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Landmines in Eritrea
The socio economic impact, prioritisation and integration on the basis of community visits

17 August 2004

Natraj Ramkrishna and Evgenios C Evgeniou

Dedication

We dedicate this report to the children of Eritrea with the wish that, sooner rather than later, they will be able to walk and play on their land free of the fear of landmines

Acknowledgements

This report would not have been possible without the support of PricewaterhouseCoopers in Cyprus and India, which covered all the costs, the UNDP that provided the logistical support necessary and the Ulysses leadership program project team and coaches.

Many thanks to the officials of the UNDP, the Mine Action Capacity Building program, the EDA and the EDO and the Cranfield University consultants for their inputs, the EDA drivers and translator that made the community visits possible, the people at the five communities visited for their warm hospitality and willingness to answer our questions, the Ministry of Agriculture, the National Statistics Office and the World Bank in Eritrea for the reports and data provided. Last but not least, special thanks to our families for their support whilst away from home.

Abbreviations

EDA	Eritrean Demining Authority
EDO	Eritrean Demining Organisation
GDP	Gross Domestic Product
IDP	Internally Displaced Persons
IMF	International Monetary Fund
LIS	Landmine Impact Survey
UN	United Nations
UNDP	United Nations Development Programme
UNMEE	United Nations Mission Ethiopia and Eritrea
TSZ	Temporary Security Zone
UXO	Unexploded Ordnances

Conversions

1 Quintal	= 100 Kg
1 Metric Tonne	= 1,000 Kg
1 Hectare	= 10,000 m ²

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Executive Summary

1. This study on the socio economic impact of landmines, the benefits of mine action, prioritisation and integration of mine action with national development priorities was carried out so as to understand how landmine contamination has affected the lives of people living in the landmine impacted communities of Eritrea, and it focuses on the humanitarian aspects of landmine impact and mine action, rather than concentrate on a purely economic cost benefit analysis.
2. Accordingly, the foundation of the study are visits to five landmine impacted communities that were selected on the basis of the LIS with the objective of achieving diversity in terms of: geography, landmine blockages, landmine impact and mine action activity in the area. At the visits, meetings were held with community leaders and elders and sub Zoba administrators. The meetings were conducted on the basis of a questionnaire that was developed with the aim of: collecting information and the views of the community on the impact of landmines on the daily community life, experience of mine action, prioritisation and integration of mine action with other development priorities.
3. On the basis of the community visits the following have been identified as the most significant impacts of landmine contamination:

Impact on people

- ◆ The psychological burden of living every day in fear as a result of being surrounded by minefields and with the prospect of death or injury because of landmines and UXO.
- ◆ The most likely landmine and UXO victims are children and the young, consequently the loss of future productivity, the impact on the quality of life of accident survivors and the disruption to family life is significant and could lead to poverty not just for the victim but also for the whole family.
- ◆ There are inadequate emergency medical care facilities and accident survivors have to be carried on foot for long journeys to regional health centres and ultimately have to be transferred to Asmara.
- ◆ However, the most acute need of landmine accidents survivors is not the medical rehabilitation but assistance to resume their roles as productive community members. The lack of CBR in most landmine-impacted communities makes this difficult.

Displacement from their homes

- ◆ There are 64,000 IDP from 58 communities; of these 23 are landmine and UXO impacted.
- ◆ The people in IDP camps depend on aid and most of them are not in economic production.
- ◆ The living conditions in IDP camps, the idleness and the aid dependency have an adverse effect on the physical and mental well being of people.
- ◆ Large areas of non-contaminated agricultural land, in the agriculturally significant Zobas of Gash Barka and Debub, are not cultivated as the people are displaced from the area. Therefore, for every square metre of land cleared of landmines, in IDP communities, several metres of agricultural land are brought back into agricultural production.

Food insecurity

- ◆ Although agricultural productivity is low, 80% of the people depend on agriculture for their livelihood and one of five people are affected by landmine contamination, therefore the landmine impact on food security from the community perspective is significant. There are communities that will never be food self sufficient unless landmine clearance takes place, as significant agricultural and grazing land is blocked by landmines.
- ◆ The lack of income because of loss of animals in minefields is significant bearing in mind that, the cost of a cow or donkey equals the annual per capita income that sale of milk and meat is the only source of income for many families, and that livestock are used for land cultivation and transportation.

Prioritisation of Mine Action

4. Based on the community visits, prioritisation at community level will need to consider the threat to human life, displacement from homes because of landmine blockage and contamination of significant agricultural and grazing land that results in food insecurity. To assess the level of threat posed to life by a minefield consideration of recent landmine and UXO accidents, the proximity of the minefield to homes and the proximity of the minefield to access roads and non-contaminated grazing land should be made. In the case of food insecurity due to landmines the minefields to be cleared should be selected by addressing the question; which minefields will make the community food self-sufficient once cleared, subject to rainfall and the necessary agricultural assistance? Considerations are: the fertility of the soil, proximity to rivers and other water sources and hence use as irrigated land, proximity to the village, quality of grazing land and ease of access by animals, number of crop periods on the contaminated land, terrain, location and vegetation (factors that will influence the cost and time needed for landmine clearance), and whether agricultural assistance will be available to ensure that the cleared land is put back to productive use immediately, after landmine clearance.
5. The above can be used for prioritising minefield clearance within a community, prioritising communities of equal landmine impact on the basis of socio economic considerations and carrying out post clearance assessments.
6. The return of IDP and the high impacted communities have been set as national priorities by the Eritrean Government. In addition to these consideration should be given to food insecurity, as a possible priority.
7. Considering clusters of mine affected communities with all the above national priorities in mind for prioritisation, will lead to the most cost effective use of resources. On the basis of a high-level analysis it appears that considering mine action in clusters of communities in the Zobas of Gash Barka, Debub and Semienavi Keih Bahri will address all national level priorities simultaneously.

Reducing the threat to human life

8. In all community visits the community leaders stressed the need for immediate action to reduce the threat of landmines and UXO to human life. It is in this context that in parallel with the integrated approach for mine action, a national campaign for MRE, marking, fencing and extension of CBR programs to all landmine-impacted communities should be considered. The CBR programs can provide the communication network with the landmine-impacted communities that could facilitate MRE, marking and fencing campaigns and a reporting mechanism for accidents and any changes of landmine impact in a community. For this to be achieved enhanced cooperation between the EDA and the Ministry of Labour and Human Welfare will be necessary.

Integration with national priorities

9. There is very little reference to mine action in the three national development documents reviewed (The Interim Poverty Reduction Strategy, The Integrated Recovery Program and the Food Security Strategy). However, on the basis of the community visits it was evident that in addition to mine action, agricultural assistance, assistance for home rebuilding, micro finance schemes and infrastructure development are necessary if IDP can return to their homes, cleared contaminated agricultural land is reclaimed and victims are able to resume a normal life.
10. The development programs that aim to address the above issues cannot proceed unless mine action takes place and mine action on its own is not sufficient to solve these problems. Coordination of mine action with the other development programs at the community level is necessary for the communities to benefit.
11. Therefore, coordination between the EDA, the Government departments, Local Government and communities, on the basis of a coordination plan of action and continuous communication is necessary. For this to be achieved the EDA needs to fully assume its role, as set out in Proclamation 123, with the support and involvement of the President's Office to which the EDA reports. In addition the EDA should develop a communication strategy with the aim of raising the profile of mine action in Eritrea and internationally.

Conclusion

12. The people of the country, in particular children and the young that are the most vulnerable group to landmine and UXO accidents, have been deeply affected by the impact of landmines psychologically, socially and economically, and landmine contamination is an impediment to future development of the landmine-impacted communities. As Eritrea is amongst the poorest countries in the world and productivity and GDP per capita are very low, the Mine Action programme should be viewed from this humanitarian and development perspective, at community level, rather than from a strictly economic cost benefit analysis perspective for the country as a whole.
13. This study was carried out in the context of the PricewaterhouseCoopers Ulysses Leadership Programme. It is limited in scope and constrained by limited data on various key issues and accordingly, it is not an exhaustive study on this subject. Conclusions and recommendation are based on the views expressed and information gathered at the communities visited; the data gathered could at best, only be verified for reasonableness and not accuracy.

