STUDY ON scrap metal collectors/dealers: Quang Tri, Quang Binh and Thua Thien Hue

Project RENEW and Norwegian People's Aid
Final Report

Compiled by Dr Robert Keeley
Data gathering by CSSH
July 2008

PROJECT RENEW™

CSSH
Hue Centre for Social Sciences and Humanities

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Cover photo: One of the CSSH surveyors observing some collectors at work (photo by CSSH)

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A number of other documents are included in the CD-ROM holding the electronic form of this report.

Figure 1. UXO bodies visible amongst normal scrap at a dealer in one of the provinces covered by this study.

Glossary of Standard Mine Action Terms

AP	Anti Personnel (Landmine)
AT	Anti-Tank (Landmine)
CBA	Cost-Benefit Analysis
CEA	Cost-Effectiveness Analysis
EOD	Explosive Ordnance Disposal
ERW	Explosive Remnants of War
GICHD	Geneva International Centre for Humanitarian Demining
GIS	Geographic Information System
IMAS	International Mine Action Standards
ITF	International Trust Fund for Demining and Mine Victim Assistance
HIDC	Highly Indebted Developing Country
KAP	Knowledge, Attitude and Practices
LIS	Landmine Impact Survey
LP	Linear Programming
MBT	Mine Ban Treaty (1997 Convention on the Prohibition of the use, stockpiling, production and transfer of antipersonnel landmines and their destruction)
MCA	Multi-Criteria Analysis
MRE	Mine Risk Education
NGO	Non-Governmental Organisation
Parastatal	A "Corporation wholly or partially government-owned and managed"
PRA	Participatory Rural Appraisal
RIM	Resilience-Impact Matrix
SAC	Survey Action Center
SALW	Small Arms and Light Weapons
UNDP	United Nations Development Programme
UNMAS	United Nations Mine Action Service
UNOPS	United Nations Office for Project Services
UXO	Unexploded Ordnance

A full glossary of terms used in humanitarian mine action can be found in International Mine Action Standards (IMAS) 04.10, which can be found at the following website:

http://www.mineactionstandards.org/imas.htm#directory

Executive Summary

Context

A knowledge-attitudes-practices study conducted by Project RENEW in Quang Tri indicated that around 33% of accidents caused by unexploded ordnance (UXO) were related to scrap metal collection. UNICEF issued terms of reference (TOR) for a study into this issue. Norwegian People's Aid (NPA) proposed a quantitative and qualitative analysis in the three target provinces. The project was conducted by NPA, RENEW and the Centre for Social Sciences and Humanities (CSSH) of Hue College of Sciences. The questions are:

- Why do scrap metal collectors do what they do? A question of '***motivation***'.
- How could they be persuaded to modify their behaviour? A question of '***modification***'.

Motivation

The data collected suggests that scrap metal collectors are motivated entirely by economic factors. A desire to clear land for harvest, observed in other studies in Cambodia, for example, was not identified amongst those interviewed. Although there is some suggestion that scrap is less readily available, the price of metal scrap is increasing, and therefore there is no end in sight in this activity in the near future, as collectors are more likely to travel further from home than leave the market. People take part in collection on a full time basis or to supplement other income generation activities. The majority of collectors are adult males but some females and children take part. Most collectors have had mine risk education (MRE) and are aware that the activity is risky. They do it because they have no choice. They are particularly scared of cluster munitions, which continue to be found in Vietnam.

The market is easy to enter; the cost of a locally-produced metal detector is the main cost of entry, and the average price paid is around $25, with anecdotal evidence that these prices are falling and that some scrap metal dealers will lend a detector to would-be collectors. Although the price is low (around 3,600 VND/kg ($0.23/kg)), this still means collectors can earn around 56,000 VND ($3.5) if they collect the average of around 16kg per day.

Scrap metal is sold on through a network of dealers. Some small dealers cross the Lao PDR border to by scrap there, and smaller dealers sell on their scrap to larger Vietnamese dealers; the data suggests that it may reach China. It is not illegal to deal in scrap metal in Vietnam though the storage and handling of weapons and explosives are tightly prescribed by law.

Modification

There are two main modalities available to modify behaviour in the face of this economic imperative. A legalistic approach may be suitable as a means to intervene with scrap metal dealers to discourage them from accepting, storing or attempting to dismantle UXO. It may also be possible to legislate about the involvement of children in the trade. The provision of alternative livelihood opportunities is likely to encourage clusters of collectors to stop this risky activity. There appears to be no realistic way for the formal UXO clearance sector to engage with these collectors but it should be possible for them to help legitimate scrap metal collectors remove UXO from their premises.

PART ONE: Background and Methodology

Background

A recent study on knowledge-attitudes-practices conducted by Project RENEW (RENEW) in Quang Tri indicated that from the year 2000 to 2005, the average rate of new victims is 45 victims per year in the province. Some observations also showed that Mine Risk Education programs did not have strong impacts on UXO/mine scrap metal collectors and dealers. They still maintain this dangerous job despite of high risks to their life and the life of people living around them. The same study informed that from 1975 to the present, around 33% of accidents caused by UXO/mines have been related to scrap metal collection.

UNICEF issued terms of reference (TOR) for a research study into scrap metal collection within the target provinces in Vietnam. The research study aims to assess knowledge, attitudes and practices of scrap metal collectors and dealers about UXO/mine risks, explore their motives for maintaining this risky job and identify possible risk-reduction interventions. Norwegian People's Aid (NPA) responded to the TOR and proposed an expansion of the original scope of the activity to allow for a formal survey process that should facilitate both the quantitative and qualitative analysis of the problem in the three target provinces. The scope of the study project ("The Project") was included in a project proposal made jointly by NPA and RENEW to UNICEF. The final expanded version of the Project is co-funded by NPA and UNICEF. It was also agreed that the project would be conducted on a collaborative basis by NPA, Project RENEW and the Centre for Social Sciences and Humanities (CSSH) of Hue College of Sciences.

The research question for the study can be summarised in two parts:

- Why do scrap metal collectors do what they do?
- How could they be persuaded to modify their behaviour?

It is intended that the study's findings and recommendations could therefore be used to design future Mine Action/MRE programs and for policy makers to make effective decisions/policies that affect the livelihoods of scrap metal collectors/dealers.

The design of the project is based on a extensive program data collection carried out by the CSSH survey team, supported series of visits by the NPA consultant, Dr Robert Keeley, starting with an inception mission in December 2007 and spread over the course of the project, with other additional support being provided by RENEW. The original proposal included a works plan describing this approach. Because of the time taken to agree the new expanded scope of the project, the works plan had to be adjusted accordingly. The works plan developed during the inception mission is included at Annex A to this report.

Aim

The aim of this Report is to record the activities conducted during the project, describe the findings and also record the lessons learned for the management of any future similar projects in Vietnam.

Report Structure

The Project can be considered in four separate phases:

- Project design and preparation
- Data gathering
- Data Analysis
- Findings

Because of the different nature of these phases, it is worth describing them separately in order to capture the particular lessons learned. Accordingly, this report is divided into five distinct parts: the first part describes the background and methodology for the project, whilst the following sections describe the phases in which work was carried out, as set out above.

Literature Review

A literature review was conducted in the first phase of the Project. The key documents examined are included for ease of reference in the CD-ROM on which this report is circulated. These documents are self-explanatory (they each contain comprehensive introductions and/or executive summaries) and therefore it seems unnecessary to describe them in length again here, especially considering the likely readership of this report who one might expect to be familiar with these documents. However, there are a few key points which are worth highlighting for those less familiar with the context of landmine and UXO contamination in Vietnam and the issue of scrap metal collection in South East Asia.

Firstly, the survey conducted by the Vietnamese UXO agency BOMICEN, supported by Vietnam Veterans of America Foundation (VVAF) confirms the continued prevalence of UXO contamination in the three central provinces in Vietnam which constitute the target area of this Project. Secondly, the studies done by RENEW, in particular the KAP study and their own analysis of victim data (in Quang Tri only) suggest that a large proportion of people injured by UXO were engaged in activities associated with scrap metal collection at the time of their injury. Secondly, there have been two other benchmark studies done on the issue of scrap metal collection; both are rightly considered as seminal documents but neither were undertaken in Vietnam. It might therefore be considered as premature to assume that the circumstances under which such activities are undertaken in Vietnam are the same without a comparative study in Vietnam itself. Furthermore, from the review of the reports on the studies it is clear that the emphasis in methodology for these two studies was of a *qualitative* approach. Because of the resources made available for this Project by UNICEF and NPA it was possible to undertake a *quantitative* study which provides a robust baseline on which any conclusions can then be drawn. The methodology chosen for this report is described below.

Figure 2. Map of Vietnam. The three central provinces covered by this study are covered in red. Quang Binh is the northernmost of the three, with Quang Tri in the centre and Thua Thien Hue to the south.

Methodology

Early in the planning process it was determined that a mix of techniques would be used for this study. The first element was the literature review. Other techniques included:

- Research on legal position
- Formal survey
- Qualitative interviews
- Expert opinion collection
- Focus group
- Participatory rural appraisal

Research on legal position

One of the questions facing the team was the need to determine the current legal position of scrap metal collectors and dealers. The UNICEF office in Hanoi was able to identify the Vietnamese law that appears to be the most relevant in the context of this issue[1]. Its contents are discussed in the section on findings below.

Formal survey

As identified in the literature review, the two most important studies on this subject are qualitative in nature, i.e. they did not attempt to collect data in a manner that would facilitate quantitative analysis (i.e. questions like 'how many' 'for how long' or 'how much'). Therefore this survey was designed around the concept of a 'formal' survey by which respondents would be asked a series of pre-determined questions designed to elicit 'closed' questions that would enable the results to be aggregated and quantified.

Qualitative interviews

One of the disadvantages of the formal survey approach is that because the questions are pre-determined, there is little scope for accommodating the unexpected, particularly in terms of the responses from the people being interviewed. A *qualitative* approach, which tends to focus on capturing the wider opinions of the target population, is better at this, but it cannot easily be used to collect data that can be subjected to quantitative analysis. The team were able to get the best of both worlds by allowing the surveyors space to note any particularly interesting observations, especially where the questions allowed the respondent the choice of an 'other' response. One of the other disadvantages of a qualitative approach is that it requires more training of the surveyors so that they are able to interpret qualitative data accurately in the context of the subject: hence the use of trained surveyors from CSSH and inclusion of several training sessions in the specific issues of landmines and UXO and scrap metal collection. This mixed approach proved to be very effective, as in a few occasions when the team came to analyse the date it was found that the selection of the 'other' choice outnumbered the other answers. Because of the supplementary information collected by the surveyors, it was possible to re-analyse these answers and in some cases actually identify

[1] Decree no.47-CP of August 12, 1996 of the Government on the management of weapons, explosives and support instruments

some other choices that were identified by the target population *and had not been predicted by the original survey design process*. The results could then be reconfigured to accurately reflected this bottom-up, local knowledge and thus provide a stronger result than a solely formal approach would have produced.

Expert opinion collection

One variant on the qualitative approach is the use of semi-structured interviews to solicit opinions from subject matter experts. In this case it was decided to interview provincial officials. This would have two main outcomes: the first would be to keep the officials informed about the progress of the project; the second would be to identify locations that are 'hot spots' for scrap metal collection and dealers. It was hoped that the identification of such locations could in turn allow the use of a 'snowball' technique through which the surveyors would be able to identify sufficient respondents to ensure that the data would be extensive enough to allow confidence in the results.

Additionally, some officials would also be formally interviewed to establish the baseline of knowledge and attitudes amongst officials on the scrap metal collection issue in Vietnam. The results of this part of the survey are discussed in the section of this report dealing with data analysis.

Focus groups

It was decided to host a focus group to solicit the opinions of those NGO active in UXO clearance in Vietnam. The specific intention was to identify how these NGO (which can be described as the 'formal' demining sector) could interact with the 'informal' sector (i.e. the scrap metal collectors and dealers). The participation was deliberately limited to those organisations active in clearance as it was felt important to prevent any bias that might be introduced by having other organisations interested in the wider aspects of mine action but that might not have to deal with the impact of any processes that were recommended. The results of the focus group are recorded in the section of this report dedicated to discussing the data gathering phase.

A wider workshop was held at the end of the data analysis phase in order to report on the progress of the study to the wider mine action community in Vietnam and solicit feedback. The feedback was generally positive with most questions raised being on the presentation of the material and plans for its wider release. Other attendees wished to share their own experiences that supported the findings.

Participatory Rural Appraisal (PRA)

A participatory rural appraisal (PRA) is a process that has become increasingly popular in recent years as a way of gathering the opinions of a community as a whole in a way that the use of individual questionnaires in a formal survey might not. The use of PRA was considered particularly relevant in the context of this study as a means of identifying alternative livelihood strategies

Selected survey techniques for each target group							
Ser	**Group**	**Technique**					**Remarks**
		Formal survey	Semi-structured	PRA	Focus Group	EOC	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Collectors	**X**	**X**	**X**			PRA used to identify possible alternative livelihood strategies
2	Dealers	**X**	**X**				
3	Victims of scrap collection	**X**	**X**				
4	Families of dead victims	**X**	**X**				
5	Police and authorities					**X**	
6	Mine action agencies				**X**		Aim of focus group to seek possible inclusion of collectors

PART TWO: Project Design

The main work undertaken for the design and preparation of this Project was undertaken between December 2007 and the Tet holidays of 2008.

Objectives of the project design phase

The objectives of this initial mission were to set up the survey, in accordance with the works plan at Annex A. The three main elements that needed to be addressed were:

1. Design of the survey
2. Confirmation of resource requirements
3. Solicitation of permission from PPC/DOFA from all three provinces

Figure 3. CSSH team members designing the survey.

Designing the survey

The intention was to involve CSSH in the design of the survey as much of possible. This was for three main reasons:

1. To promote 'ownership' of the project by a suitable Vietnamese institution
2. To provide a means to train data gatherers in the issues
3. To confirm methodology making use of CSSH expertise especially in the Vietnamese context

The survey design was conducted in a four day workshop at CSSH. It was attended by relevant members of the faculty, the CSSH survey team, the NPA consultant and a liaison officer from RENEW. CSSH have provided a Coordinator and 10 data gatherers for the project, with an eclectic mix of social science background including, for example, agricultural economics, rural development and 'local knowedge' specialists. The enthusiasm and professionalism of all CSSH personnel during this workshop deserves special mention.

The consultant provided background on the issue, explained some specialised mine action terminology and described the research questions as set out in the proposal. He then facilitated the remainder of the workshop with the support of the CSSH Coordinator and the RENEW liaison officer. The consultant and the RENEW liaison officer pooled the available literature they had been able to find so far and made it available to CSSH..

The workshop was able to:

- Establish the various target groups:
    - Collectors
    - Dealers
    - Victims/former collectors
    - Families of dead collectors
    - Neighbours of dealers
    - Mine Action NGO

- Determine the data required from each group necessary to answer the research question
- Agree on the most appropriate survey methodology for each group. A summary of these selected techniques is at Annex B
- Design questionnaires (in English) for those groups for which formal survey techniques were deemed appropriate. A set of the questionnaires is included at Enclosure 1.
- Review use of Participatory Rural Appraisal (PRA) techniques for possible identification of alternative income generation projects
- Review resource requirements

Resource requirements

The resource requirements were confirmed in a meeting between the Consultant, CSSH and the RENEW liaison officer. The resources were determined by considering the design of the survey in a logical sequence, summarized below.

Survey conduct

CSSH proposed to conduct the survey consecutively in the three provinces, the first province to be chosen depending on the return of the permission letters from the DOFA. A short preliminary survey would be conducted by the Survey Coordinator in each province, using a form of expert opinion collection from relevant provincial authorities to identify main 'hotspots' of activity and the locations of main dealers. The preliminary survey would also include a reconnaissance of the logistical requirements of the CSSH personnel.
The CSSH personnel would be divided into three teams. All teams would work in the same province, specializing by target group. The CSSH detailed works plan is at Box 1 below.

TIME FRAME FOR SURVEY
[IN THUA THIEN HUE, QUANG TRI AND QUANG BINH

Date	Activities	Place	Participant
	Design the research study	CSSH's office	All staft of CSSH
	Conduct desk study	CSSH's office	Suu, Binh
18/Jan	Encoding for survey and guiding how to collect data	CSSH's office	Hai, Thien, My, Huong
21/Jan	Training workshop from renew	CSSH's office	Renew
22-23/Jan	Primary survey	Hue	Suu, Binh/Hien
24-25/Jan	Primary survey	Quang Tri	Suu, Binh/Hien
26-28/Jan	Primary survey	Quang Binh	Suu, Binh/Hien
30/Jan	Studying tour	Military Centre	All staft of CSSH
	Data collection in Hue		
13/Feb	Prepare for conducting field work	CSSH's office	All staffs of CSSH
14-15/Feb	Data collection – phase one	Thua Thien Hue	9 staffs of CSSH
15/Feb	Conducting PRA	Huong tra – Hue	3 Staffs CSSH
16/Feb	Sharing experience from phase 1	CSSH's office	9 staffs of CSSH
20-24/Feb	Data collection phase 2	Hue	9 staffs of CSSH
	Data collection in Quang Tri	Quang Tri	
3-5/March	Conducting survey phase 1	Quang Tri	6 staffs of CSSH
5/March	PRA	Dong Ha - QT	3 staffs of CSSH
4/March	Group discussion	Dong Ha –QT	Mr Bob, Suu, Binh
6/March	Sharing experience from phase 1	Quang Tri	9 staffs of CSSH
7-13/March	Phase 2	Quang Tri	9 staffs of CSSH
	Data collection in Quang Binh	Quang Binh	
15-27/March	Conducting survey	Quang Binh	9 staffs of CSSH
17/March	PRA	Dong Hoi - QB	3 staffs of CSSH
31/March-3/April	Data entry	CSSH's office	Hai, Thien, My, Huong
31- 11/April	Process data	CSSH's office	Hai (Thien, My supporting)
12/April -22/May	Writing report		Suu (Thien, My supporting)

Box 1. The detailed works plan developed by CSSH for the data gathering phase.

Figure 4 (above). Survey areas in Quang Binh Province.
Figure 5 (below). Survey areas in Quang Tri Province.

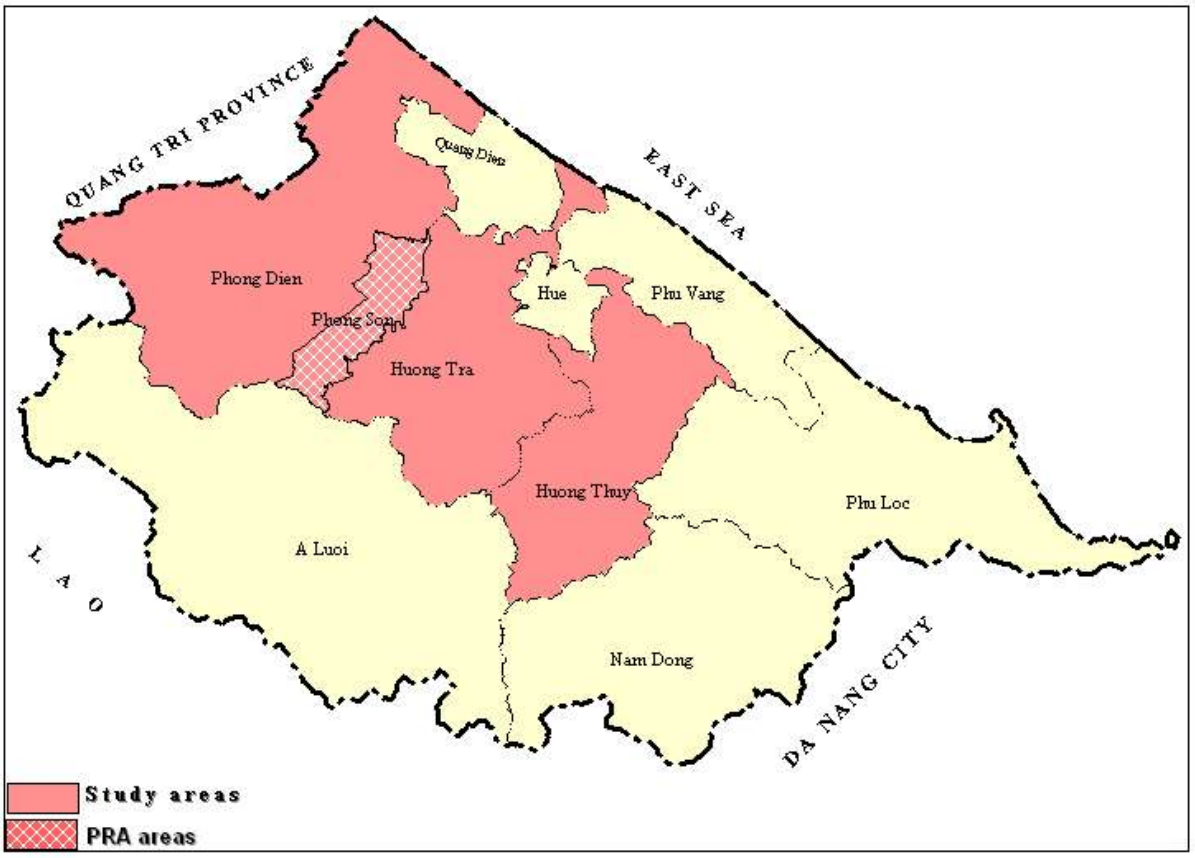

Figure 6 . Survey areas in Thua Thien Hue Province.

It was decided that the survey frame would include, as a minimum, in each province:

- One major town
- One district on Route 1
- One district in remote areas

The intention was to avoid tarmac bias and also account for a potential geographic division between dealers (likely to be on Route 1) and collectors (may be on Ho Chi Minh Trail). It was thought that the trade on the border with Lao PDR should also be identified by this method

The majority of the data would be collected using questionnaires, with a mix of quantitative and qualitative data (formal survey and semi-structured interviews). Draft questionnaires in English and Vietnamese were developed.

Plans were made to host a focus group, organized by NPA and RENEW, to solicit opinions of the NGOs active in the operational elements of mine action in Vietnam as to the feasibility of including scrap metal collectors in the formal mine action program.

CSSH prepared to conduct participatory rural appraisal (PRA) sessions in communities heavily involved in the scrap metal collection activities, with the intention of discovering possible alternative livelihood strategies based on the following main options:

- Improved existing alternative income (e.g. provision of irrigation to improve their existing farm yields)
- Greater access to land
- Job creation schemes in the community
- Involvement in the formal mine action program

The initial estimate of sample size was a minimum of 30 per target group (per district if possible). This should allow sufficient statistical confidence in the quantitative results. A table setting out how many people were actually sampled is set out in the section covering the data gathering phase below..

Timings

After discussions on the methodology, CSSH calculated that they would need a total of 30 days for the field work, based on the following estimates:

- Thua Thien Hue: 7 days
- Quang Tri: 10 days
- Quang Binh: 13 days

This was an increase of 9 days on the initial estimate of 21 days, but is realistic based on the geographic spread of the survey frame. There were some other delays that need to be built into the program, due to programming conflicts with other CSSH projects. These contribute to approximately two weeks in time, but resulted in no extra cost. For example, CSSH could start the field work until 21 January because of other commitments at the beginning of the month. The preliminary survey therefore would be done at this point and the main data gathering commenced immediately after the Tet 2008 holiday. In any event, the field element of the project could not have started earlier because of the need to wait for permission from provinces. However, not least due to the efforts of RENEW and CSSH in particular, the data gathering and analysis phases of the study were completed on time and the presentation of the draft results was made in the same week (i.e. early May) as targeted in the works plan at Annex A.

Budget revision

Once the resource requirements were confirmed, CSSH then worked to confirm their budget requirements. There was a need for revision of the estimated budget for CSSH. Mainly this is because it was only after the detailed survey design described above for CSSH to develop the details of the budget. However it was possible to complete the project by internal transfer from the other elements of the allocated budget. The project was subsequently completed within budget targets.

Safety

Prior to their deployment, all CSSH surveyors were provided with a presentation on landmine/UXO safety in order to ensure that they were able to conduct themselves safely during their field work.

DOFA Liaison

RENEW facilitated visits to the Provincial People's Committee or Department of Foreign Affairs (PPC/DOFA) in all three Provinces. The visits were conducted by a team consisting of the Consultant, the RENEW liaison officer and a member of the CSSH Staff. The aim of the visit was in each case was to introduce the project, explain the intended methodology and seek permission to conduct the survey in that province.

RENEW wrote to ask permission for the meetings, including a copy of a letter from UNICEF describing the outline of the project, and CSSH provided a general explanation of the methodology based on a translation of the NPA/RENEW project proposal. In general the reception was cordial and all expressed interest in the research and the potential for developing future projects based on its results. A list of those people met in the course of this mission is set out at Annex B. The following notes for each Province are set out in the order that the team were able to visit.

- Thua Thien Hue. The Director of the Department of Foreign Affairs (DOFA) welcomed the project and offered his support and that of the Provincial Military Authority. He asked CSSH to work in close cooperation with the head of the demining arm of the Provincial Military. He said that permission should be granted on receipt of a letter from CSSH which would also set out their budget and the allocation of resources between the three provinces. The representative of the Provincial Military Authority also offered to make a presentation of unexploded ordnance (UXO) and detection techniques to the CSSH team. It was agreed in subsequent discussions with CSSH and UNICEF that UNICEF would send the letter.

- Quang Tri. The Vice Director of the DOFA welcomed the project and offered his support. However, The Head of the International Cooperation Section requested a letter from UNICEF asking for permission for the project to conduct the survey in Quang Tri. He also suggested that the project request a Liaison Officer for the Project.

- Quang Binh. The Deputy Director of the DOFA also welcomed the project and offered support. The idea of a liaison officer was also discussed as a point of contact and the Head of the Foreign Relations Department agreed to take on this role for the present. Again, it was agreed that a letter from UNICEF would help facilitate the approval process. Incidentally, the Deputy Director informed the team that he believed there are as many as 30 scrap metal dealers in Dong Hoi City alone!

Things to do

Because there were several agencies involved in the study, based in several different locations, at the end of every consultancy visit the team members agreed a 'things to do' list that also allocated responsibility for outstanding project tasks and any time constraints on those tasks. It is believed that the maintenance of this list was one of the things that contributed to this study being able to stick so closely to its works plan.

Lessons learned

In retrospect, it would have been better to seek permission earlier from each of the PPC/DOFA. In essence, it can be seen that this issue 'fell between stools' as each of the main stakeholders in the design of the Project (UNICEF, NPA, RENEW) seems to have felt that this was the role of one of the others. Discussions with RENEW revealed that the formal approval was provided at a national level by the Committee of Population, Family and Children when they agreed the 2007 UNICEF works plan, which includes this project. Nevertheless, notice of this approval was not disseminated to the DOFA in advance of this mission. However, as a result of the activities of Project RENEW during this mission, the cooperative response of the DOFA in the target province, and the prompt support of UNICEF, this situation was remedied with no loss of time for the project.

Time was spent after the data gathering phase of the study to collate and analyse the data. During that time it became clear that in some cases the surveyors had had trouble interpreting[2] the answers of some of the respondents, especially when the respondents wanted to answer the question in a different way to the options in the questionnaire. The use of the 'other' category in most questions alleviated this problem, but it was clear when the surveyors themselves were re-interviewed about the survey after the data-gathering phase was conducted, that more pre-deployment training would have been helpful. Another way in which these interpretation problems could have dealt with would have been to have piloted the questionnaires in a single community, but both of these activities would have meant having more resources available. As it was, the project included a period of time where the consultant, CSSH and the RENEW liaison officer were able to work through the comparatively few ambiguous answers and include them in the data set.

