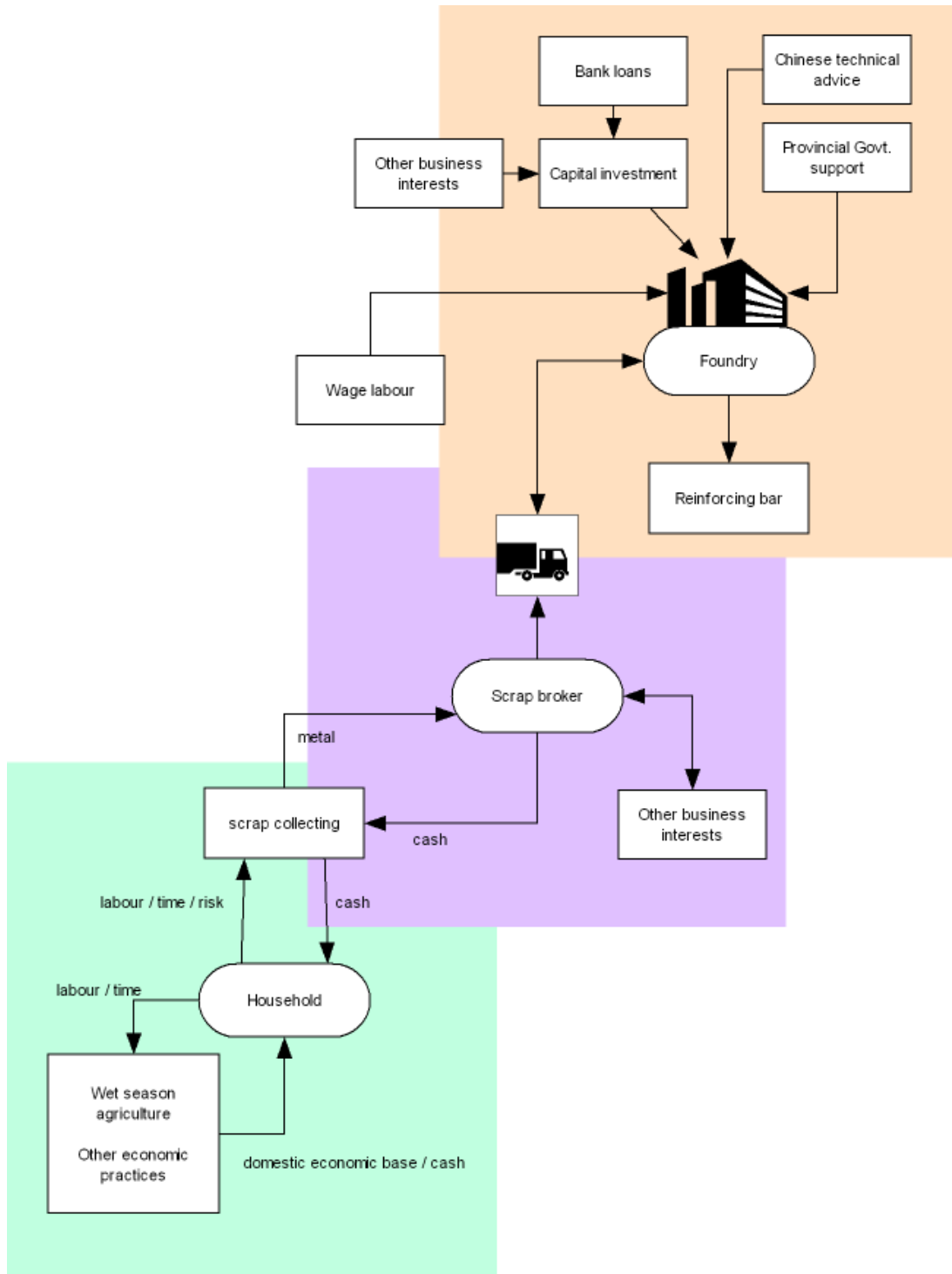
All such businesses are set up and registered with the provincial authorities. These are substantial commercial concerns which could only be set up by businessmen with a range of other commercial interests.



At all of the foundries visited for this research large quantities of live ordnance were found scattered among the metal waiting to be processed. Accidents were also reported at all three foundries. At the foundry near Thakek puncture holes could be seen going out through the corrugated sheet ceiling of some of the buildings. In all of the foundries labourers were employed to sift through the metal separating out unsafe items as they worked. Yet none of the premises evidenced any systematic management of suspect items. All three had fuses and whole live items scattered among all sorts of other metal.

Figure 13. Ordnance and small arms ammunition among scrap metal for processing at a foundry, Xieng Khouang.

Figure 12. Components of the scrap metal trade.



3. Casualties arising from the scrap metal trade

Laos lacks an effective consolidated system for gathering and managing information on ordnance accidents and casualties. The need for the development of such a system has been clearly highlighted since the Handicap International survey of UXO impact in 1997 (HI 1997). Currently, data is gathered on an *ad hoc* basis and only in those areas where UXO LAO is operating. Handicap International Belgium (HI 2004) noted the following key problems with the existing data-gathering system:

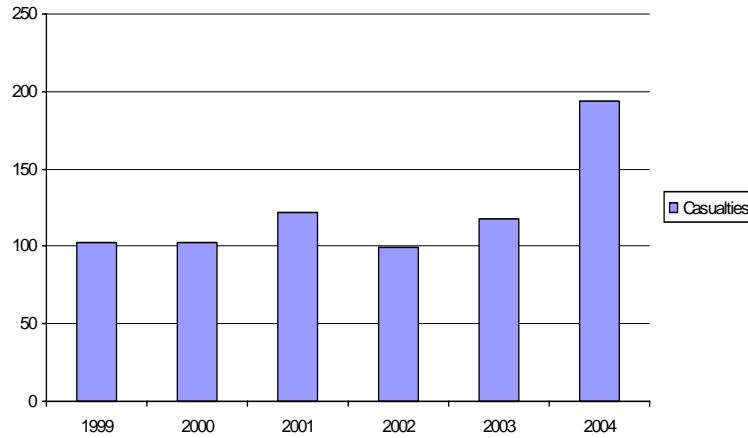
- lack of systematic system for collection and dissemination;
- existing systems are passive and confined to areas of UXO LAO operations;
- difficulties of gathering data from remote areas;
- Ministry of Health systems do not differentiate UXO accidents from others;
- poor data management within UXO LAO (data held at a provincial level is different to the data held at a national level); and
- data is not available in a timely manner and does not contain sufficient information.

Other key problems relate to the type of information gathered. For example, the forms do not contain sufficient tick boxes or closed questions, which means different information is recorded on each form and substantial interpretation is needed to establish a workable data-set. Similarly there is no consistency in the way that forms are completed. A thoroughly revised data gathering system is required, with improved forms and training for the people who must implement this system. This has already been proposed in-country in the Handicap International document referenced above.¹¹

As a result of these weaknesses, the currently available data is indicative of possible patterns and issues but provides a poor basis for substantive understanding of the extent or reality of the problem.¹² Development and monitoring of almost any initiative to reduce UXO casualties requires the establishment of an effective casualty surveillance system.

As can be seen from the chart below, reported casualties have increased significantly in 2004 from fairly stable levels over previous years. However, it is not possible to determine from the generally available data the extent to which the scrap metal trade plays a role in these accidents.

