HELMAND CLEARANCE MODEL:

REMOVAL OF KNOWN[1] HAZARD IN FOUR YEARS

- **63 demining teams**
- **7 EOD teams**
- **7 mechanical assets**
- **7 mine detection dog teams**
- **New technology for large hazards**
- **1,500 job opportunities**
- **$44 million**

On behalf of the Government of Afghanistan MACCA/DMC are the custodians of the national mine action database.

The database holds information concerning

- all reported hazard
- the extent and type of contamination
- the number of people impacted including their gender and age
- the effect each hazard has in terms of blockage to resources
- planning criteria and the resulting priorities for clearance
- the progress of clearance
- clearance rates of assets according to contamination type
- annual and quarterly clearance plans for all operators
- financial details of donor support, including the level and geographical area of investment

This data enables detailed and accurate historical analysis. In addition it provides an opportunity to model management solutions and scenarios for clearance.

The following pages detail one such modelling exercise, undertaken by MACCA in February 2010.

[1] Data taken from IMSMA 8th March 2010

Introduction & background

The following documents propose a four year solution to

- clear all known hazard[1] from Helmand Province
- contribute to stabilization in the province by providing sustained employment opportunities for 1,500 people

Almost 73 sq km of land in Helmand Province is contaminated by landmines and Explosive Remnants of War (ERW); 62 communities are impacted, over 100,000 people affected and to date there have been over 400 victims of mine and UXO accidents.

There are two issues of note concerning the contamination in Helmand. First, of the total land contaminated, 45 sq km consists of two very large minefields in Sangin and Pan Kelah Janubi[2] which are contaminated by sporadically laid anti-tank mines. MACCA does not believe it to be cost effective or appropriate to address this hazard using the technical capacity currently deployed in Afghanistan. MACCA recommends putting the removal of this hazard to global tender in an effort to draw in a new and innovative management solution to this specific problem. MACCA anticipates the cost to clear these minefields to be approximately US$10 million.

Second, almost 12.5 sq km of hazard results from areas of abandoned Improvised Explosive Devices. These areas are in the vicinity of Naw Zad and were reported to MACCA in February 2010. Supported by the United States Department of State, a small clearance project has been established in Naw Zad. The project is in its very early stages and accurate data concerning clearance rates and cost for removal of this type of hazard is not yet available. For the purposes of this project MACCA has assumed that clearance will be quicker [3] than for conventional minefields as the density of devices is likely to be less.

MACCA is well aware that manual mine clearance rates on different minefields can vary significantly. However, for this modeling exercise an average manual mine clearance rate [4] has been used for all minefields (with the exception of the two large minefields and IED fields mentioned above) regardless of terrain (hillside, flat land), soil type or vegetation cover, which are the factors which tend to affect clearance rates. It has been assumed that each team comprises 10 deminers, the most common team structure in the programme.

According to UN Department of Safety and Security all of Helmand Province is designated as “extreme risk”; clearly this poses a challenge to any project implemented in the province. In 2008, in an effort to enable demining in areas of insecurity the concept of Community Based Demining (CBD) was developed. The basic concept is that if communities are involved in the clearance of hazard from their own

[1] Data taken from IMSMA 8th March 2010. All minefields (not battlefields) recorded in IMSMA were considered including those where demining has already commenced. The area remaining on these hazards (denoted as “worked on” in IMSMA) as of the end of February 2010 is included in the calculation.
[2] 25 sq km and 20 sq km respectively
[3] Estimated at 20,000 sq m per team per month
[4] Equal to 10,000 sq m per month as observed by MACCA during the last three years of monitoring Implementing Partner operations

communities they take ownership of the project and provide the security required. Ten community based projects established and operating successfully in Helmand, Ghor, Khost, Nangahar, Kandahar, Kunar and Uruzgan indicate the concept behind the CBD approach to be robust and effective.

Further to providing security for the deminers CBD also contributes significantly to stabilization, as described by a Community Based Deminer from Khost;

"When I first heard that the mine clearance programme would start in our village, I could hardly believe it. Because of the security concerns, no other projects had come to our village. Many of our young people who had no jobs are now employed by the project and this has really helped the security and stabilization of our community."

A further benefit of using the CBD model is that employment opportunities are "secondary". This means that community members conduct demining in their own villages and communities in the mornings and for the rest of the day they are able to conduct their normal income generation activities; farming, grazing, shop keeping, manual labour etc. This approach enables communities to benefit from increased income which can be re-invested in local economies and eliminates the "economic shock" of redundancy when clearance ends.

Project design

This project has been designed to replicate and build on the community based clearance capacity established and operating in Lashkar Gah and Naw Zad.

As can be seen in Annex A, hazards have been clustered to create smaller sub-projects within the overall clearance plan. Each cluster takes into consideration geographical barriers between communities (rivers, mountains, etc) and the extent of hazard in each cluster (please see Annex A for details).

To provide a sustained stabilization effect, the project aims to clear individual clusters over a period of 24 months or more. MACCA believes it is better to employ less people but provide a longer income generation period than to create more jobs but only for a short term. Furthermore, it is more cost effective to fund equipment and set up costs for fewer teams. Only cluster 10, where the extent of hazard is small, will be cleared in 12 months. All other clusters will require 24 month operation periods, with the exception of cluster eight which will require a period of 36 months and clusters twelve and fifteen which will require 48 months for completion.

It is MACCA's recommendation that manual clearance teams be supported by a mine detection dog capacity, mechanical assets and Explosive Ordnance Disposal teams. These assets are not required in

every cluster; they are assets which can be deployed within a group of clusters as required. Given the location and extent of hazard in each cluster, supporting assets will be shared by two groups; clusters 1, 2, 3 & 5 and clusters 6, 7 & 8. The size of hazard in the remaining clusters requires supporting assets in each cluster. In total this project will require 63 community based demining teams, 7 mine detection dog teams, 7 mechanical assets and 7 EOD teams.

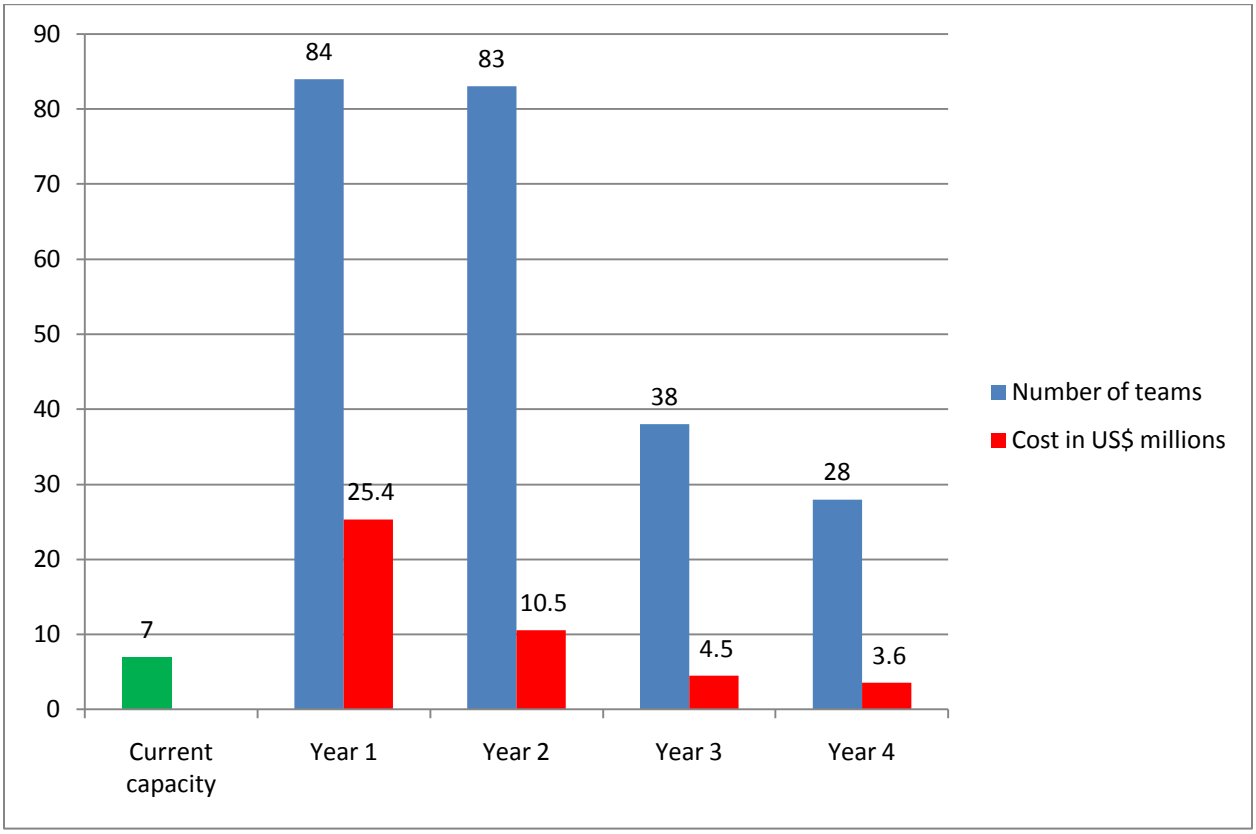
Clearance will commence in each cluster simultaneously at the beginning of the project.