[2] in an analytical rather than a linguistic sense, because of course all people involved in data collection were Vietnamese

PART THREE: Data Gathering

Overview

This part of the report is presented in five sections: the first section are some brief notes on the data gathering phase, during which time the consultant observed the field work of the CSSH survey team. The second section is based on a photo montage, which gives a feel of the typical findings of the survey. The third section is a series of qualitative case studies, again included to give a feel of the typical observations of the study. The fourth part of the report sets out the findings of the NGO focus group held on 4 March 2008. An extract of the agenda for the focus group is included at Annex C and a list of attendees is at Annex D. The fifth and final part of this report records the PRA activities undertaken by CSSH during the data gathering phase of the study.

Notes on the data gathering phase

The CSSH survey team were entirely self-sufficient in terms of logistics and had provided themselves with suitable accommodation and vehicles (they used rental motor-cycles to ease movement to the more remote villages and this allowed their division into two-person survey teams. Their preparation in terms of preparing sufficient copies of blank questionnaires, and daily planning and resource allocation was also very good. One point to note was the paucity of printed maps which appeared to make navigation difficult. It may be useful in the future for CSSH to liaise with Hue University's own Geography Department to see if they can get access to cartographic maps to ease their own navigation for such projects.

It rained almost constantly during this visit, and yet this did not impair either the progress or the morale of the survey teams, who were observed to do an excellent job. They reported (as had been predicted during the December 2007 Inception Mission) some reluctance by the collectors and particularly the dealers, but the CSSH team's attitude was able to overcome this, and the CSSH team were able to introduce the Consultant to two dealers and several scrap metal collectors without any reluctance on their part. This led to some interesting technical observations which are included in the 'Initial Findings' section below.

The total number of interviewees, by province, category and gender, are included in the table below. In the three weeks of data collection the CSSH survey team was able to interview 742 people, including 466 scrap metal collectors. This was greatly in excess on the number planned during the survey design process, and the low variance amongst some of the main quantitative data suggests that the information collected can be considered statistically significant.

There were however some problems with the data collection which were found on the initial data analysis. One of the problems was that four questions had inadvertently been left out of the questionnaire when it had been translated from English to Vietnamese. These were unfortunately key questions involving collectors and dealers; as a result CSSH had to conduct a brief re-survey in order to capture the answers to them. The number of people re-interviewed is also shown in the second table below (a total of 195 people in two provinces). Quang Binh was omitted from the re-survey for logistic convenience. The low variance in the original data meant it was felt possible to do this. The other problems are described in the paragraph on 'lessons learned' above.

Total number of interviewees: main survey														
Ser	Province	Collector		Dealer		Neighbour		Victim		Family		Government		Total
		M	F	M	F	M	F	M	F	M	F	M	F	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
1	Hue	223	17	10	17	8	16	17	2	6	22	26	1	365
2	Quang Tri	165	21	7	12	6	6	26	1	7	10	15	1	277
3	Quang Binh	35	5	5	7	4	2	5	0	1	6	23	7	100
4	Subtotal	423	43	22	36	18	24	48	3	14	38	64	9	742
5	Total	466		58		42		51		52		73		742

Total number of interviewees: re-survey						
	Province	Collector		Dealer		Total
		M	F	M	F	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Hue	9	80	13	29	131
2	Quang Tri	5	51	3	5	64
3	Subtotal	14	131	16	34	195
4	Total	145		50		195

Photo montage

Figure 7, These two photographs show the strong team spirit that kept the CSSH survey team smiling as they drove off into the rain to continue the data gathering.

Figure 8 (left). One of the collectors interviewed by the survey team. He and his colleagues pay an average of 390,000 VND ($25) for his detector and they can earn an average of 56,000 VND ($3.5) per day from the scrap they collect.

Figure 9 (right). The chief of one of the villages visited by the survey team. He reported that 15 households in his small village were actively involved in scrap metal collection.

Figure 10 (above). One of the survey teams preparing their plan for surveying the village.

Figure 11 (right). Interviewing a family member of a victim.

Figure 12 (above). A former scrap metal collector who quit after seeing several friends blown up. He is standing next to the grave of a former collector.

Figure 13 (below). The same respondent showing the CSSH survey team a UXO at the edge of his village.

Figure 14. A scrap metal dealers in Quang Tri Province. The large pile in the background is approximately three metres high and is almost entirely composed of bomb fragments.

Figure 15. A 'mini mill' inside a scrap metal dealer's shop. Clockwise from top left, these three pictures show a pile of processed artillery shells, one UXO that appears to still have its fuze fitted, and the work place of the person working to neutralise the devices.

Figure 16. This scrap metal collector lost his left eye in 2006 whilst looking for scrap in the wake of construction work on the Ho Chi Minh Highway. He also suffered other, more minor, wounds to his face. He continues to look for scrap as he has no alternative income source that pays as well. However, he did state that if the cost of scrap fell below VND 1500 per kg he would not collect it.

Figure 17. This casualty suffered more extensive wounds that are consistent with handling a small UXO and causing it to detonate

Case studies

Collector

Figure 18. Mrs Nguyen Thi Din.

Mrs. Nguyen Thi Din[3] (38 years old) has been working as a collector for 14 years. When meeting us, she told the reason why she has chosen this job:

"I have no occupation, fields and gardens. I and my husband, along with five children – seven mouths have to feed. If we do not work, we will be starving".

Mrs. Din got married when she did not have any property or economic assistance from her parents. She and her husband must earn their living by working for other people, fetching firewood in the forest. At that time, the price of per load of firewood was only 2.000VND, so they might work hard all day in order to earn about 15.000VND-20.000VND per day. In addition, after five children were born their lives have been more and more destitute. Her husband decided to borrow money to buy a mine detector, then he and some friends went to the forest for collecting scrap metal. She said:

"At that time, there was still much scrap metal, my husband could collect from 40 to 50 kilos per day, even he was unfit for carrying them back. Therefore, when my first-born daughter stopped suckling, I had my mother to take care of her and went to collect scrap metal with my husband. We collected about 100kilos but the price was so low: 200-500VND per kilo".

The woman continued to tell about her life:

"Both my husband and I have to work all month. As you know, whenever it is cold and rainy, we might not collect scrap metal, so, my family may be miserable, even starve. Honestly, the price of scrap metals is increasing; present price is 3.500-4.000VND per kilo but so many people flock into forest to find UXO and other scrap metal. As a result, the amount of scrap metals is rapidly decreasing, so we must go further to seek it, In one hard-working day, we earn only 50-70.000VND".

It can be seen that, most of the housework has been depending on her daughter (Quy): washing, cooking, care of children... Sometimes, Din also feel sorry for her, Quy had to leave school when she was 11 years old, to look after her younger sisters and bother.

About her safety, Din was thoughtful and said:

"*I have many times witnessed accidents due to bombs exploding, which makes me feel so frightened. Up to now, I still shudder when thinking about it. Although I comprehend that scrap metal collecting is a dangerous occupation, I do not stop because both my husband and I have no stable job. We know, when scrap metal and UXO are underground, if we unfortunately excavate UXO, especially fragmentation bombs that lead to UXO explosion, we*

[3] Mrs. Nguyen Thi Din – Hamlet 2, Precinct 4, Dong Ha Town

might be killed and my children will be orphaned. However, we must live together with the fear. Now, I only worry about our lives, we need money for rice, food and clothes".

The lack of stable job as well as a vulnerable life means Din and other collectors have no alternative choice; they are forced to collect scrap metals for a living. Mrs. Din said:

"If the authority provides me with soil and garden to do cultivation, I would give up collecting scrap metal because our lives are more important".

Dealer

Cao Thi Khuong[4], 54 years old, has worked as scrap metal dealer for 34 years. At present, she often buys around 100kg scrap per day, including iron, aluminum and copper with the average price for each kind of scrap metals, 4.300VND/kg for scrap iron, and 55.000-80.000VND/kg for scrap aluminum or cooper. Her constant sources of scrap metal supply are from the communal collectors and other retail dealers; then she will resell to a big scrap metal dealer in Dong Ha town. She normally earns about 100.000VND profit per day after deducting transport expenses.

Figure 19. Mrs Cao Thi Khuong

With regard to her safety, Mrs. Khuong revealed:

"I have been working this job for tens of years; I understand how dangerous it is. I have also once or twice heard others died due to making the bombs safe. Therefore, I dare not to buy UXO or something which still has explosive".

When starting this job, Mrs. Khuong had to manage everything by herself because her husband had prematurely died. She considers scrap metal trading as "her karma", she said:

"*Land and garden I have, but frankly, I have not enough strength to do gardening or something like that. I have only my son, so I want him to become an educated person. Now, he is studying in Hue University, I spend a great deal of my money for his education. Therefore I have no choice, I must do this job".*

Throughout talking with Mrs. Khuong, it can be seen that, she is deeply aware of her occupation and its risks. She confided that some collectors intentionally mix UXO into sacks of scrap metal to raise the weight of them. She thinks it is very dangerous because scrap metals might explode when drying under the sun. There is a large yard in front of her house where the children often play, she worries that if one of them unfortunately treads on a UXO that might be left there, it might explode and they might be killed.

"I cannot image the consequence-so terrible", said she... She says the collectors usually contain scrap metal in big bags, so are difficult to check if many of them come at the same time. In order to solve this problem, Mrs. Khuong always asks the collectors to pour out the scrap on the ground and to separate UXO from scrap metal. She said:

[4] Cao Thi Khuong, dealer, Ai Tu Hamlet, Trieu Ai Commune, Trieu Phong District

"I was trained about bombs and mines (referring to MRE). Although I do not understand much, I know which I can buy and which I cannot buy. Some are very explosive, such as fragmentation bombs (i.e. cluster munitions), M79 and other artillery projectiles. As you know, there are some local people have been injured related to dismantling UXO".

Mrs. Khuong cannot get rid of her occupation because that is her means of living. She revealed:

"*Once or twice I have intended to give up this job but I cannot. I have to still bring up my son; take care of his study and marriage".*

Victim

Figure 20. Cao Le Duan, became a UXO victim whilst collecting scrap.

Cao Le Duan[5], a 14 year-old boy, is in sixth grade. He started collecting scrap metal at 12 years old. He aimed to make money to helping his parents and cover his schooling expenditure.

When visiting him, it is very difficult to reminisce about the frightful accident that he suffered. Duan narrated that, one midday last year, he used his father's metal detector to collect scrap metal as normal. He said:

"*On that day, I collected scrap metal in the area near my house. I heard the sound of machine that notified the big scrap. I dug up and explosion happened. Then I fell unconscious*".

He cast down his eyes. Duan's mother furtively dried her tears and continually told with choky voice, that she

"...never thought about that before. At that time, when she and her father were tilling the field, they heard a great sound from an explosion near their home. They hurriedly came back home, then found Duan had been thrown away and his body covered with blood. "Praying God, I think I must have been lost this child", she emotionally talked.

Duan's father continued:

"As you know, a cluster bomb is very explosive, only a lightly hit, it can be exploded. When I saw Duan, I was so painful that I dared not come near him and thought he may have died. Fortunately, his uncle was still self-possessed; he wrapped him in a raincoat and took him to the hospital. I will remember for ever the speech that Duan talked to me when regaining consciousness: "Father, do not worry. I will not die"".

Duan was treated more over 2 weeks in the hospital. His parents had to borrow much money for his surgery but it was not enough. However, there are still two fragmentation scraps on Doan's face and his thigh. As for Mr. Lime (Doan's father), his family is expecting the assistance from *the victims of bomb-mine supporting program* (he does not know the name of the program) to implement the last surgery for Duan. He said:

[5] Cao Le Duan, Tan Tien Hamlet, Hoa Hop Commune, Minh Hoa District

"*If I must sell my house to cure my son, I am ready to do. I can't stand it when I find that Duan is still in pain after the accident"*.

It is obvious that, the fragmentation scraps might be taken out of Doan's body but the mental pain will never be obliterated from the 14-year-old boy's memory. Until now, he still feels worried and is persecuted with the horrible nightmares. He unveiled*:*

"Now, I myself cannot go to the field behind my house. I am so frightened. Whenever seeing bombs, I feel dizzy and afraid of its explosion".

Family of victim

Mrs. Pham Thi Luyen[6] had two sons, and one son-in-law killed and one son injured in an accident due to collecting scrap metal. When introduced about the purpose of our meeting, Mrs. Luyen burst into tears:

"All of them had served in the army but nothing happened. However, earning money for family, they painfully passed away."

Figure 21. Mrs. Pham Thi Luyen

She narrated that, in the late 1980s, her large family (eight members including her sons, son-in-law, her daughter and daughter-in-law) had to live on little land. The poor life urged her her sons and son-in-law to go into the forest for seeking aloe wood and scrap metal. They contributed money to buy a mine detector, collecting scrap metal and dividing the profit.

On 6th Nov, 1991 the accident happened. The survivor, Mr. Nguyen Huu Nguyen related:

"On that day, about 2p.m, we excavated a hole of various bombs. We picked up and carefully arranged them on the ground, some of them were still new, and we dared not collect them. Suddenly, my brother-in-law took a rusted warhead and beat it on a stone nearby. The explosion happened. I was next to him, then was thrown away. As instinct of self-preservation, I ran way and cried for help. I just saw two of my brothers were dropped on the ground but my brother-in-law was smashed – no longer the shape of body."

Mrs. Luyen shed tears and continued that, at that moment, she was working for people in the neighboring village. Hearing the news, she fell into a dead faint. Unfortunately her husband was also seriously ill; therefore, everything was dependent on the help of her relatives and neighbours for holding her sons' funerals.

"It is piteous for my daughter and daughter-in-law.", she sobbed out the continual story of her sons 'death: *"My daughter had just got married, the first-born was four months old. I could not do anything, only mourn. My two sons died, one of them was so young. He has just returned from military service for six months, had not yet got married. He loved me so much, he collected scrap metal in order to earn money to feed me and helping his brother.*

[6] Mrs. Pham Thi Luyen – Hamlet 6, Quy Dat Town.

Throughout the information which Mr. Nguyen provided, it can be seen the financial difficulties and the mental pain that the family of Mrs. Luyen must withstand. There were three dead people in a single funeral, However lucky Mr Nguyen was to survive, he still has severe wounds on his body that means he cannot do hard work. Besides, he had to pay much money for hospital fees. Thus, the family burden is concentrated on the women. They have to play the roles of father and mother of the children, work for others for their living and bring up their children. A year later, Mrs. Luyen's husband died due to psychological shock and illness. Overcoming the melancholy and economic difficulties, she and her offspring tried to stabilize their lives and educate the fatherless children. Mrs. Luyen never forgets their violent death of her three sons, she said:

"…Many times in my dreams, I have cried when I saw my sons standing in front of me. It is painful for my youngest son, he never got married…"

Findings from 4 March focus group

In general, the focus group found it hard to identify credible and safe means by which the formal EOD sector might engage with scrap metal collection. Even allowing for an innate conservatism in the sector the focus group was able to identify several positive attributes for each of the identified alternatives, but these are largely outweighed by practical considerations. The various advantages and disadvantages are set out in the table below. The disadvantages can be divided into three main groups: these are:

- Problems with dealing with the current legal paradigm (handling UXO is illegal in Vietnam) which would be outside the remit of the NGOs. For example, any attempt to licence scrap metal collectors would require a legal framework to issue the licences.

- Problems with safety and liability for the NGO involved in such work; for example the licencing of scrap collectors (as suggested in the recommendations of the 2004 tampering study in Cambodia) could cause problems for the agency responsible for technical training if the licenced collector then had an accident.

- Problems with the transaction costs to set up effective management structures, that are likely to be more expensive than simply extending the traditional capacities.

Figure 22. One of the RENEW 'Safe Scrap' bins'.

The one notable exception to this situation is that of 'safe scrap'. With the assistance of the Golden West Humanitarian Foundation, RENEW have already started a 'safe scrap' program which is now also being supported by Norwegian People's Aid. The program involves the distribution of a number of concrete bins (see Figure 22 above) in which UXO bought to scrap dealers can be stored pending disposal by RENEW EOD teams. The map at Figure 23 below shows the location of scrap bins that have been distributed by RENEW for scrap dealers to place UXO that are brought to their locations; the bins are also marked with a 'hotline' freephone number that the dealers can call. There are some teething problems with the program, especially with the operation of the hotline system and the design of the bins, but these are known to RENEW and the two NGOs and are largely outside the scope of this study.

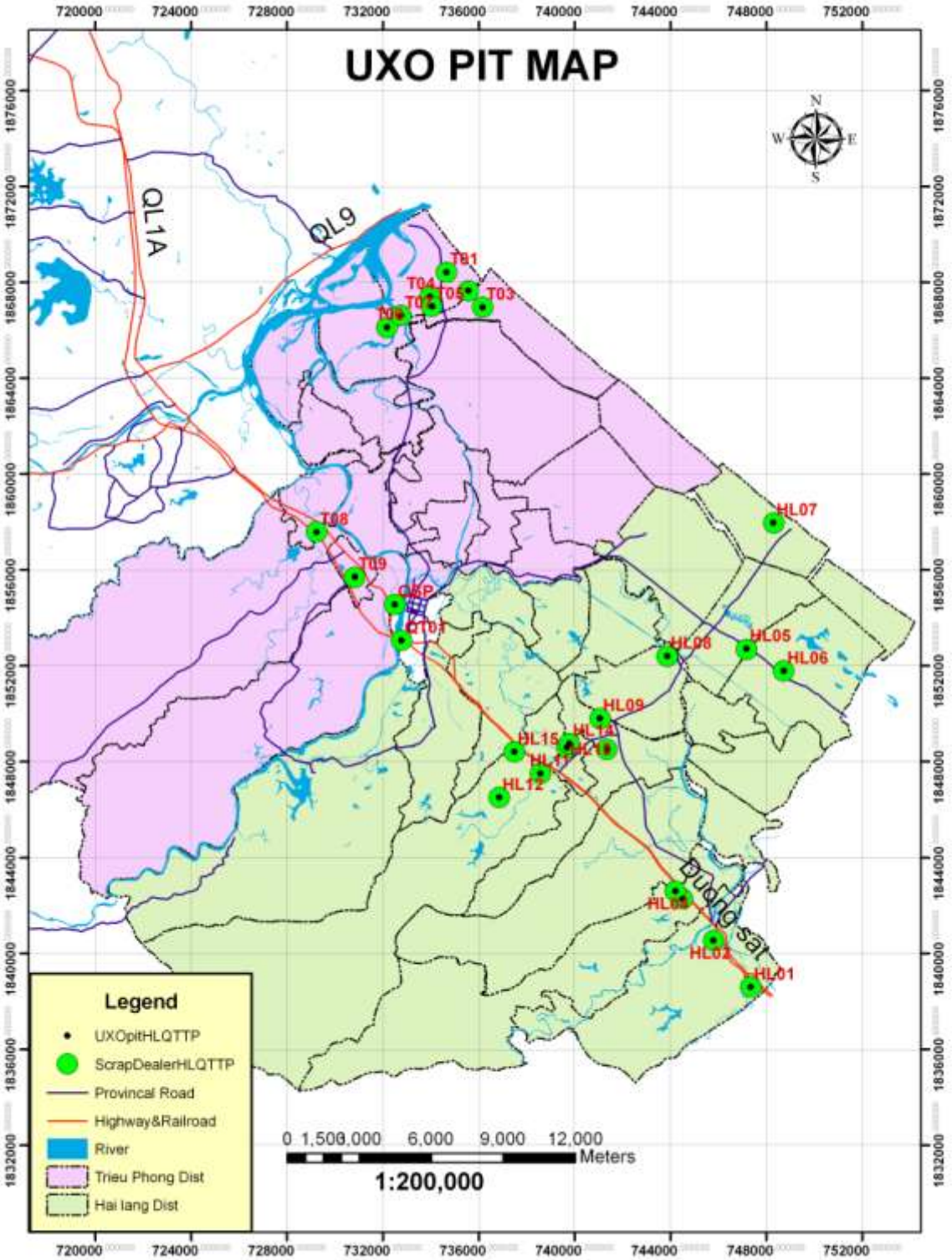

Figure 23. The location of the RENEW 'safe scrap' UXO bins (map courtesy of RENEW and Golden West).

Findings from focus group: advantages and disadvantages of possible engagement mechanism				
Ser	Engagement Mechanism	Advantage	Disadvantage	Remarks
(a)	(b)	(c)	(d)	(e)
1	'Safe Scrap' initiatives	• Dealing with UXO reported at dealers is a risk mitigation strategy – it is pragmatic • Compatible with rapid response concept being developed in Vietnam (especially Quang Tri) • It is a focused plan, it is not trying to deal with hundreds of people • Already being piloted in parts of Quang Tri • Safe Scrap initiative provides a means by which responsible scrap dealers can deal with UXO that arrive at their location that is within the requirements of the law.	• There is a risk of encouraging people lower down the supply chain if dealers have a way of filtering out UXO that they are worried about. • There are issues with determining what is actually safe to move; civilian perceptions of risk are likely to be different to those of trained technicians. • There is an issue of identifying appropriate incentives to discourage the dealers from operating 'mini-mills' to dismantle the UXO themselves and report them instead. • EOD agencies report that there appears to be little activity by the police to enforce the existing law.	Note: the pilot project in Quang Tri does ***NOT*** attempt to render the UXO safe so that the resulting scrap can enter the supply chain.UXO are removed and detonated. There are reports that some dealers have set up 'mini mills' i.e. local factories to dismantle UXO.
2	Village Assisted Clearance	• Would be valid if motivation for searching for UXO was due to a needed land • Would need redesign of existing EOD operations in Vietnam which are currently designed around: o Spot tasks o Static site clearance for development	• Data suggests that access to land is not the motivation for informal demining in Vietnam.	May have value on a case by case basis, still need land rehabilitation livelihood strategy to ensure the cleared land can be developed sustainably

3	Paid Reporting	• This intercepts the UXO further down the supply chain than the 'safe scrap' initiative • Interface with collectors rather than dealers • Would provide an Incentive for reporting UXO • Allows the formal sector to remove the item • Stays out of ethical/legal questions… • Analogous with DDR/SALW initiatives in other parts of the world • Would assist in data gathering/ learning about UXO contamination • Would be an improvement in safety if it removes collectors from the informal sector	• This is an 'all or nothing' initiative; without clear limitations it would encourage transport of UXO into project area and would discourage 'free' reporting of UXO • There is a risk of the 'law of unintended consequences' with people bringing UXO to the project office in search of rewards • How much to pay? Would need good economic data • Would credible structure with sufficient capacity to deal with the response. • Risk of strategic behavior and collusion between reporters and EOD teams involving false reports. Surveillance mechanism would add transaction costs • May be simpler to just hire conventional technical survey teams /searchers	
4	Licencing Collectors	• Could improve safety if a training program was included • No payment to the searchers would be necessary • Technically feasible • Would be engaging with informal sector • Potentially more sustainable as the trained capacity remains after the NGO presence ends	• Significant issues with liability. Who would be responsible if licenced collectors subsequently had an accident? • It is unsure about the degree of 'take-up' especially if collectors think they are already safe • Issues of enforcing safe storage of UXO found • The existing legal structure would need to be redesigned	

PRA in Phong Son commune, Phong Dien district, Thua Thien Hue province

The scrap metal collecting situation in Phong Son

Phong Son Commune is a delta-midland commune. This commune has 6 villages in upland and 7 villages in the delta. It has a population of 11,986 people, Phong Son was in the midst of exchanges fire between North and South in the war time. This area had an army base and a ARVN[7] army post with 2 ammunition stores and a military hospital. From 1964 to 1975 the local people had to leave their hometown and come to Quang Nam, Quang Ngai and Hue city as internally displaced persons. After unification in 1975 people returned to their village and rebuilt their hamlets. At that time, the whole of the commune was full of bombs and mines.

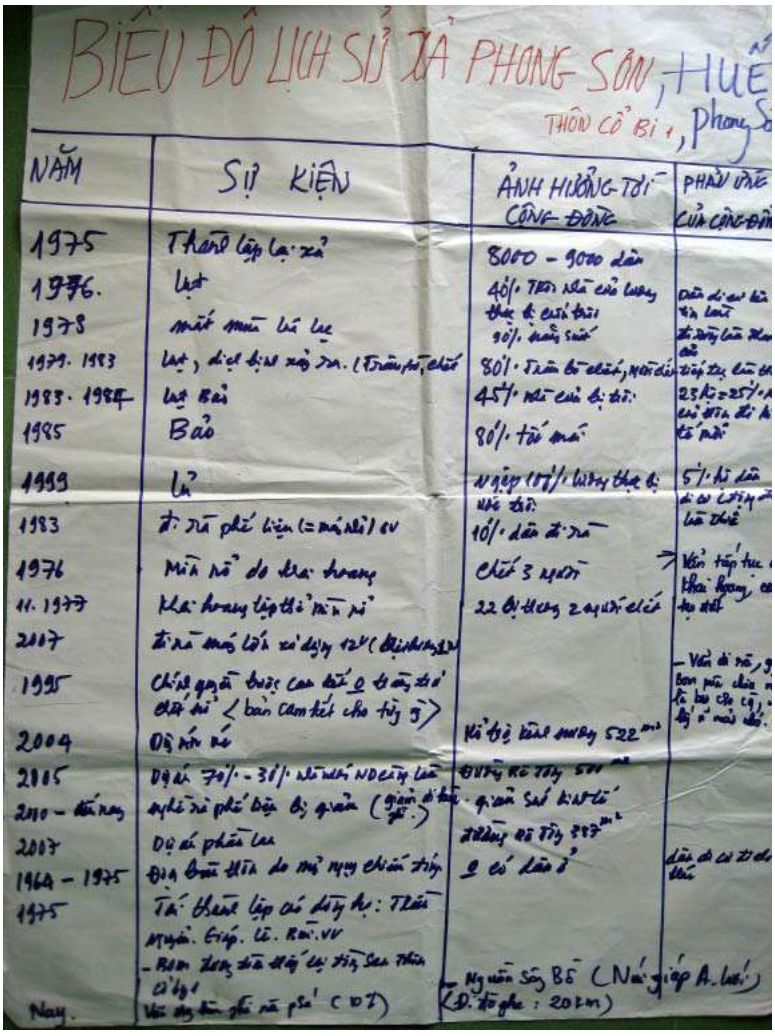

Figure 24. Historical map of Phong Son as drafted by the villagers during the PRA.

All 13 villages in this commune have collectors that make up more than 10% of the population in the whole commune. The villages which have more collectors are: Son Quang and Co Bi. In Khe Sai many people come there and pick up scrap metal, even though this area is poisoned.

The purpose for collecting scrap metal are different. At the beginning of unification, people just collected scrap metal nearby their houses with an aim to clean land for cultivation. They did this job by hand, hoe and shovel. At this time "they heard accidents, injured everyday".

[7] Army of the Republic of Viet Nam (the South Vietnamese army).

Historical Map for Phong Son, Thua Thien Hue			
Year	Event	Effect	Reaction
1964-1975	Village was occurred by American army		
1975	Village was established	8000-9000 local people	
1976	Flood	40% of house and cattle were washed away	Local people had to migrate to upland
1978	Have poor crop	90% of crop productivity	Local people went to forest and made charcoal
1979-1983	Flood and epidemic diseases	80% of cattle died and 45% of houses were washed away	23 of house hold migrant to Gia Lai and Daklak (Central upland of Viet Nam)
1999	Historical flood	100% food was c were washed away	
2000	Local people began to collect UXO		
2007	Using machine for collecting UXO	22 people injured and 2 people died	
Now	Local people keep collecting UXO		

The local people faced many hazards and natural calamities such as: flood in 1967, bad harvest in1978, human and castle epidemic diseases in 1983, typhoon in 1986. The insecurities made people here to go to collect scrap metal more and more in order to have income. The search area expanded to the hills and mountains. Women and children usually work near their house; men work with their groups in long days and travel far away their villages and homes in mountain pass areas named Ho Ngua, Khe Thai, and upper Bo River separated from their houses by approximately 20 km.

