The Environment in the Principality of Monaco

Principality of Monaco | Ministry of State

Department of the Environment



The Environment in the Principality of Monaco



Préface

Ocean acidification, the Mediterranean and the polar regions are among the key themes which, over the past few months, have prompted our discussions and action, and have brought scientists and politicians together in the Principality. The Governing Council of the United Nations Environment Programme held here was a momentous moment of the past year, during which, alongside four other lead and pioneer States, our country made a commitment towards carbon neutrality and the target of reducing greenhouse gas emissions by 60% by 2050.

Following on this theme, the "Monaco Declaration" on ocean acidification, prefaced by H.S.H. the Sovereign Prince, was recently co-signed by 150 scientists from 26 countries. At the Copenhagen Summit in December 2009, which will prepare the ground for the post-Kyoto regime in 2012, we would like the declaration to be heard by political leaders, since the chemical modification of the oceans due to the absorption of one quarter of global carbon dioxide emissions affects the marine ecosystems on which over half the world's population rely for food.

Today, views expressed in favour of the more sustainable development of our planet are developing within the international community; an increasing number of leaders are adopting the same convictions as ours in the Principality.

Each of us is gradually becoming aware of the interaction between economic and social development, resource management, the quality of life, respect for biodiversity, urban development, transportation, environmental conservation... Exploring new avenues of thought, encouraging initiatives and promoting dialogue are all examples of ways we can support a more eco-responsible society.

The financial and economic crisis which has hit the world head-on, also provides an opportunity to rebuild a more virtuous and more sustainable economy: one which respects our planet's natural balance.

In the Principality, we are currently witnessing growing awareness of these issues in support of the sustainable development of our city. The excellent results regarding selective sorting, the increased number of users of Monegasque buses and the reduction of water consumption are all encouraging indicators, which confirm the true commitment of our community.

Gilles Tonelli

Minister for Public Works, the Environment and Urban Development

MEDITERRANEE 13 juillet 2008

H.S.H. the Sovereign Prince, the French President, M^r Nicolas Sarkozy and the Egyptian President, M^r Hosni Moubarak, at the Union for the Mediterranean Summit

H.\$.H. Prince Albert II:

a committed Head of State

H.S.H. the Sovereign Prince - Champion of the Earth 2008

On Tuesday 22nd April in Singapore, H.S.H. Prince Albert II attended the opening of the "Global Business Summit for the Environment" prior to meeting 200 students at the Singapore Science Centre.

In the afternoon, the Sovereign Prince took part in the round table "advancing the climate agenda through policy,

mitigation and adaptation", before attending the "Champion of the Earth" gala evening organised by the United Nations Environment Programme. H.S.H. the Sovereign Prince received the award for Europe, for his action in favour of sustainable development. UNEP officials made reference to the work conducted in the Principality to reduce CO² emissions, as well as the international action implemented by the Prince Albert II of Monaco Foundation. After saying how honoured he was to receive the award, the Sovereign Prince called upon



all the players present to be "more inventive, clearsighted and generous and to unite their wills to save our Planet. The future of humankind depends on it."

The 10th session of the UNEP Governing Council

On the invitation of H.S.H. the Sovereign Prince, the Principality played host to the 10th special session of the UNEP Governing Council - Global Ministerial Environment Forum, from 20th to 22nd February 2008. The meeting was preceded by the 9th session of the global civil society forum on 19th February. The focus of this session was: "Globalisation and Environment: financing the transition to a sustainable low carbon economy".

In his opening address, H.S.H. Prince Albert II stressed: "The environmental crisis is worldwide. Humanity has entered a time when the fates of nations are inextricably linked. We must develop effective policies and take exemplary actions to protect the irreplaceable ecological resources of which we are guardians"... The Sovereign Prince continued:

"Even if climate change is now inevitable, in order to limit its impact, it is essential for our



H.S.H. the Sovereign Prince honoured by UNEP

H.S.H. the Sovereign Prince was presented with the Champion of the Earth award 2008 for Europe by Mr Achim Steiner, the United Nations Under-Secretary General and UNEP Executive Director at an evening dedicated to the environment in Singapore.





H.S.H. the Prince together with Spanish and Monegasque personalities in Zaragoza during the International Exhibition dedicated to water

economies to change substantially and be committed to a reduction in carbon emissions as the scientists are recommending."

In conclusion, H.S.H. the Prince affirmed "For the first time in our History, man understands that he is an inhabitant of our Planet and that as such he must think and act globally. The revolution of the consciences is underway; a universal civic conscience is being born. A new solidarity is developing, which will also be global since it is the fate of Humanity. Let us show humanism, kinship and generosity and let us not forget that nothing is as rewarding as a difficult victory when the battle depends on us."

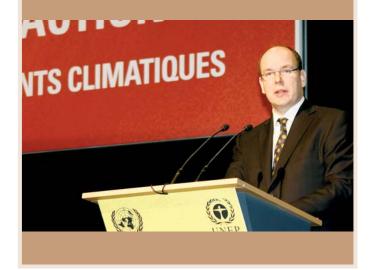
Monaco commits towards carbon neutrality and supports an initiative in favour of the Arctic

During the UNEP meeting, the Principality of Monaco pledged, alongside Costa Rica, Iceland, Norway and New Zealand, to direct its economy towards carbon neutrality by significantly reducing its CO² emissions. This UNEP initiative is intended to act as a catalyst for the transition towards a low-carbon world. Carbon emissions that cannot be eliminated are offset, for example, by funding new forests which foster carbon sequestration. Monaco, which produces one of the lowest levels of CO² in the world, has set itself the

H.S.H. the Prince opens the UNEP working sessions in the Principality

H.S.H. Prince Albert II takes the floor at the 10th special session of the United Nations Environment Programme's (UNEP) Governing Council, which was held in the Principality in February 2008, whereby he declared:

"...For the first time in our History, man understands that he is an inhabitant of the Planet and that as such he must think and act globally... Let us show humanism, kinship and generosity and let us not forget that nothing is as rewarding as a difficult victory when the battle depends on us".







For the first time in our History, man understands that he is an inhabitant of the Planet and that as such he must think and act globally »

goal of reducing this by 60% by 2050, whilst Norway intends to become climate neutral by 2030.

