



Time for action

Towards another acceleration

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FinX
EDITIONS

TIME FOR ACTION

Towards another acceleration

PREFACE



Loïck Peyron, a word from the godfather

Solo navigator, I was able to get close to the essential.

I learned to respect. Myself, nature, the others.

Respect for what we do, what we think, what we say or do not say.

Respect for the opinions of others, no matter what wrongs one could possibly attribute to them.

I learned to dare. Dare to try, to fail and start over again. Dare to care.

Most importantly, I learned how to measure efforts. Essential subtlety.

Today, I am very proud to give my support to FinX, a start up inspired by underwater life.

FinX is one of the hopes that can change the world, like a drop of water that will participate in the birth of rivers.

FinX is the intelligent bio-inspired combination of doing better, with what nature has to offer.

Sorcerer's apprentices, predatory mammals capable of the worst as well as the best, we must sweat ecology and not just dedicate a ministry to it.

It is up to mankind to make an unwavering prose of it.

LOÏCK



Harold Guillemin, the Founder's vision

Driven by a passion for boating and a real concern to find new forms of energy, we at FinX are proud to participate in the emergence of a more responsible, bio-inspired, nautical mobility.

FinX is the French finned-nautical propulsion of the future, electric, with no propeller. Cleaner, safer, quieter. FinX is also the story of a team passionate about biomimicry. I've been convinced since my teens that the best way to preserve nature is to be inspired by it. Just observing the movement of marine animals is enough to realize the obvious: if they can get around by moving their fins, why wouldn't boat engines be able to do it too?

An engineer by training, I spent 6 years working in industrial and medical pumps with undulating membranes before starting this project. This disruptive technology, developed by Wavera and backed by 15 years of research and numerous international patents, is fascinating and promising. I wanted to apply it to boat engines.

Quickly, FinX was able to unite around its ambitious project, many recognized players in the nautical world, all convinced that this technology will accompany the beginnings of a major revolution in this industry.

FinX came to life in June 2019, driven by a very high-level Advisory Board and by Loïck Peyron, its godfather, renowned ambassador and exceptional sailor.

I want us to be the architects of a more responsible mobility, which allows us to cohabit serenely with nature. While bio-inspiration is beginning to dawn, the bio-inspired nautical industry is still in its infancy.

The period that humanity is going through is an accelerator of consciousness. We can turn it into an ode to the living. The ardent desire to live in a better, gentler world must never cease to inspire us.

For tomorrow. For nature. For us.





*Alexandra Corsi Chopin and Eugénie Guillemain,
the initiators of BaseX*

FinX came into being in June 2019 with the desire to take an active role in the ecological transition of the nautical sector. A year later and in the context of the global health crisis of early 2020, FinX launched its think-tank BaseX.

Great upheavals are followed by great changes. We are convinced that planetary changes are great development opportunities. By echoing the growing forest and the raising awareness of tomorrow's challenges, BaseX must spread the FinX message loud and clear and far beyond boat engines.

Time for action - Towards another acceleration is the fruit of many exciting discussions - for several months, we gave a platform to personalities, mostly French, who generate positive changes, working for a more desirable future, driven by love for the planet, acutely aware of our interdependence with biodiversity and concern for the common good. Countless initiatives exist. Full of exciting prospects and promises, they outline our future.

We are contemporaries of a mutating, restless, complex and fascinating era. Doesn't humanity's state of health resonate with the suffering we have inflicted on planet Earth? 2020 was an accelerator of consciousness for a humanity touched at its existential foundation - we must learn once again to cherish the Earth. The unprecedented battle that we need to wage for the preservation of the climate must be won. It conditions all the others.

FinX propels the boat, BaseX invites you to come aboard.

ALEXANDRA AND EUGÉNIE



All interviews were conducted between May 2020 and June 2021.

INTERVIEWS



*“Tomorrow will emerge from what
we decide to develop out of the present.”*

ALAIN RENAUDIN

***“The world after exists,
it is 3.8 billion years old”***

Interview with Alain Renaudin

Alain Renaudin is the founder of Biomim'expo, Chairman of NewCorp Conseil and member of the FinX' Advisory Board. Considered one of the emblematic figures of biomimicry in Europe and guided by this discipline dear to his heart, he asks questions around a vast, major and global subject: The individual facing up to his responsibility for the climate.



Alain Renaudin

FRANCE

“It is urgent for humanity to recreate a bond with nature, urgent to cohabit in harmony, urgent to reconsider it.”

Passionate about and expert in biomimicry, you say that we must take as a model what has been proven for 3.8 billion years - the living. Today is no longer the time for “why” but the time for “how”. Can you explain?

Homo sapiens sapiens is a proud and pretentious species that doesn't like to be exposed to problems to which it doesn't have the solution. By warning instead of proposing solutions or only just simple ones, we maintain anxiety. The result is psychological denial. In this invitation to

move from the why to the how, it's about reconsidering the place of humans within their biotope and their ecosystem.

Tomorrow will emerge from what we decide to develop out of the present. For 30 years, we've done a lot of teaching about why we have to change, why we're heading for disaster, etc.

I've been working on CSR & sustainable development issues for 20 years. Through biomimicry, we finally move from teaching the why to teaching the how - by no longer considering nature/ecology/bio-

diversity as a problem but as a solution. And changing the way we look at things changes everything. Sustainable development has for too long been seen as a quest for the holy grail. It has actually existed for 3.8 billion years, let alone for hundreds of millions of years (to speak of species and their lifespan). The good news is that humans don't need to invent sustainable development; they just have to get inspired by nature! This shift from the why to the how is one of the levers that explains the success of biomimicry. It's an enlightening, inspiring pedagogy, which tells us that what surrounds us is a source of solutions. Nature is our ally and the living are a toolbox on different scales. To reconsider ecology is to reconsider ourselves. We need solutions more than findings. We die from findings - reports, audits which often tell us what we already know. The question is "what now?"

You explain that humanity won't save nature. It's the planet that will save humanity. However, humanity has to face and assume responsibility for preserving nature. Can you explain this choice of semantics, which conditions your entire thought and work process?

Our interdependence is living proof that the planet will save the human species, on condition that the latter gets back in osmosis and harmony with the entire living ecosystem that surrounds it.

Humans have a moral duty, they must

protect ecosystems. We're right to say that they must and can act positively to protect biodiversity. When we implement regenerative actions to protect biodiversity, it works. If you change the behavior of millions of motorists, you'll see the level of carbon dioxide in the air decrease. Humans can take positive, effective protective action relatively quickly. But we're also right to say that on a long timescale, biodiversity doesn't need humans to fare well and better.

Life is an evolution. Over hundreds of millions of years, what we know about biodiversity today hasn't always been so. There haven't always been polar bears, nor have there always been forests, pangolins... On the scale of 3.8 billion years and projecting over the next 3.8 billion years, polar bears and pangolins will be extinct, while others will have arrived. Over an extremely long timescale, we're only very little. We must let biodiversity carry on with its life and stop interfering with getting the world's balance right.

What's the best way to protect the human species?

Let's get out of this anthropocentric vision of thinking that humanity is the future of the world, including the world of biodiversity. This anthropocentric vision is, over the long term, ridiculous. Life started without us. It'll probably continue without us. Anyway, it doesn't need us. This doesn't exclude the fact that we can act positively. The best way to protect the human species

as a species is to develop a beneficial symbiosis with the entire biotope.

What lessons have you drawn from the Covid-19 pandemic?

The current crisis is only a revealer that crystallizes ancient phenomena. Everything doesn't start with Covid-19, and the world that comes after shouldn't be invented ex nihilo. Tomorrow's desired world has already been initiated, now it has to be accelerated.

We're truly aware of our community of destinies as a species. This is probably a first in the history of mankind. Humanity's always developed through aggressive conquests. Confrontation has always been either religious, military or economic. Here, we have no enemies which brings out our animal instinct again. We realize that we're fighting in a schoolyard. The school's crumbling around us and eventually it'll collapse on us. No winner will come out of it. The school will be born again, but not us, because of our self-centered vision. We must stop the killing actions because in reality we're shooting ourselves in the foot. That's what Covid-19's been teaching us, it's a backlash, a call to order.

This pandemic also reveals that climatic and ecological issues have moved in closer to us on a spatial and temporal scale. They no longer concern future generations, but ours. They no longer concern distant lands, but ours, today, at home. They no longer concern the children of

distant populations. I'm the one, here at home today, who's affected. Air pollution, one of the main causes of death, was until now one of the indicators of these issues. It'd drawn closer to all of us, everywhere, but remained insidious, indirect and slow... whereas Covid-19 is swift, identified, named without a debate.

Our future's closely linked to the future of everything else. Taking care of the planet is taking care of ourselves, and taking care of humanity. A healthy planet is capable of saving humanity.

What do you think of the political actor?

We lack real projects for society. Politically, we've had more rejection campaigns than projection ones. But things are changing. Large expert bodies such as the IPCC and IPBES (Science and Policy for People and Nature) must increasingly become political actors, in the noble sense, managers of the common good, forces of proposals. To propose is to expose yourself. It means making choices, it means prioritizing. It's complicated. We cannot adapt without changing. And change means suggesting solutions to live differently.

Economic actors are fundamental. What does the concept of corporate responsibility imply?

We have to reconsider the models, and encourage them. I don't subscribe to the easy speeches we often hear which consist of saying, or even asserting, that compa-

nies are just doing a lot of greenwashing. I don't say that but rather I ask for the demonstration which gives a detailed analysis of the sustainable development reports of a large number of corporates (audits, etc.). It's too easy, especially today, because nobody will contradict you. It's far more complicated to prove otherwise. Of course, much remains to be done, but it's better to encourage than to discourage, for our common good. Be critical, of course, but be constructive.

For a number of years, I've considered companies as the new political actors in our societies, in the sense of management of the common good, for a fairly simple reason - the impact and the leverage effect are today much more on the side of the socio-economic sphere than on the side of the political sphere. Of course, the political sphere has the power to legislate, and should propose a project for society. The one who acts and can act is principally the economic actor, associations, citizens. Over the past 50 years, this economic actor has greatly benefited from non-virtuous actions as developing an economic model. Today, it realizes that this isn't sustainable and appreciates that it can benefit much more from virtuous actions. Starting with the sustainability of the economic model: it's no longer sustainable to waste the resources you use to manufacture your products. For human reasons too - in terms of the attractiveness of the employer's brand, in terms of the ability to appeal to a project, in terms of mobilizing the internal

resources and in terms of a message to the stakeholders (including shareholders).

Even if it does mean being a little provocative, I've been developing and advocating to perpetuate these activities for 20 years, not just through philanthropy or patronage but making the "sustainable development of interest" a profitable asset for a new economic paradigm. It's much more powerful today to subscribe to virtuous action than to harmful action. This dynamic of "positive resonance" is underway. Overall, we're going in the right direction.

When did you say to yourself "I have to face my responsibility for the climate?"

I've always been very curious and sensitive to the world around us. But there was a click, the famous Johannesburg Summit in 2002, during which Jacques Chirac said, "*Our house is on fire and we are looking elsewhere*". At that time, I was beginning to sense that something was going on. As the words "sustainable development" were beginning to appear in the public debate, we saw a first generation of "Mr. and Mrs. Sustainability" appear in the large corporates. The beginning of the 2000s corresponded to the new NRE laws - the obligation for listed companies to report on their impacts. That's when one wonders whether economic development is sustainable in relation to the resources it requires.

When did you discover biomimicry?

I discovered biomimicry when a few of us created the CEEBIOS (Center for Studies and Expertise in Biomimicry). I found it a shame that the community revolving around sustainable development didn't know this approach, which is truly one of the ways of the future. Beyond the technological and scientific aspects, it provides philosophical and political answers.

The first mass effect of biomimicry isn't due to a disruptive technology that would completely overturn an industrial sector, but to a proposed change of outlook on living things, a 180-degree reconsideration of the environment. The mass impact of biomimicry is first and foremost cultural. No one comes out indifferent, because biomimicry also awakens a pre-conscious evidence in each of us - nature is great, it's beautiful, we love it and cannot do without it.

Of course it's great to talk about a beetle – to describe its size, weight, what it feeds on, the environment it lives in. But if you actually continue the story by explaining that it has a shell allowing it to harvest water in the desert; that it has elytra that fold in such a stupendously sophisticated way etc., then you re-enchant the discourse on biodiversity and you create semantic bridges. When an entomologist describes an insect by continuing the story; telling you that it's able to self-regulate its temperature; that it has a structural coloring on its wings which is otherwise antibacterial

and hyper-hydrophobic, then the entomologist talks to the engineer, the biologist talks to the chemist, etc. Biomimicry offers semantic bridges between different academic, scientific and industrial populations that need to find a common language. Biomimicry proposes a universal language to link humans, disciplines and industrial sectors.

You're fundamentally a positive person. What do you think of the media discourse around us?

I want to come back to the idea of greenwashing. We tend to want to be critical right away. That's quite cultural in France, we value ourselves in revolt, refusal - we're weak when we nod. Recognizing that the other is right is often perceived and felt as an abdication. History holds that strong people are the ones who said no. However, by doing so, one discourages initiative. It's very difficult to have a 100% positive action. You have to accept to have an action that isn't yet ideal, but is going in the right direction. I prefer to encourage benevolence to move forward, it's a very powerful technique. We can be strong by saying "yes"!

I often bet on sincerity, there are more men and women of good will than evil men and women. In our media world, a falling tree makes more noise than a growing forest but we only do "headlines" on falling trees! That's silly and the best way to discourage positive initiatives.

I strongly believe in the hybridization of

ideas. By telescoping glances, we don't see the world in the same way. This is something that I notice every day! The great bio-inspired ideas are multidisciplinary, they come from the collective. Let's take the example of the beetle again. We all have a different way of describing a beetle and this enriches our common knowledge. Common knowledge is greater than the sum of knowledge (like ecotones which are richer in biodiversity). It's meta-knowledge. We're intimidated by the idea that we have to change the paradigm. But, if we approach the problem in a different way, we'll encourage looking at things differently, we'll prove that we can propel a boat with something else other than a propeller! Yes, we can create these extraordinary techniques. Yes, we need to shift to something new.

What new horizons are you heading towards?

To exist! -and to continue the adventure, to continue to reveal. Our credo? Change how we look around us, in order to change the scale and the era, all through the power of the collective. Biomimicry strives to draw its inspiration from nature and from others. We're interdependent on other women and men and we're interdependent on our environment. This dual interdependence is gratifying, vital, in that it creates vitality. If you don't know how to listen to nature and others, you are not into biomimicry. There's only one fatality that I accept today, and that's the inevitability of our community of destinies. And that's a good fatality.







***“Above all,
let’s spend time with nature !”***

Interview with Kalina Raskin

The 10 million species living on planet Earth reveal 3.8 billion years of R&D. So many treasures and intelligence are there to see before our eyes and yet they’re so discreet.

Kalina Raskin decided to dedicate her life to understanding living things and their mechanisms of delirious ingenuity.

Co-founder and now Managing Director of CEEBIOS, (Center for Studies and Expertise in Biomimicry), Kalina Raskin shares her vision for the future.



Kalina Raskin

FRANCE

“You have to be aware of the inertia of the Earth system. Even if we drastically changed our behavior overnight, we would suffer the consequences of climate change for decades.”

What is the genesis of your unfailing fascination with living things?

Passionate about science and biology, I’ve been fascinated by the living since my youngest age. So, I turned quite naturally towards inspiration from the living. I’ve found in biomimicry a way of bringing together science, innovation and passion for living things, with a real commitment to thinking about ecological transition.

You who are now CEO of CEEBIOS

(in charge from the start), how is biomimicry understood within large bodies?

We’re progressing. We don’t have all the interlocutors that we’d like to have yet, but biomimicry is gaining ground. We presented a France Strategy report (an independent body working with the Prime Minister which contributes to public action through its analyses and proposals) to the Councilors of the French President at the end of June 2020. It’s going in the right

direction. Fall 2020 was also busy in terms of biomimicry, even the Cité des Sciences (the Paris Science exhibition centre) put on a permanent exhibition on the subject!

How do you see the Citizen's Climate Convention?

This is very good, of course, but in relation to what's at stake, we're not at all in the right order of magnitude. The temperature isn't rising fast enough for us to react. We're not burning ourselves yet. Jean-Marc Jancovici explains that it'd take one additional Covid per year to reach the 2°C limit of the Paris agreement. That's the magnitude scale we're talking about.

Do you think that our current system is slowing down the necessary energy transition?

Many major international bodies, including the United Nations, have been fighting for a long time and sounding alarm bells, with specific sustainable development goals.

France was to host the International Congress for the Conservation of Nature in 2020, but it was postponed to 2021. These organizations will have more and more weight and, hopefully get help from the different States.

To sum up, we observe the incompatibility of the infinite growth model with the real biological world we live in. As long as human beings don't understand that, we'll walk straight into the wall. We need alternative axes to live in prosperity but

without growth in the common sense of the term.

Is awareness starting to generalize?

Awareness is shared by a growing part of the population. Motivation too. I'm pretty confident in our ability as human beings to reinvent ourselves, to re-imagine ourselves. On the other hand, I fear the inertia of the system to make decisions. I'm quite worried about the kinetics of the transition that awaits us. The longer we delay that transition, the greater the inertia of the system and the more brutal the transition. You have to be aware of the inertia of the Earth system. Even if we drastically changed our behavior overnight, we would suffer the consequences of climate change for decades. I am honestly very worried, very clear-headed and I will fight every day.

Are you in tune with the collapsology school of thought? In your opinion, is negative growth a sine qua non for the survival of species?

This is the example I give to my children. Imagine you're building a tall tower with your LEGO®. In the middle of the tower, you realize that something is wrong. Some might think that the only way to fix the tower is to knock it down and rebuild it. For me, collapsology is not a questioning of progress, but a questioning of the functioning of the human world as it is today. We live in a locked world - socially, politically, regulatorily, economically. For

collapsologists, the transition cannot be a smooth one.

As for negative growth, even in biology, there's a difference between growth and development. We can develop without growing. Human beings can continue to develop, without unlimited growth, which necessarily results in the consumption of resources. Development and prosperity can be imagined, for instance with a service economy, with new schemes, with indicators other than GDP that would be indicators of the health and success of a prosperous society. In short, what do we want? - to live prosperously, with the fundamental principles that humanity seeks today; freedom and safety – from the food and health safety point of view.

What does the notion of progress inspire in you?

You know, I'm a great believer in science. I see progress as synonymous with scientific knowledge. Human beings have a thirst

for learning, for knowledge. But let's take a step back. We've gone from a time of fighting famines to a time when 30% of the world's food consumption is wasted. We must return to a fair balance, not continue to sink into the current consumerist delirium.

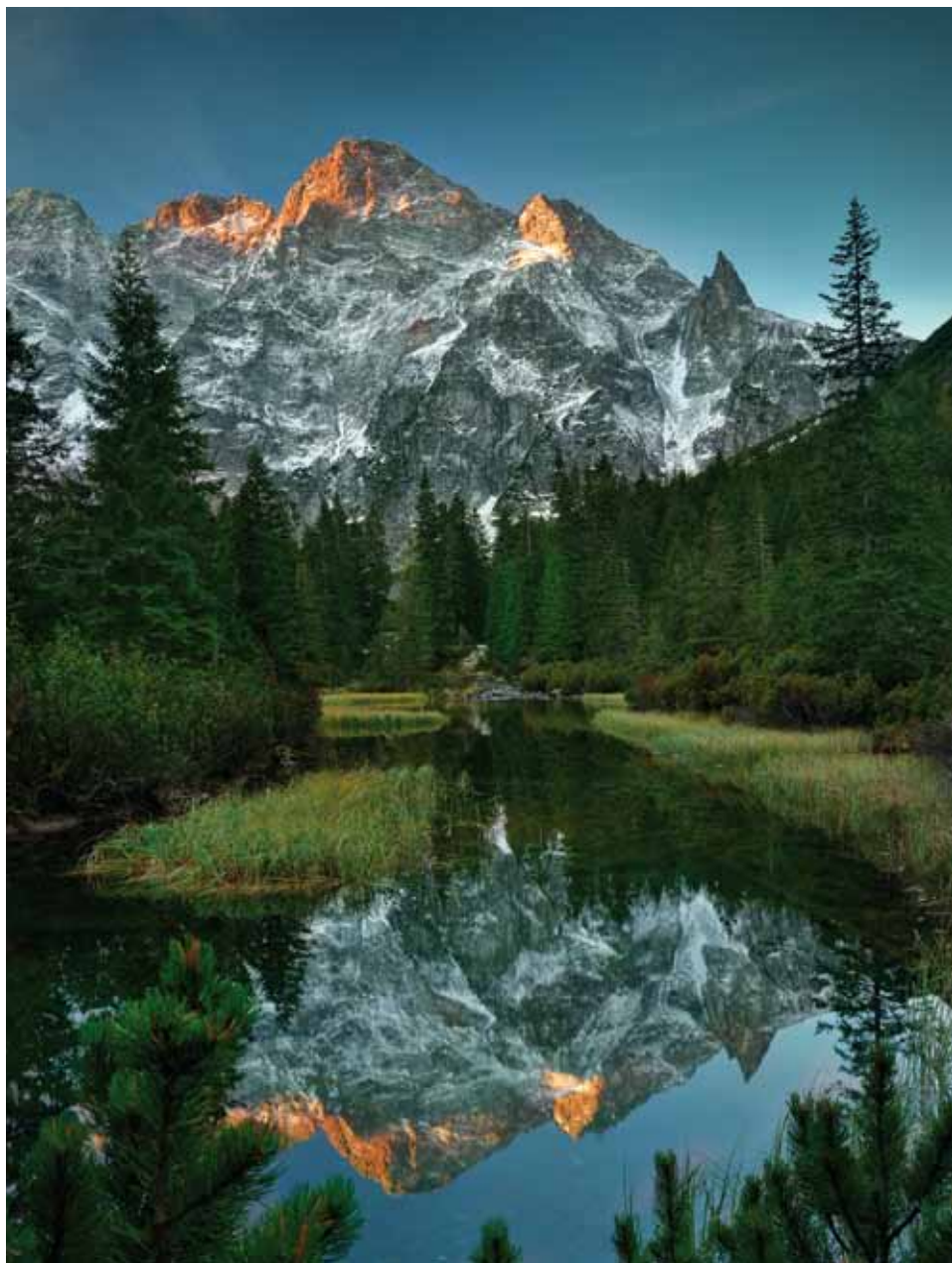
What's your bet for the future?

If there's one subject in which I believe in terms of biomimicry, it's hydrogen. And biomimicry can drastically change the situation in the energy sector particularly in regard to the production of hydrogen, always keeping in mind the principle of energy sobriety, from the start. It's not about consuming more energy than we really need.

What advice would you give to yourself and to humanity?

Above all, let's spend time with nature!







Balance as an art of life

Interview with Loïck Peyron

An extraordinary solo navigator, Loïck Peyron collects titles – 3 time winner of the English Transat, the ORMA World Championship (4 times), the Transat Jacques-Vabre (twice), the Clairefontaine trophy (8 times), as well as the Barcelona World Race, the Route du Rhum and the Jules-Verne Trophy. Even if he accumulates records on the water, Loïck Peyron takes care to make his life on “earth” a haven of peace and harmony, like a Jedi – as he’s nicknamed by family and friends - who makes balance an art of life.



Loïck Peyron

FRANCE

“Accumulation and speed don’t solve problems.”

How would you define yourself?

I’m basically a dreamer, that’s the only thing that really interests me, although I don’t dream of competition anymore and am perfectly happy with that. Sailing solo, I flirted with the essential, the great metaphysical questions about our presence in this universe. Therefore, I believe there’s always something good in the others – that’s why I’m called the Jedi.