Project budget

The total cost of this project is $44 million; $34 million is required for manual demining and $10 million to cover the cost of a management solution to the two very large hazardous areas.

A substantial initial investment will be required, reducing on an annual basis during the life-time of the project. In year one, mine action will be ongoing in all 15 clusters, in year two in 14 clusters, in year three in 3 clusters and in year four in 2 clusters.

The graph below shows the number of teams which will be deployed per year and the associated cost. The number of teams currently deployed in the province is shown for reference.

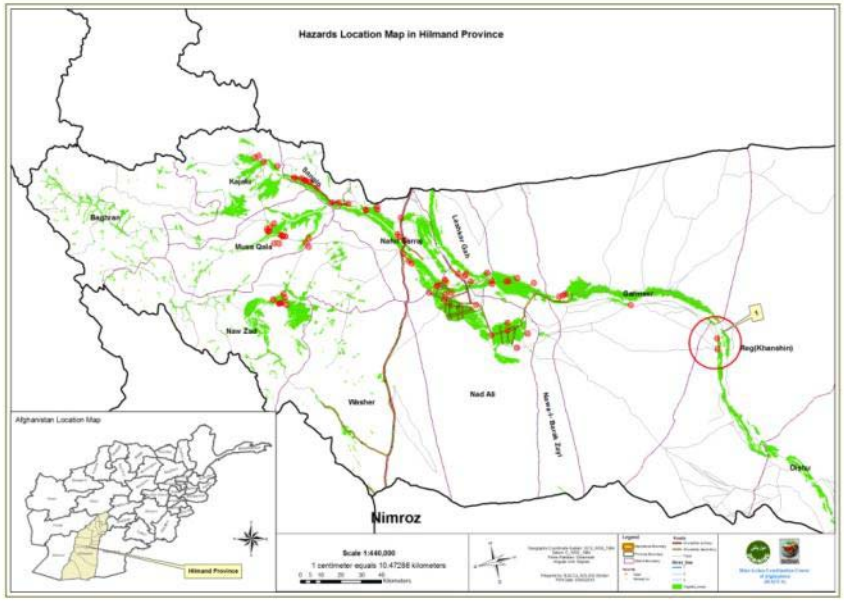


Conclusion

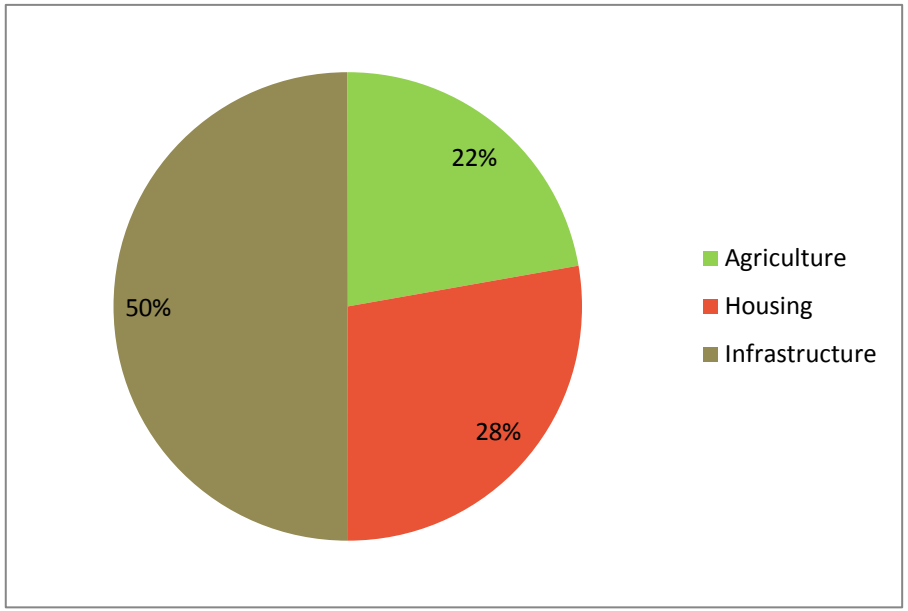
Clearance of Helmand provides a great opportunity for stabilization and a significant "win" for mine action. This four year project will provide employment opportunities throughout the province for 1,500 people and at the same time will result in clearance of all known hazard. The financial contribution, split over a four-year period, is minimal in comparison to the benefits which will be realized.

The following pages summarize the hazard and resources required to clear each cluster. For further details please contact abigail.hartley@macca.org.af

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

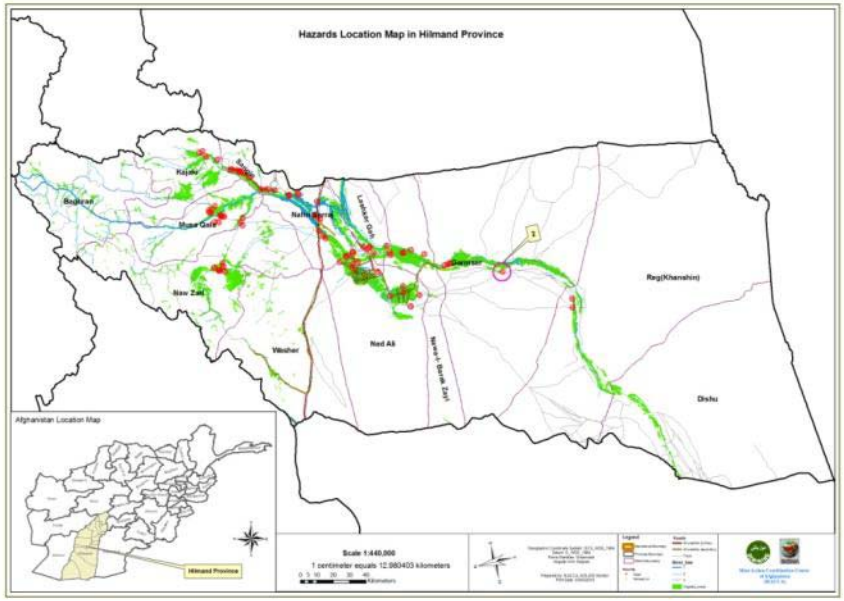
Number of minefields	2
Area of minefields (sq m)	270,000
Number of communities impacted	1
Number of families affected	12
Number of civilian deaths and injuries recorded in IMSMA	0

Resources required for complete clearance of cluster

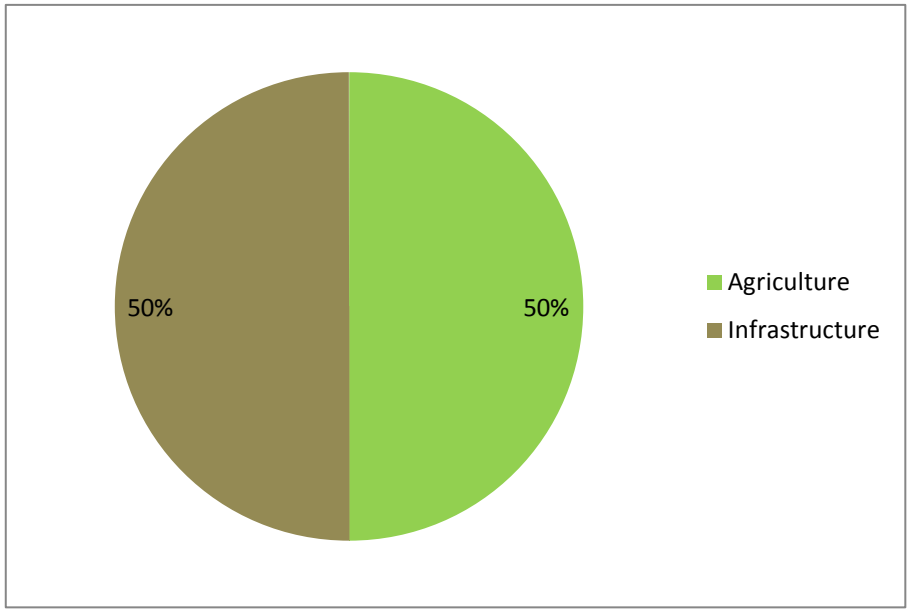
Demining Teams required	1
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	63
Project Period (operational months)	24
Total Cost (US$)	1,221,500
Cost for Year One (US$)	753,500
Cost for Year Two (US$)	468,000