Moreover, the Principality of Monaco set in motion a text in support of the Arctic in which UNEP "encourages joining forces with other organisations and programmes to find ways of supporting and reinforcing observation networks beyond the IPY research phase in the Arctic" and "also beckons governments of the Arctic States and other parties concerned, both individually and collectively, to speed up the implementation of appropriate

measures in order to facilitate adaptation to climate change at every level, including by the indigenous population and other communities within the framework of cooperation underway in the region".

H.S.H. the Sovereign Prince and President Nicolas Sarkozy at the Oceanographic Museum for a round table session on the Mediterranean Sea and the Arctic.

In response to an invitation from H.S.H. the Sovereign Prince, the French President, M^r Nicolas Sarkozy, made an official visit to the Principality on Friday 25th April 2008. On this occasion, a round table moderated by renowned scientists was held in the Oceanographic Museum on the consequences of global warming in the poles and the Mediterranean.

For over an hour, experts and policy-makers voiced their opinions on the major challenges facing these two regions of the globe, whose vulnerability related to human activities and the effects of climate change are issues they have in common.

H.S.H. Prince Albert II in Zaragoza for the International Exhibition "Zaragoza 2008"

On the occasion of the Monegasque national day, H.S.H. the Sovereign Prince travelled to Zaragoza to visit the international exhibition "Zaragoza 2008" which was held in the capital of the Spanish province of Aragon from 14th June to 14th September 2008 and focused on the theme: "water and sustainable development".

After visiting the Pavilions of Monaco, France and Spain, the Sovereign Prince presided over the signing ceremony, in the Water Tribune Pavilion, of a protocol of understanding between the Prince Albert II of Monaco Foundation, the One Drop Foundation and its partners, the RBC and Oxfam, aimed at implementing a three-year project for access to drinking water in Honduras.

H.S.H. Prince Albert II at the OECD Forum

On 3rd June, H.S.H. Prince Albert II of Monaco made a speech on the first day of the Forum of the Organisation for Economic Cooperation and Development in Paris, devoted to the following topic: "climate change, growth, stability".

The event brought together policy-makers, business executives and trade union leaders, key figures from civil society and international organisations to discuss the major challenges of the 21st century.

This year, the OECD chose in particular to address post-Kyoto and the need to implement an economic framework to combat climate change. Focusing more specifically on the political dimension of the issue of climate change, H.S.H. the Sovereign Prince stressed the weight of public opinion and the importance of the role of politics in stimulating the development of technologies that couple respect for the environment with economic development.



H.S.H. the Sovereign Prince and the French President together with Messs Jean-Louis Borloo and Hubert Falco at the Oceanographic Museum

The Arctic and the Mediterranean: endangered lands

During the official visit of the French President, M^r Nicolas Sarkozy, to the Principality of Monaco, H.S.H. the Sovereign Prince asked that a round table session at the Oceanographic Museum be organised on the theme of the Mediterranean Sea and the Arctic: two sensitive regions of the globe subjected to the effects of climate change.



H.S.H. Prince Albert II at the Union for the Mediterranean Summit

On 13th July 2008 the Sovereign Prince attended the Heads of State and Government Summit for the launch of the Union for the Mediterranean, at the Grand Palais in Paris. After introductory speeches by the UfM's co-presidents, Nicolas Sarkozy and Hosni Moubarak, the 44 State representatives discussed various projects.

During these discussions, the Sovereign Prince pointed out "My country will be an active, determined and available member to support and foster this partnership which I consider of the utmost importance."

H.S.H. the Prince stressed how "the Mediterranean is our common heritage and this heritage is endangered"... "we have an urgent duty to save it".

The Prince offered to "provide the Principality's scientific resources and accommodation capacity for the benefit of this cause".



H.S.H. the Prince takes the floor at the OECD



Memorandum of Understanding between the International Organisation for the French-speaking world (OIF) and the Prince Albert II of Monaco Foundation

H.S.H. Prince Albert II of Monaco and M^r Abdou Diouf, Secretary General of La Francophonie, at the signing of the memorandum of understanding between the International Organisation for the French-speaking world and the Prince Albert II of Monaco Foundation concerning the Francophone initiative for water, on 18th October 2008 in Quebec.



H.S.H. Prince Albert II at the World Congress of the International Union for Conservation of Nature

H.S.H. Prince Albert II visited Barcelona from 5th to 7th October 2008 to take part in the UICN World Conservation Congress bringing together close to 8,000 participants and the main leaders of organisations working for environmental conservation across the globe.

The Prince, on visiting the "Oceans" pavilion declared "The sea is so important, it is a powerless but an implacable testimony of all we inflict upon it.

More fragile and less known than the land area, every day the sea reminds us of our crimes and offences towards the planet".

The following day at the conference presenting the work of the Aspen Institute's Arctic Commission, H.S.H. the Prince stated: "Rising temperatures and rising waters, pollution, threats to biodiversity: in the Arctic more than elsewhere, the Planet's ailments are visible to the naked eye, perceptible on a human scale"... "it is essential that we do our utmost to offer scientists the conditions for working effectively in the Arctic: a setting that has become a sanctuary and pristine material".

The Sovereign Prince concluded: "I hope the international community will be particularly vigilant in the management and organisation of all that affects the poles, the Arctic in particular. This is the purpose of the UNEP resolution adopted this year, a resolution to which my Foundation is proud to have actively contributed"





H.S.H. the Prince, H.E. M' Jean-Paul Proust, M' Achim Steiner, H.E. M' Jean Pastorelli at the 10th session of the UNEP Governing Council.



H.S.H. the Prince in Antarctica

Following an invitation by the scientific community, H.S.H. the Prince undertook a twenty-day voyage across the Antarctic continent, with three key objectives: to alert public opinion on the dangers of global warming and encourage the reduction of greenhouse gas emissions; to promote scientific research in the polar regions by supporting the men and women working there in sometimes extreme conditions; lastly, to recall article 2 of the Madrid protocol to the Antarctic Treaty entered into force on 14th January 1998, which stipulates that "Antarctica is a natural reserve dedicated to peace and science".





The Larvotto beach resort and marine reserve

The preservation of biodiversity: a priority

Preservation of the environment: the Larvotto beach resort and marine reserve

In addition to being a beach resort enjoyed by all, since 1976 the Lavotto has also been a marine reserve.

As such and within the framework of the Barcelona Convention, many studies on marine biocenoses are carried out on the site.