The metal detectors first used for collecting scrap metal appeared in 1983 with 6v capacity brought from Quang Nam, 400km from Hue. From 2007, a 12v machine with higher capacity was being used which is popular until now, as only this machine can detect scrap and UXO at a depth greater than 1m.

The local people believe that, from 1975 to now they have had ‘hundreds’ of accidents because of bomb and mine and 320 people have died.

Figure 25. One of the villagers participating in the PRA process in Phong Son.

Possible livelihood strategies suggested by the people of Phong Son

Some possible livelihood activities that were suggested by local people are: forestry, industrial worker, livestock, and 'business.'

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SWOT analysis for forestry work	
Strengths	Weaknesses
• Have enough labour • Have knowledge, experience and technique for cultivation	• No land • No money
Opportunity	Threats
• Stock for long time trees can buy easily • Rubber tree and cajuput tree have high profit in demand market	• Local government do not have policy to transfer land to local people

Forestry cultivation is known as a potential activity for local people here. The reason is geographically they have access to forestry. However, legal access to forestry land is more difficult. The local people need to work with local government and discuss with them the national policy about transferring land for forestry cultivation (as nearby Minh Hoa commune has done before).

SWOT analysis for industrial work	
Strengths	Weaknesses
• Do not need land and money for investment	• No skill • Some are over age for labour
Opportunity	Threats
• Stable work (stable income and time for working)	• No factory nearby • Low salary

The main advantage about becoming industrial workers is stable income. However, there is no factory in this commune and building a factory here is unlikely because of traffic or circulation for goods and products. However, Hue city has may factories like cement company, candy factory and clothing factory where the local people can come and work there if they can meet the demand from these factories. If they want to work in the factory, local people have to study and improve their skills. Another disadvantage is, they would have to go to industrial zone like Phu Bai town to work; it would mean that they have stay in factory until the weekend.

Figure 26. Phong Son village map as drawn in the PRA.

PRA in Huong Hiep Commune, Dakrong District, Quang Tri Province

The scrap metal collecting situation in Huong Hiep

Huong Hiep is one of the highland communes that belong to Dackrong province, Quang Tri district. There are 12 hamlets inhabited by Van Kieu ethnic minority. Before, 1973, this commune was occupied by American military,who built up a military post named "Phong Khong," Consequently, the local people had to go evacuate to the north of Quang Tri province (Vinh Linh, Cam Lo) and Tay Nguyen (Dacklack). In 1973, after the war ended, people returned to their hometown, and rebuilt their villages. It can be said that, Quang Tri in general and Huong Hiep in particular, between 1954 and 1975 was a major conflict area, the consequence is the local people live with bombs and mines. That is why collecting scrap metal was taken up as an activity early after 1975.

All 12 villages have many collectors. Since 2000, 100% of the households in five villages (also including KheVan village, Savi village , Ruong village and Ralu village) are earning their living by scrap metal collecting. The reason that made the number of collectors increased is the local people do not have other jobs to do. Collecting scrap metal has expanded to the mountain which is separated approximately 7 or 8 km from their villages

Collecting scrap metal in this commune is done by men. Usually they gather together in a small group (from 5 to 7 people) and go into the forest and stay there from 7 to 10 days. After that, they came back home to take food, relax and sell scrap metal to dealers. The areas where the local people mostly come to collect is Doc Lap hill in Khe Sanh which has the highest quantity of bombs.

Historical Map of Huong Hiep Commune, Quang Tri Province

Year	Event	Effect	Reaction
1973	Village was established	10 households lived in village	
1985	Typhoon occurred	50% of household were destroyed Cattle and crops were lost	
1987	Malaria	Many people died	Local people used traditional medicine
1987-1988	Attempts to "Make it safe"	Some people died	
1995	Began to collect bomb	3 people died and 2 people injured	
1999	Began to use detectors 50% of local people collect scrap metal	5 machines	
From 2000 to now	100% of local people collect scrap metal		

Almost all the collectors do this job in order to have extra income. From 1993 to 1995 the price for selling to dealer was approximately 700VND per kg, however, after 1999 the price of scrap metal was increased from 500VND per kg to around 2000VND per kg and at this time the local people focused on collecting scrap metal. In 1993, the machine used for collecting scrap metal appeared via retailers in Dong Ha, which was a reason why the scrap metal productivity increased rapidly.

Accidents quite often happened in Huong Hiep commune. This commune had 47 heart-breaking accidents

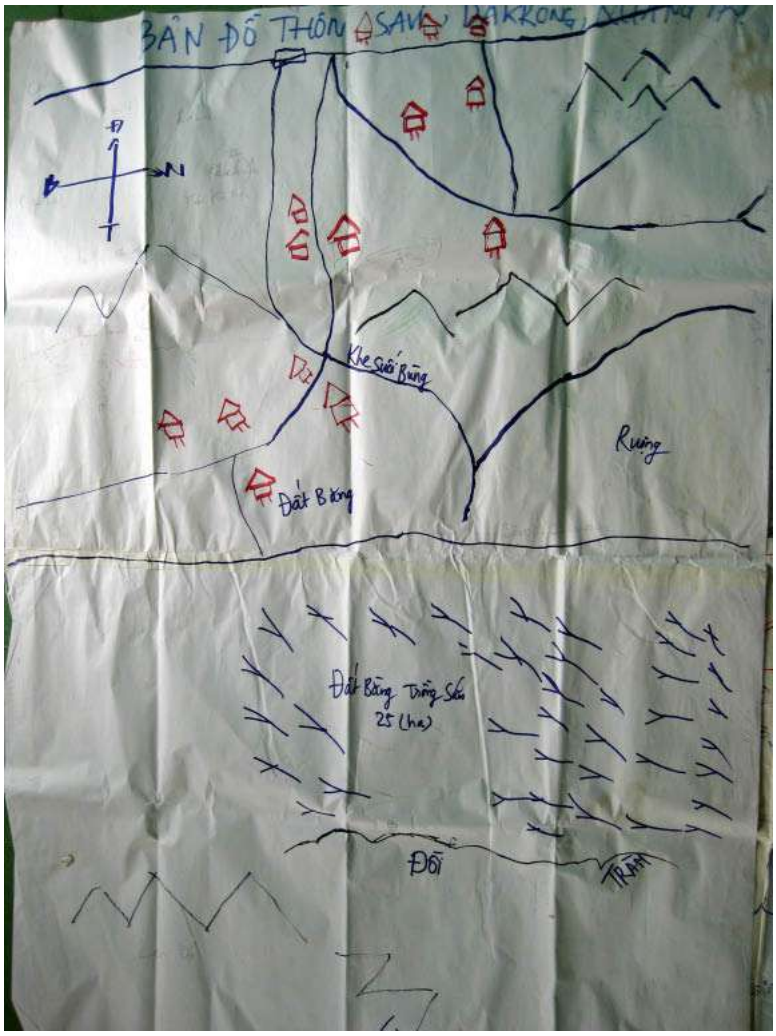

Figure 27. Village map developed during PRA

The women here rarely participate in collecting scrap metal; they are busy in agricultural activities, taking care of their family and children. The children, after finishing school time, they unusually help their parent to tend castle. Besides their agricultural activities, the women here wait for their husband in the evening, if they do not see their husbands come back home or hear some sound of bomb form the mountain, they go to their husband's friend to ask some information about their husband.

Collecting scrap metal gives high income for people here (compared with other activities), however, collectors and their families at home always live nervously: when they have dinner together it means that it is a happy day. Collecting bomb is an inpromptu activity; collectors have a lack of knowledge about bombs and mines, which is why accidents usually happened to them and their neighbours.

Huong Hiep is a poor highland commune in Quang Tri. Collecting scrap metal is considered as a "main" job to have income. The reason is business and social services are not developed, therefore collecting scrap metal is main activity for people in this highland commune. Huong Hiep has many collectors; however, dealers are very few. There are only three retailers that sell miscellaneous goods and food stuff and also trade in scrap metal. This fact makes Huong Hiep different from the other places, where exist many more dealers and less collectors. For example in Trieu Phong there are 10 big dealers and in Huong Thuy, in Thua Thien Hue there are five big dealers.

SEASONAL CALENDAR
Ruong Hamlet, Huong Hiep commune, Dakrong district

Item \ Months	1	2	3	4	5	6	7	8	9	10	11	12
1. Weather	cold	The weather is fine, both sunny and rainy, especially from March to May, it is often favorous.						Flood and storm		It is bad weather, cold and rain		
2. Occupation												
2.1. Scrap metals collecting: Some kinds of scrap metals have been collected,	Scrap metals collecting when having free time They come back home in the evening				Concentrate to collect with a big volume of scrap metals (a long trip, the collectors have to stay in the forest); sometimes the dealers go with the collectors to buy scrap metals.		Scrap metals collecting when having free time They come back home in the evening				Collecting scrap metals to earn money for expenses in lunar New year	
2.2. Farming *2.2.1.Tilling the rice field* - one crop per year with the yield of 6 quintals/hec/crop				rice cultivation Sowing weeding and spraying insecticide Harvesting - Rice has been only used for eating.								
2.2.2. Maize planting They might sell the corn in the first crop with the price around 30.000VND per basket of dried maize and 15.000VND per one of fresh maize	the yield of 7 - 8 quintals /hec/crop			the yield of 5 - 6 quintals /hec/crop								
2.3 Cattle and poultry raising all year round - Cattle are raised for suc keo - Pig and poultry are primarily raised for food							Cattles are often got congestion disease	Pigs often get some diseases after flood.				
3. Labor source - Not to have the phenomenon of labor migration					- Local men often go collecting scrap metals in forest and other areas - Local women stay at home to look after children and do the gardens.			Excess of local labor		Need much labor for harvesting crop		
4. Diseases	Having flu, headache or runny nose				- Local men often get malaria due to collecting scrap metals in the forest							Having flu, headache or runny nose
5. Income and expenses	- Lack of money, especially in Tet occasion and between-crop period. - In order to solve the above problem, local people often go collecting scrap metals or borrow money from banks and other relatives.					- High income because of collecting scrap metals and harvesting maize crop - Saving money (the wives keep money)				High income due to harvesting rice crop - Saving money (the wives keep money)		
6, Festival												

Figure 28. Seasonal Calendar for Huong Hiep Commune.

Possible livelihood strategies suggested by the people of Huong Hiep

Nowadays, the local people realize that collecting scrap metal is a dangerous activity, therefore, they wish to have another job which is safe and stable. Thus, they suggest some alternative jobs such as: agricultural activities, cattle raising, or car driver.

SWOT analysis for agricultural activity	
Strengths	Weaknesses
• Have enough land for agricultural activities • Have labour • Have knowledge	• Land does not have irrigation • No cow and buffalo for Pulling power:
Opportunity	Threats
• Rice variety which is supported from agricultural office • Fertilizer can buy in commune • Money can be borrowed from national bank	• the price of fertilizer may increase • Lack of technique

Agricultural activities are not too difficult to local people. Before they just worked on shifting cultivation and growing upland rice, but now they want to work on wet rice. The reason is upland rice give lower harvest than wet rice. However, the big problem here is irrigation, therefore, to develop wet rice here is impossible. However, a development project can consider buying new rice varieties for upland rice.

SWOT analysis for cattle raising	
Strengths	Weaknesses
• Have labour • Breeding facilities can be made	• No grass field • No technique • Land: no land for planting grass • No experience
Opportunity	Threats
• Veterinarian can help to prevent diseases • have enough medicine • Have market • Money can be borrowed from national bank	• Severe weather conditions • Epidemic diseases

Cattle raising is a very popular idea, because of supporting programmes for developing agriculture usually have money for support. However, Huong Hiep is a highland commune, there is not enough pasture for cattle.

Figure 29. CSSH staff facilitating the SWOT analyses in the PRA in Huong Hiep.

PRA in Hoa Hop Commune, Minh Hoa District, Quang Binh Province

The scrap metal collecting situation in Hoa Hop

Hoa Hop is a highland commune in Quang Binh which has 6 villages. Before 1999, local people's livelihood was based on nature: agricultural activities and non-timber forest products. However, shortages of food, illness and vulnerable livelihoods encouraged local people to collect scrap metal, with an aim to increase income.

The commune suffered damage because of natural calamities. The effect of one flood was 80% houses damaged and crops totally lost. In 1999, the flood carried away many houses, gardens and crops. From 1999 to 2000, epidemic diseases led to many cattle dying or being injured.

Collecting scrap metal increased rapidly in 1990. Most of collectors live nearby the mountain, at the beginning scrap metal were collected by hand; they just needed a plastic bag and small hoe. However, by the end of 1999 and beginning of 2000, the metal detector used for collecting scrap metal appeared in retailers in Dong Hoi. It is a 6v unit, and can detect bombs from 40 to 50 cm.

Possible livelihood strategies suggested by the people of Hoa Hop

The community are aware this career is very risky. At the beginning, there were many serious accidents in which 4 people died and 5 people were wounded. These frightful accidents made local people realize that collecting scrap metal is not safe. Therefore, from 2003 to nowadays, the number of collecting households is descending. Instead of collecting scrap metal, the local people are returning to agricultural activities, cattle raising and pig raising supported from the IFAL project, and women and farmer union's loans with low interest.

Furthermore, the government now has a policy to issue 'red permit' for land to local people; now local people began to cultivate some crops such as: gum tree, rubber tree and cajuput tree. Besides their main job the local people here penetrate into a forest for wood and non-timber collecting, this spare job has largely replaced collecting scrap metal. The people here usually go to forest in December, at that time most of people need money to prepare for the Tet holiday. To penetrate a forest they gather together in a small group and stay many days in a forest, this kind of job usually done by men. Women are rarely going to forest, perhaps just to collect firewood and participate in agriculture activities.

In general, forest activities give local people high income, however from seed for growth to harvest, it takes a long time (from 7 to 10 years). Cutting trees helps people here to have high extra income, nevertheless it is unstable. The reason is this job is illegal and the forest warden can arrest them. Therefore, the local people here follow some other jobs that help them have more extra income such as: chicken farming, fish farming and tailoring.

Historical profile of Hoa Hop commune, Quang Binh province			
Time / Events	Event	Effect on community	Respond of community
After 1945	Tan Sum helmet was established	There were 4 large of family names, including: Dinh, Phan, Cao, Le	
From 1954 to 1955	Tan Sum helmet was divided into 4 smaller helmets: Tân Tiến, Tân Bình, Tân Thuận, Tân Hòa		
From 1965 - now	There have been 80 households in Tan Hoa helmet, Hoa Hop commune		
In 1967	Flood	80% of local people's houses were broken. Their fields and gardens were also swept away.	Local people had to rebuild their house by themselves.
In 1999	Massive flood	100% of local people's houses were broken. Their fields and gardens were also completely swept away.	Rice and money were supported by the government in order to solve the starvation
In 2000	Cattle disease occurred	30% of cattle died	Local people got a loan from banks through Women Union. The loan is around 1-3 billions VND
From 2000 to 2003	Scrap metals collection rapidly developed	90% of local people worked as collectors	
From 2004 to 2008	Scrap metals has decreased	4 persons were died due to collecting scrap metals	The number of collectors has reduced
From 2000 to now	Alleviate poverty project IFAD project	Support local farmer to raise castle, fish and to plant the forest	
In 2005	Migration	100% people in labour age migrated to other big cities	

SEASONAL CALENDAR (LUNAR CALENDAR)
TAN HOA HAMLET, HOA HOP COMMUNE, MINH HOA DISTRICT, QUANG BINH PROVINCE

Time / Item	1	2	3	4	5	6	7	8	9	10	11	12
1, Weather												
- Dry season lasts only 3 months - The rest is west/rainy season	It is cold/damaging cold →			It is hot, even drought Lack of water due to the rivers and streams have been dried →				Flood and eddy	The weather is rather fine →		Cold →	
2, Occupation												
a, Scrap metals collection : all year round - The main labor is men	Few of scrap Miners are contented because local collector are busy with gardening →		Frequently going to the forest and stay there to Collect scrap metals; work in group. Each trip of collecting lasts around 10 days It takes approximately 10 hours to travel by motorbike and walking →			Intermittent collection →						Collect much scrap metals to earn money for Tet holiday
b, Farming												
- Rice cultivating + Two crops per year + Only use for eating in family	The first crop is from Dec. to May In Dec: sowing In May: harvesting					The second crop is from June to Oct. In June: sowing In October: harvesting						Sowing
- Maize and peanut cultivating	To achieve average productivity of 40quintals/ha											
- Afforesting and industrial trees growing, including rubber tree, rattan, keo	Get income after a long period, from 7 years to 10 years											
C, cattle, poultry and pig raising : all round year		Inoculation against epidemic diseases for cattle and domestic animals				Inoculation against epidemic diseases for cattle and domestic animals		After flood, pigs are often got disease	Congestion disease in cattle			Domestic animals have been died related to bad weather (damaging cold)
3, Labor: - Migration is a general phenomenon in this area	Young people often migrate to Hanoi, Ho Chi Minh Cities											
4. Expenses	Low income (ill-nourished)		Low income (ill-nourished		Much income	Much income						
5.Diseases					diarrhea	diarrhea					flu	flu
6.Festival			Quiet-seeking festival		New harvest festival	New harvest festival						Ancestor worship

Figure 30. Seasonal Calendar for Hoa Hop Commune in Quang Binh

SWOT analysis for chicken farming	
Strengths	Weaknesses
• have labour • Breeding facilities can be made	• No technique
Opportunity	Threats
• Easy to buy food for chicken • Money can be borrowed from national bank • Veterinarian can help to prevent illness • Have enough preventive medicine	• No market for chicken • No chicken for breeding

SWOT analysis for fish farming	
Strengths	Weaknesses
• have labour • Have pond and lake	• No technique
Opportunity	Threats
• Have information on fish breeding • Money can be borrowed from national bank • Food for fish easy to buy • Water resource is very good • Have enough preventive medicine	• The rate of interest is very high • No market for fish • No fishing equipments • Must go far away to buy preventive medicine

Hop Ha does not have a readily available market for chicken, nor for fish. If the local people find the market, the raising fish is realizable activity that could bring a significant benefit for people here.

In Quang Binh in general and Hoa Hop in particular, the number of collectors are fewer than Quang Tri and Thua Thien Hue province. One of the reasons is if Quang Tri is known as *"navel of bomb",* Quang Binh did not have ARVN or US military post. Therefore, it is believed that the quantity of bomb in the mountains is fewer than Quang Tri.

Besides, collecting scrap metal is considered as serious job in this commune, consequently, with the support from government, forest is transferred to local people as well as loan money with low interest that help the local people to change their occupation.

About young people: if in Dakrong, they just stay at home and collect scrap metal, in Hoa Hop these people go to Sai Gon or Ha Noi in order to find a new job. As a result, labour migration has increased since 2000, the most popular jobs that attract more young people are: leather shoe manufacturing, the garment industry or overseas migrant. This is a significant factor to decrease the number of people at labour age in Hoa Hop, the rest of people are primary working on agriculture activities and forestry. Hence, collecting scrap metal has diminished in the last five years.

Figure 31. Villagers getting involved in the PRA process in Hoa Hop.

PART FOUR: DATA ANALYSIS

Section One: Scrap metal collectors

Demographics

Table 1: Distribution of respondents between provinces					
Ser	Province	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	240	51.50	51.50	
2	Quang Tri	186	39.91	91.42	
3	Quang Binh	40	8.58	100.00	This may be an artefact of the sampling process. See PRA section in main text.
4	Total	466	100.00		

Table 2: Variation by age across three provinces						
Ser	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	455	35.4	11.6	11	67	1. 50% of the population lies between 28 and 45 2. The discrepancy between the no of observations in this table and Table 1 above is because not everyone gave their age.

Table 3: Distribution by gender					
Ser	Gender	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	43	9.2	9.2	
2	Male	423	90.8	100	
3	Total	466	100		

Table 4: Distribution by gender, disaggregated by Province					
Ser	Gender	TT Hue	Quang Tri	Quang Binh	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	17	21	5	
2	Male	223	165	35	
3	Total	240	186	40	466

Table 5: Number of people per collector household involved in scrap metal collection							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	No of people	461	1.51	0.95	0	8	See note
Note: this means additional people (i.e. in addition to the respondent) which is why it is possible to ask collectors this question and get a '0' answer.							

Table 6: Year that respondents started collecting scrap									
Ser	Year	Freq	Percent	cumulative	Year	Freq	Percent	cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	1968	1	0.22	0.22	1992	13	2.81	24.41	
2	1975	4	0.86	1.08	1993	27	5.83	30.24	
3	1976	5	1.08	2.16	1994	13	2.81	33.05	
4	1977	6	1.30	3.46	1995	17	3.67	36.72	
5	1978	6	1.30	4.75	1996	14	3.02	39.74	
6	1979	1	0.22	4.97	1997	12	2.59	42.33	
7	1980	3	0.65	5.62	1998	41	8.86	51.19	
8	1981	1	0.22	5.83	1999	11	2.38	53.56	
9	1982	3	0.65	6.48	2000	35	7.56	61.12	
10	1983	7	0.51	7.99	2001	12	2.59	63.71	
11	1985	5	1.08	9.07	2002	23	4.97	68.68	
12	1986	2	0.43	9.50	2003	31	6.70	75.38	
13	1987	2	0.43	9.94	2004	22	4.75	80.13	
14	1988	20	4.32	14.25	2005	33	7.13	87.26	
15	1989	6	1.30	15.55	2006	28	6.05	93.30	
16	1990	23	4.97	20.52	2007	26	5.62	98.92	
17	1991	5	1.08	21.60	2008	5	1.08	100.00	
18					Total	463	100		

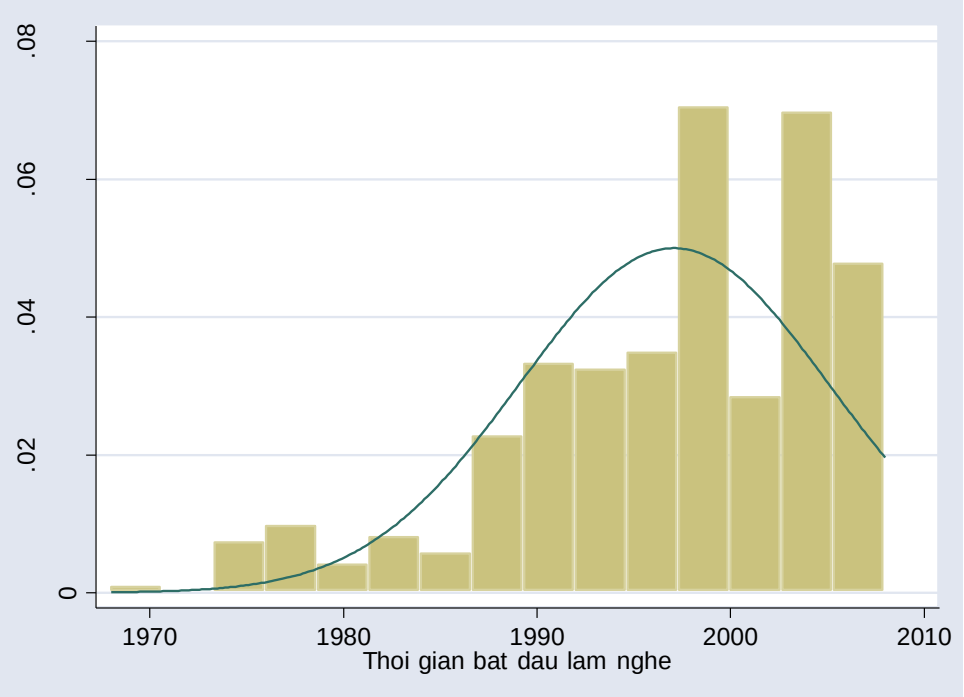

Figure 32. Graphical representation of the responses to the question "when did you start doing this job? (See Table 6). At first sight this suggests a growth industry, but the age data suggests that people tend to start and finish at certain ages, which might mean that, all other things being equal, this graph would have a similar shape if measured again in five years or so.

Table 7: No of people per collector household involved in scrap metal collection under 16 years old							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	No of people under 16	442	0.21	0.52	0	4	

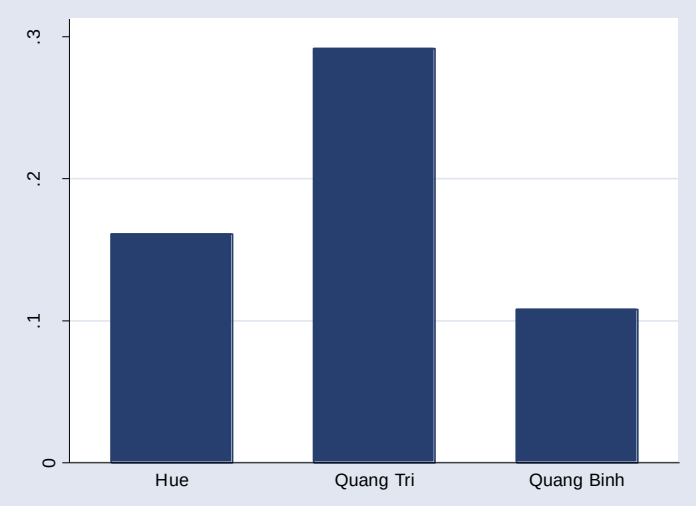

Figure 33. The average number of people per collector household involved in scrap metal collection who are under 16. Note that Quang Tri is highest by what appears to be a significant amount.

Table 8: Participation of women in scrap metal collection, by collector household					
Ser	Do women participate?	Frequency	Percentage	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	366	80.44	80.44	
2	Yes	89	19.56	100.00	
3	Total	455	100		

Table 9: Participation of women in scrap metal collection, by collector household and disaggregated by Province						
Ser	Do women participate?	Province			Total	Remarks
		TT Hue	Quang Tri	Quang Binh		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	No	195	140	31	366	
2	Yes	41	39	9	89	
3	Total	236	179	40	455	

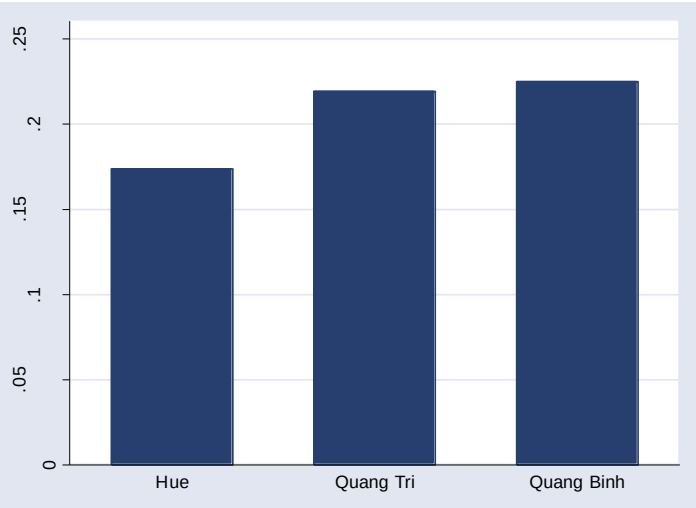

Figure 34. Participation of women in scrap metal collection, by collector household and disaggregated by Province. There is little variation by province around the figure of approximately 19%.

Economics

Table 10: Seasonal variation			
Ser	Season	Percentage	Remarks
(a)	(b)	(c)	(d)
1	Rainy season	3.0	
2	Dry season	31.54	
3	Year-round	61.8	
4	Other	5.36	
5	Total	101.7	Numbers don't total to 100% because this is a multiple choice question to which respondents could select more than one answer

Figure 35. The graph shows that the seasonal variation is generally consistent when the data is disaggregated by province.