1. Introduction

14. This study of the socio economic impact of landmines in Eritrea was carried out in the context of the PricewaterhouseCoopers Ulysses leadership program that has been developed as a response to the changing New World. The business challenges posed by Ulysses are: the Sustainability Challenge, the Leadership Challenge; and the Diversity Challenge. Ulysses participants work on a development project in partnership with the UNDP or other organisations. PricewaterhouseCoopers covered the costs of the two partners that worked on this project and the UNDP provided logistical and operational support.
15. The landmine and UXO problem in Eritrea dates back to the Second World War fighting between Italian and British forces, the 30-year struggle for independence (1961 to 1991) and the recent border conflict with Ethiopia (1998 to 2000). According to the LIS, landmines impact over 655,000 people living in 481 communities, which are spread over all six Zobas (regions) and 55 of the 58 sub Zobas of Eritrea.
16. The objective of this study is to support the mine action strategic plan and the national mine action program by providing inputs relating to the socio economic impact of landmines, the socio economic benefits of mine action, prioritisation and integration with economic development.
17. In this study mine action is discussed in accordance with the UN objectives that define mine action as, “Humanitarian mine action is not about mines. Rather it is about people and their interaction with mine contaminated environment. The aim of mine action programme is not therefore a technical engineering objective - to survey, mark and eradicate landmines - but a humanitarian and development aim which seeks to create an environment in which people can live more safely and in which economic and social development can occur free from constraints imposed by landmine contamination.”¹
18. This study was carried out on the basis of visits to five landmine-impacted communities, covering five of the six Zobas of Eritrea, and interviews with community leaders. The communities were selected on the basis of an analysis of the LIS with the objective of achieving diversity in terms of geography, landmine blockages, landmine impact and mine action activity in the area. The three national development documents on recovery, poverty and food stability were reviewed and meetings were held with EDA and UNDP officials. Social and economic data was obtained from the Ministry of Agriculture, National Statistics Office publications and reports by the World Bank and the IMF.
19. The methodology followed is presented in Chapter 3 and community visits findings are presented in Chapter 4. On the basis of these findings, the discussions held and other data gathered conclusions were drawn and recommendations were made on the socio economic impact of landmines (Chapter 5), prioritisation (Chapter 6), and the integration with the national priorities (Chapter 7).
20. This is not an exhaustive study covering all aspects of socio economic impact, prioritisation of mine action and integration with other development programs as it is primarily based on the five community visits and is constrained by the limited availability of economic and social data on Eritrea and data on the economic impact of landmines on the country.

¹ Department of Humanitarian Affairs, United Nations Demining Database.

2. Eritrea: its people, history and the economy

2.1 Geography

21. Eritrea is in the horn of Africa covering an area of 125,000Km² bordered by Sudan to the North and West and by Ethiopia and Djibouti to the South. Its Red Sea coastline is 1,200 Km long with approximately 350 islands. Administratively, the country is divided into six Zobas (regions): Anseba, Debub, Debubawi Keith Bahri, Gash Barka, Maekel and Semenawi Keith Bahri. Asmara is the capital city and the two other major towns are the ports of Massawa and Assab.
22. Eritrea is a very diverse country, with land rising from below sea level to 3,000m above sea level, and temperatures and rainfall varying with altitude. There are three geographic zones: the Western Lowlands, the Central and Northern Highlands and the Eastern Lowland. This geographic variation results in social, economic and cultural diversity.

2.2 History

23. As a result of its strategic location on the Red Sea, Eritrea has been under occupation for most of its history. After Ottoman and Egyptian rule the country became an Italian colony in 1890. After the defeat of the Italians in 1941 the country came under the administrative control of the British until 1952 when Eritrea was federated with Ethiopia. In 1961 Ethiopia annexed Eritrea and this led to the 30-year liberation struggle that resulted in independence in 1993. In 1998 to 2000 the country was again at war with Ethiopia as a result of a border dispute. On 12 December 2000, the Eritrean and Ethiopian governments signed the Algiers peace agreement. After, the peace agreement was signed the TSZ was established and the UNMEE peacekeeping troops were deployed.

2.3 People

24. There are no reliable estimates of the population of Eritrea, as a census has never been carried out. On the basis of a population count carried out by the Ministry of Local Government, the total population was estimated to be 3.2 million as of 2001². There are nine ethnic groups in Eritrea and the population is equally divided between Christians and Muslims.

2.4 Economy

25. Eritrea is one of the poorest countries in the world with GDP per capita of US\$200³. Although 80% of the people of Eritrea depend on agriculture and animal husbandry for their livelihood⁴, these activities with fisheries represent only about 20% of the GDP⁵. The reason for this is the high dependency on rainfall and the low agricultural productivity. Comparative rural productivity – defined as the (rural share of GDP/rural share of population)/(urban share of GDP/urban share of population) – is about 0.03 in

² Eritrea, Demographic and Health Survey 2002, page 2, a publication of the National Statistics and Evaluation Office Asmara, Eritrea.

³ Eritrea, Demographic and Health Survey 2002, page 2, a publication of the National Statistics and Evaluation Office Asmara, Eritrea.

⁴ As above.

⁵ As above.

Eritrea. This compares to 0.18 (i.e. six times more than Eritrea) in the rest of the Sub Saharan Africa.⁶

26. Poverty reduction, food security and the return of IDP are national priorities. Agriculture is at the heart of rural development, as the population of the country is predominantly rural, and is critical in achieving poverty reduction and food security. However, it has been adversely affected by the recent border war and the ongoing security situation (impact on people and infrastructure) and the drought of the last three years. Agricultural development is also affected by a more permanent impediment, landmines. The impact of landmines on agriculture and consequently on poverty reduction and food security are discussed in later sections of this report.

⁶ Eritrea Agricultural Sector Review, The World Bank, 26 June 2001, on page 1-1.

3. The methodology followed

3.1 Introduction

27. This study is based on an analysis of how landmines have affected the lives of people in landmine-impacted communities in Eritrea, an assessment of the socio economic impact of landmines and benefits of mine action, the prioritisation, and the integration of mine action with other development activities at community level. Therefore, it was decided to carry out this study on the basis of visits to landmine-impacted communities.

3.2 Selection of communities

28. The communities were selected on the basis of an analysis of the LIS. The objectives of the selection process were to:

- ◆ Select communities covering as many Zobas as possible
- ◆ Select communities that have benefited from mine action
- ◆ Cover all major landmine blockages as defined in the LIS
- ◆ Cover communities that rely on agriculture, on livestock and on trade
- ◆ Cover communities that have experienced accidents over the last two years
- ◆ Include communities where development projects are underway

3.3 The community meetings

29. At each community a meeting was held with the community leader, community elders and other community people so as to collect information and listen to their views with regards to the socio economic impact of landmines and the potential (or actual) benefits of mine action. In addition a meeting was held with the administrator of the sub Zoba so as to get a better understanding of the local economy and the impact of landmines on the area.

30. The community meetings were carried on the basis of a questionnaire that was prepared and is presented in Annex 1. The questions and their order were changed according to the circumstances of each community and the flow of the discussion but the framework of the questionnaire was adhered in all visits. As the discussions were carried out through a translator follow up questions were asked so as to verify the correctness and accuracy of the information given.

31. The objectives of the questionnaire were to collect information on:

- ◆ The economic activities of the community.
- ◆ The socio economic impact of landmines on the community.
- ◆ Other social and economic problems that need to be addressed for mine action to be effective, and

Get the views of the people on:

- ◆ The impact of landmine on their daily lives.
- ◆ Their experiences and views on mine action.
- ◆ The potential (or actual) benefits to the community of mine action.
- ◆ The prioritisation at community level.

- ◆ Assistance, in addition to mine action, that would be necessary for the community to resume a normal life.
32. The communities selected were Wazntet, Tisha, Foro, Shilalo and Kuazien, and they are shown on the map below:



Map 1 Five communities selected

33. These five communities:
- ◆ Cover five of the six Zobas of Eritrea
 - ◆ Two are IDP communities inside the TSZ
 - ◆ Cover all major blockages as defined in the LIS
 - ◆ Include high and moderate impact (as defined in the LIS) communities
 - ◆ Two of the communities have experienced mine action.
 - ◆ Cover all major rural economic activities and
 - ◆ In one community a development project is underway.
34. In the calculations an exchange rate of Nakfa 13.5 to US\$1 was used, the price of Nakfa 3,5 per Kg of agriculture produce was used, and the costs of landmine clearance were estimated by the EDA.