Pen shell mapping

The Department of the Environment, within the scope of its environmental monitoring mission, regularly carries out operations to control the marine biodiversity, which enables it, among other things, to assess the quality of the marine environment. As such, a mapping of pen shells present in the Larvotto Reserve was initiated at the end of 2007 and finalised in 2008. These filter-feeder molluscs, a highly vulnerable species, are protected and are good environmental indicators:



their presence is always a sign that the coastal marine environment is in good health. The study provided an accurate mapping of the pen shell population (number and area), an assessment of their state of health, and the listing of a certain number of "sentinel" individuals that will be monitored over time (growth, mortality, etc.).

Over 450 pen shells were identified across the whole Posidonia bed and will be monitored over time.

Life in the cavities of the lee breakwater.

The populations living in the sub-aquatic caves are of high ecological interest, due in particular to the intensity of the physical gradients (light, hydrological circulation, sedimentation) found there, and because of the severe fragmentation of their habitat.

The distribution of organisms, governed by these gradients, has resulted in a succession of assemblages which differ significantly depending on the distance from the entry.

A study on the colonisation dynamics of these new structures was initiated in 2004 and revealed a colonisation featuring a dominant fixed fauna, with a diversity of sponges and a biomass of ascidians, and a dominant mobile fauna of crustaceans.



Visits are regularly made to the site in order to monitor the colonisation potential.

Monacobiodiv:

A partnership agreement entitled "MonacoBiodiv" has been established for a three-year period, from 2007 to 2010, between the Principality of Monaco, the Prince Albert II of Monaco Foundation, the National Mediterranean Botanical Conservatory in Porquerolles,



Flora: 6 endemic species in the Principality

Monaco's plant biodiversity boasts 350 indigenous plants, including 6 species endemic to the Maritime and Ligurian Alps, in addition to 5 habitats presenting national heritage value. The Rocher represents the sector with the highest biodiversity featuring over two thirds of Monaco's flora species.





Fifty or so divers to take a census of pen shells in the Larvotto

the CNRS and the Paul Cézanne University of Aix-Marseille III.

The main focus of this project is the assessment, conservation and sustainable development of the biodiversity, flora and insects of the Principality's natural areas and is being carried out with the prospect of setting up an observatory for Mediterranean coastal biodiversity.

On the initiative of the Department of the Environment, around fifty divers from community groups, as well as the scientific and institutional sectors took a census of 450 pen shells in the Larvotto Reserve. A sign of the good water quality, they were listed, measured and located. They will be monitored on a long-term basis.

Entomofauna inventory

Within the scope of the MonacoBiodiv project and to follow on from the inventory of the Principality's wild flora carried out in 2006, a census of the insects living in association with the

A Brachypterus labiatus discovered during the campaign

This is a species that is generally found in the southern countries of the Mediterranean Arc.

This small beetle, associated with nettles, was discovered near the "Marie Spring" and on the glacis of the Prince's Palace.





450 pen shells identified in Larvotto

On the initiative of the Department of the Environment, around fifty divers from community groups, as well as the scientific and institutional sectors took a census of 450 pen shells in the Larvotto Reserve. A sign of the good water quality, they were listed, measured and located. They will be monitored on a long-term basis.



plants on Monaco's territory (entomofauna) was launched in 2008 for a two-year period.

The main orders to be listed are coleopterae and heteropterae (bugs). Research is focused on four sectors which still have sufficiently diverse vegetation, which in principle is conducive to insects: the "Rocher" (in particular the glacis of the Prince's Palace), by far the most favourable area due to the diversity of its flora and its relatively "wild" aspect, as well as other sectors such as the area around Porte Neuve, the Sainte Dévote valley and the Marie Spring.

A rare insect discovered

The initial results of the campaign are particularly encouraging including the discovery of a remarkable insect with the scientific name "Brachypterus labiatus". This species is generally found in the southern regions of the

Mediterranean Arc (North Africa, Spain, southern Portugal) and as far north as Corsica and Sardinia.

Signing of the Mercantour agreement

In September 2008, H.S.H. Prince Albert II,
Jean-Louis Borloo, the Minister of State and Minister
of Ecology, Energy, Sustainable Development and
Town & Country Planning of the French Republic and
M^s Stefania Prestigiacomo, the Minister of the
Environment of the Italian Republic, presided over
the signing ceremony of an agreement in support
of the Parc National du Mercantour and the Parco
Naturale delle Alpi Marittime. The two parks, which
have been twinned since 1987, carry out a large
number of joint activities.

This partnership agreement will enable four particularly ambitious projects to be developed for which, considering the environmental issues at stake, support from the Principality of Monaco and the Prince Albert II of Monaco Foundation is fully justified.

Monegasque Environment Code: the right to a healthy environment.

Interview with M^r Gilles Tonelli, Minister for public works, the Environment and Urban Development.

Will 2009 be marked by the implementation of a Monegasque Environment Code?

The Principality of Monaco's Environment Code was finalised in 2008 by the Government of Monaco with the support of the Huglo-Lepage law firm.

The objective is to have a modern, exemplary and ambitious code.

The contents of the texts referring to the environment needed to be redefined accurately, in order to adapt the Principality's prescribed policy in favour of sustainable development and ensure that it would be implemented in the most effective and modern way possible.

Today we are also able to affirm that this text incorporates the fundamental principles of international environmental law into Monegasque law. The bill has now been tabled to the National Council so that the proposed legislation can be submitted to the vote of the High Assembly prior to the ultimate phase, its promulgation by H.S.H. the Sovereign Prince.

What are the broad outlines of this text?

First of all, I think we should congratulate, as did H.E. the Minister of State when the bill was tabled, all those who have contributed to the drawing up of this complex text. A key concept prevailed throughout its preparation: the right to a healthy environment. This right is set out in a text of approximately sixty pages and one hundred and nineteen articles. It covers all the aspects relating to the protection of nature and the environment, pollution, hazards and



nuisances, and the improvement of the quality of life. The code sets out these issues in order of priority, placing prevention as the most important, followed by the duty of care. The concepts of correction and compensation for damage are then applied, if applicable: in cases where the latter is irreversible, the last resort is applied according to the polluter-pays principle.

A whole book is devoted to energy; to what purpose?

Indeed, for the first time in a code of this nature, a whole book has been devoted to energy. This completely new approach meets the obligation to formulate all public policies from now on so that they contribute towards cutting greenhouse gas emissions; the Principality has set itself the goal of reducing these by 60% by 2050.

