

# ENVIRONMENTAL REPORT 2019



Event certified ISO 14001 : 2015



**FOR 29 YEARS, DOMINIQUE SERRA HAS BEEN ORGANIZING RALLY-RAIDS WITH THE CONSTANT OBJECTIVE OF PRESERVING NATURE IN THE HOST COUNTRIES AND RESPECTING THE LIVING ENVIRONMENT OF LOCAL POPULATIONS.**





# TOGETHER FOR A SUSTAINABLE MOROCCO

## Is the Rallye Aïcha des Gazelles du Maroc an environmental anomaly?

is a wide-reaching and complex question that often gives rise to radical opinions. It compels us to be particularly attentive and innovative when it comes to respecting the environment. I say “us” because it is an issue that concerns us all: participants, organizers, staff, partners, journalists, service providers... Since its creation, the Rallye Aïcha des Gazelles du Maroc has evoked an eco-friendly concept: competitors need to drive the shortest possible distance to win.

That is why, 20 years ago, I decided to undertake an environmental approach that culminated in ISO 14001 certification in 2010. Today we are the only event in the world to have obtained this certification, a fact of which we are justifiably proud.

Numerous measures have been put in place to improve and reduce, as much as possible, our environmental footprint on Morocco and on the planet. Vehicle manufacturers, aware of the issues surrounding sustainable development, are also working in this direction and many advances are being made to make motor vehicles more “green”.

Each year, the Rallye Aïcha des Gazelles du Maroc continues to grow and evolve in ways that reflect its key concern: respect for the environment.



**Dominique SERRA**  
**Founder of the Rallye Aïcha des Gazelles du Maroc**







## ENVIRONMENTAL MANAGEMENT POLICY

### Showing Leadership

The Rallye Aïcha des Gazelles du Maroc is based on a unique eco-concept that makes it a motor sport event unlike any other: drive the shortest possible distance to win. Speed is not a measure of performance.

**Since 2010, the Rallye Aïcha des Gazelles du Maroc has been the only motorsport competition with ISO 14001 certification for environmental management.**

The Rallye's organizer, Maïenga, wants to demonstrate its desire to reduce its environmental impact and make the Rallye Aïcha des Gazelles du Maroc a model for others to follow. In fact, a white paper entitled "Rally raid and sustainable development" was published in 2017 with the objective of stimulating discussion and creating a new dimension for rally raids: that of respecting local populations and the environment



### A recognized environmental approach

- ◆ The Rallye and the **Moroccan Ministry for the Environment** have signed a convention to inform and raise awareness about environmental issues and sustainable development,
- ◆ All Rallye participants (Gazelles, organizers, partners...) signed an **"Appeal for the Climate"** in 2016,
- ◆ The Rallye Aïcha des Gazelles du Maroc took part in **COP 21 and COP 22**,
- ◆ Maïenga was awarded the **Moroccan "Tourism and Climate Initiatives" special prize** in 2016,
- ◆ In 2017, a new competition class **offering an alternative to fossil fuels** was created: e-Gazelle Class with the participation of a team driving a Citroën E. Méhari,
- ◆ This class grew in 2018, with 6 teams choosing to drive electric vehicles.
- ◆ in 2019, 10 electric vehicles competed in the Rallye including 2 buggies.
- ◆ 17 e-Gazelles teams are expected in 2020...





“

*Each year, the Rallye audits every position within the organization to make it “greener”.*

*This is a complex but exciting challenge as it involves innovative technology development, public and private partnerships, and changing behaviours.*

”





# THE KEY THEMES OF OUR ENVIRONMENTAL POLICY

## ENERGY

Maienga commits to saving energy resources by:

- ◆ Raising awareness about fuel consumption (eco-driving, not using air conditioning, reduced speed),
- ◆ Systematically installing low-energy light bulbs,
- ◆ Using natural lighting as much as possible, for example through the use of “clear” tents at the bivouac that allow sunlight to enter,
- ◆ Powering the press tent at the bivouac through 6 solar panels.

## SUSTAINABLE PROCUREMENT

Maienga chooses environmentally-friendly products in order to reduce pollutants and preserve natural resources by:

- ◆ Adhering to a sustainable procurement policy,
- ◆ Educating all persons attending the event (formalized by the signature of a Code of Good Environmental Conduct),
- ◆ Purchasing from local suppliers (Morocco) and minimizing transport distances whenever possible.

## WASTE MANAGEMENT

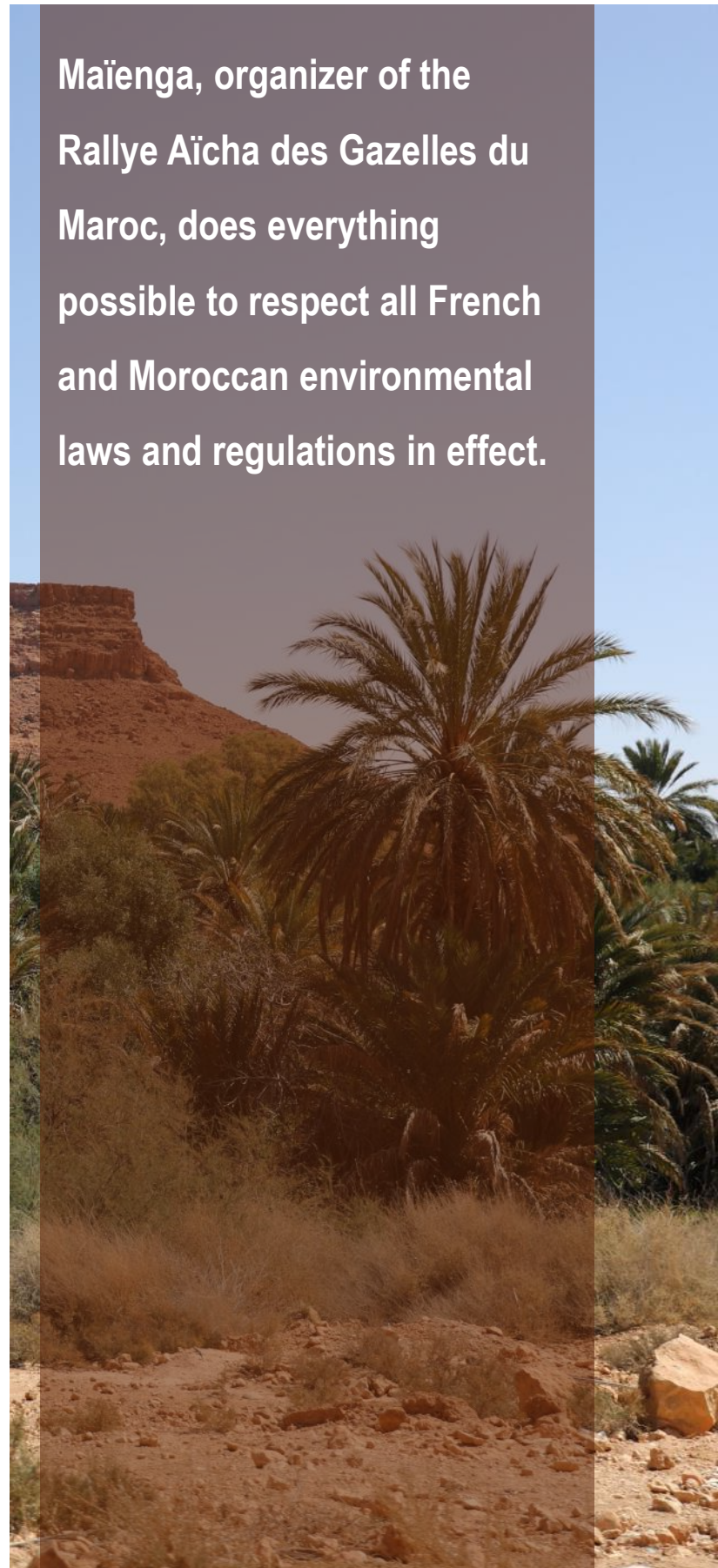
Maienga raise awareness among all people attending the event about:

- ◆ Sorting waste for the purpose of recycling,
- ◆ Eliminating food waste.

In addition, Maienga:

- ➔ Incinerates all waste that cannot be recycled in order to leave the bivouac sites clean and in their original state;
- ➔ Is working towards a “zero paper” policy.

**Maienga, organizer of the Rallye Aïcha des Gazelles du Maroc, does everything possible to respect all French and Moroccan environmental laws and regulations in effect.**







“ *The success of this approach is based on the support and commitment of the entire Maïenga staff as well as every person taking part in or attending the Rallye Aïcha des Gazelles du Maroc.* ”

*Our environmental approach is constantly striving for development and continuous improvement.*

## WATER

In order to preserve water resources, Maïenga undertakes to:

- ◆ Educate and fight against wasting bottled water and restroom water,
- ◆ Install water-saving devices,
- ◆ Properly maintain all equipment and identify and repair water leaks,
- ◆ Properly channel and control wastewater discharge using a filtering technique involving acacia branches.

## BIODIVERSITY

Maïenga protects the living environment of local populations:

- ◆ The route is optimized each year,
- ◆ Bivouacs are set up far from villages in agreement with the Moroccan Ministry for Tourism,
- ◆ A Medical and Environmental Caravan is integrated into the event (organized by Cœur de Gazelles),
- ◆ Ground protection is used in case of spills (oil, fuel...),
- ◆ Any damage to crops is subject to sanctions, as indicated in the sporting regulations of the Rallye Aïcha des Gazelles du Maroc.

## AIR

Maïenga undertakes to:

- ◆ Reduce its CO<sub>2</sub> emissions as much as possible and offset them through a recognized organization,
- ◆ Educate participants about eco-driving, not using air conditioning, reducing vehicle load...
- ◆ Encourage car-pooling and public transport for staff and organizers,
- ◆ Create a competition class offering an alternative to gas and diesel: an electric vehicle class (e-Gazelle),
- ◆ Allow hybrid vehicles to compete in Crossover Class.

# SOCIAL AND ENVIRONMENTAL RESPONSIBILITY CHARTER

MAÏENGA has based its development on values such as courage, generosity, solidarity, respect and loyalty, and is committed to implementing these principles through a **Social and environmental responsibility charter**.

This charter forms the basis of the relationship of trust that must exist between the company and its clients, suppliers and staff.

The goal of this ethics charter is to provide a formalized definition of this essential body of common references to which anyone can refer and comply under any circumstances. These rules are not exhaustive but, combined with each individual's sense of responsibility, form an important reference for all company associates and partners.

Maienga promises to:

- ◆ Respect the law,
- ◆ Respect its employees,
- ◆ Respect and protect the environment,
- ◆ Communicate and educate,
- ◆ Respect the ethical values of sport.

**MAIENGA encourages its partners, subcontractors and suppliers to uphold its values and contribute to its commitment to sustainable development.**



**THROUGH ITS NON-PROFIT ORGANIZATION CŒUR DE GAZELLES, THE RALLYE RAISES POPULATION AWARENESS ABOUT ENVIRONMENTAL ISSUES AND ABOUT ADOPTING APPROPRIATE SUSTAINABLE BEHAVIOURS.**



# CODE OF GOOD ENVIRONMENTAL CONDUCT

I pledge to:

## 1. Follow the instructions for sorting my waste and not litter:

Waste collection bins are set up at each bivouac. The Rallye incinerates or recycles all waste it produces.

## 2. Consume responsibly:

- ◆ Food: An abundance of food is provided at the bivouac. I will not pile my plate with more than I can eat.
- ◆ Water: Showers are provided at the bivouac. I will conserve this valuable resource. Once opened, all bottles of drinking water must be finished before being recycled

## 3. Use environmentally friendly products:

I will use biodegradable soaps and shampoo.

## 4. Travel light:

A lighter vehicle produces less pollution.

## 5. Practice eco-driving:

As the Rallye does not take speed into consideration in determining the rankings, there is no reason to use excessive speed. I will respect the speed limit when driving through villages (40 km/hour). Reducing speed throughout the Rallye will reduce the risk of accidents and will pollute less. I will not use air conditioning in my vehicle.

## 6. Respect local animal and plant life:

I will not collect fossils, will be careful of animals and will respect my natural environment.

## 7. If I break it, I pay for it:

I agree to compensate farmers for any damage to their crops.

## 8. In the event of mechanical repairs:

I agree to transport the broken part to an appropriate disposal facility.