4. The community visits

4.1 Introduction

35. The findings and the analysis of the findings of the five community visits follow. The information, views and opinions presented have been gathered at the meetings with the community people and the sub Zoba administrator. The analysis of the information gathered and the authors' comments are presented in *italics*. Quantities are stated using the units used by the people interviewed and in brackets the equivalent in metric units is given. The landmine impact on the community is presented on the basis of the LIS community data report.
36. The findings deal with the following main aspects of the study:
- ◆ The socio economic impact of landmines and UXO on the community.
 - ◆ The experience of the community of mine action.
 - ◆ The community views on prioritisation.
 - ◆ The community views on integration with other development programs.

4.2 The community of Wazntet

Background

37. Wazntet is in sub Zoba Hamelmalo in Zoba Anseba, about one hour's drive (on soil road) from Keren, the capital of the Zoba, and has a population of approximately 2,000 people and 647 families. There are two clinics, one health station and ten schools, in the sub Zoba servicing the community. The community sources water by tank truck from Keren..

The socio economic impact of landmines

38. Per the LIS Wazntet is a medium impacted community; seven minefields surround the community covering a total area of 271,500m². These block cropland, pastureland, non-agricultural land and fuel. In the two years prior to the LIS visit there were two landmine accidents.

Agriculture and livestock

39. In Wazntet each family has approximately 4 hectares of agricultural land producing about 5 quintals per hectare (*0,05Kg per m²*). Drought and landmine contamination have contributed to a much lower production, which currently covers approximately ½ of their needs; the other ½ is covered by aid equivalent to one quintal of food aid to each family every two months (*16Kg per person per month*). The community has few livestock due to drought; production from livestock is insignificant. Over the last year, four cows and six goats were killed in minefields around the community. *A cow costs around US\$ 450, which is more than twice the average annual income of a farmer.*
40. As compared to the Wazntet community, which is ½ food sufficient, the sub Zoba is ¾ food self-sufficient, the difference in food sufficiency is due to landmine contamination of agricultural land. *On this basis, the impact of landmines on the community is estimated at about 192,000 kg of lost agricultural production per year, which results in a loss of US\$49,778 per annum for the community.*
41. *The cost of landmine clearance in Wazntet is estimated by the EDA at US\$284,445. This cost cannot be compared to the value of lost agricultural production alone as the monetary value of landmine impact on livestock and people also needs to be considered.*

Threat to life

42. During the last year there was one death as result of landmines as a shepherd followed his animals into a minefield and was killed. The community faces a serious problem with UXO that are scattered in the area with which children sometimes tamper and get injured. Very recently, a child tampered with a hand grenade and suffered injuries in the eyes and on one leg. People feel insecure and unsafe living in the area due to the risk of accidents with landmines and UXO. *The social cost of children losing their life or suffering serious injuries cannot be fairly evaluated in terms of economic cost alone.*
43. All victims of landmines received medical assistance, initially at the local health centre (where there are only nurses), which is one-hour walk from the community and eventually were taken to hospitals in Asmara. *The economic impact (in terms of travelling costs and time away from the agricultural activities) of accidents is very high as medical care can be administered only in Asmara, which is far away.*

Experience of mine action

44. The community has no experience of mine action; there has been no mine clearance, no mine risk education, no victim support and no marking of minefields. The community leader expressed his disappointment for this and the hope that the community will have the benefit of mine action soon.

Prioritisation

45. According to the community leader the Debabi (24,000m²) minefield is top priority for clearance as the soil is very fertile and is located close to the river and therefore it can be used as irrigated land. The minefields of Kaw (80,000m²) and Glinda (90,000m²) are equal second priority as the soil is fertile and there is grass that can be used for animal grazing. According to the community leader, clearance of the three minefields will make the community food self-sufficient. The other four minefields are of equal priority for clearance. Until landmine clearance is possible, marking and mine risk education are necessary to improve security in the community.

Integration and coordination

46. The community will not be able to cultivate the land immediately even after the minefields are cleared unless they receive oxen, ploughs, equipment and seeds first.

4.3 The Community of Tisha

Background

47. The community of Tisha is in sub Zoba Senafe in Zoba Debub, bordering with Ethiopia, and is located in the TSZ. For the past four years the people of Tisha live in tents in an IDP camp as landmines block access to their village. The community has 271 families and a population (the Saho ethnic group) of approximately 1,700 people (747 male)

The socio economic impact of landmines

48. Landmines surround Tisha as it is situated between the Eritrean and Ethiopian trench line of the recent border war. As per the LIS, Tisha is a high impacted community with two minefields covering a total area of 32,500m² that block access to housing, cropland; pasture land, water and non-agricultural land. During the two years before the LIS visit there were 14 landmine and UXO accidents.

Agricultural and livestock

49. Before the recent border war there were disparities in wealth between the families, primarily because of differences in land and livestock ownership. After the war and the

- displacement all the families are equally poor, and the community exclusively relies on food aid of 17Kg of wheat per person per month.
50. Each family owns ½ hectare (5,000m²) of agricultural land (*on the basis of 271 families the total agricultural land is 135 hectares*) on which they produced maize, wheat, taff and lentils. Normal agricultural output was 8 quintals per family per year and the community was food self-sufficient, and in good harvest years they had surplus produce to sell.
 51. *On the basis of the production per family and land area per family agricultural productivity is 0,16Kg per m², which is high compared to the average productivity of 0.048Kg per m² prevailing in Zoba Debub. The production of 8 quintals per family per year appears to be very reasonable, it seems that the community leader underestimated the land area used.*
 52. Prior to the war each family had on average 10-15 chicken, 30 goats, 25 cows, 10-15 sheep and about 15 beehives. The production per beehive was 10-15Kg year and ¾ of this was sold for about Nakfa 15/Kg (pre war price). Now they have very few animals and no beehives.
 53. *The loss of agricultural output, based on the production of 8 quintals per family per year, is 216,800 kg per year (i.e., about 127 kg per person per year, as compared to the food aid they receive of 204 kg per person per annum). At prevailing market prices, the loss is estimated at US\$56,207 per annum for the community, which translates to a per capita contribution to the agricultural GDP of US\$33. This substantiates the information given at the meeting that the income from livestock and beehives constituted a significant part of their income. Using GDP per capita of US\$200 the lost livestock and beehive income for the community is US\$283,900 per year. The cost of maintaining the people in the camp is estimated at US\$ 426,700 per year, based on the average annual cost of US\$ 250 per person in the camp. Therefore the total cost (actual cost and lost income) is US\$767,000 per year.*
 54. *The cost of landmine clearance in Tisha is estimated by the EDA at US\$56,525. The benefits of mine clearance far exceed the cost.*

Threat to life

55. Over the last four years 12 people were killed and 14 injured by landmines. The injured children have continued their education, using walking sticks to go to school. Four months ago a 12-year-old child lost one eye and two fingers in a landmine accident whilst collecting wood. The child was taken to hospital in Asmara; he has recovered and now lives in the IDP camp with his family. *The cost in terms of lost future productivity, disruption to family daily life and travelling is significant.*

Living conditions in the IDP camp

56. The living conditions in the IDP camp, the idleness and the dependency on food aid have an adverse effect on the physical and mental well being of the people and the growing up and development of children in IDP camp conditions may lead to social problems. The people are frustrated and desperately want to resume a normal life. *The economic costs of maintaining people in the IDP camps therefore, represents only one aspect of the problem.*

Experience of mine action

57. About ¼ of the community's land has been cleared of landmines. The community was consulted on prioritisation of mine clearance before de-mining started and the community

people are pleased with the de-mining taking place, but they would have preferred faster progress.

58. The community has had a bad experience with regard to de-mining carried out by NGOs in the past. The community was informed that their land was cleared but when they returned they found the existence of landmines and UXO in the area. Consequently, the community needs to be assured of complete landmine clearance before they return to their land. Despite this fifteen families have returned to part of the village that has been cleared of landmines, as they got desperate living in the IDP camp. *This represents a potential threat to the lives of the people living there.*
59. The community has received MRE several times over the last years and the minefields are effectively marked. Both have proved useful and effective in avoiding accidents. After the community received MRE and the marking of the minefields there were very few accidents, involving children. The community has not received any victim support.