LANDMINE AND ERW CONTAMINATION: CLUSTER ONE

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

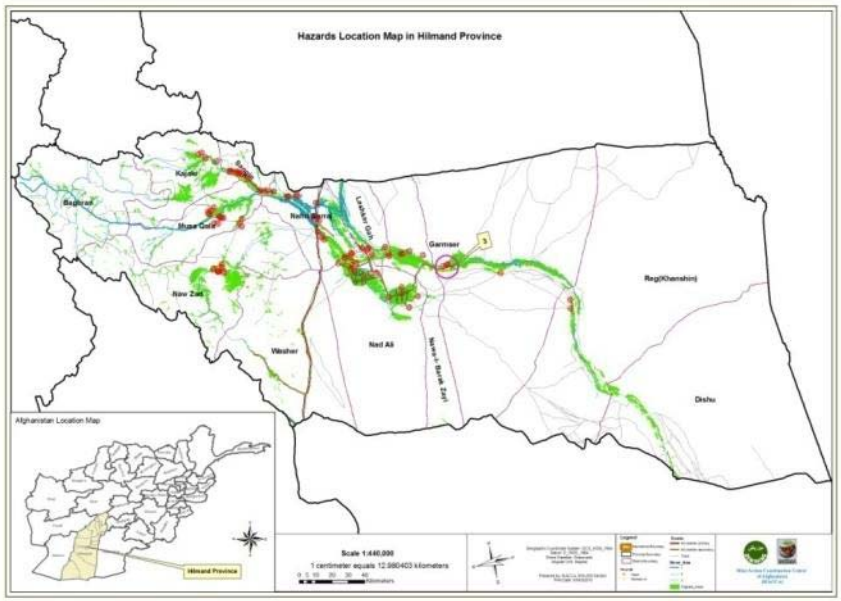
Number of minefields	1
Area of minefields (sq m)	480,000
Number of communities impacted	1
Number of families affected	100
Number of civilian deaths and injuries recorded in IMSMA	0

Resources required for complete clearance of cluster

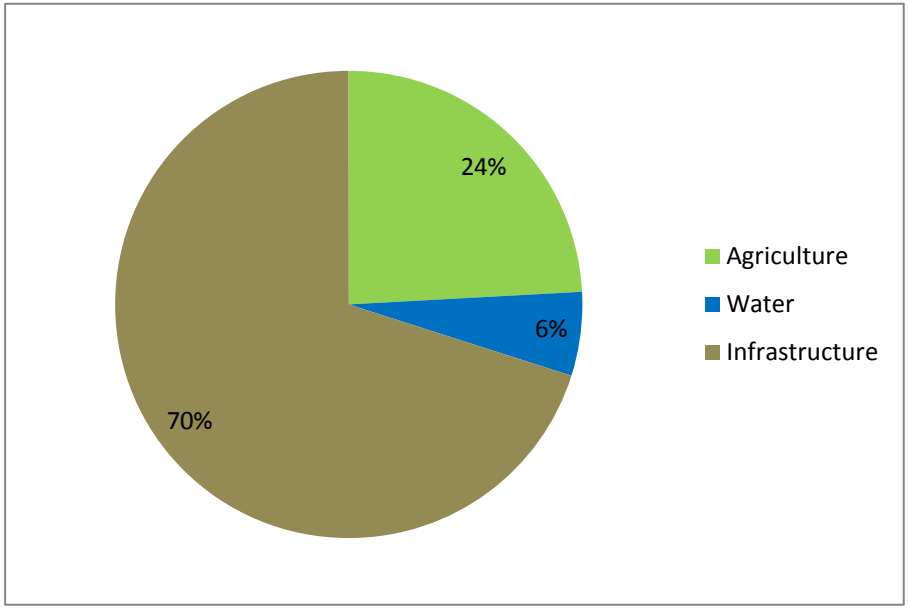
Demining Teams required	2
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	36
Project Period (operational months)	24
Total Cost (US$)	624,000
Cost for Year One (US$)	360,000
Cost for Year Two (US$)	264,000

LANDMINE AND ERW CONTAMINATION: CLUSTER TWO

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

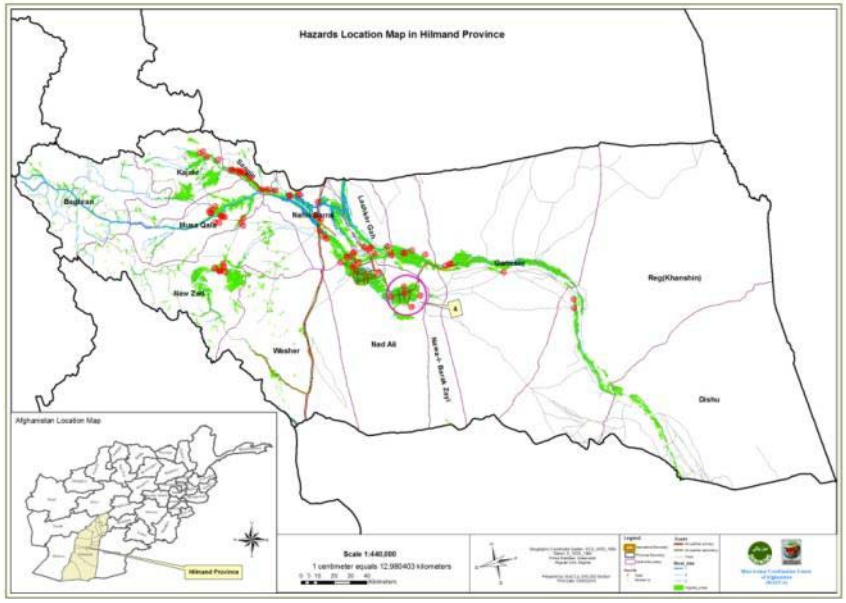
Number of minefields	4
Area of minefields (sq m)	726,000
Number of communities impacted	2
Number of families affected	115
Number of civilian deaths and injuries recorded in IMSMA	28

Resources required for complete clearance of cluster

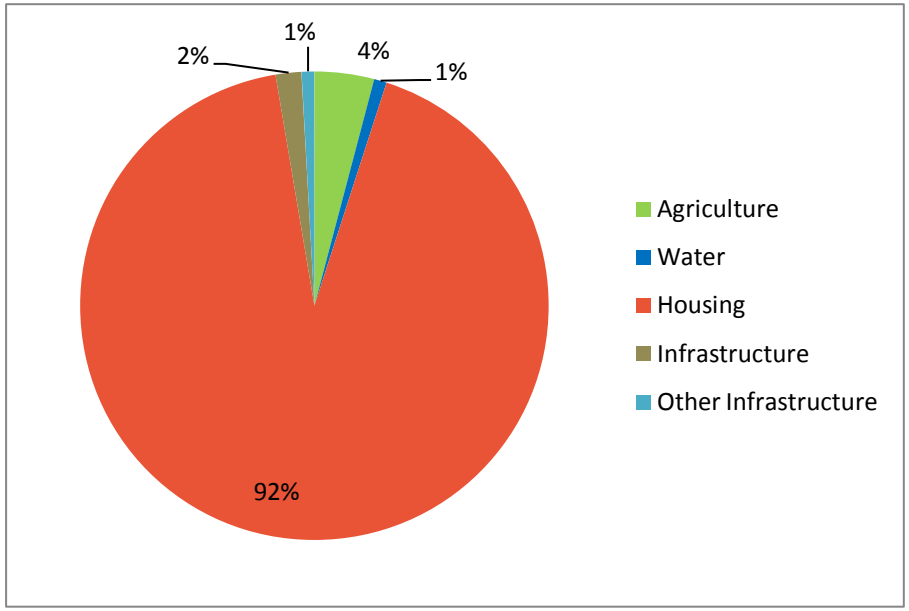
Demining Teams required	3
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	54
Project Period (operational months)	24
Total Cost (US$)	936,000
Cost for Year One (US$)	540,000
Cost for Year Two (US$)	396,000