The Rallye Aïcha des Gazelles du Maroc has introduced a “Code of good environmental conduct” intended for everyone attending the event: Gazelles, organizers, staff, journalists... All must adhere to and comply with this code.









## KEY ISSUES


	ADMINISTRATION	BIVOUAC	LOGISTICS & MECHANICS	ENVIRONMENT
CONSERVE ENERGY AND COMBAT CLIMATE CHANGE	<ul style="list-style-type: none"><li>Offsetting carbon emissions.</li></ul>	<ul style="list-style-type: none"><li>Using gas to heat water for showers.</li><li>Servicing water heaters.</li></ul>	<ul style="list-style-type: none"><li>Fuel consumption by generators.</li><li>Efficient LED lighting.</li></ul>	<ul style="list-style-type: none"><li>Monitoring energy consumption.</li></ul>
REUSE AND RECYCLE WASTE	<ul style="list-style-type: none"><li>Promoting waste recycling.</li></ul>	<ul style="list-style-type: none"><li>Feeding vegetable scraps to livestock.</li></ul>	<ul style="list-style-type: none"><li>Use empty water bottles for eco-friendly social projects.</li></ul>	
USE ECO-FRIENDLY PRODUCTS	<ul style="list-style-type: none"><li>Raising awareness.</li></ul>	<ul style="list-style-type: none"><li>Ecolabelled detergents.</li></ul>	<ul style="list-style-type: none"><li>Product inventory to eliminate all risk of accidents.</li></ul>	
PROTECT AND CONSERVE WATER RESOURCES	<ul style="list-style-type: none"><li>Raising awareness.</li></ul>	<ul style="list-style-type: none"><li>Water meters to monitor daily consumption and eliminate the risk of undetected leaks.</li></ul>	<ul style="list-style-type: none"><li>Clean sites.</li></ul>	<ul style="list-style-type: none"><li>Monitoring water consumption.</li><li>Detection and repair of leaks.</li></ul>

## NUMBERS FOR 2019


 **157** teams

 **683** people present on location

 **76,148 L** of fuel distributed by fuel partner Africaia

 **70 L** litres of water per day per person (potable and non-potable)

**78%**  
were taking part in their first Rallye des Gazelles





# CONCRETE ACTIONS

THE RALLYE AÏCHA DES GAZELLES HAS INTRODUCED MANY ACTIONS IN SUPPORT OF ITS COMMITMENT TO ENVIRONMENTAL ISSUES.

For example, the Rallye Aïcha des Gazelles:

- ◆ Trains a team to sort waste.
- ◆ Uses an incinerator truck to incinerate all non-hazardous waste on-site.
- ◆ Limits its impact on water: showers are equipped with water-saving devices, all cleaning products used are either biodegradable or have a low environmental impact.
- ◆ Installs clear partitions in the restaurant and press tent to maximize natural lighting.
- ◆ Installs solar panels to produce green energy and power the press tent at the bivouac.
- ◆ Renews its washroom facilities, maintains and services other plumbing systems, checks regularly for leaks.
- ◆ Optimizes the routes of its media drivers.
- ◆ Prints team e-mails on A5 paper
- ◆ Uses eco-friendly alternatives, e.g. solvent-free automotive products.
- ◆ Presents and repeats our environmental initiatives during briefings.
- ◆ Includes electric vehicles in the competition. The Rallye has adopted a continuous improvement approach in this area, with initiatives such as testing the ability to charge electric vehicles using solar panels. In 2019, the Rallye expanded this idea by including 100% electric buggies to attract a wider audience and take on new challenges



Alongside the rally, Cœur de Gazelles non-profit organization uses the logistics of the Rallye to implement social projects that meet the needs of the local populations. The organization acts in several areas including the environment and sustainable development.

Since 2011, 37,358 people have been educated about the negative impacts of using plastic bags and have received a 100% biodegradable cotton bag.

This year, Cœur de Gazelles created “Uppercut” a project aimed at cleaning up plastic waste in some of Morocco’s most remote areas. The plastic waste is then delivered to a work integration enterprise to be transformed into design objects such as stools, light fixtures and decorative items.



# EVENT DEVELOPMENT



## POST-MORTEM OF THE PREVIOUS EDITION

After each edition of the Rallye, organizers/staff are invited to share their impressions with Maienga via the Rallye's Intranet platform. These comments are examined and the most relevant among them are taken into account for following editions.

A management review is held after each edition of the Rallye Aïcha des Gazelles.

This meeting is an opportunity to:

- ◆ Review the regulations,
- ◆ Consider the remarks made during audits,
- ◆ Consider the feedback of organizers and competitors (satisfaction survey),
- ◆ Analyze performance during the previous edition,
- ◆ Assess the progress of the Environmental Action Plan,
- ◆ Set new goals.



## ENSURING REGULATORY COMPLIANCE

Any regulatory issues requiring special vigilance are communicated to Maienga staff and indicated in the logbooks given to head Organizers.

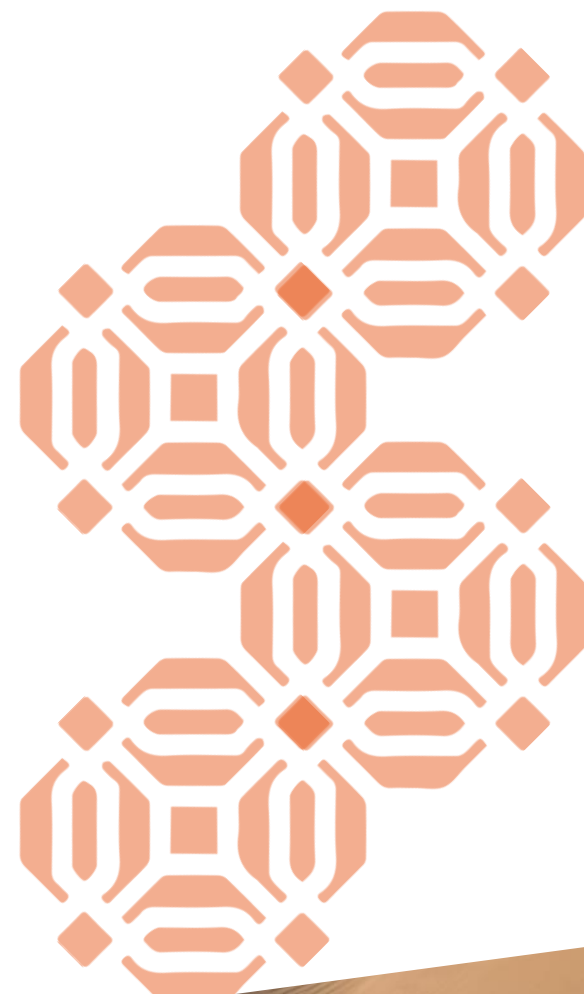
They are also integrated in the compliance monitoring criteria applicable during on-site Safety and Environment Inspections.