Prioritisation

60. The land currently being cleared is not the most fertile but it is the number one priority for the community, as it would provide access to the village, the elementary school and the water well. The next priority for mine clearance is the fertile agricultural land.

Integration and coordination

61. The houses in the village were destroyed as a result of the fighting. Therefore the community needs assistance for the reconstruction of houses; otherwise mine clearance will result in relocation of the tents to the village. The people will not be able to use their agricultural land immediately after landmine clearance unless they receive agricultural assistance in the form of: oxen, ploughs tractor and seeds. *Therefore landmine clearance is not sufficient for people to return to their homes, resume their lives and move out of aid dependency.*
62. In order to cultivate the cleared land they rented a tractor for three days from the Ministry of Agriculture, but because of the drought they had a bad harvest. Although the Ministry is not demanding an immediate payment they still have to pay the rent despite the lack of harvest.

4.4 The Community of Foro

Background

63. The community of Foro is in sub Zoba Foro in Zoba Semienawi Keith Bahri (Northern Red Sea), and is about one hour's drive (on soil road) from Massawa, the capital of the Zoba. The population of the community is approximately 2,500 people, and 550 families. There is a clinic (with nurse) and an elementary school servicing the community.

The socio economic impact of landmines

64. Per the LIS Foro is a high impacted community with three minefields covering a total area of 325,000m² blocking non-agricultural land, housing, food paths, fuel, building material cropland and pasture-lands.

Agriculture and livestock

65. The main source of income of the community is agriculture and animal husbandry. Only 2% of the population work in small shops, in the port of Massawa port and in the sub Zoba administration. The main crops cultivated are cereals on an area of 300 hectares of non-contaminated agricultural land. The community's farmland is rich and fertile and

normal agricultural production is 20-30 quintals per family per year. However, because of the drought there has been no agricultural production during the last 18 months and consequently the community depends on food aid. Only 1,400 people receive aid, as the ratio for their sub Zoba is small. Livestock have also suffered due to the drought and many farmers send their animals to the highlands for grazing. Each family has 2-3 cows. Landmines do not block any significant agricultural land. *Therefore, although agricultural production has been substantial in the past, the assumption that the decline in agricultural production is because of landmines may not be reasonable.*

66. *The cost of landmine clearance in Foro has been estimated by the EDA at US\$414,000. As a result of the conclusion in the previous paragraph this can only be compared with the benefit of eliminating the threat to human life by landmines and UXO in the community.*

Threat to life and impact on daily life

67. The impact of landmines on the community is primarily psychological as minefields are very close to the houses and block some of the paths to farmland and between houses. Minefields are always on the people's mind and as a result they are insecure and live in fear. One of the elders pictured the problem as follows "If you have a big comfortable bed but there is a snake on the ceiling will you be able to sleep?" It would appear that only landmine clearance would restore the feeling of security within the community.
68. Most accidents involve children and animals and primarily occur whilst herding and fetching wood. The victims receive first aid in the local clinic but ultimately are sent to hospitals in Massawa and Asmara. There are no landmine accident survivors living in the community.

Experience of mine action

69. There has been no landmine clearance in the area, no marking and they are not aware of victim support. A government representative spoke to the community on the issue of landmines but they have not received MRE. Although the minefields are not formally marked people are aware where they are but this is not sufficient.

Prioritisation

70. Priority for landmine clearance is the Hashet minefield, which is close to their houses and poses a serious threat to life. Clearance of the other minefields that block access to grazing and farm land is a secondary priority. Marking or fencing of the minefields and MRE is required so as to reduce the risk of accidents, but the community will not feel fully secure until all minefields are cleared.

Integration and coordination

71. A development project with European Union funding is underway to bring running water to the area and the motorway linking Massawa with Assab is passing by the community. During the construction work an earth moving machine lifted landmines from the ground. *The area is important from a trading and tourism point of view due to its proximity to Massawa and to archaeological sites.*

4.5 The Community of Shilalo

Background

72. Shilalo is in sub Zoba Lalay Gash in Zoba Gash Burka and is located within the TSZ. There are 70 families living in the village, the other 650 families live in the IDP camp near Barentu and there are 4-5 people per family. Although a school and clinic were built

with European Union funding near the community they are not operational pending the return of the IDP to the village. At the IDP camp there is a school and a clinic.

The socio economic impact of landmines

73. According to the LIS Shilalo is a high impacted community. The five minefields cover a total area of 935,100m²; blocking cropland, pasture land, non-agricultural land and building material. In the two years prior to the LIS there were six landmine accidents.

Agriculture and livestock

74. Before the war the community was food self-sufficient. They produced 50-60 quintals of sorghum and oil seeds per family in a good year; in a poor year they produced 15-20 quintals per family. Each family owns about 10-30 hectares of land but they normally cultivate about 50% of this every year. In terms of livestock, about 80% of families owned 70-80 cows and the rest 3-5 cows. Each family sold 40litres of butter and 4-5 animals per year.
75. After the war all families are equally poor and they rely substantially on the 15Kg per person per month of food aid they receive. In terms of livestock the families that returned to the village own 10 cows each, but the families living in the IDP camp have no livestock. The minefields are the main cause of poverty of the community and the community will not be food self sufficient unless minefields are cleared.
76. *The community was food sufficient before the war. Therefore, the most conservative estimate of food production lost because of landmines would be the production in the worst years, that is, 15 quintals per family per year. This results in 10,800 quintals of production lost due to landmines. The market value of this produce is estimated as US\$280,000. This appears reasonable in terms of the average annual contribution to GDP of US\$78 per person.*
77. *The cost of maintaining the people in the camp is US\$812,500 (US\$250 per person for 3,250 people). Therefore, the total cost in terms of food production lost and the cost of maintaining the IDPs is US\$1,092,500.*
78. *The cost of mine clearance in Shilalo has been estimated by the EDA at US\$1,090,383. This compares favourably to the benefits indicated in the previous paragraph.*

Threat to life

79. Over the last year a landmine killed one person and a 15 year old was injured by UXO. There are 4 disable children living in the community who are continuing with their education.

Experience of mine action

80. Landmine clearance is progressing in the area and the community is satisfied with the cooperation they receive from the de-mining teams. They have received MRE, which was effective in reducing accidents but there is still a problem with children following animals in the minefields. Marking is effective for adults but unless fenced children and animals will enter marked minefields. They are not aware of victim support.

Prioritisation

81. For the community the priority for landmine clearance is the access to the temporary village (for the rainy season) and the agricultural land.

Integration and coordination

82. Agricultural land that has been cleared of landmines is not used as the people are still in the IDP camp; therefore bringing back the people to the village is critical for the resumption of normal life and agricultural activity.
83. For the IDPs to return:
- ◆ The school and clinic that have been built close to the village has to operate.
 - ◆ Assistance should be given for the reconstruction of their houses that have been destroyed during the fighting.
 - ◆ The shortage of drinking water in the village should be solved.
 - ◆ Landmine cleared fields that are covered with bushes and trees should be cleared of this vegetation so as to be cultivable.
 - ◆ Agricultural assistance should be given so as to reclaim agricultural and grazing land.
84. The above issues in conjunction with the proximity of the village to the Ethiopian border make the people feel insecure about the prospect of returning to their village. *Therefore, unless there is an integrated recovery program involving the EDA, Government Departments and local Government, the benefits that can accrue from de-mining will not materialise.*

4.6 The Community of Kuazien

Background

85. The community of Kuazien is in sub Zoba Serejeka in Zoba Maekel, and has a population of approximately 4,000 people and 935 families.

The socio economic impact of landmines

86. Per the LIS Kuazien is a high impacted community with eight minefields covering an area of 369,500m², blocking cropland, pastureland, fuel, food, and building material.

