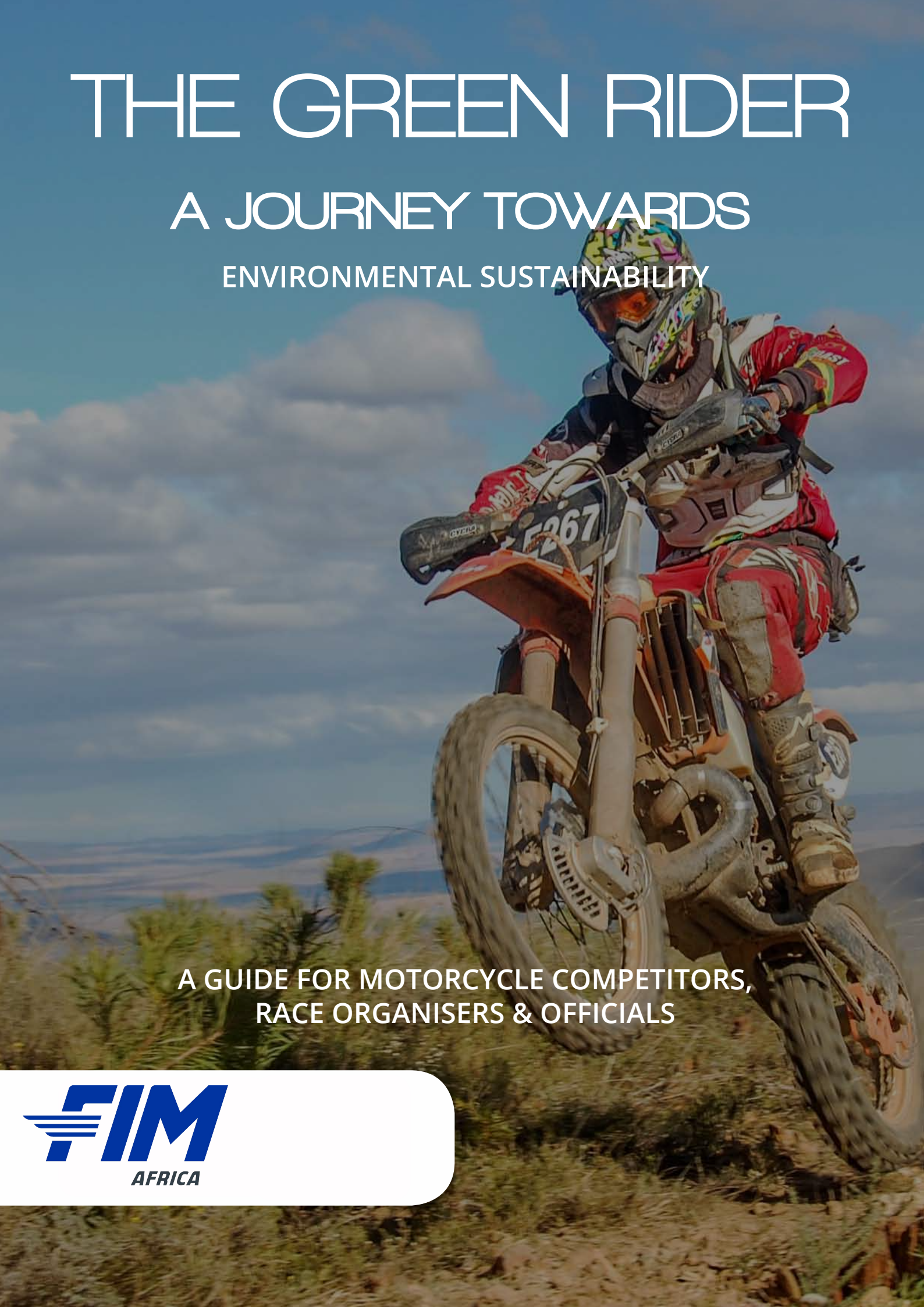
THE GREEN RIDER

A JOURNEY TOWARDS

ENVIRONMENTAL SUSTAINABILITY



A GUIDE FOR MOTORCYCLE COMPETITORS,
RACE ORGANISERS & OFFICIALS

FIM AFRICA

THE GREEN RIDER
A JOURNEY TOWARDS ENVIRONMENTAL SUSTAINABILITY

A GUIDE FOR MOTORCYCLE COMPETITORS, RACE ORGANISERS & OFFICIALS

Compiled for

FIM AFRICA

by

Marius Matthee

2015

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Journey with me to a true commitment to our environment.
Journey with me to the serenity of leaving to our children a planet in equilibrium

– Paul Tsonzas

Contents

Welcome

Welcome to FIM AFRICA's environmental information guide. We wish to involve all our motorcycling stakeholders in a sustainable environmental programme to make them aware of various requirements, as prescribed by the FIM AFRICA Environmental Code, and thereby minimising the impact of the sport on the environment.

FIM AFRICA expects that sanctioned motorcycle events are organised and run in a way that protects the social and environmental conditions in and around the proposed venue. Although scientific research on the interaction of sporting events and our natural environment is well documented, there is currently a void for a publication that serves as a useful reference guide for all motorcyclists.

This guide has been compiled to support the FIM AFRICA Environmental Code and will assist all motorcyclists with practical measures to help protect our natural surroundings, where our events take place. Challenging times lie ahead for motorcyclists, but empowered and guided with knowledge and appropriate actions, we can ride into the future with confidence.

I trust that this guide will be widely read and readily implemented.

Ray Wilson
President - FIM Africa

Introduction

Over the years, FIM AFRICA has presented many training seminars on their Environmental Code to officials. The need for an information guide arose from these seminars.

It is intended to be used as a detailed reference guide, supplementing the FIM AFRICA Environmental Code, and aims to amalgamate both the needs to assess the environmental impacts of motorcycle sport, as well as to encourage environmental awareness and the organising of environmental sustainable events. It further wishes to emphasise the importance of environmental mitigation in the staging of motorcycle events, as well as the implementation of remedial action where problems may arise.

The intended audience for this document is made up of National Motorcycle Federations, race organisers, competitors, officials clubs and through to the owners or managers of circuits and venues.

Structure of this Guide

The guide has been developed in a format to aid all roleplayers in the understanding of the underlying fundamental concepts of environmental conservation and sustainability.

It is divided into three sections:

Section 1

Provides an introduction to the major environmental challenges facing motorsport today and explains why addressing these challenges can be in their best interest.

Section 2

Provides responsibilities and actions that competitors, organisers, venue owners, officials and leisure riders can take to reduce their environmental impact.

Section 3

Provides additional tools and resources to assist race organisers and venue owners with implementing the actions and concepts covered in this guide, as well as how they can achieve and improve environmental sustainability.

How to use this Guide

You should use this guide to help motorcycle sport improves its environmental sustainability.

Use Section 1 to familiarise yourself with the current challenges facing 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.

We hope that this guide will enable you to improve our natural environment and to act on the environmental challenges that concern motorcycle sport.

Setting the Scene

The role of FIM and FIM AFRICA

Founded in 1904 under the name of Fédération Internationale des Clubs Motocyclistes, the Fédération Internationale de Motocyclisme is an international organisation acting in all matters connected with motorcycling activities and, as such, is active in domains as varied as sport, touring, the environment, mobility, road safety, legal affairs, and the protection and defence of the rights and interests of motorcycle users.

As far as motorcycle sports are concerned, the FIM is the supreme and sole international authority empowered to control international motorcycling events organised under its jurisdiction throughout the world, and as such acts as the supreme court for the settlement of disputes which may arise from the organisation of such activities.

FIM AFRICA, as one of the FIM's six Continental Unions, furthers the FIM's objectives by forging co-operation amongst motorcycling federations in Africa and governs, administers and promotes motorcycle activities on the continent. At present there are 13 African Federations affiliated to FIM AFRICA.

One of FIM AFRICA's prime objectives is to provide the strategic and environmental leadership necessary to ensure that all categories of motorcycling in Africa have a reduced impact on the environment, and to create a greater awareness of environmental sustainability amongst all motorcycle stakeholders.

Motorcycle Sport and the Environment

In recent years, there has been a growing concern and consciousness amongst world countries for environmental issues, as they affect the daily lives of every person on planet Earth. There is more than enough scientific evidence showing that we need to live more sustainably.

Motorcycling, as a motorised sport, is considered as one of the noisiest and polluting leisure activities of humankind. Local, regional and national groups seeking to minimise man's impact on his environment, thus subject our activities to scrutiny. In addition, some extreme private groups pursue their own campaigns to eliminate motorsport events of all types. Some organisations use a perceived impact on the environment as a means of prohibiting future events.