LANDMINE AND ERW CONTAMINATION: CLUSTER THREE

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

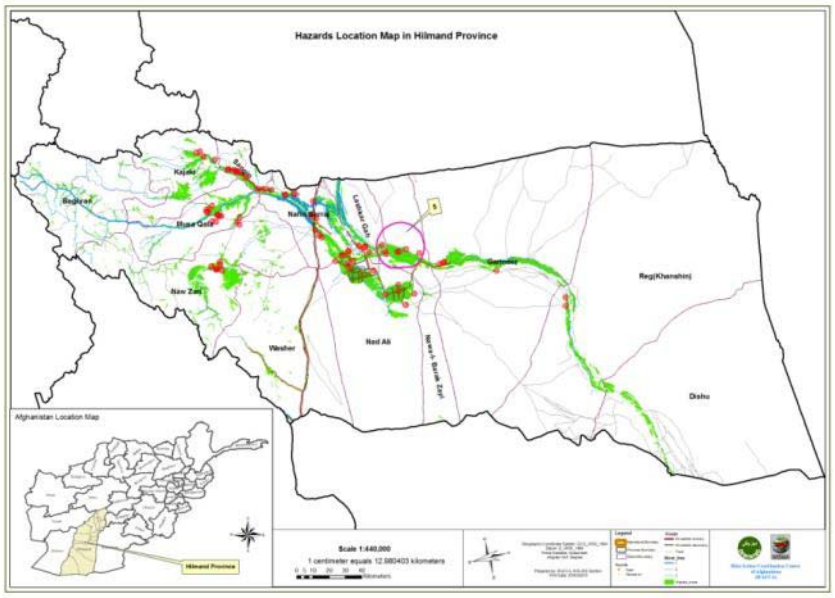
Number of minefields	6
Area of minefields (sq m)	1,387,900
Number of communities impacted	5
Number of families affected	710
Number of civilian deaths and injuries recorded in IMSMA	0

Resources required for complete clearance of cluster

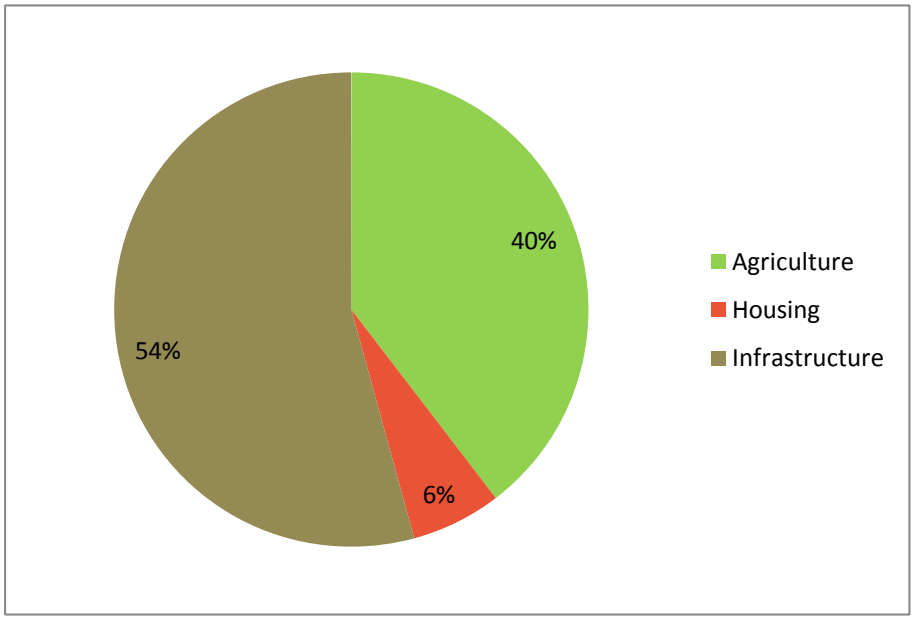
Demining Teams required	6
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	153
Project Period (operational months)	24
Total Cost (US$)	2,781,500
Cost for Year One (US$)	1,653,500
Cost for Year Two (US$)	1,128,000

LANDMINE AND ERW CONTAMINATION: CLUSTER FOUR

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

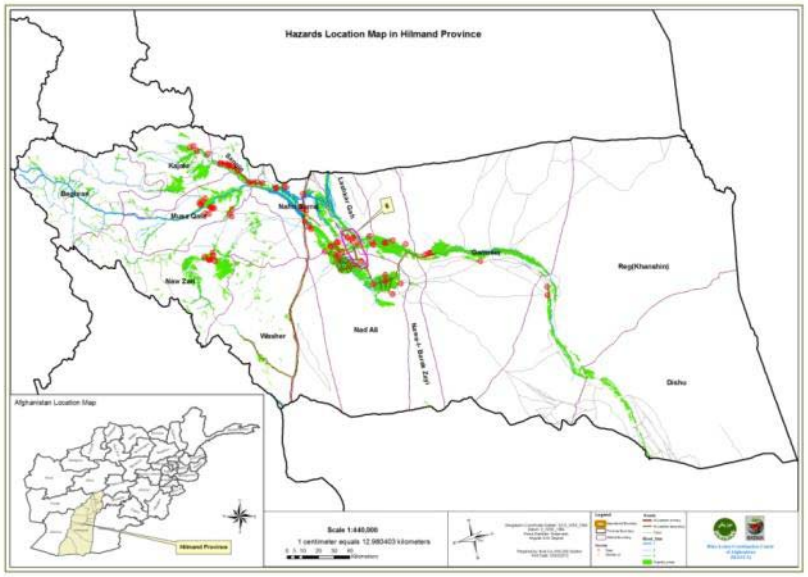
Number of minefields	7
Area of minefields (sq m)	262,310
Number of communities impacted	7
Number of families affected	644
Number of civilian deaths and injuries recorded in IMSMA	51

Resources required for complete clearance of cluster

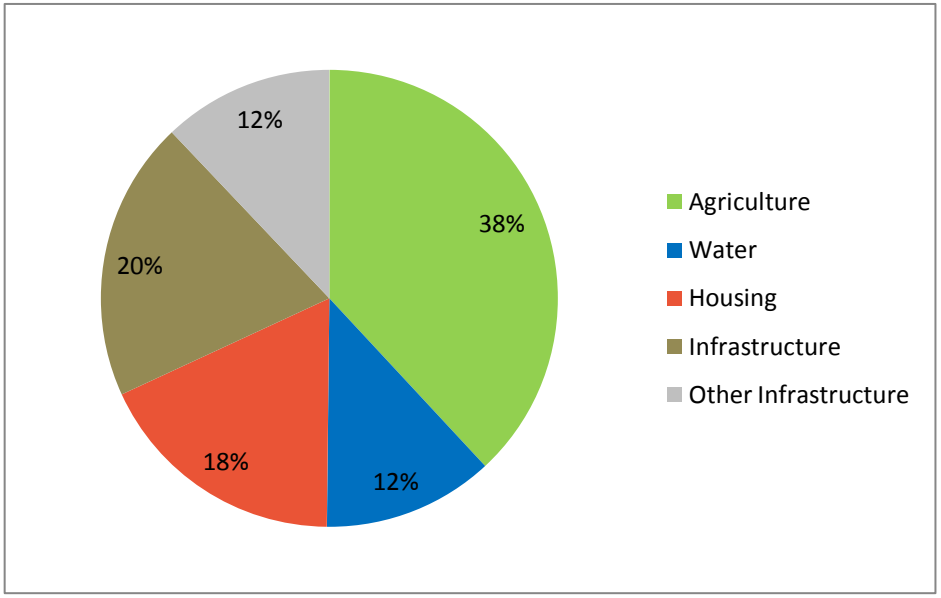
Demining Teams required	1
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	18
Project Period (operational months)	24
Total Cost (US$)	312,000
Cost for Year One (US$)	180,000
Cost for Year Two (US$)	132,000

LANDMINE AND ERW CONTAMINATION: CLUSTER FIVE

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

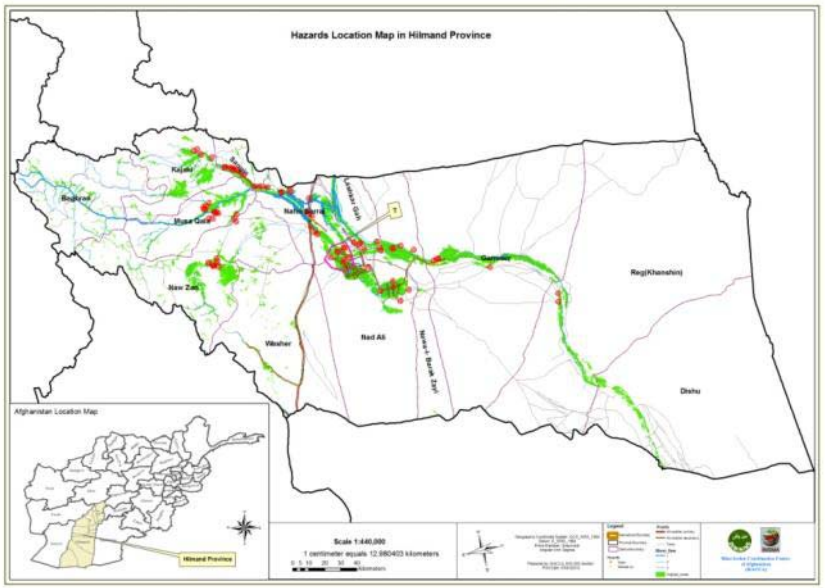
Number of minefields	4
Area of minefields (sq m)	577,274
Number of communities impacted	3
Number of families affected	1,105
Number of civilian deaths and injuries recorded in IMSMA	3