You who have traveled the globe, how do you see the evolution of the planet?

We’re such predatory mammals, capable of the worst as well as the best. Often times, the worst happens disguised as the best. While the intention may seem lau-

dable, the collateral damage can be enormous. I’m thinking of religion, hunting, technology, science, etc. Today, the existence of mankind on the planet’s a serious problem. We’re sorcerer’s apprentices. So let’s put ourselves at the service of the common good.

On the water, you go fast, very fast. But “on earth”, you make dosage your leitmotif.

Indeed. I’ve never been a heavy consumer. And surprisingly, I’ve never been drawn by greed either. I think I have a pretty good control over the dosage. We live in a world totally unbalanced by the always more. Accumulation and speed don’t solve problems.

As for beliefs, extremists remind me of specialists who look at a problem from one side only and ignore the rest. It's logical that everyone has his or her own convictions, but some can wear blinders - it's never all black or white.

How do you recognize a functioning team?

Aboard a boat, a good crew can be recognized by the quality of the teamwork and not just the skills of the skipper. Good crews are made up of people who've been used to sailing solo. The loner must be well-rounded. On sea or on land, we can recognize the quality of a team or of a person in the way they facilitate the work of others.

What's your view on politics and the place given to the preservation of the planet?

In my opinion, leaders should dose less. The sheep that we are just bleat, making cacophonous noises. We can't please everyone. In the art of improvisation, you have to be firmer and not just aim for the next election. You have to have the courage to be hated. In this regard, politics is a really astonishing gymnastic art. Obviously, we must be thankful for whistle-blowers, they're the ones who should take the credit for initiating change.

As for the Ministry of Ecological Transition, it's clear we shouldn't even need one.

We should sweat ecology! That's our key to survival. We should all make prose of it, like Monsieur Jourdain!

Do you imagine yourself one day as Minister of the Sea?

Definitely not! Politics is really not for me. I'm way too much into dosage. I like to please, I'm very attentive to others and I don't like to disappoint.

What do you think of the media?

Well, a certain way of thinking is being imposed more and more on us. The right to think differently from the mainstream is becoming reprehensible, fed by increasingly less interesting media. We have to make our own way. The tools are there, but it requires a certain culture, curiosity and maturity.

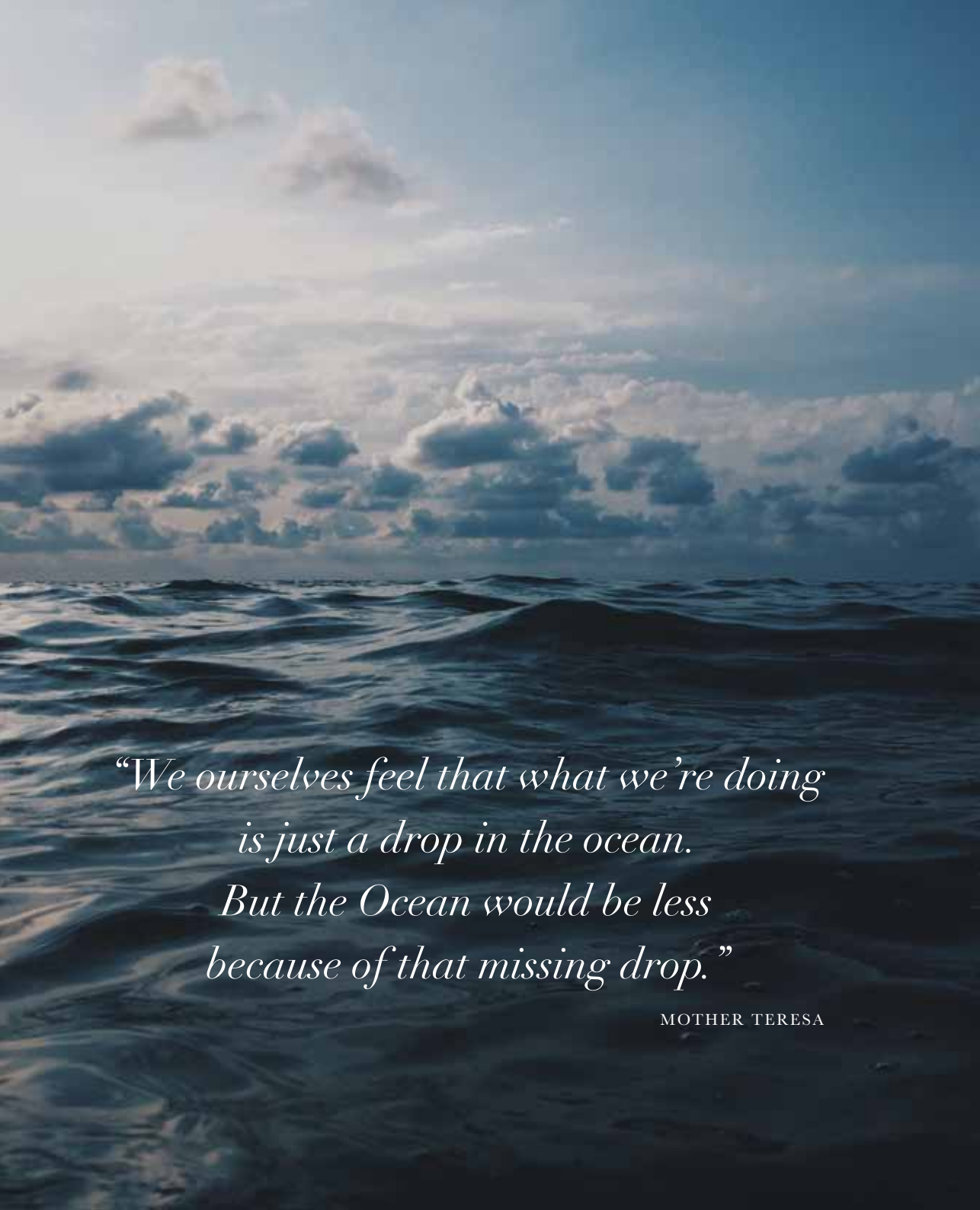
A word on FinX?

I accepted the role of godfather because of the intelligence of a concept inspired by the world of marine animals. FinX is about making smarter use of what the planet has to offer. You are one of those positive drops of water that can change the world.

Your final word ?

It'd be good if men finally accepted their share of femininity!



The background image is a full-page photograph of a vast ocean. The water is dark blue with gentle, rolling waves. The horizon is visible in the distance. The sky is filled with large, white and grey clouds, with a soft, warm light from the sun low on the horizon, creating a golden glow on the clouds and the water's surface.

*“We ourselves feel that what we’re doing
is just a drop in the ocean.
But the Ocean would be less
because of that missing drop.”*

MOTHER TERESA

The ocean, a planetary library

Interview with Maud Fontenoy

A legendary sailor, Maud Fontenoy was the first woman to cross the Atlantic and Pacific oceans aboard her 7.5 long by 1.6 meter wide rowing-boat.

In 2013, she rowed across the North Atlantic, west-east, solo and unassisted, 117 days at sea, 3,700 kilometers. She was then 25 years old.

Two years later, she made the same bet, crossing the South Pacific from east to west, from Peru. After 72 days at sea and 6,780 kilometers, she reached the Marquesas Islands. That year, Time Magazine named her “Personality of the Year”.

In 2007, she became the first woman to sail around the world against the current in 150 days, unassisted. Three capes crossed and a dismasting from which she narrowly escaped.

Committed to promoting education of the sea, in 2008 she set up the Maud Fontenoy Foundation, recognized as being of general public interest and backed by a committee of distinguished experts. In France and around the world, Maud works for the preservation of the ocean. In 2019, she was appointed Ambassador to the French Ministry of Education and Youth, to promote discovery of the sea and seaside classes. Here she tells us about her love of the sea and the assignment given to her.



Maud Fontenoy

FRANCE

“The ocean must be the object of as much attention as research on the atom or the conquest of space.”

You dedicate a large part of your life to preserving the ocean. What messages do you want to deliver?

Learning about the ocean should be given as much attention as researching the atom or conquering space. What the ocean brings us equals its vastness. It enchants us, attracts us, fascinates us. The ocean's breathtaking, both palpable and elusive. Its mysterious horizon dances before our dazzled eyes and seems to slip away under the solitary bow of our ships.

Our future depends on all this beauty. What if we could find in the mysterious

depths of those twenty thousand leagues under the sea, many of the answers to the needs of societies - oxygen, food, energy, jobs, medicines, precious metals and so many other treasures? It's a fragile environment which we destabilize unawares. By hurting it, we're destroying a multitude of solutions that could be essential to our future.

The leading producer of oxygen on Earth, principal climatic regulator, cooking pot of humanity, primary role in the water cycle... We know so little about the ocean. Today, more than 22,000 marine mole-

cules are being studied for the development of new drugs. Did you know that AZT, the treatment for AIDS, comes from herring? As for marine energies, they could on their own supply the entire planet with electricity. Marine creatures inspire us with numerous new technologies - medical, aeronautic, robotic... but also food, by providing manure for cultivated lands without destroying them with chemical inputs. And let's not forget the natural role of reefs, mangroves, marshes, beaches which protect the coasts and our homes from the fury of storms or rising waters.

It's indeed an ocean of futures - an ocean of solutions, magical life and futures to be preserved. Even though we know less about the depths of the ocean than about the surface of the moon, we already know enough to fully assess the vital importance of these mysterious bodies of water which today we need to preserve entirely, at all cost.

What are the primary missions of the Maud Fontenoy Foundation?

To raise awareness, educate and act. Only education can reassure and appease in the face of human and environmental issues. It's the key to change. Since 2008, the Foundation's been involved in ocean preservation both in France and internationally. It carries out educational projects for the youth and general public on the marine environment, backed by scientific partners and the French Ministry of Edu-

cation with which it promotes the discovery of the sea and the relaunching of seaside classes. Each year, more than 60,000 classes in France work on the Foundation's educational programs. From kindergarten to high school, we offer all teachers in France and overseas free educational kits to work on marine creatures and energies, food, biomimicry... Classes also have the option to take on challenges that we propose to them. I'm continually amazed by children's incredible ingenuity and the passion that springs from the projects we receive. The Foundation designs its educational tools based on two strong values - solidarity and the power to act personally. We also carry out solidarity projects in France and internationally.

What links do you maintain with the school environment?

I've been focusing on schools for over 20 years. Visiting school after school, meeting thousands of students and admirable teachers, I'm committed to this essential education of the ocean, teaching about all that we owe to it and all that it brings to us. We have the will to act and we have the resources to do it. It's time to understand the fabulous links that connect us to this salty immensity. Because, if the ocean is a world library whose books contain a plethora of solutions for the survival of humans, the vast majority remains ignored, having never been read. We're able to send a robot to Mars, but we only know a tiny part of the blue expanses that characterize the

planet. It's vital to increase our knowledge. Climatic crises, the decline of biodiversity are increasingly complex phenomena that societies will have to understand and face. They'll have to learn to anticipate problems and approach crises with pragmatism and intelligence.

What place do you give to biomimicry?

At a time when the environment's becoming a major concern, flora and fauna are being particularly scrutinized. Biomimicry is everywhere and never ceases to surprise us. It enables engineers and artists to discover an organization of matter and shapes going beyond their own imagination and calculation capacity.

Biomimicry has become an ally because nature can build efficiently on a large scale; it knows how to save energy and material, use local biodegradable resources and always chooses non-toxic materials.

Who'd have thought that the architecture of the Eiffel Tower, one of the most famous buildings in the world attracting more than 6 million visitors annually, was actually inspired by the femur? The strongest bone


in the human body is capable of supporting a ton of weight in an upright position. This incredible resistance is explained by the fact that it's made up of thousands of spans in the shape of plates or columns, linked together to form a network. Just like in the femur, the metal curves of the Eiffel Tower form a lattice made up of bars and metal ties that allow the tower to easily stand up against the wind!

Living things have taken millions of years to optimize their adaptation. Why not take advantage of this progress to draw on it for unprecedented structural, morphological or thermal performances?

At the Foundation, we design educational material where biomimicry has an important place. We've dedicated a complete booklet to it, developed in partnership with Biomimicry Europa, and I've enjoyed writing several books for the general public that puts the emphasis on biomimicry inspired by marine life. Through education, we can empower new generations to adapt to this changing world. We have to innovate, invent, change codes, in the same way as in medicine, economics, architecture or robotics.





An underwater photograph showing sunlight filtering through the water, creating a pattern of bright, wavy lines on the sandy ocean floor. The water is a deep blue-green color, and the light rays are visible as bright, shimmering streaks.

*“I do the possible
and strive for the impossible.”*

PAUL WATSON

Defenders of life and figureheads of the Sea Shepherd ship

*Interview with Paul Watson
et Lamya Essemlali*

They would give their lives to save marine animals. Fighters for the planet, biodiversity and justice, Lamya Essemlali and Paul Watson are at the helm of the most combative ocean defense NGO in the world.

100% independent, Sea Shepherd has been working for 44 years on 3 major axes - intervention in an active and non-violent manner in the event of illegal attacks on marine life; exposition of abuses and unsustainable or unethical practices by alerting the media and public opinion and raising awareness of the essential link that connects us to the ocean. The observation is clear. Every day, 45,000 kilometers of nets are deployed in the Bay of Biscay alone. This is equivalent to circling the planet. Four out of ten fish are accidentally caught in the world and 300,000 marine mammals are killed each year because of nets.

In 2000, Time Magazine named Captain Paul Watson one of the environmental heroes of the 20th century. Eight years later, The Guardian elected him as one of the “50 People Who Could Save the World.”

If you had the choice between saving a species of birds or protecting a famous painting like a Rembrandt, what would you do? A meeting with two apostles defending the Ocean.



Paul Watson Lamya Essemlali

CANADA / FRANCE

“Getting out of anthropocentrism is to shake up all our certainties.”

What is the ocean?

Paul: Most of mankind will tell you that it's the sea. But that's not strictly true. The sea is part of the ocean. The ocean is the planet. Water is in continuous circulation; sometimes in the sea, sometimes in ice, sometimes in the atmosphere, the clouds

and sometimes in the ground. It's also present in every cell of every plant and every living thing. In the body, water makes up 75% of our weight. We are the ocean. When you affect any part of the ocean, you affect every part of the ocean. When we pollute the atmosphere, we pollute the

sea, the bodies and all of this is part of the same system. But we don't see it that way. We are way too far from the natural world. Our reality and our values are purely anthropocentric, where the only things with a value are human things. As long as we continue to believe that we are the dominant species, the center of creation, we won't survive. Every anthropocentric religion places human beings at the forefront and center of the system. But we're not superior. Bacteria, viruses, plants, worms, trees, fish are all more important than we are. They don't need us and yet we can't live without them.

Lamya: Getting out of anthropocentrism is to shake up all our certainties. It's a revolution in mentalities and in our vision of the world that we have to bring about. We've been fed from our early age to anthropocentrism. We must get out of this prism, look at the world with more objectivity and show humility and compassion towards the rest of living things. That's the key and it's our biggest challenge. Return to our place in the living world, adopt a biocentric vision and descend from our pedestal of pseudo master and owner of nature, because this arrogance will destroy us. From an ecological point of view, the human species is very far from being a priority species. It isn't even an important one.

Paul: We belong to the same group as the animals; we're only a part of the living world. We don't even understand what a virus is. A virus is absolutely essential.

There are hundreds of millions of viruses, they are beneficial, we need them and they keep us alive. But when we reduce the number of ecosystems and species, the number of hosts they need decreases. Viruses must coexist. Today, the only really effective way to fight viruses is to restore biodiversity and ecosystems. I don't see any world health agency taking this really seriously.

What's the greatest scourge facing the ocean?

Paul: There are so many - climate change, pollution, radiation, chemical pollution, bleaching of coral reefs, overfishing... We can't live on this planet without phytoplankton but its growth has drastically declined since 1950, the year I was born. The only way to encourage the regrowth of phytoplankton is to promote the growth of marine mammals, seabirds, species that provide the basis of nutrients for phytoplankton. The more we reduce diversity, the more we diminish the possibility of phytoplankton survival.

Lamya: In my opinion, fishing's the number one threat to the survival of the ocean. And by the way, we shouldn't talk about fishing, but overfishing. The best service you can do the ocean is to forget a bit about the fish. That's really the message we keep hammering out. Fish consumption has doubled in 50 years, be it in France or internationally. Mankind has developed technologies, eg military radars which track fish absolutely everywhere.

As for the fishing nets, they're not at all selective. Every day, 45,000 kilometers of nets are deployed in the Bay of Biscay alone. That's equivalent to circling the planet. 300,000 marine mammals are killed each year because of these nets.

That's really frightening. How is it possible?

Lamya: The nets are set by boats. For example, boats can drop 100 kilometers of nets and leave them for several hours before retrieving them. Put end to end, we arrive at a daily estimate of 45,000 kilometers. Fishermen tell us that they haven't increased the amount of fishing because the number of fishing boats is the same. What they don't say is that they've increased the length and height of the nets from 5 to 15 meters deep.

Furthermore, WWF estimates that 40% of the catch is unwanted. These are known as the famous accidental captures, these "tolerated" accidents. At Sea Shepherd, we completely refute the term "accidental". These catches are most certainly not accidental since they're predictable, recurrent and above all avoidable. We call them collateral victims.

The reality is that dolphins are being sacrificed to the fishing industry. They're tolerated collateral victims. We don't have any protected marine species in France. -on paper yes, but not in practice. The ocean isn't a partitioned ground, you cannot spare one area; everything's intermingled. This is a minefield. Some fishing lines

have hundreds of hooks along dozens of kilometers, causing the same overfishing as with nets. Added to this is the pollution caused by the fishing nets themselves, since 70% of plastic macro-waste is residue from fishing gear. There's a lot of talk, and rightly so, about the slaughter of dolphins, the bloodbaths in the Faroe Islands, Japan, or the few countries that still hunt whales, but today the number one threat to marine mammals is the fishing net.

How does Sea Shepherd work? How are your campaigns organized?

Paul: First of all, we're not an organization, we're an interventionist movement against illegal fishing activities. So far, 42 countries have joined Sea Shepherd. A movement grows exponentially. You can stop an individual or an organization, but you can't destroy a movement. Today we have 200 - 300 volunteers on our ships, under the command of a captain and officers who make their own decisions. I'm not able to follow all the campaigns that we're currently running. I have no control over them and that's fine by me. I'm really happy with the way things are going. In France, Lamya also runs her own campaigns. She launched a campaign in Mayotte to protect turtles, a campaign in Reunion Island to protect sharks, a campaign in the Bay of Biscay to protect dolphins. In my opinion, the most powerful way to allow a movement to grow and flourish is to avoid centralized control.

Lamya: In France, we have more of a

whistleblower role, especially on the issue of dolphin captures - we're often involved in intervention and deterrence, making it possible to prevent a lot of things. Among other things, we work with African governments in territorial water - there's a real political will in certain countries to fight against overfishing and illegal fishing. Sometimes we take armed guards with us to make arrests and check ships. They do the police work, but don't necessarily have the maritime means to go to the fishing grounds, so we provide them with the means, the crews and our experience with poaching. The high seas are a lawless area. A lot's going on there as there's a legal vacuum relating to illegal fishing. We intervene to prevent illegal attacks on marine life, but it's legally complicated to hold poachers to account. If dolphins are caught (remember that captures are not technically illegal because they are considered accidental and therefore tolerated, which is an ethical and ecological aberration), our role is to highlight the problem to change the legislation. If we find poachers setting nets where they're not allowed, we intervene to confiscate the nets. There are a lot of thresher sharks on fish market stalls, the species is protected, prohibited from targeted capture, but there's tolerance for its marketing in the event of accidental capture. That's another aberration, totally uninhibited. We want to ban the marketing of protected species. As long as the fisherman knows that the animal in his net has commercial value,

he'll be tempted to kill it if it's still alive. There's no way to verify that it's an accidental, untargeted capture.

Paul: Our approach is aggressive but non-violent. In 44 years, we've never killed or injured anyone. The same's true for our staff who are remarkable considering the ships we sail on. Some would qualify our approach as violent, because sometimes we damage ships or equipment, but in my opinion destroying materials used for illegal purposes is by definition an act of non-violence.

I always ask people who want to join us "*Would you be willing to risk your life to save a whale?*" Does this sound so unreasonable? In our societies, we don't ask people to risk their lives, we ask people to kill, to protect real estate as well as religion. And why? For me, it's noble to risk your life to protect a new species or an ecosystem.

How has Sea Shepherd evolved?

Lamya: When I started 15 years ago, the movement was hardly known. Today, Sea Shepherd is better known and above all, better considered. There's an awareness of the urgency and that being offensive is completely justified - we won't achieve anything by signing petitions and just asking politely. I've sailed a lot with Paul, especially at the beginning when he was on all the campaigns!

Paul: What has mainly contributed to the success of Sea Shepherd in my opinion is its understanding of the media culture in which we live. The most powerful weapon

ever developed is the camera. It defines reality.

How do you see the world changing?

Lamya: There's a gulf between awareness and taking action, between realizing that your food choices have a colossal impact and deciding to take action, in other words, to really change what's on your plate. It's not exactly the same thing.

Paul: An omnivorous person who rides a bicycle emits more greenhouse gas emissions than a vegetarian driving a 4x4. The meat industry is the biggest contributor to GHGs, the biggest contributor to dead zones in the ocean and to the pollution of underground water. We kill 65 billion animals a year, not to mention the fish. This planet was never designed for 8 billion human eaters of meat and fish. And that's not all, 40% of the catch goes to feed chickens, pigs, farmed salmon, etc. It's a chilling imbalance. We have of course been vegans since 1999 on board the Sea Shepherd boats (we started vegetarianism in 1979).

Paul, you attended Cop21 in Paris in 2015, how did that go?

Paul: No one really took the ocean seriously. Yet we must somehow eliminate all industrialized fishing operations within the next 15 years. Industrialized fishing survives thanks to heavy subsidies from governments. The whole economic system is based on investment and extinction. I

call it economic extinction. The more species become rare, the more valuable they become, the more expensive they are. It's ecological madness and it's what drives the economy on Earth. We have sanctuaries, protected areas. But do you know what these places are? - magnets for fishermen. Governments don't care because the money comes from those who destroy the ocean. When you attend conferences like the one on climate change, it's basically about bringing politicians together. They appear to be doing something, but they don't intend to do anything. They don't even know how to do it. Everyone wants change, but they don't want to change. In the world we live in, profit's more valuable than life.

You know, the countries that are causing the species' scarcity are the most powerful ones. Many people live in poverty because their resources are stolen from them by Western countries. For example, I grew up in a small fishing village in eastern Canada. We didn't eat mussels because they were considered dirty. Now you find some. You can't find clams or oysters anymore, but you find mussels. And they're legion in restaurants in Paris, New York and London. We've adapted to living in a world where ecosystems have been greatly reduced. In 1965, if I'd told you that in the future you'd buy water in plastic bottles and pay for that water, you'd have looked at me and said, "*What kind of idiot would buy water?*" We adapt, we spend our time adapting, moving from one species to ano-

ther. In the 90s, in any fish market, you could buy a fish called orange roughy, it was very common. But needing 45 years to become sexually mature, it unfortunately couldn't meet the demand. Now you don't hear about it anymore, you can't buy it. We forgot about it and moved on to something else.

Today, we replace the rainforest with plantations, forgetting that it provides more than food: it helps regulate the climate and circulates water. We don't understand the planet we live on. It isn't a "land", it's an ocean.

Are you confident in the future?