Practicing motorcycle sports is a right, which must be accompanied by ethical and moral rules, admitted and respected by all and promoted by nations. Nature, though, must be protected from any form of negligence, exploitation or any practice, which may cause its degradation.

The need for Environmental Standards

All sporting federations have been requested by the International Olympic Committee (IOC) to adopt and endeavour to support the universal environmental protection declaration. National Federations that are affiliated to the Fédération International de Motocyclisme (FIM) are further requested to adapt their Statutes in order to give proper prominence to environmental matters and to the principles of the FIM Environmental Code.

It is thus far better that FIM AFRICA, organisers and participants undertake the initial measurement of environmental issues associated with motorcycle sport, than to face potential scrutiny by government authorities. These authorities can easily implement measures that can put the future of the sport in danger. As the world continues to "grow smaller", the importance and need for environmental standards will increase.

FIM AFRICA is responsible in ensuring that all competitors, race crews, organisers, promoters and venue owners comply with the FIM Environmental Code at FIM AFRICA events. This commitment will ensure that the environment, social and recreational values are maintained, whilst promoting sustainable motorsport in Africa for years to come. FIM AFRICA wishes competitors and riders, in all categories of motorcycling, enjoyment in their chosen discipline, while caring for the environment at the same time.

Motorcyclists should set an outstanding example of how to care for the environment and thereby promoting a culture of continuous environmental improvement.

The FIM AFRICA Environmental Code

FIM AFRICA adopted the FIM Environmental Code and the requirements and guidelines of this code prevail at all FIM AFRICA events. It wishes to emphasize the risks of environmental damage, to all motorcycle competitors, their crews, officials, venue owners and race organisers. The Environmental Code was developed to attain the highest standards of environmental management at FIM AFRICA sanctioned events.

The FIM AFRICA Environmental Code aims to prevent pollution and minimise the potential for adverse environmental impacts. It also prescribes regulations and recommendations to improve the relationship between motorcycling and the environment. Protocols addressing the following environmental challenges are included in the Code:

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

Section 1

The Challenges

1. The Challenges

We need to look closer at environmental threats associated with motorcycle activities to also 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, where and how it is being held as well as the size of the event. The following potential environmental threats should be considered:

1.1 Soil and Water Pollution

1.1.1 Soil Pollution

In any place where motorcycles are competing or are serviced, competitors can affect the vulnerable soil when they race. Apart from the damage that may be done to soil structure by tyre tracks, weight and vibrations of competing motorcycles, polluting substances may be released into the soil by careless handling of motorcycles, 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 from direct contact and also secondary contamination of water supplies. If this contamination goes on to harm living organisms, we can call it pollution.

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

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

Above: *Irreversible damage of soil and vegetation due to oil pollution and servicing of vehicles.*

You may not see polluting materials in the soil and you may not smell it 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 disturbed severely 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).

It is also possible that polluting substances seep into the ground where it 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 do liitle about it.

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
- inappropriate location of washdown areas
- poorly kept ablution facilities for spectators and competitors

Above: *Inappropriate disposal of waste water causes pollution and unhygienic conditions.*

Water is an extremely scarce commodity in Africa and has to be protected from pollutants at all costs. Almost 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 humans and animals in different ways. Potential risk areas at motorcycle events must be properly managed and appriopriate mitigation measures includes the following:

1.1.3 Motorcycle Servicing and Soil Protection

Spilled or leaking motorcycle fluids pose a serious risk for the environment and can cause irreversible damage to the terrestrial and aquatic ecosystems and groundwater sources.To avoid this, it is compulsory to protect the ground under the motorcycles with an environmental mat (or other effective system) to absorb any spillages or leaks of fluids whether during refuelling or servicing of motorcycles, if permitted by the organiser.

The environmental mat thus acts as a barrier between the motorcycle to protect the soil from pollutants like oil, fuel, brake fluid, etc.

The Specifications for environmental mats are as follow:

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

For Motorcycles the minimum technical data for the mat are:

- Dimensions: Minimum 160 cm X 100 cm
- Absorption capacity: Minimum 1 liter per m²
- Thickness: Minimum from 5 to 7 mm

The key-elements to consider, when deciding on an environmental mat, are the following:

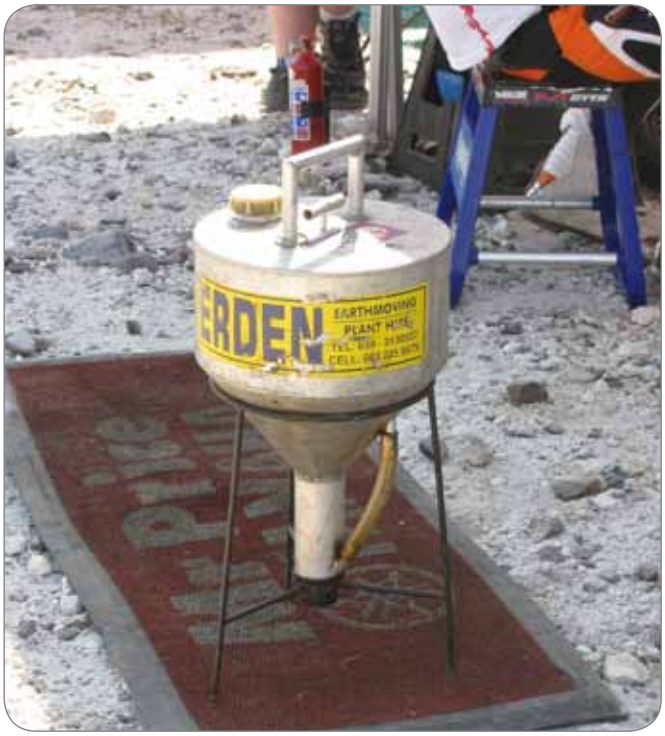
The absorption capacity of the mat (or ground protecting device) so that no puddles are formed on top. Under no circumstances must it allow vehicle fluids to seep through onto the soil, thus having to consist of an impermeable (liquid proof) base.

Above: *An environmental mat with absorbent upper and impermeable lower part.*

The use of an environmental mat protecting the ground to prevent soil and water contamination is compulsory:

a) Wherever work on motorcycles is allowed by the organisers, including Parc Fermé and Paddock areas.
b) Under all waste oil and fuel containers provided by the organisers
c) At all official refueling points
d) Under all thermic powered generators and power washers

Under no circumstances may these mats be disposed of in a standard refuse bin. A hazardous waste container must be available at a designated point within the pit/paddoack or service area. Any damaged mats must be disposed of in this container. Alternatively the soiled mats can be placed in a sealed plastic container for disposal by a hazardous waste disposal company.



Above: *The correct use of environmental mats at refueling points ensure that there is no pollution of water sources and soil.*

After the use of an environment mat, it can be rinsed with water only at a place with a drain, which is connected to an oil-divider (filter). Old mats must be considered as hazardous waste and disposed of accordingly.

Above: *Ordinary plastic sheeting does not provide proper protection, since it has no absorption qualities. Absence of an environmental mat creates a potential pollution risk.*

Above: *A suitable environmental mat with absorbent top layer and liquid proof bottom layer.Circuit owners and organisers are encouraged to keep in stock a certain number of mats to sell or rent to those who, for any reason, do not have mats at events.*

It is important that the cleaning of mats, before being reused, is done in a way that will not to harm the environment i.e. in areas dedicated for it even if the cleaning is perform 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. Specialist waste removal companies must preferably remove old and disused mats.

1.1.4 Motorcycle Cleaning and Wash Bays

Motorcycle cleaning should be done in a designated area with all the necessary equipment to prevent the wash water from seeping into the ground.

Note that washing is to be carried out with the use of water only and that detergents are not allowed. Detergents kill microorganisms in the soil and water. This can lead to ecological problems in the immediate area.

Above: *Washing of motorcycle parts at an appriopriate facility.*

The following must be considered for cleaning areas:

In case of permanent circuits, it is quite easy to identify an area in the paddock or nearby. Provide it with a waterproof surface (concrete/ cement) and gutters to collect the wash water. This can be connected, through an oil-water separator, to the main sewerage line of the paddock area or to a conservancy tank that can be emptied when it is full.

Above: *Cleaning of motorcycle at pre-alloacted wash area.*

In case of temporary circuits, the situation is clearly more difficult to address, but also here it is possible to find alternative solutions. It is essential that no fresh water sources, i.e. rivers, streams, dams, boreholes are contaminated with wash water and for this reason the designated wash bays must be located far away from such these water sources. Also, make use of 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 the total dispersion of it in the ground.