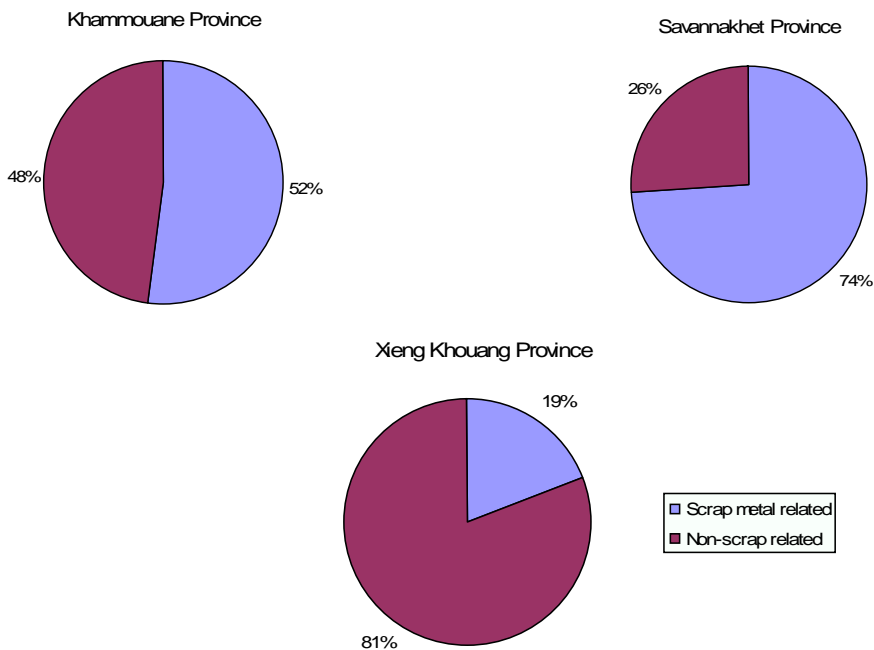
Figure 14. Number of reported casualties per annum (1999-2003 data from Landmine Monitor Reports, 2004 data from UXO LAO).



For the purposes of this report we translated the original individual accident report forms from 2004-2005¹³ held by UXO LAO for the three provinces where research was conducted. This data is summarised in Annex 1. A brief analysis of this data allows us to identify a number of interesting points. However, the weakness of current data collection and management remain a substantial impediment to a more sophisticated understanding and analysis of the relationship between scrap metal and ordnance related accidents.

Scrap metal collection as a motivation for risk-taking

Figure 15. Proportion of casualties resulting from scrap-metal related and non scrap-metal related activities in Khammouane, Savannakhet and Xieng Khouang Provinces, 2003, 2004 and 2005.



The report forms do not contain any tick boxes or other systems for classifying motivation and activity resulting in accidents. Therefore the role of scrap metal collection as a motivation can only be determined by analysing the “story” representation of how the accident happened. Based on our analysis, the role of scrap metal appears very differently as a factor in the accident reports from different areas.

There are particularly striking differences between the casualty reports from Savannakhet Province in 2004 and those from Xieng Khouang Province. While scrap metal is referred to (or can be implied) in a substantial majority of accident reports from the former, it is relatively rarely mentioned in the forms from Xieng Khouang. This may be related to a greater prevalence of metal detector use in the southern provinces (a hypothetical difference at this stage). However, the scrap metal trade (and live ordnance within that trade) seemed to be thriving in Xieng Khouang in the north as well as in the south of the country.

Some people suggested that it was understood by the population in Xieng Khouang that they would not be eligible for support for medical costs (from an NGO) if their accident resulted from scrap metal collection. On the basis of this understanding, it was suggested that people felt it was safer to report (or record) that the incident resulted from making a fire or digging for farming. Whether such a policy of discriminated medical support exists or is being applied, this suggestion casts significant doubts on the validity of the already weak data, making it still more difficult to get a realistic understanding of how to respond to this problem. The possibility of such an impact alone is enough to support a recommendation that such discrimination is stopped. That said, it was anecdotally reported that the increase in reported accidents in 2004 resulted primarily from increased accident rates in the southern provinces. The particular prominence of scrap metal collection in the casualty data presented here certainly supports the suggestion that this increase was linked to an expansion of the scrap metal trade in this area.

Cause of accidents

While scrap metal collection may be an underlying motivation in these accidents, the actual detonation can result from a number of different causes. Important distinctions can be made here between accidents caused by inadvertent contact with ordnance (such as when digging to investigate a signal received from a detector) and deliberate contact (such as attempting to dismantle an item of ordnance that has been found). Both inadvertent and deliberate contact with ordnance can occur as a result of engagement in the scrap metal trade.

Inadvertent contact: digging and cleaning

A particular risk that may be associated with detector use is the danger of digging into items of live ordnance when investigating a signal. People engaged in scrap collection in this way considered digging gently as important in minimising the risk of detonating UXO. Others reported that they dug towards the item from the side. However, despite these reports people were commonly seen in the field digging with the *saem* (a pick) using over-arm vertical strokes. Safer digging techniques have been part of community awareness messages in Laos for many years now and these messages would seem to have particular and enhanced relevance to people who are digging for detected metal (where the risk of striking ordnance is even greater). It would be very useful to know how effectively this community awareness recommendation is being adopted in practice.

In Savannakhet Province, in the accident reports available for 2004-2005, seven out of 20 scrap-metal related UXO accidents occurred when people were digging to uncover metal. A further four accidents seem to have occurred when people struck soil-covered items in order to clean them after finding them.

In Xieng Khouang and Khammouane, however, digging accidents are not particularly prominent among scrap-related casualties. Looking at casualties (rather than accidents) and including also the data for Khammouane and Xieng Khouang, only 14 out of a total of 71 scrap-related casualties can be attributed to digging. A far greater proportion of the total casualties reported in these areas seem to result from people attempting to open or “disrupt”¹⁴ live items that they have found.



Figure 16. Over-arm (vertical) digging with a saem (while collecting frogs) warned against on the back of a community awareness T-shirt.

Deliberate contact: opening items and rendering safe

As we have noted, while some people will seek to avoid live ordnance (probably leaving it where they find it or putting it somewhere they consider safe) others will attempt to engage with items more intrusively.

Of 71 casualties that can be attributed to scrap metal collection in recent reports from Savannakhet, Khammouane and Xieng Khouang, some 38 were killed or injured in accidents that involved deliberate efforts to open or disrupt the ordnance. It is also notable that, in this data set, the average number of casualties per accident is significantly higher for “opening”-related accidents (2.2 persons per accident) than it is for digging (1.75 persons per accident).

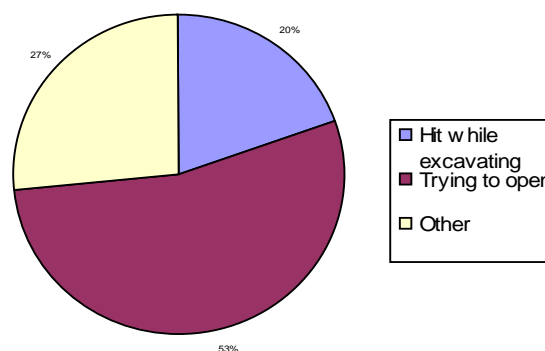
Such “opening” practices involve:

- removing and cutting open fuses to extract detonators for use in fishing;
- removing explosives for sale;
- removing explosives for fishing, burning roots or destroying termite mounds; and
- removing or burning out explosives to leave the metal for sale.

People did not report selling explosives during this research but some such market certainly exists and is reported in the *Landmine Monitor 2004*. While people may seek to open all kinds of ordnance (the casualty reports include cluster munitions, mortars and artillery), these practices are perhaps particularly common with respect to large aircraft bombs where the value of recoverable components (metal and explosives) is significant. It was also reported in some areas that local bomb dismantlers would pay approximately US\$20 to anybody reporting the location of large aircraft bombs to them. The dismantlers remove the fuses from the bomb and extract the explosives. They then sell the large bomb cases either for scrap metal or for display.¹⁵

It is also worth highlighting here that where people do dismantle ordnance they may well leave behind dangerous components. This is another area where people’s practices may endanger others and where efforts could be made to improve attitudes towards responsibility and safety.

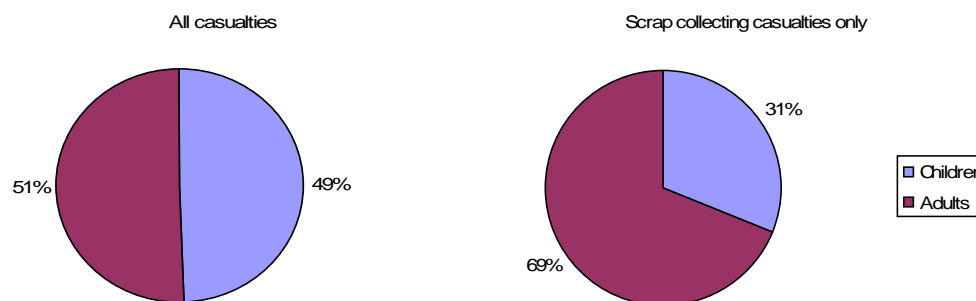
Figure 17: Casualties from scrap metal collection (Annex 1) – cause of accidents.