For example: ensuring that tech inspections of vehicles and refrigeration equipment are up-to-date; installing protective tarpaulins on the ground; placing oil cans and batteries on drip pans; providing fire extinguishers; keep compressors and batteries on drip pans.



## CHOIX OF ROUTES

- ◆ The Competition Management plans the routes and carries out terrain reconnaissance several months before the event.
- ◆ The Rallye's geographic perimeter was established over twenty years ago; special attention is paid each year to participant safety, protecting nearby farmland and crops, driving through villages, and the presence or absence of oueds (dried river beds).
- ◆ The optimum routes are off-road, but competitors are free to choose their own way. Sensitive areas are identified on the road book and instructions or recommendations are provided. These are repeated during briefings.







## FINDING PARTNERS WHO SHARE THE SAME VALUES - AR AUTO

In 2017, the Rallye Aïcha des Gazelles du Maroc created a new category for 100% electric vehicles: e-Gazelle Class. A team driving a Citroën E. Mehari [Team 500] completed some of the competition legs, which led to the drafting of specifications and recommendations for the inclusion of electric vehicles in the competition. In 2018, six 100% electric vehicles took part including a Renault Zoé.

“ For the daily operations of the rally, we require a constant supply of electricity, which is provided by generators running around the clock. We took advantage of these to charge the electric vehicles...

As a result, no additional fuel was needed to run the generators.



## COMPETING ELECTRIC VEHICLES IN 2019

- ◆ 1 Citroën E-Méhari (Team 502 )
- ◆ 6 Bluesummer Bolloré (Teams 500. 501. 503. 505. 507. 508)
- ◆ 1 Renault Zoé (Team 510)
- ◆ 2 Buggy prototypes (Teams 600. 601)

This year, two vehicles were completely charged throughout the competition using 24 dedicated solar panels, which is one more vehicle than last year. Taking this a step further, we also charged two 100% electric buggies during a marathon leg.

At the same time, a test was carried out to supply the press tent with green electricity. 6 solar panels were set up right in the bivouac. These panels produced 16.5 kW of electricity per day, while the average daily energy consumption of the press tent was 9 kW (i.e. a production of about 2400 watts/hour versus a consumption of about 1300 watts/hour). The surplus energy production was stored in batteries for use during the night.





# CONSERVING AND PROTECTING WATER

## TWO TYPES OF WATER ARE USED BY THE RALLY:

- ◆ Potable water distributed in 1.5L bottles for drinking, cooking and washing dishes. For health reasons, bottled potable water is always used in cooking and to wash food and dishes.
- ◆ Non-potable water for other uses (toilets, cleaning, etc.), delivered by tank truck.

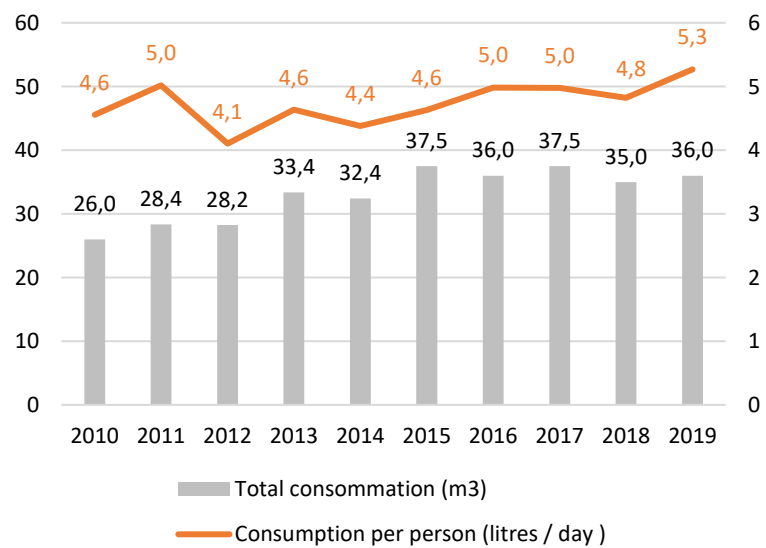
## POTABLE WATER CONSUMPTION

Drinking water in the form of 1.5-litre bottles of mineral water is provided by our partner Les Eaux Minérales d'Oulmès.

The option of storing potable water in a tank and using reusable metal water bottles is not being used for the moment due to health reasons (it is difficult to prevent bacterial contamination in stored water) but remains under study.



BOTTLED WATER CONSUMPTION



36 m<sup>3</sup>

of potable water was consumed during this edition. This number is slightly higher than last year, but we are clearly not interested in restricting the use of drinking water by participants, for obvious health reasons. Our focus is rather to reduce waste – every bottle opened must be finished. This year, we observed a significant number of abandoned half-full bottles. Next year we will address this problem through increased awareness-raising and stronger messages.

42%

of the potable water was used by the kitchen. Our objective is to minimize the risk of water-borne diseases by carefully washing all foodstuffs.

5.3 litres

of potable water was consumed per day per person during this edition. This is a reasonable quantity, given the physical demands of the competition, the climate and the importance of using clean water in the kitchen.