Above: *Wash Area without proper drainage. Potential pollution risk especially if located near fresh water sources or in areas with a high water table.*

1.1.5 Disposal of Used Motorcycle Fluids

You may not be aware that motorcycle servicing can contribute to the pollution of storm water and fresh water sources where it can cause a serious threat for human and animal health. Proper disposal of waste oil and other vehicle fluids is thus essential to prevent pollution. It is the responsibility of the organiser of the event to provide suitable containers for this type of waste.

Used fluids can also damage the environment in several different ways:

- Spilled oil tends to accumulate in the environment, causing soil and water pollution. Oil decomposes very slowly. It reduces the oxygen supply to the micro-organisms that break the oil down into non-hazardous compounds.
- Toxic gases and harmful metallic dust particles are produced by the ordinary combustion of used oil. The high concentration of metal ions, lead, zinc, chromium and copper in used oil can be toxic to ecological systems and to human health if they are emitted from the exhaust stack of uncontrolled burners and furnaces.
- Some of the additives used in lubricants can contaminate the environment.
- Certain compounds in used oil – e.g. poly-aromatic hydrocarbons (PAH) - can be very dangerous to one's health. Some are carcinogenic and mutagenic.
- The high temperatures and stress of an engine's operation transform lubricating oil. This results in oxidation, nitration, cracking of polymers and decomposition of organometallic compounds.
- Other contaminants also accumulate in oil during use.

It is extremely important that organisers/venue owners provide clearly identified and appropriate facilities for the disposal of used oil and vehicle fluids and they must arrange for the safe removal of these fluids from the site.

The FIM Africa Environmental Code recommends the following actions:

Containers must be provided at Riders' Paddock / Service Areas / Time Control Areas -

1. Ensure that there are enough containers with fixed funnels to collect used oil and motorcycle fluids.
2. Provide recognisable containers for oil filters and cleaning rags.
3. The location of the containers must be clearly marked by appropriate signage.
4. Ensure that waste oil containers are serviced throughout the event.
5. Arrange for separate removal of oil-containers, oily cleaning rags and oil filters.
6. Ensure that the disposal of used oil is managed by specialist companies.
7. Any hazardous waste (used oils, motorcycle fluids, oil filters, oily cleaning rags) collected must be disposed of by methods which meet the requirements of the country in which the circuit is based.

1.1.6 Criteria for Waste Fluid Facilities

1. Containers to be placed on environment mats or a "bund wall" to contain spillage
2. Capacity of containers to be determined by the estimated waste oil generated by participants plus an allowance of 25%
3. Containers should be sealed with a small entry or funnel for the pouring of the fluids into the container

Above: *Proper disposal in a waste fluid container with drip tray.*

If the organiser has not provided containers, it is the responsibility of the competitor and service crews to provide their own containers and to remove the containers at the end of the event.

Above: *Inappropriate storage of used oil in leaking and rusted containers*

1.2 Noise Emissions

Motorsport is under ever increasing pressure in many countries, especially in areas with a high population density. A major cause of concern is the sound produced by motorcycles, which may be music to the ears of the rider but is regarded as noise by many others and is therefore experienced as disturbing. To be able to enjoy motorsport and motorcycling in the longer term, the people engaged in these activities must have a thorough understanding of the sound aspect. In this section, the phenomenon of sound is therefore dealt with in depth.

Circuit management is very much aware that noise emissions must be kept down to the 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 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.

1.2.2 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.

Noise affects man physically, psychologically and socially. It can:

- Damage hearing
- Interfere with communication
- Be annoying

1.2.3 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.

Four factors determine whether sound is hazardous:

- Intensity or loudness of the sound (measured in dB(A))
- Frequency or pitch (measured in Hz)
- Periodicity – how often it occurs
- Duration – how long it lasts

Above: *Hearing protection is recommended for competitors, officials en spectators at race meetings.*

At about 140 dB(A) there is the likelihood of permanent hearing damage to the ear from a single exposure. Fortunately, this level of exposure is rare, and normally harm from noise occurs over a period of time.

1.2.4 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.

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.

1.2.5 Noise Sources

Concerns regarding sound levels at motorcycle events are not limited to the machines themselves. In addition to the expected engine sound levels, organisers and environmental stewards must be aware of the magnitude of sound from public address systems, crowds and other sources associated with an event. Minimising excessive noise associated with motorcycle activity and taking public reaction to sound levels in consideration is the responsibility of all concerned - riders, clubs, organisers and all officials.

Sound levels decrease as the distance from the source increases. A doubling of the distance from the source to the ear causes a theoretical loss of up to 6 dB(A). Temperature, elevation, humidity and the frequency of the sound waves also contribute to the rate of energy loss. Such things as foliage, untreated, covered or uneven ground or large obstacles, such as walls, cars or embankments will reflect or mitigate the sound level and affect sound levels in the immediate area.

The irresponsible and uncontrolled behaviour of some motorcyclists who involve themselves in illegal racing is a most worrying aspect and is in direct conflict with sanctioned motorsport. Noise pollution can further be attributed to unnecessary running and revving of engines, excessively loud exhaust systems, etc.

Apart from strict control over maximum noise limits for competing motorcycles, several other basic control measures must be considered to reduce the impact of noise levels at race meetings.

1.2.6 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 motorcycle)
2. Limiting the hours of use and the frequency of occurrence (time of events)
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 motorcycles 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, for instance, 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 that 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 for where prizes are involved there will always be those that will alter their vehicles to increase the power before using the track.

Continuous trackside noise monitoring and strict control to be able to remove any vehicle from the racetrack at any time is essential and 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.

Another source not to be forgotten is the public address system of a facility, which may also provide a major contribution to the noise nuisance to the people living in the neighbourhood. The public address systems that cause complaint often are badly designed for there is no reason why such a system should cause annoyance outside the venue if it is designed properly. Multiple lower powered speakers facing inwards across the spectators towards the track, rather than a few high powered speakers radiating from the track side towards the spectators can ensure that the sound emission is acceptable to the local neighbouring 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.

The activities of the local community also must be taken into account when planning racing events, to prevent the highest noise levels occurring during sensitive times of the day. Some racing venues have arranged breaks in track noise during local religious services and many circuits have restrictions on noise at early morning and late evening hours.

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.

1.2.7 Measurement of Sound Levels

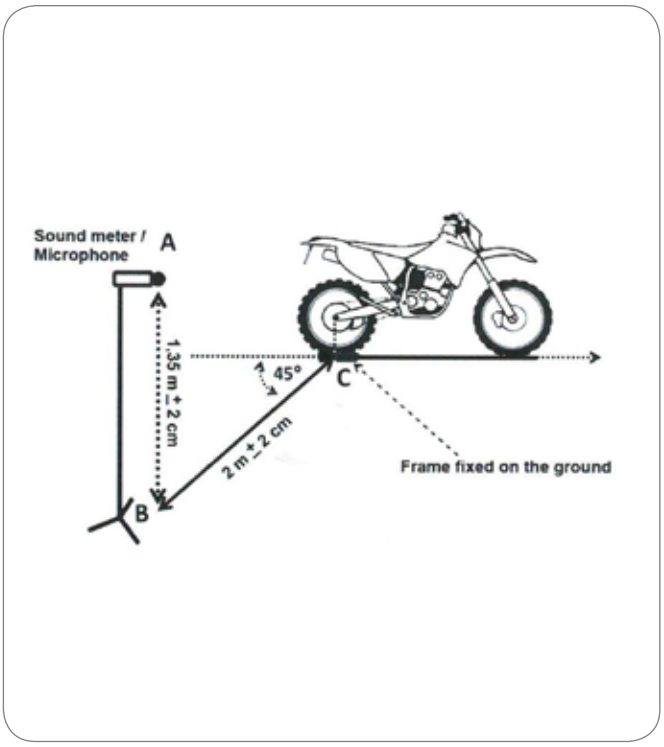
All motorcycles must be compliant with sound limits set for each racing category and are liable to sound meter testing before a race. Each sporting commission is duty bound to set upper limits of sound production for that category of motorcycle sport. It is compulsory for all event organisers (not only for circuit racing, but for all categories) to conduct sound level meter tests of competing motorcycles at events.

1.2.8 Sound Measurement Procedures for Competitors

Currently two methods are being used by the FIM to measure the sound levels emitted by racing motorcycles:

2m Max Method for Motocross and Enduro

The "Two Meter Max" sound test is carried out with the sound level meter positioned at a height of 1,35 meters at the rear of the motorcycle, at a distance of two meters and an angle of 45 degrees from the longitudinal axis of the motorcycle.