Resources required for complete clearance of cluster

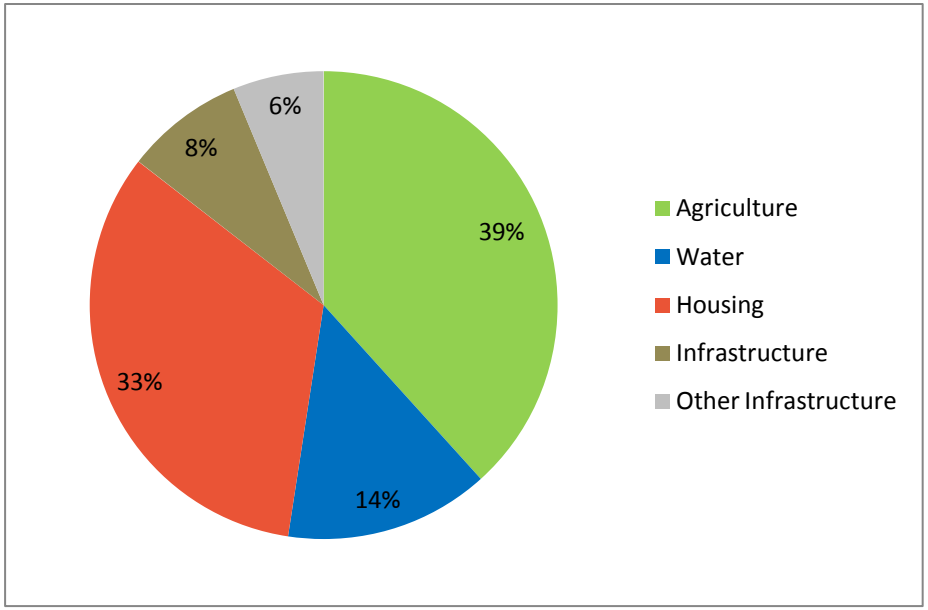
Demining Teams required	2
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	81
Project Period (operational months)	24
Total Cost (US$)	1,533,500
Cost for Year One (US$)	933,500
Cost for Year Two (US$)	600,000

LANDMINE AND ERW CONTAMINATION: CLUSTER SIX

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

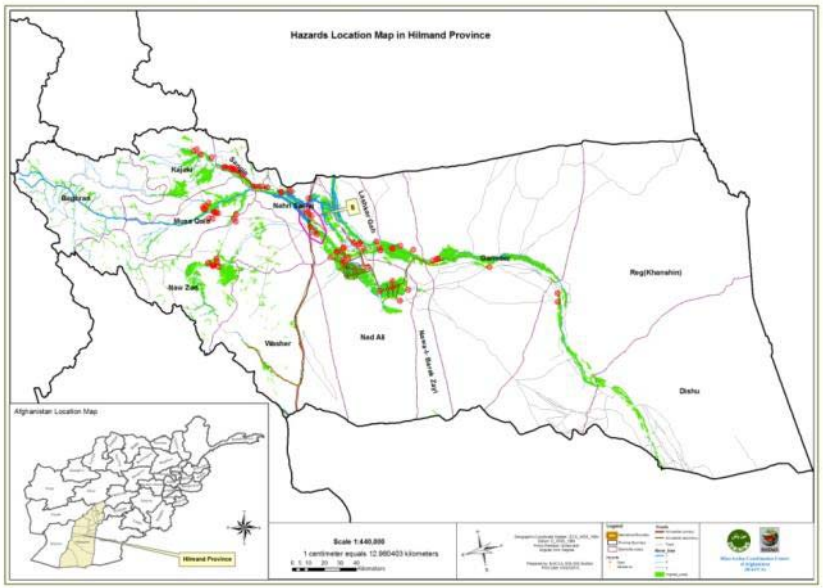
Number of minefields	12
Area of minefields (sq m)	799,068
Number of communities impacted	6
Number of families affected	330
Number of civilian deaths and injuries recorded in IMSMA	9

Resources required for complete clearance of cluster

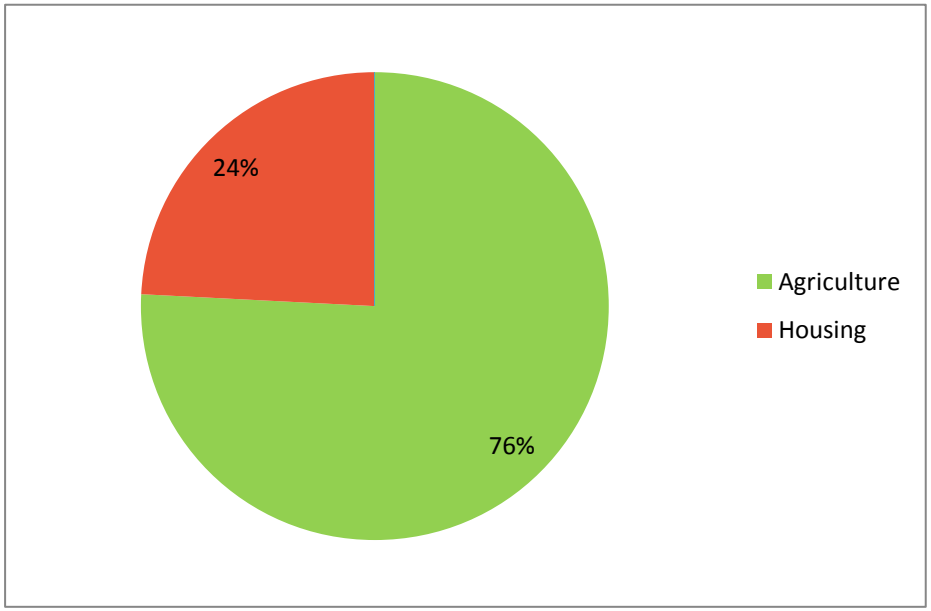
Demining Teams required	3
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	54
Project Period (operational months)	24
Total Cost (US$)	936,000
Cost for Year One (US$)	540,000
Cost for Year Two (US$)	396,000

LANDMINE AND ERW CONTAMINATION: CLUSTER SEVEN

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

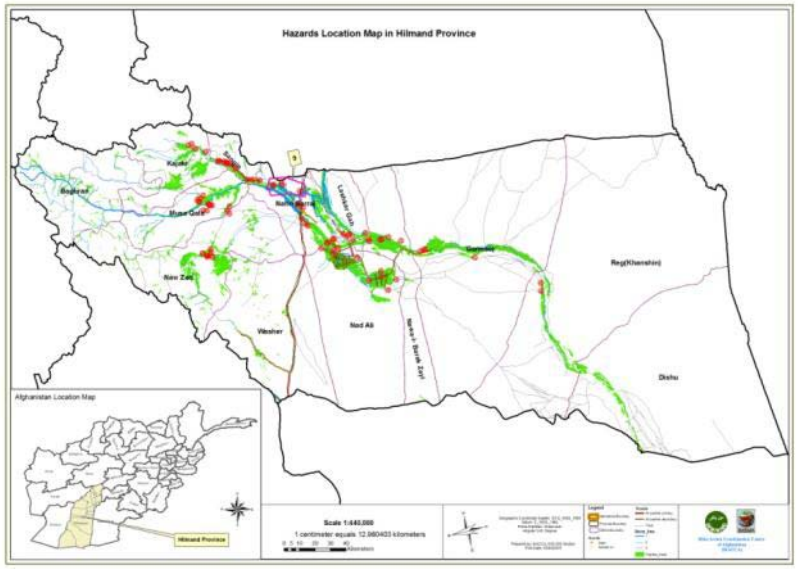
Number of minefields	6
Area of minefields (sq m)	2,594,748
Number of communities impacted	6
Number of families affected	1,390
Number of civilian deaths and injuries recorded in IMSMA	56