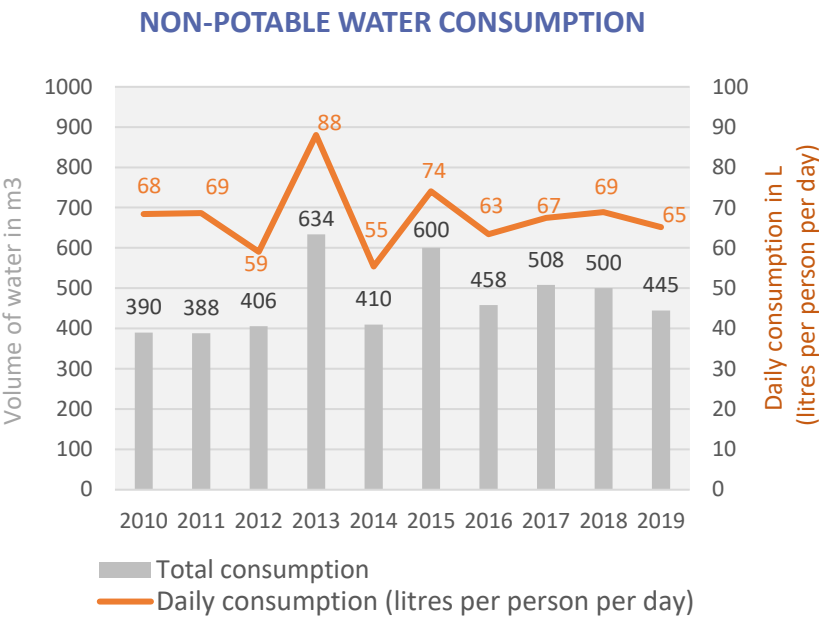
### To support our desire to curb waste, we have introduced the following actions:

- ◆ Bottles are stored in a truck and distributed according to need,
- ◆ Drinking from an unknown bottle is not advisable for hygiene reasons. For that reason, everyone is asked to write their name on their water bottles. This simple practice reduces water waste.



NON-POTABLE WATER CONSUMPTION

Non-potable water is transported to the Rallye by locally-owned tank trucks. The bivouac is equipped with 5 washroom trailers containing showers, sinks and toilet stalls. The installation of water meters makes it possible to closely monitor water consumption. This year an incident sheet was filled out concerning a leak in the water system. Regular daily monitoring of the facilities ensured that the leak was quickly repaired. This year we intensified our efforts to encourage people at the bivouac to adopt appropriate water-saving practices. In addition to reminders during the daily competition briefings, posters and signs were installed in the washrooms. During this edition we saw a marked decrease in water consumption per person. However, it must be noted that the cancellation of Leg 4 likely contributed to this significant reduction.



445 m³

of non-potable water was consumed during the event.

65 litres

of non-potable water was consumed per person per day.

150 litres

is consumed per person per day in France. (Source INSEE). In comparison with 71 L at the Rallye (potable + non-potable).

LIMITING WATER POLLUTION

Wastewater is produced by the toilets, showers, kitchen and cleaning. The volume of wastewater is difficult to measure but can be considered to correspond to the use of non-potable water. At present, the nature and the quantity of wastewater do not justify the use of complimentary treatment or filtering systems.

Wastewater contains organic matter and biodegradable products. To avoid leaving residual pollution, competitors and visitors are explicitly requested to use only natural products and to opt for ecolabelled products wherever possible.

Only standard domestic cleaning products are used (biodegradable dish soap). No industrial cleaning products having an SDS (Safety Data Sheet) are used.

Wastewater ditches are dug to channel the discharge. Discharge areas are covered when the bivouac leaves the site, to facilitate anaerobic decomposition and to limit odours. All traces disappear very quickly from the surrounding area.

“ The bivouacs are always set up at a reasonable distance from villages. The absence of sensitive areas (wells, catchment areas...) is confirmed with the local authorities and populations. ”





# INCINERATION & RECYCLING

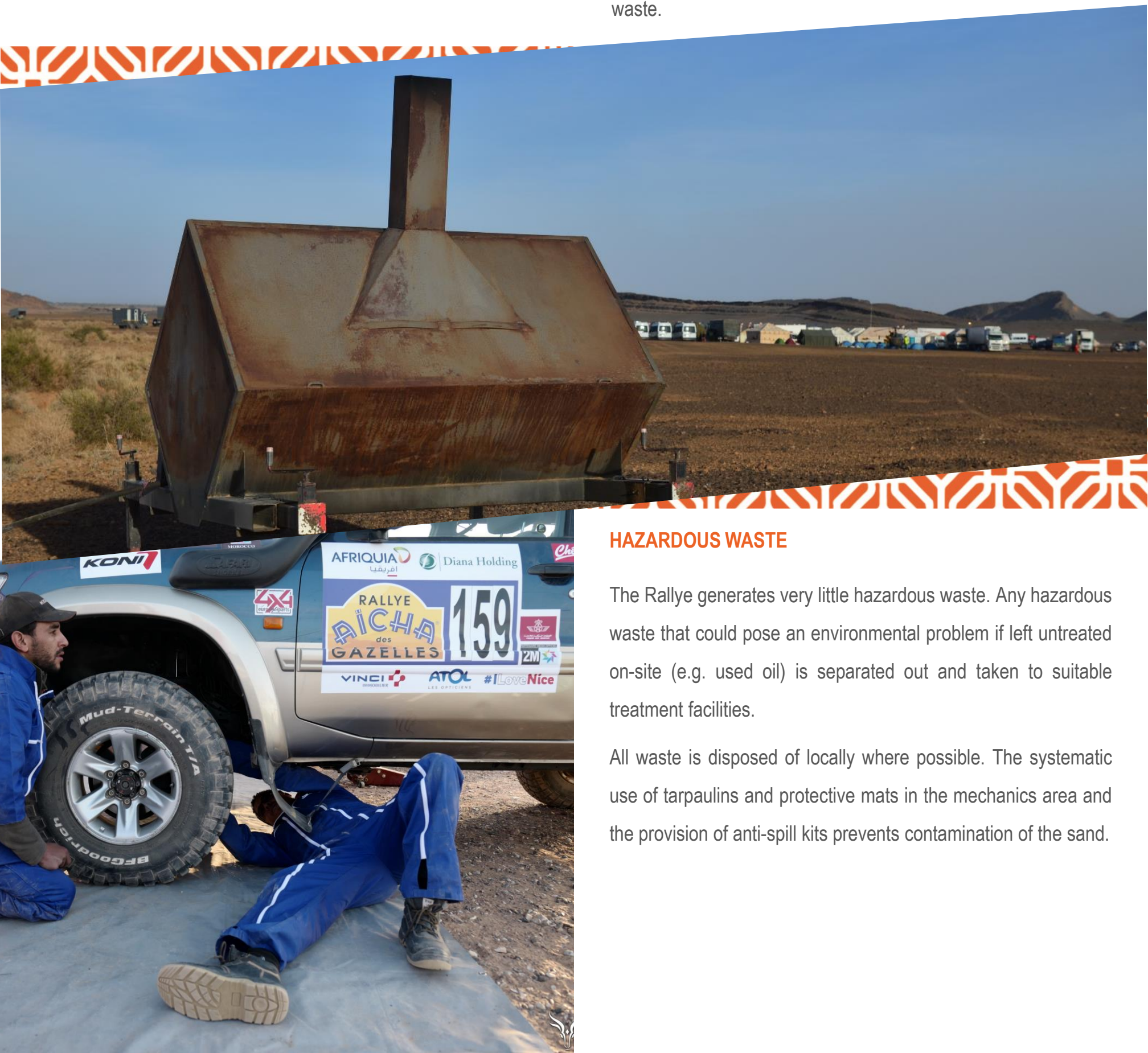
Containers for sorting and collecting waste are set up across the bivouac. Sorting instructions are posted at each sorting station and communicated to all Rallye participants at the start of the event. Sorting quality is monitored throughout the day by a trained team.