Children, scrap metal and UXO accidents

In common with many other post-conflict environments, children make up a substantial proportion of UXO casualties in Laos. From the data set analysed for this report, children (16 or under¹⁶) make up nearly 50 per cent of the total number of reported casualties. The proportion of children among scrap metal-related casualties was rather lower (31 per cent). However, this still represents a substantial engagement of children in or alongside scrap metal collecting activities.

Figure 18. Comparison of proportion of children (16 >) among UXO casualties resulting from all accidents and from scrap metal collecting specifically.



A number of points must also be borne in mind when considering this data. A significant number of ordnance accidents result in multiple casualties. It is not possible to determine from the existing data but some accidents will involve adults trying to open ordnance to extract scrap metal value with children nearby watching.

Another consideration is that external agencies often under-appreciate the economic motivation in children’s actions, and local people may under-report these motivations also. This, of course, is further exacerbated if people perceive that it will affect access to medical services. It is possible that a significant number of additional children’s accidents recorded as “playing” also contained elements of economic motivation. Children may, for example, pick up an item with the intention of selling it as scrap, only to engage with it in play activities that result in an accident (Moyes 2004).

As we noted in Section 2 regarding scrap metal collectors, children may collect scrap metal either for themselves or for their families. We did not encounter any circumstances where children were employed to collect scrap metal by third parties.

Gender

We did not translate the gender of casualties in the data set contained in Annex 1. However, in common with UXO contaminated environments internationally (see Moyes [ed] 2005:8) men and boys consistently make up the majority of casualties. For example, in the UXO LAO summary of accident data for Xieng Khouang in 2004 and 2005 (partial), men made up 77 per cent of casualties. In the UXO LAO summary of data for Savannakhet there were no reported female casualties out of a total of 26 in 2004.

This gender split should serve to emphasise that ordnance casualties result not from the external threat of the ordnance but from internal vulnerabilities of the casualties. Seeing ordnance accidents primarily in terms of people's vulnerability rather than in terms of the ordnance as the external threat is particularly important in environments where contamination can be expected to persist for a long time.

4. Attitudes towards UXO as a threat

At all levels of the scrap metal trade, people are managing the risk of accidents with UXO. While some people will seek to avoid contact with all UXO, others will evaluate whether or not an individual item is dangerous (probably handling the item carefully in the process). Among the latter group, some people will then engage with items that they recognise as dangerous in order to render them either safe or saleable. Such processes include removing fuses, chiselling out high explosives or burning out the explosive content. As we have noted in the previous section, different practices can result in accidents in different ways.

It is not possible in a short study such as this to present any systematic understanding of the factors that condition people's attitudes towards the threat from UXO. We can suggest that the following factors are likely to be significant:

- gender;
- economic alternatives; and
- technical knowledge/experience.

Some people reported fear of striking an item of UXO as a primary reason for not collecting scrap metal. Others recognised the threat of UXO as being part of scrap metal collecting but felt that the risk was acceptable. Others suggested that "*money makes you not afraid*".

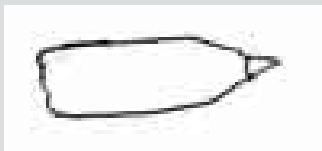
The risk of striking an item of UXO accidentally with the *saem* when digging in response to a signal was a particular concern, and some people interviewed were able to relate tales of how they had struck "bombies" or other UXO items but lived to tell the tale. Almost all reported that they would not engage with UXO that they found. However, they would also generally indicate that checking for the presence of a fuse would allow them to tell if it was dangerous or not. People seem to know the officially sanctioned messages of the State and international institutions: don't touch ordnance. On this basis, people are wary of admitting deliberate engagement with live ordnance. This brings us back to questions that we posed earlier regarding how and by whom ordnance is defined. People may report that they would not handle ordnance, when what this really means is that they would not handle items that *they* think are dangerous. It also

reminds us that criminalisation of practices tends to make discussion with practitioners even more difficult.

Case study: children and scrap metal

"TT" is nine years old and lives in Phin District, Savannakhet Province. He collects scrap metal, sometimes with friends or with his family. They go to an area about 2-3km from their house, taking the family's metal detector. If he finds enough metal (10-30,000 kip worth) he will give the money to his father; he is usually allowed to keep a few thousand kip himself which he spends on candy or Chinese noodle soup.

When he finds an item, he digs around it in a circle and digs gently. His father taught him to dig like this in order to be careful of UXO. He has seen bombs on the ground and artillery



shells. But he did not pick these up because the traders will not buy them. The traders say "look for scrap metal, if you suspect it is still working do not take it ... just if it is fragments". He says if it still has a round body it is unsafe, and on others you can see the fuse or cap. He draws an artillery shell to show the location of the fuse.

The case study above serves to illustrate that the evaluation of ordnance, even by children, can be more complex than is sometimes credited. It also highlights a point of interaction between children and adults that might be very important in efforts to shape attitudes towards children in the scrap metal trade.

Saturation of ordnance

Much as external bodies may assert that the safest way of relating to UXO is not to touch *any* suspicious objects, the reality of life in much of Laos undermines this. Both safe and dangerous items of ordnance still saturate many rural and urban environments. This leads by necessity to a situation where people are expected to discriminate, on an ongoing basis, between items that are safe or dangerous.

Scrap metal collection is not the only reason for people handling UXO. The MAG rapid assessment (MAG 2005: 17) in certain areas of Khammouane noted that "in almost all the villages visited, villagers had also done some of their own clearance, generally by simply moving items that are in the way. Items are then usually either moved to a place considered safe, for example placed in a bomb crater, or burned". Acceptance of the danger presented by UXO is not surprising in a population that has generally grown up with this contamination. Taylor (1996) reported that:

"...some villagers have denied the existence of a problem at all. This may arise from protectiveness of the village's stock of UXO in terms of its scrap value, but I think more usually, it arises from twenty-three (plus) years of working side by side with ordnance, and consequently a genuine conceptualisation of the UXO threat

as one of those dangers in life – like crossing the road – that lie within a community's natural and acceptable risk zone."

Similarly, in the research for this paper, some community groups reported that they had only started worrying about UXO since people started to undertake community awareness in their village. While, on the one hand, this supports a hypothesis that the "problem" is often constructed from outside, on the other hand it is also perhaps *the* key role of community awareness activities – i.e. giving additional weight to certain appreciations of risk at a local level (without necessarily dictating practices). This perspective may be very important in allowing us to avoid the trap of appropriating responsibility for the ordnance accidents that occur.

5. Efforts to reduce the risk of UXO accidents

The Lao government, in partnership with international organisations, has put in place a number of mechanisms or programmes designed to reduce the risk of UXO accidents and some of these relate directly to the scrap metal trade.

Legislation

In response to concern about UXO in the scrap metal trade, provincial authorities in the areas of UXO LAO operations have produced “provincial decrees” that inform the district authorities of actions they must take relating to these issues. Although these decrees seem to have been produced at the instigation of UXO LAO, they are all different; some contain specific references to elements of national law and lay down fines that can be levied, others are very vague. Key phrases from unofficial translations of decrees relating to each Province where research was conducted are as follows:

Xieng Khouang

- *Based on Letter of Order No. HO/ GDO, dated 5 April 1999. The General Department Office, Ministry of National Defence on the Directives on the use of scrap metal and Metal Detectors [...]*
- *Forbids: individual or organisation to have any kinds of armed equipment and metal detectors in possession or purchase such materials [...]*
- *Any individual or organisation who does not submit metal detectors to authorised officials will be called as an offender [...]*

Khammouane

- *It is only permitted for UXO Programme staff to use equipment to explore UXO and its salvages as well as to remove and transport them [...]*
- *Any individual or organisation possessing the equipment, shall declare it with necessary documents to the authorised officials in order to issue proper licence.*

Savannakhet

- *Impede the use of metal detectors purchased from Viet Nam and China for the exploration of scrap metal and the destruction of UXO without approval of your districts. These actions will endanger people’s lives and properties and are illegal.*
- *It is assigned to the District Governors to appoint officials to investigate and inspect merchant vehicles that travel to your districts for the purpose of UXO scrap metal purchases [...]*

Although the decree from Xieng Khouang uses the clearest terms, all three indicate that using “equipment” is problematic (although in the case of Savannakhet detectors are mentioned in the title without being subject to specific statements in the body of the decree). It should also be noted that a number of the decrees suggest that detectors may be used by “approved” people – which leaves open an option for management of legitimate access to detectors rather than necessarily banning them outright.

