

THE ROAD

TOWARDS ENVIRONMENTAL

SUSTAINABILITY IN MOTORSPORT

A GUIDE FOR COMPETITORS, ORGANISERS & OFFICIALS



THE ROAD TOWARDS ENVIRONMENTAL SUSTAINABILITY IN MOTORSPORT

A GUIDE FOR COMPETITORS, ORGANISERS & OFFICIALS

Compiled for

MOTORSPORT SOUTH AFRICA

by

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January 2015

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ACKNOWLEDGEMENTS

MOTORSPORT SOUTH AFRICA wishes to thank the Federation Internationale de Automobile's Institute for Motor Sport Safety and Sustainability for the grant, which made this work and publication possible.

Several individuals have contributed to the guide in various ways:

Dr John Boden and Beulah Schoeman who wrote the original MSA Environmental Code.

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Design and Layout: Off The Edge Marketing

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Sub-editor: Caryn Gootkin of In Other Words

Photos supplied by: Zaahir Essa (cover page), Dave Ledbitter (p.5), actioninmotion.photofrog.co.za (p.6, 29), Lee Nailand (p.8, 11, 16), Trevor Kitching (p.9, 35), RacePics.co.za (p.26), Rüdiger Böngeler (p.30), Peter Luck (p.28), Dirk van der Merwe (p.28). All other photos by Marius Matthee

Special thanks should be extended to Steve Harding for his contribution and support of the project.

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INSTITUTE
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“

Look deep into nature, and then you will understand everything better.

”

- Albert Einstein

“

There are only three sports: bullfighting, motor racing, and mountaineering... all the rest are merely games.

”

- Ernest Hemingway

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Introduction

Purpose

Over the years, Motorsport South Africa has presented many training seminars on their Environmental Code to officials and other interested partners. The need for a training manual arose from these seminars. We intend you to use it as a detailed reference guide.

This guide aims to assess the environmental impacts of motorsport and to encourage environmental awareness. It emphasises the importance of environmental mitigation in the staging of motorsport events, and the implementation of remedial action if problems arise.

We intend this guide to be used by race organisers, competitors, officials, motorsport clubs, and the owners or managers of circuits and venues. If we expect to conduct quality motorsport events well into the 21st century, and that motorsport activities will be sustainable, we must manage events so as to minimise the depletion of natural resources and pollution of the environment.

Structure of this Guide

This document is divided into three sections:

Section 1 – An introduction to the major environmental issues facing motorsport today and an explanation of why addressing these issues is in the best interest of the sport

Section 2 – Actions that competitors, organisers, venue owners and officials must take to reduce their environmental impact

Section 3 – Additional tools and resources to assist race organisers and venue owners with implementing the actions and concepts in this guide and achieving and improving environmental sustainability

How to use this Guide

Use this document to help motorsport improve its environmental sustainability. Use Section 1 to familiarise yourself with the current issues affecting motorsport and the environment. Being aware of environmental problems is the first step towards being able to solve them. Use Section 2 to understand your specific role and what you can do to ensure best environmental management practices at all time. If you decide you would like to do more to achieve sustainability of your event, you can bulk up your action plan with options provided in Section 3.



History of Motorsport South Africa

From the turn of the century (1901), the Royal Automobile Club (RAC) was motorsport's national sporting authority in South Africa, until 1966 when the RAC was taken over by the Automobile Association of South Africa (AASA). As a touring association, AASA also had a division to administer the control of motorsport in South Africa for both automobiles and motorcycles, known as AASA Motorsport.

In February 1995, AASA, decided to relinquish its control of motorsport to an independent company, and Motorsport South Africa (MSA) was registered as a Section 21 company. MSA is responsible for the governance of all motorcycling, karting and automobile sports. In total 51 different categories of motorsport fall under the control of MSA. Close on 175 clubs, associations, promoters and bodies corporate are affiliated to MSA. There are approximately 500 events per annum on the MSA motorsport calendar – ranging from club to international events. Some 10 000 competitors currently hold MSA Competition Licences.

Motorsport & the Environment

In recent years, there has been growing global concern and consciousness for environmental issues, as they affect the daily lives of every person on planet Earth. Almost every day, wherever we live in the world, we are reminded by the mass media that we have to preserve our planet or face catastrophic consequences in the near future.

Motorsport, rightly or wrongfully, is considered one of the noisiest and most polluting of humankind's leisure activities and our activities are thus subjected to closer scrutiny by local, regional and national groups seeking to minimise human impact on the environment. In addition, some extreme private groups wage their own campaigns to eliminate sporting events of all types, some using a perceived impact on the environment as a justification for prohibiting future events.

Despite the best endeavours of governing bodies and clubs, motorsport activities are still perceived by some people as unacceptable land use in virtually all areas. The following remarks sum up the lingering misconceptions that some people have of motorsport and its impact on the environment:

- Motorsports ... for the participant and enthusiasts they are exciting, involving skill, achievement and great fun. For many land owners and residents they are seen as noisy, smelly, periodic or a near permanent nuisance which brings more cost than benefit to their lives and environment. - (Elson et al, 1986)
- A lot of people – including planning authority committee members and officers – are fearful or suspicious of motorsport. Some still believe that every motorcyclist is a Hell's Angel and that every time a Land Rover turns a wheel the environment is irrecoverably damaged. (Kind, 1997)
- Bird brains who have no thought whatsoever for other users of the countryside. (Elson et al, 1986)

The need for Environmental Standards

National sports federations, like Motorsport South Africa (MSA), have been asked by the International Olympic Committee (IOC) to adopt and endeavour to support the universal environmental protection declaration. Together with its partners, the IOC is committed to promoting sustainable development and respect for the environment in and through sport. Each step taken to harmonise the development of sport with its environment can, in the long term, make a real difference to the cause of sustainability.

It is thus far better that MSA, organisers and participants undertake the initial measurement of environmental issues associated with motorsport, than face potential scrutiny by government or other authorities. These authorities can easily implement measures that can restrict and jeopardise the future of the sport. As the world continues to "grow smaller", the task of decreasing the environmental impact of motorsport is a daunting challenge.

MSA is acutely aware of international environmental planning and legislation and the potential threats to motorsport that are developing out of this legislation. MSA is committed to ensuring that all competitors, support crews, organisers, promoters and venue owners comply with the national environmental legislation imposed by the relevant regulatory bodies.

This commitment will ensure that we maintain environment, social and recreational values, while promoting sustainable motorsport in South Africa for years to come. MSA hopes that competitors in all categories of motorsport will continue to enjoy their chosen discipline, while at the same time caring for the environment. Motorsport should set an outstanding example to all South African motorists of how to care for the environment, and in so doing promote a culture of continuous environmental improvement.



The MSA Environmental Code

The first MSA Environmental Code was published in January 1996. Motorsport South Africa was in fact the first national sports federation in South Africa to introduce an Environmental Code. Through the development and promotion of its own Environmental Code, MSA wishes to emphasise the risks of environmental damage to all motorsport competitors, their support crews, officials and organisers. Fundamental elements of national environmental legislation, which are relevant to South African motorsport, have been incorporated in the MSA Environmental Code.

The MSA Environmental Code was developed to attain the highest standards of environmental compliance at motorsport events across South Africa.

The implementation of the MSA Environmental Code aims to prevent pollution and minimise the potential for adverse environmental impacts. Protocols addressing the following environmental matters are included in the Code:

1. Soil and Water Pollution
2. Waste Management
3. Sound and Noise Control
4. Sanitation
5. Public Safety
6. Atmospheric Pollution



Section 1

The Challenge

Motorsport's Environmental Impact:

1.1 Soil and Water Pollution

- 1.1.1 Soil Pollution
- 1.1.2 Water Pollution
- 1.1.3 Recommendations to protect water resources and quality
- 1.1.4 Vehicle Servicing
- 1.1.5 Vehicle Cleaning
- 1.1.6 Disposal of Used Vehicle Fluids

1.2 Noise Emissions

- 1.2.1 Sound or Noise?
- 1.2.2 What is Sound?
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- 1.5.2 Recommendations for Ecological friendly Transportation

1.6 Spectator Impacts

- 1.6.1 Event Infrastructure
- 1.6.2 Drinking Water
- 1.6.3 Food Vendors
- 1.6.4 Campsites



1. Motorsport's Environmental Impact

We need to look closer at environmental threats associated with motorsport activities to understand their polluting impact on the environment. Potentially, sport can generate various undesirable impacts on the ecosystems, from insignificant repercussions to major damage. The scale and gravity of impact depends mainly on the kind of sport and the size of the event.

The following types of impact generated by motorsports events should be considered:

Short-term Impacts

Short-term impacts occur during the event, e.g. noise or local air pollution.

Long-term Impacts

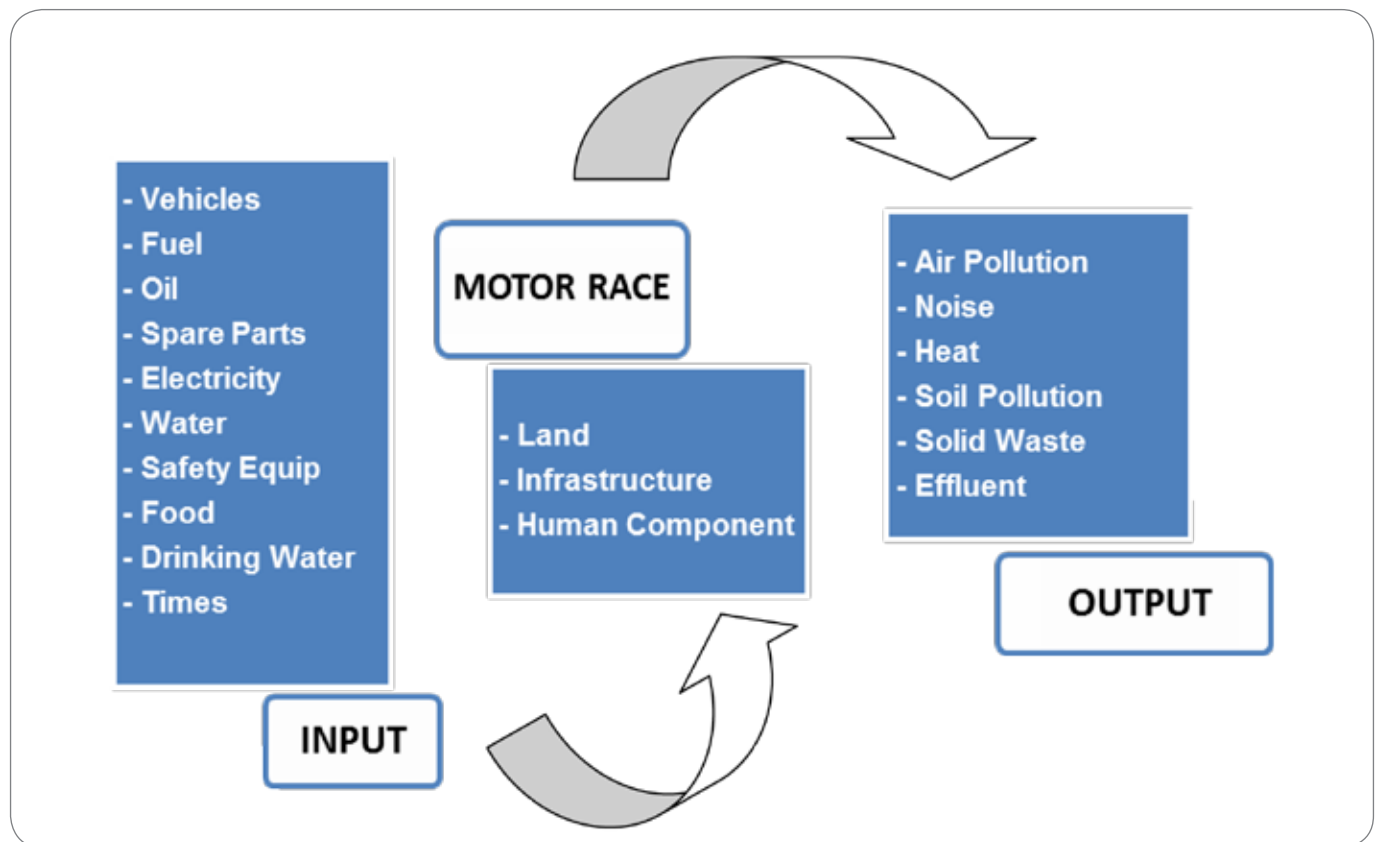
Long-term impacts continue to exist after the end of an event; they can be due to facilities or infrastructures that remain. Soil deterioration (long-term pollution or soil packing) is also a long-term impact.