## NON-HAZARDOUS WASTE

Glass is collected by our partner Les Celliers de Meknès, bread is collected and fed to local livestock, and all other waste is incinerated on site.

## MEDICAL WASTE

Throughout the Rallye, the chief medical officer stores medical waste in a special biohazard bag which is then given to the head of the Cœur de Gazelles medical caravan for proper disposal along with the caravan's infectious and hazardous medical waste.



## HAZARDOUS WASTE

The Rallye generates very little hazardous waste. Any hazardous waste that could pose an environmental problem if left untreated on-site (e.g. used oil) is separated out and taken to suitable treatment facilities.

All waste is disposed of locally where possible. The systematic use of tarpaulins and protective mats in the mechanics area and the provision of anti-spill kits prevents contamination of the sand.



# SAVING ENERGY

## FUEL MANAGEMENT

Fuel consumption is a significant aspect of the activities of the Rallye Aïcha des Gazelles du Maroc.

The following are used:

- ◆ Diesel for vehicles, trucks and generators (electricity);
- ◆ Unleaded gasoline for certain vehicles;
- ◆ Jet A1 fuel for occasional helicopter use (request for medical intervention).

AFRIQUIA, partner of the Rallye Aïcha des Gazelles du Maroc for the past 3 years, sets up a refuelling station near the bivouac.

Each refuelling is authorized by the Maïenga logistics department, in the form of a “gas voucher” that the driver must give to the fuel attendant. All fuel distributed at the pump is recorded on a daily log sheet (vehicle concerned, type of fuel, volume). The precision of the fuel pumps is also verified every day using a gauge. Precision standards for fuel pumps at the Rallye are similar to those at filling stations. At the end of the event, CO2 emissions due to fuel consumption are calculated from daily log data.

**ALL RALLYE PARTICIPANTS AGREE TO DRIVE AT LOWER SPEEDS TO REDUCE FUEL CONSUMPTION.**

## ELECTRICITY

All light bulbs at the bivouac are low-consumption bulbs, which provide equal comfort and security and contribute to reducing the need for electric energy, thus reducing the power required from the generators (and their fuel consumption, and therefore the associated CO2 emissions)

The use of clear panels and partitions (which let sunlight through) in the restaurant tent and media tent eliminates the need for artificial light before nightfall.

In the mechanics area, all light bulbs have been replaced by LEDs since 2015.

Electricity is provided by generators whose diesel consumption is included in the fuel-related data analysis. A 150 kW/h generator is used for the bivouac. A second 100 kW/h generator is used in the mechanics area. Finally, an additional 4 kW/h generator is used periodically during bivouac transfers.

The idea of producing electricity at the bivouac from renewable energy is, more than ever, a focus of concern. This year's tests to supply the press tent with green energy produced promising results.







# REDUCING THE IMPACT OF OUR ACTIVITIES

The primary source of impact is air emissions produced by the combustion of fossil fuels by the vehicles (race vehicles, assistance vehicles, medical assistance helicopter, other vehicles: organization, transfers, press) and by certain equipment (generators, propane in the kitchen).

An examination of practices in the field has confirmed that other air emissions (dust, odours, substances that could affect the ozone layer) are extremely limited and non-persistent (bivouacs are located away from villages, outside of urban or cultivated areas). Consequently, they can be considered to be without environmental impact on the surrounding area.

Cooling systems are used solely for food preservation. These systems are maintained in such a way as to prevent any refrigerant leakage. No handling of the equipment that could cause refrigerant emissions is carried out on the site.

**TEAMS ARE REMINDED, BEFORE AND DURING THE EVENT, NOT TO USE AIR CONDITIONING IN THEIR VEHICLES.**

## QUANTIFYING CO<sub>2</sub> EMISSIONS

The CO<sub>2</sub> equivalent was selected as the main air emissions indicator. Fuel-related CO<sub>2</sub> emissions were calculated on the basis of the total quantities and types of fossil fuels used during the Rallye, from the Prologue until the end of the final leg, using documented emissions factors from the ADEME “Bilan Carbone ®” (ADEME is the French Environment and Energy Management Agency).

At this stage, only “direct” emissions produced on site while the Rallye is taking place have been taken into consideration. It would be extremely complex and too imprecise to evaluate indirect emissions, which in any event have already been counted by their emitters in certain cases (transportation to and from the Rallye, travel to Essaouira for the prize-giving ceremony, etc.).

Calculated emissions therefore correspond to all CO<sub>2</sub> produced by: the kitchen and water heaters, fuel combustion by race vehicles (competitors), organization vehicles (bivouac, transfers...), support vehicles (including helicopter), equipment (generators, etc.), and gas (propane) consumption.



PROPANE WATER HEATERS

Although propane-related CO<sub>2</sub> emissions are minimal compared to fuel emissions, propane consumption is still monitored for the sake of ensuring responsible energy use. Propane is primarily used for cooking and for heating water for showers.

Propane consumption per person is seen to have decreased this year after a significant increase in 2018. As part of our quest for continuous improvement, the method for calculating propane-related emissions has been modified and our indicators have been revised. Our goal is to include as many indicators as possible to provide a complete analysis.