This Environment Code, complementary to the Sea Code, thus provides the Principality of Monaco with a dynamic legal mechanism enabling it to make the tradition of the Sovereign Princes and the long-standing political will a reality. It sets out durable implementation measures for the protection and sustainable management of the environment, as well as monitoring methods and sanctions in favour of the environment and a good quality of life.

Will the setting up of an Environment Council help the State in its decision-making?

Indeed, the purpose of setting up this Council is to help the State in its decision-making with regard to environmental issues and more generally sustainable development.

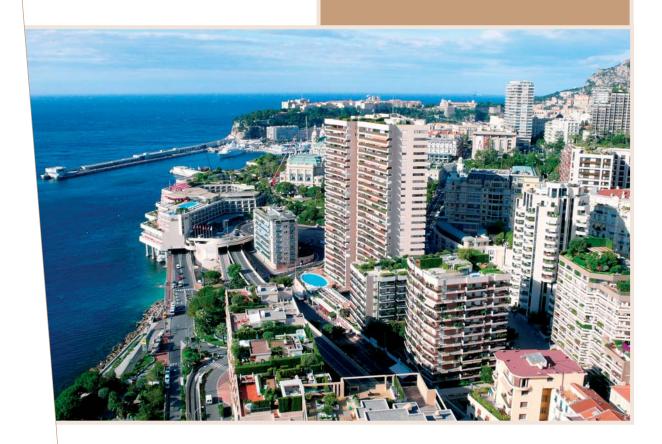
The Council will be made up of representatives of the State, organisations representing Monaco's economic, social and community life, as well as individuals specialised in

environmental affairs. I feel that it is important that all the players in our community are involved in discussions concerning the key issues which affect the quality of life in our country.



The right to a healthy environment

A text consisting of around sixty pages and one hundred and seventy-nine articles, the Environment Code covers every aspect relating to the protection of nature and the environment, pollution, hazards and nuisances, as well as improving the quality of life. Prevention, duty of care, compensation for damage and the polluter-pays principle are the top priorities for the right to a healthy environment.





H.E. Jean-Paul Proust, M' Stéphane Valérie, M' Georges Marsan, photographed with key figures from the Principality, open a section of the backroad in December 2008.

Monaco: a city State for sustainable development

Mobility and travel

The number of vehicles entering and exiting the Principality's borders every day is estimated at approximately 105,000. At the same time, we have noted a change in behaviour, since 55% of residents travel about on foot, 20% by car and 12% by public transport.

46% of individuals who enter Monaco continue their journey on foot.

Developments to the road network

The boulevard du Larvotto extension between the Auréglia roundabout and the Rainier III tunnel which leads to the "moyenne corniche" has been operational since the end of December. In March 2009 the Cap d'Ail-Monaco bound section of the backroad was opened.

Today, the road is between 60% and 70% functional. Within the next two years, the inter-district road network will have been completed. A dedicated public



transport lane (TCSP) is also planned for this major road of the Principality and will provide new solutions for the smooth flow of traffic on the east-west bound trunk road.

An increasingly attractive public transport system

Since 1st January 2007, a single ticket on the Monegasque bus network has cost 1 euro.

This pricing policy has resulted in the number of bus users increasing by almost 30% over the last two years, with figures exceeding 6,200,000 passengers, whereas between 1995 and 2006 the numbers increased by only 7.5%!

Efforts are now being focused on improving the service, by increasing the frequency of buses which, at the beginning of February, ran every 8 minutes on routes 1, 2 and 6 and every

10 minutes on routes 4 and 5. In order to achieve this, the Monaco Bus Company (CAM) has equipped itself with six new enhanced environmentally friendly high-capacity buses known as "EEV". Like all the CAM fleet, the buses are diester-powered (bio-fuel from rapeseed) and equipped with access ramps for the disabled.

Evening buses

In 2008, the night bus service transported over 8,200 passengers every Friday and Saturday evening (approximately 75 passengers per evening). In the light of the success of this weekend service, a daily "evening bus" service has been introduced in the Principality for 2009 which will follow the same route as the night bus with a departure every 30 minutes from 9 p.m. onwards, with the last bus leaving at 12.20 a.m., ensuring a connection with TER arrivals and departures. The night bus will still be available on Friday and



Unveiling of a new bus meeting EEV standards for route 5



H.S.H. the Prince and M^r Jean-Louis Borloo together with French, Italian and Monegasque personalities, unveil the first TER bearing the Principality's colours.

Saturday evenings as a continuation of the evening bus with the same timetable and itinerary as at present (a bus every hour until 4 a.m.).

Since 1st December, the electro-solar bus-boat, enabling passengers to cross Port Hercule easily, has been implemented on a permanent basis throughout the year.

The number of passengers increased threefold between 2007 and 2008 and many inhabitants asked for the service to run during the winter period.

A more frequent train service

In addition to the two trains already in service on the railway network and, three months ahead of schedule, three of the five TER trains financed by the Principality have been running since 14th December 2008. With the introduction of a new timetable, a train now passes through Monaco station approximately every fifteen minutes, both day and evening.

Urban development and sustainable development

As part of its duties to upkeep and maintain public green spaces, the Department of Urban Development (SDAU) has implemented several measures aimed at saving water, including the widespread use of automatic watering systems, the use of rain gauges, which cuts off the watering in the event of rain, and centralised watering management. Today, new work is underway; a watering system for green spaces in the Larvotto district with water recovered from the "Vallon de la Noix" and the installation of an automatic cut-off system for the water supply used to water green spaces should a leakage be detected. For several years, biological control has been used

against rosebush parasites in the Princess Grace Rose Garden, as well as in the Japanese and Saint Martin Gardens where excellent results have been achieved. Furthermore, in cooperation with INRA, a programme to combat the spread of mealybug on Seville orange trees planted as avenue trees has made it possible to stop the chemical treatment of these plants by releasing natural predators.

Biological insecticide

In a constant effort to cut back on chemical pest control, since the beginning of the year, the SDAU has been using a highly selective biological insecticide against mosquito larva, "Vectobac". This entirely biodegradable bacterial preparation is totally harmless to those applying it, nontargeted flora and fauna and domestic animals.

At the same time, the Department, which produces 800 tons of green waste every year, composed mainly of grass clippings and waste plant cuttings, has equipped itself with mulching lawnmowers in order to reduce CO² emissions and diesel oil consumption.

After being chopped into fine particles, the grass clippings are transformed into humus on the existing lawn. As far as the recycling of other green waste is concerned, the implementation of a composting platform is currently under consideration.