Paul: I focus on the present. What you do today will create the future. Don't worry about the future. Focus on the present. I also keep in mind the fact that our movement isn't about saving the planet, the planet will save itself, it always has, it's gone through 5 major extinctions and it'll also survive the 6th major extinction that humanity's created. The stake isn't really to save the planet. It's about saving us from ourselves. And we have the keys. Indigenous peoples have much to teach us as proponents of a biocentric view of the world.

It was unthinkable to imagine Nelson Mandela becoming the president of South Africa but he did. "*It always seems impossible until it's done*" he said. I see a lot of things coming true because people have done everything to make it become possible. I believe that one person can change

the world. I do the possible and above all I strive for the impossible. The solution to our problems is to do the impossible - which implies passion, courage and imagination. Sometimes it comes at a cost. I've been on the Interpol Red List for 5 years about whaling because of Japan and the reason? "Boarding conspiracy", something never heard of before. It's a tool to gag political opponents and limit their movements. This list is supposed to be dedicated to serial killers, war criminals, major drug dealers. No one in History has ever been on this list for conspiracy or intrusion. We've never hurt anyone during our actions and we've never stolen anything either.

What are your actions at the moment?

Paul: We have 2 ships in Mexico and we're in partnership with the Mexican government to protect the vaquitas from extinction. We're also working in partnership with the Colombian government to protect a national maritime park classified by UNESCO. We've developed partnerships with Panama, Peru and Ecuador to protect the Galapagos National Park, but also Liberia, Gambia, Gabon, Tanzania, Sierra Leone... We also do marine research. Two months ago, for example, we discovered a new species of whales in Mexican waters.

Lamyia: There are many partnerships with African countries. Sea Shepherd France also works in partnership with the

Italian Navy. For my part, I'm starting to meet with members of the Parliament, advisers from different departments of the Ministries, so we can make our voice heard, because we're greatly criticized by the fisheries committees who convey an image of us that doesn't correspond to reality.

What's your greatest pride?

Paul: Japan no longer kills whales in the Southern Ocean Whale Sanctuary - we won the fight we started in 1975. Since then, whaling has been reduced by 95%. When we started, Australia, Chile, Spain, Peru and South Africa were all whaling countries, that's now over and Australia's currently one of the leading anti-whaling nations!


Lamy: It's not easy to take stock of our progress in figures, but if there was a balance to be made, it'd be in the number of lives saved, because it is very concrete. In Mayotte, hundreds of turtles are protected from poaching every summer. Another

example - for 2 years we stopped a boat that was catching 25,000 sharks every two weeks. That's saved nearly 1 million sharks.

What are your sources of inspiration?

Paul: For me, they don't come from humans, but from nature, whales for example. But many young people are starting to make a difference and are making history. Greta Thunberg is an example of boldness.

Lamy: For me too, it's nature, even though Paul's inspired me a lot too. He's leaving a legacy - his career and his way of life are motivating, stimulating. When all of society will tell you something's impossible, he'll tell you the opposite, he'll go to the front. He shows rare humility. I wouldn't have gotten involved to this point in Sea Shepherd if Paul hadn't been a profoundly good person.







A navigator tackles the problem of ocean plastic macro-waste

Interview with Yvan Bourgnon

Yvan Bourgnon is a rarely seen phenomenon. A top-level navigator but more of an adventurer than a competitor, he set off in 2013 on a solo round-the-world trip on an uninhabitable 6.30meter sports catamaran, armed with a single satellite phone. His compass? A sextant and a few paper maps. No weather or GPS information. This sea gladiator, as some people call him, now devotes his life to raising the awareness of leaders through conferences and to protecting the oceans, notably with The Sea Cleaners, a French NGO he created in 2016. This unique project will soon give birth to the Manta, a giant multihull and the first offshore sailboat capable of collecting plastic macro-waste.



Yvan Bourgnon

FRANCE

“As the population grows, plastic consumption will have tripled by 2050 compared to today. Something will have to be done about it.”

When did your electroshock on plastic pollution happen?

I toured the world with my parents in the early 1980s for 4 years on a sports catamaran. There was no visible pollution then but 33 years later, between 2013 and 2015, while I was doing the same route, I was deeply shocked to see plastic pollution, especially around Sri Lanka and the Maldives. I also remember being flabbergasted while sailing in the Red Sea, a veritable sea of hydrocarbons. Finally, during my sports career, I hit containers many

times and had almost to give up on several races due to collisions.

As the population grows - soon we will be 10 billion - plastic consumption will have tripled by 2050 compared to today. 19 tonnes of plastic are poured into the oceans every minute - that's 8 million tonnes per year, which will become 25 million tonnes. Something will have to be done about it.

What's the mission of the Manta going to be?

The Manta will be a vessel designed to collect any plastic macro-waste over 1 cm long, sailing 75% of the time without the use of fossil fuels, 300 days a year. The data collected on the waste by our team of scientists will be listed, mapped and shared with the international scientific community and the general public since they'll be accessible on open data. With a waste collection and treatment capacity of 1-3 tonnes per hour, the goal of Manta is to rid the oceans of 5,000-10,000 tonnes of plastic waste per year. The Manta will be very useful in the most contaminated areas - coastal areas, rivers, mouths of large rivers and estuaries - to recover waste before it breaks up into micro-particles.

How did you get the idea?

Since 1950 humanity has manufactured 8.3 billion tonnes of plastics but only 9% has been recycled. Some missions, like those of Tara Ocean*, analyze plastic micro-particles. However, these expedition ships don't have collection and storage capacities for plastic macro-waste. We also know that 95% of macro-waste is distributed over 5% of the oceans. Those which stagnate are still quite "pure", not too badly deteriorated - they aren't loaded with metals or with chlorine, or at least very little.

The Manta will be equipped with pyrolysis. What does this process consist of?

Pyrolysis transforms plastic into synthesis

gas, without combustion. This "syngas" is itself converted into electricity by a turbine, to power all of the Manta's electrical equipment - the cockpit, navigation instruments, batteries, propulsion units and its factory. The heat, as well as all the so-called "fatal" emissions released by the process, are recovered to meet the thermal needs of the vessel and to guarantee a process that's as virtuous as possible, with very few emissions. The solid residues (the tank), which represent 5-10% of the treated plastic, are stored for recovery on land, in the form of bitumen, cement, fuel, etc. Did you know that in the case of navigation, pyrolysis reduces pollution by two-thirds compared to petroleum? I'm sure it will become an interesting solution but at the moment, it's an expensive and under-developed one. But, nations are starting to really turn away from fossil fuels and I believe NGOs have their place in the waste treatment process. In an ideal world, we at The SeaCleaners would like to finance a part of these pyrolyses. Replicable on a large scale, this technology will therefore be used not only on board the boat, but also at each stopover (we plan to have one per month). Up to now, pyrolysis was incompatible with deteriorated marine plastic waste loaded with chlorine and nitrogen. So, solutions had to be found, in particular to eliminate chlorine from plastic.

How will the ship be built and how will it operate?

The contours of the boat are well designed! In order to make the best design choices, we carried out a complete Life Cycle Analysis (LCA) of the Manta - we were thus able to determine the most environmentally friendly materials in the short, medium and long terms and those with the lowest carbon footprint. We've been very careful to get the right balance between the materials used for the boat and their weight, so that the Manta is as energy efficient as possible.

The ship's propulsion will be provided by a tailor-made hybrid system combining 1,500 m² of sails installed on automated rigs, with electric propulsion engines. Electricity will be produced by a series of on-board renewable energy-production equipment (2 wind turbines, hydro-generators, nearly 500 m² of photovoltaic solar panels) and also by the on-board unit for energy recovery from waste with pyrolysis. On the technical level, our consultation file's ready to go and consult the shipyards. The studies aren't completely finished, but sufficiently advanced to have a precise idea on a lot of points (the number of people on board, the length, width, etc.). Construction will begin in 2022 and the launch of the first Manta is scheduled for 2024.

How are you organized?

About thirty people currently work at The SeaCleaners. We developed quickly in France, with 14 regional delegations and 1,000 trained volunteers. At the start of

2021, we launched our development on a European scale in Switzerland and Germany, and we'll continue that, particularly in Belgium and Spain.

As an observer member of UN Environment, we're sponsored by the Prince Albert II of Monaco Foundation and funded by around fifty patrons. Lastly, we maintain diplomatic relations with Cambodia, Vietnam, Indonesia, the Maldives and Bahrain...

How does your scientific council work?

The SeaCleaners has created an unprecedented scientific council in the world of waste collection, with 12 of the 20 leading world scientific specialists in the field. Between 5 and 10 scientists will work on board the Manta (2 of those work for us all year round), to analyze the collected plastics. The scientists who've been following us work together to study the issues, especially on how to spot plastic waste at sea (drones, satellites, small tracking boats). Finally, working on an open source platform will be our priority so that nations wishing to "copy" us can eventually build their own boats.

Which areas will you target first?

Basically, we're going to focus on the most contaminated areas. It's now been established that 80% of marine pollution comes from land, reaching the oceans largely through rivers. According to researchers, 88- 95% of this volume comes from

just ten rivers, the most polluted in the world, mainly in Asia and Africa.

With this first Manta Ambassador, we're going to sail from one river to another, from one country to another. In a slightly more distant future, we hope to position one Manta (or even several) on each river mouth. With our forecast calculations we estimate that with a fleet of 400 boats and 2 billion euro per year, we'd be able to collect 1 third of global plastic pollution.

What will become of the waste brought ashore?

Our philosophy's based on a simple principle - nothing should be wasted. Everything that's collected and processed on board the vessel is converted into a useful component, according to the principles of the circular economy. So, our priority is to convert waste into energy rather than storing it, which would increase the weight of the ship and its energy consumption. Each Manta mission will last up to 3 weeks. It'll be followed by a week ashore where the collected waste that hasn't been transformed into energy will be unloaded and entrusted to local recycling circuits. We'll also carry out campaigns to raise awareness and promote the transition to a circular economy.

One of your major objectives is to boost a sustainable local and circular economy by offering solutions for recycling plastic waste.

Yes, we have to give lectures in schools,

train volunteers on site and carry out awareness-raising actions. It's better to favor solidarity with other countries than to race for exemplarity at home. Some countries have the means to treat their waste (China and Western European countries for example). On the contrary, Bangladesh won't be able to do so for 30 years. With our globalized business model, money has to be put in the right place.

With a view to transferring skills and co-development, visits will be organized on board the Manta for political, industrial and economic decision-makers in the regions where we'll have organized collection campaigns, so as to adapt the solutions present on the Manta to local contexts using our small collection boats which will be called Mobulas.

Would you like to navigate once again?

Yes, I miss that a lot, the call of the sea's very strong. I often sail along the coast and do regattas with my son. We were European champions 2 years ago! Last year I was able to sail for 60 days. It's true that I launched The SeaCleaners without imagining that the project would take up so much time. But it's a great adventure and our very dynamic team is a wonderful source of energy. I also want to sail around the world, and why not compete, with the Vendée Globe.

** See interview with Romain Troublé, Tara Océan.*





A pioneering network for the ocean

Interview with Raphaëla Le Gouvello

Eager for sea spray, Raphaëla Le Gouvello devoted the first decade of 2000 to pushing back the limits of the known. The feats she achieved are astounding - windsurfing the planet alone. In 2000, she was the first woman to cross the Atlantic Ocean, from Senegal to the island of Martinique where she spent 2 months. Two years later, she went from Marseille to Sidi Bou Saïd (Tunisia) in 10 days, a world first. The following year, she achieved the first crossing of the Pacific between Peru and Tahiti in 89 days. In 2006, it was the Indian Ocean, known to be the most difficult, connecting Australia to Reunion Island in 60 days.

When she's not at sea, Raphaëla Le Gouvello is involved in preserving the ocean. A veterinary specialist in aquaculture, she heads Stermor, a consultancy and service company in aquaculture nutrition, health and hygiene (founded in 1994). She also chairs RespectOcean, a network she created in 2013 (which became an association in 2018), around which around fifty committed players and companies gravitate, with the common desire to reduce the impact of their activities on marine ecosystems and coastal areas and so make economic development more respectful of biodiversity.



Raphaëla Le Gouvello

FRANCE

“Each sector has its pioneers who demonstrate by example that a sustainable business can be reconciled with the preservation of the marine and coastal environment. We want to illustrate the need for collective awareness and a common course of actions.”

Where does your passion for the sea come from?

My family roots are in Brittany, France and I've always been deeply attached to the sea. I discovered sailing with a dinghy, then windsurfing, which was a real revelation. Subsequently, I did everything I could to always live near the sea. My company Stermor (which means river and sea

in Breton) is located in Penestin, the village where we used to spend our holidays in south-west Brittany.

Can you tell us some stories about the crossing?

Because I was solo, my team followed me on the first day (and night) of the crossing. Firstly because my windsurf board

had a particular structure specially shaped for ocean crossings, not very easy to manoeuvre near a beach or rocky coast. You also need to be very attentive to coastal fishing boats. I recall that especially in Peru or Senegal. The tailing boat is there to protect us. And then the second day is a second start. "Goodbyes" at a distance are very trying.

My navigation rhythm was only day-time. At night, I slept in a drifting bivouac, the sail stowed on the deck. The big challenge is to avoid falling at all times. The Indian Ocean crossing was the toughest due to the formidable sea and wind conditions.

What are your main activities today?

My primary vocation is that of a field veterinary in aquaculture. With Stermor, I chose something I feel really deeply about - the environmental issues facing the sea and the coast, and the consultation between the various actors and sectors of activity. In estuary environments, this is complex and fascinating.

RespectOcean celebrated its second anniversary in September 2020. What's its genesis?

I've always wanted to combine my passion for the sea and for work. Thanks to the crossings that I've achieved I've met a lot of people - the general public, the press but also financial and technical partners in activities linked to the sea. Rather than looking for partners in the usual way as in

sponsorship for example, I wanted to find business partners who were really committed to the marine environment and get a positive dialogue going with them.

Are you in liaison with the government?

Not yet. We must start virtuous loops from a local base and create good relationships locally. That works well on a regional scale. RespectOcean's very focused on the Brittany region, which itself is very involved in stakeholder discussions around the sea. It's an innovative and inter-sectoral network that's generating a lot of interest. We have maritime transport stakeholders who are looking into new types of transport (particularly in sailing). But it'll be difficult to convince if the conventional alternative remains much cheaper... In my view, all pleasure boats should be equipped with a hydro-generator. The goal is to encourage companies to prioritize respect for biodiversity by turning to carbon-free activities and to promote synergies and collaborative projects between our members. Each sector has its pioneers who prove for example, that a sustainable business can be reconciled with the preservation of the marine and coastal environment. We want to illustrate the need for collective awareness and a common course of actions. Our more long-term ambitions haven't been made public as yet.

Since the start of RespectOcean, you've reoriented Stermor's research

areas and activities around more sustainable aquaculture and integrated coastal management. Can you tell us what that's about?

First of all, let me clarify - aquaculture includes fish, shellfish, marine cultures (algae) and is carried out mainly in fresh water (with a pond system), but also in salt water or in brackish mixed water and feeds a large part of the planet, especially in South-east Asia. Today, more than 500 species are raised and harvested in the water. I've followed the advances in modern aquaculture very closely, working in particular with the International Union for the Conservation of Nature - it's a very complex sector of activity.

Sustainable aquaculture is part of the logic of sustainable development respecting environmental conditions, by ensuring an important role in terms of food safety. As for integrated multitrophic aquaculture, it comes close to agro-ecology in aquaculture. For example, it suggests raising

fish with shells, sea-grass, algae, etc. It's a kind of permaculture in aquaculture! I'm deeply passionate about aquaculture and coastal issues and I devote a lot of my professional time to them. I chose this profession out of taste and utopia, convinced that we'd be able to change the world and feed the planet as well.

How does the new, more sustainable blue economy model represent a real challenge in the global economy of tomorrow?

The ocean forms a whole and plays a major role in the functioning of the climate and food webs. Almost two-thirds of humanity live on coasts, in coastal areas likely to be significantly impacted by climate change. The preservation of marine and coastal ecosystems, the recognition of the services they provide to humanity are the pillars of the blue economy and are a decisive global challenge.









Nature, our school, Elemen'Terre crossings

Interview with Marie Tabarly

Before the Elemen'Terre adventure, Marie Tabarly spent several years alongside equine behaviorists and grandmaster horsemen, driven by the desire to understand rider-horse communication. Some time later, she turned to the extremely complex subject of communication between humans.

So on July 3, 2018, her dream became the trip of a lifetime. On board the famous Pen-Duick VI sailboat imagined by her father, she set sail from Lorient with her crew, for a round-the-world trip. This mythical boat became the scene of a floating think-tank which she renamed "The Elemen'Terre Project". Marie worked tirelessly to encourage inspiring people to think together about the major challenges of tomorrow in order to develop a better common well-being; always with the same leitmotif - arts and sports as allegories to the formidable challenges of the century.



Marie Tabarly

FRANCE

“We have made Pen-Duick VI a place of reflection to weave a network of values facing the challenges of the century.”

Observing and living slowly is your credo. Can you tell us why?

We've made Pen-Duick VI a place of reflection and awareness in order to participate in the shaping of a new world. Drowned by a constant flow of information, we set sail towards the open sea, to take a step back, to recreate the link with nature which we are part of, but which we so often tend to forget about.

How are Elemen'Terre expeditions prepared (choice of places, stopovers, guests)?

14 people can board this 22-meter boat.

Several parameters come into play for preparation - the theme that suits the stopover, the weather, the season and the availability of guests and crew.

We chose Greenland as the first stop for the challenges that this destination represented. At each stopover, guests from various worlds (artistic, sporting, scientific, political...) come on board. We then visit the world through their eyes, all different, and relate our reflections through documentaries, social networks or even media campaigns. Elemen'Terre is an around-the-world series of documentaries, like a plea in favor of nature and humanity. Art

and sport are two fabulous means of bringing people together!

What major challenges have you overcome?

The setting-up of the expedition in itself represents a real challenge. I'm quite a loner, even on land. Anyone who sets up a project, regardless of its size, must face his or her own challenges. Concretizing a real project is already a victory!

Which links do you have with politics?

We've welcomed several personalities, including regional presidents and senators, mayors, as well as Nicolas Hulot, former French Minister of Ecology, Sustainable Development and Energy. Nevertheless, we really do try not to get engaged in politics to avoid being prey to political interests and to maintain a dialogue with all parties.

Would you like to strengthen your actions in schools?

Absolutely - today at each stopover, we welcome elementary schools on board and soon, we hope to have middle-school, high-school and university students too.

Who would you dream of inviting aboard Pen-Duick VI?

There are so many people! But I don't like name-dropping. The choice of guests isn't only made according to my wishes, but also for their relevance to the theme

being addressed. They may or may not be famous, what matters is their desire to share their knowledge.

What's most difficult for you when you get back to land?

It's always difficult for me to get off the boat. Coming back to life on land is complicated. The sound of the telephone is painful, all the superfluous constantly surrounding us, we're swamped by too much information. It all seems so ridiculous. I don't like to live in too much comfort on land. On the boat, we live on little and waste nothing, starting with saving water.

What are your driving motivations?

The sea and the navigation make me indescribably happy. Stress is also an interesting driving factor, I mean positive stress that helps you take on challenges and accept failures, something that's hard at the time. It doesn't scare me. On the other hand, I hate to disappoint, starting with myself. So I do everything at 250%!

What's your way of being in the world, with regard to environmental changes?

No matter how many technologies there are on Earth, it's humanity that has to change. But changing on your own is exceedingly difficult. Change must come through industry and we must help it. Our views towards it must evolve. Personally, I make the choice to remain positive and not sink into fatalism. It's a daily disci-

pline because I want to live in peace, in harmony with nature. That's one of Elemen'Terre's major axes.

What are the visual impacts or experiences that have particularly impressed you?

Take a walk in the forest or on the beach and see the number of cigarette butts on the ground. No need to travel the planet. The impact of global warming can be measured from our windows. All around the globe, weather phenomena are changing. With Pen-Duick VI, we suffered

Hurricane Lorenzo in the Azores in the fall of 2019. A year later at the same time, there was 100 knot winds at Belle-Île, France. These extreme weather conditions are new for this time of year.

Which landscapes have particularly moved you?

So many! On land, I'd say Montana... but also Iceland, Greenland, Patagonia... But you know, I adore Ushant most of all. No need to go to the end of the world to see and marvel at all the treasures that lie before our eyes!







Plastic Odyssey, the laboratory boat of all possibilities

Interview with Simon Bernard

Simon Bernard could have created a lucrative business but he preferred to embark on the Plastic Odyssey epic.

By training, Simon is a merchant navy officer, as is his partner, Alexandre.

But a one-year expedition aboard a low-tech ambassador catamaran (Nomade des Mers) turned his destiny upside down. The shock he got in Dakar at the piles of abandoned plastics and some revealing statistics contributed to his awareness - twenty tons of plastic waste per minute are dumped in the waters of the world. That's the equivalent of a garbage truck - two hundred and fifty-three kilos per second. Simon made a U-turn decision; he would no longer work on big merchant ships.

Plastic Odyssey started in 2017, with the desire for him and his two associates, Alexandre Dechelotte, a fellow student and Bob Vri-gnaud, another engineer, to seek inspiration during the catamaran expedition and especially to wage two battles - the fight against plastic consumption and against the creation of waste. For them, only one solution is valid: turn off the tap. Explanations.



Simon Bernard

FRANCE

“We want to be copied.”

What is Plastic Odyssey?

Plastic Odyssey is both a project and a floating laboratory. We want to promote recycling and waste treatment dramatically thanks to a laboratory boat that'll reduce waste in the ocean, from fuel... to plastic waste! From 2021, we'll be on a 3 year expedition around the world. At each stopover, waste will be collected and sorted. What's recyclable will be transfor-

med into useful objects or materials. The rest will be converted into fuel.

Navigating thanks to plastic is a strong signal that will be a platform for our on-board solutions. We want to transform waste into sustainability and eventually see recycling centers flourish all over the world. But first, you have to understand the different waste management policies, raise awareness and convince local players

to recycle, on their own scale.

How do you plan to do this?

By turning to sponsorship and patronage, a process already underway. For maximum impact, and to be copied which is our goal, our solutions will be open source, simple enough to reproduce and cheap enough for the poorest populations to benefit. If plastic is seen as a financial resource, it'll be gathered. There's also an exhibition planned at each stopover. The boat's there to put the spotlight on technological advances and bring entrepreneurs, investors and other actors together.

How does the boat work?

It's split in two. 200m² of workshops and around 15 machines equip it. The lab "Clean up the Past" is at the back. The entire recycling chain is there - collection, sorting, preparation, (plastic-grinding and washing), analysis, melting and transformation into profiles, plates, tubes and other construction materials. We're also working on processes to make textiles from plastic bottles, something that already exists in Industry.

A database will be created with all the waste collected by country, photos, composition of matter and physical data.

"Build the future" at the front, will be the showroom. Companies will be able to see the alternatives to plastic that exist. Our first boat was a 6-meter demonstrator that we toured France with. Today, it measures 40 meters!

Who creates the machines?

We sometimes do a little design work on certain elements but the majority of the work is delegated to about thirty experts and manufacturing partners. We're going to do retro-engineering with the few sourced machines that already exist. In Cairo, for example, we're in contact with informal recyclers who've developed several proven systems over the past twenty years (crushers, centrifuges).

What are first stages and how do you prepare for them?

Stopovers are prepared 6 months in advance. The first two, Lebanon and Egypt, are already well established. We've built up relations there, as well as in Cape Verde where we're expected for the setting-up of a recycling center. We meet entrepreneurs who might be interested in building recycling centers and incubators that could help them; investors and companies wishing to reduce their plastic production. The crew, made up of 10-15 people, will take turns. We have 2 teams. The Plastic Odyssey Community, for the awareness part, focuses on the general public, schools, while the Expedition team takes care of the institutional, the sponsorship and targeting the creation of local recycling companies.