Resources required for complete clearance of cluster

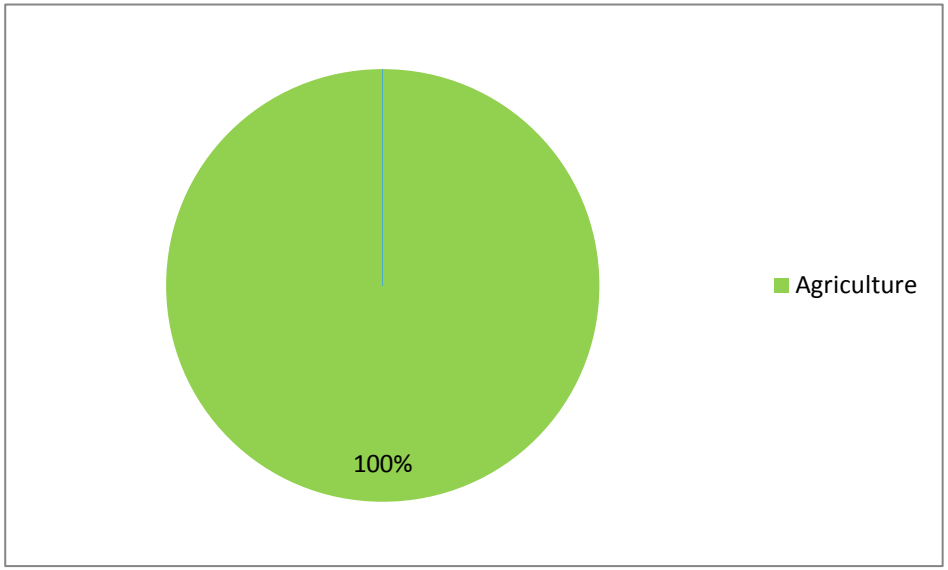
Demining Teams required	7
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	123
Project Period (operational months)	36
Total Cost (US$)	3,108,000
Cost for Year One (US$)	1,260,000
Cost for Year Two (US$)	924,000
Cost for Year Three (US$)	924,000

LANDMINE AND ERW CONTAMINATION: CLUSTER EIGHT

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

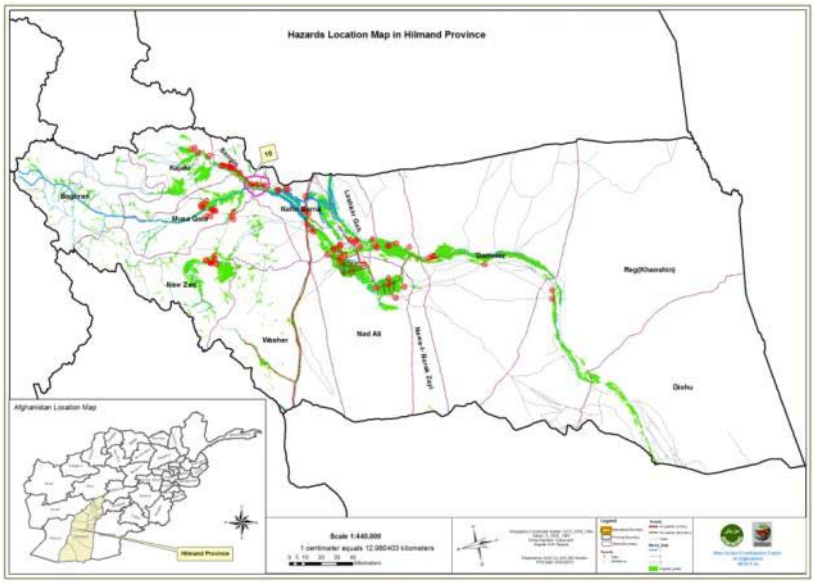
Number of minefields	6
Area of minefields (sq m)	1,085,000
Number of communities impacted	3
Number of families affected	175
Number of civilian deaths and injuries recorded in IMSMA	6

Resources required for complete clearance of cluster

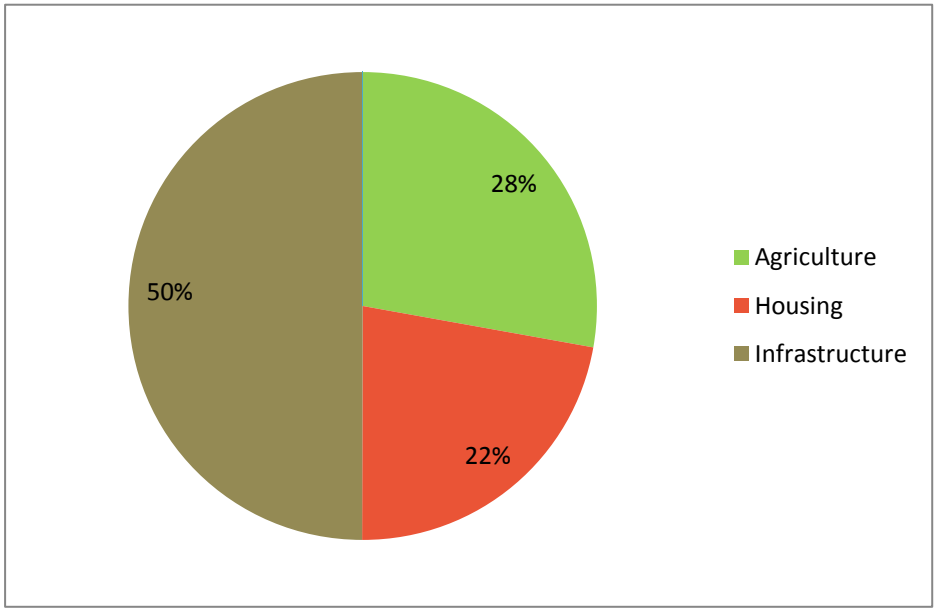
Demining Teams required	5
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	135
Project Period (operational months)	24
Total Cost (US$)	2,469,500
Cost for Year One (US$)	1,473,500
Cost for Year Two (US$)	996,000

LANDMINE AND ERW CONTAMINATION: CLUSTER NINE

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

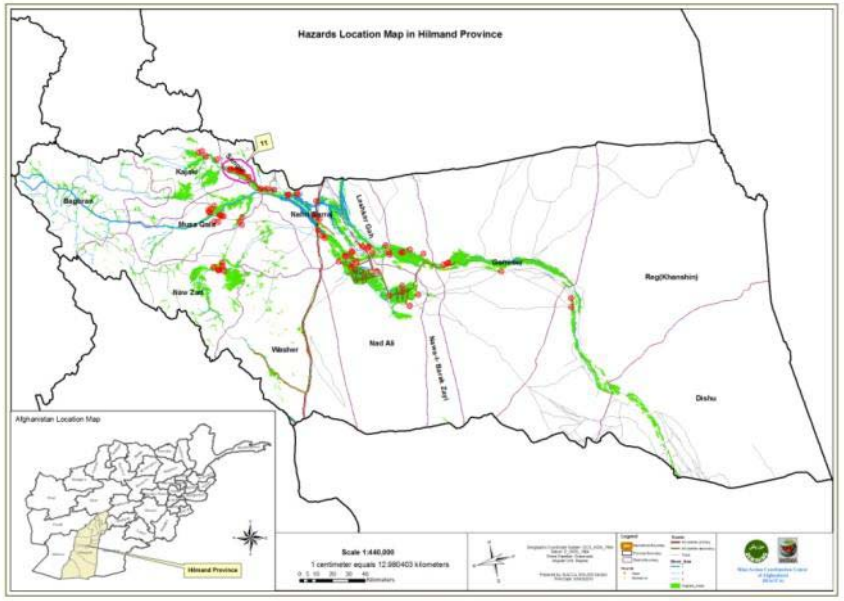
Number of minefields	3
Area of minefields (sq m)	60,000
Number of communities impacted	3
Number of families affected	1,770
Number of civilian deaths and injuries recorded in IMSMA	45