Direct Impacts

Direct impacts are caused by facilities and people directly involved in the event.

Indirect Impacts

Indirect impacts are due to new infrastructures built for the event, but not directly related to the sports activity (e.g. new access roads, new bridges).



1.1 Soil and Water Pollution

1.1.1 Soil Pollution

In any place where cars are competing or are serviced, motorsport competitors can affect the vulnerable soil when they race. Apart from the damage that may be done by tyre tracks, vibrations and the like, polluting substances may be released into the soil by careless handling of vehicles, notably during refuelling, servicing, washing, etc. There is always a risk of polluting substances being spilled and contaminating the soil. This is undesirable and should be prevented.

Soil contamination is caused by the presence of manmade chemicals or other alteration in the natural soil environment. The concern over soil contamination stems primarily from health risks, both of direct contact and from secondary contamination of water supplies. If this contamination goes on to harm living organisms, we can call it pollution.

Soil degradation occurs when the soil loses its value as a result of overuse of off-road racing routes or erosion. For example, if a bush fire wipes out the vegetation on a piece of land, exposing the soils, and nutrients in the soil are dissolved by rainwater run-off, the ability of the soil to support plant life is reduced.

We distinguish between a few main groups of manmade hazardous substances that can be toxic to the environment:

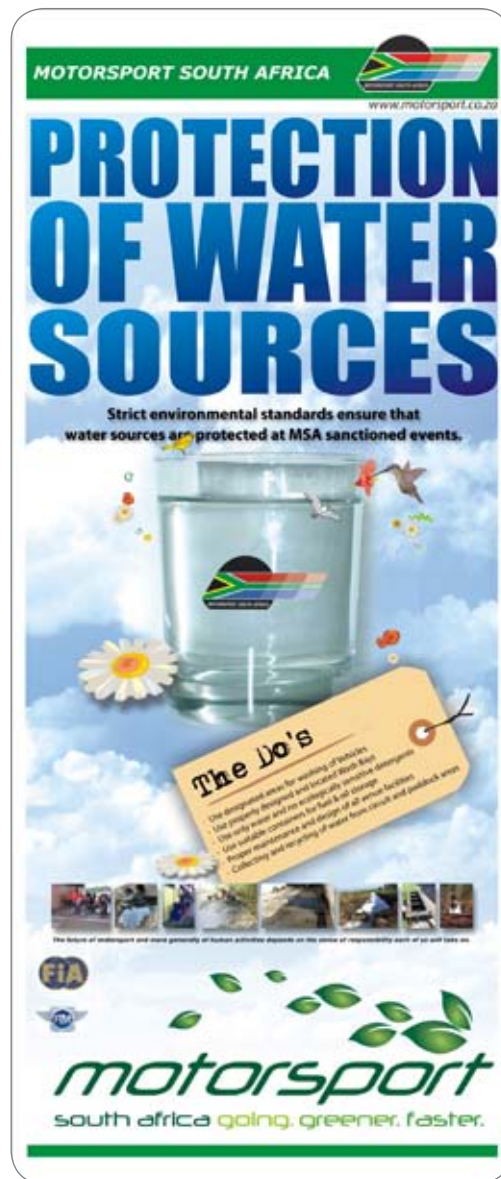
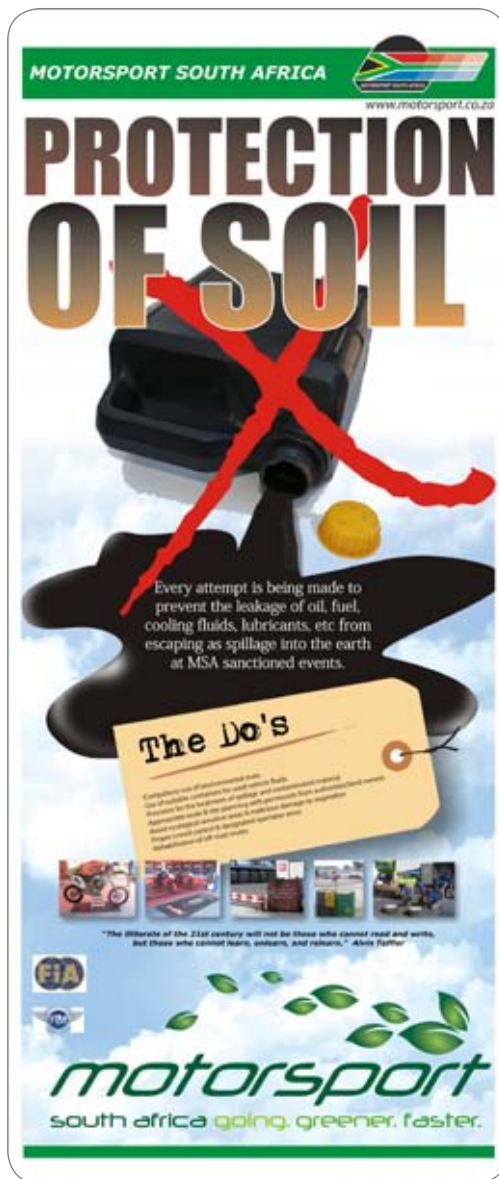
Heavy metals such as lead, cadmium and mercury

Chlorinated hydrocarbons such as crop protection chemicals, solvents and polychlorinated biphenyls

Aromatic hydrocarbons such as benzene and naphthalene

Although the soil may look like a motionless mass, it is actually an impressive ecological system in which countless reactions and processes take place. The soil has its own life, a major part of which consists of minute soil creatures. These micro-organisms live off the material in the soil and make the soil suitable for plant growth. As we depend on plants and trees for our food supply, we are indirectly dependent on the quality of soil life.

You cannot see polluting materials in the soil and you cannot usually smell them either, but poison moves steadily and the effect may suddenly come to light many years later when it may be found that soil life has been severely disturbed or that poison has been absorbed by plants. People may become ill from eating contaminated vegetables and the same applies for animals feeding on contaminated pastures (many of them become our food again).



1.1.2 Water Pollution

Motorsport venues provide facilities for a range of different events involving motorised vehicles and can attract large numbers of participants, officials and spectators. However, they can pose environmental risks to water resources through:

- clearing of native vegetation for race routes and spectator areas
- leaks or spills of chemicals, petroleum and oil from storage areas
- mechanical servicing areas and on track activities
- turbid or contaminated storm water run-off from pit/paddock areas
- inappropriate containment or disposal of solid waste and wastewater from permanent race venues
- location of washdown areas
- poorly kept ablution facilities for spectators/competitors

Polluting substances that seep into the ground can cause serious problems to the underground network of drinking water. We often discover what is wrong only after pollution has produced its harmful effects for some time and when we can then do little about it. Water is an extremely scarce commodity in South Africa and has to be protected from pollutants at all costs.



DID YOU KNOW

One litre of used oil pollutes one million litres of water.



1.1.3 Recommendations to protect water resources and water quality

Motorsport activities should take place on land with the following attributes:

- Site zoned for motorsport in the local government's planning scheme
- Access to essential services, including waste collection, effluent treatment and recycling facilities
- Effective management of spectator areas and transport routes
- Stable soil surfaces that are not prone to flood or erosion
- Outside of sensitive ecological areas

Virtually all types of water pollution are harmful to the health of humans and animals. Water pollution may not damage our health immediately, but can be harmful after long-term exposure. Different forms of pollutants affect the health of animals in different ways:

- Heavy metals from industrial processes can accumulate in nearby lakes and rivers. These are toxic to marine life such as fish and shellfish, and subsequently to the humans who eat them. Heavy metals can slow development, result in birth defects and, in some cases, be carcinogenic.
- Industrial waste often contains many toxic compounds that damage the health of aquatic animals and those who eat them. Some of the toxins in industrial waste may only have a mild effect whereas others can be fatal. They can cause immune suppression, reproductive failure or acute poisoning.
- Microbial pollutants from sewage often result in infectious diseases that infect aquatic life and terrestrial life through drinking water. Microbial water pollution is a major problem in the developing world, with diseases such as cholera and typhoid fever being the primary cause of infant mortality.
- Organic matter and nutrients cause an increase in aerobic algae and deplete oxygen from the water column. This causes the suffocation of fish and other aquatic organisms.
- Sulphur particles from acid rain can harm the health of marine life in the rivers and lakes it contaminates, and can result in mortality.
- Suspended particles in freshwater reduces the quality of drinking water for humans and the aquatic environment for marine life. Suspended particles can often reduce the amount of sunlight penetrating the water, disrupting the growth of photosynthetic plants and microorganisms.

Soil and water pollution are of significant importance in all off-road disciplines, but could also pose problems for all other racing categories. Three of the main problem areas we usually encounter at events are the following:

1.1.4 Vehicle Servicing

Problems that can arise when liquids, oil, fuel etc., coming from the competing cars, are dispersed on unprotected soil surface when they are being serviced. To avoid this, it is compulsory to cover the ground under the vehicles with an environmental mat (or other effective system) able to absorb the liquid. The current MSA Environmental Code gives the following minimal criteria for mats:

The Environment Mat must be composed of an absorbent upper part and an impermeable lower part.

The minimum specification for the mat is as follows:

- | | |
|------------------------|-----------------------|
| • Dimensions: | Minimum 160cm x 100cm |
| • Absorption Capacity: | Minimum 1 litre |
| • Thickness: | Minimum 5mm |

It is recommended, when possible, to enlarge the covered area either using mats (ground covering) of a larger size or using two or more overlapping mats in the area of contact. We also recommend using mats with higher absorbing capacity considering it is possible to find mats that can absorb up to 5 litre/m².



Other products that can be used on their own or in combination with environmental mats are absorbent cloths/pads/pellets and specialist spill kits. Environmentally friendly chemicals also treat contaminated soil.

At refuelling points fuel containers must be placed on environmental mats if the ground surface is porous.