Is the recycling process easy?

It's the sorting that's especially challenging. Sorting different types of plastics is difficult and requires specific knowledge.

We're working on sensors that would help identify them.

As for recycling, it's not always done in the same way. It's not like aluminum or glass, which you just need to melt. But it's not utopian either, it already exists. In Cairo, for example, 70,000 people make a living from it.

The invention of plastic dates back to 1838. Since then, 6.3 billion tons have been produced but only 9% have been recycled. It's estimated that if we recycle 1 in 2 waste products in 20 countries, we'll reduce pollution in the ocean by 40%.

Imagine, there isn't even one recycling school in France - that's shameful! The programs have to be changed and move with the times. At Plastic Odyssey, we'd like to become the Wikipedia for turning plastic waste into resources.

What can be done with recycled plastic?

Indeed, that's the challenge. Who will be the buyers? You have to find profitable uses, such as tiles, paving stones or works of art, although they're more difficult to sell. Recycle for the sake of recycling is of no use if no one's buying.

Our society is built around plastic. What are the tips deployed by manufacturers?

All a company needs to put on its labels is "bio-based", "recycled" or "recyclable" materials for its image to be embellished and the consumer to be lured. We have to

be clear about things. A recycled material is not the same as a recyclable, biodegradable or even bio-based material and won't have the same impacts. Vigilance requires knowledge. Just because a material is recyclable doesn't mean it'll be recycled. And just because it's recycled doesn't mean it'll be recycled a second time.

How many times can plastic be recycled?

That's hard to quantify. The majority of plastic waste is recycled only once. It's also true that each recycling process impoverishes the mechanical characteristics of the waste. Actually, food packaging and bottles require cutting-edge technology because they have advanced characteristics. Initially we want to focus on quickly-made, 100% recycled, basic objects.

When we think of the "plastic continent", we often think of stagnant visible elements, but much less of micro-plastics. Where are they?

Indeed. Over 300 million tons of plastics are produced each year. You need to know that 80% of marine pollution comes from coastal towns in the poorest countries. Only 1% of plastic waste floats. The rest leaks or breaks down into micro-particles. What sinks becomes heavier and gradually settles, forming a layer on the sea-bed. Recovering these plastics would be tantamount to extracting the life that's accumulated there with reef ecosystems and is obviously a pipe dream. Not to mention the

fish that sometimes are found in bottles, shoes, etc. Another part, the majority, turns into micro-particles and becomes micro-plastic - barely visible, impossible to fish. Picking up visible trash and recycling plastic is just a small band-aid on our mistakes, certainly not a solution. We must turn off the tap and consider more sustainable solutions.


The ocean, at abysmal depths, stretches over 70% of the planet's surface. However, we too often forget that the ocean isn't primarily made up of water. Immeasurable amounts of ecosystems live there, including micro-plankton, essential for life.

You have to focus on how to stop producing plastic. Imagine a water leak in your bathroom with a tap fully turned on. Imagine wiping up any drops that have run down the sides of the sink while your feet are submerged in water. Delusional, isn't it? Well that's exactly what's going on right now. We must turn off the tap.

Plastic Odyssey will ultimately have an incubator role. Do you plan for long-term follow-up?

Yes, of course. In parallel with the navigation expedition, we're going to create a support program to bring the projects to life. This phase will take place at the end of the R&D, when we've visited the countries, found the partners, planted the seeds and understood the situation on site. An online platform and a catalog of solutions will bring the community of stakeholders we'll have met together. Each context is specific (needs, local markets, types of waste) and countless professions have to be created! Plastic Odyssey will take the role of advisor, catalyst and facilitator with a strong added value - our knowledge of recycling techniques and the analysis of situations.



An aerial photograph of a vast, rugged mountain landscape. A massive glacier flows down the center of the image, its surface marked by numerous crevasses and ridges. The surrounding peaks are steep and rocky, with patches of snow or ice. The lighting creates strong shadows, emphasizing the dramatic topography.

*“If I don’t dream big,
no one will do it for me.”*

STÉPHANIE GICQUEL

The power of visualization

Interview with Stéphanie Gicquel

For ordinary people, the exploits and adventures she experiences are beyond comprehension. Extreme sportswoman, passionate about adventure sports, ultra-trail runner, Stéphanie Gicquel turns her initiatory experiences into odes to the living. A former lawyer, author and coach in business and within entrepreneurial networks, she talks once again about her 2,045 kilometer, breathtaking Antarctic crossing in 2015. Meeting with an adventurer for whom nothing is insurmountable.



Stéphanie Gicquel

FRANCE

“The only limit to our goals is the one we give them. The rest is just an excuse, a fear maybe.”

What moves you more than anything?

Adventure. We're all born adventurers. That's kind of my mantra, which I believe in a lot. Anyone can inspire me, I don't have an idol but I do have a lot of curiosity. There are many people who achieve incredible things but don't necessarily realize it, whether it's sporting, entrepreneurial, in an association or a personal journey. Being aware of this requires taking a step back, taking time, being in reflection mode, not in the action - something not easy in our daily Western lives. Yes, and this is what's often contradictory

in our fast paced lives. Yes, it's always possible to respond even faster, to work even faster. Yet it still takes just as long as before to achieve one's goals. We see it in sport - the body can adapt, but it has to be trained. Nothing happens overnight.

How do you work on self-confidence?

Self-confidence is not innate - it's something that's acquired over time, through experiences and reaching goals outside of your comfort zone. Now, when I'm struggling in high performance sport, I think about what I did when I crossed Antarc-

tica. That gives me the strength and the confidence to keep going forward.

I encounter many moments of doubt, that's part of the adventure. You can have confidence in your ability to achieve a goal despite having doubts about how to reach it (timing, etc.). It doesn't seem at all contradictory to me. Actually, you have to anticipate the risks. This allows you to be better prepared and to remain humble.

Is visualization a sine qua non for success?

The mind is capital. In my opinion, it's impossible for an athlete to get on a podium without first having imagined, visualized and dreamed of being there. If that's not the case, the challenge just wasn't great enough or the physical potential was much higher than the challenge set. In Antarctica, I walked between 8 and 16 hours a day. I went through really difficult areas, with crevasses and white fog. Sometimes I didn't even have a landmark and temperatures were often below -50°C.

Visualization is key. Firstly positive visualization, where you see yourself achieving the goal. And then the visualization of obstacles, such as pain, rain, muscle spasms, stomach-aches, which allows us to better accept them when we have to go through them. You can't fight against rain. You just have to accept it. This technique helps to build confidence and find solutions, so you don't let obstacles win the day. Giving into a difficulty is a waste of time and focus on the goal.

I ski-toured across 2,045 kilometers of Antarctica in 74 days. I was afraid that the temperature would drop below -50 degrees, as my equipment was light. I was frightened by the paralyzing cold which means you can't stay immobile for long. I was scared when I ran out of food, afraid of the arrival of the katabatic winds that can reach 320 km/h. Fortunately, I didn't experience them, but I did have winds blowing at 80-90 km/h, which is the limit at which you can continue walking. Short breaks to eat or hydrate necessarily take longer. I barely had enough time to shut down my equipment before setting off again, in order to keep heat generating in my body! Given the element of uncertainty, visualization helps to anticipate the risks and details.

Is the adventurer looking for risk?

No, it's not risk that adventurers are passionate about. It's commonly believed they love risk, but most of all they're passionate about what they do, their sport, and in my case the scenery.

In Antarctica, there were three of us. Expeditions often consist of two to six people. I like human contact way too much to be alone on this type of adventure. And let's not forget that we always have the goal of staying alive! When the goals are extremely high and the expedition's particularly challenging, being in a team's definitely more relevant if you want to reach them.

You now also have a role of coach, what are the tools that help you to achieve your goals and dreams?

I regularly intervene in business as an advisor, working with employees and clients, or at trade shows and certain general public events. I talk about the resources I was able to use to achieve my goals, especially in sports. The first and most fundamental thing is passion, desire. The second is the ability for hard work generated by a sense of effort. Too often, we highlight the results, but what about the path to get there, the effort, the discipline? A sense of rigor requires an organized schedule. You need a long-term vision, which means being comfortable with the notion of passing time. And most importantly, you mustn't try to achieve a goal overnight. We've all been made more aware of that since 2020.

Which associations do you give your time to?

2 years ago, I ran 7 marathons in 7 consecutive days. I took the opportunity to communicate and try to raise funds for "Petits Princes". This association was founded 30 years ago, and its main aim is to make the dreams of sick children come true. Sometimes I give talks in schools about Antarctica to encourage them to also raise funds for the association. When I collaborate with eco-responsible brands, I highlight the clothes which are relevant to my acti-

vity and are respectful of the environment. The money raised is paid in full to the association.

Do you believe in a better tomorrow?

I'm optimistic, but I realize that it'll take time to rethink our operating systems. The scale of the task is immense. As an explorer, I've seen the wilderness. The only human construction in Antarctica is at the South Pole.

I have two observations and the first is positive. Mankind's been able to create remarkable inventions (monuments, technologies) thanks to intelligence, a collective spirit, the pooling of skills and qualities. The second one's more negative, linked to the world of overconsumerism and too many densely-populated areas.

I think the human species is able to react and adapt, especially when we feel there's an emergency or pain and discomfort and we've seen that with the recent lockdowns. So yes, in moments of instability, we're able to show resilience. But in order to be able to see something, you need to want to. Will we have to wait to be faced with an even more visible reality to truly change our consciences and show resilience? Might it not be too late then? The ecological adventure is the largest of all the adventures that mankind has yet had to face.







The schooner Tara (re) enchants the sea

Interview with Romain Troublé

The famous schooner Tara, the largest polar dinghy in the world designed to withstand the compression of moving ice and very low temperatures, is a real floating scientific laboratory. With 12 scientific expeditions to her credit since 2003, she has traveled the seas and oceans of the globe, in collaboration with international laboratories of excellence (CNRS, NASA, MIT, universities, etc.). Tara discovers the planktonic world, carries out unprecedented collections of marine micro-organisms and maps their distribution and models of their interactions.

In 2016, the project became a Foundation and that was the birth of Tara Ocean, the first recognized public utility foundation dedicated to the ocean in France.

A special observer at the UN, the Foundation is leading a scientific revolution to help anticipate and manage climate risks better.

Tara has traveled more than 400,000 kilometers and left her base in Lorient, France on December 12, 2020 on a new voyage, 70,000 kilometers over 21 months.

Romain Troublé is the Managing Director – a sailor and scientist in molecular biology, he joined the adventure in 2003.



Romain Troublé

FRANCE

“More than 100,000 students have followed the educational programs developed by the Foundation in partnership with the Ministry of Education.”

What is Tara Ocean’s mission?

To work for the good of all. I’d first like to remind people that Tara was created by sailors, known to remain humble when confronted by the elements.

Today, Tara launches relatively long scientific research missions, carried out by a team of researchers. Since the start, 80,000 samples have been collected and more than 300 scientific publications have appeared. Sometimes, the actual subjects come into being at sea! The Micro-Plastics Expedition came about during a 4-year

plankton mission 12 years ago. We discovered that we were fishing... a lot of plastic. We then spent an entire year focusing on European rivers which were carrying flows of plastics.

How are the expeditions organized?

The duration of a mission can vary between 2 and 3 years. The boat doesn’t stop, but the teams change (scientists, artists, sailors, etc.). 2021 has been devoted to a new two-year, 70,000 kilometers mission “Micro-biomes – Understanding the

invisible people of the ocean to preserve our future”, marked out by 23 stopovers - in Latin America, the South Atlantic, West Africa and Antarctica. We’re focusing on the production of dioxygen by the sea, its way of storing CO2 and producing proteins. What can we predict, protect, cool down?

What are your wishes for future expeditions?

To set up a mission dedicated to coral over an entire oceanic basin. In 2016 and for 3 years, Tara Pacific focused on these reefs, spread out over 30 countries.

We’re also looking closely at the scourge of plastic waste and its origins - industry, poor sorting, anti-social behaviour... where should we put the money to stop this ecological massacre?

In your opinion, optimism drives Tara. You are yourself quite optimistic about the resilience of the ocean and the ability of humans to change their behavior.

The ocean’s one of the most resilient environments on the planet - 80% of the biomass, of micro-organisms are renewed every two weeks. A coral reef can recover in about 7 years. This is out of all proportion to what’s happening on earth. The coral that we know today won’t look the same tomorrow, some species will have adapted and evolved. The Red Sea’s home to a lot of corals, yet it’s much warmer than other oceans. I must add that I welcome the

French leads, such as the very ambitious objective of reaching 30% of marine protected areas by 2030. France, one of the most active countries in this field, has also been one of the few to commit.

Tara is a UN Special Observer on the ocean. You also say you actively take part in ocean governance processes at a national and international level. How?

Tara’s a member of “Ocean & Climat”, a platform bringing 90 French and international NGOs together, notably in industrial and science sectors, around issues relating to climate. Created a year before Cop21, it’s currently seeing the emergence of a consensus. We’re in close contact with the Ministry of the Sea, our discussion partners. In my opinion, the challenge for the next 10 years will revolve around marine protected areas. Today, it’s true to say they’re not always very well-surveyed and are frequently fished. How can we improve the protection of what’s already protected?

We’re also involved in talks with the government, and in discussions on the next laws relating to future washing machines which are to be fitted with nanoparticle filters. It’s a fact that anything synthetic sows particles...

What does your main teaching work consist of?

Tara has the particularity of working with classes in French schools. More than

100,000 students have followed the educational programs developed by the Foundation in partnership with the Ministry of Education.

We have to make young people want the future, to understand, to get involved. The scientific projects we touch on are a bit complicated, relating in particular to basic research of a fairly high level. Thanks to its educational programs, Tara trains 1,000 teachers per year, from primary to high school - 10,000 children came to visit us in the summer of 2020 in Paris, when the boat was docked for 2 months!

And during stopovers?

At each stopover, around 130 children on school outings visit us daily, that's about 8 classes. They work on cross-curriculum projects jointly supervised by teachers of biology, history, geography etc. Since the start, more than 70,000 children who've come on board have been made aware of environmental issues, in France and in over 60 countries. We've also recently launched a project on plastic - "Plastic under the microscope" - the classes carry out their investigations on the banks of rivers, streams and lakes, then bring back samples and follow the same protocol as the scientists. They send their samples to the CNRS (French National Centre for Scientific Research).

What are the beginnings of solutions according to you?

A cocktail of actions and what innovative start ups do is fundamental. The State also has a major role to play. We've been monitoring progress on the circular economy decrees for a year, but it's slow and complicated (short-term policies, Covid, etc.). Unfortunately, we didn't win our case on the order we'd campaigned for, but it's alleged the State wants to come back to the table.

Finally, even if the legislator is undeniably making progress, that is, by banning the sale of washing machines without filters, it's above all a question of educating the buyer to buy less synthetic products in favor of more natural fibers and recycled wool. But these issues are still reserved to a certain elite.

How does the foundation really stand out from other actors involved at sea?

Many economic clusters already existed but the scientific aspect was missing. Tara created a cluster which is based more on science and education. Today we're very happy and proud to say that Tara has an international reach and is a predominant actor in the debate.







“Diving expeditions have their virtues: they cure egocentricity”

Interview with Laurent Ballesta

Diver, nature biologist and underwater photographer, Laurent Ballesta is used to extraordinary challenges. During a twilight dive in 2010 off South Africa and at a depth of 120 meters, he took the very first photograph made by a diver of the coelacanth, a 350 million year old fossil fish, discovered in 2000.

In the summer of 2019, he made a world premiere - with 3 teammates, he experienced saturation diving, discovering the great depths between Marseille and Monaco. For 28 consecutive days, he experienced life in an ultra-confined 5 m² pressurized chamber placed on the water and connected to a diving-bell for descending the divers to a depth of 120 meters. Subjected to a pressure 13 times greater than that of the atmosphere, divers operate in an extreme environment (3% oxygen, 97% helium). This vessel makes it possible to remain in saturation for a long time, with no obligation to decompress or return to “earth”.

With Andromède Océanologie, a company he co-created in 2000, Laurent Ballesta and his teams explore, photograph and bear witness to the beauty of the ocean and the alteration of great depths by anthropogenic pollution.



Laurent Ballesta

FRANCE

“Because men have traveled there for millennia, we believe the sea to have no secrets. Because they have conquered and mistreated it, we believe it to be devastated. However, the Mediterranean remains a living sea, to be explored.”

Where does your passion for studying benthic life and habitats come from?

Commander Cousteau's films were decisive for me. *“How can you protect what you don't know?”* he said quite rightly. Furthermore, I've always been driven by an immense curiosity and a passion for exploration, particularly strong in children. As for benthic habitats, they carry with them the fascination of parallel universes.

How do you choose the locations for the Gombessa expeditions, orches-

trated by Andromède Océanologie?

3 criteria motivate our choices. My scientific naturalistic curiosity imposes expeditions on the look-out for mysterious beauties. Lots of subjects arouse my curiosity - the reproduction of groupers or the deep coral reefs of Antarctica, the hunting in schools of sharks or giant squids, etc. Sometimes the dive isn't sustainable and the mystery remains... humans don't know how to dive 3,000 meters deep.

The second criterion relates to the diving challenge. Is it feasible to answer the scientific mystery raised? Finally, there must be a

promise of original animal pictures. The expeditions are sometimes carried out quickly (6 months), but sometimes over decades. It took me 18 years to take up the challenge of saturation diving. Advanced industrial diving techniques meant that I was able to stay at a depth of 120 meters for 28 days, thus touching upon some almost inaccessible mysteries of the underwater world.

With Andromède Océanologie, you supported the Monaco sea extension project, by carrying out the largest Posidonia herbarium transplant operation ever. For several years your team spent 250 diving days in total per year transplanting the herbarium, in order to free up the advance on the sea. How is that going?

We're very proud of the result which has been almost totally successful. The titanic work involved transplanting 750 herbarium baskets each measuring 1 cubic meter. We've had a success rate of over 90%. Some herbaria have even started to shoot branches growing out of the baskets. However, their precise development will need decades to be measured.

We'd started the transplant before the construction of the advance on the sea, taking immense precautions (dust covers to limit the murky waters in particular); the herbarium found itself in very unfavorable conditions, traumatized, torn and displaced, undergoing excessive sedimentation because of the construction site. It's currently reco-

vering, and the results are really very encouraging. This is one of the *raison-d'être* of Andromède Océanologie - ecological restoration, conditioned by the study and expertise of the marine environment.

France holds the second largest maritime territory in the world. If you were in government, what action would you take as a priority?

I'd do anything to increase the size of marine protected areas (MPAs). This is a measure that's certainly not easy to put in place, but it's very concrete. Everyone wants to protect the sea, but very often it's not at home, just next door. I believe all it'd take is strong political will and I'm sure public opinion would follow suit. I know many professional fishermen who are fervent defenders of marine protected areas. They know how excellent the fishing is on the outskirts of the said MPAs. We really have the means to be exemplary on a global level, between Antarctica, the Subantarctic islands etc... France has a unique position in the world, managing territories in the 5 oceans!

What's the situation of marine protected areas?

Many MPAs are flourishing. Unfortunately, this is often administrative with very few inspections. The changes are worrying. From the beginning of spring, we notice a proliferation of filamentous algae. The very deep coralligenous reefs become necrotic in their upper limits (40 meters) due to the heating

of the water. On the other hand, we have observed an extraordinary development in a few short decades within the strictly restricted areas – for example, the Cerbère-Banyuls reserve in the Eastern Pyrenees, the Port-Cros national park in PACA (on the Riviera coast), the Scandola nature reserves or the Bouches de Bonifacio, a nature reserve in Corsica. The Calanques National Park in Marseille is the latest fine French example, it being the most recent of the strict, large marine protected areas. In less than 10 years the fish have returned, in quantity and in size.

But MPAs remain insignificant given the vastness of the planet. This is all the more maddening because we know it works. According to many scientists, protecting even 20% of coastlines would be enough to reseed the remaining 80%, which could then be exploited in a sustainable manner - the overflow effect is really interesting to observe in these protected areas.

New anchoring regulations in the Alpes-Maritimes department came into force in the fall of 2020.

Posidonia meadows have declined by 30% in less than 5 years - just imagine that? Another 10 years and there'll be nothing left. This is already the case in Golfe Juan. Rapid action's essential and these new regulations are a tremendous step forward. The maritime prefect for the Mediterranean has taken up the cause, particularly with the aim of protecting Posidonia, and has decreed no-mooring zones for ships over 20 meters.

This prefectural decree didn't fall out of the sky. It is, among other things, the result of 20 years of mapping work, which we forwarded to the Rhône Mediterranean & Corsican water agency, subsequently passed on to the prefect.

Are you completely satisfied with this decree?

This is an exceptional decree. Obviously, we'd have liked him to go further and see all anchors banned from these areas, regardless of the size of the boat. But everyone's opinion must be taken into account. During the previous summer, the police imposed numerous fines to set an example. Word of mouth was quick - all boat-owners knew they could get immobilized and that the offenses were considered criminal. Lobbying then spread to the government.

Of course, those in the business will tell you that the yachting industry, which runs between June and September, is fundamental to the French Riviera. But this doesn't take into account what we we'd lose if the herbaria weren't there. Without them, Saint-Tropez would no longer exist; Golfe Juan would be in distress. It's not easy to realize the countless ecosystem services they provide, not only to the "little fish" as those who laugh at environmentalists would say, but also to coastal human populations. Genuine carbon sinks, they maintain the beach, fight against coastal erosion and provide a fish nursery for fishermen, the very people who will sell them to coastal restaurants.

A degraded environment and a short-term

view of profitability can never save money in the long term. Humanity depends on the sea. It's so obvious that it's actually ridiculous to repeat it.

With Andromède Océanologie, you also work as a cartographer. Tell us how.

Mapping the seabed, unlike mapping vegetation on land, is painstaking work! You have to check everything while diving – sounders and sonars quickly reach their limits when you want something really precise.

We started with basic cartography, before doing applied cartography (maps of natural areas), destined for national parks, MPAs, water agencies, etc.). In fact, with the proof of work in images and expertise we wanted to make these maps speak, to show that catastrophic regressions can be quantified, in particular the devastating consequences of the anchors on the Posidonia meadows, in Corsica and in PACA (on the French Riviera). All this work was handed over to the previous prefect two years ago and passed on to his replacement.

What are your next challenges?

We're going to return to Polynesia to study the behavior of the great hammerhead shark, extraordinarily stealthy and fierce. They're king in Polynesia and yet we know very little about their migrations, their times of predation or reproduction. With the team, we are giving ourselves until 2023 to rise to the challenge of filming some of their behavior. As spectacular as they are, nothing is known about most large animals, except that they exist.

How have your explorations changed you?

The Gombessa projects, which are very federating, mainly stem from my childhood dreams. But they couldn't be done without a great team! I'm deeply proud of the people working around me. Human relationships have endless nuances, but diving expeditions have the virtue of curing egocentricity.





Traveling alone: the NomadHer boost

Interview with Hyojeong Kim

“NomadHer is one of 8 innovative applications designed to change the world, advocating the independence of women”, according to Apple. Hyojeong Kim, a South Korean entrepreneur based in Paris, aims to revolutionize tourism. Her NomadHer application has been making solo travel for women easier for 3 years. Hyojeong is also Girls20 Ambassador for South Korea, an organization that wants to transform tomorrow by putting its trust in young women and placing them at the center of decision-making processes. Interview.