Resources required for complete clearance of cluster

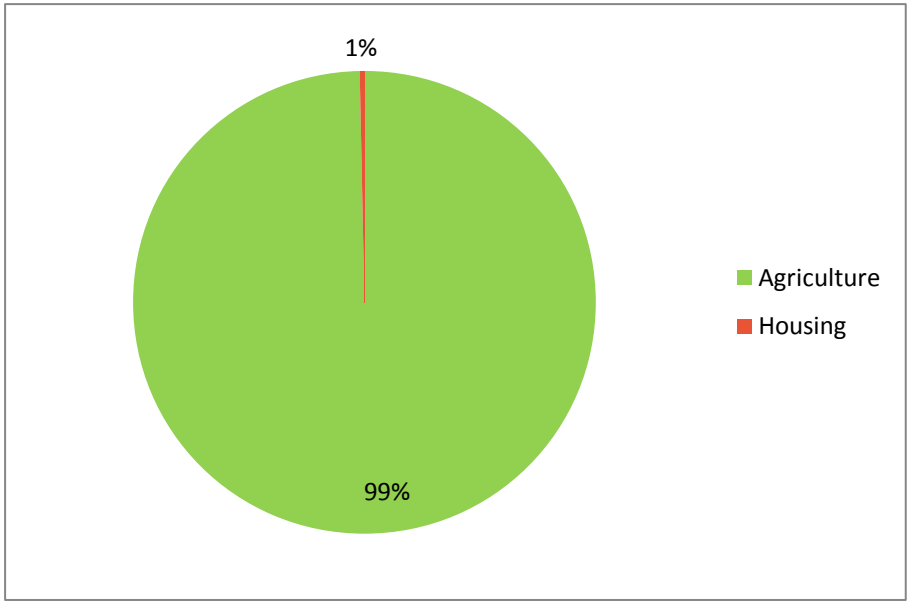
Demining Teams required	1
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	18
Project Period (operational months)	12
Total Cost (US$)	180,000
Cost for Year One (US$)	180,000

LANDMINE AND ERW CONTAMINATION: CLUSTER TEN

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

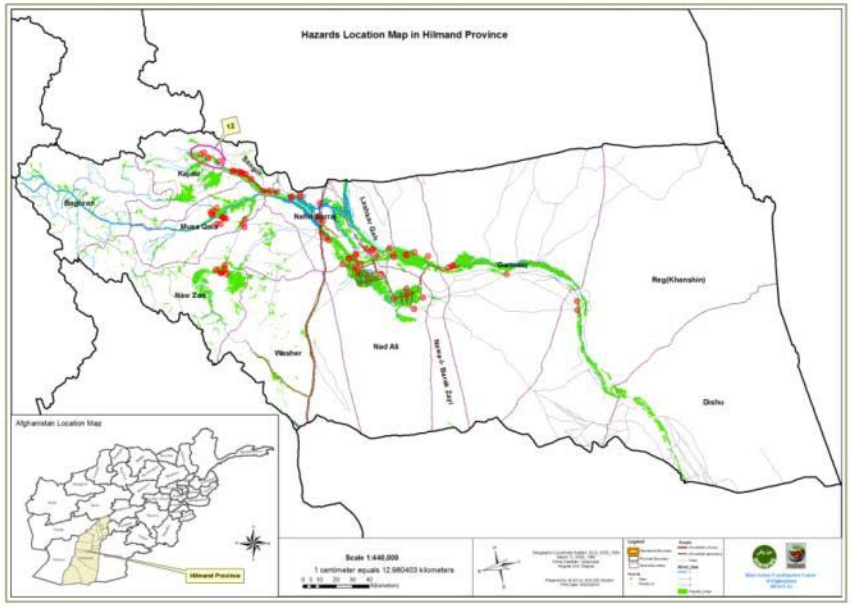
Number of minefields	9
Area of minefields (sq m)	765,000
Number of communities impacted	4
Number of families affected	2,110
Number of civilian deaths and injuries recorded in IMSMA	3

Resources required for complete clearance of cluster

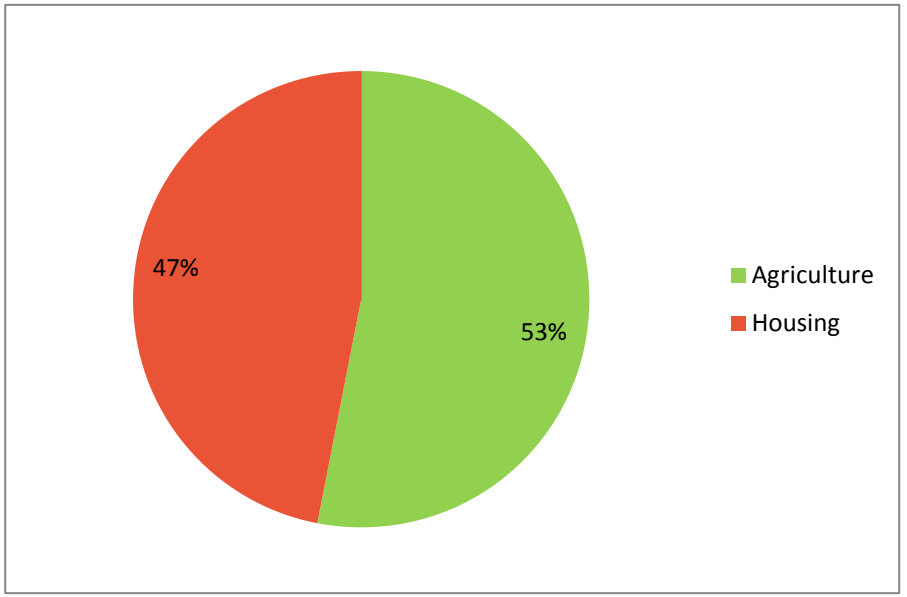
Demining Teams required	3
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	54
Project Period (operational months)	24
Total Cost (US$)	936,000
Cost for Year One (US$)	540,000
Cost for Year Two (US$)	396,000

LANDMINE AND ERW CONTAMINATION: CLUSTER ELEVEN

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

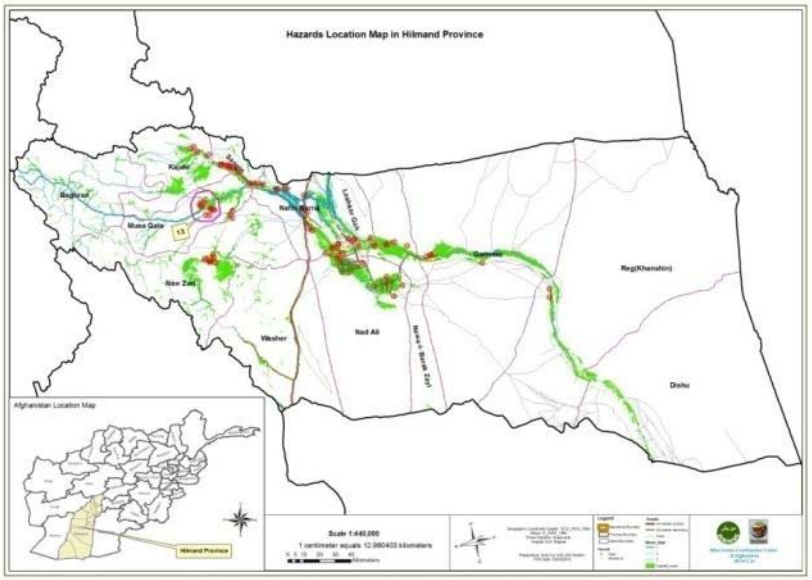
Number of minefields	5
Area of minefields (sq m)	4,523,750
Number of communities impacted	4
Number of families affected	1,612
Number of civilian deaths and injuries recorded in IMSMA	58

Resources required for complete clearance of cluster

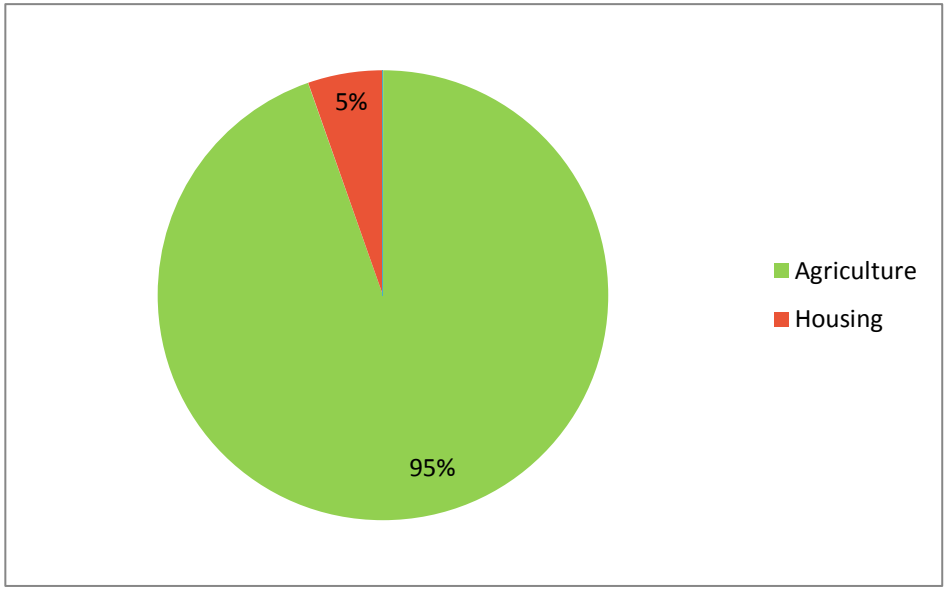
Demining Teams required	9
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	207
Project Period (operational months)	48
Total Cost (US$)	6,765,500
Cost for Year One (US$)	2,193,500
Cost for Year Two (US$)	1,524,000
Cost for Year Three (US$)	1,524,000
Cost for Year Four (US$)	1,524,000