As mentioned above, the use of environmental mats is compulsory and drivers not respecting this rule will be fined. The primary goal, though, is to preserve the environment and not to punish. So, in the spirit of mutual collaboration, the owners of the circuits and/or the organisers of events should stock carpets to sell or rent to those who, for any reason, do not have mats at events.

Lastly, it is important that mats are cleaned before reuse. This must be done in a way that will not harm the environment i.e. in dedicated areas, whether it's cleaned at the circuit/venue or away from it, otherwise it will nullify the purpose of this exercise. The same applies for the discarding of environmental mats. Use specialist waste removal companies to remove old and disused mats.

1.1.5 Vehicle Cleaning

You must clean vehicles in a designated area with all the necessary equipment to prevent the wash water from seeping into the ground. Wash with water only – detergents are not allowed. Detergents kill micro-organisms in the soil and water, and this can lead to ecological problems in the immediate area.

In the case of permanent circuits, it is quite easy to identify an area in the paddock or nearby. Provide it with a waterproof surface and gutters to collect the wash water. This can be connected to the main sewage line of the paddock area or to a conservancy tank that can be emptied when full. Although more difficult to address, it is possible to find alternative solutions in the case of temporary circuits



It is essential that no fresh water sources – rivers, streams, dams, boreholes – are contaminated with wash water; the designated wash bays must be located far away from such water sources. Also, use the natural slope of the ground to identify a suitable washing area. Partial recovery of the wastewater in waste tanks/reservoirs is also better than its total dispersion in the ground.

1.1.6 Disposal of Used Vehicle Fluids

The leakage and spillage of fuel, oil, cooling and brake fluids and any other additive or cleaning agent on to the unprotected ground must be prevented at all times. These fluids must never be poured into storm and waste water systems.

It is the responsibility of the organiser of the event to provide clearly identified and appropriate facilities/containers for the disposal of used oil, filters and other vehicle fluids. These waste containers must be placed on a non-porous surface to prevent soil contamination that may result from spillages that may occur when pouring the fluids into the waste container.



Containers for the collection of used or contaminated oil must have fixed funnel inlets to prevent spillages. Separate and clearly marked containers for the collection of oil filters and cleaning rags must also be provided. If the organiser has not provided containers, the competitor and their service crews must provide their own containers and remove the containers at the end of the event.

It is also extremely important that organisers/owners ensure the separate removal of these waste products by a specialist waste removal company for hazard-free disposal.

1.2 Noise Emissions

The motorsport fraternity has always been aware of the noise attached to racing and the effect this could have on nearby residential areas. For enthusiasts the noise of a motorsport event can add to the excitement, but for those living near a circuit it can be annoying or even alarming. That was a good reason for locating racetracks well away from these areas. The world population is expanding rapidly with a corresponding increase in housing needs. The once remote racetracks are increasingly being threatened by urban growth. Reverse sensitivity is now the norm for most circuits and some have already been closed down or made to relocate further away due to environmental law favouring the new neighbours that the circuit did not want in the first place.

Circuit management is very much aware that noise emissions must be kept to a minimum to keep the track viable, and that they still have to fight to keep a buffer zone around the track to protect any neighbouring residential areas from the noise produced, and in reverse to protect the track from legal action to have it closed down.

A number of factors contribute to the noise impact on residential areas as the result of motorsport events:

- Level of noise
- Number of events per year
- Time at which events take place
- Spread of events during the year
- Period of notification provided to residents about upcoming events

The main sources of noise from a motorsport venue are:

- Exhaust noise from individual vehicles
- Other vehicle noise, including tyre and brake noise
- Collateral noise from unofficial revving and racing in the vicinity
- Public address systems
- Noise from increased spectator traffic to and from the venue

1.2.1 Sound or Noise?

Sound is such a common part of our daily lives that we rarely appreciate all of its functions. Yet, too often in our modern society, sound annoys us. Many sounds are unpleasant or unwanted. These are called NOISE.



DID YOU KNOW

Noise is a form of sound that is unwanted, while sound, is something that people enjoy.



Domestic noise can be a significant source of annoyance to members of the community. Noise affects people physically, psychologically and socially, and interrupts, without warning, personal activities such as sleep, study, entertainment, relaxation and conversation.

Noise intrusions are especially annoying when they are needless, such as the acceleration of a noisy car with a faulty silencer. The exhaust sound from a car's engine may be music to the driver's ears, but will be ear-splitting agony for others. People have varying sensitivities to noise. Those with hearing problems, the aged, children and the intellectually handicapped are usually more sensitive to excessive noise.

Noise intrusions are characterised by their transient quality. The volume, intensity, duration and time of the day all influence the level of annoyance. The level of background noise in an area will influence whether domestic noise is considered to be annoying. It will usually be quite noticeable at night and in rural towns where background noise levels are usually lower.

1.2.2 What is Sound?

Sound is a physical phenomenon that can be characterised as successive fluctuations of the pressure around the atmospheric pressure. It is a wave motion that occurs when a sound source sets the nearest particles of air in motion. These variations can differ in intensity, or they can follow each other more or less rapidly.

The magnitude of the fluctuations (with respect to the atmospheric pressure) is referred to as the intensity of the sound or the sound pressure; it is usually measured in decibels.

The time between two fluctuations determines the pitch or frequency of the sound; this is measured in hertz.

The "sound" from a certain source is usually composed of a multitude of sounds, each with its own pitch. This constitutes what is referred to as a sound spectrum.

1.2.3 Noise and Man

The human ear is a complicated instrument; if an instrument is used improperly or overloaded, damage may result. Overloading may therefore damage the human ear.

An ear can register differences in frequency. Every frequency requires a separate part of the auditory organ. Overloading of such a part will lead to reduction or complete loss of registration in the long run. The result is that certain tones cannot be heard properly or at all. In that case we speak of hearing fatigue, or even worse, hearing loss.

1.2.4 Noise-Induced Hearing Loss

Noise-induced hearing loss, which is described by the World Health Organisation as the most prevalent non-reversible industrial disease, is usually caused by prolonged exposure to loud noise, typically in excess of 85dB(A). It causes damage to the sensory organs of the inner ear and this type of hearing damage can never be repaired.

1.2.5 Reducing Sound Levels

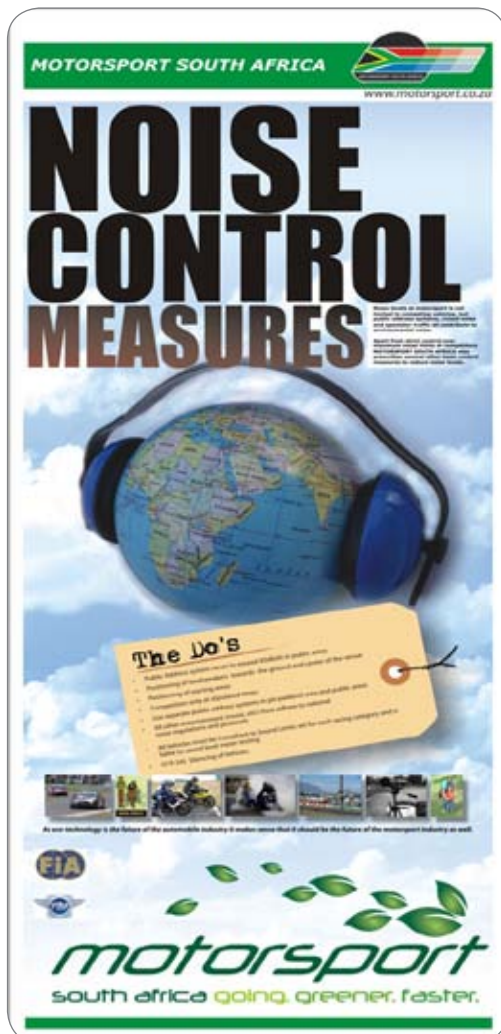
There are four main methods that can be used to minimise and control noise intrusion in the community:

1. Controlling the noise levels produced by the source (silencing car)
2. Limiting the hours of use and the frequency of occurrence (race times)
3. Interrupting the path between the source and receiver (noise barriers)
4. Monitoring the source level contribution to environmental noise (sound level checks at scrutineering)

It is usually much easier and cheaper to take measures to reduce the noise at source than to take other measures such as constructing noise barriers and/or excavating the track site.

The exhaust sound of racing cars depends largely on the power of the combustion and the shape of the exhaust (and the air intake), so the engine tuning is a major determining factor in the sound produced. Furthermore, the mixture composition and atmospheric humidity are important as well. Thus it is possible that two identical engines show different sound pressure values, or that one engine gives a somewhat different value on another racing day. It is therefore very important that silencers are developed as part of the engine tuning. A silencer will wear, due to the vibration forces and the gases flowing through it, so regular maintenance or timely replacement is necessary to keep it working properly.

This is especially important at training facilities and club races, where the vehicles used are often relatively old and no longer subjected to the regular sound checks at national or international races. Owing to a lack of information, club competitors often do not know how much noise their machine produces and they do not worry about it. Adequate information and regular sound measurements at scrutineering can prevent the authorities from taking measures that may even cause a circuit to be closed.



The reduction in vehicle exhaust noise over the last few years has put more emphasis on the other noise sources. The vehicle noise on the track does cause complaints, but often it is the practice outside of actual race times that stimulates a complaint. Control of the noise at source is the most effective way of managing the noise emissions from the track. Pre-event control is not the complete answer – where prizes are involved there will always be those who alter their vehicles to increase the power before using the track.

Continuous trackside noise monitoring and strict control over removing any vehicle from the racetrack at any time is essential and should form part of any good noise management plan. Planning for the noise emission from the racetrack is difficult as there is a considerable difference in sound levels between events, and throughout the day of track activity. For example: A dealer day demonstrating production saloon cars, will produce much less noise than a day of racing, and during the day between events there may be no noise at all.

Don't forget the facility's public address system, which may also be a major contribution to the noise nuisance to the people living in the neighbourhood. The public address systems that cause complaint are often badly designed – there is no reason why such a system should cause annoyance outside the venue if it is designed properly. Multiple low-powered speakers facing inwards across the spectators towards the track, rather than a few high-powered speakers radiating from the trackside towards the spectators, can ensure that the sound emission is acceptable to local residents. The use of radio headphones in place of the public address system may be the easiest and best solution to the problem but requires acceptance by the management of the racetrack and those attending the race meeting.



1.2.6 Sound Levels at Motorsport Events

Each sporting commission is duty bound to set upper limits of sound production for that category of motorsport. It is compulsory for all event organisers (not only for circuit racing, but for all categories) to conduct sound level meter tests of competing vehicles and motorcycles at events. Competitors who fail to comply with this requirement will be subject to exclusion or a time penalty as prescribed by the relevant racing category regulations.

1.2.7 Sound Measurement Procedures for Competitors

Noise Limits are a key part of life within all motorsport activities these days. Circuit neighbours want a quiet life, yet drivers want to enjoy the sound of a clean revving engine. The only way for both parties to enjoy what they both want is by sensible compromise and setting limits. Adherence to these limits is the main weapon in the fight to maintain use of venues.

The different testing methods in accordance with GCR245 and APPENDIX 1 of the MSA Environmental Code are as follow:

The 50cm Static Test

To measure sound levels, place the sound level meter's microphone 50cm from the end of the exhaust pipe at a 45° angle and at the level of the exhaust outlet.