Hyojeong Kim

SOUTH KOREA

“All women in this world should - and should be able to - travel solo, at least once in their lifetime.”

Who are you?

I'm a dreamer and an experienced traveler! I've been to 42 countries and done a lot of Couchsurfing. I'd also call myself a visionary. Today, I run NomadHer, which I founded 3 years ago.

What was your greatest challenge?

Well first of all, to create the NomadHer application of course, and then to see women using it! It's a safe and comfortable environment for them where we give a lot of advice. Our community's growing, res-

ponding to a real need in society. Based in Paris and South Korea, we're a team of digital nomads! We all remote work, the case even before Covid and that's is one of our strengths.

How did the idea of creating NomadHer come to you?

It came in stages. I first wondered if there were a lot of women like me who wanted to travel alone, so I got stuck into the subject. Then, I looked at the difficulties they face when traveling alone. NomadHer was

born in Paris during my studies, when I met tourists from all over the world. I asked myself, *“What if you were to create the female traveler connection community?”* I pitched the idea during my entrepreneurship classes and received a lot of positive feedback from teachers and my entourage.

You’re also an ambassador for Girls20. What’s your mission?

To help increase gender equality in my own community in South Korea! Girls20 is a bit like the G20, except that the organization represents young women. Each of the 20 countries is represented by a woman and I was selected in 2015 to represent South Korea. When you’re an ambassador, you can propose your initiatives, which is partly the reason why I started NomadHer, but the main objective is to increase the involvement of women in the economy and social sectors. We want to make their voices be heard.

How did you get there?

When I first applied I was living in Mexico, where I’d gone to live on my own, and I was in the process of setting up my business. I think that’s what attracted them.

I was also teaching languages to women and explaining the power of education to them. I was then 21 years old. Girls20 was growing rapidly and one day I was invited to attend a conference in Turkey. Later it was New York at the Rockefeller Foundation. I met incredible leaders there from all over the world.

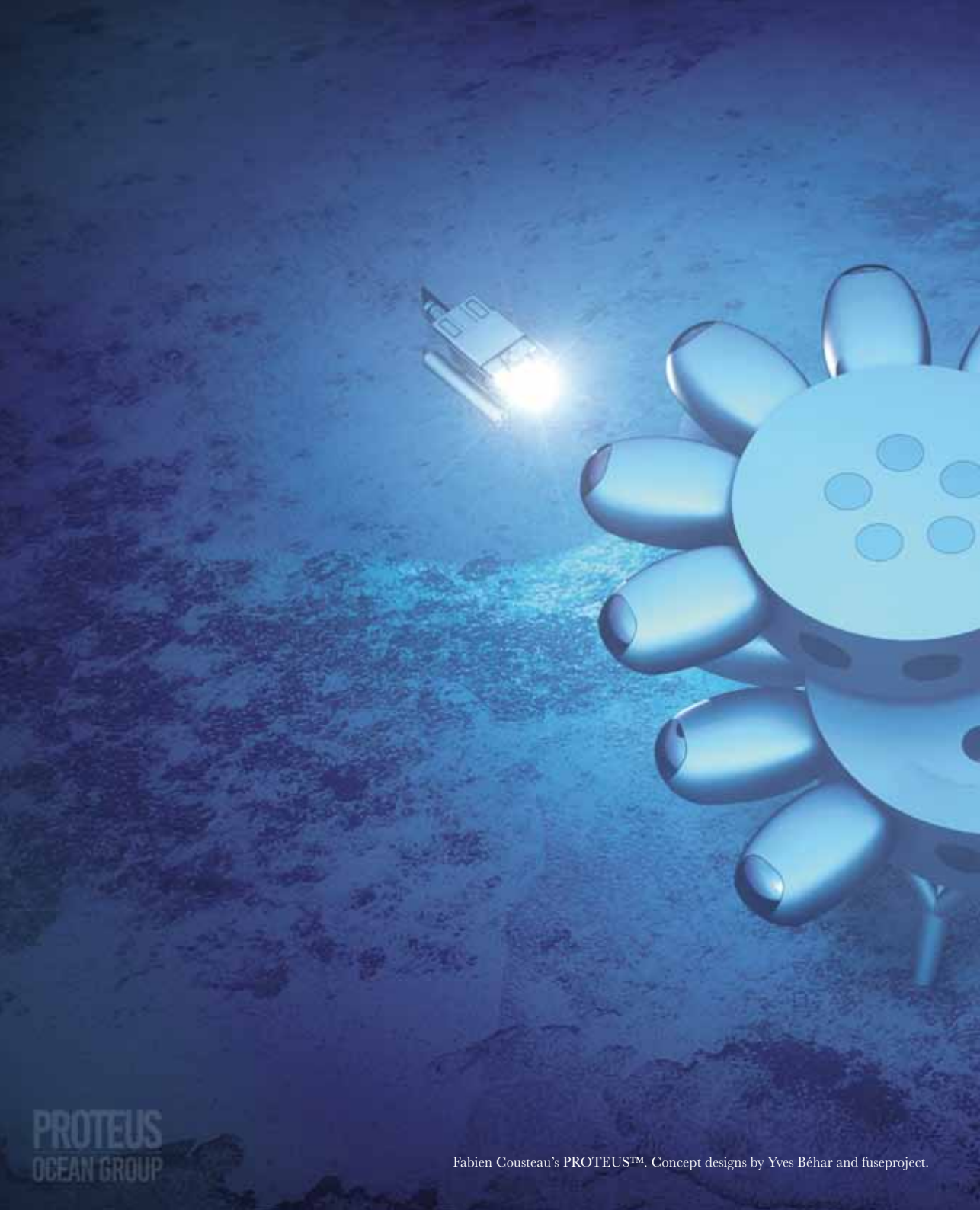
How much has all that changed you?

We’re a huge network of women ambassadors for the causes of women and some have become my friends. Each of us has either her own company or NGO - some of us are journalists, scientists, engineers... Recently, I gave a talk to UN Women, an experience made possible by our ambassador who recommended me. On that occasion, I talked about NomadHer of course, but above all I explained why all women in this world should - and should be able to - travel solo, at least once in their lifetime.

What’s your response to that?

Traveling alone allows you to experience your weaknesses, define your strengths and to delve deeper into yourself.





PROTEUS
OCEAN GROUP

Fabien Cousteau's PROTEUS™. Concept designs by Yves Béhar and fuseproject.

Proteus - underwater exploration at the dawn of a new Cousteau era

Interview with Fabien Cousteau

Humanity has explored 5% of the ocean. Out of ignorance, it has invested much more in the conquest of space rather than in underwater research, preferring to travel ever so far to seek what may actually be found at home (information for use in science, medicine or industry).

Fabien Cousteau's idea is revolutionary - Proteus, a Greek marine divinity with protean aspects, gives its name to the future underwater exploration station, the largest and most sophisticated ever designed (370m²).

Located 18 meters deep off the island of Curaçao, famous for its immense coral reefs in the Caribbean Sea, the submarine base should be habitable by 2024.

Fabien Cousteau, who started diving at the age of 4 and spent his childhood on the legendary research vessels Calypso and Alcyone, continues to push the limits of what is possible.



Fabien Cousteau

FRANCE/USA

“We often talk about the ocean, a blue vastness that we know nothing about. Proteus must become the platform that can connect us in real time with what enables us to be.”

Proteus will be a world first. What will its missions be?

Our research will focus on climate change and the micro-plastic that infuses the ocean. We aim to combine talents and promote the hybridization of skills. During the mission, 12 aquanauts will in fact be constantly working and evolving inside Proteus. Subsequently, we plan to create a network of submarine bases, spread over

seven or eight strategic locations around the world.

Why locate Proteus off the island of Curaçao?

It's a place which has been explored very little, with coral reefs in great condition and fabulous biodiversity! It offers possibilities for in-depth research, with the seabed reaching 800 meters in places.

The government of Curacao was very enthusiastic about the project and gave us almost immediate access permission.

How will Proteus be organized?

Containers will be installed inside and outside to allow scientists to study unstressed, intact organisms and plants. This is a major breakthrough - these organisms won't react to the changes in pressure and temperature usually associated with ocean sampling.

The station will also be connected to the surface by a line that will carry breathable air and communications. Marine life and everyday life aboard Proteus will be filmed continuously, via a video production facility and shared with universities so they can follow the research and discoveries in progress during sessions.

What answers are you looking for?

We want to advance on knowledge of the seabed. Less than 5% of the ocean has been explored. We often talk about this blue immensity about which we really know nothing. Proteus needs to become the platform that can connect us in real time with what enables us to be.

Humanity's taken a selfish course for itself, but we have the opportunity to turn that radically around, in a time-frame that's getting shorter every day. It's obvious that the ecological crisis affects us deeply, even unconsciously. We're in the 6th mass extinction, the only one to have been caused by one species - the human species. We're

not aware enough of the great whole that we form with nature; aware enough of the interdependence between all the species. We're completely disconnected from the ocean. Yet it's thanks to the ocean that all life on the planet exists.

How will the first mission be organized?

It'll be dedicated to basic excursions and applied research on the seabed around Proteus. The expedition, carried out with my team, will consist of perfecting the functions of Proteus as well as studying human psychology and physiology, since we're going to be quite numerous, twelve (as opposed to 6 on average in the past). I can't tell you how long it's going to last yet, but what I can tell you is that it'll be unique! For the subsequent missions, we plan to call on different research structures, depending on the subjects - biochemical research, robot development etc. We're currently in talks with MIT, Nautica, the Oceanographic Institute, the Albert 1 Prince of Monaco Foundation and many others.

In 2014, you led Mission 31, within the Aquarius Underwater Laboratory, in the Florida Keys. Did it inspire you to create Proteus?

It's obvious that Mission 31 strengthened our approaches and convictions. We'd focused our research on climate change and the overconsumption of marine species, especially fish. After that, we were able to

communicate with over 100,000 students for 31 days which was fantastic. When we completed the assignment, we forwarded our results to Stanford University, MIT and Northeastern University with whom we had partnerships. Numerous research articles were published between 2015 and 2017. Proteus will be much larger and should allow us to work and develop over a long timescale and to further research of course.

What particularly moves you?

One of my biggest dreams was to create an international submarine station. With Proteus, we're at the dawn of a new era. One major tool was missing from underwater exploration, and I really realized that with Mission 31 - submarines, robots and diving are not enough. An underwater laboratory habitat such as Proteus opens up extraordinary perspectives.

Furthermore, I have a passion for all living things. During exploration I'm happy when I discover a whole panoply of lives, colors, movements. Continually learning a little more about the ocean makes you know yourself a little better. My grandfather used to say, *"People protect what they love, they love what they know and they know what they learn."* Taking an interest in the environment is enough for our decisions to be naturally anchored in a process of love for the planet. We're all united to the ocean, the common good of mankind. We need more aquanauts in the world! Imagine, there've been more astronauts in History than "oceanauts", to use a term dear to my grandparents. We must make young people dream, refuse to accept the word "impossible" and make it a discipline of life. Anything's possible once you get started. Have dreams and strive to fulfill them!







A swim across the “plastic continent”

Interview with Benoît Lecomte

5,980 kilometers: that’s the distance, swimming and drifting without a board, covered by Benoît Lecomte, a long-distance French swimmer in 1988. He crossed the Atlantic Ocean from Cape Cod (Massachusetts) to Quiberon in 73 days. At 31, he was the first man to do so.

In 2018, he crossed 2,800 kilometers of the Pacific Ocean during a swim called The Longest Swim – it was abruptly stopped by a typhoon. He was then accompanied by 27 scientific institutions, including NASA, to carry out research on pollution, mammal migration, and endurance.

A year later, the extreme swimmer followed his passion to raise awareness of the scourge of plastic pollution. His goal was to alert the public of the infamous “plastic continent”, halfway between Hawaii and San Francisco in the North Pacific, whose vortex is so dense that entire floating islands have emerged.

Preceded by a Zodiac (an inflatable boat) to keep him on course, and followed by a 20-meter sailboat with eating and sleeping quarters for the team, and where scientific and medical teams could work together, Benoît Lecomte achieved the remarkable feat of swimming 555 kilometers through plastic for 80 days, for 7-8 hours a day.

He talks about this incredible crossing in an area 3 times the size of France.



Benoît Lecomte

FRANCE / USA

“While swimming in the ocean, I saw more plastic than fish. The solution’s in our hands - the way we act is the cause of the problem.”

During your expeditions, you swim an average of 8 hours a day. How do you manage to stay on course?

Everything comes from the psychic, mental preparation. In this type of challenge where stimuli are very limited, the mind must take the upper hand. So, I set about creating a schedule in my mind. Many swimmers far surpass me at Olympic level, but they’d be incapable of achieving this type of challenge. For 8 hours a day, I see the same blue backdrop; I hear the same

sound of water and taste the same salty water. For hours, I swim mechanically, looking at the line under the water drawn by the boat in front of me, much like the line at the bottom of a swimming pool. In an environment without a lot of external stimulation, it’s a question of dissociating the mind from the body, releasing into autopilot and reactivating sensations. It’s up to me to create them. And so, I organize my days around my thoughts, focusing on reliving happy times and focusing precisely on

those sensations. Was I outside? Did I feel the sun on my skin? What did the air smell like?

At those times, do you still feel like you're swimming?

No, I don't think about it anymore. By choosing to switch my mind to a well-defined moment, I work on the notion of compressing time. Time's an expandable notion - we often experience that when a 2 hour film seems to last only 10 minutes. If you don't know exactly how to occupy your mind, you risk focusing on negative things very quickly (in my case, it was important not to think about the cold, the fatigue or the back-ache).

With the expedition called The Vortex Swim, you focused on an area of the North Pacific. Why?

The Pacific unfortunately has 3 major plastic vortices and due to the winds and currents, they're quite concentrated. With The Vortex Swim, I crossed the one located halfway between Hawaii and California, which stretches over 1.6 million km². The 300 nautical miles crossed (555 kilometers) symbolize the 300 million tons of single-use plastic produced each year in the world, eight million tons of which end up in our oceans. In this vortex, we recorded an increase in plastic concentration of over 1,000% compared to other areas of the Pacific Ocean. With my team, we collected 45,000 fragments of microplastics from the surface of the water.

What happened to this collected data?

We'd partnered with the Scripps Institute of Oceanography, a division of the University of California, San Diego, and the Woods Hole Institute of Oceanography in Massachusetts. The data collected was sent to them, but our research has fallen badly behind, particularly because of the Covid pandemic. There are far fewer face-to-face students to do all the difficult analytical work. When the pieces of plastic are very small, they're difficult to source, so an in-depth analysis has to be carried out.

Swimming across a plastic continent is a very unique process. Why this choice?

I want to provoke reactions; that's part of my personality. I'm attracted to the extreme, always wanting to go where no one's gone before. And then on my scale, what can I do to try and improve the lives of my children and grandchildren? That's the question that drives me. I use swimming because it gives me so much personally. And since I have a certain claim to fame, these expeditions provide me with an opportunity to alert the general public and collect important data for science. It's obvious that my approach arouses curiosity and that's good - a person swimming alone in the middle of the ocean is intriguing. I'm not a scientist, but I believe that it's my mission to alert the public to the scourge of plastic pollution, and to make

as many people as possible aware that the solution's in our hands; our way of doing things is the cause of the problem.

Are you going to communicate differently on this swim?

Yes, we're currently working on a documentary that'll provide a holistic view on the subject of plastic. It's up to us to change the way we consume. As a naturalized French American, I notice that ecological awareness is very different in the USA to that in Europe, especially in France. Plastic bags are still distributed freely in the USA. I really want documentary work to be a goal during each of my expeditions - the audiovisual platform is essential to inform.

What are your strongest swimming memories?

I've only really been scared once in my life and it wasn't because of a sea-animal, but a result of human error. One day during my swim in the Pacific in 2018, the heavy swell caused the guiding Zodiac pilot in front to lose sight of me. So he reversed,

just as a wave propelled me forward... I saw the boat coming and thought it was all over; that I was going to die. Then, my brain went into overdrive mode to escape but it was too late, and the propeller hit me straight in the forehead. My snorkel, which was above my head, was cut off by the propeller. I bled, but that was all. It's a miracle I escaped. Obviously, the blood attracted the sharks, but I quickly got back on board the sailboat. The doctor checked me out and luckily all my injuries were superficial. It's the only time I was really scared because I feel good in the water and marine animals are great companions. I've had moving encounters with birds, dolphins, whales, blue sharks and mako sharks. Animals show a remarkable curiosity. They're not afraid and often swim around me but at a safe distance all the same. Even the albatrosses came to rest next to me! Sometimes I'd stick my fist out, and they'd give me little pecks with their beaks. With sharks, I admit my heart beats faster. But I've never actually felt unsafe in the water. Honestly, never.







Hydrogen, a fuel of hope

Interview with Jérémie Lagarrigue

Energy Observer is the first hydrogen vessel aimed at energy self-sufficiency, with no greenhouse gas emissions or fine particles. Equipped with 200m² of solar panels, it draws its energy from nature. Sponsored by Nicolas Hulot, this former racing boat has been reconditioned into an electrically powered vessel of the future. Today, engineer Jérémie Lagarrigue is at the helm of EODev, a subsidiary of Energy Observer, created to industrialize and market solutions resulting from feedback from Energy Observer. An unparalleled multi-medalist sailor (French, European and world championships, holder of the absolute world speed sailing record in 2009 aboard the Hydroptère), Jeremie's also a member of the Advisory Board of FinX. He explains how he's participating in the emergence of propulsion systems for the ships of the future.



Jérémie Lagarrigue

FRANCE

“There is nothing smarter than nature.”

As you are a member of the Advisory Board of FinX, what did you appreciate about this venture?

There's nothing smarter than nature. Just watch fish - their tails don't spin unnaturally and FinX takes the same approach. It was the first time that I'd seen a project that listened to and responded to my demonstration with the absurd - marine animals move without a propeller. FinX has a truly disruptive and intelligent approach. By the way, you know as well as I do that *“It's impossible”* is a phrase that's repeated over and over again: *“It's impossible to operate a square sail”*, *“You can't run boats on hydrogen”*, etc. It's clear that it's not only

possible, but that it can be achieved quite well.

Energy Observer is an electrically powered vessel of the future. How does it work?

Energy Observer works with a mix of renewable energies and a system for producing carbon-free hydrogen from seawater. This process is relatively standard. Yet we set ourselves apart with an electrolysis system.

Which means?

There are two main ways of producing hydrogen industrially. The first is refor-

ming which involves the release of CO₂ and carbon monoxide, both very harmful to the atmosphere. This implies making methane react with water to produce a synthesis gas containing hydrogen. Today, this technique accounts for 98% of hydrogen production.

The second method is electrolysis, which we chose on board Energy Observer. This process develops hydrogen little by little and consists of breaking up the water molecule H₂O through electrical activation in the water. It's very simple. Take a + terminal and a - terminal, put them in the water and run electricity between the two. The hydrogen and oxygen molecules will separate and it'll then be possible to recover them individually.

Your process is a little more complex because it's made from seawater. Can you please explain why?

Yes indeed. We were the first to take it on board a boat and do it from seawater. The pumped seawater goes through a filtration system called reverse osmosis, because the brine, which has a very high salt concentration, must be recovered. The saltwater concentrate and de-mineralized water are thus separated. You must repeat the procedure a second time to get really pure water. This water's then electrolyzed and can produce hydrogen.

In addition to the water filter system, we've created another for the air! The marine environment's very harmful for the fuel cell, as well as for the electrolyzers. The

challenge today is to be able to filter the air properly and therefore the oxygen that enters our system. And this has led to the development of our specific know-how.

In your opinion, is hydrogen the key to tomorrow?

It's one of the keys and it's a huge key. The only molecule today capable of replacing diesel while maintaining such a high energy density is hydrogen.

Which countries are at the forefront of hydrogen?

Japan. Many hydrogen solutions were put in place after Fukushima. In the same vein, Germany, which wanted to stop anything nuclear, has been greatly accelerating its development in hydrogen.

And France?

At the moment, France is at the back of the pack. But it occupies a median position in Europe. Two years ago, there was nothing but over the past year, we've seen a lot of funded pilot-projects. Currently, a real hydrogen ecosystem is developing, driven by the perspective of Paris 2024.

What's your next challenge?

To put hydrogen engines on offer to boats intended for use in environments that want to be protected. The goal of EODev is to industrialize an affordable, efficient, compact solution that will eventually democratize this technology.





Towards a considerable change in the yachting sector

Interview with Hervé Gastinel

Hervé Gastinel has supported very large groups in their international strategy and their environmental transition. Chairman of Ponant since March 2021, former CEO of Bénéteau, former Strategic & Corporate Planning Director at the Saint-Gobain Group, Hervé Gastinel is a member of the Advisory Board of FinX and a private investor. Extremely attentive to the advances in the nautical sector, he shares with us the great challenges that this industry, in his view, has to take on.



Hervé Gastinel

FRANCE

“The nautical sector has to call into question almost all its activities.”

What’s your view on the nautical sector today in terms of the environment?

The nautical sector needs to be almost completely called into question when it comes to analyzing the life-cycle of boats, that is, the design, use and end of life. However, environmental awareness is still very low. A major overhaul’s just beginning in the yachting world.

How’s the market evolving with regard to engines?

Electric or hybrid motors still represent a marginal part of the recreational boat

fleet. There aren’t enough convincing applications from a power and range point of view at an acceptable cost, while at the same time we’re seeing the development of ever more powerful and efficient internal combustion engines. They’re also popular with the general public; with outboard propulsions going beyond 400 HP. Large inboard motor boats can consume several hundred liters of fuel per hour. These represent a gigantic consumption of fossil fuel along with all the environmental consequences that you can imagine.

While the desired use by boaters remains a sensitive subject, the problems associated

with the design and manufacture of boats shouldn't be overlooked. Eco-design's been developed very little to date and the manufacturing processes of polyester boats have hardly changed over the last 50 years. However, these manufacturing processes are emissive, dangerous substances, and are therefore toxic. And what do we do with fiberglass composite materials at the end of their life? More generally, what do we do with boats at the end of their life?

Where's the boat-recycling and end-of-life management industry going?

It's changing. But the end of life management of boats needs to be anticipated from the outset, at the time of design in order to integrate recycling issues.

In my view, the end of life of boats and their reprocessing is a subject on which the profession can and must move forward quickly. We were pioneers in this area at Beneteau, along with the FIN (Federation of Nautical Industries) and created APER, the French leisure boat deconstruction sector which sorts waste and manages it at the end of its life. Too often we see boats left abandoned in ports, polluting the environment. A few thousand boats have been deconstructed in this way and the European Commission's taking a keen interest in that. Yes, all of this is changing, but the economic environment isn't very favorable at the moment.

Do you think that the pandemic

health crisis is diverting priorities in terms of ecological transition?

Yes, and this may seem paradoxical given the importance of these topics. All boat-building sites are struggling, absorbed in short-term issues. For some, the emergency restructuring plans managed in panic have taken precedence over the medium or long-term considerations, still so essential. It's good to protect the margins, but you need to think ahead and remain innovative.

What are the major projects on which you've worked and which you'd like to see happen?

I come from the building-materials industry, a much more advanced industry in this area. I accompanied the Saint-Gobain Group for nearly 3 years as Strategy Director. The Group's extremely innovative in materials, and life cycle analyzes have been carried out for years. At Beneteau, we chose two main areas for the Turquoise project launched in 2018 - improving manufacturing processes which includes investing massively in factories to clean up production, and moving towards clean manufacturing processes (infusion, injection, infujection etc.). This also resulted in major investments in ventilation and treatment of room air in order to protect employees from polluting emissions. We worked with large chemical groups on resins with low emissions of styrenes, one of the worrying components. The other axis is eco-design. Beneteau, whose mission is

to create boats, has to do a lot of work on the integration of materials and engineering in order to favor the use of more recyclable components. Fiberglass, which is very competitive and very well-mastered today on construction sites, offers many advantages. But we must work on long-term solutions that allow fiberglass to be replaced by more innovative and environmentally friendly materials.