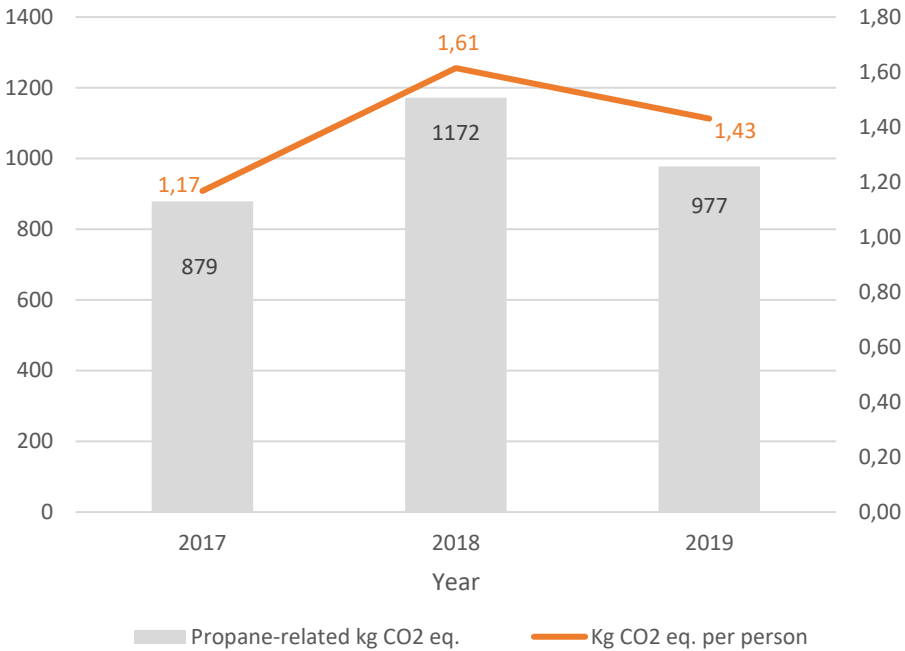
Finally, as is the case with non-potable water consumption , it is important to note that propane consumption also depends on the weather. In this case, the main reason for the decrease was the cancellation of one of the competition legs.

FUEL-RELATED CO<sub>2</sub> EMISSIONS

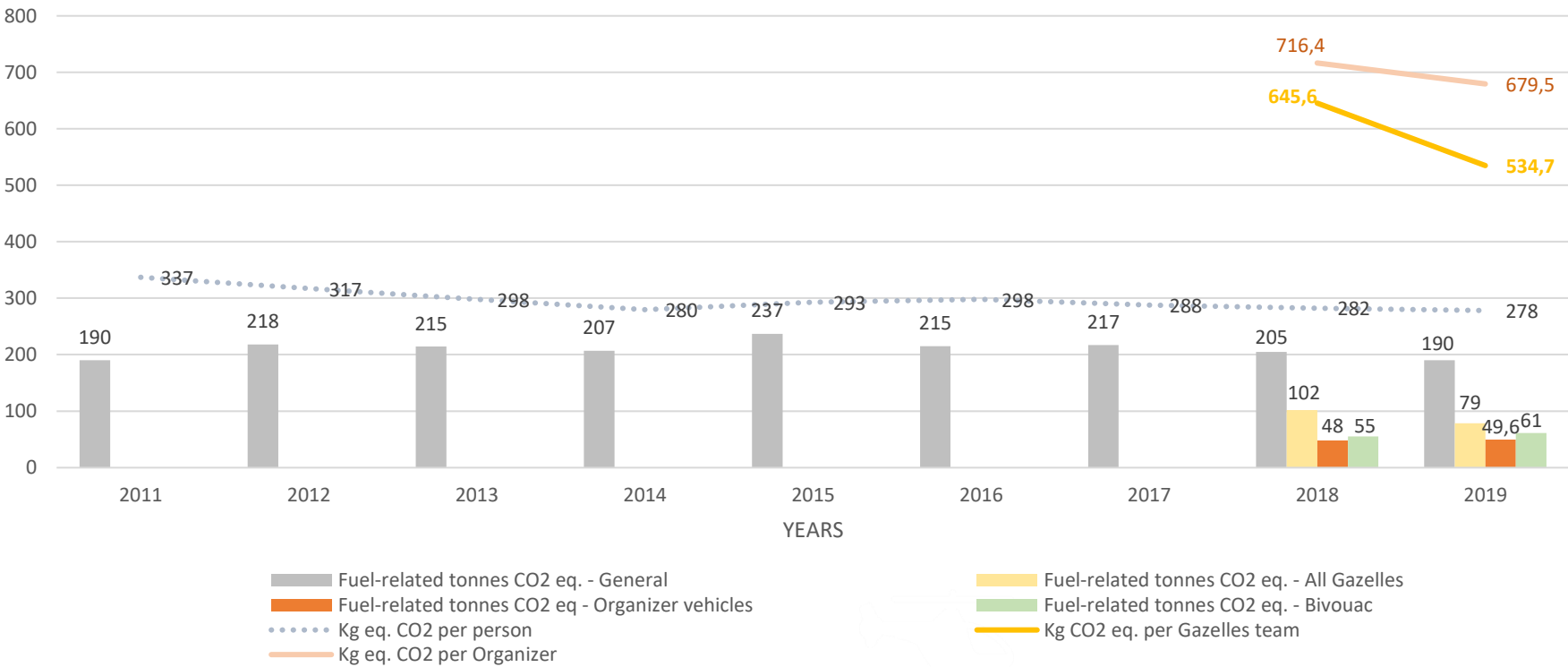
This year we decided to break down fuel consumption by category:

- Competing Gazelle vehicles (gas/diesel),
- Staff vehicles (assistance vehicles, media vehicles, CP setup crew, etc.)
- The bivouac (generators, infrastructure/logistics trucks, etc.)

PROPANE-RELATED GREENHOUSE GAS EMISSIONS



FUEL-RELATED CO2 EQUIVALENT - BREAKDOWN



2019 saw a significant decrease in global fuel-related CO<sub>2</sub> emissions. The event produced 190 T of CO<sub>2</sub> (compared with 205 T in 2018).