Above: *The 2mMax Method being performed and demostrated.*

The engine and exhaust system shall be warmed up before the sound test. The ignition mapping shall be the same as during practices and races. The engine will be in neutral. During the sound test, the engine will be brought from idle to maximum engine speed (max rpm) by a sudden, full opening of the throttle (done within one second), and back to idle by a sudden release of the throttle.

The distance from the motorcycle to sound reflecting buildings and the like shall be at least 10 meters. The motorcycle shall be held, either by the rider or fixed, in the upright position. The rider should stand beside the motorcycle, on the side of the motorcycle opposite to where the microphone is positioned.

The sound level meter shall be a class 1 or class 2 instrument that shall be calibrated before and after a series of control measurements (and every two years by the manufacturer). The parameter measured is the maximum, A-weighted, sound pressure level with the time constant on FAST. The sound level meter shall be set to "max-hold".

The maximum allowable sound levels are:

Motocross: 115 dB(A)
Enduro: 112 dB(A)

The 50cm Static Test for Circuit Road Racing

The measuring equipment should be placed 50 cm from the end of the exhaust pipe and at 45 degree angle to the pipe either to the side or above. The test may be conducted at a fixed RPM.

Above: *Officials performing the 50cm Static Test at a Road Racing event.*

Sound tests must be conducted in an open area with a space of at least 10 metres between the motorcycle being tested and walls or other obstacles. There should be a minimum amount of ambient noise in the area.

The measuring equipment must be calibrated prior to the test and recalibrated at regular intervals. The FIM Road Racing World Championship Grand Prix Regulations (2 February 2015) determined the following the maximum noise levels:

MotoGP:	130 dB(A)
Superbikes:	107 dB(A)

1.3 Waste Management

Motorsport activities, especially bigger events, can generate a considerable amount of waste, some of which cause 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 cut in half its creation of waste and the associated costs. Sport events are regarded as opportunities to demostrate 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 a powerful tool for communicating environmental messages and encouraging action to clean up the environment.

A sound waste management plan, with respect to waste disposal, needs to be prepared, which takes into consideration environmental, health and costs.

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

- Waste prevention and avoidance
- Waste reduction, recycling and reuse
- Sound waste collection and disposal methods

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:

- The necessity of acquiring a particular product should be assessed before it is procured. Is the product really necessary? Are there other alternatives? Can the product be rented?
- When materials and goods are procured, select products that can be recycled.
- Appoint service providers that implement waste minimisation strategies.
- Use equipment and techniques that assist with waste minimisation or avoidance e.g. printers capable of double sided printing.
- Prepare and implement a procurement plan that encourages waste prevention and minimisation.

1.3.2 Waste reduction, recycling and reuse

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 natural lends itself to 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. The effectiveness of such schemes naturally depends on the willingness of competitors and spectators to use the available containers for their waste.

Strategy:

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

Above: *Recycling of waste can be undertaken on site by the provision of different containers for specific waste e.g. glasses, cans, plastic. It is advisable to provide containers in different colours and different labels for organic waste, paper and plastic.*

1.3.3 Waste Collecting

It is self-evident that during motorsport meetings there should be a sufficient number of collection facilities to gather the waste of riders, assistants and visitors. 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, and that, of course, is not the intention.

It is important to have a sufficient number of waste bins scattered all around the circuit in a position easy to reach by everybody, as people often consider the distance from the bin as an excuse to litter. It is also important to have an efficient and continuous service dedicated to the emptying of all bins during the event to avoid that full bins become the area where people feel authorized to leave their litter on the ground. Remember – litter attracts litter!

1.3.4 Waste Generation - Areas and Type

Waste generated and the type of waste generated will vary at different motorsport venues. Care must be exercised in the choice and size of the receptacles Waste receptacles may be placed around the periphery of the venue or site, within the venue or in any other appropriate areas.

Above: *Cleaning crews must be on hand during and after meetings.*

Above: *Collection times must be scheduled with a reputable waste contractor for before, during and after the event.*

1.3.5 Waste Receptacles

Waste receptacles may be placed around the periphery of the venue or site, within the venue or in any other appropriate areas. Care must be exercised in the choice, size and location of receptacles.

Wheeled or similar containers are currently the most versatile. They are equipped with lids. They are easily positioned and manoeuvred. Steel drums, when full, are difficult to empty and manoeuvre. They serve as an attraction for bees and flies.

Skips may be utilised but correct site planning is important for delivery and collection access, particularly in bad weather. They should be located distant to spectators. They are a fire hazard and require frequent monitoring.

Above: *The size and type of waste containers must be determined by the area they have to service.*

1.3.6 Waste 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 specialized non-recyclable waste, such as hazardous (used oil) or medical waste, need to be located 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, such as hazardous or medical waste near to areas where it 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.

1.3.7 Waste Hazards

Waste must be managed carefully to decrease the health risk associated with its accumulation, collection and final disposal.

Accumulated waste attracts and encourage the breeding of flies, cockroaches and vermin which again and can thus cause a serious public health nuisance. The spreading of diseases and pollution of soil and underground water sources are also possible.

Waste is both an environmental and a social issue. Other waste hazards that can be present at race meetings are the following:

- Injuries sustained by workers during collection and removal of waste.
- Accumulations of waste, which may block emergency access routes or access routes around the venue.
- Accidentally or purposely ignited waste creating a fire hazard to the entire venue.
- The abuse of solid waste by spectators e.g. throwing of cans and bottles.

Above: *The accumulation of any type of waste is unacceptable.*

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 fascilities needs sound planning, since it constitute a very visible part of any motorsport event or venue. The main oblectives 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.

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 aims to remove this waste from sight.
- Privacy and Safety – good sanitation aims at privacy and protection when people relieve and clean themselves.

1.4.1 Sanitary Facilities

To 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. Toilets must be supplied regularly with toilet paper, which must be kept in a dispenser, or holder at all times. 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 (mains) or a septic/ conservancy tank. Under no circumstances waste and sewerage, water is allowed to accumulate on the surface, since it may lead to serious health and pollution related nuisances. 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.

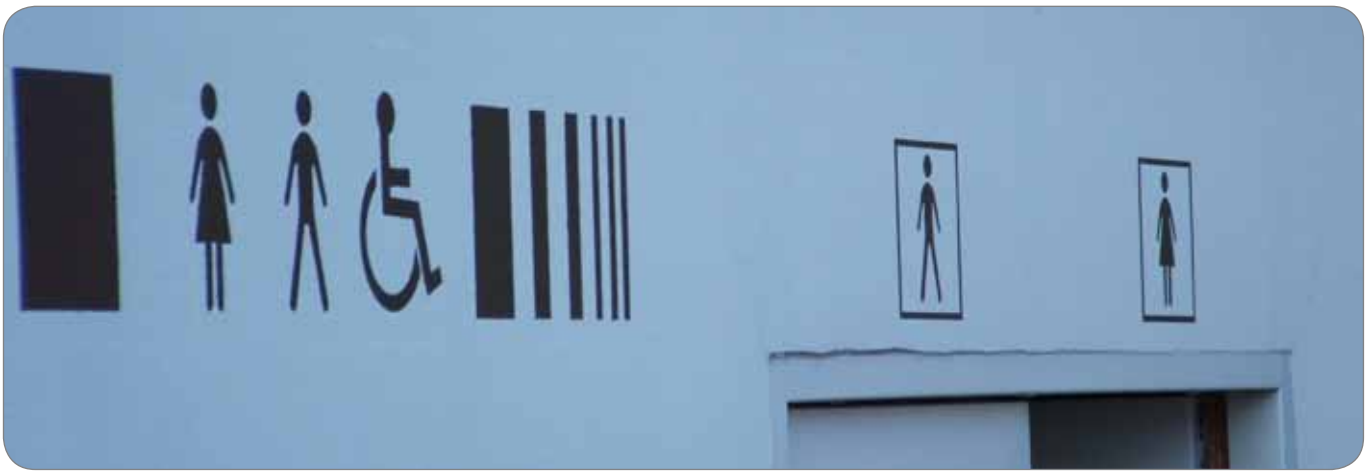
Above: *Various temporary toilet facilities at race venues*

1.4.2 Toilet Numbers and Location

Both the paddock and in the spectators areas, should be ensured of a reasonable number of facilities (1 per 100 female and 1 per 500 male 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 who may take longer to use the facility.
- Toilet inside a fenced venue with a no re-admission policy.
- Weather conditions and temperature.
- Toilet facilities must be provided adjacent to designated areas set aside 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.