What should be done to raise awareness?

Providing education and showing alternatives to the general public, testing the solutions of the future (Energy Observer does this very well!*). Then, you must be able to move to industrialization at a competitive price. Public demand's still very volatile. You just have to go to major international boat-shows like in Miami to see that over-motorized boats with a very negative carbon footprint are still in great demand. Honesty forces us to recognize that consumers are still paradoxical in their behavior and are rarely ready to pay for greener boats.

What's your opinion on hydrogen?

Hydrogen seems to me to be more promising for boating than electricity in view

of the constraints that we mentioned previously. The fuel cell has a lot of merits and can overcome the problems associated with electric batteries. Hydrogen can be produced on board large units or stored with adequate tanks. The issue with hydrogen is the equipping of ports, which will need to be provided with sufficient storage and supply capacities. Support from public authorities will be necessary. Significant domestic and European investments are currently taking place. In my opinion, we'll be talking about equipment rates rather than technical issues very soon.

Do you have any hope that this industry will be fundamentally transformed?

Yes, I have high hopes - there's an extremely strong, underlying trend that I believe irreversible, encouraged by the PACTE law of 2019 and the creation of the label "Company with a mission". Companies must be encouraged to show responsibility in this area. This is the whole issue of CSR (Corporate Social Responsibility). Yes, we're going in the right direction.



** See interview with Jérémie Lagarrigue.*





Know, protect, involve - the mission statement of the Fondation de la Mer

Interview with Sabine Roux de Bézieux

Nourished by a passion for the sea and wishing to participate in its protection, Sabine Roux de Bézieux co-created the Fondation de la Mer in 2015. She has since been in charge, bringing together actors from the world of the sea to share their passion and convictions with 70 million French people and more widely still, 500 million Europeans. As Sabine puts it so well, “*The sea’s the future of the Earth and the mother of all battles.*” Indeed, what would be the meaning of educational work if the state of the oceans no longer allowed life on Earth?



Sabine Roux de Bézieux

FRANCE

“The sea is the future of the Earth and the mother of all battles.”

What’s been the first success of the Fondation de la Mer?

That of existing - with a maritime space as vast as 20 times the territory of the metropolis, comprising of 10% coral reefs and 20% of the atolls of the planet, France has the second largest maritime space in the world after the United States. The only country on which the sun never sets, France has a duty to set an example. I’m proud to say that in France we have a Ministry of the Sea, even if its resources are limited in view of the enormous challenges.

What’s the major scourge for the ocean?

Firstly, global warming and therefore the acidification of the ocean which regulates the climate. Then, the physical and chemical pollution that spills into it. Upstream, on land, we must reduce our GHG emissions and deal with two subjects - water and waste. 3.5 people out of 5 on the planet don’t have access to a wastewater treatment system. I’ve gone walking several times in the desert and I’ve seen plastic there, thousands of kilometers from the coast. It’ll eventually decompose and end up in the sea. Pollution on land has major consequences for human health, even before it reaches the ocean. The Plastic Odyssey project, led by Simon Bernard* is in this, very clever - to think low-tech for

populations who don't have a waste management system.

The ocean's unexplored and it's difficult to protect what's unknown to us. One of the missions of your Foundation is to promote the study of the oceans.

We've misled our relationship with nature. To know, to protect and to involve is the mission statement of the Foundation. We need the ocean. Hundreds of millions of people make a living from it. When cultivating, what else do you do if not use nature for the good of human beings?

Can you be more specific?

Gain knowledge, because we know nothing about the ocean. Molecules from the seas are gradually taking a place in cosmetics and health. Biotech start ups are emerging. But 90% of marine species still have to be discovered. The surface of the Moon has been mapped better than that of the ocean.

We support research, encourage young people to be informed and offer scholarships for doctoral students in biology and engineering, but also in history and literature. Then of course we must protect, because the sea must be free and used wisely. Many people are taking concrete action in the field, so we wanted to bring together those who are already very active by educating populations on pollution issues and by organizing waste collections. Our web platform "A gesture for the sea"

is the result of this and groups around a hundred associations in France and more recently in French-speaking Africa. The protection of marine ecosystems is essential.

What are they?

The most famous are coral reefs. With its Exclusive Economic Zone, France owns 10% of the planet's coral reefs which are home to a quarter of marine biodiversity. Mangroves, these highly endangered marine forests located between the high seas and the land, protect populations on land from swells, erosion and all major climatic phenomena, and are among the ecosystems that must absolutely be protected. Protecting mangroves is about protecting what lives inside, what reproduces there and by ricochet the people who live on land. A quarter of the mangroves has disappeared or is seriously threatened. Finally, sea-grass beds are essential - these plants that grow at the bottom of the ocean have a role in capturing CO2 and producing oxygen. They promote nurseries and the development of juveniles, thus the development of life in the ocean. Our next "SOS Corail" platform aims to identify the most scientifically sound projects for the protection of these areas in the French overseas territories. We're working on this with the State as it's responsible for these spaces which are in the public domain. Finally, everyone must get involved – each person can and must be an actor in favor of a protected sea. We work for the general

public and are partners in a whole series of events, but we also have an agreement with the Ministry of Education, and work closely with them to develop educational kits for children. These kits can be downloaded from our “Merci la Mer” site and the Foundation provides the material free of charge (manuals, USB keys, tools, etc.).

Does France’s objective of reaching 30% of marine protected areas by 2030 seem conceivable to you?

2030 isn’t that far off. France is at the forefront of marine protected areas. Our EEZ is so large! We protect the Kerguelen Islands in the great South and Polynesia, which covers millions of km². France also protects the scattered islands of the Mozambique Channel, magnificent biodiversity reserves. Bordering countries cannot afford a marine police or a national navy like ours. They end up with looted and depleted water. The French navy has the capacity to monitor these areas. It’s our responsibility. Without surveillance, there’s no point in having marine protected areas. However, around the metropolis, we’re a long way off the 30% MPA mark and I doubt we’ll ever achieve it.

What do you think of the role of the French State?

We can complain about the slowness of certain steps or the excess of caution on the part of the ministries, but we have no other choice but to work with the State. Private initiatives like ours complement its

actions. If we want to reach the 12 million students in France, we have to work with the Ministry of Education. The same goes for marine protected areas under French State surveillance. If we don’t want to just talk about things, we have to work with the Ministry of Ecological Transition and the Ministry of Overseas Territories.

What do you think of the role of companies?

Innovation never came from States. At the Foundation, we support those who innovate to live more soberly. I just spoke about the general public and children, but we’re also targeting businesses. If they are largely responsible for the bad state of the planet today, they are also the solution. No solution will be found without them and FinX is an example. I’m a business owner and I believe deeply in entrepreneurial initiatives. We’ve also pioneered the creation of Mer Angels, the first French business angels club dedicated to the maritime economy.

You’ve just created the Ocean Referential. What does that consist of?

This is a world first, and doesn’t exist anywhere else. In collaboration with the Boston Consulting Group and the Ministry for Ecological Transition, we’ve created this tool to help companies, whatever their sector or size, to assess their impact on the ocean and to adapt their economic models. We’ve relied on the target figures of the UN Sustainable Goal 14

relating to the sea and aquatic life which companies know nothing about. And so, we explain to them how and why to simply get interested in the project. I know the OECD and the European Parliament are very interested too.

For convenience, we've just launched Ocean Approved, a website that allows companies to access the Ocean Referential, participate in forums with their peers and interact with the Foundation's experts.

What are your sources of inspiration?

The sea! It's my great source of inspiration and commitment. The thousands of people who take concrete action for the ocean - researchers, NGO managers and heads of innovative companies - inspire me too.

Are you optimistic for the future?

By nature! I'm a marathon runner. I know everything takes time and it's worth it. We have two major values at the Foundation - uprightness and imagination - being upright in thought, word and deed. Let me explain. We're surrounded by people who want to scare us so we have to be very careful about what we say and how we say it. Our words must be positive and constructive. It's by small actions and big projects that we can make a difference. As for being upright in action, it's simple - we say what we do and we do what we say. After that you have to capitalize on imagination. But again, it's bafflingly obvious - the

way western societies have developed up to now just won't work tomorrow. With 7 billion human beings, we'll need imagination to find another way. That's what FinX is doing by designing its engine. The planet needs millions of imaginative, upright, honest, serious people.

64% of the planet's surface, known as the high seas, doesn't belong to any country. The United Nations is working on a common and sustainable stewardship base for the high seas, the BBNJ (Marine Biodiversity of Areas Beyond National Jurisdiction). What do you think about that?

This is obviously a good thing. The UN Convention on the Law of the Sea, signed in Montego Bay in 1982 had defined EEZs (Exclusive Economic Zones). At that time, the span of internal waters under national jurisdiction was only a few nautical miles, within the reach of a cannonball. These distances were subsequently extended to 200 nautical miles, still the case today. However, we mustn't forget that during the negotiation of Montego Bay, it was very difficult to go on the high seas. Today, our technologies make it possible to go much further and it's therefore necessary to regulate the way in which countries will use this common space.

BBNJ, the only agreement currently under negotiation at the UN, concerns biodiversity resources and only the water column. I'd like to point out that it doesn't actually concern fishing which remains free; nor

the exploration of the deep seabed. Globally, it's the IAFM, the little-known International Seabed Authority, which governs the international rules for the exploitation of marine soils and sub-soils. It grants exploration permits for the seabed, those of the ridges for example, these meeting places of large oceanic plates, extremely rich in rare metals. On these ridges and under the ultimate supervision of the UN, the AIFM has given exploration authorizations to a number of countries, including France which has an exploration permit in the Clarion-Clipperton area, in the North Pacific.

France has strong potential for developing MRE (Marine Renewable Energies), given the natural assets of its territory. What, in your opinion, are the MREs to be reckoned with?

The subject of energy is very complicated. With fossil fuels, we've come to the end of a system - we can no longer continue to extract oil and gas as we've been doing for over a century. We haven't succeeded in dealing with the issue of nuclear waste and at the same time, France is one of the countries emitting the least CO₂, precisely thanks to nuclear power. Even the green parties are thinking again about nuclear power. I'm reflecting on it myself and am simply answering you as an ordinary citizen - I'm not a scientist.

As for renewable marine energies, or

others, they're great on paper. But we can also see their limits - according to the ADEME report on energy autonomy, 17% of the French territory would have to be covered by wind-turbines in 2050 to compensate for the total phase-out of nuclear power. It's not even a question of acceptability by the French people; there just wouldn't be enough areas with favorable winds anyway.

On the other hand, the idea of floating wind-turbines far out to sea seems very interesting unlike that of bedded wind turbines which are catastrophic for the seabed (the installation of concrete pillars is brutal) and very visible, being close to the coast. One can imagine wind farms further from the coast, with less impact on birds and marine life, in zones where there's less fishing-traffic and where winds are more intense and regular. The first floating offshore wind-turbine off Le Croisic is already in operation. But the transport of electricity once it's produced is the new equation to be solved - there's significant energy loss between the time it's captured and the time it arrives on land.

Our company's worked a lot with monolithic energies. I think we're at the dawn of a new model that will operate with mixed energy depending on geography, winds, geothermal energy, etc. Energy, in my opinion, is the real issue at stake for humanity today.



** See interview with Simon Bernard.*



*“You must unite behind the science.
You must take action.
You must do the impossible.
Because giving up can never ever be an option.”*

GRETA THUNBERG



Listening to the sound of silence

Interview with Michel André

Michel André is an enlightened, vibrant man. By embracing a profession with a mission, he decided to dedicate his life to listening to animals - those underwater that we as humans can't hear; those that we can't see or rarely see and that we damage through ignorance.

As head of the Laboratory of Bioacoustic Applications (LAB) of the Polytechnic University of Catalonia, BarcelonaTech (UPC) where's he also a professor, Michel André and his team have created an intelligent acoustic technology to listen to animals and identify them, their behavior and their health. His skills in bioacoustics have enabled him to develop a detailed understanding of marine noise pollution and to study the physiological and pathological effects on the acoustic signal reception of marine organisms and animals. Also a biotechnology engineer at the National Institute of Applied Sciences in Toulouse (INSA), Michel André opens the doors to a new world, one of silence. By inciting a powerful and necessary reconsideration of marine life, he invites us here on a sensory journey, with dedication and humility.



Michel André

FRANCE

“The oceans will die because of the noise. The entire food chain’s being affected in all the seas of the world.”

“The oceans will die because of the noise. The whole food chain’s being affected in all the seas of the world.” After 25 years of research, your observation is clear, implacable.

The balance of the oceans depends on sound. Imagine if the planet was plunged into absolute darkness suddenly and forever, if our voice was only audible a few meters away, if we were no longer able to communicate, if we could no longer hear the approach of dangerous animals and

were no longer be able to move around. The only thing we could do to survive would then be to develop other means of communication, other skills.

This is exactly what happened to the inhabitants of the sea. Sound’s their only way of communicating and exchanging information, since light doesn’t penetrate underwater deeper than a few meters. Sound is life - polluting these communication channels amounts to condemning animals to irreversible imbalances. For example,

more than 100,000 container ships plough the seas every day, not to mention fishing boats, pleasure boats, etc. It's a constant, cacophonous hubbub. Depending on the sounds produced, damage to animals becomes chronic. I often draw a parallel with smog, you know this air pollution, this kind of yellowish haze that hovers over cities; It doesn't kill anyone in the short-term, but it causes breathing difficulties and health issues over longer periods of time. Transfer that to sound sources - the phenomenon is identical underwater and causes considerable hearing pain.

You started by inventing an ingenious system to prevent ships from colliding with cetaceans and therefore protect marine life. Tell us about that?

In the early 1990s in the Canary Islands, there were several collisions between large cetaceans and ferries (the boats were sailing at high speed, over 45 knots, carrying tourists between the islands). While no human accident was to be deplored, whales and sperm whales were systematically losing their lives. In 1992, the first human death occurred following one of these collisions. The shipping company then decided to finance a research project to understand the causes of accidents. And that's actually when our technology came to the fore.

The situation was very complex. To give you an order of magnitude, a sperm whale (the largest odontocete with teeth) eats a ton of squid per day. This necessity normally

forces him to migrate great distances in order to find his food resources. However, in the Canaries, due to the incredible diversity of marine life in that region, these invertebrates are found there in abundance, which explains the resident character of more than 300 sperm whales around the islands. Unfortunately, it's also one of the busiest sea routes. Exposed 24 hours a day to deafening noise, sperm whales gradually lost their hearing ability until they could no longer avoid collisions with these vessels. The risk is real - this population could be wiped out in a few years. That would lead to an extraordinary imbalance in the entire food chain - 300 tons of cephalopods would no longer be ingested daily. That's just a drop in the ocean, but it's by no means a science-fiction disaster scenario. The ocean is nearing breaking point and technology may represent one of our last chances to restore that lost balance. To deal with this problem, we decided to turn the problem upside down. Instead of asking cetaceans to make way for boats, we used the fact that sperm whales emit characteristic sounds 80% of their time to find their food, to detect the mammals and alert ships of their presence, and thereby avoid collisions. This system, called WACS (Whale Anti-Collision System), is the origin of a more complex approach that we've since developed.

In 2003 you founded a laboratory which you are currently managing. How do you work?

The technology that we've developed to be able to listen underwater and in forests has allowed us to enter a new sensory dimension and to acquire skills to understand this dimension up to now ignored, due to our physiological incapacity to perceive it. Our role - and our responsibility - is to extract data to better understand the challenges of this natural balance, and even to restore it. In a way, this approach makes it possible to recreate the soundscapes surrounding us beyond our own perception, and thus enable to alert on alterations linked to climate change or to human activities that could threaten this balance. In addition to being endowed with a new sense, we're fortunate as bio-acousticians, to be able to take an interest in all ecosystems simultaneously, whatever their geographical position, thanks to the possibility of ubiquity that this technology offers.

Noise pollution is a global problem. If we can begin to address this problem during the boat-building stage, by insulating the engine rooms for example, we have on our side already developed technologies that allow industries working at sea to limit the impact of their activities. We allow them to detect the presence of certain species at risk in real time and to suspend their operations for a few minutes, while the animals move away from the source of pollution that can be fatal to them. It's certainly more complicated for military maneuvers which deliberately introduce sounds to detect the presence of enemy ships.

To give you a few examples, a coastal

dolphin is sensitive to high frequencies while whales, which communicate at very long distances, are more sensitive to low frequencies. We've established the sensitivity of many species through audiograms, to find out the acceptable threshold of noise beyond which their life would be threatened. Our laboratory's also identified acoustic trauma in invertebrates exposed to anthropogenic sources of noise (crustaceans, shells, cephalopods, jellyfish, corals, etc.) - they don't have ears, strictly speaking, but sensory organs allowing them to perceive their environment through the vibrations associated with sounds. Sound has two components - sound pressure, which we perceive in intensity and the mechanical component directly associated with the vibration of the particles that permits sound creation and transmission. These species are more sensitive to the mechanical aspect of sound - they don't hear, they vibrate. Curiously, the structure of these organs is also extremely similar to that of our inner ear and the traumas caused by noise are identical in severity. In short, the LAB is owned by a public university. We respond to calls for tenders on subjects identified by the European Commission, which leaves us little freedom to work in certain regions or on endangered species which for the moment haven't attracted the attention of public administrations. We've also created a start up to support the efforts of offshore industries which reduce the noise impact of their activities. But in this case again,

our contribution is subject to the needs of the operators.

You created The Sense of Silence Foundation in 2014. What projects are you working on?

With the same technology, The Sense of Silence Foundation works without any constraints, exclusively and independently for the preservation of wild life. Since 2016, we've been developing a major project in the Amazon. Drones and satellite images keep us informed every day of the progress of the destruction of the forest. But we don't have any data on what life under the canopy is like. A few partial studies based on rare samples provide occasional information on the state of conservation in a particular territory, but it's impossible to extrapolate the results from one region to another because the forest's very diverse (submerged and dry parts, reliefs, etc.). For this reason, we proposed our listening technology with the sole aim of identifying and tracing species such as jaguars, great apes, birds, fish, pink dolphins, bats, insects, etc.; and to create an inventory of the health of the largest forest in the world by establishing eco-acoustic indicators of its biodiversity. We started this ambitious project in the Mamirauá sustainable development reserve in the Amazon, Brazil. In order to obtain an acoustic map of the region, we've placed nodes at fixed points and at regular intervals, equipped with sensors and cameras which communicate with each other and

permit to detect sounds over very long distances. By 2025, we want to position this network of sensors throughout the Amazon, to take its pulse and judge its capacity for resilience in the face of the proliferation of dams, overfishing but also the mines that dump mercury into the rivers. We work in close collaboration with indigenous communities, guarantors of biodiversity, which not only help us identify the places where we deploy the nodes, but also allow us to identify certain sound sources that we didn't know about and which haven't yet been described in scientific literature. The fundamental objective of this collaboration is to train young people from these communities and to integrate them into the research team.

We're also involved in another major project called Listening to the Poles, in the Arctic and Antarctic, where ice is melting at an alarming rate. There's a real need to obtain baseline data on the marine biodiversity of these two regions before human activities invade them permanently. We're already seeing new species in waters they didn't previously visit. Here too, we're going to deploy permanent acoustic sensors, and make the data available to the authorities thus contributing to the future management of the Poles.

Are there specific environmental regulations in these regions?

A treaty exists, protecting the Antarctic continent from all human activity except cruise ships. Along with the scientific

exploration boats, they're the only ones authorized to enter the area during the season, that is, from November to March (remember that the season is getting longer and longer due to the melting of the ice and sometimes even begins in October).

The size of the boats as well as the number of passengers authorized to disembark at each stopover, are limited (maximum 100 passengers). Nevertheless, the noise pollution created by this growing maritime traffic isn't being controlled for the moment. Environmental protection measures are urgently needed. In the Arctic, the problem's different because there's no such kind of treaty. It all depends on the Arctic Council and the neighboring countries. Scientific data is essential to convince governments to spare these regions which should remain ecological sanctuaries at all cost.

How do you see the future?

Time is ticking. I'm optimistic about our capacity for resilience. We have technologies at our disposal that can overcome the mistakes we've made in the past; when we still weren't aware of the extent of the negative consequences of our activities. But there hasn't yet been an environmental decision that'll make it possible to generally drive real change. Our society isn't prepared and here I put everyone in the same bag - we are jointly responsible for industrial development and its effects on the environment. Just because we're not phy-

sically on the boat that extracts oil from the seabed doesn't mean that we're not directly interested in the products that flow from it. I hope the scientific community will receive sufficient means to implement the necessary actions to watch over biodiversity and regenerate damaged habitats. It's now a race against time, a matter of years. The changes to come are unfortunately inevitable and we will witness in 10-15 years profound upheavals that will change our society. We must prepare for it and put all the scientific and technological mechanisms in place to protect the natural balance of the planet on which we depend.

How is it that humans took 80 years to tackle the subject of marine noise pollution?

When you bathe in the sea, you can be disturbed by a plastic bag that breaks the beauty of the underwater landscape but less by a noisy boat. And even less by the sound of this boat underwater. Why? - because our ears can't hear underwater, or very badly. And noise is invisible. For 80 years we've been introducing multiple sources of noise pollution into the water unconsciously, asking no questions, (boats, oil research, military maneuvers, construction of ports, wind farms, etc.). These have invaded the submarine world that was completely unknown to us, where sounds travel five times faster than in the air and at distances that can reach hundreds of kilometers. Because our perception of

this world was limited, we ignored it, we decided it didn't exist. Our human vanity brings us to believe - and this is perhaps one of our most interesting traits - that reality only exists if we're able to perceive it, hear it, touch it or see it. However, this underwater sound dimension is vital for all inhabitants of the sea. The balance

of the ocean and therefore of the planet, depends on it. The scientific program to be implemented is gigantic but it should allow us to find this lost balance and give us an opportunity to repair some of our mistakes before their consequences become irreversible for all living creatures.





The floating offshore wind turbine, a decisive lever for humanity

Interview with Antoine Rabain

A fine connoisseur of the emerging Marine Renewable Energies market, Antoine Rabain has been supporting public and private organizations in their transition to decarbonation for 15 years and he's putting all his energy into trying to transform them in depth.

A consulting engineer, lecturer, president of the HEC Green Economy Club and founding president of Geckosphere, whose main objective is to reconcile ecological and economic issues, Antoine Rabain signed in April 2020 with 2 co-authors a scientific article now considered as a reference: *"But why the hell seek to convert renewable energies at sea?"*



Antoine Rabain

FRANCE

“Within the various sectors of marine renewable energies, offshore wind represents in my opinion, the greatest potential of all energies combined, land and sea.”

How radically has the Anthropocene changed the face of the planet?

Numerous climatic disturbances have taken place over the past 4.3 billion years. But if we look at the last 20,000 years, humanity has accelerated them by a factor of 100. The IPCC explains that human activities have an unprecedented impact on the climate – it’s called the Anthropocene. If nothing changes, we could move

from 15 to 20 degrees in 200 years, an acceleration of a factor of 100. Today, 15 degrees Celsius is the annual average on the planet. 20,000 years ago, the average was 10 degrees, agriculture didn’t exist, the ocean was 120 meters lower, and Arctic ice went as far as London. These 5 degrees of difference are one of the IPCC scenarios if we don’t change direction with our greenhouse gas emissions over

the next three decades.