While the provincial decrees may serve as an apparent response to the rise in metal detector use and the widespread movement of live ordnance through the scrap metal trade, little seems to have been done to implement the responses that the decrees call for. Only in Xieng Khouang did the provincial police present evidence that they had confiscated detectors (the focus of the decrees in that area) and levied fines on people trying to import this equipment.

At a district level in Savannakhet and Khammouane little seemed to have been done other than posting the provincial decree as a notice to the public. Some district authorities stated that they lacked the funding and resources to implement the decrees. Others were not clear as to what was required – were they trying to stop the whole scrap metal trade, or just metal from ordnance, or just live ordnance? One district also reported that stifling the scrap metal trade would clash with the government’s poverty eradication policy. District officers seemed very aware that they were being asked to impede livelihood activities while having nothing to offer people in return. Some officials also cited the practical problem of checking trucks loaded with scrap metal.

It was also perceived by some that while local officials may use lack of resources or concern regarding the poverty of the local population as reasons for not acting on legislation, another key problem is a lack of willingness among individuals at these levels to take responsibility or to make themselves unpopular. In this respect, it was seen that pushing for greater enforcement would probably need some measures of support to district level officials to encourage them in this work.

Lack of coordination between different bodies at a district level is another significant problem. There are considered to be five departments who should be responsible for implementation of the Provincial Authority decree:

- Police;
- Customs;
- Department of Social Welfare;
- Military; and
- District Authority Secretariat.

A number of officials reported difficulties of cooperation between different district and provincial departments as a particular problem in organising a response to this issue. With the importation of detectors falling under Customs, regulation of businesses falling under the Commercial Section, law enforcement under the Police and ordnance with UXO LAO, no one department or section seemed to have ownership of this issue and as a result little actual implementation was apparent.

These same problems of coordination also affect capacity to monitor and control the widespread presence of live ordnance within the scrap metal yards and foundries. UXO LAO Provincial Coordinators are well aware that there are large amounts of live ordnance at various scrap metal foundries but (understandably) they do not see this

as falling within their mandate. They see it primarily as an issue for the police. The lack of inter-sectoral dialogue is seen as a problem throughout the very vertically structured Lao administrative system.

It should also be noted that to set up in business as a scrap metal trader a provincial-level document was needed that positively stated the business was to trade in scrap metal not in UXO. It was not possible to see copies of such documents during this research or to see exactly how this distinction was worded. As with the provincial decrees, the question of distinction between scrap metal and UXO is very important but subject to various formulations.

Unacceptable scrap metal: definitions or descriptions from Lao PDR provincial decrees

It is important to note that these are based on unofficial translations and are therefore indicative of the issues only:

Xieng Khouang

Unexploded bomb, bombing elements dumped by the war.
Armed equipment.

Khammouane

UXO and its scrap metal, UXO and its salvages.

Savannakhet

UXO scrap metal.
... inspect all kinds of transportation carrying metals.

Houaphan

All kinds of UXO and scrap metal.

Luang Prabang

Bullets that still contain chemical elements.

Sekong

UXO and its scrap metal
... seeking for UXO and scrap metal with high technology equipment.

Community awareness

Another mechanism designed to reduce the likelihood of ordnance accidents is community awareness (CA) which is supported by UNICEF and undertaken by the Lao Youth Union, the Ministry of Education in partnership with the NGO Consortium, and by UXO LAO. A common response from district authorities and police in discussions regarding UXO accidents was to assert a need for more awareness programming and for an extension of current programming to remote areas. It is difficult to tell if this is driven by evidence that this programming is effective or simply by the preconception that this is the best form of response given that ordnance contamination is going to be a continuing problem.

Important CA messages relate to recognition of suspect items; actions on finding a suspect item – not touching, marking, reporting; fleeing from those who undertake dangerous behaviour; safer practices (building fires, digging). It is notoriously difficult to evaluate the impact of such awareness programmes. While even partial accident

data provides an indication that awareness messages are not being acted upon, there is no positive data to indicate those people who have acted upon the proffered advice and avoided accidents. CA in Laos has for some time presented positive messages designed to provide safer alternatives to risky behaviour (rather than just negative messages warning of the danger). In addition to transmission of messages, the UNICEF supported “Sport in a Box” project seeks to provide safe practical play activity alternatives for children living in contaminated areas.

As we have noted, safer digging might be especially important in relation to digging for scrap after locating a signal with a detector. It would be very useful to know more about actual adoption of safer behaviours (such as safer digging techniques). In particular it would be useful to determine the level of discrepancy between knowledge of the recommended technique and practice.

Figure 19. UXO LAO awareness poster highlighting the danger of making fires.



As we noted in Section 4, a key role of CA might be to give weight to people’s perspective on the risks of engagement with ordnance. The critical challenge to CA is the ongoing discrepancy between an assertion that all ordnance can be dangerous and local experience that distinction can be made between items in different states. Another challenge relates to the enforcement or non-enforcement of legislation. CA could be utilised to inform people of the legal status of detectors and to advocate against detector use (which would be in line with the Provincial Authority positions in most areas). However, this may also serve to alienate those implementing CA from the local community and make it more difficult to develop positive safety messages (such as safe digging in relation to detector use). We discuss possible CA messages/approaches and issues of the relationship between CA and the legal context further in Section 6.

Another important issue is the level of responsive ordnance disposal capacity operating in the areas where CA is being undertaken. Certain CA messages are based on a model that external assistance will be forthcoming to destroy any suspect items that are found (and thus people should seek external assistance rather than engage with

ordnance themselves). It was not possible within this research to determine how easily or regularly communities were able to report ordnance, or how long they would then have to wait for the ordnance to be addressed. However, lack of a responsive explosive ordnance disposal (EOD) capacity will impede the adoption of safer behaviours.

Ordnance disposal operations

UXO LAO is the national ordnance disposal organisation. In addition to UXO LAO, a number of non-governmental organisations (NGOs) and commercial companies are implementing operations either in support of humanitarian objectives or under contract to mining or infrastructure development projects. UXO LAO has the following key objectives:

- to reduce accidents; and
- to open land.

A large part of UXO LAO's resources are committed to detector-lead area clearance as determined by district and provincial development plans. Significantly fewer resources are available for Roving Teams working responsively to address surface-lying ordnance and ordnance reported by local communities.

It is important to reiterate here that this study did not allow for, and was not mandated to undertake, any substantial evaluation of UXO LAO's operational planning and the effectiveness of these plans. However, the current balance between sub-surface area clearance and responsive operations probably significantly impedes the capacity of UXO LAO to reduce accidents. It was considered by many that UXO LAO had been established on the basis of operational models imported from landmine clearance and that these models did not represent the most effective operational structures for addressing the specific problems in Lao PDR.

Laos still suffers from an effective saturation of ordnance – both safe and unsafe. Without addressing this saturation of ordnance throughout society it seems very unlikely that a response can be developed that allows people to be significantly more pro-safety in their attitudes towards UXO. The current focus of clearance assets on sub-surface area clearance in accordance with development plans means that these assets are not available to operate in a responsive relationship to communities (or even directly to apparent UXO problems). Thus scrap metal yards can be full of dangerous live ordnance but it is not within the mandate of UXO LAO to address this contamination and they may not have the flexibility to address it even if it were.

Similarly, there are guest houses in Phonsavanh that are well known to keep live cluster munitions on display in cabinets yet ordnance disposal teams are working on land where there may or may not be munitions at all. Indeed it was reported anecdotally during this research that a significant proportion of sub-surface clearance sites presented no ordnance at all. Yet so much ordnance is still present elsewhere within society that people must continue to engage with that ordnance, building a familiarity and confidence that CA messages can do little to counter-balance.

Another consideration is the competition between requesting assistance and the possible financial returns of salvaging for scrap metal. This can cause problems for clearance organisations, with ordnance being removed for salvage before they have had a chance to destroy the items. On the other hand some people reported suggestions that clearance teams may prefer to “low-order” items so as to secure some scrap metal return for

themselves. In the end these issues may resolve into a balance between items that communities are particularly concerned about (such as large aircraft bombs in proximity to houses, or dense bombie contamination) and those items that people feel comfortable to salvage.