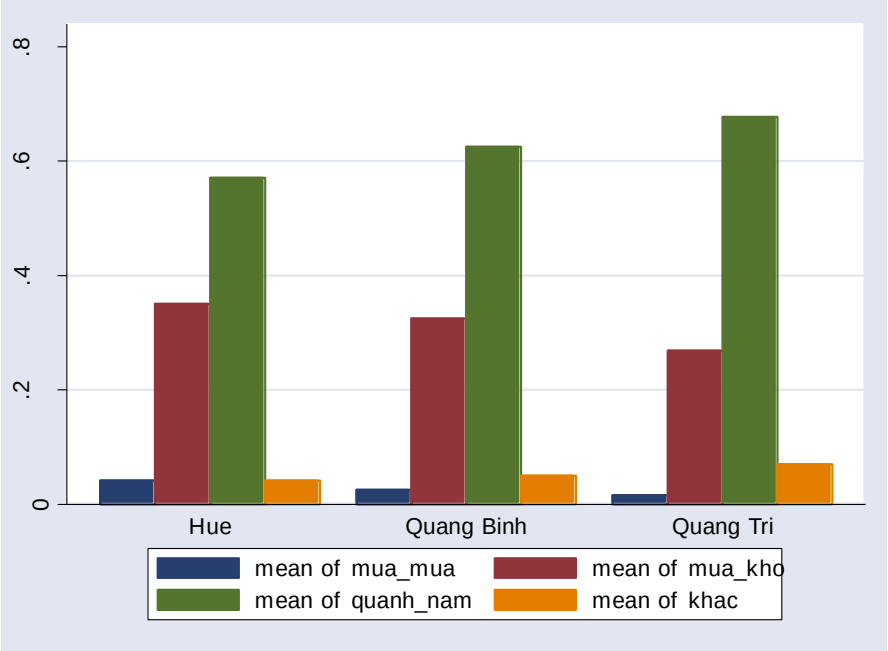

Table 11: No of days worked per month							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Days worked	465	17.4	6.5	1	30	See below
The data on numbers of days worked suggests that there is a great variance between respondents, with a low minimum response (1 day) and a high maximum (30 days). When the data is displayed graphically, it confirms that these minimum and maximum are not unusual 'outliers,' rather that there is a broad distribution amongst the whole population. Whilst even the mean number (approximately 17 days is almost a full time job (when compared to a standard five day week in (i.e. 20 days in a 30 day month) the data reveals that a considerable proportion works considerably more than a five day week at scrap metal collecting, whilst an almost equal proportion appears to use this as a means of (occasional) income supplement. Any intervention aimed at alternative livelihood strategy would have to take this into account.							

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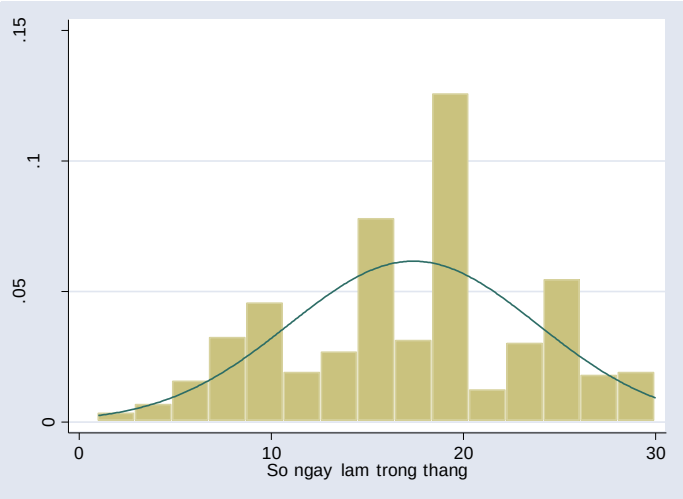


Figure 36. A graphical representation of the data summarised in Table 11 above. The bottom axis is the number of days worked per month

Table 12: Effect of weather on days worked							
Ser	Weather	Obs	Mean	Std. Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Rainy	14	19	5.2	10	28	
2	Dry	147	16.6	6.2	1	30	
3	Sunny	287	18,2	6.4	2	30	
4	Other	24	11	6.7	2	25	
		472					
This information was collected in order to investigate the effect of weather on the collectors. Again it can be seen that there is a great variation in the number of days worked per month, and this high variance is common across all four weather conditions (as can be seen by the comparatively high standard deviation). It is interesting that the minimum number for those 14 people who stated they worked in the rain is much higher than for other conditions. This may suggest that those few who work in the rain have no alternative (if the wet weather meant that it was easier to excavate then one might expect more than 14 people to be collecting when it rains). 'Other' in this case includes people who only work in their 'leisure' time (after the harvest or after school).							

Table 13: Amount of scrap metal collected per day (kg)[8]							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	428	15.86	9.15	0	100	See footnote
2	1 year ago	439	21.96	12.46	0	100	
3	5 year ago	375	39.99	27.36	0	250	

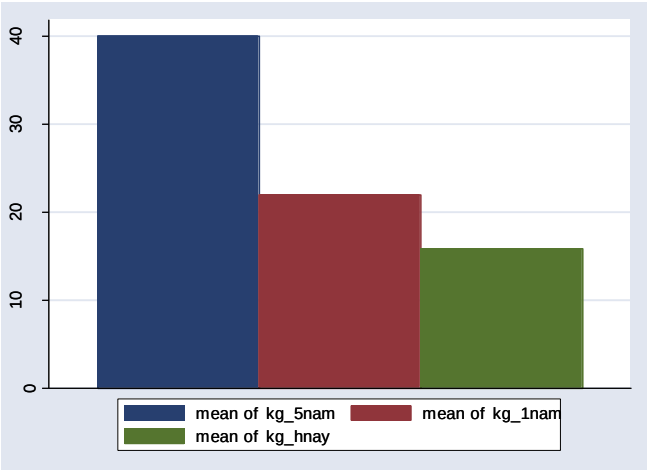


Figure 37. Graph showing how amount of scrap metal collected per day has declined since five years ago. The vertical axis shows amount in kg, the three blocks show (from left) five years ago, one year ago, and today.

[8] Note: this table ignores one statistical outlier, Mr Pham Van Xo, Respondent No 463. This man established group to detect mines and bombs to collect scrap metal, explosives, etc. Mr Xo was a solder and, after returning from military service, he established this team with the aim to reduce the hazards from UXO. His group is permitted by local government.

Figure 38. This graph shows the same data from Table 13 disaggregated by province. The downwards trend is clearly the same across the entire survey area.

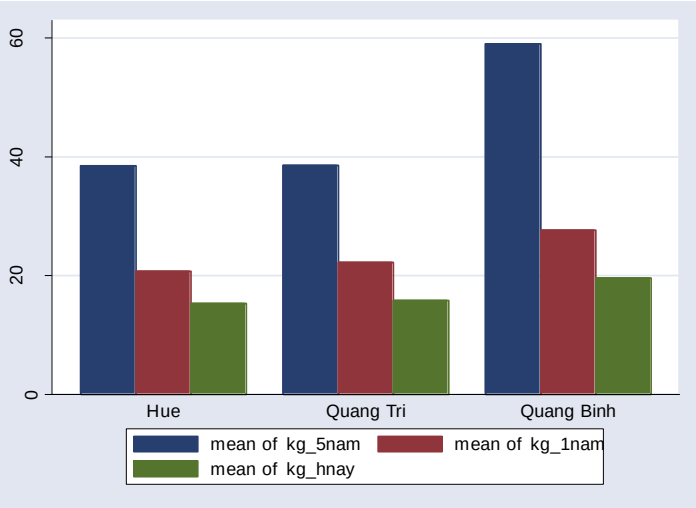


Table 14: price received by collectors for 1 kg scrap metal (VND) over time

Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	433	3574.13	748.87	2000	7000	The high variance in prices may be a function of the fact that dealers pay different prices for different grades and type of metal.
2	1 year ago	437	2677.80	609.28	900	6500	
3	5 year ago	370	1112.70	596.77	200	4000	

Figure 39. Change in price of scrap over time. The vertical axis shows average price received by collectors in VND; the three blocks show (from left) five years ago, one year ago, and today.

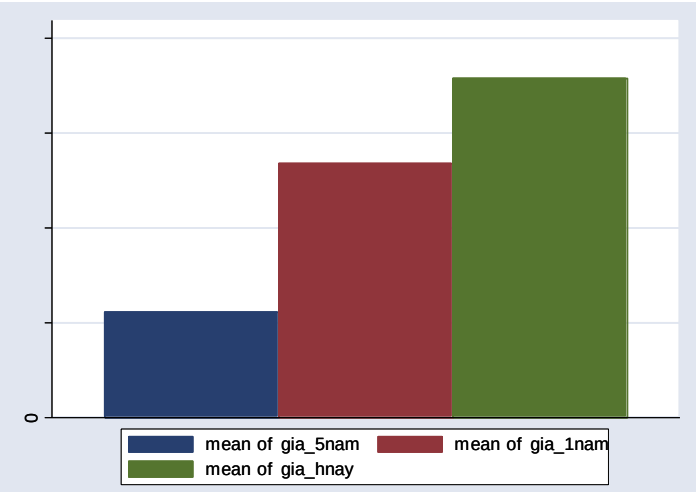


Figure 40. This graph shows the same price data disaggregated by province. The trend is clearly the same across the entire survey area. However the average price in Quang Binh appears to be significantly higher.

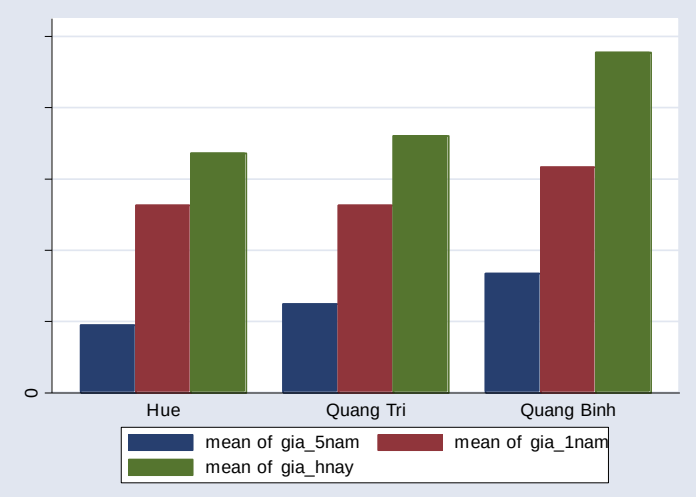


Table 15: Investment money for metal detectors (1)							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Investment	397	389,841.6	200,625.1	0	1,745,000	See note
Note: this table includes 397 people who invested less than 2 million VND. In most cases it means buying 'normal' detector Some people just use their hands, plastic bag, and a hoe (hence min=0 VND). The variance in prices for detectors could be due to a change in prices over time. Other observations by the Consultant suggest that the price in locally-manufactured detectors has fallen considerably over the last five years.							

Table 16: Investment money for metal detectors (2)							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Investment	52	4,194,231	1,794,933	2,022,000	11,500,000	See note
Note: this table includes 52 people who invested more than 2 million VND. These people bought detectors that can detect large scrap/UXO deeper than 1 m. Again, the variance in prices for detectors could be due to a change in prices over time or due to a difference in brand.							

Table 17: Motivation for collecting scrap metal				
Ser	Reason given	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	No secondary job	465	58.92	These reasons are not mutually exclusive and so do not sum to 100%
2	Secondary job	465	49.25	
3	Easy job	465	27.96	
4	High income	465	30.97	
5	Low investment	465	7.53	
6	Not dangerous	465	2.59	
7	Follow others	465	11.40	
8	Cleaning land	465	0.65	
9	Daily income	465	3.23	
10	Other	465	0	They don't have to wait till 'pay day' to get paid

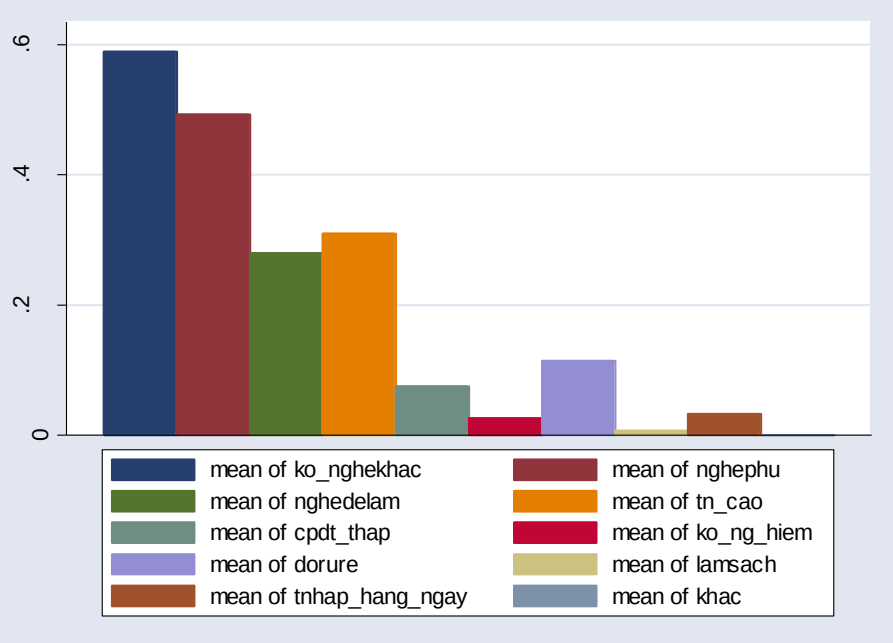


Figure 41. Graphic representation of the data on motivation in Table 17 above. See key below,

No secondary job	Secondary job
Easy job	High income
Low investment	Not dangerous
Follow others	Cleaning land
Daily income	Other

Table 18: Collector's income from other jobs (1): Mean							
Ser	Variable	Obs	Mean	Std Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Other income	392	1,064,250	705,111.9	100,000	6,000,000	

Table 19: Collector's income from other jobs (2): Distribution					
Ser	Percentile	From	To	Statistical tests	
(a)	(b)	(c)	(d)	(e)	
1	1	100000	125000	Obs	392
2	5	100000	250000	Sum of weight	392
3	10	120000	350000	Mean	1064250
4	25	125000	600000	Std. Dev.	705111.9
5	50	600000	1500000	Variance	4.97e+11
6	75	1500000	3400000	Skewness	2.319573
7	90	1900000	5000000	Kurtosis	13.36887
8	95	2000000	5000000		
9	99	3400000	6000000		

Figure 42. Graphical epresentation of the data on secondary income distribution as set out in aboveTable 19 above.

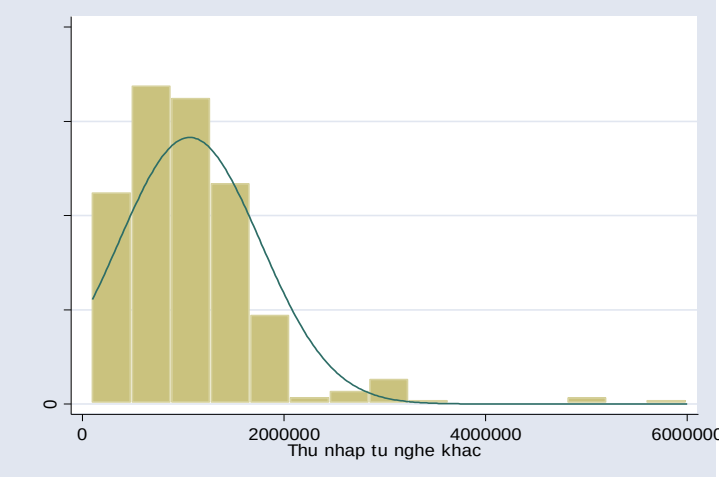
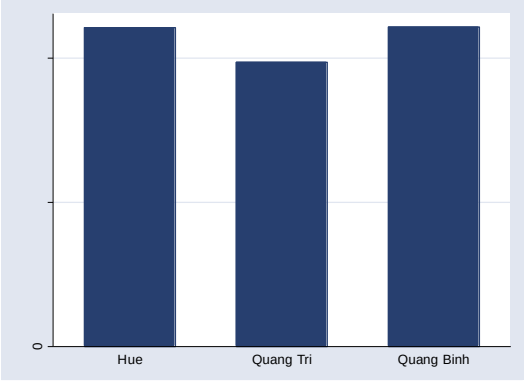


Table 20: Collector's mean income from other jobs (1): disaggregated by Province							
Ser	Province	Observation	Mean income	Std Err	Confidence interval		Remarks
					From	To	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	TT Hue	218	1105807	49398.16	1008446	1203169	See note
2	Quang Tri	136	985514.7	57406.46	871982.4	1099047	
3	Quang Binh	38	1107632	110497.6	883742.2	1331521	
Note: No significant difference between provinces.							

Figure 43. Graphical representation of the data on secondary income distribution as set out in Table 20 above



Knowledge Attitude and Practices

Table 21: frequency of different types of UXO				
Ser	UXO	Observation	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Aircraft bomb	451	76.1	For clarification, this means that "37.5% of respondents have encountered cluster munitions, rather than "37.5% of all UXO found are cluster munitions" (which is why column (d) does not sum to 100%)
2	Cluster munition	451	37.5	
3	LSA	451	95.6	
4	Mine	451	27	
5	Other	451	0.9	

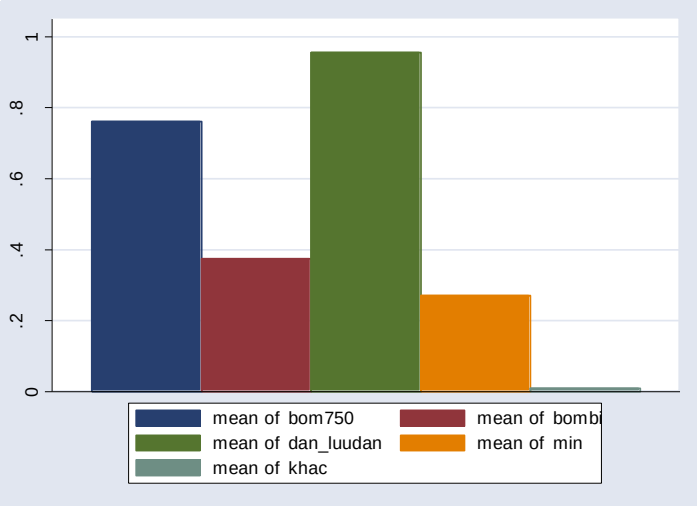


Figure 44. Frequency of encounters with different UXO types

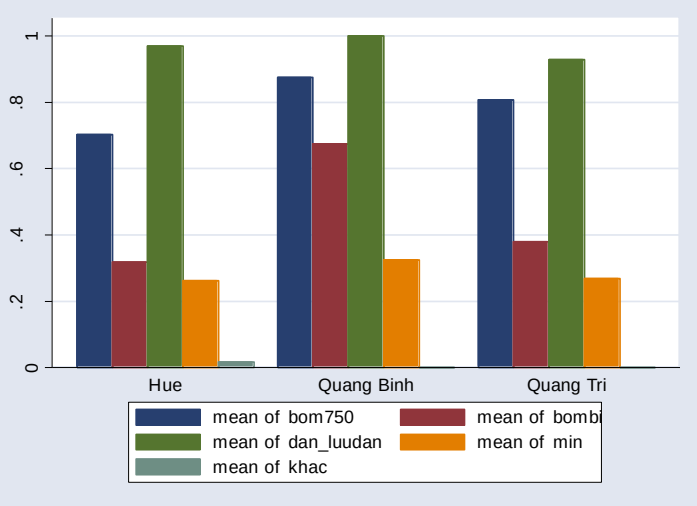


Figure 45. Frequency of encounters with different UXO types, disaggregated by province.

Table 22: Personal risk assessment by collectors					
Ser	Risk Assessment	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Unsafe	360	79.12		This makes interesting comparison with a similar question asked of victims, see Table 105.
2	Safe	88	19.34		
3	Don't know	7	1.54	100	
4	Total	455	100		

Table 23: Frequency of accidents amongst active collectors					
Ser	Accident	Freq	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Never	407	88.48	88.48	The figure of 9% in cell (c)3 is conservative as it does not capture those who died or otherwise left the market after being injured
2	Once	42	9.13	97.61	
3	Many times	11	2.39	100.00	
4	Total	460	100		

Table 24: Frequency of accidents amongst active collectors, disaggregated by Province						
Ser	Accident	Province			Total	Remarks
		TT Hue	Quang Tri	Quang Binh		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Never	217	154	36	407	These absolute numbers must be compared with the number of respondents from each Province. See calculations in Table 25
2	Had accident	22	28	3	53	
3	Total	239	182	39	460	

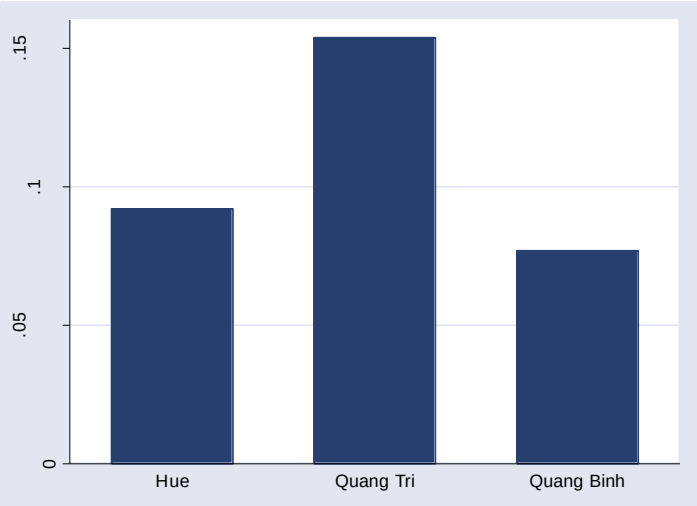


Figure 46. Rate of accidents, calculated by controlling absolute number of accidents by percentage of total collector population.

Table 25: Frequency of accidents amongst active collectors, disaggregated by Province, controlled by population						
Ser	Accident	Province			Total	Remarks
		TT Hue	Quang Tri	Quang Binh		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Never	91.60%	83.88%	91.38%	407	These numbers control the data in Table 24 with that in Table 1 to give a rate of accidents, as shown in Figure 46 above. The totals do not sum to 100% because of slight differences in number of respondents in the source tables.
2	Had accident	9.29%	15.25%	7.61%	53	
3	Total	100.88%	99.13%	98.99%	460	

Table 26: Activity at time of accident as reported by surviving collectors					
Ser	Cause of accident	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Detecting	3	5.66	5.66	These numbers may under-represent the absolute risk of dismantling UXO as being closer to a detonation is unlikely to leave the victim in a fit state to continue this sort of work. See case studies and photographs of victims for examples
2	Excavating	27	50.94	56.60	
3	Transporting	3	5.66	62.26	
4	Dismantling	14	26.42	88.68	
5	Other	6	11.32	100.00	
6	Total	53	100.00		

Table 27: Number of collectors that have witnessed accidents involving others					
Ser	Witnessed	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	106	23.14	23.14	
2	Yes	352	76.86	100.00	
3	Total	458	100.00		

Table 28: Recognition of risk to neighbours					
Ser	Recognition	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Not dangerous	15	3.24	3.24	This perception of risk is different to that felt by dealers and the neighbours, see Table 64 and Table 87.
2	Dangerous	446	96.33	99.57	
3	Don't know	2	0.43	100.00	
4	Total	463	100.00		

Table 29: Exposure to Mine Risk Education (MRE) amongst collectors					
Ser	Received MRE	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	29	6.24	6.24	
2	Yes	436	93.76	100.00	
3	Total	465	100.00		

Table 30: Exposure to Mine Risk Education (MRE) amongst collectors, disaggregated by MRE activity				
Ser	MRE Activity	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Community	436	30.05	Analysis of this information suggests two things: the first is that, in terms of 'coverage' television messages are the most effective. The second thing is that this data cannot inform on the content of these MRE transmissions.
2	School	436	22.48	
3	Television	436	82.11	
4	Radio	436	18.11	
5	Poster	436	17.20	
6	Military	436	23.12	
7	Other	436	2.06	

Figure 47. Graphical representation of the data on MRE activity set out in Table 30 above.

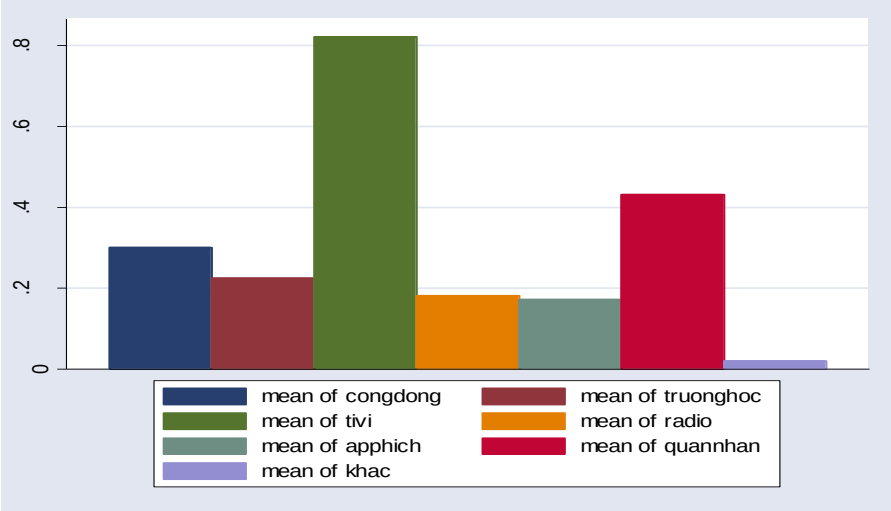


Table 31: Effect of MRE on behaviour of active collectors				
Ser	Behaviour change	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	No change	434	38.48	Respondents had the opportunity to select more than one answer
2	Reduce collecting	434	30.65	
3	No picking up UXO	434	44.93	
4	Other	434	6.44	

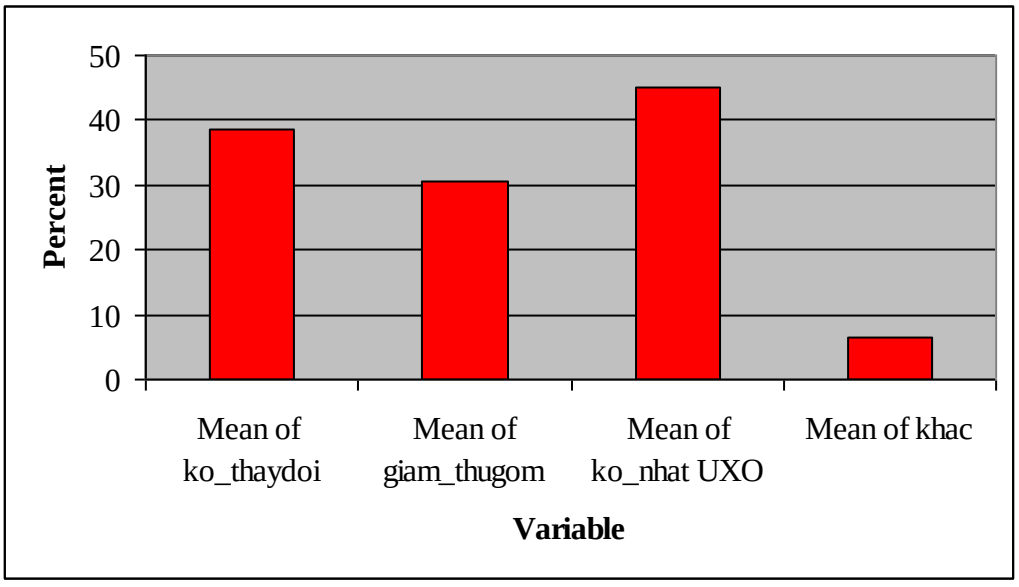


Figure 48. Graphical representation of the data on behaviour set out in Table 31 above.