Our understanding of the anticipated impacts is weak, such as the role of ocean acidification on all marine biodiversity, while it's observed to have a determining role in the climate machine and in its capacity to absorb part of its deregulation.

The requirement criterion around the environmental issue is only growing. Some projects don't see the light of day if the impact chain is too risky and the uncertainty too high, which would have been quite different 50 years ago. You have to ask yourself if the impact is acceptable when weighed against the expected benefits, and then arbitrate, which means making real societal choices. In other words, we put nature in a balance - are the impacts tolerable compared to the benefits? Just as life is priced in some business plans, some people put a cost on nature to balance theirs. This makes it possible to arbitrate in a very or too rational way as to the budget to be allocated for securing activities and how to react in the event of serious accidents. One can of course question the relevance of all this.

The maritimization of the economy is a real turning point. You're very committed to promoting offshore wind power. How is it developing?

France has the second largest maritime domain in the world after the United States - 11 million km². Present on all oceans and

all continents (counting overseas departments), its responsibility is gigantic. To explain it more simply - I often say that the sun never sets in France! Following on the Grenelle de l'Environnement in 2007, the Grenelle de la Mer defined for France an objective for renewable marine energies (RME) of 6 gigawatts by 2020, equivalent to 6 nuclear power plants in terms of capacity installed. However, to date, there are still no megawatts in operation... On the other hand, 6 pilot projects have been validated including the first one, under construction in Saint-Nazaire, and the second in Saint-Brieuc, where the construction phase has been launched, led by EDF and Iberdrola, 2 of the 3 energy companies working in France on the development of offshore wind-farms.

Why seek to convert renewables at sea?

Because we have no choice - the challenge today is to build a future where we'll control and minimize the impacts in order to continue to develop well-being. If we want carbon neutrality by 2050, we'll certainly have to be sober in our consumption and rethink the globalization of trade, but energy will always be necessary. It's therefore absolutely necessary to decarbonize its production.

For me, the global response to energy transition is the drastic ramp-up of renewable energies, the biggest mitigation lever to

aim for carbon neutrality by 2050. But land-based sectors alone (hydroelectricity, wind, solar, etc. biomass, geothermal energy) won't be enough to answer the climate equation. So why the hell go and seek renewable energies at sea? - once again, because there's no choice and because ocean resources represent strategic potential. Within the various sectors of renewable marine energies, offshore wind represents in my opinion the greatest potential of all energies combined, land and sea. This is also the discourse, though admittedly recent, of the International Agency for Energy which describes the potential of floating wind power as "almost unlimited" in a report published in September 2019.

How's the global offshore wind market structured today?

To date, 100% or thereabouts of the commercial offshore wind market is still built on laid foundations (steel, concrete). But they have their limits - it's not possible to place them below 50 meters of water depth. Floating wind turbines, on the other hand, make it possible to seek stronger and more consistent winds further out at sea, where water depths can reach 200 meters or more.

What are the great advantages of floating wind turbines?

First of all, I'd like to remind you that all human activity has an impact on the environment, whatever it may be. Nevertheless, floating wind turbines are likely to

be less destructive to the environment - the wind turbine is pulled from the port and its anchoring floating structure isn't supposed to move for 20 years. This isn't the case with fixed-foundation wind turbines - their foundations have to be dug out using huge machines, causing significant vibrations during the construction phase.

What's your view on maritime transport?

It's the central element in the device developed by humanity to carry out its intensified globalization of trade. Over the last 40 years, mankind's chosen to focus its investments on production centers in Asia and to create a soar in demand for the transport of goods and people by boat. I wonder if we really need so many boats and exchanges.

There are therefore two parameters to change, besides that of reducing the flows. One is to decarbonize transport - even if we don't change the need, we'll have to transform the boats. The other is to decarbonize the engine - today with LNG and tomorrow perhaps with hydrogen and its derivatives (methanol, ammonia...) or all electric. Sail power could also be interesting (sailboats, kites, smart sails...). However, let's not forget that while technology is essential, it won't save us. It's up to us first and foremost to question ourselves about our consumer patterns.

Are you optimistic?

I see the glass half full - otherwise I

wouldn't get up in the morning. When I see Statoil, Total's equivalent in Norway investing billions of euro in offshore wind since 2010 and deciding to change its name to Equinor, then yes, I have hope. When I see DONG (Danish Oil National Gas), Total's equivalent in Denmark, deciding on a strategic shift towards offshore wind power and changing its name to Ørsted - in reference to one of the great Danish inventors of electricity, then yes, I have hope. The fundamentals behind the apparent marketing are fabulous - these great industrialists, who are experts in the marine environment, are using their technological know-how in new energy markets which are more respectful of the environment.

What's your take on hydrogen?

I've been devoting a third of my professional time for 2 years to green (non-carbon) maritime hydrogen, a wonderful response opportunity but subject to conditions. In which cases would hydrogen be more

interesting than all-electric? Which uses might it be better for? It's essential to find answers to these two questions. Tomorrow perhaps, we'll be able to produce hydrogen at sea thanks to massive wind fields that will irrigate the whole world by boat.

The final word?

In the last 2 years, I have taken time (particularly through serious games) to reach all types of audiences (citizens, students, elected officials, managers and employees) and promote awareness of the environmental challenge and its complexity - everything is linked, interdependent, systemic. If you haven't heard of them yet, I'd advise you to try out two workshops - the Fresque du Climat and the Fresque Océane! With holistic, professional and personal approaches, it's about revealing what's at stake - thinking and touching, not only the head, but also the heart... and the legs, to make you want to engage and transform the world!





*“It always seems impossible
until it’s done.”*

NELSON MANDELA

The success of a company - above all a matter of beliefs!

Interview with Jean-François Galloüin

A professor at Centrale Supélec and ESSEC, among the best French schools, Director of the Specialized Master's course "Centrale Essec entrepreneurs", a founder and former business manager, Jean-François Galloüin, has an acute perception of the entrepreneurial world and accompanies many young and not so young people on their business creation journey. Business culture, new dynamics, liberated companies - he discusses why the entrepreneurial adventure is above all a question of beliefs.



Jean-François Galloüin

FRANCE

“The entrepreneurial adventure is a very personal adventure.”

How would you describe a successful business?

It all depends on your point of view which could be that of the founder, the shareholder, the employee, the State, the community. It's really about asking why you want to start a business when you could be an employee. Those who create have a very personal purpose, which varies greatly from person to person. A lot of research has been done to find out the drivers that revolve around business creation - the wish to live an adventure; the need for independence; the need to make a positive impact on society, on nature; profit motives? The criterion of success, a very relative

notion, depends on the initial motivations. Take the example of a product that finds its market, has a positive impact but a poor economic performance. Some people will still think it's a success. But obviously, for an economist or a management professor the criteria remain much more general - they'll focus first on the turnover, its progression and profitability. I've been accompanying students for over 20 years. I tell them that the entrepreneurial adventure is a very personal one. I say *“You're the one who's going to enjoy this, you're the one who'll decide what you want to do and what you're going to be satisfied with!”*

Has your outlook on success changed?

Today there's a lot of talk about liberated companies. How can we get away from the sacrosanct pyramidal organization? I do feel there's been a shift. The once dominant economic objective is gradually being replaced by a desire to make an impact, a new concern for today's entrepreneurs. Let me give you an example relating to a course that I've been teaching at CentraleSupélec for 20 years. During my first 5 years, the subject of impact businesses didn't exist. It was at the request of the students about fifteen years ago that we began to devote sessions to it, around subjects such as energy, water management, the aging of the population, etc. This year, students are working on real business cases and 3 out of 4 are impact businesses!

What new dynamics do you feel?

The GreenTech movement came to the fore in the early 2000s, before impact funds. For the first time, we were ready to give up some of economic performance in return for a positive social impact. That's the principle of impact-investing. As an investor, I'm increasingly concerned about how an innovation can be received in terms of impact. The minimum we ask of it is to be neutral.

On the other hand, it must be emphasized that there've always been people who had the will to change the world, to have a positive impact. But before, we separated

these people from those who were in a purely capitalist culture. Borders are now blurring, we can see it even in associations - by adopting an impact business culture, some will see their influence amplified.

The younger generations are very sensitive to the ecological impact. It's become a fundamental criterion in their choice of business, for both women and men. If the business doesn't have an impact that's at least neutral, at best positive, they won't commit to it.

What's the general concept of a liberated business?

It's about trying to rethink the "social contract" created within the company between the boss, the shareholders and the various employees, by giving more autonomy to the employees, so that they get more involved, are committed to the projects and take on more responsibilities. Of course, that gets complicated as the business grows. The very notion of management must therefore be rethought. It's a real field of research. Even today, it's not clear which model is the right one. We reject the old model, without having clearly defined what the new one could be. Organizational models are constantly evolving.

What do you think of the political role of the company?

That's a very complicated question, the story of the hen and egg paradox. The political actor is elected but who's behind

him? The citizen. Well, citizens are consumers. Of course, companies can influence and guide but they remain plugged to the consumers. They're the ones who play a major role. In other words, the company sells to people who want to buy the product. The boss of the company has some influence if he can offer what consumers are willing to buy and what the regulations permit. And who's behind the laws? The citizen. Everything intertwines. Who influences who? Ultimately, does business create or is it subjected?

The success of a business is therefore linked to the context...

Absolutely. Can a business create a market? Or does it only reveal markets, latent demands? Some of us are ready to eat vegetable steaks that taste like meat. Would the manufacturers who market these products today have succeeded 20 years ago? It's doubtful - we probably wouldn't have been ready. The context has to be favorable.

You mention the notion of belief as being fundamental when setting up a business. We embark on the adventure because we believe in our project. Without proof, without knowing if it will bear fruit... Over time, this belief becomes tangible (or not). Could you develop?

Creating a business is a journey, a set of assumptions. There's first of all the assumption of the person who thinks he's

able, who believes that it's possible, while waiting for the proof. The second's the person who believes that there are people who are going to be interested in what he has to offer and who are going to buy his product. The third assumption is the economic equation, at a minimum, profitable. It's a bet each time. There are some notable examples of failures – eg The Newton, Apple's project which prefigured the touchscreen tablet, launched in 1993 and abandoned in 1998. Or more recently Google and its Google Glass project, abandoned for the general public in 2015. All entrepreneurs constantly make assumptions, more or less daring. Finally, there's the target you're aiming for. Sometimes selling at a high price is less risky! If you sell a luxury item for \$10, people won't buy it, not seeing it as luxury. Consistency in luxury requires it to be expensive. These are reflections around the perception of value. The entrepreneur's job is to advance and confirm or sometimes refute assumptions. And lastly, there's the execution assumption which every entrepreneur makes whether he be innovative or less innovative. For the latter, if what he has to offer is already well-known (for example a bakery project), he'll assume he knows how to present products properly, as others have done before him, and he'll become a good leader rather than a creator in the innovative sense.


What could the company of tomorrow look like?

In 1990, could we have imagined teleworking? No, that would have been science fiction. It's fascinating to note the considerable acceleration over the past 3 decades, especially in view of the speed of absorption of certain technologies by the markets. How long does it take for a product to reach an 80% market share? The car was launched at the beginning of the last century but took about 80 years for 80% of the population to own one. The radio?- We had to wait 60 years. TV?- It's a bit less, about 20-30 years. Computers?- 20 years. Smartphones?- Not long, 5 years at most. The closer we get to our time, the more dramatically the rates of technology absorption increase. As an entrepreneur and as a manager, it's in our greatest interest to be as agile as possible.

Are you thinking only about technologies? Are our cultures changing as

quickly as we absorb technology? Are consumers' habits also affected by the change?

We can observe a capacity to change behavior very quickly, more or less under duress. I'm thinking of the ban on smoking in public places, new habits in food and health (the Covid-19 pandemic is the most recent striking example), the attitude to property which has changed with apartment rentals via Airbnb for example, the purchase of a car which is no longer a real issue for young people today, etc. Generations change very quickly, everything's interlinked. The next generation is marked by the environment left to them by the previous one. Children are born today with smartphones in their hands. So inevitably, their behavior, expectations and way of interacting with the world will be totally different from those of previous generations.





The tech and social mix at the service of the common good

Interview with Jeanne Bretécher

Jeanne Bretécher is co-Founder and President of the Social Good Accelerator, a think-tank which promotes the models of social tech and defends the digital acceleration of the social economy in Europe. She's also the founder and associate director of YOurmission, a "societal engagement" consulting firm linked to UN Sustainable Development Goals. At the beginning of 2021, she said: *"2021 will be a year of resilience. May we as citizens and organizations, find the resources and courage to regenerate the economy, democracy and face the ever stronger environmental and societal challenges."*



Jeanne Bretécher

FRANCE

“People have never talked about the social economy as much as today, whether they’re political decision-makers, young graduates or even students who are switching to more meaningful professions. Many of them tend to make this a priority over pay.”

What’s the Social Good Accelerator?

The social good accelerator is the development of social tech and digital models for the social economy. It faces two challenges - facilitating the digital transformation of social economy organizations and developing the digital “unicorns” of this sector. We’re currently developing the European network for social tech (European network for People, Planet and Social Tech).

What brought you onto the road of social and technological innovation?

I’ve been an activist for a long time in the

social and solidarity economy (SSE) at European level, fiercely optimistic and attached to the freedom to take action and foster cooperation! In order to preserve our democratic and social heritage in a world where resources are finite, we’ll have to further redistribute the value created and take into account the social and environmental value generated by organizations. Today, it’s no longer a question of focusing solely on economic value, but of having a global vision of the value generated. We can perceive weak signals¹ the social economy is growing faster, as are the Euro-

pean Commission works on the European Social Economy Action Plan. I can see a real desire to change this economy of scale at the institutional level, both in Brussels and in a certain number of member States which already have a mature social economy ecosystem, particularly in the Latin countries and the UK. We have this particularity in Europe of having a social economy which is extremely dynamic and developing! 1 in 8 businesses that are set up in Europe today are part of the social economy.

What weak signals are you talking about?

We've never talked about the social economy as much as today, whether it's political decision-makers, young graduates or even students who are switching to more meaningful professions. Many of them tend to make this a priority over pay.

As for the constraints linked to sustainable development, to the famous Doughnut model², they're also a driving force for the social economy. This "reasonable economy" takes into account the resources available and limits profit ambitions. The notion of "limited profitability" converges with the Doughnut model.

Being aware that our resources are limited and that we'll have to rethink our modes of production and consumption in order to survive, ultimately feeds what the social economy has been building for decades. Accentuated by the Covid crisis which will, I hope, bring about a paradigm shift.

Humanity as a whole is starting to realize that it's extremely fragile and the time's come to relocate a number of elements such as food and pharmaceutical production more efficiently.

What are the pitfalls you face?

Social economy actors use tech to solve problems. However, in the majority of discussions around European digital technology, they weren't part of the political discussion until very recently; despite providing an alternative to the excesses of the digital technological economy, as with the "uberization" phenomenon for example.

Social economy actors propose concrete alternatives such as cooperative platform models that respect social rights and promote sober digital equipment or open data³ technologies.

What are your main areas of work within Social Good Accelerator?

We're working on two main axes.

The first is the lobbying axe with the aim of bringing our voice to Brussels and Strasbourg. We try to bring the member organizations of the Social Good Accelerator to the European Commission and European Parliament table.

The second axe is research and prospection. We analyze the needs and barriers of these SSE organizations in their digital transformation. We're soon going to launch research work on generative ecosystems, governed by non-profit organizations.

Could you give an example?

OpenStreetMap is a collaborative online mapping project which aims to build a free geographic database of the world, using the GPS system. It's a citizen-generated database, much like Wikipedia. Start ups and large groups will use the data and thus generate economic value.

A governing body will intervene to monitor the operation and ensure that democratic principles are preserved and value properly distributed. It's an extremely virtuous model! It's part of the digital social and solidarity economy, but it's not well known by the general public yet. With this example, we have a model that is both cooperative, due to the 3 stakeholders working together, and at the same time generative because each stakeholder actively contributes to the creation of collective value and "limited profit", or even "non-profit",

making it possible to guarantee operations in the service of the common good.

What's your big challenge?

Community organizing⁴ and the creation of a shared resource center at European level! At the moment we have 2 projects: Firstly the Social Tech Academy, with webinars to raise awareness of relevant digital methods and tools to be developed in SSE organizations. There isn't a resource center yet, which is why we want to document the digital professions of the SSE. Secondly, we want to create a European community of social tech. It doesn't exist yet either but we've just published our "Social Tech Atlas", a directory that references social tech at European level!

Last but not least, one of our next big challenges is applying for funding.



¹ *Elements of perception of the environment, opportunities or threats, which must be the subject of anticipatory listening.*

² *Theory by Kate Raworth, former economist at the NGO Oxfam. The Doughnut model is a doughnut-shaped diagram symbolizing a sustainable economy, combining the concept of planetary boundaries with the concept of social boundaries.*

³ *Open data are digital data sets, private or public, whose access and use are left free to users.*

⁴ *Community organizing describes the process by which organizations or individuals build and animate a community of interests in order to harness more power and better assert their common interests in front of public institutions, companies and owners; and whose decisions impact their lives.*





Lamazuna invents the company of tomorrow

Interview with Laëtitia Van de Walle

Laëtitia Van de Walle, a committed and environmentally aware pioneer, has created a new business model with Lamazuna. Lamazuna is a natural cosmetics store concept and France's leader in zero waste cosmetics. It's a promise of upheaval for the economic model as we know it today. Implanted on an eco-friendly site in the south of France (the Drôme department) it'll provide a company crèche surrounded by orchards and gardens whose products will supply the company restaurant.



Laëtitia Van de Walle

FRANCE

“I realized the impact entrepreneurs have. I questioned their role and the development of products and that incited me to go as far as possible - I work in organic, vegan, zero waste, made in France with the aim of always trying to do better.”

How would you define yourself?

Lamazuna or me? *(laughs)*

Both!

My question says it all! I'm an entrepreneur, a visionary and a pioneer of zero waste, driven by the desire to act.

How did Lamazuna come to be?

Lamazuna started out with washable and reusable make-up removing wipes, a very basic product idea. My first wipes were packaged in plastic bags - I bought 10, 100, 1000 sachets. And then one day, I realized people were making plastic somewhere in

the world for my supposedly green idea. That made me really aware of the impact entrepreneurs can have. I questioned their role and the development of products and that incited me to go as far as possible - I work in organic, vegan, zero waste, made in France with the aim of always trying to do better.

Tell us about Lamazuna's beginnings.

Lamazuna was established in 2010 and has grown over time. The first employees arrived 5 years ago. Today, our brand imagines a business model as a whole. I

wanted to do permaculture to supply produce for the company. There was a time when the kitchen bin was overflowing, but I couldn't in all fairness ask colleagues not to eat fast food. I needed to find a solution true to my ethos. So now, we're going to switch the lunch-vouchers for our own home-grown products!

Where did the idea for the micro-nursery come from?

We are in the Drôme, in an area far from everything. We had to be able to attract quality profiles if we wanted to grow. The micro-nursery's attractive because employees are on average very young. I'm also curious by nature and I kept wondering if a zero-waste micro-nursery could be feasible? I think so but now we had to prove it!

On another note, we're looking to achieve the "Remarkable Garden" label for our future permaculture garden which is currently being designed for planting next year. I got this idea for a garden after visiting other gardens labeled "remarkable". In fact, Lamazuna rather looks like an artist's studio with a touch of madness. I don't want us to be just an ordinary business operation.

Among your 5 commitments for 2021, there's one related to making your products "eco-economic", by gradually reducing their price. How?

We've been reducing the prices of one product line per year, every year for the

past 3 years. We're continually innovating but developing a product is very expensive in terms of investment, costs of labor, formulas, molds etc. As soon as we've had a return on investment in the molds which we purchase in France (very expensive) for purely ecological reasons, we lower the selling price. There's a genuine economic reality behind these price cuts.

Are you seeing major developments in the world of cosmetics?

I remain optimistic. We see changes today with competition coming from all sides. Even L'Oréal's starting to make solid shampoos! We proved that there's a market for it. You often need large groups to implement change for things to really change. It's going in the right direction. I notice a real awareness and knowledge on the part of consumers regarding the products they put on their skin. They read the ingredients, and have become able to choose. Once the consumer knows how to read a label, we can no longer lie to them. It's through knowledge that we will force entrepreneurs and businesses to act and improve.

Do you think responsible capitalism is possible?

Yes. Even if we're going in 2 directions at the same time. There are so many funds financing projects that don't really have green objectives... there is a lot of green-washing.

Your door is closed to investment funds. Why's it so important for you to reinvent everything?

In order to be completely free of any pressure - I wanted to start a business to be free. The funds are there for purely financial motives. In my opinion, comparing amounts of money raised is just a exercise for business schools.

Are you going to develop other products besides cosmetics?

Yes, we're coming out of the bathroom! We still want to be innovative, but without adding new needs. So, we'll have to change rooms. We did think about laundry detergent, but it can be made quite successfully at home. However, that isn't the case for washing-up detergent. So, we've invented an alternative - a solid dishwashing soap bar, labeled eco-detergent.

You have a store in Paris. Are you going to open a second one soon?

No. If we did that we'd be competing with our zero waste distributors who are very active and militant. Instead we've gone on a tour of France for 2 consecutive summers with Ulysses, our own truck-shop.

What are you putting in place for the well-being of employees in terms of logistics, schedules?

One employee asked if she could come to work on horseback! It's under consideration and we'd be really pleased if we could

find a paddock for her horse. But we're careful not to spill over into employees' privacy. On Fridays, we all finish work at noon. Organizing 35 hours a week in four and a half days works very well!

What are the set boundaries to remain an impact business?

I think we need to limit the number of employees. We've grown very fast; increasing from 30 to 70 employees this past year. Our limit is 150 people. According to a scientific study, 150 is a reasonable number to guarantee the smooth running of the company - it's small enough not to require too strict a framework which normally means that everyone knows each other.

Why did you launch The Green Emporium, an ecological cosmetic brand for mass distribution?

At first, we were against this idea. However, when we found out that L'Oréal also wanted to launch solid shampoo, we decided we had to go for it! We wanted to meet the customers and show them what a good solid shampoo is made of. We've kept the Lamazuna concept but use different ingredients to avoid drawing on the same resources. Lamazuna funds agro-forestry tree plantations whereas Green Emporium funds beach clean-ups with the Surfrider Foundation. This saved 32,000 square meters of beach last year and we hope to do a lot more!







Investment/luck and ingenuity – Advices from a Business Angel

Interview with Didier Boullery

How do you turn a problem into an opportunity? This could be Didier Boullery's motto. An investor, a Business Angel since 2011 and co-president of ESSEC Business Angels, European Innovation Manager at IBM and a lecturer at ESSEC, one of France's top schools, Didier Boullery satisfies his overflowing curiosity by supporting young companies that are different. A meeting with a dynamic "Gyro Gearloose" who has so many ideas that he files patent applications for them.



Didier Boullery

FRANCE

“Ingenuity makes it possible to think differently.”

What are the main characteristics of a Business Angel (BA)?

It's basically the pleasure of sharing one's experience with entrepreneurs. This is coupled with a certain taste for innovation and intelligent risk-taking if he decides to provide financial support. The BA works closely with the strategy committee as a mentor, combining benevolence, help and advice, but is never involved in the actual running of the business. His experience both in business and in supporting start ups helps the founders to avoid pitfalls.

What's the recipe for constructively supporting a start up?

For exchanges to take place in the best possible conditions, personal relationships must precede any financial agreement between the BA and the founding team. In case of doubt or a problem, being available is fundamental because the BA is the reference person to turn to immediately for answers or information, especially since he's neutral and looks first and foremost at the interests of the company rather than at those of the managers or

investors. So, I quite often receive calls late in the evening or on Sundays. No matter the hour or the day, a BA's commitment to his "foals" is permanent.