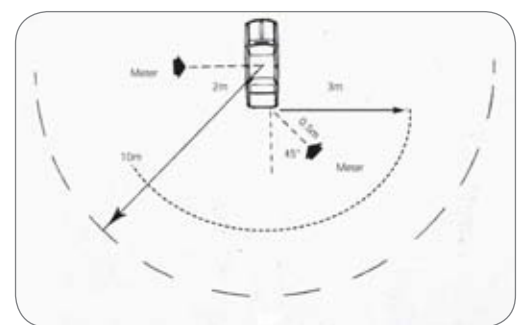
Where more than one exhaust outlet is present on the vehicle, the test must be repeated for each exhaust outlet and the highest reading will be the representative reading.

The Two Metre Static Test

In circumstances where the exhaust outlet is not immediately available or accessible, the test may be conducted at a distance of 2m from the centreline of the vehicle with the microphone 1.2m above the ground.

Measurements should be made outdoors with no large reflecting objects – walls or buildings – within 3m for the 50cm test or within 10m in the 2m test.

Background noise should be at least 10 dB(A) below the measured level with distances from 2m–8m. There must be a minimum of 20m radius open flat space around the vehicle. Where possible, measurements must be taken as close as possible to the vehicle, at the defined distance, to avoid background noise.



1.3 Waste Management

Motorsport activities, especially bigger events, can generate considerable waste, some causing little more than dirt or minor disturbances, while others have a harmful and lasting effect on the environment and human health. Waste generation is one of the major environmental problems associated with sporting events.

Waste can be generated by participants and spectators (through event-related activities such as the consumption of food) and a wide range of supplies and materials used in hosting an event. In addition, on a larger scale, waste is produced in the construction of permanent sports facilities and the creation and disposal of temporary installations.

Through good waste management practices like reduction, reuse, recycling and composting, a major event can easily halve its creation of waste and the associated costs. Sport events are regarded as opportunities to demonstrate best practice models in waste management and to change public attitudes and habits. The inherent link between a clean environment and participation in sport is part of what makes sport such a powerful tool for communicating environmental messages and encouraging action to clean up the environment.



A sound waste management disposal plan must be prepared, taking into consideration environmental, health and costs factors.

The three key objectives for waste management in relation to a motorsport event are:

- Waste prevention and avoidance
- Reducing the need for disposal
- Sound disposal of waste



DID YOU KNOW

The amount of waste in landfills that could be recycled is about 70%

1.3.1 Waste Prevention and Avoidance

During the planning of events, an effort must be made to identify opportunities to prevent or avoid the generation of waste. This can involve altering the design, manufacture, purchase, or use of products and materials so as to reduce the quantity and quality of waste associated with all phases of the event.

Strategy:

1. Assess the need for a particular product before it is procured. Is the product really necessary? Are there alternatives? Can the product be rented?
2. When procuring materials and goods, select products that can be recycled.
3. Appoint service providers that implement waste-minimisation strategies.
4. Use equipment and techniques that assist with waste minimisation or avoidance e.g. printers capable of double sided printing.
5. Prepare and implement a procurement plan that encourages waste prevention and minimisation



1.3.2 Reducing the need for Disposal

Waste minimisation improves the efficiency of an event. The more waste is generated at an event, the more time, money and resources must be devoted to collection, transportation, storage and removal of these materials. Waste reduction and recycling also help minimise the creation of greenhouse gases.

The increase in waste volumes naturally poses challenges associated with collection and disposal. The real goal should be to reduce the volume of waste, i.e. packaging material, bottles, paper, etc. Reusing or recycling waste materials can result in a significant reduction both in the demand for natural resources and the amount of waste going to landfill. This has the added benefits of prolonging the lifespan of landfill sites, reducing the financial and environmental costs of transporting waste, and minimising pollution. Recycling initiatives have proved to be very successful in reducing waste generation at many sporting events.

Strategy:

1. Reuse used or excess materials for future events.
2. Encourage separation of waste at source for recycling, reuse and composting.
3. Separate wet and dry waste at source to enable reclamation of dry waste.
4. Initiate recycling or buy-back programmes, especially for glass bottles, cans, plastic and paper products.
5. Approach manufacturers (e.g. Mondi, SAPPI) about collecting and re-cycling used products.
6. Use different colours and shapes that are universally recognised to differentiate between recycling and rubbish bins.
7. Place recycling bins in areas where waste for recycling is generated e.g. next to spectator areas, pits, food vendor areas.
8. Train unskilled workers in waste-sorting techniques
9. Keep recycling areas clean, well lit and odour free.
10. Collect litter and maintain signage and containers regularly.



1.3.3 Appropriate Disposal

All waste that cannot be recycled or reused should be disposed off in licensed waste disposal facilities. Appropriate arrangements need to be made for regular collection of the waste, and bins for specialised non-recyclable waste, such as hazardous (used oil) or medical waste, need to be placed at the motorsport venues in places where this waste is likely to be generated.

Strategy:

1. Ensure environmental, health and safety requirements are met during waste collection and disposal.
2. Identify all sources of non-recyclable waste for collection and disposal.
3. Ensure proper infrastructure for waste collection and disposal.
4. Provide bins for specialised non-recyclable waste like hazardous or medical waste in close proximity to sites where waste is generated.
5. Ensure that waste is disposed of in a licensed landfill site
6. Avoid leakages and spills during storage and disposal of non-recyclable or hazardous waste.
7. Work with the local waste authority to add extra collection shifts during peak waste generation to avoid bin overflowing.



1.3.4 Waste Generation: Areas and Type

The volume and type of waste generated will vary at different motorsport venues. Care must be exercised in the choice and size of waste receptacles, which may be placed around the periphery of the venue or site, within the venue or in any other appropriate areas. Special attention must be paid to the following areas:

1. Surrounding land and streets
2. Entrance and exists
3. Ablution facilities
4. Temporary or permanent medical centres
5. Catering areas
6. Campsite areas
7. Parking areas
8. Spectator areas
9. Pits & Paddock



1.3.5 Waste generated by Competitors

It is self-evident that during motorsport meetings there should be a sufficient number of collection facilities to gather the waste of competitors, officials and spectators. Furthermore, adequate waste disposal should be guaranteed, taking account of the type of waste. Used oil and items polluted with oil should be considered chemical waste and do not belong on a refuse dump. This would only shift the soil pollution, which, of course, is not the intention.

1.4 Sanitation and Wastewater

Wastewater treatment and safe disposal are key environmental components at motorsport events, since it may cause serious pollution and health related problems, if not properly managed. Sanitation refers to everything that concerns the cleanliness of our surroundings. That is the absence of human waste.

The provision of suitable ablution facilities needs sound planning, since it constitutes a very visible part of any motorsport event or venue. The main objectives are to provide facilities that satisfy the needs generated by a particular event without endangering the health of spectators, competitors and people in the region. Wastewater effluent must under no circumstances pollute any water source or create soil pollution.

1.4.1 The Importance of Good Sanitation

Good sanitation is important for several reasons:

- Health – Human waste left lying around end up in dams, rivers, springs and contaminates water that can spread diseases like cholera and hepatitis.
- Waste left lying on the ground provides a breeding ground for flies that can spread diseases to humans.
- Economic – we lose money when people are ill and cannot work.
- Aesthetics – Most cultures believes that human waste is unsightly and therefore good sanitation also aims to remove this waste from sight.
- Privacy and safety – good sanitation aims at privacy and protection when people relieve and clean themselves.

1.4.2 Ablution Facilities

- Ensure that adequate sanitary provisions are made for the estimated number of spectators attending the event. Consideration must be given to the location, access, construction, temporary facilities, lighting and signage.
- Toilets should be constructed and located in such a way that spectators are protected from bad weather and trip hazards. The floors, ramps and steps of all units must be stable and constructed with a non-slip surface.
- Toilets must be readily visible, lit and clearly identified at all parts of the venue.
- Toilets must be regularly maintained, serviced and repaired, by competent workers throughout the event to ensure that the toilets are safe, clean and hygienic.
- All blocked toilets must be cleared immediately.

- All toilet and wash facilities must be connected to an underground sewer unit, be it a permanent sewerage network or a septic/conservancy tank. Under no circumstances is waste and sewage water allowed to accumulate on the surface, since it may lead to serious health- and pollution-related nuisances.
- Hand washing facilities should be provided in the ratio of one basin to 5 toilets and certainly not less than one basin per 10 toilets.
- Hand drying facilities must be provided. If paper towels are to be used, ensure regular disposal and restocking.
- Where warm water hand washing facilities are available, adequate supplies of suitable soap must be supplied. Where warm water is not available, either antiseptic hand wipes or bactericidal soap should be provided.
- If hand washing facilities are in the open, ensure that the surrounding ground does not become waterlogged or flooded.
- In events lasting longer than one day, consider providing showers.

1.4.3 Location

- Toilets must be located at different points around the venue and not concentrated in specific areas. This will reduce crowding and queuing.
- Consideration should be given to placing toilets outside the perimeter fenced venue area e.g. car parks, ticket office queuing areas, event campsites etc.
- Provision must be made for easy access to toilets for servicing and sewage removal vehicles.



1.4.4 Toilet Types

- If temporary toilets are to be used, the different toilet types (only flush or chemical toilets are recommended) must be assessed as to their suitability for the type and duration of the event.
- Peak toilet usage time should be assessed as rapid and constant use of any toilet may result in blockages and the toilet bowls may become unsanitary.
- Temporary mains units can be used if a sewer, drain or septic tank is available, provided there is an adequate water supply and water pressure.
- Single self-contained units are acceptable and easily relocated. They have a maximum number of uses before requiring servicing or emptying.
- When non-mains units are used, provision for safe and hygienic removal of waste must be arranged, if necessary with a holding tank.

1.4.5 Toilet Numbers

Both the paddock and the spectators areas should be ensured of a reasonable number of facilities (1 per 100 females; 1 per 500 males plus 1 urinal per 150 male).

The following factors must also be considered in attempting to estimate the minimum number of toilets required:

- The duration of the event.
- Perceived spectator food and fluid consumption.
- Estimated toilet usage during breaks in the programme of events.
- Usage of temporary campsites.
- The provision of suitable facilities for children, the elderly, and the infirm or disabled attending the event as they may take longer to use the facility.

1.4.6 Sanitary Facilities for People with Special Needs

- Appropriate sanitary accommodation must be provided for wheelchair users and other people with special needs.
- Access to toilets must be considered. Supply fixed and stable ramps where appropriate.
- Toilet facilities must be provided next to designated areas for spectators with special needs or otherwise in all areas that are accessible to spectators.
- As a general rule, one toilet with hand washing facilities should be provided for every 75 people with special needs.
- Weather conditions and temperature.

1.4.7 Maintenance

It is very important that all facilities are kept clean and fully operational at all times if we want people to use them without problems, which will avoid inappropriate behaviour. Adequately trained individuals must maintain the facilities. At big international and national events we recommend that full-time staff are appointed to address this very important aspect.

1.5 Atmospheric Pollution

Air pollution is the human introduction into the atmosphere of chemicals, particulate matter or biological materials that:-

- cause harm or discomfort to humans or other living organisms; or
- damage the natural environment..