Agriculture and livestock

87. Normal agricultural production was 10 quintals per family per year and included wheat, barley, corn, beans, maize and potatoes (*this represents an aggregate production of about 9,350 quintals for the community*). Production was primarily consumed in the village but in good years there was excess production of potatoes and beans for sale. Landmines block about 30% of the community's agricultural land and some people are so desperate that they cultivate minefields. .
88. *Currently the community is 70% reliant on the 10Kg per person per month of food aid that they receive, the other 30% is covered by their own production, primarily potatoes. As they were food sufficient, the quantum of food aid would represent the loss of agricultural productivity due to landmines. The aggregate loss at 4.29 kg per person per month is about 729,000 kg. Lost production is determined at about US\$189,000. This is reasonable in terms of the loss representing US\$ 200 per family per year.*
89. *The community lost during the last 30 years 390 cows, 120 donkeys and about 90 goats because of landmine. This has had huge economic impact on the community, considering the value of the animals lost and the lost production. The people had many animals and sold butter, milk and meat that generated, with 1975 prices 1,000 Nakfa per family per year. Based on an inflation of 50% over the past 29 years, the loss at current US dollar value would approximate US\$104,000, excluding the sale value of animals .The total loss to the community is therefore US\$293,000 per year.*

90. *The cost of landmine clearance in Kuazien has been estimated by the EDA at US\$491,435. This compares favourably with the benefits that will arise as indicated in the previous paragraph.*

Threat to life

91. There have been many landmine and UXO accidents in the community over the years and a number of landmine survivors live in the village. The primary impact of landmines on the community is fear. There are no medical facilities in the area so in case of accidents after first aid victims are taken to Asmara, resulting in travelling costs and disruption to daily family life.

Experience of mine action

92. There has been no landmine clearance, MRE or marking in the community. In terms of victim support there is a very successful Community Rehabilitation Program (CBR) for all disabled people. The benefits of this spread beyond the disabled to the whole community, creating a supportive community spirit and a “can do” “self help” attitude. The CBR committee is very active and is the link between the community and the sub Zoba and Zoba administration. Disabled people are given priority for jobs and are assisted with agricultural activities. Two landmine survivors participated at the community meeting. As a result of CBR, they have a job; a family and they are very active in the community. They explained that disabled people do not want to live on aid they want the opportunity to lead a normal life. The “CBR spirit” extends to about 420 female-headed families that the community helps in their agricultural activities.

Prioritisation

93. The community listed three minefields, Wuldeshu, Saelezghi and Kurmti Ansti, as priorities for clearance. Clearance of these would reduce the threat to life, free fertile agricultural land; facilitate two harvests in a year and free access to firewood. The community believes in sharing the benefits of landmine clearance equally amongst all community members. The community is very keen that as a first step, the minefields are fenced and MRE provided to the community to reduce the risk of accidents. The community people expressed scepticism about mine action; despite of the many meetings and visits by various groups, no action was initiated yet for the benefit the community.

Integration and coordination

94. In addition to agricultural assistance the community people (including landmine accident survivors) are very keen to receive micro finance so to start small businesses like a bakery and a beauty salon in the community.

4.7 Conclusions

95. The key conclusions are:

- ◆ In all communities the threat to life has been sited as the most significant impact of landmines and UXO on daily life. The community leaders expressed the view that marking, fencing, MRE and victim support should be provided to reduce this threat until landmine clearance, which is ultimately what they want, is possible.
- ◆ The displacement from homes is the second most significant impact. In IDP communities the benefits of mine clearance are the greatest as the land that returns to agricultural production far exceeds the landmine-contaminated land cleared. In addition the costs of maintaining the people in IDP camps would be foregone. However, landmine clearance alone is not sufficient to achieve these benefits. Assistance for home rebuilding,

agricultural assistance and infrastructure development is also necessary. The costs of these are not known.

- ◆ There are communities where once the drought is over, landmine contamination will be a cause of food insecurity. Agricultural assistance will be necessary for these communities to reclaim the landmine-cleared land.
- ◆ A landmine clearance cost benefit analysis was carried out for each community on the basis of the costs of clearance estimated by the EDA and data collected at the visits. The recovery of the costs would depend on factors such as the drought, the agricultural productivity and the time taken for the land to be put back into production (both would depend on the agricultural assistance provided).

5. The socio economic impact of landmines

5.1 Introduction

96. The conclusions and recommendations were arrived at on the basis of the five community visits, discussions with EDA and UNDP officials and analysis of the LIS and of other data gathered.

5.2 The landmine problem according to the LIS

Extent of landmine impact

97. Landmines affect directly all six zobas, 55 of the 58 sub zobas and 481 of the 4,176 communities in the country. The landmine impact on Eritrea is summarised in table 1.

Zoba	Sub Zobas		Communities		Population	
	Number	Percentage	Number	Percentage	Number	Percentage
Anseba	10	18%	111	23%	107,446	16%
Debub	12	22%	91	19%	91,661	14%
Debubawi Keih Bahri	4	7%	18	4%	9,924	2%
Gash Barka	14	25%	90	19%	173,560	26%
Maekel	6	11%	39	8%	93,271	14%
Semienawi Keih Bahri	9	16%	132	27%	179,255	27%
Total	55	100%	481	100%	655,117	100%

Table 1 – Impacted sub Zobas, communities, and populations, by Zoba

98. The level of landmine impact on communities and people is summarised in table 2. Of the 33 highly impacted communities, 11 are in Debub (33%), and in Gash Barka and Semienawi Keih Bahri zobas 7 (or 21%) each.

Impact Category	Communities	Impacted Population	Mined Areas
High	33	56,993	86
Low	348	449,031	579
Medium	100	149,093	249
Total	481	655,117	914

Table 2 - Impacted communities, populations, and mined areas, by impact category

The victims of landmine and UXO accidents according to the LIS

99. The LIS is currently the only available source of data and analysis on victims of landmine accidents. It gives a representative sample of the landmine victim problem in Eritrea as it reports the relatively recent victims of landmines and UXO in the communities visited during the survey. It is not a comprehensive analysis of the problem. Table 3 provides a summary of landmine and UXO victims by number, nature of casualty and communities. It indicates that, of the 481 impacted communities, 399 had a history of accidents, with at least one dead and / or injured person.

Victims	Fatal	Non-Fatal	All	Communities involved
Recent victims*	77	218	295	117
Less recent victims**	3075	2015	5090	280
Total victims	3152	2233	5385	399
No victims	-	-	-	82

* Defined as people who were killed or injured during the two-year period prior to the survey.
 ** Incidents more than two-years prior to the survey (estimated).

Table 3 - Mine victim survey

100. Table 4 provides data on victims of accidents by age and gender. Of the 295 victims 209 are less than 29 years old and of these 116 are less than 14 years old.

Age	Female	Male	Total
0-4 years	3	1	4
5-14 years	25	87	112
15-29 years	8	95	103
30-44 years	5	27	32
45-59 years	2	29	31
60_above	5	8	13
Total	48	247	295

Table 4 - Recent victims, by age and gender

101. Table 5 presents the activity of the victims at the time of accidents. The most dangerous activity (62% of accidents) is herding, an activity usually carried out by children and youth. It is worth noting the sad finding that 9% of accidents occurred whilst “playing” and “tampering” usually with UXO. Therefore the most vulnerable are the children and young people.

Occupation	Female	Male	Total
Military	0	2	2
Civilian			
Collecting Food and Water	2	7	9
Farming	0	22	22
Herding	22	161	183
Household work	2	0	2
Playing	6	14	20
Tampering	3	5	8
Travel	5	19	24
Other	8	15	23
Unknown	0	2	2
Civilian subtotal	48	245	293
Total	48	247	295

Table 5 – Activity of victim at time of mine incident

102. On the basis of the community visits, the following have been identified as the most significant impacts of landmines:

- ◆ Impact on people
- ◆ Displacement from homes and the land and
- ◆ Food insecurity.

5.3 The impact on people

103. In all, five communities visited people live in fear. This is the result of being surrounded by minefields, leading in insecurity that dramatically affects the daily lives of people. In all communities visited there have been landmine and UXO accidents resulting in death and disability. The prospect of death and injury, particularly amongst children, puts a huge psychological burden on people.

104. Table 5 indicates that most accidents occur because people, in particular children, follow their animals that stray into minefields that offer rich vegetation for grazing. This pattern is supported by the fact that pastureland blockages are present in 399 of the 481 communities and 83% of the impacted population, and was confirmed at the community visits. Most minefields are not marked and marking does not prevent animals from straying into them. It is a demonstration of the desperation of people, as they are willing to risk their lives in order to save their animals.

