

**Vehicles, like boats, represent a necessary and large investment for the MPA. The purchase of appropriate vehicles, that can meet clearly defined requirements, will make a valuable contribution to the management of the MPA, whereas the purchase of unsuitable ones will not only be a waste of money but is likely to make management more difficult. This sheet offers guidance on the vehicle procurement process.**

Most MPAs use vehicles to transport personnel, equipment, and supplies or to tow boat trailers. The range of vehicles used might include mini-buses, saloon cars, four-wheel drive (4x4) vehicles, small trucks and tractors, motor cycles and even bicycles. Before investing in new or additional vehicles, the MPA should first consider what requirements it has for land transport, both inside and outside the MPA. In particular, it is important to decide on journey distances, frequency, type and size of loads and to take into consideration the geographical area to be covered, the existence and condition of roads and tracks and what tasks can be best carried out by vehicle or by boat (see sheet F5).

Once the requirements are known, identify the vehicle or combination of vehicles that can most effectively meet these needs within available budgets. Vehicles cost money even when not being used, through depreciation and insurance, and the MPA should aim to have the minimum number necessary to meet its requirements, with each having a high utilisation rate.

Costs of new vehicles vary depending on model availability and type, demand and import duties and other local taxes. Older vehicle models can sometimes be purchased at a discount when new models appear. Like boats, an MPA vehicle is a potential item for sponsorship.

### MANUFACTURER AND MODEL

Manufacturers of 4x4 vehicles, commonly in use throughout the WIO, include Toyota, Land Rover, Jeep, Mitsubishi, Nissan, Suzuki and Mercedes. Agents for these are present in most countries and should stock spare parts. Before deciding on the most appropriate 4x4 vehicle to buy, it may be useful to seek advice on those that are already in use in the area, how long they have been used and whether there are problems in acquiring spare parts. For other vehicles, such as minibuses, saloon cars and motor cycles, it should be readily obvious, from the nearest large town, what makes are locally available and easy to support and maintain.

Some new vehicle designs come with complex electronic fuel control and management systems, which require highly specialised diagnostic and maintenance equipment and appropriately trained personnel. Avoid buying such models as they are likely to be unsuitable for an MPA, and a headache to operate. Even 'standard' features, such as electric windows, central locking or air conditioning, may not be appropriate for harsh operating environments. Select more basic vehicle models where a choice is available.

### ENGINE

Engine size, performance and range will be determined by the requirements within the MPA. For example, a saloon car may appear to be the best vehicle for regular trips on metalled roads to towns and cities but if it sits idle the rest of the time, unable to operate on the bad roads within the MPA, then it is the wrong choice. A heavy duty 4x4, that operates daily within in the MPA and occasionally goes to town, would be better.

### FUEL

Modern engines are very reliable, so the choice between petrol and diesel is not really a technical one. Diesel engine vehicles tend to be slightly more expensive than petrol ones but are in general easier to maintain and can cope better with extremely wet conditions. What matters more in the decision is:

- The quality of the locally available fuel and oil and the reliability of its supply;
- Engine spare part availability;
- Whether the MPA wants to standardise on either just petrol or just diesel (including for the generator, boat engines and any other engines).

Diesel, with its lower flammability, is safer to transport. When filling vehicles or other fuel tanks, the use of basic strain filters is recommended. New vehicles with petrol engines are usually designed to run on lead free petrol and often have catalytic converters fitted to meet European import requirements. If only leaded petrol is available, the vehicle will run, but the exhaust filtration will not be effective.



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Maintaining vehicles in difficult conditions with inadequate availability of spare parts can be a challenging task.

## ACCESSORIES

Boat trailers and the corresponding tow bars are a common requirement of MPA vehicles. Although their use is fairly simple, there are differences in design that need to be considered before fitting a tow bar. For example, a boat trailer fitting may be different from that of a standard goods trailer i.e. one being a 'pin hook' and the other being a 'ball hook'.