The atmosphere is a complex, dynamic natural gaseous system that is essential to support life on planet Earth. Stratospheric ozone depletion due to air pollution has long been recognised as a threat to human health and to the Earth's ecosystems.

The journeys made by competitors, officials and spectators to and from motorsport events have considerable adverse effects on the environment. Studies have shown that transport was responsible for approximately 90% of the greenhouse gas emissions of all large sporting events. Fossil fuel combustion, particularly as it occurs in motor vehicles, has been identified as the largest contributor to air pollution in the world.

In fact, there are two types of pollution discharged by petrol vehicles:

- exhaust emissions, including dangerous gases such as carbon monoxide, oxides of nitrogen, hydrocarbons and particulates;
- evaporative emissions – vapours of fuels that are released into the atmosphere, without being burnt.

1.5.1 Transportation

Thousands of spectators use personal or public transport to and from sports venues. Exhaust fumes, which are a public health hazard, are major contributor to the CO₂ emissions that are causing climate change. Minimising the environmental impact of transport is a major challenge for organisers of major sport events.



Transportation is needed to get to the sports facility and much of it usually takes place in private cars. Transportation contributes to many environmental hazards, particularly air pollution (greenhouse effect, ozone formation at ground level) and related health problems. A reduction in the distances travelled with private cars, incentives to promote public transportation and non-pollutive transport (e.g. bicycles), and sound transportation planning could greatly minimise air pollution, noise and disturbance, as well as the extent of land use.

The objectives are to:

- minimise transportation
- promote collective and or public transportation
- encourage environmentally friendly transportation.



DID YOU KNOW

One poorly maintained vehicle emits pollutants equivalent to those from 20 properly tuned cars.



1.5.2 Recommendations for ecologically friendly transportation

- Select specific transportation systems which minimise energy use and reduce pollution
- Encourage public transportation systems over private transportation
- Issue tickets for the event that entitle their holders to free public transit rides
- Encourage access to facilities on foot
- Encourage the construction of bicycle routes and parking for bicycles near the sports facilities
- Encourage the use of shared transportation for trips to meetings, tournaments and matches
- Organise training and competitions in such way that as many participants as possible can take part without travelling by car
- Organise shared transportation where motor transport is necessary

1.6 Spectator Impacts

Any gathering of a large number of people has the potential to harm the environment. Given the number of people who attend motorsport events in this country each year, just imagine the impact that such large gatherings could have on water, soil and atmosphere where the event takes place, but also far beyond. The spectators use a lot of energy, both driving to the venue and at the venue itself. Tens of thousands of hours of energy and litres of water are used and a large amount of waste is produced.

Organisers must remember that large motorsport events also present a unique opportunity for promoting environmental awareness and action by drawing the attention of spectators to the impact that a degraded environment has on sporting performance and other aspects of daily life.



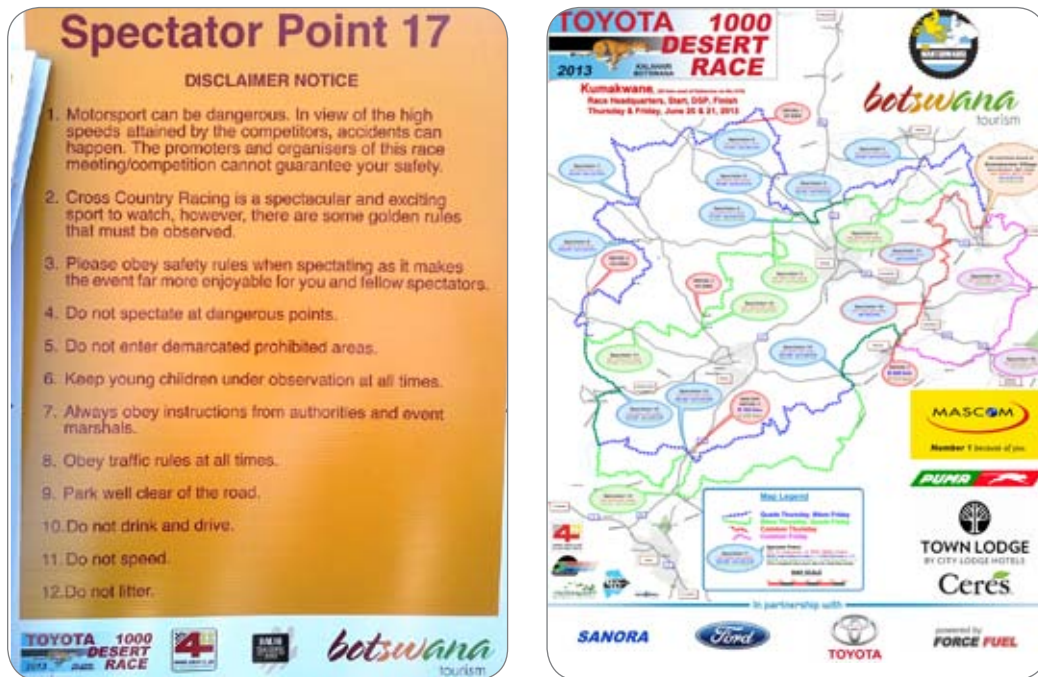
1.6.1 Event Infrastructure

By taking sustainable planning practices into consideration, organisers and venue owners of motorsport circuit or off-road events can play an important role in keeping the environment clean and undamaged, thereby minimising potential negative impacts. Here are some suggestions to lessen spectator impact at events:

- In co-operation with the police, select the routes to and from circuits and events that will cause as little annoyance as possible for the surrounding areas.
- Provide clear signs to circuit facilities and spectator areas.
- Do not allow parking on vulnerable places (verges, entrance, exits).
- To prevent fires, do not allow parking in long grass.
- Encourage the use of public transport.
- Avoid excessively high concentrations of people in ecologically vulnerable places.
- Cordon off vulnerable areas to prevent spectator access.
- Provide enough sanitary and refuse facilities.
- Inform the spectators about responsible behaviour on the site.

- Specify in contracts with catering firms a requirement to sell drinks and food packaged in recyclable, reusable or biodegradable material, and to provide and maintain sufficient waste containers.

We recognise that our people and the environment in which we live and compete are among our greatest assets. Safety and environmental issues are closely linked and, from a motorsport perspective, we need to address and incorporate certain public safety aspects as part of our environmental management process.



1.6.2 Drinking Water

- The provision of free, uncontaminated drinking water is essential. The volume required depends on the number of people, the duration of the event and prevailing weather conditions.
- Ideally, water for drinking purposes should be provided from a main (municipal) supply. If this is not possible, suitable containers with clean drinking water must be provided for spectators and competitors.
- All water dispensing equipment must be clean and well maintained. It is considered good practice to sample and test temporary water supplies for bacteriological safety, especially if it is not from a municipal water source.
- For outdoor one-day events, a general guideline is one water outlet per 3000 spectators and one water outlet per 10 caterers in the same area.
- All water points must:
 - o have unobstructed access
 - o be clearly identified as drinking water (signage)
 - o be clearly lit at night
 - o have self-closing taps
- The ground surrounding all water points should be well drained.

1.6.3 Food Vendors

The delivery, storage, preparation and sale of food at race meetings must comply with local and national food safety regulations at all times if you sell food for profit.

Both the venue owner and individual food caterers/vendors must:

- make sure that they are familiar with these regulations; and
- have the necessary permission (certification) from the relevant local health authority to prepare and sell food.

This applies to all forms of catering including mobile catering units; catering stalls and marquees; staff catering; hospitality catering; restaurants and bars.



Non-compliance can have serious repercussions in the case of food-borne diseases that can be traced back to these providers. It is extremely important that all caterers and food vendors carry out their businesses in a safe and hygienic manner.

The volume of waste generated at sporting events is largely the result of food vending and extreme care and good planning is essential to address its impact. Waste minimisation is the primary objective and food vendors and outlets must be instructed accordingly.

1.6.4 Campsites

- It is essential to ensure that food outlets and personal hygiene within a campsite are satisfactory to prevent outbreaks of food poisoning and other potentially dangerous diseases like cholera and hepatitis.
- Avoid using sites that have been used for animal grazing as campsites. The bacteria *E. coli* is present in all animal droppings and can survive for long periods in the environment.
- No dogs are allowed in the campsite. Dogs might produce unnecessary health risks by fouling the site and dog-bites. Furthermore, many dogs are scared of noise, which can result in aggressive behaviour.
- Campfires are potentially hazardous as they can lead to burns, bushfires and smoke pollution. Communal fires may be safer.
- If campfires are allowed, make provision on site for the sale of chopped wood and charcoal. This could prevent the destruction of surrounding natural vegetation.
- The burning of substances that produce noxious fumes (like plastic) is forbidden.
- Fire services at campsites must include:
 - o Trained fire marshals;
 - o Fire points where a fire alarm may be initiated. Consider having buckets and water available at this point;
 - o An adequate number of fire extinguishers;
 - o Fire trucks for large events.



Section 2

On the Starting Line

The Protagonists

2.1 The Environmental Officer



2.2 Duties of Competitors and Service Crews



2.3 Duties of Permanent Venue Owners



2.4 Sanitation and Wastewater



2. The Protagonists

Environmental sustainability in motorsport is only possible with the collaboration of all the different stakeholders that are involved in the sport. They all play a role to ensure that motorsport events are planned and conducted in an environmentally compatible way. The responsibilities and duties of the following individuals, groups and organisations are explained in detail in the MSA Environmental Code:

1. The Environmental Officer
2. Competitors and their Service Crews
3. Permanent Venue Owners
4. Promoters and Organisers

2.1 The Environmental Officer

It is compulsory at all meetings to appoint an Environmental Officer, and their name must be included in the event SRs. An Environmental Officer must have satisfactorily completed MSA's examination and must be accredited and licenced. The Environmental Officer keeps an eye on environmental issues during the running of an event and ensures that the requirements of MSA's Environmental Code are complied with. They must make recommendations before, during and after the race. After the race the Environmental Officer must prepare a report that is made available to MSA and the race organisers.

The Environmental Officer must also:

- complete the Environmental Checklist, which will be distributed to organisers, and return it to MSA within 3 workings days after the event;
- ensure that the organisers and officials of an event have examined MSA's Environmental Code and its Protocols and that all role players are respecting their principles;
- have access to all event information;
- be involved in the planning of the event;
- have the opportunity to make recommendations, during or after the event, to the organisers, chief officer, clerk of the course or jury president on all aspects of the event that may have potential environmental consequences;
- conduct random inspections of the circuit or venue and all its facilities at any time before, during or after an event;
- inform the race officials (Clerk of the Course) of serious breaches of this Code;
- identify areas of good practice;
- keep an Environmental Logbook for the circuit, venue or off-road event.

2.2 Duties of Competitors and Service Crews

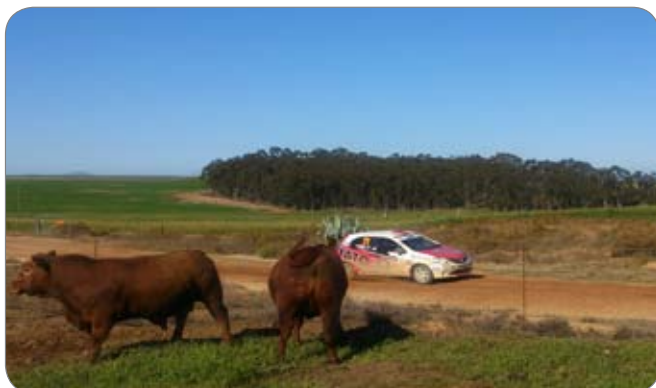
Motorsport competitors have an important role to play on a variety of issues as both role models and participants. A degraded environment affects them directly inasmuch as it threatens their performance, health and even their lives. Every competitor and member of the service crews must be aware of the contents of the MSA Environmental Code.