The issues highlighted here are listed because they are problematic and because they relate to the problems of the scrap metal trade. This should not be taken as a critique of UXO LAO's operations overall. However, the structure and availability of the "formal" explosive ordnance disposal capacity is an important factor in understanding the relationship between the general population and ordnance contamination. Lack of a responsive capacity makes it more likely that people will address ordnance on their own than will expect assistance from an outside body. In turn, almost all CA is predicated on the notion that external bodies can come and implement a safe response to any suspect items that are found.

National Regulatory Authority

All actors working to address ordnance contamination in Laos are awaiting the establishment of the National Regulatory Authority (NRA). According to a decree of early 2004 (GOL 2004b), this body will have the following responsibilities:

- review and implementation of national strategic plan;
- definition and provision of policy direction;
- accreditation, licensing and oversight of all UXO operators;
- management of the database and the prioritisation and related tasking of all UXO operators;
- external quality assurance of UXO activities; and
- post-clearance impact assessment.

However, more than a year after the release of this decree the NRA is still not established. Such a body should be very important in development of any national strategy to address the threat of UXO within the scrap metal trade. However, whether the NRA will have the capacity and authority to develop effective strategies remains to be seen.

6. A future strategy

An analysis of a single sample village conducted by UXO LAO¹⁷ reported that:

“In this village the most important factor that leads people to consciously engage in unsafe behaviour are poverty and food security. Poverty and insufficient food contributes to villagers actively participating in the war scrap trade as a means of ensuring a cash income. Poverty and a lack of village technology also contribute to villagers continuing to engage in unsafe farming practices. Thus while CA will continue to be important to maintain awareness, it is perhaps naïve to suggest that CA alone will effect sustainable behavioural change. As also indicated in the behaviour, attitudes and knowledge study, this survey suggests that a broader multi-sectoral approach which includes clearance, education, enforced legislation and poverty alleviation strategies such as micro-credit and interest free lending schemes might be more effective.”

This paragraph neatly encapsulates key issues and possible components for a strategic response. However, there are a number of areas where clear decisions need to be made and these decisions will dictate the shape and direction of the overall strategy. The issues are complex, however, and there are many areas where we have little knowledge and little evidence. In this section we discuss a number of the key points that must be addressed if a strategy is to be developed to respond to the scrap metal trade.

Although this paper was commissioned by UNICEF, a response to these issues must necessarily involve the coordinated efforts of a number of key institutions. The development of a coherent strategy is probably more important than rushing to undertake some form of response. While a multi-sectoral approach would be most effective, the different programmes being pursued need to be coherent and mutually supportive.

Understanding the reality of the problem

The evidence does not currently exist to allow a realistic appreciation of the problem. We all accept certain levels of risk as being tolerable in a trade-off with other perceived

benefits. The fact that information is gathered on ordnance related accidents (although it is only partial) means that we tend to see the scrap metal trade first and foremost as a driver of risk. However, to understand this accident data we need to put it in its social and economic context. These are not accidents caused by ordnance, but accidents *with* ordnance caused by people's engagement in an economic enterprise. Without understanding the scale of this economic activity, or the value of this activity to the participants, we are in no position to determine whether the perceived casualty rates represent an acceptable or unacceptable social cost.

This is simply to say that we need to be self-conscious about how we come to view certain situations as problems. It is not to deny that concern regarding ordnance accidents is legitimate. But before we devote our efforts to controlling or curtailing the scrap metal trade we need to be sure that the outcome of our interventions would be a net benefit for the rural population that we claim to be helping. This may mean we need to be more precise about what problem we really want to address. In this regard it may be the role of children in the trade, or the propensity of accidents to occur in the middle of villages among bystanders, that provide a clearer moral basis for intervention.

Two priorities should be:

- establishment of a national casualty surveillance system; and
- further research to be conducted on the growth, prevalence and value of scrap metal collecting in the rural economy of target areas.

Conceptualising casualties

It would be worthwhile thinking critically about how casualties are viewed. One question is whether we are concerned with the total number of casualties or casualties as a proportion of a particular population. In relation to this, it would be interesting to question how scrap-related casualties have risen in proportion to the prevalence and incidence of scrap collecting within the population.

This is to apply an "industrial accidents" frame of reference, where the casualties are not wholly separated from the economic activities that underpin those accidents.

The role of children

Lao PDR is a signatory to the UN Convention on the Rights of the Child. This presents obligations to support the best interests of children, notably:

Article 32.

1. States Parties recognise the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health [...].

While children's work within the scrap metal trade may provide income for themselves or their families it still represents a form of work which is likely to be hazardous.

In any evaluation of the economic benefits and social costs of the scrap trade, this clause commits the State to work to provide protection of children. The role of children

within the scrap metal trade should be a key focus of efforts to reduce accidents but this again this would need to be coordinated with broader responses to the issue.

Defining ordnance within the scrap metal trade

Efforts to control the threat of ordnance within the scrap metal trade need to give consideration to how UXO or “war scrap” is defined. Some officials emphasised that it was important to stop *all* war remnants within the scrap metal trade. Others, including some police officials, stated that distinction needed to be made between dangerous items and safe items – with trade in safe items being permissible.¹⁸

The process of definition has two key challenges:

- If the trade in all war scrap is outlawed this amounts to a massive economic curtailment of the current scrap industry. It also clashes with widespread knowledge that certain items are safe and the widespread display of such items throughout towns and villages.
- If distinction is to be made between safe and unsafe items – as it is currently – then there is the question of how people are to make this distinction. The process of distinction within the trade can also promote dismantling of ordnance by the local population in order to render items acceptable for sale.

The current situation tends towards the former in official statements but the latter in implementation (to the extent that any implementation is apparent). In most cases, the process of distinction is driven from within the scrap trade by a recognition that the foundries do not want to accept live items. As we have reported, however, large quantities of live ordnance still make their way through the system.

Two priorities should be:

- Further research on the processes of differentiation currently being undertaken by people at different levels of the scrap metal trade. A valuable pilot project would be to conduct a training needs analysis of differentiation practices within a scrap yard/foundry. This could then be followed up with training to address common problems.
- National level formulation of what is and is not acceptable metal within the scrap metal trade (i.e. any war scrap, any metal derived from ordnance, any items containing explosives, etc.)

Banning detectors

With provincial decrees already in place regarding metal detectors, there seems to be three options available:

- non-enforcement of existing legislation – which seems to be the current approach in many areas;
- improved enforcement of legislation; and
- managed access to detectors – perhaps through a licensing system.

Most of the provincial decrees are phrased so as to leave the latter option available. Possibilities in this area could develop systems for the identification and registration of people as scrap metal collectors/traders – accepting it as an economic practice but asserting certain principles of responsibility. Such a response would need to be designed and implemented as a substantial programme of development assistance, although

research and trial processes could be implemented as pilots in specific areas. This would certainly present administrative challenges and challenges of enforcement (although the latter would not necessarily be more problematic than enforcement of existing legislation). Such engagement would also need to recognise that given the current economic situation in Laos, scrap metal collection will continue as a viable, albeit dangerous, economic activity for the foreseeable future. This however, does not alleviate the necessity for programmes that attempt to develop economic alternatives for the long-term.

The approach taken to this issue should really build upon the findings regarding an improved understanding of the problem. Additional considerations could be:

- Capacity to enforce or implement the proposed course of action;
- Impact of criminalisation on dialogue with vulnerable populations regarding their practices;
- Any licensing system would probably require controls on importation and sale, and training for detector users (covering safe digging, reporting of live ordnance and responsible practices);
- Detectors represent an asset that can be seized where people have contravened boundaries of responsible behaviour – this makes their presence useful as a potential source of leverage;
- Possible institutional prejudices against civilian ownership of detectors because they are the status symbols of professional mine action bodies;
- The need to understand to what extent detectors specifically increase risk (in terms of the total numbers and in terms of proportions);
- State institutions may have other security concerns and detectors may be categorised as military equipment; and
- In general, criminalisation of the scrap trade without a substantial investment in enforcement may make the adoption of safe behaviours less likely (e.g. people will not report items and will not seek assistance from external bodies).

Commercial obligations

While there are already obligations for people establishing businesses to secure permissions from district and provincial authorities, these could be developed further to take account of the specific risks of the scrap metal trade. Proof of compliance or acceptance of these conditions could be made mandatory within these existing approval systems.

