

3. CAPITAL COST (continued)

d. Does the machine need to be adapted? If yes, how?

For example No, see previous questions.

e. Has the adaptation been done before and what is the cost for this adaption?

For example Not applicable

4. ESTABLISHMENT AND RUNNING COSTS

a. What is the maintenance regime for the machine?

For example Two mechanics will need to be trained by the manufacturer. The machines will be purchased with two mobile workshops. A workshop will be set up and equipped. Each machine is to be supported by one operator and one mechanic.

b. How much operator training will be required and what is the cost for this?

For example The training of the mechanics and operators is estimated to require two weeks of formal training, followed by eight weeks of on-the-job training under the supervision of the manufacturer.

c. Will an internationally qualified mechanic be required and if yes, what is the annual cost for this mechanic?

For example If yes, this will be for a period of ten weeks. This will have to form a part of the overall contract for the procurement of the two machines.

d. What is the annual cost of a qualified mechanic?

For example It is estimated that the cost for the two operators and the two mechanics will be US\$ 20,000.

4. ESTABLISHMENT AND RUNNING COSTS (continued)

e. How many other supporting mechanics will be needed and what is the annual cost for these?

For example One additional mechanic will be hired at an additional cost of US\$ 5,000. This will bring the annual cost for the mechanics and operators to US\$ 25,000.

f. What is the training requirement for all mechanics and how, and by whom, will this training be done?

For example As above, ten weeks, as part of the procurement contract and presented as a separate budget line.

g. What is the annual cost for maintenance and spare parts?

For example It is estimated that the annual cost for spare parts will be US\$ 50,000 for the two machines. In addition, US\$ 25,000 should be budgeted for an international service technician from the manufacturer to service the machines after six months.

h. How easily are spares sourced – is the machine built with common parts?

For example Spare parts will have to be purchased through the manufacturer. This will have to form part of the contract with the manufacturer, who will be required to provide spare parts for a period of 12 months.

i. Are there parts suppliers or maintenance facilities in the country?

For example Spare parts are not available in country. Workshop facilities are available in the capital but not in the field. Two workshop containers will be required to be provided under the contract with the manufacturer. The manufacturer will also be required to include two service periods for the two machines on location in country. Each for a minimum of two weeks.

j. What spares package and support is the machine supplier offering?

For example All suppliers that are being considered are supplying spare parts packages for the machines. Provision of spare parts (as per a list in the request for proposals) will be required under the contract, once it is issued.



This model will help those thinking about buying, leasing or constructing a demining machine. It is derived from several sources, including the experiences of the GICHD mechanical demining team, and is a further development of the check-lists that accompany this handbook.



Selection Model

Demining Machine

4. ESTABLISHMENT AND RUNNING COSTS (continued)

k. What is the warranty period for the machine?

For example All suppliers that are being considered are providing a 12 month warranty period for their demining machines. This will also form a part of the contract.

l. What is the annual fuel cost?

For example The annual fuel cost is estimated at 25 litres per machine an hour. The machines are estimated to work 6 hours a day, 200 days a year. The cost per litre of fuel is US\$ 1.25/litre. This gives the following: 2 (machines) x 25 (litres) x 6 (hours) x 200 (days) x 1,25 (US\$/litre) = US\$ 75,000. This is the annual cost of fuel for the two machines per year.

m. Will machine maintenance schedules need to be adjusted because of climatic factors?

For example Additional filters might have to be installed to enable the machines to cope with the dust and to prolong the lifespan of the machines.

1. NEED

a. What is the identified need for a machine (what kind of machine) and how will the machine be used?

b. Are there a large number of potential target sites for the machine and where are those target sites located?

c. Is there a need for transportation of the machine between sites or can the machine be driven between sites itself?

d. Will the machine speed up the achievement of national objectives?

e. What difference will a machine make? Is one machine enough or will several machines be needed? If yes, how many machines will be needed?

For example *Vegetation cutting in support of manual and MDD operations in order to enable manual and MDD operations. The machine is be used in a vegetation cutting role where it will remove vegetation in areas, which will then be cleared by manual deminers and MDD. The threat is mainly from AP mines which the machine should have a capacity of clearing. The machine required is a medium flail.*

For example *There are at least 400 potential sites where vegetation cutting is required in support of technical survey and for clearance of AP mines. There are more than 400 locations suspected to contain AP mines only, where the plan is to use the machine for clearance.*

For example *The machine will need a carrier at times but many sites are located so that the machine can be driven between sites itself within a cluster of sites.*

For example *It is estimated that if a machine for vegetation cutting is purchased productivity will be increased by at least 20%.*

For example *It is estimated that if a machine for vegetation cutting is purchased productivity will be increased by at least 20% and capacity for technical survey will be greatly improved. Two demining machines are needed.*

2. EXISTING CAPABILITIES

a. Is there an existing machine in the market with the right capabilities for the task required? Which types are available?

b. What is the productivity of the machine?

c. Will the machine be used in support of manual deminers or mine detection dogs (MDD), or will manual deminers and MDD be in support of the machine?

d. What are the differences between the various manual, animal and mechanical capabilities?

e. How many personnel will be needed to support/follow-on the work of the machine?

f. What are the annual costs of balanced supporting/follow-on assets – manual deminers, MDD or other?

For example *See the GICHD Mechanical Demining Equipment Catalogue. Two machines have been identified as suitable as follows:*

- > *Bozena 4 (Way Industry)*
- > *MV 4 (DOK-ING)*

Both machines are available on the market but the delivery time will need to be confirmed with the manufacturers.