Following these basic guidelines gives competitors an ideal opportunity to advocate the values set out in this Code and inspire others to adopt environmentally responsible behaviour.

ENVIRONMENTAL GUIDELINES FOR COMPETITORS (DRIVERS & SERVICE CREWS)



Service and competing vehicles must avoid parking on grass verges, plants and shrubs. Apart from damage to vegetation it can also create a fire hazard.



Do not maliciously or intentionally damage, kill or maim any species of fauna or flora. (Cross Country and Rallying). Respect and preserve the environment through which you travel, especially in off-road events. No long-term evidence of the running of a motorsport event, especially off-road events, must be left to scar the environment.



To prevent soil & water pollution due to leaking or spilled vehicle fluids, the use of an environmental mat or similar ground-protecting device is mandatory for ALL Off-Road events and also at permanent circuits where a porous pit floor is present (i.e. grass or soil). After the use of an environment mat, it must be rinsed with water ONLY in a place with a proper drain and oil-divider. Mats and/or oil contaminated must be considered as hazardous waste and disposed of accordingly.



Correct use of an environmental mat to prevent soil pollution due to spillages during refueling. All fuel/oil containing containers must be placed on top of an environmental mat.



Ensure that the vehicle complies with the maximum sound level (dB(A)) allowed for the motorsport discipline to be competed in. Unnecessary and prolonged running and rewinding of engines must be avoided to prevent noise pollution. Ascertain whether there are time restrictions for running vehicle engines and remain within the stipulated times.



Prevent littering and pollution by using designated refuse containers or refuse bags. Keep your pit and paddock areas clean at all times.



Only designated washing areas (wash bay), with proper drainage, may be used for the washing of vehicles. Only water may be used. Do not use detergents, since it may kill micro-organisms in water and soil (detergents usually not biodegradable)



Don't leave punctured or damaged tyres along the route of an off-road event. (Cross Country and Rallying). The same applies for other vehicle parts, bodywork, etc.



Prevent soil and water pollution by using designated containers for the safe disposal of used vehicle fluids. The leakage and spillage of fuel, oil, cleaning, degreasing, cooling and brake fluids and any other additive or cleaning agent on to the unprotected ground or the escape of vapors from these products into the atmosphere, must be prevented.. If the organiser has not provided containers, it is the responsibility of the competitor and their service crews to provide their own containers and to remove the containers at the end of the event. Containers for the collection of used or contaminated oil must have fixed funnel inlets.



Avoid damaging natural embankments of rivers. (cross country racing) In off-road events where competitors are required to cross riverbeds, whether dry or at low water, the competitors must avoid damaging natural embankments, which, if significantly damaged, could eventually alter the flow of the river after heavy rains. Avoid intentionally driving through pools of water, small streams and muddy areas. It is a proven fact that mud on vehicles, tyres and shoes introduced into wilderness areas has decimated colonies of wild animals, due to the introduction of diseases.



Do not start fires along the route or at service parks under adverse weather conditions. Such fires may become runaway fires which could destroy residential property, forested areas and livestock, as well as destroying small animals and insects vital to the ecological balance of a region. An explosion hazard would exist around fuel stores at service parks.



Stick to the designated route markers and do not create new routes or short cuts. (Cross Country and Rallying). Competitors in off-road events must endeavor to follow the route designated by route markers and not to create new routes or short cuts in attempts to improve their times. Travel to and from events must be done using legally available and designated routes, thus preventing irreversible damage to other routes.

2.3 Duties of Permanent Venue Owners

Venue facilities are the most visible part of any motorsport event or permanent circuit. Their location, construction, materials and operational processes are potentially high sources of nuisance and damage. These include land waste, landscape harm, high-energy consumption, pollution and waste of financial resources when they aren't adequately planned or correctly managed by the circuit/venue owners.

Sound planning also allows owners to reduce costs by avoiding oversized facilities, and to minimise operational and overhead costs. Venue owners must:

- avoid venues with little or no post event usage.
- reduce location-related impacts (landscape, land use).
- minimise energy consumption.
- reduce environmental pollution.

The following mitigation measures will ensure that motorsport events do not have a significant impact on the environment:

- The owner of a permanent racing venue must appoint an Environmental Officer (or responsible person) who must start and keep an Environmental Logbook for that venue.
- The Environmental Officer should attend all planning meetings for events.
- All permanent venue buildings, especially ablution facilities, must be inspected regularly and be maintained, repaired and kept clean at all times.
- All parking areas must be maintained and grass kept short to prevent fires.
- Unsightly structures must be screened off from the general public using shrubs, trees, etc.
- Ecologically sensitive areas must be cordoned off.



- The construction of new structures or the alteration of existing structures must be assessed and signed off by MSA before construction. Prior written approval must also be obtained from the relevant local authority departments.
- The use of building rubble is prohibited in any form of construction, including noise barriers.
- Sewage and waste disposal must be nuisance-free and without defects.
- All defects to the exterior of buildings including guttering, roofing and fencing, must be timeously repaired.
- Natural colours must be used for the painting and construction of all structures.
- Provide proper wash bays (with concrete floors and drainage) at venue if washing of vehicles is allowed. Installation of oil separators is also preferred.
- Prevent soil erosion during construction and alterations to layout and contours of the venue.
- All catering, food vendor and food handling premises at the circuit must comply with national health and hygiene regulations.
- Prevent the waste of water by immediately repairing leaking taps, hydrants, hoses, etc.
- The design and placing of the start area must be made in a manner where it will have the least noise effect on the surrounding areas.
- Remove trees and vegetation only when it is absolutely necessary. Get written permission from the owner if it has to be done on private property. Removed vegetation must be completely cleared from the venue.
- The replanting of vegetation must be done in a manner that fully utilises their sound absorbing capabilities.
- Damaged or discarded tyres may not be kept in an uncontrolled dumpsite and may not be burnt.
- The best possible environmental management must be ensured at all times and the impact of the venue and its activities on the surrounding environment must be assessed and recorded in the Environmental Logbooks. Shortcomings must be addressed and improvements implemented.



ENVIRONMENTAL LOGBOOK

Motorsport venue owners and the appointed Environmental Officer are required to open and maintain an Environmental Logbook. The primary objective is to document all race meetings from an environmental perspective. It will thus indicate the level of environmental compliance at a specific venue over a certain period of time. The logbook must be completed for each event and must include the following information:

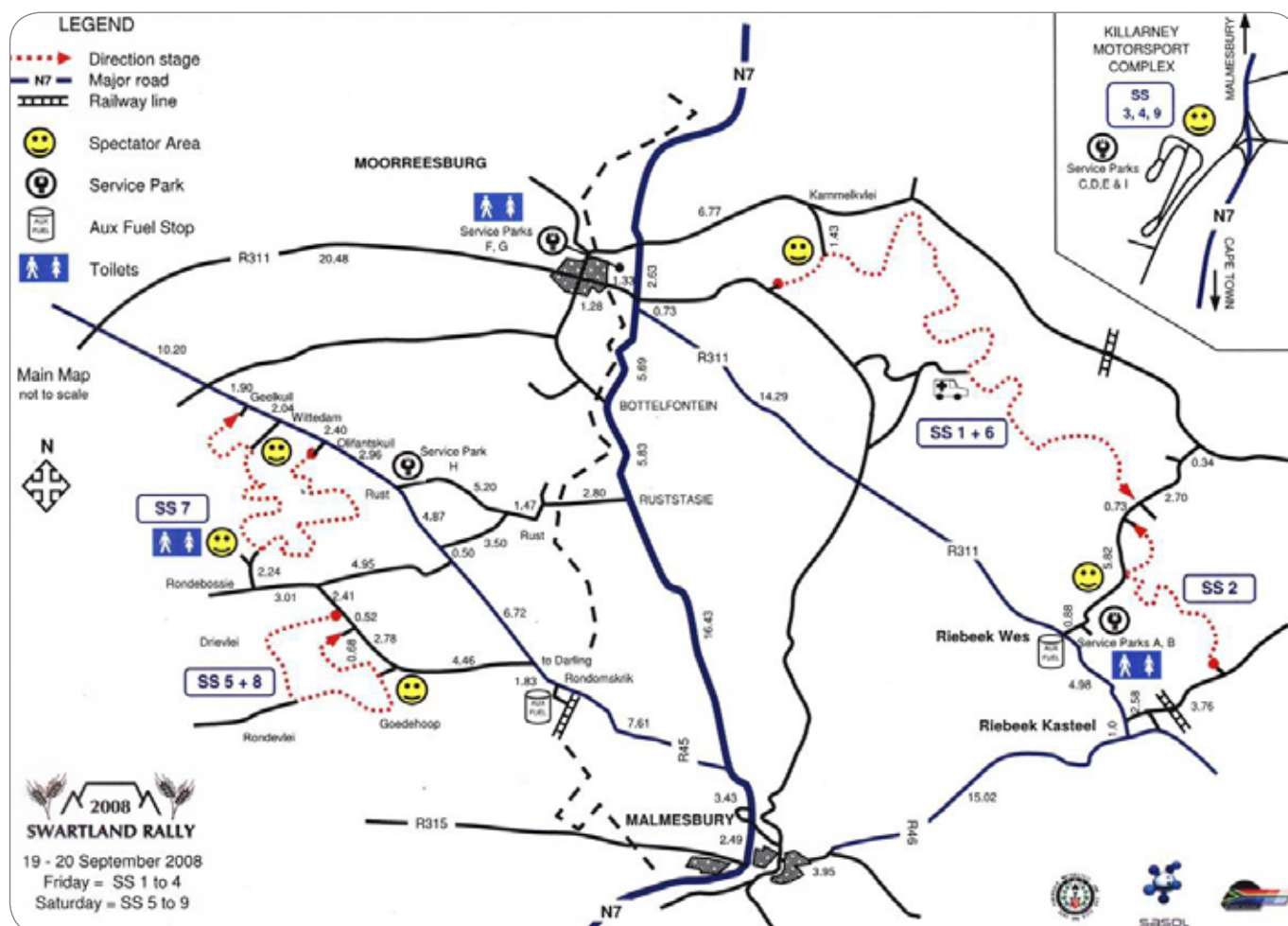
1. all activities occurring at the event;
2. measures taken to prevent pollution and to ensure environmental protection at the event;
3. details of all meetings held, with an attendance register of all participants at the meeting;
4. written confirmation of permission sought and granted for the use of the facility;
5. time constraints;
6. all infringements of the Environmental Code;
7. all penalties imposed for code infringements;

2.4 Duties of Organisers and Promoters

Motorsport is spectacular and exciting, providing enjoyment for competitors and spectators. It takes many forms, from events at large circuits with thousands of spectators, to off-road meetings in a farmer's field, attended mostly by competitors and their families. The organisers of motorsport events range from big promoters to small motor clubs whose members take part for the fun of it. All motorsport events, though, have the potential to impact negatively on local ecosystems by bringing pollution and waste into an area. Releasing carbon emissions and high consumption of energy and water sources during the event can also have adverse consequences for the environment and local communities.