Possible additional obligations could be:

- all scrap metal foundries have to purchase health insurance for their workers;
- all scrap metal foundries and brokers have to open their premises to inspection by the police working in conjunction with an authorised UXO disposal capacity;
- all scrap metal foundries and brokers must store suspect items in a segregated area and must report such items for inspection by an authorised capacity;
- all scrap metal foundry labourers must have undertaken a basic course in dangerous item recognition; and
- scrap metal brokers must not purchase scrap metal/metal derived from ordnance from children.

Further liaison with bodies such as the International Labour Organization (ILO) could serve to ensure any proposals were coherent and supportive of broader efforts to establish conditions of decent work for labourers and other groups.

It may be asserted that the problem of ordnance and scrap metal trade lies not in these businesses but with the rural population. This is certainly true in some respects. However, it seems very likely that accidents within foundries are not being systematically reported. More importantly, addressing ordnance issues within these institutions is an important part of addressing the visible saturation of ordnance in society. If it is not possible to regulate people's contact with ordnance in clearly defined, predictable and accessible locations such as scrap brokers and scrap foundries, there is little likelihood of being able to control people's engagement with ordnance in the rural environment. Such processes of regulation could be linked to a broader initiative to further formalise the scrap metal trade down to the level of rural collection.

The structures of ordnance disposal

Linked to the issues above, the availability and responsiveness of ordnance disposal capacity certainly has a bearing on how people choose to interact with ordnance contamination. In this regard UXO LAO's current emphasis on sub-surface area clearance probably diminishes its capacity to address the most prominent outstanding needs. Davies (2004) states:

"In a context where so many UXO items are lying around on the surface in the places where people live, work and play, destroying such items is a major vehicle for us to achieve [UXO LAO's] mandate, especially where children are concerned. Over 80 per cent, in excess of 400,000, of the items destroyed by UXO LAO since its establishment in 1996, have been destroyed by our 'Roving Teams', tasked by community requests and based on technical survey. This has proven a flexible and pragmatic response to the needs of people living with UXO. The work of the 'Roving Teams' is one of the most cost-effective areas of the organization's operations and has had a disproportionately high impact (Roving Teams punch above their weight) in terms of making rural Laos a safer place in which to live."

To state that Roving Teams have a disproportionately high impact, is pretty much to acknowledge that area-clearance teams have a disproportionately low impact.

The fact that ordnance is still so widespread and visible "on the surface" of society makes the focus of resources on sub-surface area clearance seem misplaced. Unless the saturation of ordnance can be addressed at its most apparent level there is little chance of making inroads into the culture of engagement with ordnance that supports risk-taking in the scrap metal trade. Similarly, the lack of an available, responsive EOD capacity also further undermines those messages of community awareness that stress reporting to the authorised bodies as being the best way to respond to suspect items.

EOD organisations should review their practices regarding the scrap metal output of their work. Where possible, value should be returned to the local community. Safe operating practices should not, however, be compromised in an effort to produce a scrap metal yield.

Safety messages and community level solutions

Safety messages need to be in accordance with the overall strategy being pursued, appropriate to local contexts and directed at specific target audiences. An important current question is how the legal status of detectors will be taken forwards.

Messages could be developed relating to the following:

- Don't use detectors – they are illegal, dangerous, you/your family will be fined.
- Don't collect scrap metal – it is illegal, dangerous.

Or

- When digging for scrap metal – presume it will be UXO, dig carefully, stand a safe distance from your friends.
- When you find scrap metal, be careful how you clean it – don't hit it.
- If you find live UXO, don't try to open it or take it with you – leave it, mark the location and report it (relies on availability of EOD capacity).
- Adults are responsible for their children's safety – where are they getting their money from?
- If you buy scrap metal from children you can be fined.

And/or

- If you dismantle ordnance, don't leave the live fuses where children can find them. Mark the location and report them.
- If you want to dismantle live ordnance, don't bring the item into the village where other people might be hurt.

If detectors were allowed, even on a qualified basis, they could also be a useful safety tool:

- If making a fire, choose an area where the detector finds no metal.
- If digging, dig where the detector finds no metal.

Such practices would not guarantee safety, of course – but they would improve safety.

Ultimately we should be wary of presuming that a “message-based” approach will have a significant impact in terms of behavioural change. The assumption that bodies at the centre know more about the dangers of UXO in the rural environment than the rural population itself is very questionable. More might be gained by efforts to understand existing attitudes towards ordnance and established local coping strategies.

In this regard, the focus could be on facilitation of discussion and local decision-making about responsible and irresponsible behaviour. Such processes probably need to be wholly separate from “message-based” approaches if the inherently judgemental structures of the latter are not to influence local decision-making. The focus here should be on establishing/confirming that responsibility for managing these risks lies with the affected community not with external bodies.

Alternative incomes

In a number of discussions people raised the possibility of providing economic alternatives as either compensation for making detectors illegal or as a part of a general effort to draw people away from scrap metal collecting. There is no doubt that the provision of economic alternatives should have a substantial impact on reliance on scrap metal collection. On this basis, it would be useful to use casualty data regarding scrap metal accidents to focus some pilot projects developing locally appropriate economic alternatives in these areas.

However, it is very possible that such projects would fail to achieve their stated goals. Jo Durham¹⁹ states that despite its risks, selling scrap metal has many perceived advantages over other dry season crops, including:

- low initial investment;
- quick return on investment;
- buyers come to the village; and
- high returns for labour invested.

Durham contrasts these advantages with the poor uptake of dry season rice farming after this had been promoted in certain areas: high up-front investments in irrigation and fertilizers were seen as producing only a low return and even depleted wet-season productivity.

Added to its commercial strengths, the fact that scrap metal availability is seen as finite is another factor that makes facilitation of alternative incomes even more difficult; from the perspective of the community, uptake of alternatives could always be deferred until after the current period of relative metal abundance and high prices had been exploited. While provision of economic alternatives may look good on paper, we must return to an appreciation of the economic strength of the scrap metal trade. It is not simply a question of providing some other economic activity, but the alternative must compete with levels of income and market integration that currently make scrap metal so important.

The role of UNICEF

As a final comment, it is worth returning to the role of UNICEF in pushing forward a response to these issues. It is hoped that this paper will serve to open up debate regarding the problems arising from the scrap metal trade and the possibilities for addressing these problems. This debate will need to involve a broad range of international and national institutions. In particular, it is hoped that the discussion of key issues in this section can act as a frame of reference for the planning and development of further research and pilot activities. A coherent strategy cannot be developed without addressing and resolving some of these questions.

It is also worth noting that the problems and issues discussed here are not peculiar to Laos but are regional issues that have parallels in Cambodia and Viet Nam. So strategies developed in one location may be a source of useful ideas for people working elsewhere. With a strong regional presence, UNICEF could have a very valuable role in promoting and facilitating that discussion.

Endnotes

1. This quotation is taken from the undated UNICEF Country Briefing Guide. The project objective regarding UXO from the UNICEF/Government of Lao PDR Master Plan of Operations 2002-2006 (UNICEF 2001: 18) is: *“to prevent disability from UXO through a national programme of community awareness education and UXO accident reporting”*.
2. See, for example, MAG 1999.
3. Taylor (1996).
4. Moyes (2005: 9).
5. Jo Durham (MAG) has suggested that men collecting scrap in groups was a continuation of traditional hunting structures.
6. In May 2005, the Lao kip was exchanged at approximately 10,500 kip to the US dollar. This exchange rate is used for calculations in this report – although sometimes figures are rounded for ease of representation.
7. It is not clear how this calculation is made or how (if) it translates domestic production into a cash value.
8. Durham et al. (2002: 9).
9. For example, we spoke to rural women in Xieng Khouang who wove silk as a cash income activity. Taking the maximum production they stated (four rolls of material per day) at the maximum price (3,000 kip per roll), they can get an income of 12,000 kip (US\$1.15) per day. Set against this is the initial investment in a loom, and the ongoing cost of the raw silk and time (this represents a whole day’s work as opposed to an activity that can be undertaken alongside or subsequent to other economic tasks). A final factor is the velocity of transactions, with a trader coming to purchase their products only every two weeks.
10. However, one family did report using their detector to help them extend their rice-field land more safely. As they were extending the land, they reported that they used the detector to check the ground. This allowed them to collect some scrap but most importantly it had enabled them to find three bombies that day. They reported digging carefully around items to uncover them without striking them hard. They did not move the bombies they found but built a small fire over them and then hid some 2-300 metres away behind a tree. They reported that they worked too far away to get a clearance team to deal with these problems.
11. HI (2004).
12. Despite this, at least one draft of the Lao Government’s Strategic Plan for the UXO Programme (GOL 2005) sets as an objective that accidents will be reduced to a rate not exceeding 100 persons per year. Such a formulation is incongruous because, without a realistic understanding of current casualty levels, it is impossible to tell whether such a target is either reasonable or achievable.
13. The data-set that this analysis is based on is attached as Appendix 1 to this report. It is made up of accident reports for 2004 and the first part of 2005 that were held at the Khammouane and Savannakhet UXO LAO field offices, and data on Xieng Khouang for 2003-2004 held at the UXO LAO head office in Vientiane (because these records were not available at the field office at the time of the research). Although the data-set for Xieng Khouang is of a slightly different period, there is no significant difference in the balance of scrap metal reported and non-scrap metal reported accidents between the 2003 and the 2004 data (i.e. scrap metal accounts for about one quarter of reported casualties in both years).