Eco public lighting

Energy saving also forms part of the strategic missions of this Department.

Consequently, during renovation work to public lighting fixtures, the lighting columns in Porte Neuve, boulevards Albert I and du Larvotto, were fitted with electronic ballasts.

Equipped with a dimming system to reduce the luminous intensity from 11 p.m. to 5 a.m., the electricity used by



Unveiling of the first of the five TER trains financed by the Principality

Travel and mobility are at the heart of the action implemented by the Government of Monaco. In 2008 the Principality contributed towards increasing the frequency of regional trains, which transport 14,000 passengers to Monaco every day, by providing funds to purchase five TER trains.

H.S.H. Prince Albert II presided over the ceremony to unveil the first of these five trains in the presence of M^r Jean-Louis Borloo, the French Minister of the Environment, M^s Stefania Prestigiacomo, the Italian Minister of the Environment, M^r Michel Vauzelle, President of the Provence Alpes Côte d'Azur Region, M^r Christian Estrosi, the Mayor of Nice and many key figures from the neighbouring French and Italian regions.





The new CHPG built in accordance with the HQE approach

the lights concerned during this period has consequently been reduced by 50%.

The above operations have been accompanied, among other things, by the installation of solar blister lights in the ground in order to make certain passageways or certain pedestrian walks more secure at night.

The COLAS company has developed a low-temperature asphalt concrete process with a plant-based binder called Végécol®.

After a conclusive trial carried out in December 2007 on a section of the uphill lane of avenue Princesse Grace, during renovation work to the road surface in boulevard Albert I in March 2008, this process was used for the exit slip road from the Formula 1 Grand Prix pits. Despite the passage of the racing cars, the coating did not deteriorate.

A new "noise reduction" coating, Nanosoft, was tested at the end of March 2008 on a section of boulevard du Larvotto. The coating, composed of micro-cells, absorbs the noise made by the friction of tyres on the road and a part of that made by the engine.

The results of the acoustic readings taken are conclusive; as far as perception from the immediate environment is

concerned, the sound level is divided by 2 at the minimum, and even by 3.5 depending on the position of the microphone. Moreover, the noise level inside the passenger compartment of the vehicle is divided by 6.

High Environmental Quality approach

The environmental quality of a building is its ability to meet three complementary requirements:

- to control the impact of the building on the outside environment,
- to create a comfortable and healthy environment for its users,
- to preserve natural resources by optimising their use.

For the past two years, the High Environmental Quality approach (HQE®) is systematically implemented for all State operations, such as the new technical and hotel school, the new Princess Grace Hospital, State housing, etc...



Launch of waste sorting campaign at the The Révoires School

The Révoires School, which since September 2007, has been taking part in the "eco-school" programme developed in 37 countries, was chosen for the launch of the selective waste sorting awareness campaign in the Principality in February 2008.



Controlled waste management

In February 2008, the Principality reinforced its selective waste sorting system.

Fifty or so collection points or buried containers have been installed in the various districts of the Principality in which the three types of waste are gathered together.

Three colours are associated with each category of sorted waste: Green for glass, blue for paper, newspapers and magazines, and yellow for recyclable household packaging. In addition, fifty apartment blocks in the Principality have been equipped with containers dedicated to waste sorting. The figures show a positive response for controlled waste management by the inhabitants of the Principality.

In 2007, 16 tons of paper, newspapers and magazines were collected every month. Since March 2008, 88 tons have been collected every month;

likewise, 90 tons of glass have been collected every month compared to 42 tons previously.

As far as household waste packaging is concerned, 12 tons have been collected every month ■





Solar panels on the Annonciade complex

& climate change

Energy audit of buildings

As part of its demand side management policy, the Government of Monaco has been carrying out energy audits of all state buildings since 2006.

The results obtained show that with a medium-size investment, the measures implemented in five buildings result in an energy saving every year of 2 GWh, which represents the average global energy consumption of 150 households of 4 people.

In the light of these positive initial results, the Department of State Buildings has systemised this auditing approach for buildings and has introduced the monitoring and control of energy consumption, chiefly through the transmission of data by intranet.

Solar power unit on the Charles III School

In June 2008, solar power units designed to pre-heat and maintain the water temperature of the swimming pool, as well as to provide hot water for the bathroom



facilities, completed the work to improve energy efficiency in the Annonciade school complex.

The installation consists of two solar panel systems.

The system produces a total of 125 000 kWh/year thus covering approximately 7% of the complex's gas consumption, i.e. the equivalent of the annual energy consumption of the Annonciade car park.

An initial assessment of the impact of this installation will be carried out in June 2009 after one year's operation.

Solar energy: a subsidy of 30%

Since February 2008, the Government of Monaco has implemented a subsidy policy designed to help and encourage the installation of thermal solar systems.

Aid amounting to 30% of the total cost

of the system, including the equipment and installation, is presently available after examination of the application by the Department of Prospective Studies, Urbanism and Mobility. This aid, with an upper limit of 30,000 €, and paid on completion of the work, is intended to replace fossil-fuelled heating systems by solar heating systems.

To benefit from this subsidy, applicants are required to submit an application for a work permit to the Department of Prospective Studies, Urbanism and Mobility.

Conference on acidification: the Monaco Declaration

A result of the ocean's uptake of steadily increasing amounts of man-made carbon dioxide (CO²), ocean acidification is a fact. Since the beginning of the industrial revolution, this acidity has increased



Agreement between the Principality and Veolia Environnement

The signing of a partnership agreement, aimed at providing the Department of the Environment with expertise from this company, the world leader in environmental services, for a period of one year, with on completion, the handing over of the methodology for setting up and maintaining performance indicators for sustainable development in the Principality.



Signing of the Agreement by H.E. M' Jean-Paul Proust, Minister of State and M' Henri Proglio, Chairman and Chief Executive Officer of Veolin Environment



Solar energy for the Annonciade

100 square metres of solar panels have been installed in the Annonciade complex, chiefly to provide hot water for the bathroom facilities, whilst solar sensors over an area of 160 square metres on the terrace of the roof supply part of the needs to heat and maintain the temperature of the swimming pool at 29°.

The system produces a total of 125,000 kWh/year covering approximately 7% of the gas used by the complex, saves 25 tons of CO² discharge into the atmosphere.



by 30%. However, its effects on the marine ecosystems are little known. In order to deliberate on this topic, 250 scientists representing 87 countries met on the occasion of the "2nd symposium on the ocean in a high CO2 world" placed under the High Patronage of H.S.H. Prince Albert II, which was held from 6th to 9th October 2008 in the Oceanographic Museum of Monaco.