Events must be properly planned to ensure that everything runs smoothly. Part of the plan should include identifying the environmental risks, assessing the risks, and setting out what you intend to do to eliminate or reduce the risks. The environmental requirements for a large race meeting held at a permanent circuit will be very different from those for a rally or cross-country race on farmlands, but these basic principles are the same for all events:

- In consultation with the police and traffic departments, select a number of routes to and from the venue that will cause no or minimal environmental damage and disruption to daily life patterns, especially for off-road events and multiple stage rallies.
- Provide accurate and concise directions to all circuits and venues in all advertising for the event.



- Identify vulnerable and ecologically sensitive areas like grass verges, sacred grounds.
- Prevent concentrations of people, vehicles, entertainment and catering areas, which could result in permanent damage to an area.
- Ensure that all ablution facilities at fixed circuits are well maintained.
- Sufficient, hygienic temporary ablution facilities must be provided at off-road and non-permanent venues.



- Inform spectators of responsible behaviour, particularly at campsites, e.g. waste disposal, care of open fires, noise etc. Prominent information signs in this regard must be displayed in car parks, entrances to venue and other visible points.
- Details of all contracted caterers/food vendors must be kept. Facilities and caterers must comply with all the applicable local and national legislation and requirements for food handling.



- Where food preparation is allowed on open fires, level concrete surfaces must be provided and used.
- Protocols for the prevention and control of grass fires must be in place and grass must be kept very short in parking areas.
- Adequate refuse bins must be provided at key areas.



- Special containers must be provided for medical waste and specialist medical waste contractors must remove it.
- Recycling of waste must be promoted and labelled containers must be provided at strategic places at race venues.
- Washing of vehicles is only allowed at identified wash areas.



- Only water must be used to wash vehicles. Addition of any other substances, including detergents, is not allowed.
- Sturdy containers or tanks must be provided for separate collection of used oil, drained fuel, brake fluids etc.
- Specialised companies must be contracted to remove general, chemical and other hazardous waste within three days of the end of an event.
- Ensure that fuel used at the venue complies with the standards of this Code.
- Ensure that maximum noise levels for competitors and spectators are not exceeded.
- Event advertising posters must not be attached to trees, plants, shrubs etc. by nails or other damaging methods. String must be used. Permission must be obtained from local authorities or private owners to display advertising posters.
- Advertising leaflets and brochures must only be distributed at the entrance to venues, not when spectators are leaving. They must not be placed under car windscreen wipers etc.
- All advertising material for events must be removed within three days after the event.
- Provide plastic or recyclable paper bags to competitors and their crews for the collection of personal waste.
- Appropriate dust control at venue must be performed and must conform to the regulations of the category of motorsport competing at the circuit.
- Effective ventilation systems must be in place at indoor race venues.
- Route markers must be made of reusable and recyclable material, and must be removed immediately after that section of the route is completed.



- Route planning and construction must ensure that no part of the route crosses sensitive areas like ecological habitats, tribal and sacred lands etc. Use existing routes/roads wherever possible.
- Temporary roads that have been constructed must be levelled off immediately to prevent soil erosion.
- Where damage of trees and large shrubs have occurred on private property, the owner must be notified immediately after the event in writing. The organiser or promoter must arrange for the replacement of damaged flora.
- Return to the venue a month later to ascertain the rate of recovery of the venue.

Section 3

The Race - Pursuing Sustainable Success

3.1 Environmental Sustainability

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3.1 Environmental Sustainability

3.1.1 What is Environmental Sustainability?

Sustainability in general refers to the capacity of a society to endure over generations and requires far-seeing, flexible and wise strategies that don't undermine its environmental, economic and social support systems.

Environmental sustainability also involves making decisions and taking actions that are in the interests of protecting the natural world, with particular emphasis on preserving the capability of the environment to support human life. Sustainable sport events are those that can endure indefinitely, without consuming or spoiling the resources upon which they depend.

To reduce the environmental impact of motorsport events, it is important that competitors, organisers and venue owners adapt their operations to promote environmental sustainability. All sports are different, and although no strategy can be applied universally, sustainability is still based on the following practical guidelines:

1. Commit and agree to sustainability as a team
2. Facilitate accessible venues and services
3. Travel lightly
4. Buy local, ethical and green products where practical
5. Recruit and target local populations where practical
6. Operate eco-efficiently and protect sensitive areas
7. Minimise waste to landfill
8. Facilitate participation of minority/segregated groups
9. Leave a positive legacy
10. Celebrate and share successes

3.1.2 The Benefits of Sustainable Motorsport

Organising sustainable events not only reduces their environmental impact, but can also benefit the main role players involved.

The benefits of bringing environmental sustainability into your club or circuit go beyond 'doing the right thing' by the environment. It is common for sustainability actions to lead to cost savings. For example, finding ways to reduce your waste, water and electricity use will lead to a reduction in your costs. When you consider that we are expecting to see increasing costs for most of our resources over the coming years, finding ways to reduce these costs now is of much benefit.

You may also find that the added recognition and reputation benefits you receive from 'going green' may lead to increased sponsorship and other funding opportunities for your organisation. Sponsors and donors often look for high profile opportunities to associate themselves with publicly supported causes. They may also be attracted by the chance to demonstrate their own environmental technologies, practices and achievements.

If planned and implemented properly, the event can provide social benefits to the region by creating jobs and encouraging local investment. It can further act as a catalyst for encouraging environmental and sustainable best practices across the region, as well as improving the relationship between the organiser and the local community.

3.1.3 Can Motorsport Go Green?

Before you begin the environmental sustainability journey, you should make a commitment to sustainability within your organisation. This will ensure all stakeholders are aware of what you are trying to achieve and can help you get there.

The process of improving your organisation's sustainability involves four steps:

- Commit – Make a visible commitment to sustainability within your organisation
- Plan – Assess what actions are available to you and develop an action plan
- Do – Work towards implementing the actions listed on your action plan

3.1.4 Key Areas of Environmental Sustainability

The principles of sustainability may appear at odds with motorsport activities, but with proper planning several key areas can be identified and specific programmes and practices can be put in place to achieve sustainable development where both organisers and venue owners add to the environmental benefits. This could involve reducing the negative impact on the environment by conserving resources, for example using resources efficiently, thereby minimising pollution.

Motorsport is regarded as being sustainable when it has a low environmental impact and delivers outcomes that are more positive for the social and economic welfare of society, compared to the resources it uses. The wise use of material and commodities are thus essential. It involves deliberate management intervention in all facets of event planning and execution, such that all resources are utilised in a way that promotes sustainable development.

The following key areas (waste, energy use, water, education, transportation, food services, noise) and actions can serve as guidelines for motorsport organisers and venue owners and can help to reach this goal.

Waste Management



Waste volumes should be avoided or at least reduced. Unavoidable waste should be recycled and non-recyclable waste expertly disposed of.

Recycling

- Place recycling bins at venue
- Use a 'closed loop' recycling system
- Use 100% recycled packaging
- Sell reusable water/drinks bottles or glasses
- Contact your local council to understand what recycling opportunities exist in your area
- Establish a recycle campaign for spectators at the circuit

Packaging / Merchandise

- Encourage use of reusable bags for new items
- Replace single-use products such as sauce or sugar sachets at food outlets with bulk options.

Paper Procurement

- All marketing material must be printed on recycled paper
- Print tickets on recycled paper
- Use recycled paper for hand-outs, printed by a company that is certified
- Paper towels and toilet paper in bathrooms must be made from recycled paper

Energy Management



Potential energy savings should be exploited through technological and organisational measures.

Lighting

- Use passive lighting for well-lit office rooms at circuits
- Use renewable energy sources for electricity
- Replace high wattage bulbs with LED or fluorescent bulbs
- Put solar panels on clubhouse, office and other roofs

Heating

- Use solar water heaters for hot water
- Use passive heating methods (e.g. install insulating materials)

Cooling

- Use renewable energy sources
- Use trees for shade
- Set thermostats to stabilise temperatures
- Install eaves to create shade for buildings

Water Management



Water is a valuable resource that should be used carefully and economically.

Potable Water

- Install flow regulators on all taps to reduce the rate of water released
- Install push button sinks/urinals
- Identify and repair any leaks
- Examine your cleaning practices

Grey Water / Sewage System

- Install grey water catchment system (storm water and rainwater) and use water for toilets, irrigation etc.
- Water treatment and storage facility on site
- Install sub ground irrigation system for landscape management
- Harvest rainwater for use in toilets and irrigation

Education



Organisers of environmentally sustainable sporting events should make this known through the media and to spectators and competitors. A communication and marketing strategy to raise environmental awareness and to promote these actions is essential.

Spectators

- Inform spectators of pro-environment conduct through public announcer (internal environmental awareness)
- Have interactive green initiatives at the event
- Advertise green initiatives at circuit, on website, media etc. (external environmental awareness)
- Publish an environmental message in official race programme
- Issue press releases of actions prior to event

Competitors

- Include environmental info as part of event SRs
- Eco-tips/reminders printed on the competitors registration forms
- Display MSA Green logos/banners in registration office etc.
- Get a high profile competitor to act as an environmental ambassador

Staff

- Training program on sustainable operations during orientation

Transportation



Travel to and from the event must be organised in an environmental efficient way. Avoid unnecessary travel.

Spectators

- Encourage the use of public transportation
- Arrange public transport to big events, if not available
- Provide shuttle services at permanent circuits for spectators, media, officials
- Co-ordinate traffic to venue with traffic police and transport companies

Competitors

- Use hybrid vehicles to transport competitors to and from the venue
- Offset competitor travel emissions by partnering with an environmental organisation

Staff

- Encourage use of public transportation to get to work each day by providing staff with concession tickets

Food Services



Purchasing

- Buy as much produce from local suppliers as possible
- Purchase organically produced foods
- Utensils, plates, cups etc. must be made of biodegradable materials

Waste Recycling

- Composting programs in kitchens and cafeterias
- Recycle used cooking oil for biodiesel fuel



The event must be planned in such a way that local residents are inconvenienced as little as possible. There must be permanent and consistent monitoring of events with high noise emissions.

Spectators

- Sensitise spectators for noise control
- Location of PA and sound equipment
- Comply with municipal requirements for environmental noise limits

Competitors

- Sound level meter readings at scrutineering
- Observe legal requirements for competing vehicles

3.2 Developing an Environmental Action Plan

With a general understanding of the most pertinent environmental issues, it is possible to prepare an action plan that will manage and monitor the environmental performance of a motorsport event and eventually contribute towards creating sustainability. However, before choosing the applicable actions, an event organiser would do well to create a proper environmental management system to ensure effective development and execution of the plan.



DID YOU KNOW

We can promote sustainable sport by using environmentally friendly sports equipment and by not wasting energy sources.



Not all events will require a comprehensive Environmental Action Plan, nor will all organisers have the knowledge or resources to implement one. For smaller events, and those new to environmental management, a basic Action Plan may be sufficient. It is often better to tackle a smaller number of top priority issues – and do a good job – than to achieve mixed results on an overly ambitious list of issues.