Key for Figure 48	
Mean of ko_thaydoi	No change
Mean of giam_thugom	Reduce collecting
Mean of ko_nhat UXO	No picking up UXO
Mean of khac	Other

Re-survey of collectors

Demographics

Table 32: Distribution of respondents in re-survey by Province					
Ser	Province	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	89	61.38	61.38	
2	Quang Tri	56	38.62	100	
3	**Total**	**145**	**100**	**100**	

Table 33: Distribution of respondents in re-survey between Districts					
Ser	District	Frequency	Percent	Cum	Remarks
(a)	(b)	(a)	(d)	(e)	(f)
1	Huong Thuy	5	3.45	3.45	
2	Huong Tra	46	31.72	35.17	
3	Phong Dien	38	26.21	61.38	
4	Trieu Phong	8	5.52	66.9	
5	Hai Lang	21	14.48	81.38	
6	TX Quang Tri	8	5.52	86.9	
7	Dong Ha	19	13.1	100	
8	**Total**	**145**	**100**	**100**	

.

Table 34: Age of respondents in re-survey							
Ser	Variable	Obs	Mean	Std.Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Age	144	34.19	11.05	13	64	See note
Note: one respondent did not provide age							

Table 35: Average age of children (under 16) in re-survey who work as collectors							
Ser	Variable	Obs	Mean	Std.Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Age	9	14.33	1.41	13	16	

Table 36: Distribution of respondents in re-survey between female and male					
Ser	Gender	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	14	9.66	9.66	Over 90% of collectors are male
2	Male	131	90.34	100	
3	Total	145	100		

Economics

Table 37: The lowest price at which respondents would stop collecting scrap metal					
Ser	Price	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Under 3.000VND/kg	21	15.44	15.44	136 out of 145 respondents answered this question during the resurvey..
2	Under 2.000VND/kg	69	50.74	66.18	
3	Under 1.000VND/kg	46	33.82	100	Over 50% of interviewees would give up scrap metals collection if the price was under 2.000VND/kg
4	Total	136	100		

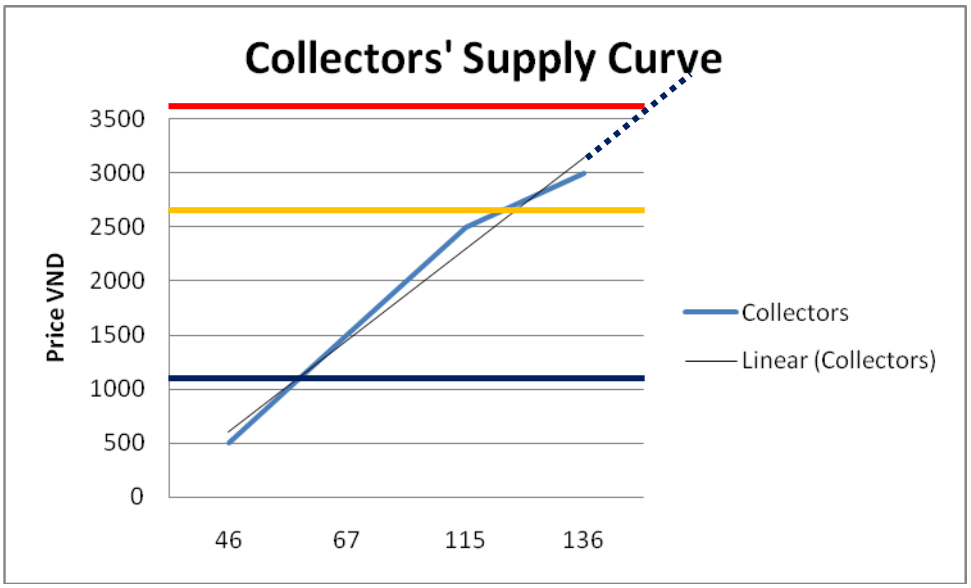


Figure 49. Collector's supply curve

Key to Figure 49	
	Price now
	Price 1 year ago
	Price 5 years ago
	Extrapolation of supply curve

The data in Table 37 above provides a form of supply curve, as set out in Figure 49. Given that collectors appear to be 'price takers[9]' it is possible to superimpose a flat demand curve based on the current average price paid to collectors (from Table 14 above). Providing the users accept this sample of 136 collectors as statistically significant, it would be possible to use this supply and demand diagram to extrapolate what a fall in scrap price might do to the scrap metal collecting business in Vietnam, in terms of the numbers of people who might leave the market. The price changes of the last five years, also included in Figure 49, help demonstrate this effect. Unfortunately, it does not help too much in the question of predicting how many other people might join the market in the event of further price increases, though it does suggest that more people would do so. The reason this further increase might not be linear is because of the risk element; once people have 'enough' money from higher-priced scrap they might limit their involvement

[9] A 'price taker' is "An economic entity that is too small relative to a market to affect its price, and that therefore must take that price as given in making its own decisions". See http://www-personal.umich.edu/~alandear/glossary/p.html

Knowledge Attitude and Practices

Table 38: Collector's opinions on the most dangerous UXO					
Ser	UXO classification	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Aircraft bomb	6	4.35	4.35	134 out of 145 respondents answered this question during the re-survey
2	Cluster munition	95	68.84	73	
3	Other LSA*	35	25.36	98.55	
4	Mine	2	1.45	100	
5	Total	134	100		
'Other LSA' means other items of land service ammunition apart from landmines, i.e. projectiles, mortars, grenades and rockets.					

Table 39: Actions taken after finding the most dangerous UXO					
Ser	Solution	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Leave it	122	84.72	84.72	Most of collectors (84.72) state that they do not touch bombs when they find them Reporting means reporting to agencies authorised to deal with UXO. It is possible that this number is inflated because it is "the right answer". Similarly, Ser 2 and 3 may also be under-reported. However the general willingness of collectors to engage with the survey team suggests this probability is low. 144 out of 145 respondents answered this question during the re-survey
2	Make it safe [10] themselves	1	0.69	85.42	
3	Involve others	4	2.78	88.19	
4	Reporting	14	9.72	97.92	
5	Throw away	2	1.39	99.31	
6	Other	1	0.69	100	
7	Total	144	100		

[10] One issue that arose during the presentation of the term 'make it safe'. Bomb disposal technicians will dispute the use of this term when describing actions carried out by untrained personnel. However surveys such of this deal with the subjective 'perceptions' of the people being interviewed, who feel that this is what they are doing (even if we the observers do not agree!) and it was the term they responded to during the interview. This issue of subjective risk is likely to be important when considering how to use this data in MRE programs that attempt behavior change. The term 'make it safe' is therefore retained here. Nevertheless, as the accident data suggests, there is a marked difference between what is perceived to be safe behavior and what is actually safe.

Section Two: Scrap metal dealers

Demographics

Table 40: Distribution of dealer respondents between provinces					
Ser	Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	27	46.55	46.55	
2	Quang Tri	19	32.76	79.31	
3	Quang Binh	12	20.69	100	
4	Total	58	100		

Table 41: Distribution of dealer respondents between districts					
Ser	Districts	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	13	22.41	22.41	
2	Huong Tra	10	17.24	39.66	
3	Phong Dien	4	6.90	46.55	
4	Trieu Phong	13	22.41	68.97	
5	Dong Ha	2	3.45	72.41	
6	Dakrong	4	6.90	79.31	
7	Le Thuy	2	3.45	82.76	
8	Dong Hoi	6	10.34	93.10	
9	Minh Hoa	4	6.90	100.00	
10	Total	58	100		

Table 42: Distribution of dealer respondents between provinces and districts						
Ser	Districts	Hue	Quang Tri	Quang Binh	Total	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Huong Thuy	13	0	0	13	
2	Huong Tra	10	0	0	10	
3	Phong Dien	4	0	0	4	
4	Trieu Phong	0	13	0	13	
5	Dong Ha	0	2	0	2	
6	Dakrong	0	4	0	4	
7	Le Thuy	0	0	2	2	
8	Dong Hoi	0	0	6	6	
9	Minh Hoa	0	0	4	4	
10	Total	27	19	12	58	

Table 43: Statistical analysis of age of dealers						
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Age	53	41.72	8.81	21	60

	Percentiles	Largest	Smallest	Statistical tests		Remarks
2	1%	21	21			
3	5%	27	23			
4	10%	30	27	Obs	53	
5	25%	38	27	Sum of Wgt	53	
						Min age = 21
6	50%	42		Std. Err.	1.21	Max age= 60.
				95% confidence Interval		50% of people are 38 to 46 years old
			Largest	From	To	
7	75%	46	55	39.29	44.14	
8	90%	54	58	Variance	77.55298	
9	95%	58	60	Skewness	0.0647506	
10	99%	60	60	Kurtosis	2.944281	

Figure 50. Graphical representation of data on age of dealers as set out in Table 43 above.

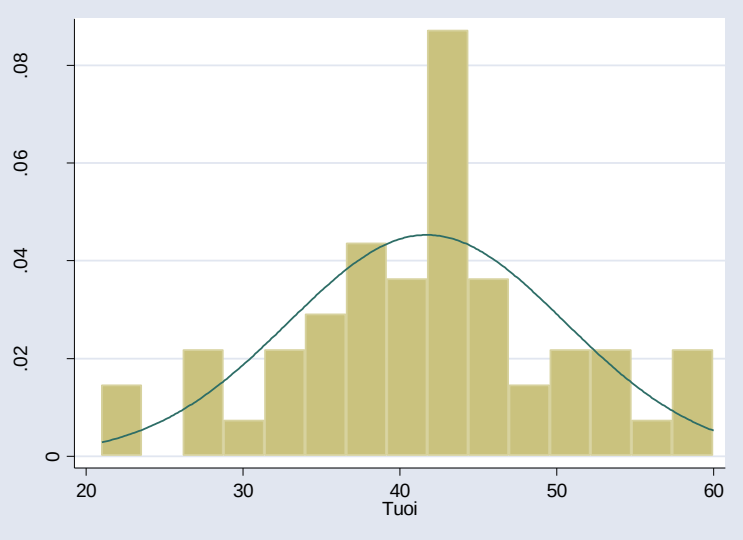
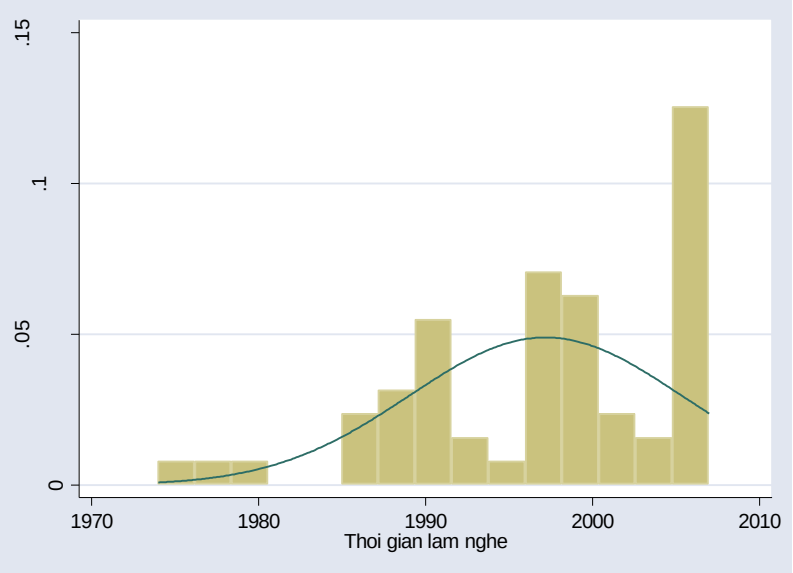


Table 44: Distribution of gender amongst dealers					
Ser	Gender	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	36	62.07	62.94	The majority of dealers interviewed were women, compared to collectors who are mainly men (See Table 3)
2	Male	22	37.93	100	
3	Total	58	100		

Table 45: Distribution of gender amongst dealers, disaggregated by province					
Ser	Province	Female	Male	Total	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	17	10	27	
2	Quang Tri	12	7	19	
3	Quang Binh	7	5	12	
4	Total	36	22	58	

Table 46: Year when dealer begun activity								
Ser	Year	Freq	Percent	cuml	Year	Freq	Percent	cuml
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	1974	1	1.72	1.72	1997	1	1.72	41.38
2	1978	1	1.72	3.45	1998	5	8.62	50.00
3	1980	1	1.72	5.17	1999	2	3.45	53.45
4	1985	3	5.17	10.34	2000	6	10.34	63.79
5	1988	3	5.17	15.52	2001	1	1.72	65.52
6	1989	1	1.72	17.24	2002	2	3.45	68.97
7	1990	3	5.17	22.41	2004	2	3.45	72.41
8	1991	4	6.90	29.31	2005	6	10.34	82.76
9	1993	2	3.45	32.76	2006	4	6.90	89.66
10	1995	1	1.72	34.48	2007	6	10.34	100.00
11	1996	3	5.17	39.66	Total	58	100.00	

Figure 51. Graph showing date when dealers begun activity.



Economics

Table 47: The number of people employed by dealers							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	No. of people	57	3.46	4.99	0	23	

Table 48: Number of people employed by scrap metal dealers, disaggregated by province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	TT Hue	No.of people	27	5.04	6.61	1	23	
2	Quang Tri	No.of people	19	2.47	2.52	1	12	
3	Quang Binh	No.of people	11	1.27	0.79	0	3	

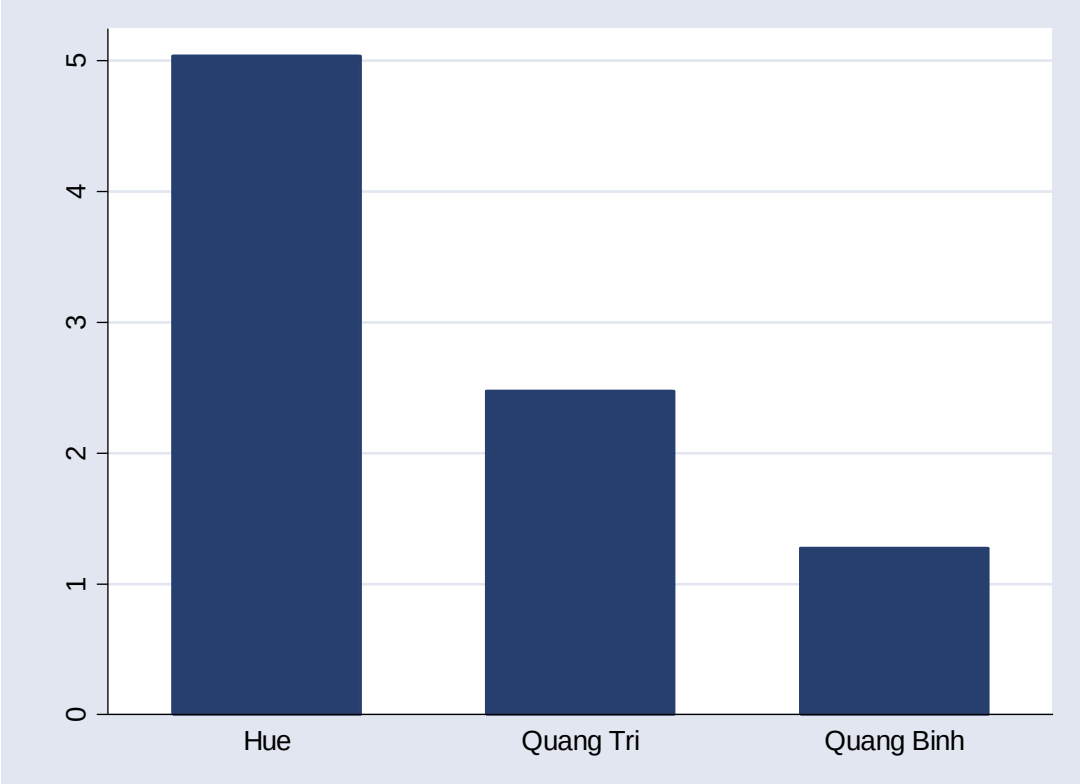


Figure 52. Number of people employed by scrap metal dealers, disaggregated by Province.

Table 49: Mean amount of scrap metal purchased per day by dealers, over five years (kg)							
Ser	Variable	Obs	Mean	Std. Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	47	203.79	422.68	2	2500	
2	1year ago	50	232.78	531.56	4	3500	
3	5years ago	40	598.4	1272.32		7500	

Figure 53. Mean amount of scrap metal purchased per day by dealers, over five years. The left column shows five years ago and the right column shows today.

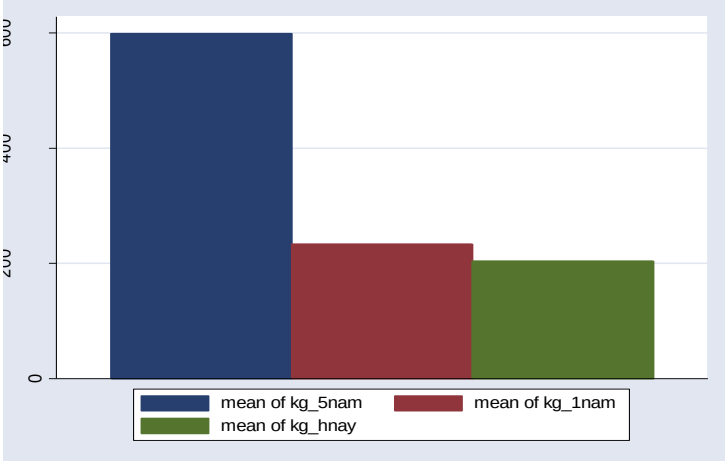


Table 50: Mean amount of scrap metal purchased per day by dealers, over five years, disaggregated by Province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	TT Hue	Now	21	296.29	609.57	10	2500	
2		1 year ago	22	362.05	779.70	15	3500	
3		5 years ago	20	830.00	1747.29	25	7500	
4	Quang Tri	Now	17	155.71	152.01	2	500	
5		1 year ago	18	154.50	138.55	13	550	
6		5 years ago	15	388.00	348.94	20	1000	
7	Quang Binh	Now	9	78.78	84.69	5	270	
8		1 year ago	10	89.30	86.90	4	270	
9		5 years ago	5	303.20	558.55	10	1300	

Figure 54. Mean amount of scrap metal purchased per day by dealers, over five years, disaggregated by Province.

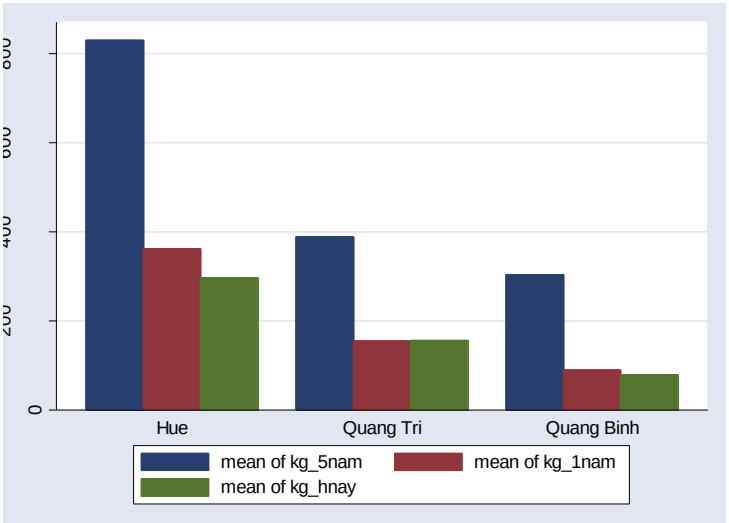


Table 51: The price paid by dealers for scrap metal (VND)							
Ser	Variable	Obs	Mean	Std. Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	51	4186.28	1185.92	2500	7500	This is the price reported by dealers. See note below.
2	1 year ago	52	3155.77	980.28	500	6000	
3	5 years ago	43	1196.51	616.09	400	2700	
When compared by the stated price received by collectors (see Table 14) there is a noticeable difference, with dealers claiming to pay about 15% more than collectors claim to receive. However the upward trend in price over five years is consistent between both groups.							

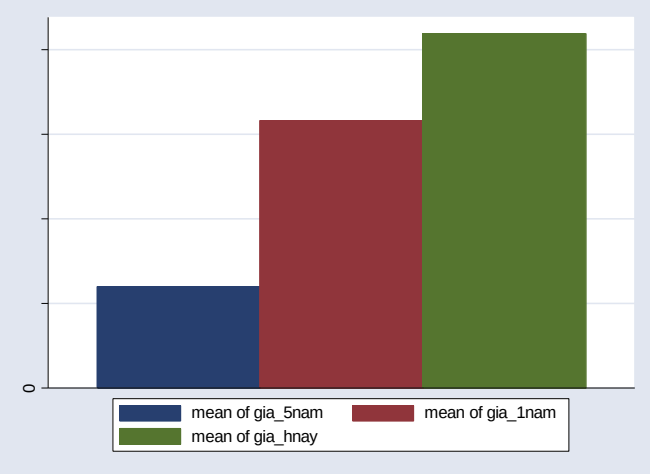


Figure 55. Changes in price paid for scrap metal over five years.

Table 52: The price paid by dealers for scrap metal (VND), disaggregated by province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	TT Hue	Now	23	4065.21	997.09	3000	6000	
2		1 year ago	23	3321.74	963.40	2000	6000	
3		5 years ago	22	1154.54	567.14	400	2500	
4	Quang Tri	Now	19	3657.90	479.95	2500	4500	
5		1 year ago	19	2652.63	777.72	500	3800	
6		5 years ago	15	1026.67	606.47	400	2700	
7	Quang Binh	Now	9	5611.11	1596.44	3500	7500	
8		1 year ago	10	3730.00	997.83	2500	6000	
9		5 years ago	6	1775.00	558.35	850	2500	

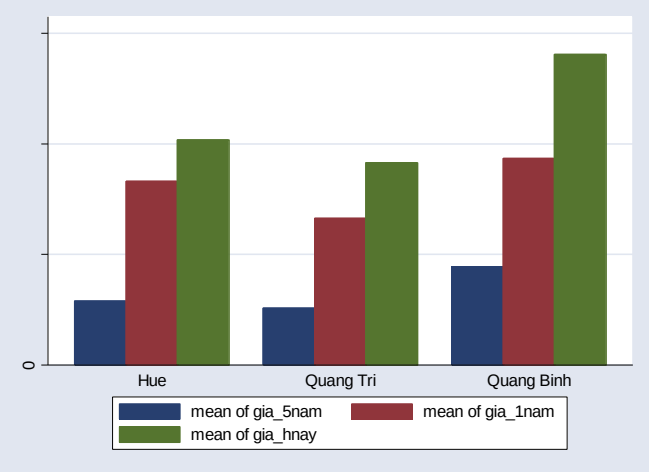


Figure 56. Changes in price paid for scrap metal over five years, disaggregated by Province. Note the higher places paid in Quang Binh, which is consistent with the reports from collectors as depicted in Figure 40.

Table 53: Change in price received by dealers for scrap over five years (VND)							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	51	4646.08	1292.70	3200	7700	
2	1 year ago	51	3483.33	919.11	700	6200	See note
3	5 years ago	43	1527.91	726.81	600	3500	
Note: Using stated prices paid in Table 51, the current average 'mark-up' for scrap is approximately 10%. If the prices in Table 14 are used, this mark-up is approximately 25%.							

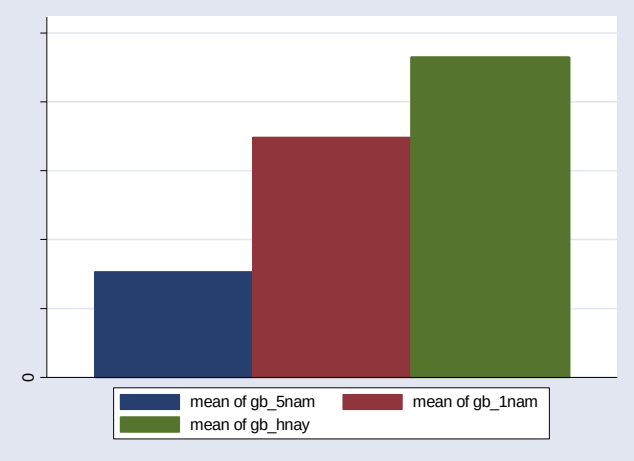


Figure 57. Changes in price received for scrap metal over five years.

Table 54: Change in price received by dealers for scrap over five years (VND), disaggregated by province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Hue	Now	23	4478.26	1067.69	3300	7100	
2		1 year ago	23	3660.87	911.91	2500	6200	
3		5 years ago	22	1463.64	567.82	700	2700	
4	Quang Tri	Now	19	4100.00	782.44	3200	6900	
5		1 year ago	18	3005.56	791.48	700	2500	
6		5 years ago	15	1420.00	930.59	600	3500	
7	Quang Binh	Now	9	6227.78	1525.84	3600	7700	
8		1 year ago	10	3935.00	844.61	2950	5500	
9		5 years ago	6	2033.33	546.50	1000	2600	

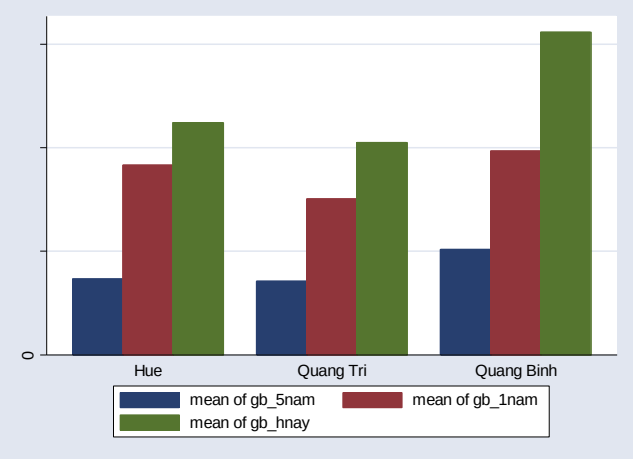


Figure 58. Changes in price received for scrap metal over five years, disaggregated by Province. Again, note the higher prices for Quang Binh.

Table 55: The difference between selling and buying price							
Ser	Variable	Obs	Mean	Std. Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Difference-now	50	449	424.56	100	2400	Based on data in Table 51 and Table 53
2	Difference_1 year ago	50	347	326.99	50	1500	
3	Difference_5 year ago	43	331.40	350.85	0	2300	

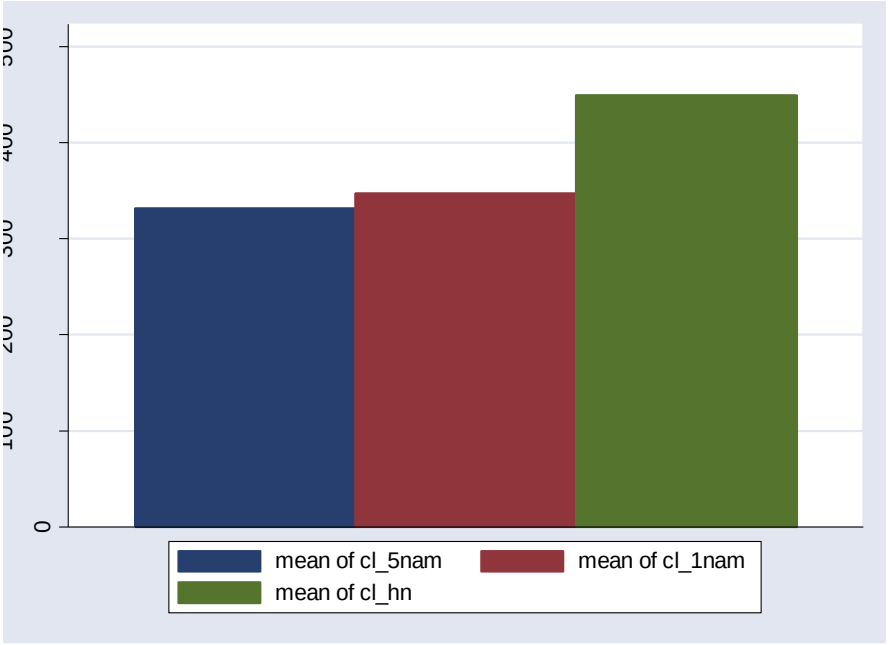


Figure 59. Difference between scrap buying and selling prices, over five years.