This event, bringing together international experts to the Principality, provided the opportunity to assess future scenarios of ocean acidification, and that of previous geological epochs, the mechanisms of calcification, in addition to the impact of acidification on marine organisms.

Drawn up following this symposium, the "Monaco Declaration" prefaced by H.S.H. Prince Albert II and co-signed by 155 scientists from 26 countries, was published at the ASLO Aquatic Sciences Congress which took place in Nice at the end of January 2009.

Commitment towards the two polar regions

In May 2008, the Principality of Monaco became the 47th signatory country of the Antarctic Treaty and on 9th and 10th November 2008, the French Presidency of the Council of the European Union and the Principality of Monaco co-organised an international conference entitled "The Arctic:



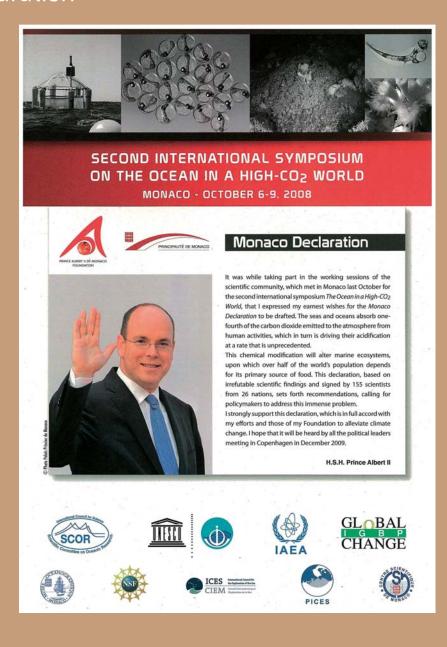
H.S.H. the Prince and M^r Jean-Louis Borloo at the Arctic Conference in Monaco



Ocean acidification: The Monaco Declaration

The Monaco Declaration, prefaced by H.S.H. Prince Albert II, is aimed at drawing the attention of political decision-makers to the implications of ocean acidification and encouraging research efforts in this field. It calls for immediate action to reduce CO² emissions in a resolute manner in order to prevent physicochemical modifications to the oceans causing extensive and serious damage to the marine ecosystems on which over half of the world population's survival depends.

Drawn up following the Second Symposium on Ocean Acidification, which was held in the Principality from 6th to 9th October 2008, the "Monaco Declaration" co-signed by 155 scientists from 26 countries, was published at the ASLO Aquatic Sciences Congress which took place in Nice at the end of January 2009.



an observatory to meet the challenges of environmental change", which was held in Monaco. This event brought together over 230 participants and included, alongside the ministers and representatives of the countries concerned, experts from the international scientific community and individuals involved in this issue.

Along the same lines, an international meeting of experts, under the aegis of UNESCO, took place from 3rd to 6th March 2009 on the instigation of Professor Jean Malaurie, the UNESCO goodwill ambassador in charge of Arctic polar issues, the purpose of which was to pinpoint any deficiencies in existing knowledge and to identify the main scientific, social, cultural and educational challenges to be met in order to ensure the sustainable development of the Arctic.

In January 2009, on the invitation of the international scientific community, H.S.H. Prince Albert II undertook a 17-day voyage across Antarctica, punctuated with visits to around fifteen polar stations.



H.S.H. the Prince and Joël Savarino, a glaciologist at the CNRS

This Antarctic mission had three main goals:

- to alert international public opinion to the dangers of global warming and encourage the reduction of their greenhouse gas emissions;
- to promote scientific research in these polar regions by supporting the men and women working there in sometimes extreme conditions;



H.S.H. the Prince and Professor David G. Ainley, a specialist of the Adélie penguin



• to recall article 2 of the Madrid protocol to the Antarctic Treaty, entered into force on 14th January 1998, which stipulates that "Antarctica is a natural reserve devoted to peace and science"

« the North Pole and the South Pole are vital for the balance of our extremely fragile planet » H.S.H. Prince Albert II



Regional & international cooperation,

and sustainable development

Activites conducted by the Office of International Cooperation in the environmental field in 2008

In 2008, 18% of appropriations entered for field work, i.e. 430,000 €, concerned action for environmental purposes under the denomination "Preservation and development of natural resources".

Within this context, the Monegasque

Cooperation endeavours to place the local populations at the centre of its concerns, in particular with regard to their economic development.

Action is therefore focused on the rural environment where the exploitation of natural resources represents the main means of subsistence for the population and enables certain regions to develop their tourist appeal. In this respect, the Monegasque Cooperation strives to: Combat desertification by rehabilitating over 450 hectares of palm groves in Morocco and Tunisia and



restoring degraded cultivable land in the Sahel (over 1,000 hectares to date).

Develop services for access to drinking water and sanitation by constructing wells in Mali and Ethiopia to benefit 18,000 people and creating sanitation networks in Mozambique.

Water points

Furthermore, access to drinking water is systematically included in all programmes for building and fitting out healthcare centres and schools. Consequently, over 150,000 people now have access to a water point in the isolated rural areas of Morocco, Burkina Faso, Mauritania and Madagascar.

Develop an environmentally-friendly urban setting through the promotion of urban green spaces in Tunisia with the support of the Principality of Monaco's Department of Urban Development (SDAU).

Study urban pollution by supporting the development of an air pollution monitoring network in Morocco.

Preserve biodiversity and promote the development of protected areas in Bulgaria, Croatia, Slovenia, Madagascar and Mozambique.

Reforest degraded areas in Lebanon where a programme has resulted in the reforestation of several hundred hectares of forest since 1993.

Solar energy

In addition to these fields of activity, the development of renewable energies and the reduction of greenhouse gas emissions are an overarching theme of the Monegasque Cooperation's activities: electricity supply to facilities such as community clinics and schools in remote areas is provided through the use of photovoltaic solar energy.



Action undertaken by the Monegasque Cooperation is achieved primarily in cooperation with local partners: Technical Ministries, Town Councils, Non Governmental Organisations, United Nations sub-regional Agencies, etc.

Other activities have been carried out in partnership with Monegasque NGOs working in the field of the environment such as Monaco Développement Durable (Mc2d) and Act For Nature.