- Competitors running on unleaded gas or diesel emitted 79 tonnes of CO<sub>2</sub>, corresponding to 534,7 kg per team (compared with 645,6 kg in 2018).
- This year, staff vehicles produced 50 tonnes of CO<sub>2</sub>, corresponding to 679,5 kg per staff vehicle (compared with 716,4 kg in 2018).

This decrease can be explained in part by the cancellation of a competition leg, but not entirely. Every year the organization educates and reminds all participants of the importance of eco-driving.





# SUMMARY – BIVOUAC

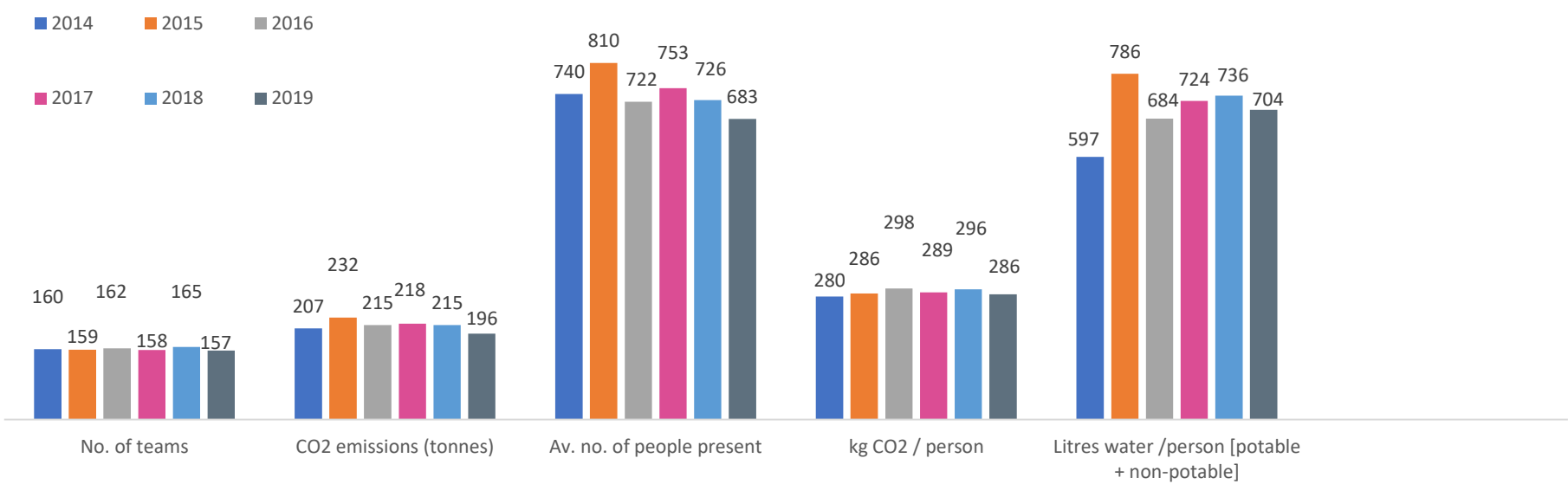
	2015	2016	2017	2018	2019
Number of teams	159	162	158	165	157
Average number of people present	810	722	753	726	683
FUEL-RELATED CO <sub>2</sub>					
CO <sub>2</sub> from diesel (tonnes)	193	185	194	184	172
CO <sub>2</sub> from SP 95 (tonnes)	33	20	17	22	17
CO <sub>2</sub> from Jet A1 (tonnes)	6	10	6	8	6
TOTAL fuel-related CO <sub>2</sub> emissions (tonnes)	232	215	218	214	195
PROPANE-RELATED CO <sub>2</sub>					
CO <sub>2</sub> from propane (kg)			879	1172	977
TOTAL CO <sub>2</sub> FROM FUEL + PROPANE					
TOTAL CO <sub>2</sub> from fuel + propane (Tonnes)			218.879	215.172	195.977
WATER CONSUMPTION					
NON-POTABLE water used (m3)	600	458	508	500	445
POTABLE water used (m3)	37	36	37	35	36
TOTAL water used (m3)	637	494	545	535	481
Quantity of water / person (litres)	786	648	724	736	704





# CONCLUSION

INDICATORS AT THE EVENT OVER 10 DAYS



Previous editions provided the opportunity to identify and verify, in the field, the Rallye’s main environmental impacts; to clarify key data to track in order to analyze environmental performance; and to contribute to actions aimed at increasing awareness. Environmental risk awareness efforts (fire, hazardous product spills) were continued to better mitigate any incidents.

The 2019 edition was marked by an exceptional occurrence: the cancellation of one of the competition legs due to weather conditions. This incident had a significant impact on the consumption of water, propane and fuel. However, it is easy to see that in 9 years the Rallye Aïcha des Gazelles du Maroc has considerably reduced its environmental impact.

As a reminder, all greenhouse gas emissions related to the Rallye Aïcha des Gazelles du Maroc (196 Tonnes) will be offset through a foundation to fund environmental projects.





This year was also marked by numerous concrete actions that illustrate our desire for continuous improvement at the Rallye Aïcha des Gazelles. These actions include:

- The Uppercut project (cleaning up plastic in the desert).
- The use of solar panels qui to supply electricity to part of the bivouac,
- An increase in the number of teams participating in e-Gazelles Class,
- An increase in the number of vehicles charged using green energy,
- An overall reduction in consumption
- The organization chose eco-friendly products such as silicone drinking cups and biodegradable toilet paper to give to participants and volunteers.

The Rallye Aïcha des Gazelles du Maroc's commitment to the environment is not limited to concrete actions at the Rallye site. Its commitment includes educating others! The Rallye shares its environmental awareness in a number of ways, including the actions of non-profit organization Cœur de Gazelles ([www.coeurdegazelles.org](http://www.coeurdegazelles.org)).

Despite a positive balance sheet, the organization has not lost track of areas for future improvement. The Rallye Aïcha des Gazelles du Maroc has every intention of continuing its efforts in editions to come. Key areas for future efforts include:

- Encourage more participants to use vehicles offering alternatives to fossil fuels.
- Increase clean energy production at the bivouac (extend the use of solar panels to other areas of the bivouac)
- Develop and increase eco-friendly initiatives.
- Continue to raise awareness of eco-behaviour among participants and encourage individual initiatives.

The organization is continuing its efforts to show that a passion for sport, reduced environmental impact and progress can go hand in hand.





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