105. The most vulnerable group, children and the young, have many productive years ahead of them. In Eritrea 90% of the population is less than 60 years old⁷, and life expectancy at birth barely exceeds 50⁸. This data presents serious implications in terms of the loss of productivity because of current victims but also because of future victims, that are more likely to be children. One should also consider the impact of an accident on the quality of life of the survivor and the implications for the family and the community.

106. The disruption to family life and consequent loss of income of a landmine or UXO accident is significant, particularly if the victim is a child, which means that the parents would also have to travel and spend time at the hospital. For communities that rely on all family members to help in the daily agricultural and pastoral activities a landmine or UXO accident that takes the injured person and one parent out of daily work can be the cause of poverty for the whole family.

Victim Assistance

107. The most acute need of landmine accidents survivors is not the medical rehabilitation but assistance in helping them to resume their roles as productive community members and contributors to their families' well being⁹. This was confirmed at the meeting with landmine accident survivors in Kuazien.

108. Therefore the Community Based Rehabilitation (CBR) programme, under the overall management of the Ministry of Labour and Human welfare (MLHW), that aims to build support mechanisms to help disable people resume their lives, is of critical

⁷ Eritrea, Demographic and Health Survey 2002, table 2.1, on page 10, a publication of the National Statistics and Evaluation Office Asmara, Eritrea.

⁸ Eritrea Agricultural Sector Review, The World Bank, 26 June 2001 page 1-4

⁹ The World Rehabilitation Fund-Guidelines for the Socio-Economic Integration of Landmine Survivors, page 1.

importance to landmine accident survivors. CBR is important because its benefits spread to the whole community (as witnessed in Kuazien) and continues to provide support after the other mine action activities are over.

109. The community visits revealed that most of the communities do not have immediate access to medical or health facilities, and on many occasions landmine and UXO accident survivors were carried on foot for long journeys to regional health centres, with only nurse support, and ultimately were transferred to Asmara for treatment. An added consideration is that Eritrea is a mountainous country and although medical facilities may appear to be fairly well distributed, equity in terms of access is difficult to achieve due to topography and the lack of roads.
110. There are three orthopaedic workshops that have the capacity and know how to support landmine and UXO victims but are currently under utilised because of lack of materials.

5.4 Displacement from homes and the land

111. An estimated 64,000 people still live in fourteen IDP camps in zobas Gash Barka, Debub and Semienawi Keih Bahri. The IDPs originate from 58 communities, of these 23 are landmine affected, 18 are not mine affected and 17 were not located or were inaccessible.
112. The people in these communities totally depend on food aid and most of them are not in economic production. The total cost (including food aid) of maintaining the people in IDP camps was estimated at US\$250¹⁰ per person per year.
113. In the case of landmine impacted IDP communities the agricultural land that is not cultivated because the people are not in their villages far exceeds the area of the minefields. For example in Tisha for every square metre of minefield cleared 40m² of agricultural land are put back to agricultural production, and in Shilalo for every square metre of minefield cleared 150m² are put back into agricultural production. Therefore landmine clearance is more cost effective in IDP communities.
114. On the basis of the visits to Tisha and Shilalo, landmine clearance will not be sufficient for the IDP to return and resume a normal life. Assistance for rebuilding of homes, agricultural assistance and infrastructure development will also be necessary.

5.5 Food insecurity

115. Although, as discussed in section 2.4 Economy, agricultural productivity is low (six times less than the average of Sub Saharan Africa) 80% of the people depend on agriculture for their livelihood.
116. On the basis of data provided by the Ministry of Agriculture the average agricultural productivity for each of the six Zoba and the country during the period 1992 to 2003 for cereals, pulses and oil crops is presented in table 6. In the same period, on the basis of the same information, the best year was 1998 with a production of 0.094Kg per m² and the worst year was 2002 with a production of 0.016 Kg per m².

¹⁰ Eritrea Mine Action Capacity Building Program, Appraisal Team Report

Zoba	Agricultural production Kg / m2
Debub	0.048
Gash Burka	0.053
Maekel	0.068
Anseba	0.040
Semienawi Keith Bahri	0.053
Debubawi Keith Bahri	0.000
The Country	0.051

Table 6 – Average agricultural production for the years 1992 to 2003

117. Table 7¹¹ shows the number of animals per Zoba for 2002. The Zobas that receive high rainfall (defined as more than 477mm) are Gash Barka, Debub and Maekel¹². Therefore the agriculturally significant Zobas are Gash Barka, Debub, Maekel and Semienawi Keith Bahri.

Zoba	Livestock		
	Cows ' 000	Goats ' 000	Poultry ' 000
Debub	506.00	1,346.00	499.00
Gash Burka	949.00	2,463.00	417.00
Maekel	40.00	180.00	84.00
Anseba	227.00	763.00	77.00
Semienawi Keith Bahri	185.00	1,492.00	27.00
Debubawi Keith Bahri	86.00	694.00	6.00
Total	1,993.00	6,938.00	1,110.00

Table 7 Livestock by zoba

The landmine impact on agriculture and livestock

118. Table 8 presents the number of landmine-affected communities, the landmine-affected population, the total contaminated area, the cultivable land (rain fed and irrigated land as defined in the LIS) and pastureland-contaminated area per zoba on the basis of the LIS. All rain fed and irrigated land; farmland and a substantial area of non-agricultural land are used as pasture land. This is the reason that pastureland constitutes such a high percentage of the total contaminated land. The average land area cultivated every year between the years 1999 to 2003 (on the basis of Ministry of Agriculture data)

¹¹ Source International Monetary Fund report on Eritrea, statistical appendix page 83.

¹² Eritrea Rural Livelihood Security Assessment, Report of the Findings, July 2003 table 2.1 page 6.

Zoba	No of communities	No of people affected ('000)	Total Contaminated area M2 ('000)	Cultivable land contaminated area M2 ('000)	Pasture land contaminated area M2 ('000)
Anseba	111	107,446	11,982	4,794	11,785
Debub	91	91,661	13,056	10,716	10,666
Gash Burka	90	173,560	8,745	5,316	5,810
Maekel	39	93,271	25,323	20,101	22,316
Semienawi Keith Bahri	132	179,255	62,547	32,245	60,630
Debubawi Keith Bahri	18	9,924	7,397	340	7,253
Total	481	655,117	129,050	73,512	118,460

Table 8 – Landmine contamination by zoba

119. In order to extrapolate the landmine impact on food production on the country as a whole the average yield production figures for the period 1992 to 2003 by Zoba are multiplied with the corresponding area of potentially cultivable contaminated land of the Zoba. This gives an indication of the annual lost production for each Zoba as a result of contamination by landmines.

120. The inherent weakness of this calculation is that it ignores agricultural land that is not landmine contaminated (and hence not included in the LIS) but is not used because of landmines as:

- ◆ Landmines block access to it or
- ◆ The people have been displaced from the area as a result of landmines (particularly in the agriculturally significant Zobas of Gash Barka and Debub)

Zoba	Annual lost production Kg
Debub	514,368
Gash Burka	281,748
Maekel	1,366,868
Anseba	191,760
Semienawi Keith Bahri	1,708,985
Debubawi Keith Bahri	0.000
The Country	4,063,729

Table 9 Annual lost agricultural production due to landmine contamination

121. A monetary value of lost agricultural production is not calculated, as under the current drought conditions it is difficult to obtain representative market prices. In addition, as most people are currently dependent on food aid the additional production from the landmine contaminated cultivable land would go into consumption.

122. The impact of landmines on livestock is interlinked to agriculture because of the extensive use of animals for ploughing. In addition the loss of animals in minefields is significant, as the price of a donkey or a cow can be equal to one year's income, and has

a serious economic impact on affected communities. For many affected communities livestock is the only source of income from the sale of milk, butter and meat and no value can be placed on lost income when the only means of transportation (a donkey or camel) is lost.

123. On the basis of the community visits for many landmine-impacted communities once the drought is over landmine contamination will be a cause of food insecurity. Therefore the landmine impact on food security should be seen from the community perspective.