3.2.1 Basic Action Plan

- Develop and approve your environmental policy
- Define specific objectives and targets to deal with in each key area
- Adopt environmentally sustainable practices in all stages of planning and organising
- Develop a waste minimisation strategy for the event and venue
- Involve sponsors, suppliers and other stakeholders in your environmental sustainability process
- Promote and provide public transport for spectators and competitors
- Promote conservation of electricity and water during operations
- Use media to educate and publish environmental efforts made at event
- The following key areas can form part of your sustainability action plan at a motor racing event and/or venue:

3.2.2 Sustainability Action Plan

Key Area and Recommended Action

General

- Define policies, goals and objectives
- Implement an environmental management system
- Train and educate staff and volunteers
- Involve suppliers, donors and sponsors in the “green event” initiative

Water Quality

- Select location for best water quality and protection
- Work with authorities to improve water quality for event
- Minimise water pollution from facilities construction and operations

Land and Water

- Carefully select sites for facilities construction and event activities to prevent harm to fragile ecosystems and protected spaces
- Clean up and take steps to protect water bodies used for events and facilities
- Minimise water consumption through conservation
- Revegetate with natural species wherever possible

Waste Management

- Reduce waste generation through purchasing practices, reduction, reuse and recycling
- Reduce solid waste generation from event activities through purchasing practices, reduction, reuse, recycling, composting

Energy Management

- Minimise energy consumption through facility design, conservation and efficient technologies
- Reduce energy consumption
- Reduce water consumption
- Avoid hazardous materials in maintenance and operations

Transportation

- Encourage and facilitate alternatives to private car transportation, including shuttles and public transport

3.3 Environmental Performance Indicators

Environmental Performance Indicators (EPI) show how your venue or event impacts on living and non-living natural systems, including ecosystems, land, air and water. EPIs can show clearly how your organisation is performing, and provide a firm basis for future targets and improvements.

3.3.1 Monitoring Results

EPIs measure and indicate some aspects of environmental performance and/or resource use. By measuring, reporting and communicating your organisation's environmental performance, you can address public concerns about your environmental performance, drive internal change and develop a more efficient organisation and sustainable environment.



3.3.2 Selecting Appropriate Indicators

EPIs can be put to practical use by event organisers and circuit owners for monitoring specific issues. For example, an EPI may provide information on:

- how efficiently you use energy, water, or other materials
- what types of waste are being reduced
- how you prioritise and direct improvement efforts
- the monitoring of environmental performance and improvements over time
- assessing the impact of new practices and investments
- comparing the performance of one event to another

3.3.3 Basic Environmental Performance Indicators for Motorsport

Environmental Policy	Is there an Environmental Policy for your venue/event? Has it been approved by management? Has it been communicated to and discussed with staff, volunteers etc.?	Comments
Objectives and Targets	Have objectives and targets been defined and communicated? Are they measurable? Have they been achieved?	
Green Office	Has a basic Green Office program been created and communicated? What percentage of recycling etc. has been achieved? What percentage of purchases is "environmentally preferable"?	
Waste Reduction at Venues	Volume of waste generated? Volume and percentage (by type) of total waste that is diverted through recycling, reuse or composting?	

Involving Suppliers, Sponsors and Donors	<p>Is there an Environmental Policy for your Greening program?</p> <p>Are there compulsory practices/codes/standards for all partners and/or their products?</p> <p>How many partners participate in the Greening program?</p>	
Transportation	<p>Have objectives and targets been defined and Number and % of venues accessible by public/active transport?</p> <p>Number and % of participants by category (competitors, spectators) using public/active means?</p> <p>Number and % using private vehicles?</p>	
Health Conditions	<p>Levels of air pollution/emissions before and during the event?</p> <p>Are pesticides used at venues?</p> <p>Types, amounts and most recent application of pesticides at a venue?</p> <p>Water quality measures (outdoor and indoor) at venue (compliance with bacteriological and chemical standards)</p>	
Resource Conservations	<p>Average electricity consumption levels, and related costs, before and during the event?</p> <p>Measures taken to reduce energy consumption?</p> <p>Levels of reduction achieved (kWh and %) by these measures?</p> <p>Average water consumption levels and related costs – before and during the event – at each facility?</p> <p>Measures taken to reduce water consumption?</p> <p>Levels of reduction (volume and %) achieved by these measures?</p>	
Habitat Protection	<p>Area of sensitive/protected land opened up for motorsport use during or after event?</p> <p>Area of sensitive land protected from harm as a result of the event?</p> <p>Number of indigenous trees or other plants cut and/or replanted?</p>	
Education/Publicity	<p>Number and types of environmental educational and publicity initiatives undertaken?</p> <p>Number of media stories?</p> <p>Size of audience reached?</p> <p>Number of participants in environmental related initiatives?</p>	

Glossary of Terms and Acronyms

Aesthetic

Having a sense of the beautiful or characterised by a love of beauty.

Alternative Energy Sources

Also called “renewable sources of energy” because these sources, such as the sun and wind, can never be exhausted. They do not lead to high concentrations of harmful gases in the atmosphere.

Atmosphere

The air surrounding the Earth, described as a series of layers of different characteristics. The atmosphere is composed mainly of nitrogen and oxygen with traces of carbon dioxide, water vapour and other gases, and acts as a buffer between Earth and the sun.

Best Environmental Practice

Means the application of the most appropriate combination of environmental control measures and strategies.

Biodegradable

The ability of a substance to be broken down physically and/or chemically by micro-organisms.

Biodiversity

The rich variety of plants and animals that live in their own environment.

Biosphere

Part of the Earth system in which life can exist.

Climate Change

A change that alters the composition of the global atmosphere and is attributed directly or indirectly to human activity. The build-up of manmade gases in the atmosphere traps the sun's heat, causing changes in weather patterns on a global scale. The effects include changes in rainfall patterns, sea level rise, potential droughts, habitat loss and heat stress.

Commercial Waste

All solid waste from businesses. This category includes, but is not limited to, solid waste originating in service stations, workshops etc.

Contamination

Polluting or making something impure.

Degradation

The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Disposal

The discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste or hazardous waste into the environment (land, surface water, groundwater and air).

Ecology

The scientific study of the relationship between living things (animals, plants and humans) and their environment.

Ecosystem

A system involving the relationships and interactions between plants, animals and the non-living environment.

Effluent

Liquid released as waste from sewerage and industrial plants.

Emissions

Discharging or sending out of substances or fluids, e.g. car fumes.

Environment

Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our built, social and economic surroundings, and our effect on our surroundings.

Environmental Audit

A detailed assessment to check if an organisation is following the law, its environmental policies and its Environmental Management System (EMS). The results of the audit help the organisation to improve its environmental policies and management system.

Environmental Impact Assessment (EIA)

A scientific study of the likely effect on the environment of proposed activities or development. EIAs help bodies like local authorities to decide if they should accept proposals, e.g. to develop a piece of land for housing.

Environmental Management

Making sure that environmental concerns are included in all stages of development so that development is sustainable.

Environmental Policy

Guidelines and rules for managing and protecting the environment.

Environmental Sustainability

Maintaining the environment in a responsible way to keep it healthy for future generations.

Event Greening

Hosting events in a way that has minimal effect on the environment and maximum benefit to the people.

Faecal

Referring to body waste.

Fauna

Animal life in an area.

Flora

Plant life in an area.

Fossil Fuels

Non-reusable and decayed organic material that can be burned or consumed to produce energy e.g. oil, natural gas and coal.

Global Warming

The noticeable increase in the average temperature of the Earth's atmosphere and oceans in recent decades and its projected continuation. An increase in global temperatures can in turn cause other changes, including a rising sea level and changes in the amount and pattern of rainfall. These changes may increase the frequency and intensity of extreme weather events, such as floods, droughts, heat waves, hurricanes and tornados.

Grey Water

Any water that has already been used and has the potential for reuse without treatment.

Groundwater

Water found underground, typically supplying wells, boreholes and springs.

Hazardous Waste

Waste that is a threat to the well-being of people, plants and animals, e.g. hazardous waste from factories, detergents, pesticides and vehicles. Also includes medical waste.

Heavy Metals

A common hazardous waste; can damage organisms at a low concentration and tends to accumulate in the food chain.

Land Degradation

Reduction in capacity of the soil or vegetation to support life, through the damage to physical, chemical or biological properties, contributing to an unsustainable ecological system.

Natural Environment

Our physical surroundings, including plants and animals, when they are unspoiled by human activities. Themes that form part of the natural environment are: air quality, inland waters, coastal waters and biodiversity.

Natural Heritage Site

A site of outstanding universal value from an aesthetic, scientific or conservation point of view and that encompasses natural features consisting of physical and biological formations or groups of such formations.

Natural Resource

Any resource provided by the biophysical environment.

Non-renewable Resources

Raw materials available for a limited time, which can run out. Examples include coal and oil.

Ozone Layer

The layer of ozone that begins approximately 15km above the Earth and thins to an almost negligible amount at about 50km. It shields the Earth from harmful ultraviolet radiation from the sun.

Pollution

Harming or contaminating the natural environment as a result of human activities, especially through household and chemical waste, e.g. substances, noise, dust, smells.

Recycling

Collecting, cleaning and re-using waste materials.

Runoff

Water that does not filter into soil but flows over the surface and into natural surface waters.

Sewage

Household or industrial liquid waste that is carried away in sewers and drains.

Socio-economic Environment

The part of the environment that is linked to human activities (e.g. social, economic, cultural and political processes). Themes that form part of the socio-economic environment are: the economy, health, education, safety and security, and environmental governance.

Soil Erosion

The loss of soil through the washing, wearing and falling away of the soil.

Solid Waste

Any solid, semi-solid, liquid or contained gaseous materials discarded from industrial, commercial mining or agricultural operations and from community activities. Solid waste includes garbage, construction debris, commercial refuse, sludge from water supply or waste treatment plants or air pollution control facilities and other discarded materials.

Stakeholders

People and organisations involved or interested in a particular area or an issue.

Storm water Drainage

System of underground pipes that removes rain and other water from the ground, roads and roofs to rivers, lakes and the sea.

Surface Water

Water above the ground surface in lakes, dams, rivers and pans.

Sustainability

Being able to meet the needs of present and future generations by the responsible use of resources.

Sustainability Report

A progress report on environmental issues and conditions that helps in the drawing up of environmental policies and meeting environmental challenges.

Sustainable

Something that is protected and maintained so that it can be used in the future.

Sustainable Development

Development that is planned to meet the needs of present and future generations, e.g. the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.

Toxic Chemical

A substance that can cause severe illness, poisoning, birth defects, disease or death when ingested, inhaled or absorbed by living organisms.

Vegetation

The different types of plants in an area.

Waste

Any superfluous by-product, emission, residue or remainder of any process or activity.

Waste management

A control system to limit, collect and dispose of waste in an efficient and environmentally friendly way through clear policies and environmental standards, e.g. reducing plastic packets.

Wastewater

Water left over after it has been used, e.g. in homes, gardens and factories.



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The environmental challenges our planet faces are like a motor race without end.

The future of motorsport activities and more generally of human activities depends on the sense of responsibility each of us will take on.