MPA vehicles may need to be equipped with auxiliary equipment such as radios (and relevant antenna) and search lights. A complete tool kit, tow rope, jump leads, and other items such as flares, torches, first aid kit, fire extinguisher should also be considered, factored into the costs, and fitted accordingly. Many other potentially useful vehicle accessories are available, particularly for 4x4 vehicles used in research, such as roof racks, heavy duty and high suspension systems, winches, mounted water tanks, external airfilter extension pipe, diving bottle holders, spot lights, glass fibre covers for pickups, secure storage bins and 12V cool boxes. Within the WIO region, South Africa has probably the greatest choice of suppliers.

## MAINTENANCE

The objective of regular preventive maintenance is to minimise the time the vehicle is non-functional and ensure a long service life. Lack of maintenance, and wear and tear, are the major causes of vehicle failure. Damage from accidents sometimes happens and cannot always be prevented, but breakdowns due to lack of maintenance can be minimised. Every vehicle manufacturer produces a maintenance manual and schedule that should be studied, understood and followed.

If vehicles are used in rough terrain, constantly working in mud, dust, and water, oil changes should be more frequent (including engine, gearbox and differential oils). The air filter should also be cleaned more frequently, and wheel bearings and drive shaft and steering joints more regularly re-packed with suitable grease.

As with any equipment used by the sea, washes with freshwater are an essential part of preventive maintenance. In addition, the main areas to inspect regularly are:

- Bodywork for rust
- Tyres
- Cooling systems
- Electrical systems

Another simple measure that can enhance the value and working life of vehicles is to fit removable seat covers. These can probably be locally made from heavy duty canvas.

In remote areas the MPA may have to maintain a fully equipped workshop to service vehicles and other equipment. A range of spare parts needs to be kept to link with the servicing of the vehicle. Of these, oil and fuel filters will be the most regularly consumed. The standard recommendation is to buy genuine manufacturer's spare parts from an authorised dealer, although this may not

always be practicable particularly in small islands or remote places where obtaining supplies is difficult. Planning ahead for the purchase of spare parts reduces the need for urgent spares when there is a breakdown. In some instances it may be possible to bring a specialist mechanic to the MPA for major servicing of certain components, but in general the MPA should have a trained mechanic, competent in the general maintenance of all MPA vehicles. The MPA should identify and list key workshop tools required, i.e. ramp where work can be carried out underneath the car, good lighting and security, and puncture repair kits.

## VEHICLE USE

MPA drivers should have a valid local driving licence issued by the relevant authorities. Training in additional car handling skills may be necessary where difficult off road driving, including water crossing and sand driving, is a necessary and regular part of vehicle operations. A training programme for drivers should be built into the annual work plan where appropriate.

It is recommended that a logbook is kept with the vehicle and completed by the driver. Basic information to record, on a daily basis, includes; start and end of day kilometres, fuel taken, basic checks (oil, tyres, battery) carried out and punctures or other problems. A separate maintenance logbook should be kept by the MPA workshops, recording the date, kilometres and details of all servicing of the vehicle.

### KEY POINTS FOR THE MPA

- Develop a set of land transport needs for the MPA, in as much detail as possible, and use this to focus decision-making about vehicle procurement; do not buy extra features that will not be needed.
- Aim for maximum usage and flexibility in MPA vehicles, but use the vehicle primarily for its correct purpose; do not over load or over use.
- Encourage a 'maintenance' rather than 'repair' culture amongst MPA staff.
- Adhere to the insurance points; e.g. avoid using an open pick-up to transport personnel or local community members, as this can easily be overloaded and accidents can occur.
- Consider community requirements as part of the schedule and develop a protocol for this.
- Security may be an issue in some areas, and should be taken into consideration, i.e. a new vehicle is a potential target for bandits or thieves.

## Sources of further information

Corfield, T. 1993. *The Wilderness Guardian: A Practical Handbook*. African Wildlife Foundation/The David Sheldrick Wildlife Trust, Longman, Kenya. 701pp.

Use a search engine on the internet to explore websites for manufacturers of vehicles and accessories.