For example *Bozena 4 – up to 2,500 m²/hour (depending on the terrain), MV 4 – up to 2,500 m²/hour (depending on the terrain). The GICHD Mechanical Demining Equipment Catalogue can be used for this purpose. Information can also be gathered from other programmes using the machines.*

For example *The machine will mainly be used in support of manual deminers and MDD and mainly for Technical Survey of mined areas. For certain task sites the machines will also be used for clearance of AP mines.*

For example *It is estimated that the machine will be able to cover a minimum of 10,000 m² per machine and day. MDD can do 500 m² a day under good conditions and a manual deminer can do 100 m² a day.*

For example *It is estimated that a team of five deminers working with a one man drill will be requested to support each machine together with one medic, two drivers, a team leader, a machine operator and one mechanic. It is further estimated that there will be a need for four MDD with two handlers for follow-on behind each machine.*

For example *The cost for each manual team with support functions is estimated at: US\$ 50,000 for the two manual demining teams per year and US\$ 40,000 for the two MDD teams per year. The above figures only include the running costs and salaries since the equipment and MDD are already available with the programme.*

2. EXISTING CAPABILITIES (continued)

g. What is the working life of the machine – 5 years, 10 years?

h. What climatic factors will impact on the machine – heat, dust, rain, etc?

i. What kind of terrain is the machine expected to work in?

For example *The life span for the machine is estimated at 5 years for each machine.*

For example *Temperatures can reach up to 45° in the south. During the summer dust can be severe. During October to February the whole country will experience rain (and sometimes severe rain).*

For example *Most areas will be flat with vegetation in the form of bushes and small trees (with a trunk diameter of maximum 5 centimetres). Vegetation can be dense in certain areas.*

3. CAPITAL COST

a. What is the purchase cost of the machine(s)?

b. Will the machine need to be armoured?

c. What are the costs of armouring the machine?

For example
> *Bozena 4 (Way Industry)*
> *MV 4 (DOK-ING)*

For example *No, the machine will be purchased in its standard configuration*

For example *Not applicable, see above.*

4. ESTABLISHMENT AND RUNNING COSTS (continued)

n. What will be the annual costs of maintenance adjustments?

For example *The cost is classed as minor but is estimated at US\$ 2,000.*

o. Does the frequency range of remote controlled units interfere with other operators in the area?

For example *No*

p. Can fuel be purchased easily in the country or region?

For example *Yes, fuel can easily be purchased but requires transportation planning to reach the clearance sites. A detailed plan needs to be set up for provision of fuel for each site. Fuel needs to be ordered well in advance. Two fuel tanks will be purchased locally and be moved between task sites to support the demining machines.*

q. Will a fuel truck need to be purchased to support the machine in some parts of the country?

For example *No fuel truck will be purchased. The programme will rely on local providers/contractors for provision of fuel.*

r. Will a low-loader or lorry be required to transport the machine between sites?

For example *Two low-loaders will be purchased locally (second hand) and will be used for transportation of the demining machines and the workshop containers between task sites. The cost for these two low-loaders is estimated at US\$ 120,000. They will be purchased locally under a separate contract.*

s. What are the maintenance and running costs of the fuel truck and low-loader?

For example *The running cost of the two low-loaders is estimated at US\$ 2,000 a month (US\$ 24,000/year). This also includes the maintenance cost.*

4. ESTABLISHMENT AND RUNNING COSTS (continued)

t. Will a mobile workshop be required?

For example *Two mobile workshop containers equipped with tools and welding machines will be required. These will be purchased as a part of the contract for the purchase of the demining machines.*

u. What rules govern importation of the machine or in-country purchase? (For example, can a machine be imported if it is second hand?)

For example *The machines will be new when imported. The customs clearance will be arranged through the border authority and will have to be initiated six weeks prior to the arrival of the machines and other equipment under the contract.*

v. What is the cost of a mobile workshop vehicle and tools, including the running cost?

For example *The cost for the two mobile workshops is estimated at US\$ 50,000 for the two workshops, including tools and running costs for one year of operations..*

w. What maintenance and training package does the manufacturer provide?

For example *The manufacturers considered both provide a maintenance and training package. The manufacturer will be required to include two service periods for the two machines on location in country. Each for a minimum of two weeks. The service periods will be after six months and after twelve months. The training of mechanics and operators will also form a part of the contract*

5. FURTHER SUPPORT COSTS

a. Is the infrastructure (rail, road and bridges) good enough to enable the machine to be transported between sites?

For example *Roads are sufficient to transport the demining machines on low-loaders to the south and also between task sites in the south. During the wet season it will not be possible to transport the machines between the capital and the south.*

5. FURTHER SUPPORT COSTS (continued)

b. Will additional operations staff and equipment (such as vehicles) be required? What is the cost for this?

For example *It is not estimated that additional operations staff or equipment will be needed to manage these additional assets.*

c. What are the costs of additional operational planning?

6. IMPORTATION ISSUES

a. What will be the costs of shipping the machine to the operational theatre?

For example *This will form a part of the contract for the procurement of the two machines. The cost is estimated at US\$ 50,000 for the two machines, spare parts and two work shop containers. An additional US\$ 10,000 is estimated for the transportation to the accreditation site.*

b. What country of origin/manufacture rules govern the export of the machine?

For example *This will be the responsibility of the manufacturer under this contract.*

c. What is the manufacture and delivery timeline and will the delivery date coincide with the optimal season for machine use?

For example *In order to be able to move the machine to the south before the wet season the machine will need to arrive in country no later than the 15th of July.*