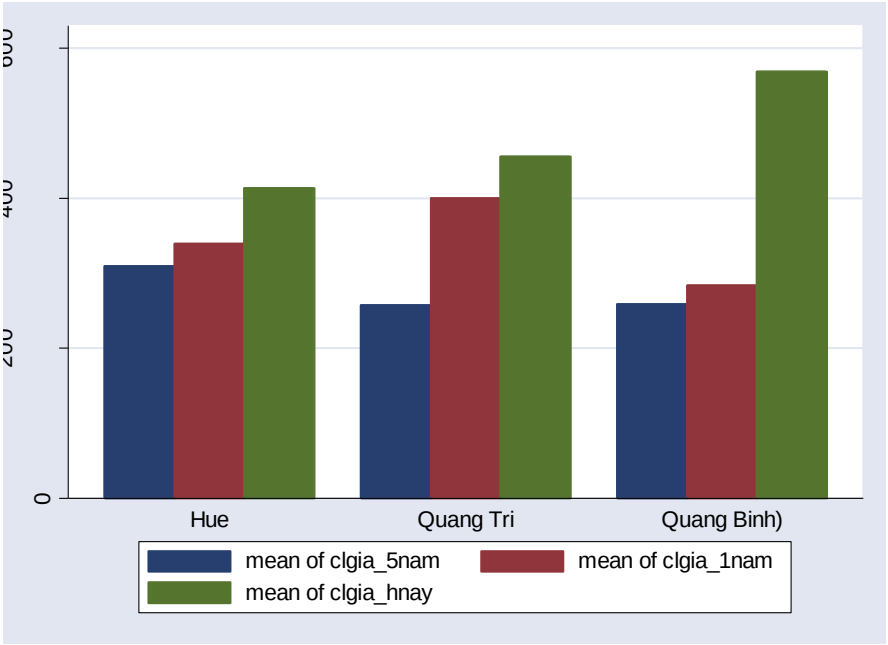


Figure 60. Difference between scrap buying and selling prices, over five years, disaggregated by Province..

Table 56: Best season for selling scrap metal					
Ser	Season	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Rainy season	33	60	60	This may be because the rainy season is the best season for collectors and thus a supply of scrap is more readily available.
2	Dry season	5	9.09	69.09	
3	Year-round	15	27.27	96.36	
4	Other	2	3.64	100	
5	Total	55	100		

Table 57: The proportion of dealers who admit to buying UXO					
Ser	Bought UXO	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Yes	31	59.62	59.62	The buying of UXO may be under-reported as it may be seen as the 'wrong' answer.
2	No	21	40.38	100	
3	Total	52	100		

Table 58: The proportion of dealers who admit to buying UXO, disaggregated by Province							
Ser	Province	Bought UXO		Do not buy		Total	Remarks
		Freq	Percent	Freq	Percent		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	TT Hue	16	59%	11	41%	27	Although the absolute numbers rank TT Hue highest, a higher percentage of dealers in Quang Tri admit to buying UXO
2	Quang Tri	12	67%	6	33%	18	
3	Quang Binh	3	43%	4	57%	7	
4	Total	31		21		52	

Table 59: The way dealers buy scrap				
Ser	How dealers buy	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Other people carry UXO to dealer	21	91%	Two respondents answered 'Yes' to both purchase methods
2	Dealer travels round to buy scrap	21	21%	

Table 60. Other people carry UXO to dealer, disaggregated by Province					
Ser	Province	Yes	No	Total	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	0	12	12	
2	Quang Tri	2	4	6	
3	Quang Binh	0	3	3	
4	Total	2	19	21	

Table 61. Dealers that travels round to buy scrap, disaggregated by Province					
Ser	Province	Yes	No	Total	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	10	2	12	
2	Quang Tri	3	3	6	
3	Quang Binh	3	0	3	
4	Total	16	5	21	

Knowledge Attitude and Practices

Table 62: The reasons why dealers bought UXO					
Ser	Reasons	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	High income	10	55.56	55.56	
2	Low volume of other scrap metal available	1	5.56	61.11	
3	"Not a dangerous activity"	1	5.56	66.67	
4	No knowledge	4	22.22	88.89	
5	Other	2	11.11	100	
6	Total	18	100.00		

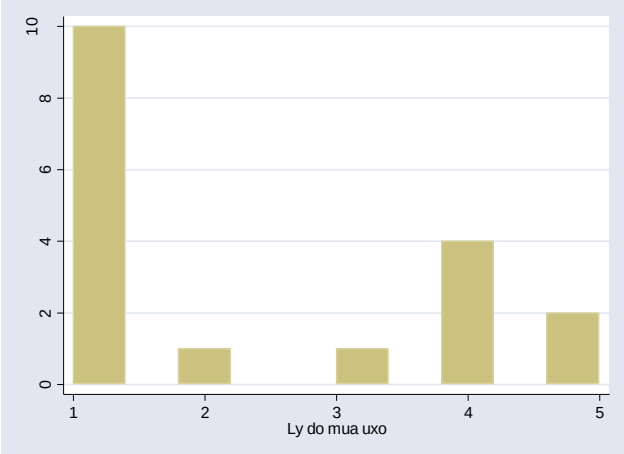


Figure 61. Graphical display of the reasons scrap metal dealers buy UXO.

Table 63. The Most common types of UXO bought by dealers				
Ser	UXO type	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Aircraft bomb	53	81.13	The high percentage score for aircraft bombs and LSA may be due to a number of reasons, including their 'comparative' safety and proportionately high metal content.
2	Cluster munition	53	18.87	
3	LSA	53	96.23	
4	Mine	53	16.98	

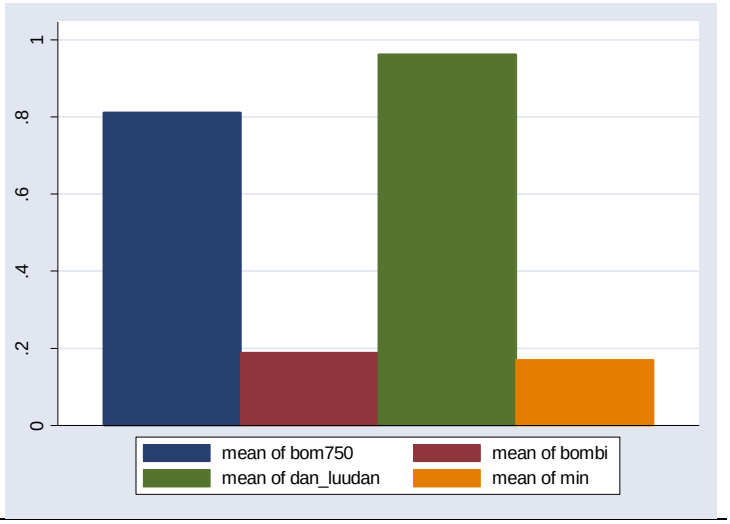


Figure 62. Dealer's estimate of the most common UXO types that they purchase.

Table 64: Personal risk assessment by Dealers					
Ser	Activity assessed as 'safe'	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Yes	12	44.44	44.44	This is based on dealer's own subjective risk assessment
2	No	14	51.85	96.3	
3	No idea	1	3.7	100	
4	Total	27	100		

Table 65: Accidents amongst dealers involving UXO					
Ser	Involved in UXO accident	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	54	98.18	98.12	This may under-report those no longer in the market place. See note.
2	Yes	1[11]	1.82	100	
3	Total	55	100		
The comparatively low number of casualties amongst dealers (1/55 compared to 1/10 for collectors) may also suggest that dealers' contract out' risk through only accepting non-hazardous UXO, thus encouraging collectors to attempt to "make them safe" before taking them to the dealers.					

Table 66: Exposure to Mine Risk Education (MRE) amongst dealers					
Ser	Received MRE	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	1	1.75	1.75	These numbers are broadly consistent with the data for collectors. See Table 29
2	Yes	56	98.25	100	
3	Total	57	100		

Table 67: Exposure to Mine Risk Education (MRE) amongst dealers, disaggregated by MRE activity				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Community	56	57.14	These numbers are broadly consistent with the data for collectors. See Table 30
2	School	56	17.86	
3	TV	56	80.36	
4	Radio	56	7.14	
5	Poster	56	7.14	
6	Military	56	5.36	
7	Others	56	19.64	

[11] The single accident took place in Quang Tri. The victim lost an eye and arm.

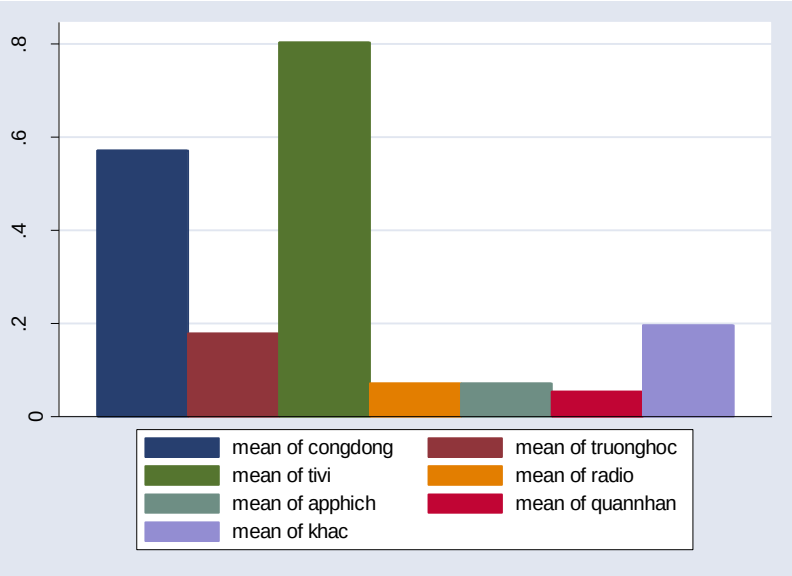


Figure 63. Graphical representation of the data on MRE activity set out in Table 67.Note that television is again the most common source of MRE information.

Table 68: Dealer understanding of legal status of handling UXO

Ser	Believes forbidden	Frequency	Percent	Cum	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	25	44.64	44.64	
2	Yes	31	55.36	100	
3	Total	56	100		

Re-survey of dealers

Demographics

Table 69: Distribution of respondents in re-survey between provinces					
Ser	Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	42	84	84	
2	Quang Tri	8	16	100	
3	Total	50	100		

Table 70: Distribution of in re-survey respondents between districts					
Ser	District	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	22	44	44	
2	Huong Tra	14	28	72	
3	Phong Dien	3	6	78	
4	Trieu phong	1	2	80	
5	TX Quang tri	7	14	94	
6	Dong Ha	3	6	100	
7	Total	50	100		

Economics

Table 71: Dealers who buy scrap metal in their commune					
Ser	In commune	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	27	56.25	56.25	56% buy of these 48 dealers buy of their scrap in their commune, whereas the other 44% buy some of it from outside.
2	Some	21	43.75	100	
3	Total	48	100		

Table 72: Dealers who buy scrap metal in their district					
Ser	In District	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	16	43.24	43.24	43% of these 37 dealers buy all of their scrap in their district, whereas the other 57% buy some of it from outside.
2	Some	21	56.76	100	
3	Total	37	100		

Table 73: Dealers who buy scrap metal in their province					
Ser	In Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	12	42.86	42.86	43% of these 28 dealers buy all of their scrap in their province, whereas the other 57% buy some of it from outside.
2	Some	16	57.14	100	
3	Total	28	100		

Table 74: Dealers who buy scrap metal throughout Vietnam					
Ser	Outside Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	0	0	0	All of these 7 dealers buy some of their scrap metal from outside of their province.
2	Some	7	100	100	
3	Total	7	100		

Table 75: Dealers who buy scrap metal from outside Vietnam					
Ser	Outside Vietnam	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	0	0	0	1 dealer buys some scrap metal from outside of Vietnam.
2	Some	1	100	100	
3	Total	1	100		

Table 76: Dealers who sell scrap metal in their commune					
Ser	In commune	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	38	77.55	77.55	77% of these 48 dealers sell all of their scrap in their commune.
2	Some	11	22.45	100	
3	Total	**49**	**100**		

Table 77: Dealers who sell scrap metal in their district					
Ser	In District	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	36	76.6	76.6	76% of these 47 dealers sell all of their scrap in their district.
2	Some	11	23.4	100	
3	Total	**47**	**100**		

Table 78: Dealers who sell scrap metal in their province					
Ser	In Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	31	73.81	73.81	74% of these 42 dealers sell all of their scrap in their province, whereas the other 26% sell some of it outside.
2	Some	11	26.19	100	
3	Total	**42**	**100**		

Table 79: Dealers who sell scrap metal throughout Vietnam					
Ser	Outside Province	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	11	55	55	11 of these dealers sell all of their scrap metal outside of their province, whilst 9 sell some of it outside.
2	Some	9	45	100	
3	Total	**20**	**100**		

Table 80: Dealers who sell scrap metal outside Vietnam					
Ser	Outside Vietnam	Frequency	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	All	0	0	0	1 dealer sells some scrap metal outside of Vietnam.
2	Some	1	100	100	
3	Total	1	100		

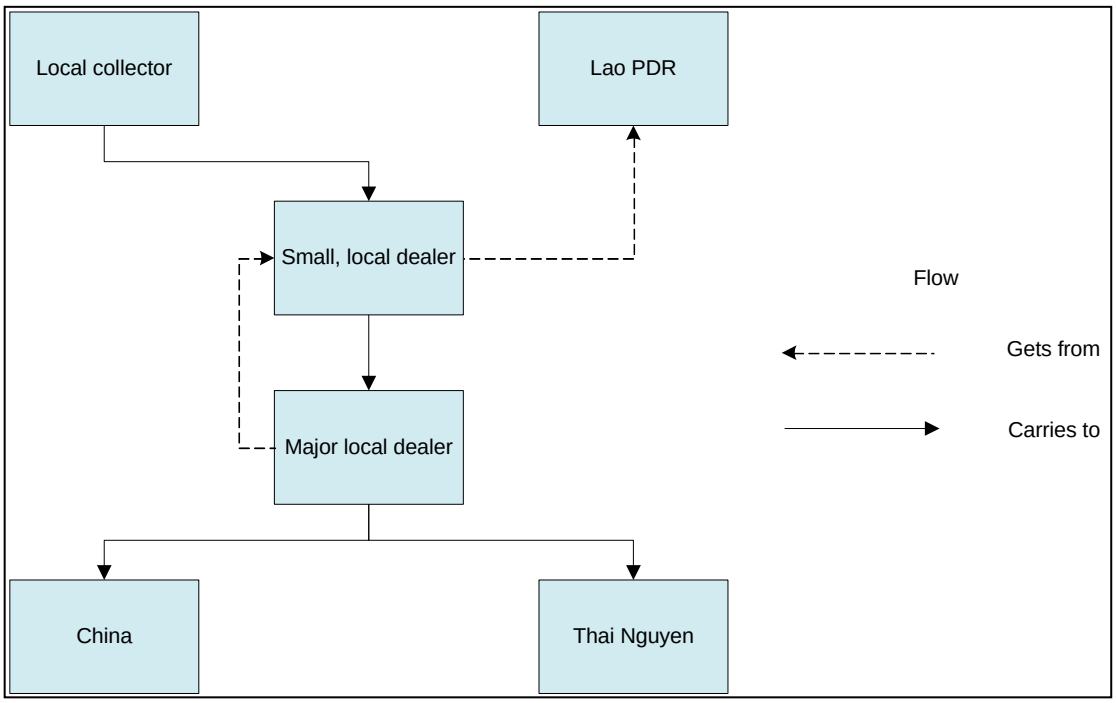


Figure 64. Graphical description of the scrap metal sector in the three provinces in the study. Thai Nguyen is a major metal company in Vietnam. Note that according to the data most trade, however, is local.

Section Three: Neighbours of scrap metal dealers

Demographics

Table 81: Distribution of respondents (neighbours) between Provinces					
Ser	Province	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	24	57.14	57.14	
2	Quang Tri	12	28.57	85.71	
3	Quang Binh	6	14.29	100.00	
4	Total	42	100.00		

Table 82: Distribution of respondents (neighbours) between Districts					
Ser	District	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	12	28.57	28.57	
2	Huong Tra	11	26.19	54.76	
3	Phong Dien	1	2.38	57.14	
4	Trieu Phong	12	28.57	85.71	
5	Le Thuy	1	2.38	88.10	
6	Dong Hoi	4	9.52	97.62	
7	Minh Hoa	1	2.38	100.00	
8	Total	42	100.00		

Table 83: Distribution of respondents (neighbours) between Communes					
Ser	Commune	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Ai Tu	3	7.14	7.14	
2	An Cuu	1	2.38	9.52	
3	An Hoa	3	7.14	16.67	
4	Bac ly	1	2.38	19.05	
5	Binh Dien	4	9.52	28.57	
6	Binh Thanh	3	7.14	35.71	
7	Loc Ninh	3	7.14	42.86	
8	Phong Son	1	2.38	45.24	
9	Phu Bai	4	9.52	54.76	
10	Quy Dat	1	2.38	57.14	
11	Thanh Thuy	1	2.38	59.52	
12	Thuy Chau	2	4.76	64.29	
13	Thuy Phu	4	9.52	73.81	
14	Thuy Phuong	1	2.38	76.19	
15	Thuy chau	1	2.38	78.57	
16	Trieu Ai	5	11.90	90.48	
17	Trieu Giang	1	2.38	92.86	
18	Trieu Thuong	3	7.14	100.00	
19	Total	42	100.00		

Table 84: The mean age of neighbours							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Age	39	45.23	13.70	24	74	

Table 85: Distribution of gender amongst neighbours					
Ser	Gender	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	24	57.14	57.14	
2	Male	18	42.86	100.00	
3	Total	42	100.00		

Table 86: Distribution of gender amongst neighbours, disaggregated by Province					
Ser	Province	Gender		Total	Remarks
		Female	Male		
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	16	8	24	
2	Quang tri	6	6	12	
3	Quang Binh	2	4	6	
4	Total	24	18	42	

Knowledge attitude and practices

Table 87: Attitude about their neighbour (dealer) buying UXO					
Ser	Attitude	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Always anxious	5	13.51	13.51	This contrasts with attitude of dealers and collectors to risk – it suggests that the neighbours might be less comfortable if they knew how the dealers and collectors felt!
2	a little anxious	10	27.03	40.54	
3	Normal	22	59.46	100.00	
4	Total	37	100.00		

Table 88: Number that witnessed UXO accident happen to their neighbour (dealer)					
Ser	Witnessed	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	39	95.12	95.12	
2	Yes	2	4.88	100.00	
3	Total	41	100.00		

Table 89: Did their neighbour the dealer continue to do this job after UXO accident happened					
Ser	Continued	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	1	14.29	14.29	Team interviewed 42 people, but only 7 could/would answer this question.
2	Yes	4	57.14	71.43	
3	Don't know	2	28.57	100.00	
4	Total	7	100.00		

Section Four: Victims (former scrap metal collectors)

Demographics

Table 90: Distribution of respondents (Victims) between Provinces					
Ser	Province	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	19	37.25	37.25	
2	Quang Tri	27	52.94	90.20	
3	Quang Binh	5	9.80	100.00	
4	Total	51	100.00		

Table 91: Distribution of respondents (Victims) between Districts					
Ser	Province	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	8	15.69	15.69	
2	Huong Tra	3	5.88	21.57	
3	Phong Dien	8	15.69	37.25	
4	Trieu Phong	18	35.29	72.55	
5	Dong Ha	4	7.84	80.39	
6	Dakrong	5	9.80	90.20	
7	Le Thuy	3	5.88	96.08	
8	Minh Hoa	2	3.92	100.00	
9	Total	51	100.00		

Table 92: The mean age of victims							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Age	50	40.84	14.01	8[12]	71	

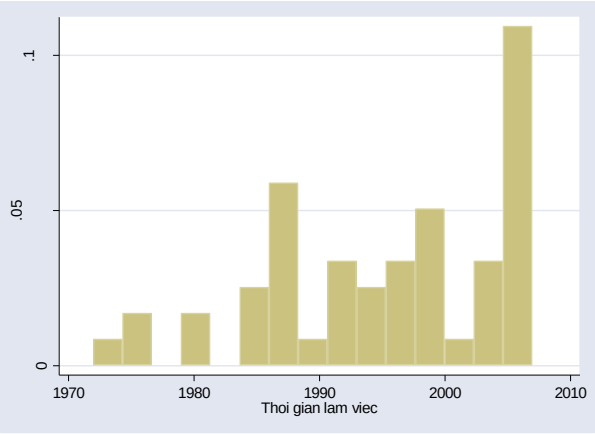
Table 93: Gender statistics					
Ser	Gender	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	3	5.88	5.88	
2	Male	48	94.12	100.00	
3	Total	51	100.00		

Table 94: Gender statistics, disaggregated by Province					
Ser	Province	Gender		Total	Remarks
		Female	Male		
(a)	(b)	(c)	(d)	(e)	(f)
1	TT Hue	2	17	19	
2	Quang tri	1	26	27	
3	Quang Binh	0	5	5	
4	Total	3	48	51	

[12] His name is Phan Ngoc tuan. Address: Phu Bai town, Huong Thuy district. Year of accident: 2007

Table 95: Year victims began to collect scrap metal									
Ser	Year	Freq	Percent	cumulative	Year	Freq	Percent	cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(g)	(i)	(j)
1	1972	1	1.96	1.96	1996	1	1.96	47.06	
2	1976	2	3.92	5.88	1997	3	5.88	52.94	
3	1979	2	3.92	9.80	1998	5	9.80	62.75	
4	1985	3	5.88	15.69	1999	1	1.96	64.71	
5	1986	1	1.96	17.65	2001	1	1.96	66.67	
6	1987	1	1.96	19.61	2003	3	5.88	72.55	
7	1988	5	9.80	29.41	2004	1	1.96	74.51	
8	1989	1	1.96	31.37	2005	2	3.92	78.43	
9	1991	3	5.88	37.25	2006	6	11.76	90.20	
10	1992	1	1.96	39.22	2007	5	9.80	100.00	
11	1993	3	5.88	45.10	Total		100.00		

Table 96: Year of accident									
Ser	Year	Freq	Percent	cumulative	Year	Freq	Percent	cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	1969	1	2.00	2.00	1993	1	2.00	62.00	
2	1976	2	4.00	6.00	1994	2	4.00	66.00	
3	1978	3	6.00	12.00	1995	4	8.00	74.00	
4	1979	2	4.00	16.00	1996	1	2.00	76.00	
5	1981	1	2.00	18.00	1997	1	2.00	78.00	
6	1982	2	4.00	22.00	1998	2	4.00	82.00	
7	1985	1	2.00	24.00	1999	1	2.00	84.00	
8	1986	1	2.00	26.00	2000	1	2.00	86.00	
9	1987	1	2.00	28.00	2001	1	2.00	88.00	
10	1988	2	4.00	32.00	2002	1	2.00	90.00	
11	1989	3	6.00	38.00	2004	2	4.00	94.00	
12	1990	3	6.00	44.00	2006	2	4.00	98.00	
13	1991	5	10.00	54.00	2007	1	2.00	100.00	
14	1992	3	6.00	60.00	Total		100.00		



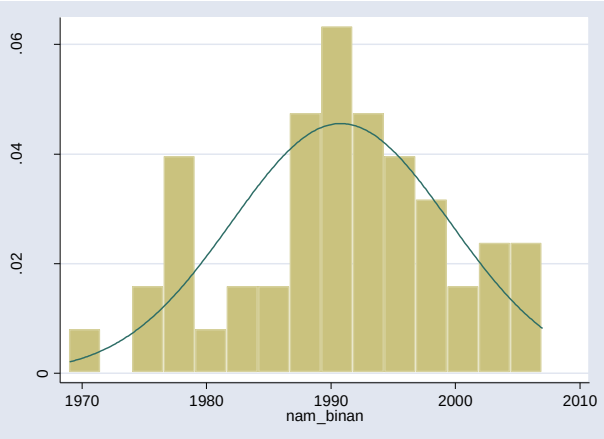


Figure 65 (Left). Year victims began to collect scrap metal

Figure 66 (Right). Year of accident

Economics

Table 97: Primary occupation at time of accident				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Agriculture	50	26.00	These numbers do not sum to 100% as people can have more than one occupation
2	Forestry	50	0.00	
3	Business	50	0.00	
4	Collecting	50	90.00	
5	Dealing	50	0.00	
6	Pupil/student	50	10.00	
	Worker/hired labour	50	14.00	

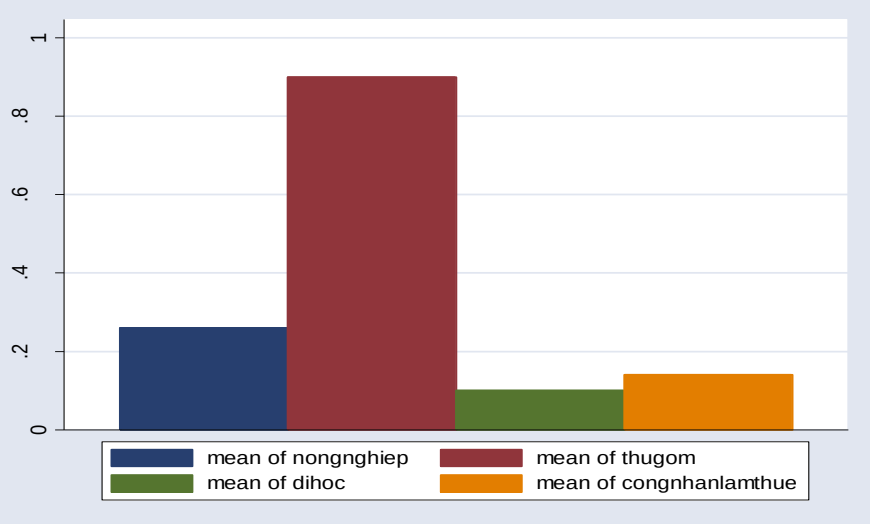
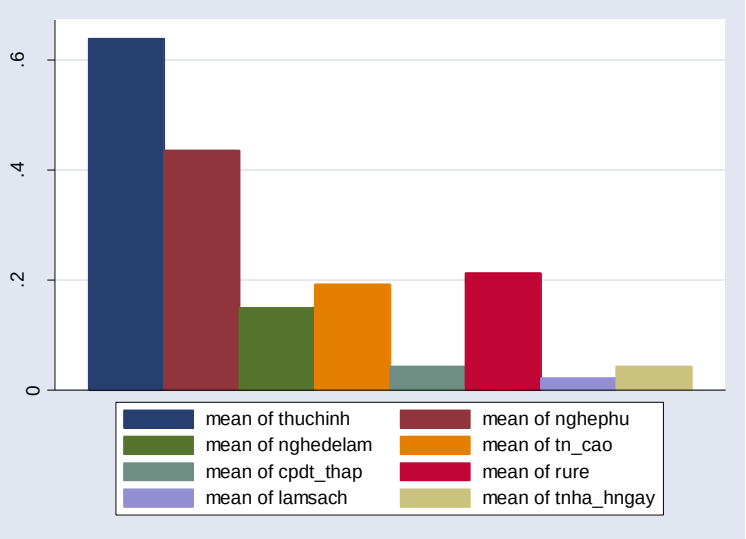


Figure 67. Occupations of victims at time of accident

Key to Figure 67			
	Agriculture		collecting
	Pupil/Student		Worker/hired labour

Table 98: The reasons why victims collect scrap metal when they think that this job is not safe				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Main income	47	63.83	
2	Secondary job	47	43.48	
3	Easy job	47	14.89	
4	High income	47	19.15	
5	Low investment	47	4.26	
6	Follow the others	47	21.28	
7	Land clearance	47	2.13	
8	Daily income	47	4.26	

Figure 68. Reasons why victims collected scrap metal even when they thought it was not safe.