Above: *Signage is very important to show exact location of ablution facilities*

1.4.3 Maintenance

It is very important that all facilities should be kept clean and fully operational at all times, if we wish people to use them without problems and thereby avoiding inappropriate behaviour. Adequately trained individuals is required to perform the maintenance duties and at big international and national events it is recommended that full-time staff is appointed to address this very important aspect.

1.5 Spectator Impact

Any gathering of a large number of people can have a potential negative impact on the environment. Given the number of people who attend motorsport events each year, you can think of the impact that such a large gathering could have on water, soil and atmosphere. This includes not only the location where the event takes place, but also far beyond. All these fans coming as spectators would be using a lot of energy, both by driving down to the venue and at the venue itself. Tens of thousands of hours of energy, litres of water would be used and a large amount of waste would be produced.

Organisers must remember that large motorsport events also present a unique opportunity for promoting environmental awareness and action of spectators to environmentally responsible behaviour and its positive impact on the event's image, as well as on other aspects of daily life.

By taking sustainable planning practices into consederation, 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, events, etc., which will cause as little annoyance as possible for the surrounding areas.
- Provide clear signs to circuit facilties, spectator areas, etc
- Do not allow parking on vulnerable places (verges, entrance & exits).
- Do not allow parking in long grass to prevent fires
- Encourage the use of public transport.
- Avoid too high concentrations of people in order to preserve vulnerable places.
- Cordon-off vulnerable areas to prevent spectator access
- Provide sufficient 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.

1.5.1 Drinking Water

The provision of free, uncontaminated drinking water is essential. The volume required depends on the volume of people, the duration of the event and prevailing weather conditions.

All water dispensing equipment must be clean and well maintained. It is considered good practice to sample and test temporary water supplies for bacteriological safely, especially if it is not from a municipal water source. At 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.

1.5.2 Food Vendors

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

It is the duty of both the venue owner and individual food caterers/vendors to make sure that they are familiar with these regulations and that they have the necessary permission (certification) of the local Municipal Health Department to prepare and sell food. This is applicable to all mobile catering units, catering stalls and marquees, staff catering, hospitality catering, restaurants and bars.

Non-compliance may lead to serious repercussions in the case of foodborne diseases that can be traced back to above-mentioned individuals. 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 thus essential to address the impact thereof. Waste minimisation will be the primary objective and food vendors and outlets must be instructed accordingly.

1.5.3 Campsites

It is essential to ensure that food outlets and personal hygiene is satisfactory within a campsite to prevent outbreaks of food poisoning and other potentially dangerous diseases like cholera, hepatitis. Sites that have been used for animal grazing should be avoided as campsites. The bacteria E.coli is present in all animal droppings and can survive for long periods in the environment.

Dogs must be prohibited from the campsite. Dogs might produce unnecessary health risks from fouling of the site and dog-bites. Furthermore, many dogs are scared of noise, which can result in aggressive behaviour.

Campfires are potential hazards that can cause burns, bush fires and smokes pollution. Communal fires may be a safer option. 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 e.g. plastic must be prevented.

Fire services at campsites must include:

- The presence of trained fire marshals.
- Fire points where a fire alarm may be initiated. The availability of buckets and water at this point must be considered.
- An adequate provision of fire extinguishers.
- For large events, the provision of fire trucks.

1.5.4 Transportation and Atmospheric Pollution

The journeys made by competitors, officials and spectators to and from motorsport events have a considerable adverse effect on the environment. Transportation contributes to many environmental hazards, particularly air pollution (greenhouse effect, ozone formation at ground level) and related health problems.

Transportation is required to get to the sports facility and much of it usually takes place in private cars. A reduction in the distances traveled with private cars, incentives to promote public transportation and non-pollutive transport (e.g. bicycles) together with sound transportation planning could greatly minimise air pollution, noise and disturbance, as well as the extent of land use.

The objectives are to:

- Minimize transportation
- Promote collective and or public transportation
- Encourage environmentally friendly transportation

1.5.5 Sustainable Transport Planning

Transport has considerable ecological effects. The following actions can help to counter negative impacts and may encourage environmental sustainability.

- Select specific transportation systems which minimize energy use and reduce pollution
- Encourage public transportation systems over private transportation
- Issue tickets for the event that entitle 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

Section 2

The Prime Movers

2. The Prime Movers

Environmental sustainability 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.

2.1 The FIM AFRICA Environmental Steward

It is compulsory at all FIM AFRICA meetings to appoint an Environmental Steward who shall deal only with environmental aspects. An Environmental Steward must have satisfactorily completed FIM AFRICA's environmental seminar and examination and must be accredited and licenced.

2.1.1 Duties of the Environmental Steward

1. Ensure that the FIM Africa Environmental Code is respected.
2. Have access to all information concerning the event, and must be able to give prior to, during and after the event, recommendations to the President of the Jury or Chief Steward on all aspects of the event which may have potential environmental consequences.
3. Draw up in a conscientious and appropriate manner a report on the basis of a checklist and send it within 48 hours to the FIM Africa Administration. A copy should also be handed to the Jury President or Chief Steward at the event.
4. Instruct officials during national seminars for the various disciplines.
5. Have the right to attend all open meetings of the FIM Africa Jury, but without voting rights.
6. In case of non-respect or violation of the provisions mentioned in the Code, he must immediately inform the Clerk of the Course.

2.1.2 Actions Before, During and After Events

BEFORE THE EVENT	DURING THE EVENT	AFTER THE EVENT
4 weeks before the event – send by email the Environmental Code and applicable checklist to the event organiser	Upon arrival, introduce yourself to the Jury President, Clerk of the Course and other Jury members. Attend ALL Jury meetings and give feedback.	Send your checklist to the FIM AFRICA Secretariat within 48 hours after the event
3 weeks before the event – contact the organizer, whether they understand the documents received	If possible, wear clothing with FIM AFRICA logo for easy identification	Prepare a report, with photos, summing up important environmental aspects related to the event
Familiarise yourself with all information concerning the event and get a general impression of the circuit/route and its fascilities before the start of the first Jury meeting	Carry your Environmental Steward licence at all time	If possible, check by phone or in person, a few days after the event, whether organiser did everything necessary to minimize negative impacts on the environment
Inform and ask the organiser to remedy identified shortcomings and violations of the Environmental Code	Perform regular inspections of the circuit/ course and all its fascilities	
Prepare and personally hand over information to the public /race announcer, about environmental conduct for competitors and spectators	Immediately inform the Clerk of the Course of non-respect or violations of the Environmental Code	
	Before the last Jury meeting, prepare the relevant Checklist and hand over to the Jury President or Chief Steward	

2.1.3 The Environmental Checklist

Each Environmental Steward has to fill in a FIM AFRICA Environmental Checklist for the relevant event and disciplines. This checklist must be returned to the FIM AFRICA Administration within 48 hours after the closure of the event concerned.

2.1.4 Rules of Conduct for the Environmental Steward

The Environmental Steward, as an official, is responsible for ensuring that at all events, the organisers and competitors comply with the FIM AFRICA's requirements in terms of protection of our environment

1. Promote environmental awareness - act first and foremost as an educator
2. Be unbiased and objective when you complete the check list. Make sure of your facts and remember that your remarks will improve future events.
3. Respect the rights and dignity of others
4. Be professional and diplomatic in discharging your responsibilities
5. Be fair, honest and considerate in your dealings with others
6. Be committed to providing a quality service
7. Demonstrate a high degree of individual responsibility, especially when dealing with youngsters
8. After an event, commend the organisers/owners on their achievements and give advice for future improvements
9. Refrain from behavior that could bring the FIM AFRICA into disrepute
10. Declare immediately any conflict of interest

2.2 Duties of Competitors and Service Crews

Motorcycle 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 FIM AFRICA Environmental Code.

All motorsport competitors must respect and reduce their impact on the environment. By following a few basic guidelines, it gives competitors an ideal opportunity to create a sustainable legacy for future motorsport generations.

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:

1. Ensure that the motorcycle complies with the maximum sound level limit allowed for the specific racing discipline.

- Unnecessary and prolonged running and revving 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.
- Motorcycles must be tested with a sound level meter at scrutineering.

2. Prevent soil and water pollution by using designated containers for the safe disposal of used motorcycle 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. It is the responsibility of the organiser of the event to provide suitable containers for this type of waste. The competitors must use the designated containers for the disposal of used vehiclefluids. 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. Separate and clearly marked containers for the collection of oil filters and cleaning rags must be provided.

3. Use an Environmental Mat to prevent soil & water pollution due to leaking or spilled motorcycle 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.