14. “Disrupt” here is a translation from the casualty report forms but it is unclear exactly what it means – the authors take it to mean opening the ordnance.

15. The collection of bomb cases for display seems to be of growing importance in Xieng Khouang where almost all of the guesthouses and restaurants in Phonsavan town proudly display large aircraft bombs beside the road. One respondent elsewhere in Xieng Khouang reported that he had purchased two large aircraft bombs for US\$40 and US\$50 each to stand outside a guesthouse he was building. He said he thought these things might not be available in the future and so it was best to invest in them now. The guest house that the research team stayed in contained a glass cabinet full of cluster submunitions on display.

16. Although the Convention on the Rights of the Child (UN 1989) defines a child as anyone below the age of 18, it was reported during this research that in Lao 15 or 16 was generally considered the division point between childhood and adulthood. For the purposes of our analysis such distinctions are not too important – but this may be an important distinction for the implementation of further practical responses to this issue.

17. Durham et al. (2002:1-2).

18. In some areas (notably Savannakhet) officials also cited a Ministry of Defence plan to collect all war remnants for a display. It was difficult to get details of what this plan consisted of but it was cited by officials both at a provincial level and at a district level as a component of their thinking on this issue. In one of the districts the police showed cluster bomb casings that they had reportedly confiscated from scrap metal traders – despite the fact that these are widely known to be safe, they are prominently displayed around the town and nearby villages and were being used by the police themselves as a planter for onions.

19. MAG (2005).

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Glossary of acronyms

Bombies	Lao term for cluster submunitions
CA	community awareness
EOD	explosive ordnance disposal
GICHD	Geneva International Centre for Humanitarian Demining
HI	Handicap International
ILO	International Labour Organization
LAO PDR	Lao People's Democratic Republic
MAG	Mines Advisory Group
NGO	non-governmental organisation
NRA	National Regulatory Authority
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UXO	unexploded ordnance
UXO LAO	Lao National Unexploded Ordnance Programme

Annex 1.

Analysis of UXO accidents from Khammouane, Savannakhet and Xieng Khouang Provinces: 2003, 2004, 2005

The following table summarises information on the causes of accidents. The information is taken from the accident report forms held by UXO LAO provincial offices. The data for Xieng Khouang Province includes records for 2003 also.

	Date of accident	Ages	Cause	Comments
Khammouane Province				
1	01/02/05	25, 35	Looking for scrap metal, found 500lb bomb, no explosives just fuse, using a <i>saem</i> to lift when fuse detonated.	Scrap, no mention of detectors.
2	23/01/05	37	Cutting vegetation	
3	23/02/05	10, 8, 8, 8	Reported as playing - threw a bombie on the ground.	Possibly picked up for scrap.
4	13/1/05	49	Cutting vegetation for extension of rice field.	
5	13/01/05	15, 14	Looking for scrap metal, found a BLU 26 and tried to open it.	Scrap, no mention of detectors.
6	14/01/05	16, 40	Made a fire to keep warm	
7	12/01/05	7	Threw a BLU 26 against a tree - reported as playing.	
8	02/02/05	36	UXO LAO work accident	
9	19/02/05	30, 18	Attempted "disruption" of 105mm. Probably scrap but not mentioned on form.	Scrap, no mention of detectors.
10	08/10/04	27, 20, 25	Trying to take copper from a nose fuse (artillery).	Scrap, no mention of detectors.
11	12/10/04	29	Opening a mine to extract detonator for fishing with explosives	
12	02/05/04	16	Making a fire for cooking.	
13	11/08/04	18, 26	Looking for scrap metal, no other details	Scrap.
14	12/01/04	48	No details on cause.	
15	21/03/04	20, 18, 21	"Disruption" of 500lb bomb. Probably scrap related but not mentioned on form.	Scrap, no mention of detectors.
Savannakhet Province				
1	14/02/03	13	Finding scrap metal with a detector. Hit a BLU 26 when digging.	Scrap, detector.
2	10/03/04	50	Looking for scrap metal - found UXO and tried to open it.	Scrap, no mention of detectors.

3	11/03/04	7, 12	Found scrap metal near their house and hit it when digging.	Scrap, no mention of detectors.
4	18/03/04	19, 20, 30	Trying to clean a BLU 83. Probably scrap metal related but not mentioned on form.	Scrap, no mention of detectors.
5	21/01/04	20	Went to find scrap metal with four other people, using detectors. He found a UXO, told friends to go away and then he tripped, fell and dropped it.	Scrap, detector.
6	18/02/04	27	Using a detector with friend. Found BLU 26 and took the fuse out to use for fishing. They went OUT in the boat with their improvised explosive device, lit the fuse, it exploded too early and he fell in the river.	No mention of scrap but probably their initial intention.
7	22/01/04	19	Looking for scrap metal but not using a detector. Hit a bombie with a knife (unclear what the intention was).	Scrap, not detector.
8	22/02/04	7, 8	Playing in the fields. They found a UXO and threw it in front of each other.	Scrap, no mention of detectors.
9	07/04/04	30, 12	Father and son looking for scrap metal. Hit a BLU 26 when digging.	
10	03/12/04	20	Looking for scrap metal and hit an artillery shell.	Scrap, no mention of detectors.
11	17/09/04	12	Shooting birds with 4 friends when they found a bombie. Three ran away but the fourth stayed and threw it against a tree.	
12	10/04/04	12	Went to find scrap metal with 13 other people. They split up in the forest, he dug up a BLU 24 and then hit it with his <i>saem</i> .	Scrap, no mention of detectors. Hit after finding - cleaning?
13	08/04/04	11, 12	They were looking for scrap metal. Found a BLU 26 and hit it on a stone.	Scrap, no mention of detectors. Hit after finding.
14	10/01/05	20, 18, 15, 17, 21, 35, 22	They were trying to take fuse and explosives out of a large aircraft bomb. They had burned the explosives out and left it over night. The next day they returned to it and the nose fuse detonated.	Scrap, rendering safe.
15	06/04/04	30, 32	Looking for scrap metal. Hit a UXO when digging with <i>saem</i> .	Scrap, no mention of detectors.
16	12/05/04	14	Used a detector to find scrap metal. Found a BLU 61, and hit it to get soil off.	Scrap, detectors. Hit after finding.
17	07/09/04	15	No information (page missing)	
18	23/02/05	28, 48, 40	Trying to open a 750lb aircraft bomb using chisels. Scrap metal not mentioned.	Scrap.
19	24/11/04	60, 55	Made a small fire under their house, UXO exploded underneath.	
20	28/07/04	7	Went with grandmother to find food. He found a UXO and threw it at a tree.	
21	17/02/05	10,12,8	Out looking for food. Found a UXO and tried to open it by hitting it with a rock.	No mention of scrap metal. Possible scrap metal or just playing.
22	15/12/04	16, 8, 10, 9	Went to shoot birds with a catapult. Found a UXO and shot that.	
23	19/06/04	21	Looking after cattle when he found a BLU 26. He tried to open it to take out the fuse and it exploded. No mention of scrap.	Possible scrap collecting or planning to fish with explosives.
24	28/06/05	11	Went looking for frogs, found a UXO and threw it on the ground.	
25	01/04/05	16	Hit a BLU 24 with <i>saem</i> when digging for scrap metal.	Scrap, no mention of detectors.
26	01/05/05	14	Looking to collect scrap metal. Found a mortar and burned it.	Scrap, no mention of detectors.
27	23/02/05	45, 30, 50	Three people trying to open a 750lb aircraft bomb.	No mention of scrap metal. Scrap.
28	20/01/05	14, 16	Made a fire in the forest.	
29	13/01/05	14, 14	Looking for scrap metal, found a bombies and threw it against a tree.	Scrap, no mention of detectors.