6. Prioritisation

124. In an ideal world every single landmine would be removed. But in a world where there are scarce resources and competing needs, prioritisation is crucial. In addition, from a purely socio economic cost benefit perspective, removing every single landmine is not a viable solution, as the incremental benefit compared to the incremental cost of removing every single landmine will be diminishing. Prioritisation should take place at the **national level** and at the **community level**.

6.1 Prioritisation at community level

125. In all five visits the community leaders already knew their priorities and they were willing to discuss this issue. Therefore communication with the community will be very useful and effective in arriving at priorities.

Key considerations for prioritisation at community level

126. On the basis of the discussion with community leaders during the five community visits, the key considerations identified for prioritising mine action at community level are in order of importance:

- ◆ Threat to human life.
- ◆ Displacement from homes because of landmine blockage.
- ◆ Contamination of significant agricultural and grazing land that results in food insecurity.
- ◆ Blockage of water sources and firewood.

127. On the basis of the community visits the level of threat to life posed by a minefield can be assessed by considering the following:

- ◆ Recent landmine and UXO accidents.
- ◆ Proximity of minefield to homes.
- ◆ Proximity of minefield to access roads and non-contaminated grazing land.

128. In the case of food insecurity due to landmines the minefields to be cleared should be carefully selected. The essential question that needs to be asked is; which minefields will make the community food self-sufficient once cleared subject to rainfall and the necessary agricultural assistance? On the basis of the five community visits selection considerations for minefield prioritisation should be:

- ◆ The fertility of the soil.
- ◆ Proximity to rivers and other water sources and hence use as irrigated land.
- ◆ Proximity to the village.
- ◆ Quality of grazing land and ease of access by animals.
- ◆ Number of crop periods on the contaminated land.

- ◆ Terrain, location and vegetation – factors that will influence the cost and time needed for landmine clearance
- ◆ Whether agricultural assistance will be available to ensure that the cleared land is put back to productive use immediately after landmine clearance

129. The above considerations can be used in

- ◆ Prioritising minefield clearance within a community and
- ◆ Prioritising communities of equal landmine impact for landmine clearance on the basis of socio economic considerations.
- ◆ Post landmine clearance assessment.

6.2 Reducing the threat to life at community level

130. In all visits the community leaders stressed that, although ultimately they want all minefields to be cleared, they would like Victim Support, MRE, marking and fencing in their communities as a means of reducing the threat to life until landmine clearance takes place.

131. Complete landmine clearance may be achieved, subject to sufficient funding, over the next fifteen years. This means that many communities will live with the threat of landmines for many more years. It is in this context that in addition to the integrated approach for mine action, which will deal with the national priorities, consideration should be given to national MRE, marking and fencing campaigns, which can run in parallel with the integrated approach to mine action, and extension of CBR to cover all landmine impacted communities.

132. CBR can provide the communication network with landmine impacted communities that could facilitate MRE, marking and fencing campaigns and a reporting mechanism for accidents and any changes of circumstance in a community (e.g. movement of landmines and UXO as a result of heavy rainfall and landslides). For this to be achieved enhanced cooperation between the EDA and the Ministry of Labour and Human Welfare will be necessary.

133. Marking will ensure that communities at least know where there are landmines and fencing would prevent access to the most dangerous minefields. Fencing should be basic, in the form of stones, and the community should get involved in the fencing process so as to have ownership of the fence and protect it.

134. On the basis of information provided by the EDA the set up cost for an MRE team is US\$49,760, the operating cost for a year is US\$22,000 and one team can visit 36 communities in a year. Over a five-year period the cost per community visit (including amortisation of set up costs) is US\$887. Marking costs about 10% of the cost for mine clearance¹³ and setting up CBR for a community costs US\$12,000.

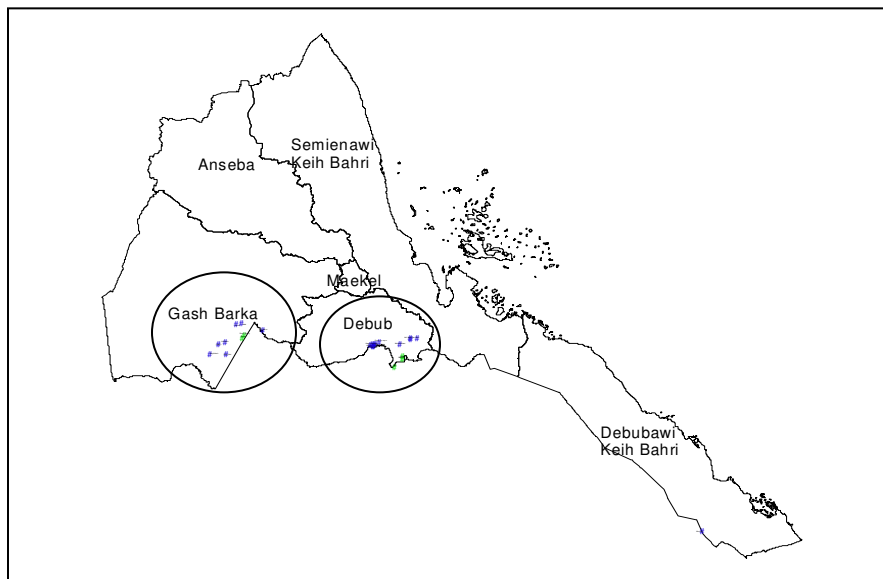
6.3 National level prioritisation

135. At national level the priorities have already been set by the Government as the:

- ◆ Return of IDPs to their homes and their land and
- ◆ High impacted communities

¹³ T. Paterson, S Sekkenes and G Wickware, “Task Assessment and Planning: a pilot project in Bosnia and Herzegovina, mission report”, Sarajevo 2002.

136. Currently the drought is the main cause of food instability and poverty in the country but once the drought is over many landmine-affected communities will still have to rely on food aid as landmines block their agricultural and grazing land. Therefore the food security issue could be added to the above priorities.
137. With regards to IDPs priority for mine action should be given to communities where other recovery activities (e.g. house building assistance, agricultural assistance) are in place so as to ensure that soon after the IDPs return to their community they will be able to resume a normal life, maximising the benefit of mine action.
138. The above national priorities are not contradictory or mutually exclusive but in many respects complimentary. On many occasions one mine action activity will lead to fulfilment of all three priorities. This is the most desirable outcome as it leads to the best utilisation of resources. **Therefore considering clusters of mine affected communities with all the above three priorities in mind, for prioritisation at a national level, will lead to the best use of resources.**
139. With regards to meeting the objective of return of IDP, it is noted that the IDP communities and IDP camps are in the zobas of Gash Barka and Debub (see map below). Of the 33 highly impacted communities, 11 are in Debub (33%), and 7 (or 21%) are each in Gash Barka and Semienawi Keih Bahri zobas. With regards to addressing the food security issue the agriculturally significant Zobas, in terms of production and yield, are Maekel, Gash Barka, Debub and Semienawi Keith Bahri. On the basis of this high-level analysis it appears that considering mine action in clusters of communities in the Zobas of Gash Barka, Debub and Semienawi Keih Bahri will address all national level priorities simultaneously in the most cost effective manner.



Map 2 IDP communities in Gash Barka and Debub

7. Integration with the national development priorities

7.1 The national development priority documents

140. For the purposes of this study the three main national development documents were reviewed to assess the linkage with landmine impact and mine action.

141. The **Integrated Recovery Programme (IRP)** represents “an integrated and comprehensive assessment of the relief-transition-development needs of IDP, expellees, returnees and their host communities.” The document refers to landmines only as a cause of delay for the return of the IDP. None of the key sections in the IRP makes a distinct reference to those host communities that are impacted by landmines and where mine action is required for the return of IDP. Consequently, no reference is made to the mine action activity that is necessary for the return of IDPs, and no reference is made to the socio economic and humanitarian impact of landmines on the people who are currently IDP and the assistance and support that they need. The EDA and EDO are not included in the agencies with which coordination is necessary in the context of the IRP. It seems that the document assumes that mine clearance would take place before the implementation of the IRP.

Recommendation

142. Given the time necessary for mine clearance, the lack of resources and the number of landmine impacted host communities, it would be more appropriate if mine action was integrated as one of the key activities that is necessary for the implementation of the IRP, with particular analysis of the coordination that would be needed.