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

- Competitors and their service crews should be issued with paper or plastic refuse bags for the disposal of personal waste. These personal containers must be disposed of both during and after the event in designated refuse containers. Pit and surrounding areas must be kept clean at all times. Use designated refuse containers and/or bags at all time.

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5. Avoid damaging natural embankments of rivers.

- 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 with the aim of splashing water or mud over officials, spectators and fellow-competitors. Furthermore, 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 human diseases.

6. Only use designated wash areas for the washing of motorcycles.

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

7. Don't leave used tyres along the route of an off-road event.

- Punctured or damaged tyres may not, under any circumstance whatsoever, be left along the route of an off-road event. The discarded tyre must be removed either immediately by the competitor or the competitor's service crew or by advising a marshal to arrange for later collection.

8. Do not start fires along the route or at service parks under adverse weather conditions.

- The starting of any type of fire along the route or at service parks during off-road events is prohibited under adverse weather conditions, particularly wind. 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.

9. Stick to the designated route markers and do not to create new routes or short cuts.

- 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.

10. Do not maliciously or intentionally damage, kill or maim any species of fauna or flora.

- Respect and preserve the environment through which you travel, especially during off-road events. Do not maliciously or intentionally damage trees, the branches of trees, shrubs or plants. Do not kill or maim any species of fauna. No long-term evidence of the running of a motorsport event, especially off-road events, must be left to scar the environment.

DONT'S	DO'S
Don't litter	Use an environmental mat when working on your motorcycle to pollution of soil and water sources.
Don't use chemicals to wash you motorcycle	Ensure that your motorcycle complies with the sound limits for your category to reduce overall sound levels.
Don't pour oil or vehicle fluids on the ground or in water sources	Wash your motorcycle only in designated areas or wash bay.
Don't wash your motorcycle outside designated areas	Use waste containers or refuse bags for the disposal of personal waste to keep pit/paddock area clean.
Don't discard refuse, tyres or any other vehicle parts along the route at off-road events.	Use designated containers for collection and safe disposal of waste oil and other vehicle fluids.
Don't maliciously damage flora or kill or maim fauna.	Stick to the designated route at off-road events.

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 are not 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 needs to prioritise the following aspects as part of their environmental policy and performances:

- reduction of littering and waste by spectators
- reduce location-related impacts (landscape, land use).
- minimise energy consumption
- improvement of traffic management and parking
- continuous monitoring of noise emissions
- a constant commitment to facility maintenance

Good practice is to appoint a permanent staff member who will be responsible for environmental management of the venue.
The best possible environmental management must be ensured at all times to reduce the impact of the venue and its activities on the surrounding environment.

1) Permanent venue **buildings** and structures must be inspected regularly and be maintained, repaired and kept clean at all times. Written approval must be obtained from the relevant Local Authority or National Government Departments before the construction of new structures or the alteration of existing structures.

2) **Parking areas** must be maintained and grass kept short to prevent fires.

3) **Waste and Sewerage** disposal must be nuisance free and without defects at all times.

4) Provide proper **wash bays** (with concrete floors and drainage) at venue if washing of vehicles is allowed. Installation of oil separators is also preferred.

5) 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.

6) Damaged or **discarded tyres** may not be kept in an unauthorised dumpsite. Burning of used tyres is not allowed.

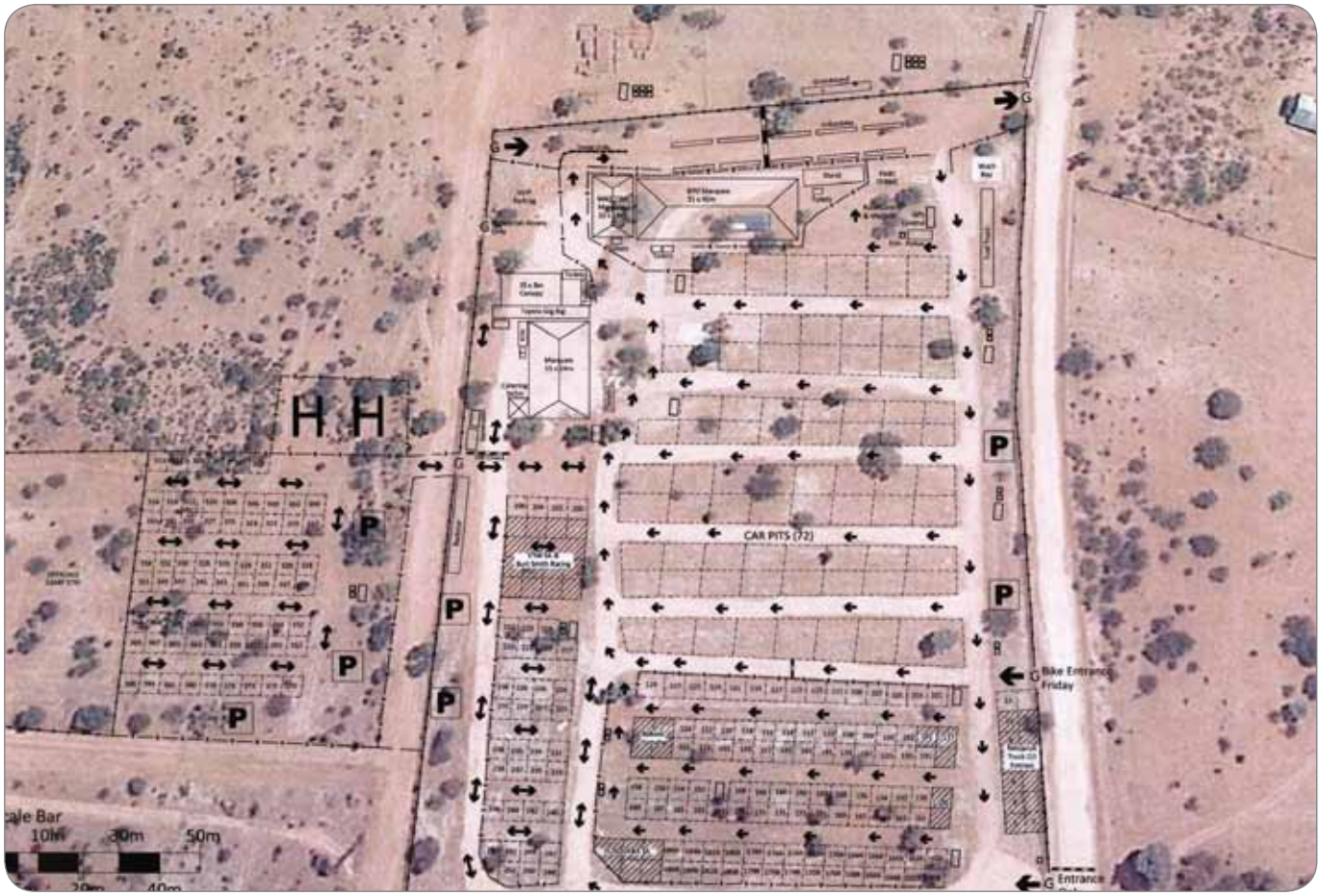
2.4 Duties of Organisers and Promoters

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.

It is recommended to prepare a plan for the management of the facilities, to stimulate an environment-minded behaviour by the spectators and an environment minded use of the facilities during events. To support the Environment Management Plan, organisers are required to provide a map (either in the event SRs, official race programme or on the official notice board and other visible areas) of the venue showing clearly the location of the following facilities:

a) Location of Waste oil containers;
b) Location of Wash Bays
c) Domestic and contaminated waste containers areas
d) Refuelling locations
e) Toilets and showers
f) Storage and disposal area(s) for used tyres
g) Parking areas and pit/paddock allocations



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 an enduro or any other cross-country race on farmlands, but these basic principles are the same for all events:

1) In consultation with the Police or Traffic Department **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.

2) **Ecologically sensitive areas** must be cordoned off

3) **Prevent concentrations** of people, vehicles, entertainment and catering areas, which could result in permanent damage to an area.

4) Provide sufficient and hygienic, **temporary ablution facilities** at off-road and non-permanent venues.

5) Put in place protocols for the prevention and control of grass **fires** and keep grass very short in parking areas.

6) Adequate **refuse bins** must be provided at key areas, with emphasis to separate recyclable waste at source. Waste must not accumulate and must be disposed of in a safe manner.

7) Provide special containers for **medical waste** and ensure that removal is done by a specialist medical waste contractor.

8) **Washing of motorcycles** are only allowed at designated wash areas.

9) Provide sturdy containers or tanks for **collection of hazardous waste** (used oil, drained fuel, brake fluids, etc) by a licenced contractor.