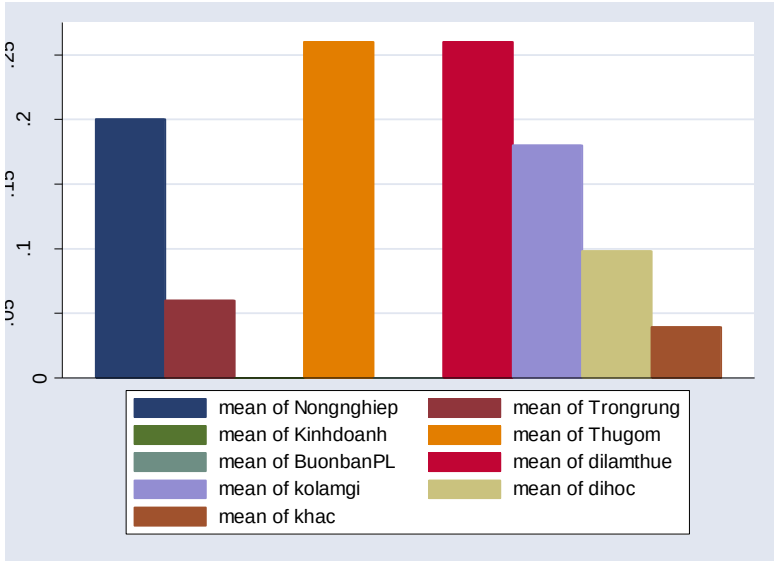


Key for Figure 68	
Main income	Secondary job
Easy job	High income
Low investment	Follow the others
Land clearance	Daily income

Table 99: Current occupation of victims

Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Agriculture	50	20.00	
2	Forest	50	6.00	
3	Business	50	0.00	
4	Collecting	50	26.00	
5	Dealing	50	0.00	
6	Worker/hired labour	50	26.00	
7	Unemployed	50	18.00	
8	Pupil/student	50	9.80	
9	Other	50	3.92	

Figure 69. Current occupation of victims



Key to Figure 69	
Agriculture	Forestry
Business	Collecting
Dealing	Hired labour
Unemployed	student
other	

Knowledge attitudes and practices

Table 100: Number of accidents per victim					
Ser	No of accident	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	One time	41	80.39	80.39	
2	Many times	10	19.61	100.00	
3	Total	51	100.00		

Table 101: The reason why victims thought it was safe					
Ser	The reason	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Didn't know it was dangerous	4	44.44	44.88	"Economic excuse" is interpreted to mean knew but had no choice
2	Economic excuse	4	44.44	88.89	
3	Other	1	11.11	100.00	
4	Total	9	100.00		

Table 102: Exposure to MRE amongst victims					
Ser	Had MRE	Freq.	Percent	Cum.	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	6	12.24	12.24	
2	Yes	43	87.76	100.00	
3	Total	49	100.00		

Table 103: Exposure to MRE amongst victims , disaggregated by MRE activity				
Ser	Source	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Community	45	57.78	
2	School	45	22.22	
3	Television	45	80.00	
4	Radio	45	22.22	
5	Poster	45	13.33	
6	Military	45	2.22	
7	(NGO)Project	45	17.78	

Figure 70. Types of MRE exposed to victims

Key for Figure 70	
Community	School
Television	Radio
Poster	Military
Project	

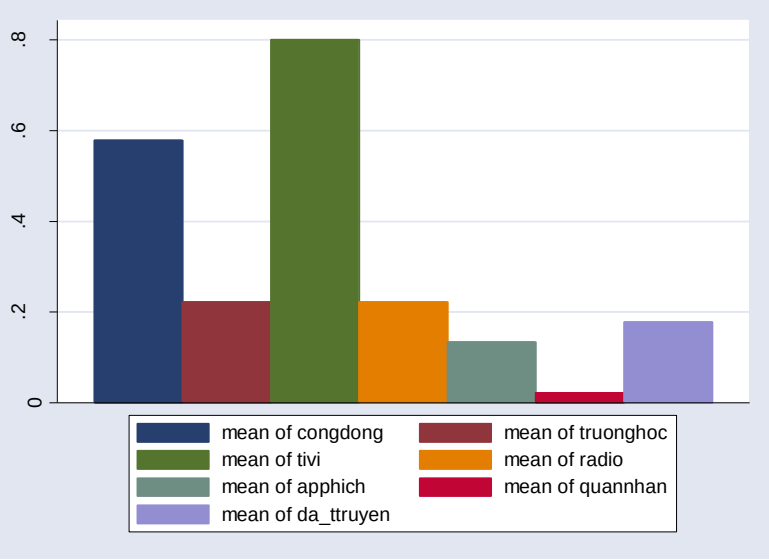
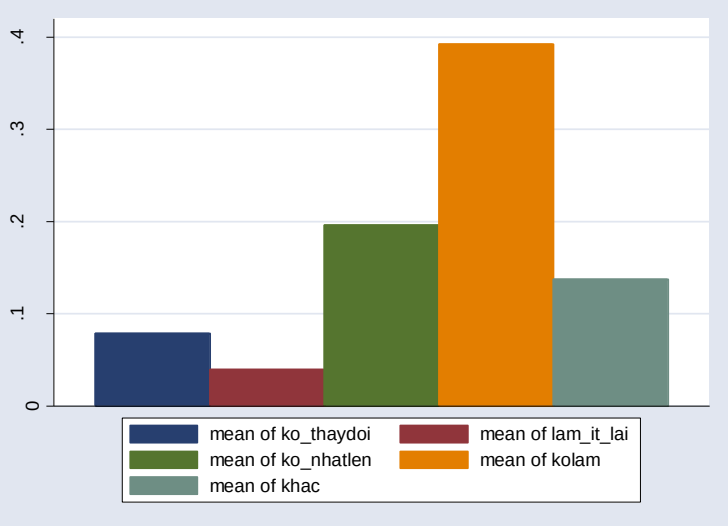


Table 104: Effect of MRE on behaviour of victims				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	No change	51	7.84	
2	Reduce collecting	51	3.92	
3	No picking up UXO	51	19.61	
4	Stop doing this job	51	39.22	
5	Other	51	13.73	

Figure 71. Effect of MRE on victim behaviour.



Key for Figure 71	
No change	Reduce collecting
No picking up UXO	Stop doing this job
Other	

Table 105: Personal risk assessment (before accident)					
Ser	Thought to be safe	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Yes	7	13.73	13.73	
2	No	38	74.51	88.24	
3	No ideas	6	11.76	100.00	
4	Total	51	100.00		

Table 106: Activity at time of accident as reported by victim				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Detecting	51	5.88235	There is one person who met accident 2 times. The first time he had accident when he was detecting, but the second time he was hurt when he was digging. This is why Column (d) does not sum to 100%
2	Digging	51	50.98039	
3	Transporting	51	3.92157	
4	Make it safe	51	39.21569	
5	Other	51	9.80392	

Table 107: Type of injuries amongst victims				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Lost leg	51	19.61	
2	Small injuries	51	33.33	May include multiple lacerations
3	Arm-eye loss	51	58.82	
4	Other	51	31.37	Includes: stomach, spine, head, face
5	Total			Does not sum to 100% because some casualties have more than one type of injury

Figure 72. Victim activity at time of accident

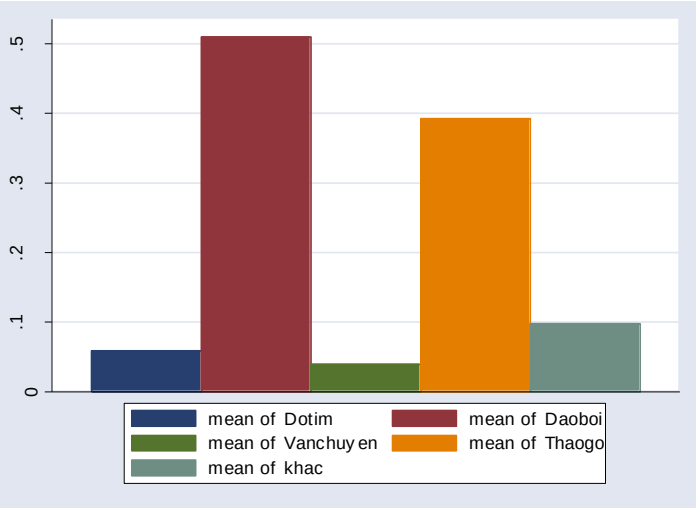


Figure 73. Types of injuries amongst victims

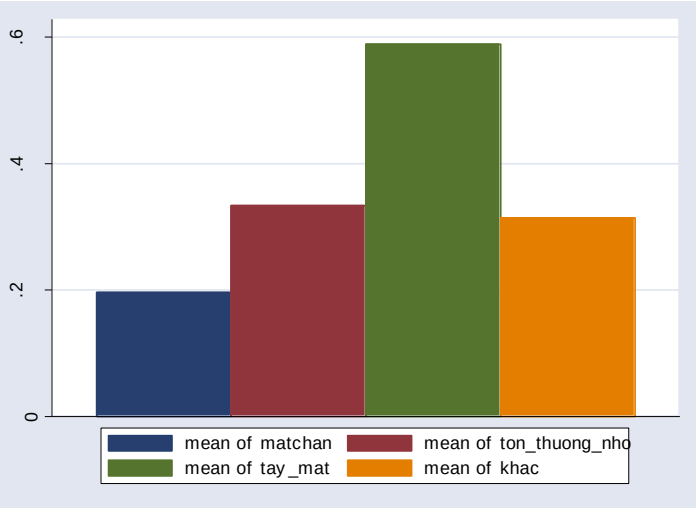


Table 108: Distribution of type of accident amongst victims

Ser	Injury	Freq	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	1	6	11.76	11.76	
2	1,2,3	1	1.96	13.73	
3	1,3	3	5.88	19.61	
4	2	7	13.73	33.33	
5	2,3	6	11.76	45.10	
6	2,4	3	5.88	50.98	
7	3	12	23.53	74.51	
8	3,4	8	15.69	90.20	
9	4	5	9.80	100.00	
10	Total	51	100.00		

Table 109: Do others in your family continue collecting?

Ser	Response	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	34	68.00	68.00	
2	Yes	16	32.00	100.00	
3	Total	50	100.00		

Section Five: Families of dead victims

Demographics

Table 110: Mean age of respondents							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Age	47	48.58	15.32	18	88	

Table 111: Distribution of respondents by gender					
Ser	Gender	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	38	73.08	73.08	
2	Male	14	26.92	100.00	
3	Total	52	100.00		

Table 112: Distribution of respondents by gender, disaggregated by Province					
Ser	Province	Female	Male	Total	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	22	6	28	
2	Quang Tri	10	7	17	
3	Quang Binh	6	1	7	
4	Total	38	14	52	

Table 113: Distribution of respondents between Provinces					
Ser	Province	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	28	28	53.85	
2	Quang Tri	17	32.69	86.54	
3	Quang Binh	7	13.46	100.00	
4	Total	52	52	100.00	

Table 114: Distribution of respondents between Districts					
Ser	District	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	7	13.46	13.46	
2	Huong Tra	16	30.77	44.23	
3	Phong Dien	5	9.62	53.85	
4	Trieu Phong	13	25.00	78.85	
5	Dong Ha	2	3.85	82.69	
6	Dakrong	2	3.85	86.54	
7	Le Thuy	5	9.62	96.15	
8	Minh Hoa	2	3.85	100.00	
9	Total	52	100.00		

Table 115: Distribution of respondents between Districts and Provinces						
Ser	District	Province			Total	Remarks
		Hue	Quang Tri	Quang Binh		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Huong Thuy	7	0	0	7	
2	Huong Tra	16	0	0	16	
3	Phong Dien	5	0	0	5	
4	Trieu Phong	0	13	0	13	
5	Dong Ha	0	2	0	2	
6	Dakrong	0	2	0	2	
7	Le Thuy	0	0	5	5	
8	Minh Hoa	0	0	2	2	
9	Total	28	17	7	52	

Table 116: Distribution of respondents between Communes					
Ser	Commune	Freq.	Percent	Cum.	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Ai Tu	4	8.00	8.00	
2	Binh Dien	14	28.00	36.00	
3	Binh Thanh	2	4.00	40.00	
4	Hoa Hop	1	2.00	42.00	
5	Huong Hiep	2	4.00	46.00	
6	Kien Giang	1	2.00	48.00	
7	Phong An	4	8.00	56.00	
8	Phong Son	1	2.00	58.00	
9	Phu Bai	6	12.00	70.00	
10	Phuong 5	2	4.00	74.00	
11	Quy Dat	1	2.00	76.00	
12	Thanh Thuy	2	4.00	80.00	
13	Thuy Phu	1	2.00	82.00	
14	Trieu Ai	5	10.00	92.00	
15	Trieu Giang	2	4.00	96.00	
16	Trieu Thuong	2	4.00	100.00	
17	Total	50	100.00		

Table 117: The number of collectors in family (before accident)							
Ser	Variable	Obs	Mean	Std. Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Number	52	1.89	1.04	1	5	
2			Mean	Std. Err.	95% Conf. Interval		
3			1.89	0.14	1.60 - 2.18		

Table 118: No of collectors in victim's families disaggregated by Province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	TT Hue	Number	28	1.79	1.03	1	4	
2	Quang Tri		17	1.94	0.90	1	4	
3	Quang Binh		7	2.14	1.46	1	5	

Figure 74. No of collectors in victims' families, disaggregated by Province

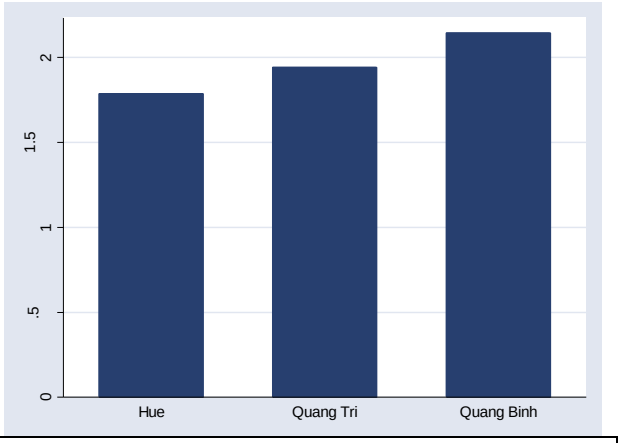


Table 119: Families who had injured and dead members					
Ser	Injured	Freq.	Percent	Cumulative.	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	26	50.00	50.00	
2	Yes	26	50.00	100.00	
3	**Total**	**52**	**100.00**		

Economics

Table 120: Families that receive support					
Ser	Supported	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	34	65.38	65.38	
2	Yes	18	34.62	100.00	
3	Total	52	100.00		

Table 121: Families that receive support, disaggregated by Province					
Ser	Province	Supported		Total	Remarks
		No	Yes		
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	20	8	28	
2	Quang Tri	9	8	17	
3	Quang Binh	5	2	7	
4	Total	34	18	52	

Table 122: Difficulties faced by victims' families				
Ser	Variable	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Decrease income	52	84.62	
2	Hospital fees	52	34.62	
3	Psycho-social problems	52	30.77	
4	Other	52	5.77	

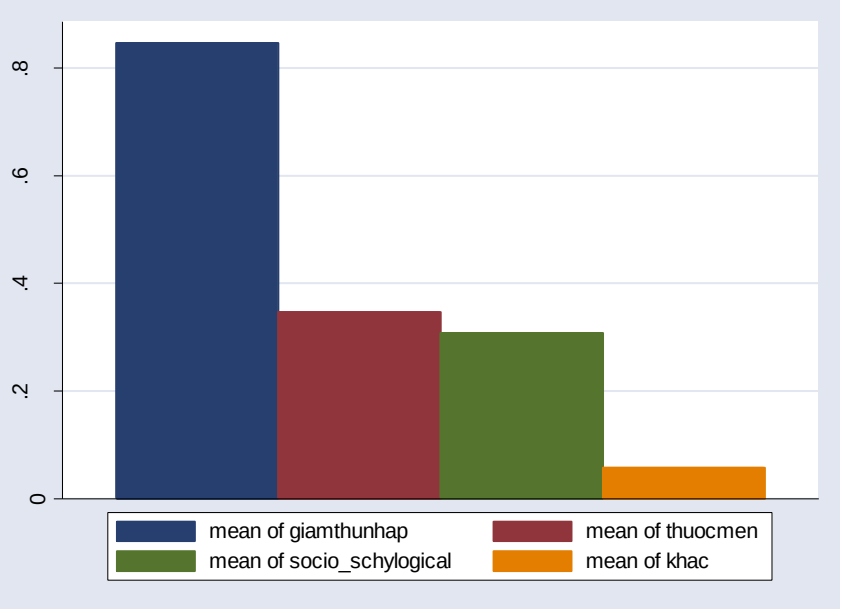


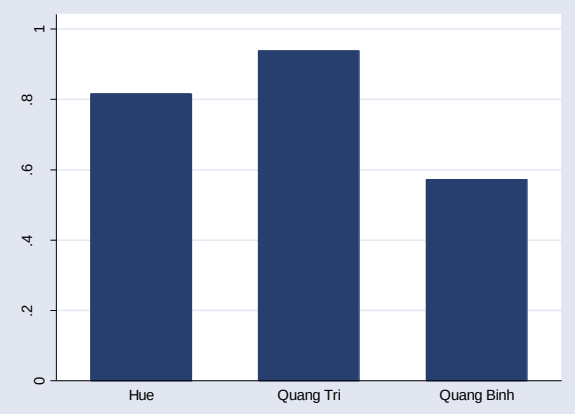
Figure 75. Difficulties faced by victims' families.

Knowledge attitude and practices

Table 123: Exposure to MRE amongst victims' families					
Ser	Had MRE	Freq.	Percent	Cumulative.	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	No	9	18.00	18.00	
2	Yes	41	82.00	82.00	
3	Total	50	100.00		

Table 124: Exposure to MRE amongst victim families, by Province					
Ser	Province	MRE		Total	Remarks
		No	Yes		
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	5	22	27	
2	Quang Tri	1	15	16	
3	Quang Binh	3	4	7	
4	Total	9	41	50	

Table 125: Exposure to MRE amongst victims , disaggregated by MRE activity				
Ser	Source	Obs	Percent	Remarks
(a)	(b)	(c)	(d)	(e)
1	Community	42	61.91	
2	School	42	19.05	
3	TV	42	78.57	
4	Radio	42	21.43	
5	Poster	42	21.43	
6	Military	42	4.76	
7	Other	42	7.14	



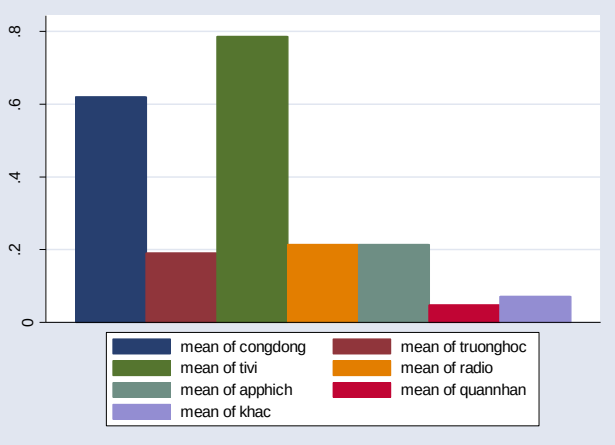


Figure 76 (Left). Exposure to MRE amongst victim families, by Province

Figure 77 (Right). Types of MRE exposed to victims' families

Table 126: People who continue to collect even with fatalities in their family					
Ser	Do you worry?	Freq.	Percent	Cumulative	Remark
(a)	(b)	(c)	(d)	(e)	(f)
1	No	4	25.00	25.00	
2	Yes	12	75.00	100.00	
3	Total	16	100.00		

Section Six: Officials

Demographics

Table 127: Distribution of respondents between Provinces					
Ser	Province	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Hue	27	36.99	36.99	
2	Quang Tri	16	21.92	58.90	
3	Quang Binh	30	41.10	100.00	
4	Total	73	100.00		

Table 128: Distribution of respondents between Districts					
Ser	District	Freq.	Percent	Cumulative	
(a)	(b)	(c)	(d)	(e)	(f)
1	Huong Thuy	17	23.29	23.29	
2	Huong Tra	8	10.96	34.25	
3	Phong Dien	2	2.74	36.99	
4	Trieu Phong	11	15.07	52.05	
5	Dong Ha	2	2.74	54.79	
6	Dakrong	3	4.11	58.90	
7	Le Thuy	10	13.70	72.60	
8	Dong Hoi	5	6.85	79.45	
9	Minh Hoa	15	20.55	100.00	
10	Total	73	100.00		

Table 129: Distribution of respondents between Provinces and Districts						
Ser	District	Province				Remarks
		Hue	Quang Tri	Quang Binh	Total	
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Huong Thuy	17			17	
2	Huong Tra	8			8	
3	Phong Dien	2			2	
4	Trieu Phong		11		11	
5	Dong Ha		2		2	
6	Dakrong		3		3	
7	Le Thuy			10	10	
8	Dong Hoi			5	5	
9	Minh Hoa			15	15	
10	Total	27	16	30	73	

Table 130: Mean age of respondents (Officials)						
Ser	Variable	Obs	Mean	Std. Err.	95% Conf. Interval	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Age	60	45.27	1.31	42.65 - 47.88	

Table 131: Distribution of respondents by gender (Officials)					
Ser	Gender	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Female	9	12.33	12.33	
2	Male	64	87.67	100.00	
3	Total	73	100.00		

Economics

Table 132: Official estimation of the number of collectors							
Ser	Estimate	Obs	Mean	Std. Dev	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	Now	71	61.79	253.36	0	1800	The wide range in the data values suggest these estimates are inaccurate
2	1 year ago	69	78.33	329.64	0	2500	
3	5 years aqo	66	158.17	614.18	0	4500	

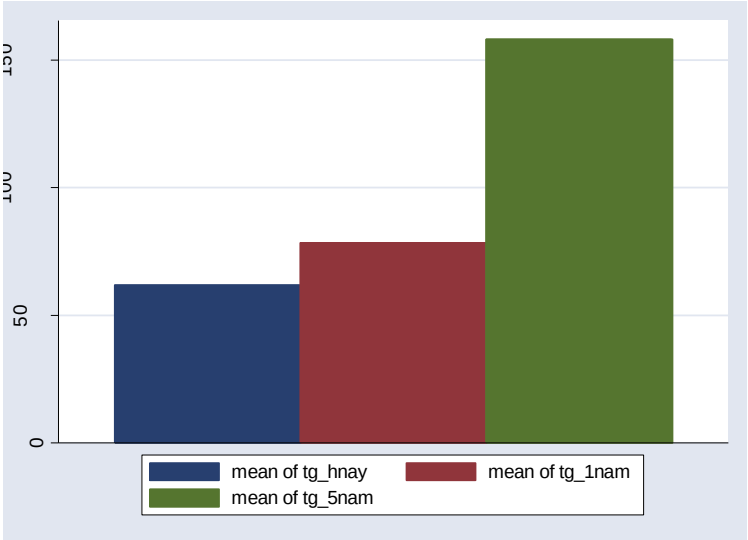


Figure 78. Official estimates of trend over time in terms of number of scrap metal collectors.

Table 133: Official estimates of trend over time in terms of number of scrap metal collectors, disaggregated by Province								
Ser	Province	variable	obs	mean	Std.Dev.	Min	Max	Remarks
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Hue	Now	27	127.33	404.60	2	1800	
2		1 year ago	25	171.04	539.30	2	2500	
3		5 years ago	25	343.68	976.72	6	4500	
4	Quang Tri	Now	16	46.56	44.30	4	157	
5		1 year ago	16	48.56	53.40	0	209	
6		5 years ago	15	81.80	111.98	0	413	
7	Quang Binh	Now	28	7.29	13.37	0	50	
8		1 year ago	28	12.57	24.21	0	100	
9		5 years ago	26	23.85	35.42	0	150	

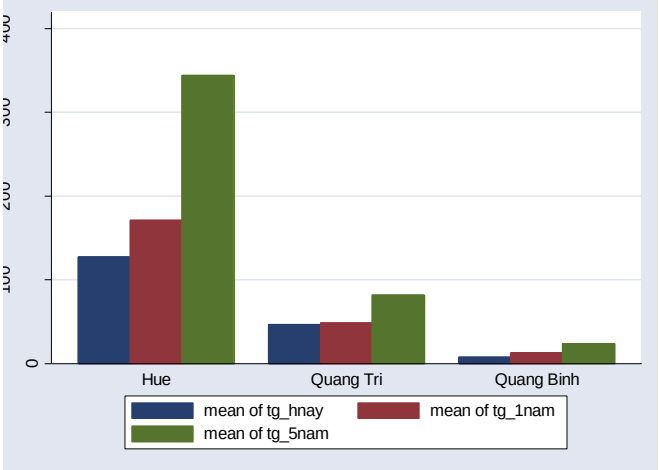


Figure 79. Official estimates of trend over time in terms of number of scrap metal collectors, disaggregated by Province.

Knowledge attitude and practices

Table 134: Official understanding of legality					
Ser	Understanding	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Illegal	47	75.81	75.81	Most officials understand this issue to be illegal; however 25% believe otherwise
2	Legal	15	24.19	100.00	
3	Total	62	100.00		

Table 135: Official understanding of legality, disaggregated by Province						
Ser	Understanding	Province			Total	Remarks
		TT Hue	Quang Tri	Quang Binh		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Illegal	15	7	25	47	
2	Legal	8	4	3	15	
3	Total	23	11	28	62	

Table 136: Official understanding of future plans for livelihood support for collectors					
Ser	Understanding	Freq.	Percent	Cumulative	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Yes	25	34.72	34.72	
2	No	45	62.50	97.22	
3	Unknown	2	2.78	100.00	
4	Total	72	100.00		

Table 137: Official understanding of future plans for livelihood support for collectors, disaggregated by Province						
Ser	Province	Understanding			Total	Remarks
		Yes	No	Unknown		
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1	Hue	14	13	0	27	
2	Quang Tri	8	6	2	16	
3	Quang Binh	3	26	0	29	
4	Total	25	45	2	72	

Feedback

The study team were able to present their initial findings at a presentation to the mine action community in Vietnam on 5 May 2008. In general the audience endorsed the findings of the team with anecdotes of their own experience relevant to this issue. However, there was one recurrent theme in the presentations; the confusion over terminology as it applies to scrap metal collecting in this issue. The diagram at Figure 80 below is an attempt to clarify the terminology in this context.