Two Monegasque "students on ice

As part of the environmental and sustainable education programme conducted in Monaco by the Department of National Education, Youth and Sport, two students from Monaco, Benjamin Tur

and Elsa Milanesio, aged 16 and 18 respectively, were chosen to take part in "Students on Ice" from 2^{nd} to 17^{th} August 2008.

This boat expedition organised by the Canadian Ministry of Education sailed along the Arctic Circle on the occasion of International Polar Year. The two Monegasque winners were selected following a competition comprising two categories, "Open letter" and "Photographic diptych", which was open to all lower sixth form students in the Principality. Elsa won for her photos featuring Monaco harbour and Benjamin for his "Open letter to George Bush". Thanks to the support of two sponsors, M^r de Montigny and the President of the Compagnie Monégasque de Banque, Etienne Franzi, on 2nd August 2008, the two students embarked on a 15-day adventure to the Arctic with 73 other young students of all nationalities aged between 14 and 19, and accompanied by over 30 scientists and educators. The expedition programme included exploring the fauna, flora and populations living there so that the students would gain sufficient knowledge of the impact of climate change and that they would be able to transfer this knowledge to their classmates via a blog and a log book.



10th Alpine Conference

A Monegasque delegation took part in the 10th Alpine Conference in Evian on 12th March 2009, which was preceded by the 40th meeting of the Permanent Committee of the Alpine Conference on 10th and 11th March.

The Alpine Convention is the first Convention for the protection of a mountain region.

Its purpose is to ensure the protection and sustainable development of the Alpine chain with the aim of conserving the natural ecosystem.



The two winners of "Students on Ice" photographed with key figures from the Principality

Signed by Austria, the European Union, France, Germany, Italy, Liechtenstein, the Principality of Monaco, Slovenia and Switzerland, the Alpine Convention concerns an area of 190,600 km² populated by 13.6 million people.

The framework convention, which defines the basic principles of all the activities of the Alpine Convention, covers a wide range of subjects including regional planning and sustainable development, nature conservation, mountain farming, soil conservation, tourism, energy and transport.

The topics discussed during the debates at these meetings included: the implementation of an observation and information system for the Alps, the activities of the Alpine Network for protected areas, international mountain partnerships, transport, as well as climate change in the Alps and the state of Alpine water



An agreement signed for natural parks

The Principality of Monaco, the Prince Albert II

of Monaco Foundation, the Parc du Mercantour and the Parco Alpi Marittime, have signed a partnership agreement, the purpose of which is to improve knowledge of biodiversity in this natural area, to promote its exemplary management, in particular with regard to sustainable tourism and to promote the sharing of experiences. H.S.H. Prince Albert II, photographed with M^r Jean-Louis Borloo and M^s Stefania Prestigiacomo, the French and Italian ministers of the environment, presided over the signing ceremony at the Ministry of State, in the presence of H.E. the Minister of State. The agreement was signed for the Principality by Mr Robert Calcagno Minister for Public Works, the Environment and Urban Development, for the Prince Albert II of Monaco Foundation by H.E. M^r Bernard Fautrier, Vice-President and Chief Executive Officer of the Foundation, for the Parc du Mercantour by M^r Gaston Franco, Chairman of the Board of Directors and Pierre Commenville, acting Director, and for the Parco Naturale delle Alpi Marittime by M^r Gian Pietro Pepino, President and M^s Patrizia Rossi, Director.



Charly Gallo - Centre de



H.S.H. the Prince and Mrs Jane Goodall open an exhibition dedicated to great apes

Raising the awareness of Monegasque

Exhibitions at the Galerie des Pêcheurs

The gallery, located at the exit of the Pêcheurs car park, has become a venue for exhibitions and for raising awareness about environmental matters in the Principality.

Admission to this unique gallery is free with no fewer than 5,000 visitors passing through every day.

From 10th June to 20th September 2008, the Jane Goodall Institute France and the Prince Albert II of Monaco Foundation hosted an outstanding exhibition in the gallery, created by the Natural History Museum in London and featuring thirty huge portraits of great apes.

Photographed by James Mollison, the portraits are testimony to four years spent travelling to various sanctuaries and zoos in many African, Asian and European countries, where orphan primates,



the victims of poaching and having undergone great hardship, are taken in. The exhibition, full of feeling and entitled "Face to Face" was aimed at making the visitor reflect on the way we think of and treat great apes.

Following this first exhibition, a display of images taken by the biologist Laurent Ballesta during his dives to a depth of 150 metres offered visitors the opportunity to experience a unique journey from the tropical seas to the Polar Seas

3rd Ever Conference and Exhibition

The 2008 EVER event, dedicated to ecological vehicles and renewable energies, was held in the Principality from 27th to 30th March 2008. Organised in the Grimaldi Forum by the Association MC2D and the Miti company, this event, with free admission to the public, provides visitors with the opportunity to discover the latest technical innovation in the renewable energy and clean mobility sectors.

At the heart of the exhibition, the latest breakthroughs made by the car industry regarding ecology are presented; other areas are dedicated to component manufacturers, lorries and buses. In 2008, EVER Monaco dedicated a specific area to two-wheels.

The exhibition not only offers the visitor the opportunity to try out certain models on display free of charge during the "test drive





A carob tree for the planet

As a sideline to the UNEP meetings in the Principality of Monaco, H.S.H. Prince Albert II, M' Achim Steiner, the Executive Director of UNEP and M^s Margareth Koli representing D' Wangari Maathai, Nobel Peace Prize winner, planted an olive tree, an Australian beefwood tree and a carob tree, Monaco's national tree. A token gesture within the scope of the "Plant for the planet: the billion tree campaign".

sessions" but also to take part in forums, round tables and debates open to the public and moderated by experts on various topics ranging from bio-fuels to the issue of the urban tolls.



The Monaco Scientific Centre: Research and Environment

Are the coral ecosystems bio-indicators of climate change?

To determine the biological mechanisms at the root of the functioning of the marine ecosystems sensitive to climate change: this is one of the missions of the Monaco Scientific Centre, a research organisation with the status of an independent public institution founded by Prince Rainier III in 1960.

Although changes to our environment, and in particular the increase in the global temperature, affect all the ecosystems of our planet, certain effects are more visible than others, such as the phenomena of coral bleaching in the tropical environment and the mass mortality of gorgonians and other marine invertebrates in the Mediterranean. But how can we use these incidents as bio-indicators if they are not understood?