10) Ensure that maximum **noise levels** for competitors and spectators are not exceeded.

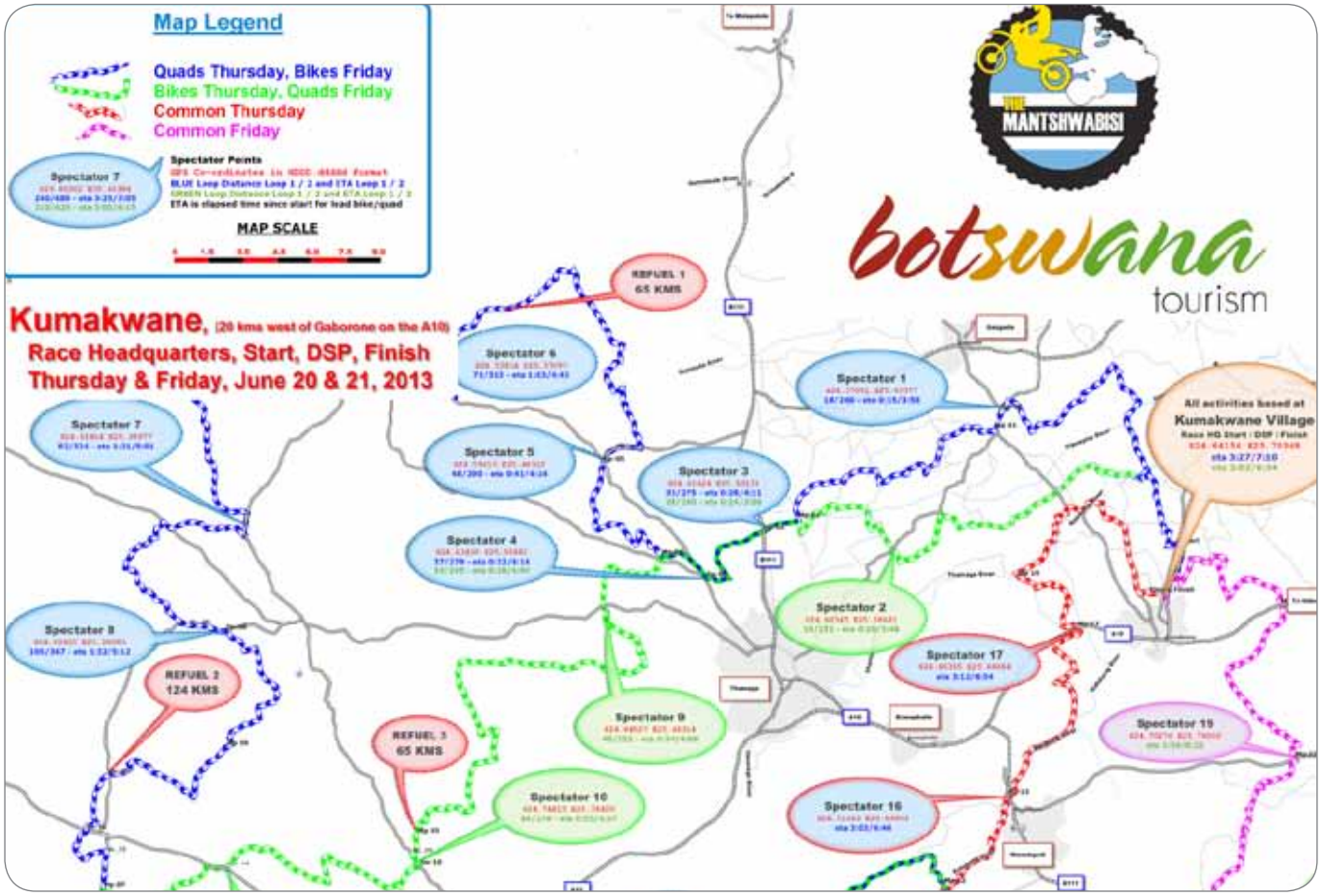
11) Do not attach event **advertising posters or signage** to trees, plants, shrubs, etc. by using nails or other damaging methods.

12) **Advertising leaflets,** brochures must only be distributed at the entrance to venues, not when spectators are leaving. They are not allowed to be place under car windscreen wipers, etc.

13) Provide plastic or recyclable paper **bags** to competitors and their crews for the collection of personal waste.

14) Use **route markers** that are made of reusable or recyclable material. Removal of route markers must be done soon after that section of the route is completed.

15) **Route planning** and construction must ensure that no part of the route crosses sensitive areas. i.e. ecological habitats, tribal and sacred lands, etc.



16) Level off temporary roads that have been constructed to prevent **soil erosion**

17) Where damaged of trees and large shrubs have occurred on private property, the owner must be notified immediately after the event in writing. Arrange for replacement of damaged flora. Return to the venue a month later to ascertain the rate of recovery of the venue.

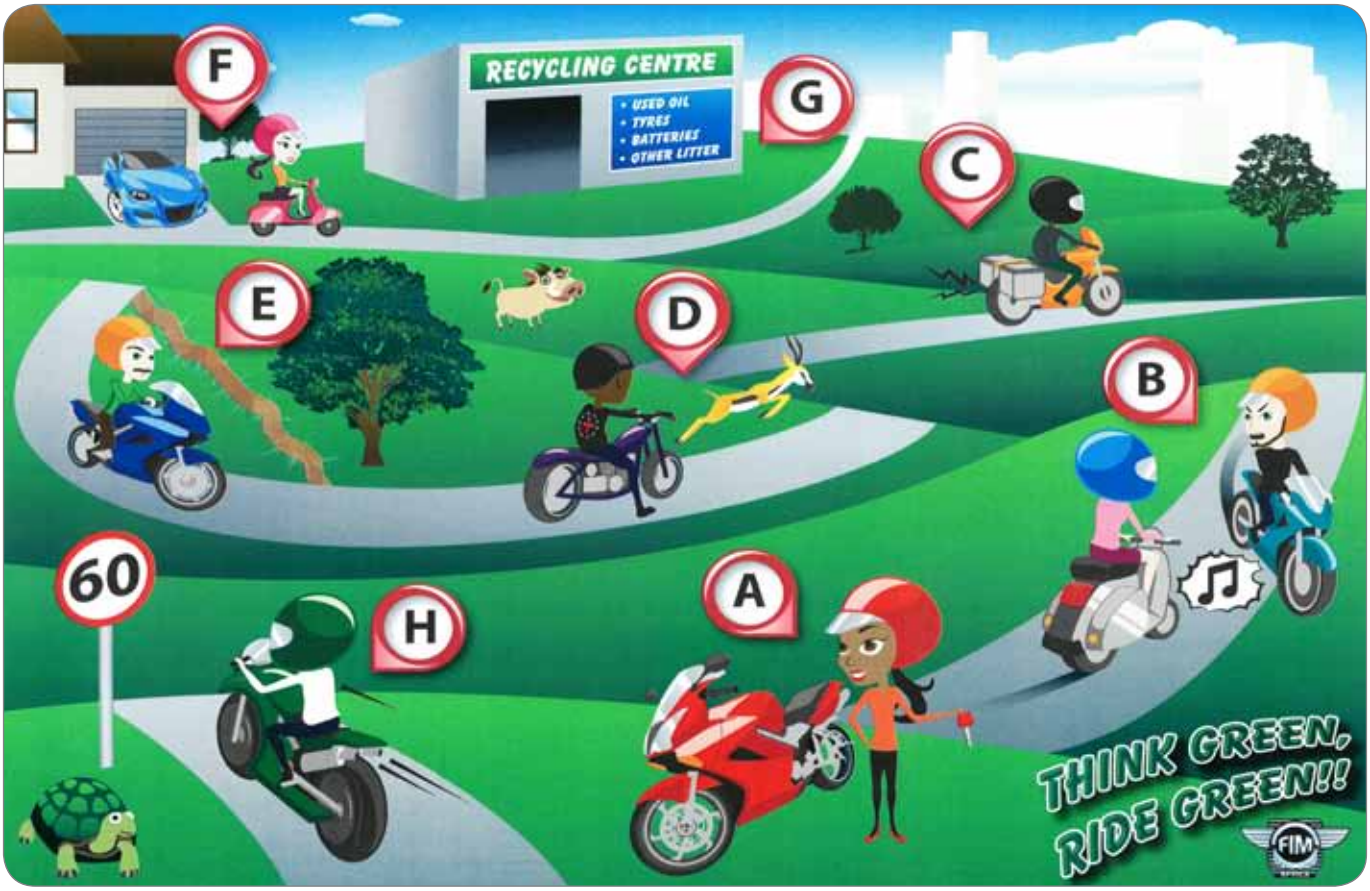
18) Provide visible signage at venues showing the location of refuel areas, used oil containers, wash bays, toilets, disposal point for used tyres, etc.