143. The **Interim Poverty Reduction Strategy Paper (IPRSP)** sets out the long-term strategy for addressing poverty in the country. The only references to the landmine problem are at a high level with regards to reduced agricultural output and the threat to IDPs that would return to landmine impacted communities. On the basis of the community visits, there are four broad areas where there is a clear link between landmine contamination and poverty:

- ◆ Loss of income by families as a result of landmine and UXO accidents (particularly involving children and young people) and the lack of extensive CBR programs that would help them resume normal lives.
- ◆ IDP that cannot return to their communities and remain in IDP camps unless mine action takes place.
- ◆ Landmine impacted communities that cannot be food self sufficient unless landmine clearance takes place.
- ◆ The psychological impact on people as result of living with the daily fear of landmines and UXO.

Recommendation

144. The above four broad areas of linkage of landmine contamination with poverty should be discussed in the IPRSP with particular reference to the coordination that would be necessary between mine action and other programs so as to achieve maximum socio economic benefit.

145. The **Food Security Strategy** is an integral component of the national development strategy. On the basis of the community visits it is evident that there are communities that would never be food secure unless mine action takes place. It is also clear that mine action would not be sufficient to make these communities food self-

sufficient. Coordination between mine action and other development programs would be necessary to achieve this.

Recommendation

146. For the above reasons it would be appropriate for mine action and the necessary coordination to be addressed in a separate section of the FSS.

7.2 The role of the EDA

147. Landmine contamination is an impediment to development and a contributing factor to food insecurity, poverty, and displacement of people in the landmine-impacted communities. The development programs that aim to address the above issues cannot proceed unless mine action takes place and mine action on its own is not sufficient to solve these problems. Coordination of mine action with the other development programs at the community level is absolutely necessary for communities to benefit.

Recommendation

148. As there is very little reference to mine action in the three national development documents reviewed (The Interim Poverty Reduction Strategy, The Integrated Recovery Programme and the Food Security Strategy) the EDA should address the issue of what else needs to be done for mine action to result in immediate and maximum socio economic benefits for the country.

149. Consequently the EDA should fully assume its coordination role as set out in Proclamation 123. Specifically:

- ◆ The EDA should present the final LIS report and the proposed national mine action strategy to the President, to whom it reports.
- ◆ Following this, a presentation of the proposed national mine action strategy should be made to all government Ministers, heads of Ministries and Zoba administrators on the invitation of the President.
- ◆ Each Ministry should be asked to designate one official that will represent the ministry at coordination meetings that should take place on a monthly basis.
- ◆ The EDA should internally designate officials responsible for coordination with specific government departments.
- ◆ The EDA should present proposed priorities and coordination plans to community leaders of affected communities at sub zoba regional meetings and receive their comments.
- ◆ The EDA should draft a coordination plan setting out the responsibilities, priorities and time frames and monitor its implementation.
- ◆ The EDA should set up regional offices with priority to the Zobas where mine action will take place first so as to ensure that the necessary coordination takes place at community level.
- ◆ The EDA should develop a communication strategy with the aim of raising awareness of the landmine problem in Eritrea amongst Government Departments, the international organisations and embassies that are represented in the country and the local and international press.

Annex 1 – The community visits questionnaire

Name of the community:

Zoba:

Sub Zoba:

LIS reference:

Background information on the community

1. What is the total population of the community (including IDPs)?
2. What is the percentage of females?
3. What is the percentage of people who are economically productive?
4. What is the percentage of IDPs?
5. What is the average number of people per family / household?
6. Which ethnic groups are represented in the community?
7. What is the percentage of each ethnic group?
8. Are families relatively equal or are they vastly different in wealth?
9. What factors contribute to the difference in wealth?
10. What are the main economic resources of the community?
11. What are the main sources of income of the community and the corresponding percentages to the total?
12. What is the estimated total annual income of the community?

Agriculture

13. Which are the main crops cultivated?
14. What is the average annual production of each of these crops?
15. What are the current sale prices of each of these crops?
16. What is the average crop production per land area for each of these crops?
17. What is the average annual growth in total agricultural production?
18. What percentage of the produce does the community consume?
19. Where does the community sell its agricultural produce?
20. Is there agricultural land, which is also used for animal grazing or other economic activity?

21. If yes what percentage?
22. What is your average agricultural cost per land area i.e. fertilisers, labour, equipment etc?

Livestock

23. Which are the main types of animals in the community?
24. Which are the types of pasture?
25. What is the average annual income from each of these types of animals?
26. What is the produce i.e. milk, meat, skin, wool, the animal itself?
27. What is the current sale price for these products?
28. What percentage of the produce does the community consume?
29. Where does the community sell its livestock produce?
30. What is the area of land needed for grazing per animal?
31. What is the annual growth in total animal population?
32. What is your average livestock cost per land area i.e. medicines, labour, equipment etc?

Other economic information

33. Is the community food self-sufficient?
34. What is the nature of aid received by the community i.e. cash, food supplies?
35. What is the level of aid received by the community per year?
36. What are the occupations of people in employment?
37. What is their average income per person from employment?
38. What services and facilities does the state provide i.e. health, education?
39. What resources does the community need in order to sustain an independent livelihood?

Impact of landmines on daily life

40. What are the main risks that the community faces other than landmines?
41. Are these risks more or less significant than landmines?
42. How does the community cope with these risks?
43. Have there been any community efforts or initiatives to deal with the landmine problem?
44. What has been the most significant impact of landmines on the community?

Impact of landmines on agriculture and livestock

45. What is your estimate of loss of annual agricultural income for the community because of the landmine problem?
46. What is your estimate of loss of annual livestock income for the community because of the landmine problem?
47. How many animals are lost on average per year as a result of landmines?
48. Do landmines block any water resource that is crucial for agriculture and/or livestock?
49. Are there any other factors that adversely affect agricultural and livestock production other than landmines?
50. Are these factors more or less significant than landmines?

Impact of landmines on other economic resources

51. Which is the most economically significant economic resource other than agricultural and grazing land that is blocked by landmines e.g. roads?
52. Why is it significant?
53. What is the annual income lost as a result of this blockage?

Humanitarian impact of landmines and victim support

54. How many deaths as a result of landmines since the LIS?
55. How many people sustained injuries as a result of landmines since the LIS?
56. Are the landmine victims mobile within the community and how?
57. Are the landmine victims economically active?
58. If they are economically active what economic activity do they pursue and what is their annual income?
59. If not, which is the main obstacle in landmine victims becoming economically active?
60. Have the landmine victims received any rehabilitation support?
61. What is the main obstacle in receiving rehabilitation support?
62. Have the children landmine victims been able to continue their education?
63. What is the main obstacle in continuing their education?
64. Do landmine victims have access to health / medical care?
65. What is the main obstacle to receiving the required medical / health care?

- 66. What is the annual cost to the family of medical / health care for landmine victims?
- 67. Are the problems of access to health / medical care and education specific to landmine victims?
- 68. What has been the most significant impact of landmines on family life?
- 69. Any suggestions for victim support?

Impact or potential impact of landmine clearance

- 70. For each minefield, what will the land be used for? *
- 71. For each minefield, will the land be put to productive use immediately? *
- 72. If not what is the reason? *
- 73. What else needs to be done for the land to be back in productive use? *
- 74. Will IDPs return to their homes immediately after landmine clearance?
- 75. If not what is the reason?
- 76. What else needs to be done for IDPs to return to their homes?
- 77. What will be the economic benefit for the community of IDPs returning to their homes?
- 78. What will be the increase in annual agricultural income for the community if all minefields are cleared?
- 79. What will be the increase in annual livestock income for the community if all minefields are cleared?
- 80. Will landmine clearance have a benefit on employment?
- 81. If yes what is the expected annual increase of income for the community?
- 82. Any other economic benefit of landmine clearance, and the corresponding increase in annual income for the community?
- 83. What should be the considerations for prioritising landmine clearance in your community?
- 84. Which minefield should be cleared first and why?

Mine risk education

- 85. Has the community received any mine risk education?
- 86. What percentage of people in the community received mine risk education?
- 87. Was mine risk education effective in avoiding accidents?

88. If not why?

89. Any suggestions on mine risk education?

Marking of minefields

90. Which minefields in the community are marked?

91. Is marking effective in avoiding accidents?

92. If not why?

93. Any suggestions on marking of minefields?