LANDMINE AND ERW CONTAMINATION: CLUSTER TWELVE

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

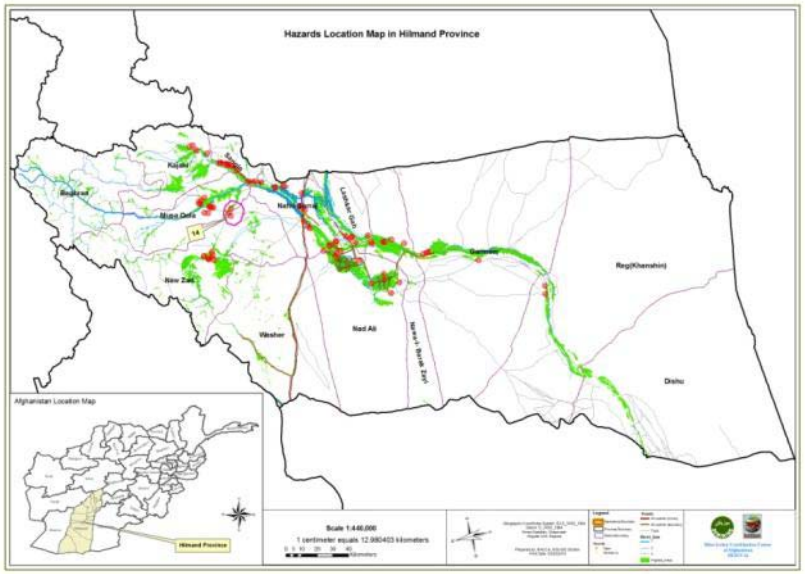
Number of minefields	13
Area of minefields (sq m)	1,384,694
Number of communities impacted	7
Number of families affected	3,410
Number of civilian deaths and injuries recorded in IMSMA	8

Resources required for complete clearance of cluster

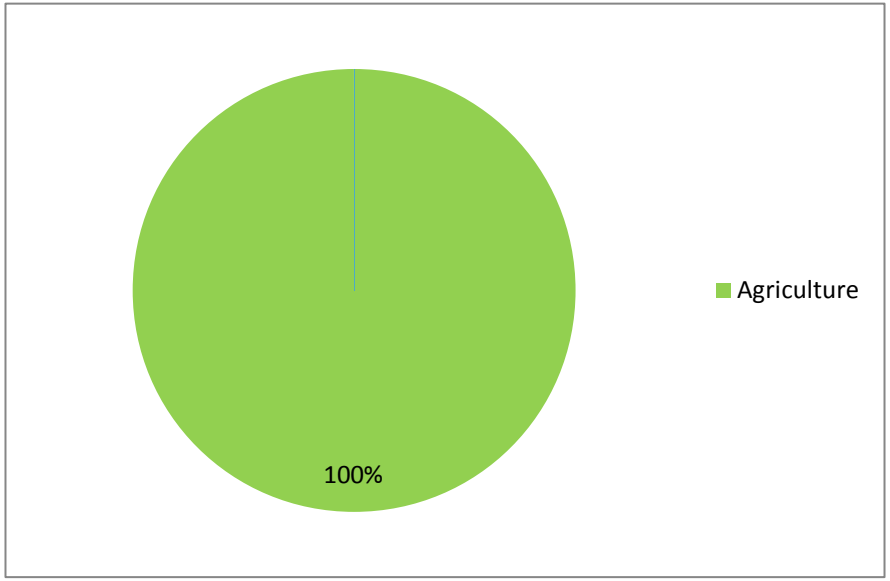
Demining Teams required	6
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	153
Project Period (operational months)	24
Total Cost (US$)	2,781,500
Cost for Year One (US$)	1,653,500
Cost for Year Two (US$)	1,128,000

LANDMINE AND ERW CONTAMINATION: CLUSTER THIRTEEN

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

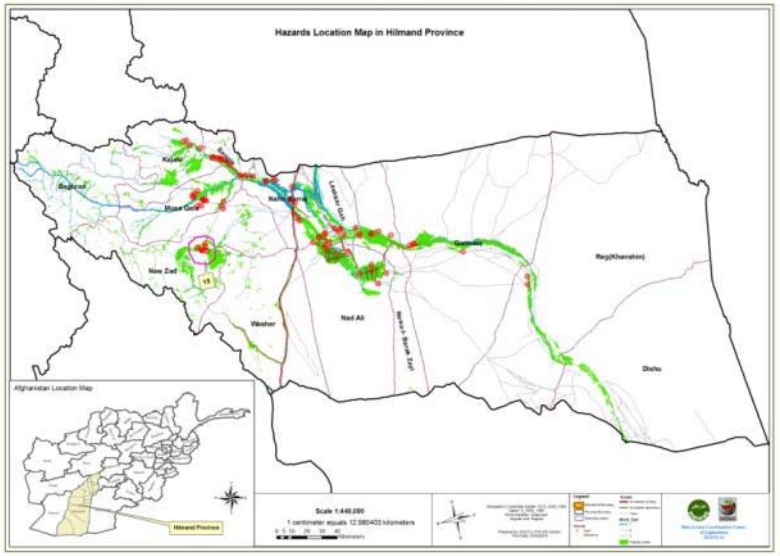
Number of minefields	3
Area of minefields (sq m)	250,000
Number of communities impacted	1
Number of families affected	300
Number of civilian deaths and injuries recorded in IMSMA	6

Resources required for complete clearance of cluster

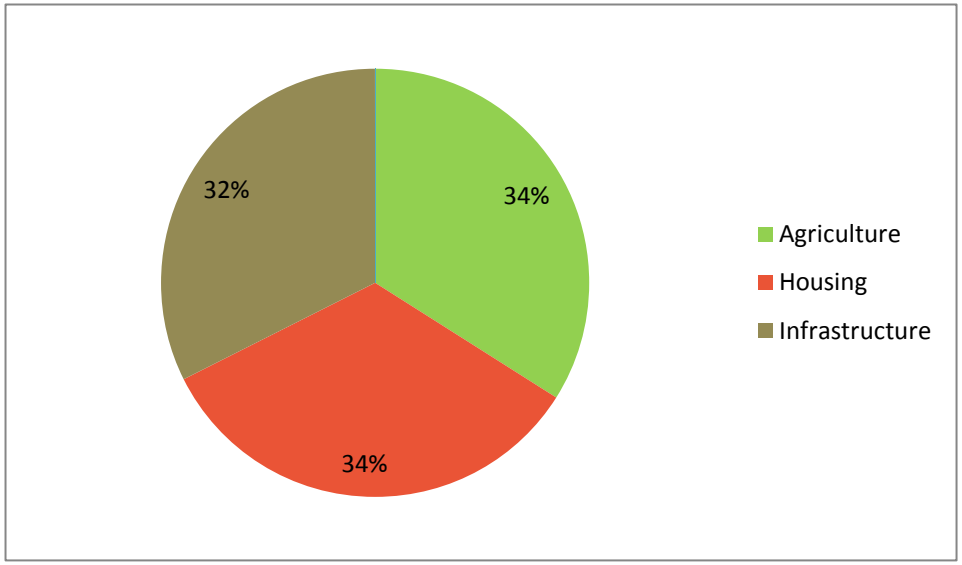
Demining Teams required	1
EOD Teams required	0
Dog Assets required	0
Mechanical Assets required	0
Number of jobs created	18
Project Period (operational months)	24
Total Cost (US$)	312,000
Cost for Year One (US$)	180,000
Cost for Year Two (US$)	132,000

LANDMINE AND ERW CONTAMINATION: CLUSTER FOURTEEN

Cluster location and contamination



Socio-economic blockages resulting from contamination



Impact summary

Number of minefields	31
Area of minefields (sq m)	12,640,827
Number of communities impacted	9
Number of families affected	545
Number of civilian deaths and injuries recorded in IMSMA	155

Resources required for complete clearance of cluster

Demining Teams required	13
EOD Teams required	1
Dog Assets required	1
Mechanical Assets required	1
Number of jobs created	279
Project Period (operational months)	48
Total Cost (US$)	9,069,500
Cost for Year One (US$)	2,913,500
Cost for Year Two (US$)	2,052,000
Cost for Year Three (US$)	2,052,000
Cost for Year Four (US$)	2,052,000

LANDMINE AND ERW CONTAMINATION: CLUSTER FIFTEEN