2.5 Duties of Leisure Riders

Motorcycling as a leisure activity has grown with increasing levels of popularity in recent years. Traffic congestion in cities means that motorcycles are often the quickest way to travel. Public transport in large cities can sometimes be overcrowded or slow. These factors, and also the congestion charge to drive a car have also persuaded more people to commute by motorcycle.

We must voluntarily moderate and add a greater degree of responsibility to our natural desire for individual mobility. We should try to achieve results on the basis of freedom of thought and movement, and exploit every opportunity to combine the pleasure of motorcycling more effectively with ecological and economic needs. Every motorcyclist is encouraged to enjoy, to the fullest extent, their travels without leaving a damaging environmental footprint of their journey. Appropriate rider conduct should include the following (also see illustration):

a) Save petrol and reduce pollution by avoiding unnecessary idling of engines.
b) Limit noise pollution by using your horn only in an emergency.
c) Avoid noise annoyance. Use a standard or another quiet exhaust system and keep audio systems at a low level.
d) Protect wildlife and its natural habitat by riding intelligently.
e) Respect nature by not travelling on paths which risk being damaged beyond a point of natural recovery.
f) Encourage a rational use of fuel and space economy by using motorcycles instead of driving automobiles.
g) Ensure that your used oil, tyres, batteries and other litter are properly recycled or collected.
h) Drive at posted speed limits. Driving faster creates more noise.



Section 3

Environmental Sustainability

3. Environmental Sustainability

3.1 Getting Started – The Race for Environmental Sustainability

3.1.1 How to Promote Environmental Sustainability?

Motorcycling is one of the fastest growing sports on a global scale and it has also grown tremendously on the African continent over recent years. Motorcycle sport is an industry with significant economic, social and environmental dimensions that needs balancing. Sustainability in general refers to the capacity of a society to persist over generations and that is farseeing, flexible and wise enough not to undermine its environmental, economic and social support systems.

Environmental sustainability 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. Such events reduce their environmental impact and generate more economic and social benefits in comparison to the amount of resources they use.

In order 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 principles:

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. Protection of habitat of fauna and flora
7. Reduction of waste and all pollutants
8. Facilitate participation and foster partnerships with the wider community
9. Leave a positive presence and legacy
10. Share and encourage environmental awareness and education

3.1.2 The Benefits of Sustainable Motorsport

Promoting environmental sustainability in events, not only reduces their environmental impact, but can also benefit the main role-players and society at large.

The benefit of bringing environmental sustainability into your club or circuit goes beyond doing the right thing for 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, practises and achievements.

If planned and implemented properly, the event can provide social benefits to the region by creating jobs, encouraging local investment, etc. It can further act as a catalyst for encouraging environmental and sustainable best practices across the region, as well as improving the realationship 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 several steps:

- Identify your issues - in other words where do you have a negative economic, social or environmental impacts that you have some control over?
- Commit – make a visible committment to sustainability within your organisation
- Create an action plan - what needs to happen to address your negative impacts, who needs to do what and when?
- Allocate resources to this action plan - for example take time and budget to get educated on what sustainability means.
- Do – work towards implementing the actions listed on your action plan
- Engage those who are interested in what you are doing and listen to their input. This would include your staff, suppliers, top management and local community - what do they think are your issues and how can they support your action plan?
- Monitor and evaluate your progress - what is working? What needs to change?

3.1.4 Key Areas of Environmental Sustainability

The principles of sustainability may first 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 in the end, where both organisers and venue owners will add the environmental benefits. Staging a more sustainable sporting event means managing social, economic and environmental factors to minimise its impact, and leaving a positive legacy that continues to enrich host venues long after the event.

Sustainability within motorsport is enhanced by decreased environmental impact and resources use and delivery of outcomes that are more positive for the social and economic welfare of society. 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.

3.2 Creating Momentum - Developing an Environmental Action Plan

The principles of sustainability may first appear at odds with motorsport activities, but with proper planning several key areas can be identified and spe

A Basic Action Plan

- Develop and approve your environmental policy
- Define specific objectives and targets to deal with in each key area
- Adopt environmental sustainable practices in all stages of planning and organising
- Develop a waste minimasation 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 serve as guidelines for motorsport organisers and venue owners and can contribute in reaching their sustainability goal:

Energy Management

Find ways to minimise energy usage to reduce emissions and costs. Design facilities and infrastructure for low-energy usage, and maximise the use of renewable energy

Water Management

Avoid using drinking water for irrigation, cooling, and sanitary purposes, and minimise all water use through sustainable design. Provide drinking water from the best local source, and avoid bottled water, which is carbon-intensive and creates waste. For venue maintenance purposes, harvest rain and run-off water into constructed surface dams, ponds and conservation tillage.

Waste Management

Avoid waste volumes throughout all phases of planning, construction, and staging. Use or upgrade existing infrastructure, if possible. During the event, minimise waste through recyclable packaging, facilitating recycling and reuse, and implementing take-back options.

Materials

Use renewable materials that have low environmental impact, are produced locally, have no harmful content and are from sustainable sources.

Habitat Protection

Assess site biodiversity to ensure that in legacy, site biodiversity is maintained or improved and that sensitive land is being protected from harm as a result of the event. Ensure that planting and landscaping are appropriate to the local conditions and heritage.

Inclusion

Ensure that the event is accessible to all ages, abilities, genders, and cultures without discrimination throughout its life cycle. Foster local community ownership and build pride in the event and its legacy. Provide training and education to enhance inclusion.

Healthy Living

Inspire sport, health, and wellbeing in the community. Promote local, sustainable fair trade produce.

Transportation

Avoid unnecessary travel. Encourage public transport, and use low-carbon vehicles with high occupancy. Co-ordinate traffic to venue with traffic police and public transport companies.

Education

Develop and roll out a communication and marketing strategy to raise environmental awareness on sustainability factors in motorsport. Initiate interactive green initiatives at the event and advertise them through media sources. Publish an environmental message in the event programme.

Noise Control

The event must be planned in such a way that local residents are inconvenienced as little as possible. Introduction of a noise management plan for permanent circuits.

3.3 Fine Tuning - Environmental Performance Indicators

Environmental Performance Indicators (EPI) concern 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.

EPIs measure and indicate some aspects of environmental performance and/or resource use. By measuring, reporting and communicating on 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.

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
- Prioritise and direct improvement efforts
- Monitor environmental performance and improvements over time
- Assess the impact of new practices and investments
- Compare the performance of one event to another

BASIC ENVIRONMENTAL PERFORMANCE INDICATORS FOR MOTORSPORT		
Environmental Policy	Is there an Environmental Policy for your Is there an approved Environmental Policy to govern your venue or event? Has it been communicated to and discussed with staff, volunteers, etc?	**Comments**
Objectives and Targets	Have objectives and targets been defined and Have environmental objectives and measurable targets been defined and communicated? What is the progress towards their achievement?	

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	Is a program set up to involve partners in the Greening program? Are there compulsory practices/codes/ standards for the key partners and/or their products? How many partners participate in the Greening program?	
Transportation	Have objectives and targets been defined and Number and % of venue accessible by public/ active transport? Number and % of participants by category, (competitors, spectators) using public/active means?	
Health Conditions	Levels of air pollution/emmissions before and during the event? Are pesticides used at venues? Types, amounts and most recent application of pesticides at a venue? Water quality measures (outdoor and indoor) at venue (compliance with bacteriological and chemical standards)	
Resource Conservations	Measures taken to reduce energy consumption? Levels of reduction achieved (kWh and %) by these measures? Measures taken to reduce water consumption? Levels of reduction (volume and %) achieved by these measures?	
Habitat Protection	Area of sensitive land protected from harm as a result of the event? Number of indigenous trees or other plants cut and/or replanted?	
Education/Publicity	Number and types of environmental educational and publicity initiatives undertaken? Number of media stories? Size of audience reached? Number of participants in environmental related initiatives?	

3.4 Conclusion

These guidelines have been provided in the expectation that incorporating an Environmental Management System into motorcycle event organisation will have an overall positive benefit to your circuit, organisers, competitors, spectators, local communities and will contribute to host a cost effective event. Organisers of FIM AFRICA sanctioned events are expected to actively set out to minimise the potential negative impacts of hosting a motorcycle event. The organisers must, however, be practical in what can be accomplished.

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