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22/09/03	19	Making a fire.	
24/01/03	53, 18	Father and son cutting vegetation with machete - hit bombie.	
16/02/03	12	Burning rubbish.	
20/02/03	10, 12	Went to fields with father, picked up an artillery fuse.	
22/02/03	38	Making a fire in the garden.	
22/02/03	21	Cutting vegetation, found a mortar and tried to open it.	No mention of scrap. Scrap.
25/02/03	18, 13	Looking for scrap metal in an old camp - was cleaning up an M14 when it exploded.	Scrap.
08/03/03	11	Burning rubbish.	
22/03/03	20	Burning rubbish.	
22/03/03	30, 31, 9, 5	Making a fire.	
31/03/03	18, 12	Looking for scrap metal around the village - handling a 75mm shell.	
04/04/03	66	Burning rubbish.	
10/04/03	17	Digging the ground - hit a fuse.	
02/05/03	8	Played with a mortar fuse when no parents were at home.	Possibly scrap metal collected by parents?
21/06/03	26, 30	Hit BLU26 when digging in fields.	
12/06/03	25, 15	Making a path to the house, hit a BLU26.	
13/06/03	10	Making a fire.	
20/06/03	38	Making a fire.	
27/07/03	10, 49	Burning wood for charcoal.	
13/07/03	7, 4, 9	Went to the fields with their parents, played with a BLU26.	
18/09/03	56, 50	Digging up UXO for sale.	Scrap, no mention of detectors.
24/10/03	28	Making a fire.	
16/11/03	26	Blacksmith had a mortar nearby while he was working. It got hot and exploded.	Scrap.
21/11/03	38, 32, 12	Cleaning temple, burning rubbish.	
07/12/03	45	Looking for his cow near old camp where there are lots of mines. Trod on something that exploded.	
02/01/04	13, 12, 8, 8, 13	Five children went looking for firewood - found items in a pit and engaged with them.	
15/01/04	15	Burning vegetation in the garden.	
15/01/04	30, 30	Hit BLU26 when digging a hole to erect a canopy for a wedding.	
22/02/04	18	Cutting and burning vegetation in garden.	
22/02/04	13, 12	Burning artillery to get scrap metal for sale.	Scrap.
03/03/04	17, 14, 14, 15, 13	Making a fire for charcoal.	
02/03/04	38, 30	Looking for scrap metal, tried to disrupt a 82mm mortar.	Scrap.
23/03/04	13	Looking for cow, found artillery fuse (no other info).	Possibly scrap.
15/03/04	22	Put scrap metal/shell into foundry and it exploded.	Scrap, probably the Phonsavanh foundry.
26/03/04	35	Burning rubbish.	
06/04/04	25	Looking for bamboo, found an artillery nose fuse and tried to disrupt it. .	No mention of scrap Probably scrap.
11/04/04	45	Making a fire in the garden.	
13/04/04	7	Adults had collected scrap metal to store but children found a fuse.	Scrap.
14/04/04	11	Picked up a fuse from BLU26 and hit it on something.	
29/05/04	45	Cutting and burning vegetation.	
14/05/04	58, 6	Tried to open a 60mm mortar in front of the house.	No mention of scrap. Scrap.
07/06/04	54	Looking for a cow in the forest, felt cold and made a fire.	
05/07/04	38, 32	Tried to open a 250lb aircraft bomb for sale.	Scrap.
24/09/04	14	Digging with a hoe to make a path.	
14/09/04	6, 6,	Threw a BLU26 near the school.	

12/10/04	27	Burning vegetation for rice fields when BLU26 exploded.	
13/10/04	10,10,7	Looking after buffalo, found BLU26 and handled it	no mention of scrap).
			Possibly scrap.
02/10/04	21	Making fire to keep warm.	
10/10/04	8, 9, 3, 2, 40, 40, 9	Splitting wood on the ground with an axe when hit a BLU26 buried underground.	
02/12/04	22	Hit BLU26 when cutting firewood in the forest.	
03/12/04	21	Digging for potatoes for pig food - hit a rifle grenade.	
16/12/04	12, 11	Found BLU26 on way to school and played with it.	
17/12/04	16, 17	Looking for buffalo and BLU26 exploded.	
19/12/04	75	Found a rifle grenade in the garden and tried to open it.	
25/12/04	48, 3, 5, 9	Making a fire.	
25/12/04	58, 12, 10, 15, 7	Making a fire.	
26/04/04	22, 7, 4	Playing around village, found BLU 26 and threw on paved road.	

Annex 2

Excerpts from the Penal Law of Lao PDR

Ministry of Justice, updated collection, Year 2002

Supported by: UNDP Project Lao 99/008 *“Strengthening the Foundation/or Implementation of the Rule of Law in the Lao PDR”*



LAO PEOPLE'S DEMOCRATIC REPUBLIC
PEACE INDEPENDENCE DEMOCRACY UNITY PROSPERITY

National Assembly

23 November 1989

PENAL LAW

General Part Chapter I General Principles

Article 1 : Role of the penal Law.

The role of the Penal Law is to safeguard the political, economic and social system of the Lao People's Democratic Republic, the state, collective and individual properties, the life, health, rights and freedom of the people, the national security and public order, to counter and prevent infractions and educate all citizens to he respect of laws.

In view of implementing this role, this law determines which act deemed dangerous for society is a penal infraction liable of sanctions.

Article 2 : Basis of penal responsibilities

All individuals will assume penal responsibilities and will be liable to penalties only on the basis of voluntary or inadvertent acts deemed dangerous for society as defined in the Penal Law and only when decision is brought by the court of justice.

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Article 70: (New) Unlawful Production, Possession and Use of Warfare Weapons or Explosives

Any person producing, possessing, keeping, wearing or using warfare weapons or explosives in contravention with the law shall be punished by six months to five years of imprisonment and shall be fined from Kip 500,000 to Kip 10,000,000.

Article 71. (New) Unlawful Trade of Warfare Weapons or explosives

Any person purchasing and selling warfare weapons or explosives in contravention with the law shall be punished by six months to five years of imprisonment and shall be fined from Kip 1,000,000 to Kip 20,000,000.

Where an offender performs the purchase and sale of warfare weapons or explosives as regular profession, through an organized group or in the case of the purchase and sale in substantial quantity, shall be punished by five to ten years of imprisonment and shall be fined from Kip 5,000,000 to Kip 50,000,000.

Article 72: (New) Theft, Embezzlement, Robbery of Warfare Weapons or Ordnance

Any person stealing, embezzling or robbing warfare weapons or explosives shall, be punished by two to five years of imprisonment and shall be fined from Kip 2,000,000 to Kip 25,000,000.

Where such theft or embezzlement of war weapons or explosives are performed as a regular profession, through an organized group, or involves a substantial quantity of war weapons or explosives or is committed robbery of these items,, the offender shall be punished by five to ten years of imprisonment and shall be fined from Kip 5,000,000 to Kip 50,000,000.

Article 73. (New) Loss of Warfare Weapons or explosives belonging to the State or Collectives

Any person causing the loss of warfare explosives or ordnance belonging to the State or collectives out of negligence shall be punishable by three months to three years of imprisonment or by reformatory measures without privation of liberty, and shall be fined from Kip 100,000 to Kip 1,500,000.

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Article 154: (New) Concealment of Offence

A witness to an offence, but failing to report to the authorities without any previous promise with the offender shall be punishable by three months to two years of imprisonment or reformatory measures without privation of liberty and fines from Kip 200,000 to Kip 2,000,000.

Article 155:(New) Concealment of Offender

A person having not previously agreed with an offender and providing shelter or assistance to such offender to evade arrest or trial shall be punishable by three months to five years of imprisonment or reformation without privation of liberty and fines from Kip 300,000 to Kip 5,000,000.