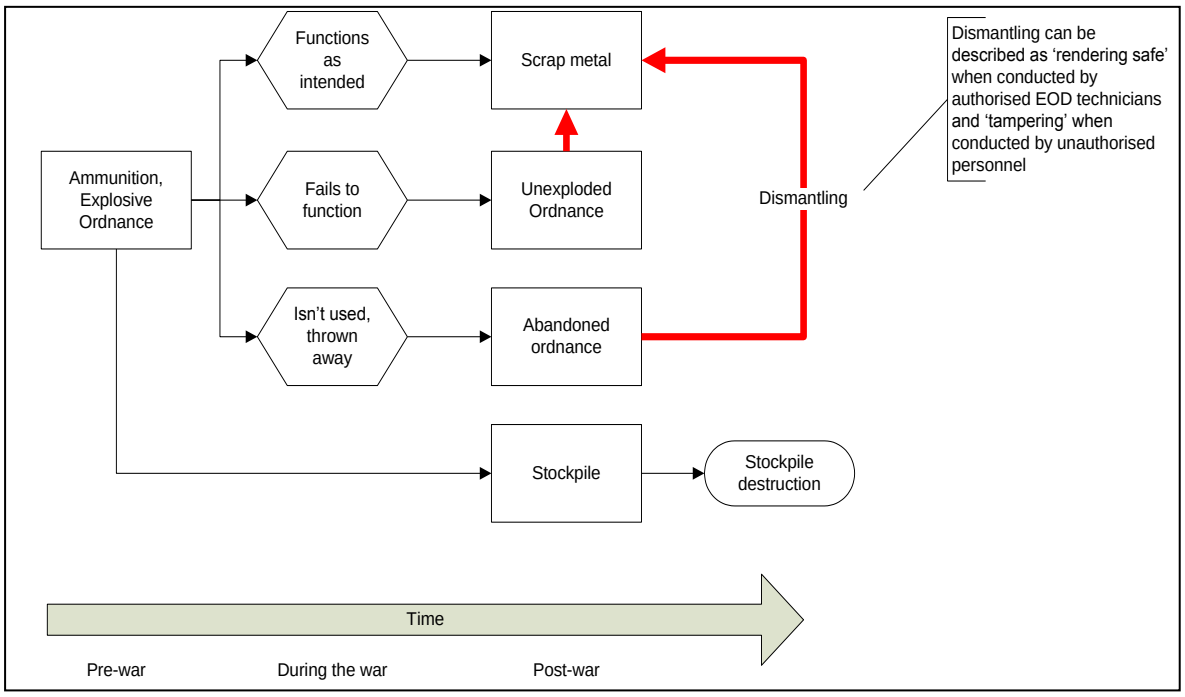


Figure 80. A flow chart showing the relationship of different terms used to describe explosive ordnance or ammunition during its life. The red arrows show where scrap metal collectors or dealers are conducting illegal activity in terms of Vietnamese law.

Several participants in the workshop felt the need to emphasise the valid point that collecting or handling scrap metal itself is not illegal in Vietnam nor is it dangerous. Indeed, the vast majority of the scrap handled in dealers are simply pieces of iron. The collectors are not out looking for bombs; they are looking for metal. Indeed the data suggests that collectors who find UXO that they consider too dangerous to move (predominantly cluster munitions) will leave them where they are. The issues are:

- When a collector who has an indication on his metal detector accidentally detonates a UXO before he finds out what it is, normally during the excavation process (i.e. an issue of *safety*)

- When someone, be it collector or dealer, attempts to deliberately dismantle ordnance in order to get to its components (i.e. an issue of both *safety* and *legality*).

The legal paradigm is discussed below in the section on this report dealing with the findings of this study.

Figure 81. Vietnamese scrap metal dealers observed working in Khammouane Province, Lao PDR (opposite the province of Quang Binh) during the time of this study.

PART FIVE: Summary of Findings

Extent of the problem (demographics)

The large numbers found by CSSH reveal how widespread this activity actually is. There is likely to be a 'dark figure' of others that have not been found by the methodology used by the study, which was a sample, not a census. For example, the Team identified that in Tua Thien Hue there were actually 182 casualties from scrap metal collection who could have been interviewed. The activity is not quite so visible to casual observers today because collectors follow construction work or go deeper into the forest than they did before (scrap collection was much more visible in 2002 when work was being done on Route 1).

A significant number of women (around 19%) are involved in collection. There is a wide age range, although most scrap metal collectors are adult men. A spike of elder children is also visible, suggesting that older children who have not yet found a full time job use this as income generation. Some 20% of respondents admitted to involving children in collection.

Official estimates suggest the number of people engaged in this trade is decreasing, although the wide range of values in the data, suggest that their estimates on actual numbers are not very accurate.

Economics

There is a wide variance in the numbers of days worked, with some people collecting UXO as an income supplement for a few days a month, with others engaged full time. Similarly there is a variance in seasonality, with some people collecting all year round and others collecting only in the dry season. It is possible that the increase in activity in the dry season is due to a 'hunger gap' between crops.

Although the data suggests a downward trend, interviews with some villagers suggest that they feel there will be no shortage of scrap in the foreseeable future. However it is likely they will have to travel further from the main population centres to find it. Less metal is being found, but on the other hand its value per kg is increasing.

Activity has been found to be clustered in communities. This may make a suitable development intervention feasible to improve the economic circumstances of the target communities and remove the incentives to collect scrap. The PRA conducted in Quang Binh does suggest that alternative livelihoods can help people wean themselves off of dependence on scrap metal collecting, though the other two PRA also suggest that the identification of suitable alternative livelihood strategies is not easy, and may be impossible for villagers without economic assistance.

Scrap metal collection is done to find metal, not UXO *per se*. Some collectors report that they will leave behind UXO that they consider dangerous. This means that land that has been processed by scrap metal collectors is not necessarily clear.

The survey has found that scrap metal collection is being done for cash/income generation. Current price is around 3,600 VND/kg. It is not an ancillary of UXO clearance activities to clear access to land. This has implications for any possible 'village assisted clearance'

interventions as discussed in the focus group. The higher costs of food and fuel at the time of writing, plus high interest, may encourage scrap metal collectors to continue undertaking the activity.

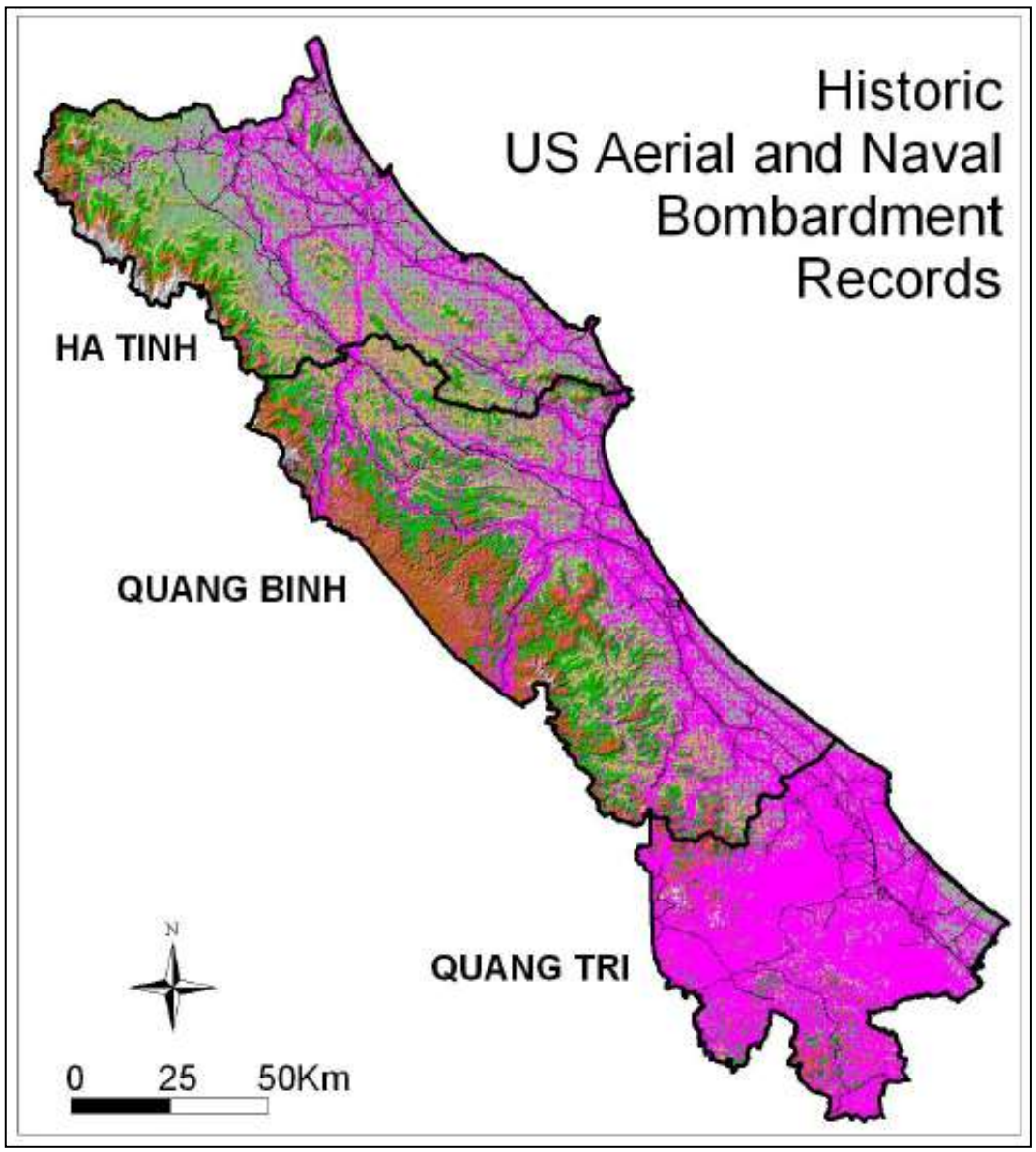


Figure 82. US bombing map as extracted from the BOMICEN survey.

There appears to be comparatively little activity in Quang Binh province compared to the other two provinces. This *may* be an artefact of the snowball sampling process; however there are other three pieces of data that support this differential. The first is the US bombing data, as recorded in the BOMICEN survey mentioned in the literature review. The map shown at Figure 82 above is from the BOMICEN survey and it clearly shows a marked difference in the amount of US bombing missions (shown in purple) dropped in Quang Binh and Quang Tri. The second source of information in this regard is the PRA conducted in Quang Binh, which also mentions a number of reasons why scrap collection has reduced in that community. Thirdly, the price for scrap is higher in Quang Binh than in the other two provinces: this may reflect a relative scarcity of scrap in the local market.

The volume of activity appears to be commensurate with price. Discussion with one collector suggests that a fall in the price of scrap to VND 1500/kg would be sufficient for him to leave the market. Quantitative data supports this finding, with some respondents stating they would leave the market at VND2000/kg and others saying they would leave if the price fell under VND1000/kg. More than 50% of 136 respondents said that they would leave the market if the price fell below VND2000/kg. However, many respondents who said that they would only leave if the price fell below VND1000/kg, also say they would have to stay in the business at whatever price, as they have no alternative.

The two main attractions of collecting scrap are the comparative high income and the ease of entering the market. The data provides an indication of the low cost of detectors, and there is anecdotal evidence that in some cases collectors are able to borrow or rent detectors from dealers, again reducing the barriers to entry.

There is some evidence of specialisation within the scrap metal collection business. Whilst most collectors use the famous cheap detectors that are also exported to Lao PDR (where they can be purchased for around $12[13]), there are a significant number of respondents who are buying more expensive metal detectors able to detect scrap at a greater depth than the common detectors.

There is a widespread scrap metal dealer network. Some small dealers travel to Lao PDR to buy scrap from collectors there, with the scrap ending up in major dealers and in China. Of course, most scrap handled by the dealers is not UXO, even though a large proportion of the raw scrap may be bits of bomb fragments. It appears that UXO are neutralised at a local level before being passed on to major dealers.

On average, only 34% of victims' families received some form of external support. Of these, the greatest by proportion are those in Quang Tri Province.

The greatest problem faced by families of victims' is lack of income as a result of their loss. However, as significant proportion reported that hospital fees and psycho-social issues were also problems for them.

Knowledge, attitude and practices

There were a large numbers of casualties identified by the survey process; indeed the ratio of casualties amongst collectors interviewed is around 1 in 10. However this figure is conservative as it does not fully take account of casualties that are no longer capable of collecting. A full census would be needed to provide a more accurate figure. There is a significantly smaller number of casualties reported amongst dealers. The comparatively low number of casualties amongst dealers (1/55 compared to 1/10 for collectors) may suggest that dealers' contract out' risk through only accepting non-hazardous UXO, thus encouraging collectors to attempt to "make them safe" before taking them to the dealers.

[13] Based on a visit by the author to Savanakhet Province in Lao PDR, June 2008.

Most casualties occur when collectors attempt to excavate the source of an indication on their metal detectors. The problem is probably exacerbated by the use of a *chuoc* (hoe) to excavate the find; the impact of the hoe probably causes the device to detonate. The second greatest cause of casualties is when the collector or dealer attempts to dismantle the device.

The respondents in Tua Thien Hue are less familiar with MRE activities than in Quang Tri. This may suggest a potential for MRE interventions in Tua Thien Hue, though see below.

The collectors tend to know that UXO are dangerous. On the other hand, one respondent has reported that he left the market when too many of his own friends became casualties. This also has implications for any MRE interventions, which will need to be focussed on exposing the real risks in the light of the collector's own subjective risk assessments that encourage them to continue in this activity.

The data suggests that current MRE interventions are ineffective in terms of modifying the behaviour of collectors. Indeed, a significant proportion of victims continue to claim that their activity was safe, even though they had had an accident!
Collectors and dealers have 'local knowledge' about which types of UXO are more dangerous than others. The vast majority (around 70%) report that they consider cluster munitions the most dangerous and many of the respondents state that they will not pick these up if they find them. Most collectors (around 85%) state that they do not touch the most dangerous bombs. A significant number say they report finds of dangerous UXO to agencies authorised to deal with UXO. It is possible that this number is inflated because it is "the right answer". Similarly, other responses which are widely described as being "wrong" in the various MRE messages, such as dismantling the UXO themselves or getting others to deal with it may also be under-reported.

However the 'local knowledge' is sometimes at variance with reality, as the case study of the victims included in this report so eloquently spells out. As mentioned above, this may be a target for more focussed MRE training in the future.

Dealers are aware that this issue is legally questionable. They are reluctant to answer questions, and often claim that they do not accept UXO. However observations tend to suggest that this is not always true.

Most victims knew they had were engaging in risky activity before their accident. There is no major difference in the proportions of people who had had MRE between collectors and victims. Similarly, TV is the major source of MRE across all groups.

Interviews with officials suggest that there is not a clear understanding of the legal situation *vis-a-vis* scrap metal collection and UXO storage/dismantling.

Implications for possible interventions

It is difficult to find mechanisms for engagement of scrap metal collectors with the formal EOD sector that do not expose the implementing agencies to legal (and ethical) problems, especially where the legal situation is ambiguous. There would also be considerable transaction costs and it is considered unlikely that, when these are taken into account, such engagement would be any more cost-effective than conventional EOD interventions. However the NGO currently active in mine clearance state that they would be sympathetic to

the recruitment of scrap metal collectors as their projects allow it. NGO representatives are encouraged in particular to contact Mr Pham Van Xo, respondent No 463 in the data set, who has been permitted to establish an EOD response capacity by the local government.

The safe scrap initiative appears acceptable to those dealers who do not want to handle UXO and feasible from the perspective of the formal EOD sector.

The clustering of collectors in communities suggests that alternative livelihood strategies could be implemented at community level in order to provide safe alternatives for those families who have no other choice at the moment but to collect scrap.

Dismantling appears to be taking place in mini-mills at a district/provincial level. This does suggest that, if a legalistic approach is deemed appropriate, it should prove feasible for police interventions to discourage dismantling of UXO in the scrap dealers premises.

There is some confusion amongst officials about the legal status of this issue. This suggests there is room for some local advocacy activity to promulgate the status and seek local initiatives for intervention.

Numbers of UXO have been reported to the CSSH survey teams. This suggests a need for the revision of MRE message in order to promulgate a reporting process, and need for increased capacity in terms of mobile EOD teams to respond to reports of UXO.

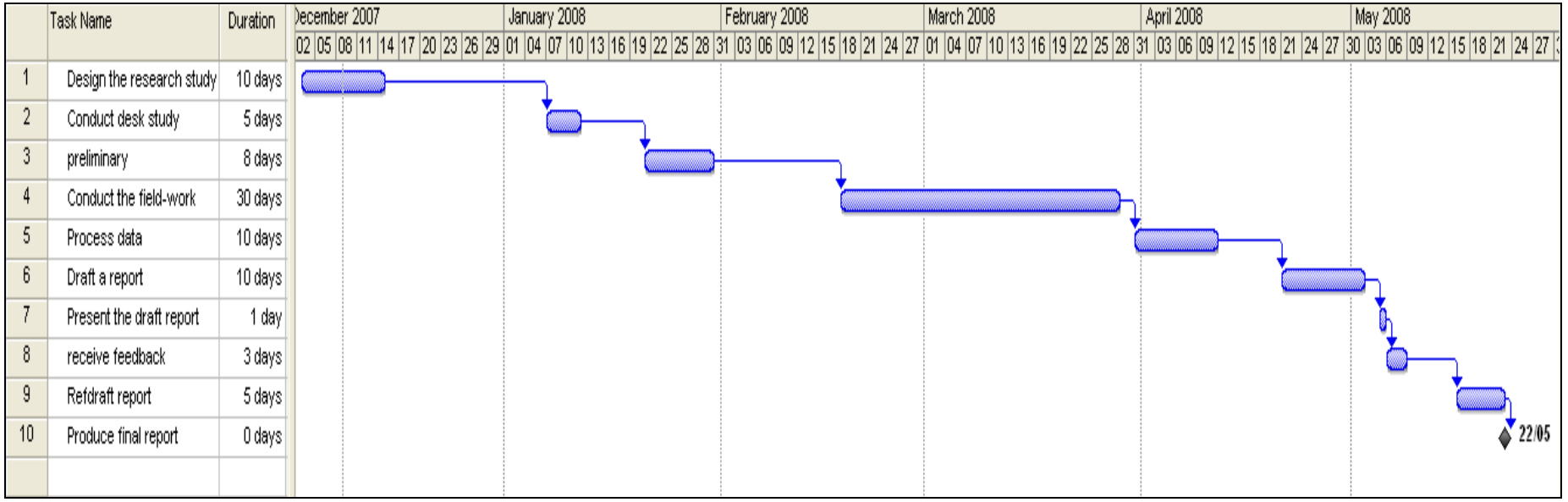
Almost all of the respondents have received MRE in one form or another. This suggests there is a need to revise current MRE activity to determine whether a more effective message can be sent. Apart from the reporting requirement, it might be possible, for example, to focus on the involvement of school-age children in the practice as a particularly dangerous thing that parents should discourage.

The legalistic paradigm

One of the key findings is that there is a difficulty with regarding the legalistic paradigm as a simple solution to this problem. UXO lie on a spectrum of definitions, ranging from intact UXO through dismantled UXO and small arms cartridges to bomb case fragments. Any attempt to widen an interpretation of the law to include dismantled UXO scrap (in order to provide disincentives for dismantling UXO) will hit the problem of how to differentiate UXO scrap from bomb fragments, etc. Handling scrap metal is *not* illegal. What *is* illegal in Vietnam is the storage and dismantling of UXO. It seems that any enforcement of the legalistic paradigm must hang on the actual activity of dismantling UXO rather than possessing metal from former UXO components. However, one area where it might be possible to encourage a prohibition on activity would be to forbid the involvement of children in the practice, through a combination of stigmatisation in the MRE messages and legal action against people taking their children to collect scrap.

Figure 83. A typical dealer's scrap metal pile. It would be difficult to see how any legalistic approach could attempt to regulate trade in pieces of metal like this; however there is at least one UXO body in this picture (although it is impossible from the photograph to tell what condition it is in). The safe scrap initiative should allow dealers to report any UXO they believe to pose an explosive threat.

Annex A. Outline works plan



Company	Norwegian People's Aid
Current Date	09/12/2007
Title	Scrap Metal Study in Central Vietnam
Project Start	12/03/2007 08:00:00
Project Finish	22/05/2008 17:00:00

Annex B. List of key people

Ser	Agency	Point of Contact	Position	Telephone	Fax	Mobile	Email
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1	CSSH	Hoang Van Hien	Director	054 832 788	054 824 901	091 407 7895	hiencssh@gmail.com
2		Tran Xuan Binh	Vice Director	054 832 788	054 824 901	091 342 0143	txbinhxhh@yahoo.com
3		Lam Thi Thu Suu	Coordinator	054 832 788	054 824 901	094 550 3508	cssh@vnn.vn
4	Thua Thien Hue DOFA	Chau Dien Nguyen	Director	054 845 595	054 833 639	090 353 8393	Nguyencd_nv@yahoo.com
5		Col Tranh Duc Thanh	Head of EOD				
6	Quang Tri DOFA	Nguyen Phuc Vuong	Vice Director	053 554 696	053 851 200		NguyenPhucVuong@quangtri.gov.vn
7		Nguyen Duc Quang	Head of International Cooperation Section	053 854 745	053 851 200	090 350 7604	Nguyenducquang@quangtri.gov.vn
8	Quang Binh DOFA	Nguyen Trung Thuc	Deputy Director	052 840 757	052 822 804	091 338 6325	ttthuuc@yahoo.com.vn
9		Tran Van Hoai	Head of Foreign Relations Division				Hoai_tranvan@yahoo.com
10	MAG	Andrew McCalister	Community Liaison Manager			093 635 2492	Mag-clm@vnn.vn
11	UNICEF	Isabelle Sévédé-Bardem	Chief, childhood injury prevention program	04 942 5706 ext 422	04 942 5705	091 323 2953	ibardam@unicef.org
12		Nguyen Thi Thanh An	Specialist, childhood injury prevention section	04 942 5706 ext 270	04 942 5705	091 225 2011	nttan@unicef.org
13	NPA	Lee Moroney	Country Manager				leem@folkehjelp.no
14		Robert Keeley	Consultant	+44 1233 888012	+44 870 199 2064	093 559 0875 +44 7788 585828	research@rk-consulting.net
15	RENEW	Nguyen Hieu Trung	Liaison officer			090 509 0235	hieutrungdpi@gmail.com

Annex C: Extract from the agenda for the Mine Action NGO Focus Group held on 4 March 2008.

"Possible relations between the formal EOD sector and scrap metal collectors and dealers in the three central provinces of Vietnam"

A number of studies carried out in other countries have raised the question about how the formal EOD community can best interact with this scrap metal collection industry.

As part of this research, the Project intends to conduct a focus group on 4 March 2008 to solicit opinions from relevant mine action agencies on how they could possibly interact with scrap metal collectors and dealers in the three target provinces in Vietnam.

Aim

The aim of this note is to set out the scope and proposed agenda for a focus group on possible relations between the formal EOD sector and scrap metal collectors and dealers in the three central provinces of Vietnam.

Agenda

The inception mission conducted by NPA in December 2007 with CSSH identified three main possible mechanisms by which the formal EOD sector might interact with the scrap metal industry. These "Engagement Mechanisms" are:

- The establishment of a 'safe scrap' response program by which NGOs could respond to reports of a suspected live UXO in a scrap dealer's pile. The NGO would render the item safe on behalf of the dealer. Issues include the establishment of a reporting mechanism and how to manage the final disposal of the metal remnants.

- The creation of village assisted clearance schemes to employ villagers as short term employees of the NGOS on clearance projects in their own communities. This method is seen to be mainly applicable where individuals are clearing items of UXO to gain access to safe farmland.

- The utilization of the skills of the collectors as reporters of UXO items rather than as collectors. Questions to be resolved include the appropriate incentives scheme and how such a program might be enforced.

- The literature review undertaken as part of this project also revealed a fourth possible engagement mechanism, which would be the licensing of collectors as a means of providing some sort of training and safety processes.

The first part of the focus group would be used to consider the possible advantages and disadvantages of these four potential engagement mechanisms; the second part of the focus group would provide a forum to consider any alternative ideas proposed by the attendees.

Because of the nature of this issue and the strong opinions that may be held by some of the attendees, it is intended to use a variant of the 'Six Hats' brainstorming process to help focus the discussions. Some notes on Six Hats brainstorming are enclosed with this note.

Desired attendees

In order to ensure some focus from the focus group, it is felt appropriate to limit participation in the focus group to representatives of those organizations who are being asked to accommodate these potential new mechanisms, i.e. the agencies conducting (or preparing to conduct) formal EOD activities in the three target provinces. Representatives from the relevant branches of the three Departments of Foreign Affairs are of course also very welcome to attend, as are UNICEF as a co-funder of this Project.

Organisation

The focus group will be hosted by Project RENEW in Dong Ha and facilitated by NPA. Proceedings will be observed by the CSSH Project Coordinator. All proceedings will be in English, though there should be sufficient translation ability within the staff of RENEW and CSSH present to facilitate any necessary translation into Vietnamese.

It is expected that the focus group will be an all-day event. RENEW will provide light refreshments during the proceedings and there will be a break for a group lunch, but all attendees may be asked to contribute to the cost of the lunch. As most attendees are expected to be based in Dong Ha there will be no coordinated provision made for overnight accommodation, though of course attendees may wish to make their own arrangements.

Organisations wishing to participate are asked to inform Mr Trung of Project RENEW of their interest and the name(s) and contact details of the people who will be representing them. Anyone wishing to propose an alternative engagement mechanism is asked to prepare a short (less than one page) synopsis of their idea to Mr Trung to facilitate discussions.

The venue selected will be based on the number of attendees; attendees will be informed closer to the date of the venue and the exact starting time.

Six Thinking Hats

'Six Thinking Hats' is a powerful technique that helps look at important decisions from a number of different perspectives. It helps users understand the full complexity of the decision, and spot issues and opportunities to which one might otherwise be blind. This tool was created by Edward de Bono in his book '6 Thinking Hats'[14]. Conventional brainstorming approaches can allow people to fall into their own established patterns of thinking. Those responsible for thinking of the original idea that is being discussed can become possessive and defensive; they may miss objective criticism; Similarly, pessimists may be excessively defensive, and more emotional people may fail to look at decisions calmly and rationally. Each 'Thinking Hat' is a different style of thinking. These are explained below:

[14] More information on the Six Hats technique is available at http://www.mindtools.com/pages/article/newTED_07.htm

White Hat

With this thinking hat you focus on the data available. Look at the information you have, and see what you can learn from it. Look for gaps in your knowledge, and either try to fill them or take account of them. This is where you analyze past trends, and try to extrapolate from historical data.

Red Hat

'Wearing' the red hat, you look at problems using intuition, gut reaction, and emotion. Also try to think how other people will react emotionally. Try to understand the responses of people who do not fully know your reasoning.

Black Hat:

Using black hat thinking, look at all the bad points of the decision. Look at it cautiously and defensively. Try to see why it might not work. This is important because it highlights the weak points in a plan. It allows you to eliminate them, alter them, or prepare contingency plans to counter them. Black Hat thinking helps to make your plans 'tougher' and more resilient. It can also help you to spot fatal flaws and risks before you embark on a course of action.

Yellow Hat

The yellow hat helps you to think positively. It is the optimistic viewpoint that helps you to see all the benefits of the decision and the value in it. Yellow Hat thinking helps you to keep going when everything looks gloomy and difficult.

Green Hat

The Green Hat stands for creativity. This is where you can develop creative solutions to a problem. It is a freewheeling way of thinking, in which there is little criticism of ideas. A whole range of creativity tools can help you here.

Blue Hat

The Blue Hat stands for process control. This is the hat worn by people chairing meetings. When running into difficulties because ideas are running dry, they may direct activity into Green Hat thinking. When contingency plans are needed, they will ask for Black Hat thinking, etc.

Box 2. The Six Thinking Hats.

Annex D: Attendees at the 4th March Focus Group

"Possible relations between the formal EOD sector and scrap metal collectors and dealers in the three central provinces of Vietnam" Focus Group Attendees					
Ser	Name	Organisation	Email	Telephone	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1	Lam Thu Suu	CSSH Hue University	cssh@vnn.vn		
2	Lee Moroney	NPA	Lpm_mobile@hotmail.com		
3	Mark Fitzpatrick	Golden West	Mark.fitzpatrick@goldenwesthf.org		
4	Somphong Chanthavong	FSD Laos	Somphong.chanthavong@fsd.ch	+856 205622184	
5	Ho Viet Hung	SODI	Sodi-qt@dng.vnn.vn		
6	Robert Keeley	NPA	research@rk-consulting.net		Facilitator
7	Andrew McCalister	MAG	Clm.magvietnam@gmail.com		
8	Nguyen Hieu Trung	RENEW	hieutrungdpi@gmail.com		