For almost 20 years, scientists from the C.S.M. have been studying the physiology and ecophysiology of the organisms at the heart of these ecosystems: cnidarians (corals, gorgonians and red coral).

Biomineralisation

The functioning and growth of the latter depend on two key biological processes, biomineralisation, namely the process by which organisms form their skeleton, and for some, symbiosis between the animal and a unicellular algae, zooxanthella, which enables this ecosystem to function and achieve the marine equivalent of the primary forests, providing a habitat for over 30% of all marine fauna in less than 1/50th of the ocean surface.

Thanks to the combined research of its two teams capitalising on their complementary approaches, the C.S.M. has become a global benchmark laboratory in biomineralisation and symbiosis studies, from the ecosystem level to the genus level.

The effects of the temperature, U.V. rays and nutrition have been meticulously examined under perfectly controlled laboratory conditions in order to understand their action mechanisms. The experience gained by the C.S.M. in the field of biomineralisation now enables it to address another threat hanging over the coral ecosystems: ocean acidification. The current challenges faced by scientists at the C.S.M are to understand how acidification inhibits coral calcification and to determine if adaptation possibilities exist for corals.



A branch of acropora observed under the microscope



A coral head in the Red Sea



H.S.H. the Prince, Ms Sylvie Biancheri, Director of the Grimaldi Forum and Mr Massimo Bosco from the Det Norsk Veritas certification centre

Green approach by signing a charter of eco-responsibility whereby they agree to limit their consumption of water, electricity, paper print outs, to sort their waste and to purchase eco-label products.

The Ecole Bleue

The Ecole Bleue is a Monegasque association whose purpose is:

 to raise public awareness, and in particular that of children over the age of 8, of the need to protect the coastal and seabed environment through education and prevention;

Monte Carlo Société des Bains de Mer and sustainable development

Monte Carlo SBM adopted a five-year charter in 2007 based on 23 concrete measures for a more global sustainable development policy.

After the first eighteen months, the Monte Carlo SBM Environmental Charter showed extremely encouraging results, demonstrating the exceptional mobilisation of the group's staff and economic partners.

Grimaldi Forum Act Green

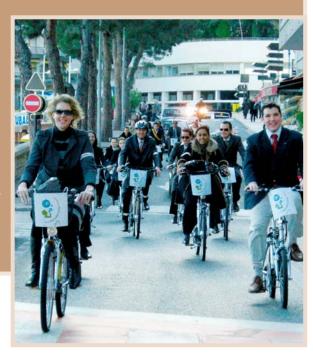
The Grimaldi Forum Monaco, which received ISO 14001: 2004 certification on 15th October 2008, is pursuing an environmental approach in favour of a more eco-responsible events industry. The Principality's congress and cultural centre is environmentally friendly both as far as its constructional design and daily activities are concerned. Not only its staff, but also its service providers and suppliers, have all adopted the Act



Electric bikes for everyone

On the sidelines of the EVER Exhibition and Conference, the Junior Chamber International of Monaco organised an electric bicycle ride across Monaco. In 2007, the JCI was behind the idea of implementing a Charter on Monegasque Corporate Social Responsibility. The charter, signed by 79 companies and associations, is a ten-point code of conduct designed to provide guidance for companies, associations and institutions in the Principality who wish to set up a "sustainable development" approach.

- to cooperate with all organisations, associations and confederations involved in protecting the sea environment, as well as developing scuba diving;
- to define the subject matter of educational and training programmes; to produce documents and teaching aids to promote education;
- · to steer children and new divers towards exploring the Mediterranean fauna and flora, using every approach possible (water rambling, boat rambling, hikes, educational lessons, scuba diving etc...);
 - to help prevent accidents by establishing safety regulations and supervisory standards for scuba diving and water rambling.



Arty Ecology

The "Arty-Ecology" association, established in the spring of 2007, stemmed from the idea of uniting art, ecology and humanitarian action: Ecofuturism. Its purpose is to organise ecological action of a humanitarian nature, using artistic creativity as a means of expression. Its activities are aimed at raising awareness, first and foremost that of children, of the urgent need to address the ecological and human issues of the planet.

Website: www.arty-ecology.com

Act for Nature

Act for Nature was founded in 2004 under the aegis of H.S.H. Prince Albert II. Its mission:

To take action in support of the conservation of animal and plant species under threat of extinction and which feature on the World Conservation Union's (UICN)



H.S.H. the Prince on visit to the Monacology village

"red list" of endangered species.

Boasting a professional and multi-talented team, Act for Nature is involved in conservation assignments and setting up projects.

By funding activities in the field, it helps to get the local populations involved in protection measures and make them aware of the importance of respecting the heritage of their regions. It supports and provides the necessary resources for experts involved in long-term conservation programmes for animal and plant species threatened with extinction. In agreement with research institutes, in situ and ex situ studies are financed and coordinated by the association. As part of its efforts to raise awareness, Act for Nature,

in partnership with Stars'n'Bars, has been organising since 2005 the Monegasque Environmental Awareness Week, MONACOLOGY, which was expanded in 2008 with the first edition of the International short film Festival on ecology, the environment and sustainable development.

Website: www.actfornature.org

🚁 A man of peace in the Principality

In late November 2008, Muhammad Yunus, the 2006 Nobel Peace Prize winner and a member of the Prince Albert II of Monaco Foundation, took part in a conference in the Principality and attended, alongside H.S.H. the Prince, an evening designed to raise funds for the benefit of Nobel Prize activities.

The initiator of microcredit for farmers in 1976, Muhammad Yunus set up the Grameen Bank, which now has 7.5 million borrowers, including 23,000 students.



The JCI Sustainable **Development Award**

In 2007, the Junior Chamber International of Monaco created the Charter on Corporate Social Responsibility, the goal of which is to encourage Monegasque companies to work for the sustainable economic development of the Principality.

The 10-point text, drawn up in conjunction with the country's main institutions, has since been signed by approximately 80 companies and associations, of all sizes and from all sectors of activity. The signatories agree to submit an annual report on their activities in favour of sustainable development.

The J.C.I.M was keen to acknowledge the efforts of such companies by creating the "Sustainable Development Award" in 2008.

- · "Large company" Award: The Fairmont Monte Carlo
- · "Small company" Award: Bureau Veritas Monaco
- · "Jury's Choice" Award: Enoleo

To join the Charter on Corporate Social Responsibility:

www.charte-rsm.org or jcemonaco@jcemonaco.mc