What are the qualities of a team that manages to withstand the shock and move forward in times of crisis?

Its adaptability – a crisis is essentially seeing a risky horizon with short-term visibility; the goals of the team may have to change at any given time. Under such conditions, it becomes difficult to react correctly and therefore, to ride the consequences of the crisis with the certainty of benefiting from it. In sum, extreme vigilance is required to work round new obstacles, and necessitates observing the market very closely to detect development opportunities.

You say "I look at the team more than at the project". Really?

Absolutely! In fact, I'm working with a start up in the pastry industry, even though I don't particularly like cakes! I'd already built up a really good relationship with the team before they actually succeeded in "selling" me their original business idea.

To what extent does the project carried out by a company contribute to your choices? Have you turned to impact start ups?

Curious by nature and therefore eager to learn more about unfamiliar subjects, I'm particularly sensitive to any projects based on innovative or promising concepts, es-

pecially if they contribute to the future of my children. For example, before FinX, I knew nothing about the mechanics of marine propulsion. Now I'd be able to write you a whole article about it!

Is the luck factor decisive for the success of a business?

Luck always retains its share of mystery in the development of a start up. It peaks when an idea lands at the right time in a niche that was waiting for it. But no business can rely on it alone. Adopting a large number of approaches, like taking part in competitions or radio and TV programs, is an essential springboard for being seen and heard, or just simply discovered. Whereas, a start upper who contents himself with carefully building a business plan on his computer and in his private circle won't get the same opportunities. In conclusion, to increase its chances of success, all businesses have to assess the return on media investment.

Has the crisis stopped fundraising for businesses?

All crises inevitably lead to a detrimental lack of liquidity. We saw that in 2008 and, unfortunately, we can see the same pattern in the current crisis. Start ups which had to cease activity due to lack of cash could have been able to continue under other circumstances and would probably have developed. At the same time, the shareholder BA has to make an almost impossible choice - increase his investment in a

business to help replenish its cash flow or finance a new adventure in a more interesting start up. Changing horses in the middle of a race might get you further than the initial one but success is highly unpredictable in either case... Thus, the decision is based partly on the relationship with the founders and how the company has developed. Personally, I don't have a firm conviction. But it's true to say that the current situation's proving extremely difficult for start ups.

What industry should you, as a BA, get into today?

In the one that motivates or excites me most!

How long have you been noticing that more and more companies are caring about their impact, if not positive, at least neutral on the environment?

They were probably there before I really took any particular interest in them. However, for the past 5 years I've seen them rise to the fore. There are some very smart businesses in that sector and some are making a lot more money than the so-called normal start ups.

What advice could you give to students or entrepreneurs?

During my classes at ESSEC business school, I explain to students that founders generally draw up business plans that comprise more theory than practice, therefore distant from the reality on the ground, ex-

cept on one point - expenses. Their expenditure forecasts are usually very concrete, far removed from those concerning turnover and development timescale, which I tend to divide by 2 and multiply by 3 respectively. My advice to entrepreneurs is to give your greatest attention to your cash flow, because it's a question of survival!

When starting a business, founders regularly face the unexpected and, lacking experience, risk making mistakes. That's quite normal! I recognize a good entrepreneur by the way he faces a problem; he immediately seeks the advice of his relatives, his strategic committee, his team of experts in order to better assess the situation and propose the most effective action plan.

Founders are often working with their noses to the grindstone, so the BA has to look further afield. On perceiving weak signals in the ecosystem, he can detect future opportunities, open his own network of contacts or propose synergies with other start ups. I love this last part of my activity. Finally but importantly, arouse interest by applying transparency. Regular press releases constantly demonstrate the reactivity and progress of the start up to those who support it. Too few founders think about that, which is a shame. This shared information gives me the means to better sell the start up whenever an opportunity arises. If I invest, it's to dream and participate. Imagine following a regatta around the world, if you only received two pieces of information: "*They're leaving Saint-Malo*"

and “*They’ve returned to Saint-Malo*”. What’s the point?

As a manager at IBM, how do you see the future of the company, and especially of large groups?

Crowned by their status, large companies appear to be the drivers of industry, if only by the number of patents they own. However, their size traps them in a much more static model than that of a start ups. It will take such companies between ten and twenty years to turn around, while the much more dynamic start up will rebound almost instantly, seizing new markets to the detriment of large groups. Accor and Marriott have allowed Airbnb to develop a parallel offer with the latter gaining a significant and successful share in the travel accommodation market.

During my first lessons as a student at ESSEC, a teacher asked us for the definition of a company. Very many proposals were put forward. Yet that day, I realized that there were none. Managing a company consists of constantly adjusting the interests of different actors - shareholders, employees, suppliers, customers and public authorities whose objectives don’t necessarily converge. At the moment, the social, responsible and ecological environment is added to this complex issue with obvious benefits - the company mustn’t only serve the interests of its shareholders

and employees, but also those of society for the common good. Therefore, being successful in today’s corporate world requires adapting to all of these variables and providing consumers with an image that meets their expectations or commitments.

What’s the essential quality of an entrepreneur?

Without a doubt I’d say ingenuity! Ingenuity makes it possible to think differently. When faced with a problem, whatever it may be, reflection must break free from pre-existing models in order to “disrupt”. One time in three, a patent application is filed and one time in ten, a start up takes off. My position as innovation manager has never allowed me to have such an open mind.

In my BA career, I’ve met around 1,500 start ups and I’m always fascinated by their creative buzz. They arrive in niches where nobody expects them, catalysts of ideas and connectors of innovation! I really like Newton’s apple metaphor. Anyone with that fruit on their heads would have fired, maybe him too, but he didn’t stop there. He reflected on and developed the notion of gravity. Luck capital is cultivated. That’s the goal a start-upper must pursue - to transform perception into opportunity and luck.







New look for cosmetics

Interview with Clémentine Granet

Out of their business school friendship and cheerful, dynamic personalities has grown a company that finds its DNA in the motto “less is more” - doing better with less. Les Petits Prédiges was one of the first 100% natural, French eco-responsible cosmetics brands to emerge in 2016. Clémentine Granet, co-Founder with Camille Brégeaut, explains this success story in a rapidly changing sector.



with Camille Brégeaut (right)

Clémentine Granet

FRANCE

“We move forward as society changes and faces new issues. We wanted to create a brand that could convince people who at the start had little or no interest, but who gradually finished up by changing their behavior without drastically changing their habits.”

How would you define yourself?

Camille and I have been friends since business school! Beyond our passion for ecology and natural cosmetics, it's above all entrepreneurship that's driven us. Very attentive to the content of the skin products we use, we realized that the pleasure got from a beauty routine was spoiled because of the obligation to check out the ingredients used in the fabrication.

How do you see entrepreneurship?

Entrepreneurship is taking on a project

that you believe in deeply and trying to achieve the set goals with flexibility and positivity! Successful business means staying close to the values of the company as defined at the outset and moving forward as society changes and faces new issues. Three years ago, we were looking for eco-friendly, natural, sexy brands, with pretty packaging and pleasant scents which ultimately look like conventional cosmetics, but, we couldn't find any. That's how Les Petits Prédiges came to be. We wanted to create a brand that could

convince people who initially had little or no interest, but who gradually finished up by changing their behavior without drastically changing their habits.

What are you particularly proud of?

To have succeeded in being where we are today without having raised any funds! We want to maintain this financial autonomy and choose where we're going, even if, in principle, we're not against the arrival of investors to consolidate our position in the market. This challenge was met because we have a turnover of more than one million euro. The concept's proven itself in today's highly competitive market.

Are you considering marketing other products?

The brand revolves around the beauty hygiene routine essentials only, the basics that you can't do without. After the multi-purpose balm for all skincare (hair, face and body) and the deodorant, we plan to launch the toothpaste! We want to focus on basic, simple products, with biodegradable cardboard packaging and most importantly, to avoid misleading marketing. Therefore, our range of products won't a priori expand into cosmetics. But why not, in the medium term, extend to interior cosmetics (food supplements) and daily life with laundry products. However, if there are already well-established players in these segments, we won't compete against them.

What surprises have you had?

We discovered that the balm works great on eczema! That's not necessarily something we expected. In general, the compliments we receive unanimously concern the pleasant colors, beyond the pure hygiene aspect of the product. It's nice to display pretty products in your bathroom! These are the products we use the most on a daily basis, but which we don't give much importance to, be it the composition or the packaging.

On a daily basis, how far does your commitment go?

Camille and I obviously sort all waste. We cycle or use public transport. We don't have a motor vehicle and we limit our air travel to domestic flights. As for food and cosmetics, we take a close look at the list of ingredients and components.

Have you thought about donating funds to associations, for example?

Yes! We've done this for occasional events, either with partners who work on social issues (particularly those in reintegration and rehabilitation), or those with environmental goals. We'd like to be in a position to donate systematically part of our profits to an ecological association for example, but today our margins are extremely small. We oscillate between the wish to support these associations and reality. We're still too small to contribute something systematic with an impact, but we are definitely looking in that direction!





Parity in tech - a target for 2050

Interview with Caroline Ramade

Upheaval in sight on the tech planet! By 2050, 50% of entrepreneurs could be women. That's the wish of Caroline Ramade, entrepreneur, founder and director of 50inTech, a committed and progressive community that connects female talent with businesses. Today in France, 10% of tech start up founders are women while only 3% are CEOs. As for the investors, there are only 8%. Caroline Ramade is determined to create a tsunami in the tech ecosystem.



Caroline Ramade

FRANCE

Covid has delayed gender equality by 36 years. As for equal pay, the delay is now 200 years.”

When does your engagement date from?

I've been very committed for a very long time! I started my career as a journalist before branching into politics as Communications officer at the local authority in Paris' 18th arrondissement, and after that at Paris City Hall. I quickly realized that digital was the best way to reach and engage citizens meaningfully. That's how I became deputy head of the digital department for the city of Paris, with a very strong commitment to gender equality.

During my career, I've always been an activist and had a special connection with start ups. I subsequently became Managing Director of a start up incubator for women entrepreneurs, Paris Pionnières, later renamed Willa. It was at this point in my life that the real struggle intensified! Our economy has too few women or diverse profiles and yet, women represent 52%, even 53% of humanity! I felt it was completely absurd that the needs of women, or those of non-binary people, couldn't be represented in the develop-

ment of algorithms, for example. Apple credit solutions are biased because the algorithms consider that women earn less than men and are therefore less creditworthy. It's not even a question of the future anymore, it's about our daily lives!

What's the situation for women in tech?

There are very few women entrepreneurs in general and even fewer in tech - about 25% globally. They represent 16% in the field of artificial intelligence in France, against 26% in Latvia! I ran entrepreneurship and intrapreneurship programs for 3 years, which obviously required female co-founders. There was great diversity within these structures. The mix was perfect and the profiles for the most part hadn't graduated from prestigious schools. This is a real challenge for engineering schools.

In the West, one in every two women leaves tech after 8 years' experience over issues of discrimination and harassment. Why? - Because everything centers round the male perspective. Women complain of toxicity at work often leading to burnout and it's even worse for people of color. There's also a management problem - for generations, we've relied heavily on hard skills for male managers. However, soft skills are fundamental to help employees progress! In addition, women often don't feel supported. In the event of maternity leave for instance, the return to work's often very violent and mainly concerns start

ups where the average age is very young.

What great accomplishments have made you proud and happy since the creation of 50inTech?

Seeing women launching projects even though it is more difficult for them to move forward in terms of funding. Diversity has become non-negotiable, a non-subject, and we know that's a factor helping performance and innovation! A lot of men are also concerned about this now. In fact, companies have no choice but to change even if they don't know how to do it well and are prevented from doing so by their investors' demands - greater adaptability and therefore too much pressure compared to what humans can withstand. Imagine, we give you 100 million, so you have to recruit 200 people in 1 year, how do you do it? How do you manage the human in a machine that's just there to make profits? In case of discrimination, how do you react, how do you make the company as inclusive as possible?

How does your 50inTech community work?

We want to achieve parity in tech by 2050. Not surprisingly, at 50inTech we attract a lot of female profiles. My wish is for the tech world to have 50-50 gender equality much sooner! To achieve that, we try to place women at the highest level, in top management. So we put professional and job-seeking women in touch with inclusive companies with whom we sign a commit-

ment to meet a certain number of criteria. At the outset, we always use an automatic evaluation principle which can validate rapidly if the profile corresponds to the criteria required by companies and vice versa.

You say Covid has delayed gender equality by 36 years.

Yes, and it takes 136 years for culture, health as well as social, political and economic domains. As for equal pay, the delay is now 200 years. During the Covid period, women raised even less funds than usual and suffered more lay-offs partly due to their overrepresentation in consumer-related sectors that were more directly affected by the lockdown measures. Also, many women leaders stayed home to look after the children and all their home responsibilities, thus increasing the double burden of work and daily home life. It's not a choice, but blatant reality - the world of work clearly isn't made for those who still run the home. The world of work's not suitable for those who want a family life or who manage it. It's not suitable either for those who want to have a life outside work. The reality is that this is a world built by men, for men. But today, a whole generation of men no longer want that and that's why we must support these modern movements for paternity leave or second parent leave. It's as if women who give birth carry some kind of burden. When real equality exists, when women, men and second parents

can go on leave at the same time over similar periods of time and when it ceases to be seen as a fault, then society will have won, at least partly. It isn't by coming back to work after 10 days that you form a relationship with your child. Today, a whole generation of fathers and second parents want to get involved.

Today you're an administrator of the national committee of UN Women France, which aims to promote programs for gender equality. What does your engagement consist of?

I've been a member of the UN Women Governing Council since 2018 as a volunteer. UN Women is an organization that raises awareness, takes a stand and lobbies public authorities. It also raises funds to carry out international operations aimed at countries that need to make a lot of progress on the subject. Personally, I attend council meetings, help with networking, fundraising and the implementation of new ideas.

The next stop for 50inTech will be London. Why?

Because we've already had Berlin and because you really have to be in the field, in London. There are a lot of start ups there and a lid's been put on the market! That's probably due to a lack of talent, so I think now is the right time to go. Finally, the large investment funds, including the Nordic ones, remain in London.







A great new wind is blowing on the start up planet

Interview with Anita de Voisins

Nearly 20 years of experience in finance, consultancy, impact investment and environmentally-friendly start ups in France and abroad have led Anita de Voisins to support budding entrepreneurs, this time alongside students. She's been Director of Entrepreneurship at CentraleSupélec (a top French engineering college) for nearly 2 years and is particularly interested in societal, environmental, creative and innovative subjects. She explains to us the major challenges facing start ups, especially in the tech world.



Anita de Voisins

FRANCE

“A large majority of student projects in our Entrepreneurship career programs at CentraleSupélec involve projects with a dimension relating to society or the environment. This awareness is gaining importance in many innovation projects, and is very encouraging.”

How would you define yourself?

Curious and empathetic! Empathy means we pay attention to others and the world around us.

Do you believe in responsible capitalism?

I believe in it, but there's one drawback. For it to work, you have to be able to prove that there is profitability with models that

prioritize impact. Clearly, there's now more impact awareness among customers and employees with increasing pressure on companies to take these dimensions into account if they want to attract them and keep them. On the other hand, the search for profitability at all costs and a rather “short-termish” vision can slow down this development.

What general major advances have you seen in environmentally-friendly start ups over the past few years?

In 2013, I participated in the development of an “Impact Investing” fund called Investir& +. We were a few pioneers on these topics at the time with very few start ups putting the pursuit of positive impact at the heart of their business. Any funds that existed before ours were very few and far between. Since the time I took off my “investor” cap to join CentraleSupélec, I’ve noticed a real underlying trend emerging on these impact topics. There are now more than twenty impact funds in France, not counting the traditional funds that have now realized that integrating a non-financial dimension to their investments is a must. So yes, there are still funds that stop at marketing and surface display, but some are really starting to change their practices. There’s a real awareness being pushed by the new generation who want to address the issues of society and the environment more than ever.

Is this what you’re seeing in CentraleSupélec?

A large majority of student projects in our Entrepreneurship career programs at CentraleSupélec involve projects with a dimension relating to society or the environment. This awareness is gaining importance in many innovation projects and is very encouraging. There’s also a second generation of more seasoned entrepreneurs, who’ve already started their busi-

ness, who wish to integrate more meaning and the notion of impact into their new entrepreneurial adventure. Entrepreneurs have indeed realized they can be part of the solution.

And what are the major advances in the tech environment?

It’s not that different from start ups in general. Tech has an interesting role to play, whether low-tech, deep tech or high-tech. It can provide relevant answers on the circularity of processes, for example, eco-design, decarbonation, access to disadvantaged populations, etc.

How’s the ratio of women to men changing in tech?

It’s changing slowly, just like elsewhere in entrepreneurship. The advantage of developing impact topics in the entrepreneurial and tech world is that more women are represented within them, much more than in conventional fields. What’s very clear however is that the proportion of women remains low in deep tech.

This is one of the major challenges of the moment facing CentraleSupélec - how do you encourage women to study engineering? Today, we’re at 18-20% of women in the conventional engineering course. This is obviously not enough, but it’s not easy to act quickly and easily because we’re at the end of the chain - after preparatory classes, after the school system. Some of these issues could be addressed in early childhood.

We've therefore chosen to diversify student recruitment. For instance, we're seeking out talented women in preparatory classes where there tend to be more, especially in BCPST (biology, chemistry, physics and earth sciences). We're also opening up to university profiles, even if the majority of students still come from the more traditional preparatory classes.

Finally, we've just created a Summer School which aims to break down the preconceptions that some high school students may have about engineering studies. As from summer 2021, first year students who've chosen mathematics as an option for the French Baccalaureat will come for a week to discover the school's ecosystem and its laboratories. On the entrepreneurship side, we devote half a day to informing them on these subjects and showing them the diversity of themes offered. It's the first time we've organized this Summer School and our goal's already been reached! We wanted to welcome at least 50% female profiles, 50% stock market profiles and more than 60% high school students from outside the Paris region. We've had a lot of requests and filled all the places available. Our wish is to demystify engineering studies. For example, we're going to organize a workshop for them of the "Climate mural" type in order to answer the question "*How can an engineer provide solutions to climate issues?*"

What are the essential prerequisites for an entrepreneur?

Ah! That is the big question. Are we born entrepreneurs or can we become one? Personally, I believe that an entrepreneur requires capital qualities that not everyone has: You have to be deeply resilient and very optimistic because the entrepreneur spends his time defending his idea in front of people who don't always believe in it and the road is sometimes long and winding...

What does business success mean?

It all depends on the goals you set for yourself at the start. For an entrepreneur, it means giving life to an initial vision, often in connection with an identified need. It's very important not to lose your DNA as your business grows. You really have to work on the values that you want to keep at each stage of development and how you recruit people.

Is the subject of recruitment more relevant for impact companies?

Yes, maybe. The founders are often very motivated by the impact dimension they've decided to transmit to their company. They want to change the world. The first employees are often very much in tune with this objective, but as the company grows, more traditional topics arise such as business development, profitability management, etc. These are very concrete but necessary issues, which can gradually attract profiles further from the initial impact objectives. The challenge is to stay on course but at the same time succeed in

attracting profiles capable of growing the business.

Is the luck factor decisive for the success of a business?

Yes, there's the famous "momentum". You can have a great entrepreneurial idea, have all the capabilities for its development but fail, just because the market isn't ready for it. Entrepreneurship also involves networking, but that you can provoke... A good entrepreneur provokes that type of luck! However, entrepreneurship isn't all about luck. Ability to implement is key and it's

this aspect that's the most decisive for the success of a business - much more than the original idea in fact! We often hear from entrepreneurs who say, *"I have an idea but I don't wish to share it for the moment."* It'll be of little use to them... The more they share it, the more they'll get interesting feedback that will help them move forward. We are several billion people on this planet. The probability of several people having the same idea at the same time is high! The successful entrepreneur is the one who brings his or her idea to life, with talent!





Find talent where it is

Interview with Estelle Barthélemy

80% of job offers never appear on job search websites. Estelle Barthélemy got involved very early on in youth issues, with economic inclusion as a driving force. In 2008, she co-founded Mozaïk RH, a leader in recruiting talent from disadvantaged suburbs and cultural diversity. Mozaïk RH is now a mission-driven company where she developed ambitious support programs for young job seekers, before going on to found OYA Agency, a consulting and training firm with a positive social impact, in 2018. Meeting with a social entrepreneur who promotes a model that allows everyone to find their place in the job market if they are accompanied and encouraged.



Estelle Barthélemy

FRANCE

“Many new terms have entered our vocabulary, such as ‘inclusion’, which has disrupted what pre-existed. Today, no one can question the fact that there’s talent in the disadvantaged neighborhoods.”

How would you define yourself?

I define myself as someone who wants to leave a mark! I support associations and social enterprises which on a daily basis work to reduce inequalities, protect the most vulnerable and promote social ties.

Can you explain what your job consists of?

My job involves transmitting knowledge about the development of a social enterprise and accelerating social innovation, supported by talented project leaders. That helps them save time on HR issues and develop their model. All that in a friendly, cheerful way and driven by passion and enthusiasm.

You started by setting up a recruitment firm. Why?

It seemed obvious to me as I had myself grown up in a disadvantaged area. I was the first in my family to pass the French Baccalaureat and thereby access higher education. In fact, I took up a Master’s degree at ESSEC business school 3 years ago! I’m a trained economist, which is why the Mozaïk HR dynamic, crossing economic efficiency and social issues interested me, because we started with the needs of companies. Many of them want to recruit talent but don’t always know how to go about using a recruitment method that widens “the sourcing” - this is neither a philanthropic nor a tearful response, it’s pure

common sense. In my neighborhood and network, I saw a lot of young graduates who were struggling to find a job and realized there was a big waste of talent. With OYA, an expert in consulting and training, I continue that work, supporting over the last 3 years 35 project leaders in the social economy in companies and associations that work for the general public interest. I also work for Antropia, ESSEC's social business incubator and accelerator.

Have you seen the wind change since the start of Mozaïk RH?

Mozaïk RH participated in the implementation of the El Khomri labor law, the modernization of social dialogue and the securing of professional careers. From now on, companies have an obligation to train. It's a major step forward and one of the axes that can be used as a lever.

In addition, when a company adopts a genuine CSR approach, when it realizes its positive and negative externalities and its role, then yes, there's a diversification approach on its part. Antoine Jouteau, CEO of the French company Le Bon Coin (equivalent to Gumtree), does this very well and has doubled his teams in a very short time! He seeks out talents where they exist.

Finally, many new terms have entered our vocabulary, such as "inclusion", which has disrupted what pre-existed. Today, no one can question the fact that there's talent in the disadvantaged neighborhoods. But for me who's at the heart of these questions, things aren't going fast enough and

the statistics prove that. When there are issues related to the economic crisis linked to Covid for example, it's the most fragile who are affected.

You were vice-president of the MOUVES network, which became Impact France, where you provided mentorship for women's projects. Now, you're a director of the association Positive Planet France co-founded by Jacques Attali, which promotes the positive economy by fighting against poverty and all forms of exclusion through positive entrepreneurship. What's your role there?

I'm a member of the governing board which devotes whatever time is needed to help and advise teams on the ground. We compare our vision of things with what they propose. Then, we look for fundraising opportunities (eg. foundations), by networking with companies that might be interested in working with Positive Planet France.

What makes you happy?

Being useful! Changing lives, changing directions as best I can, watching people I recruited grow in their roles and professions, being able to measure the impact directly, seeing small social businesses flourish, while at the same time solving social problems. This is purpose - transmit and help them succeed.





*“The people who are crazy enough to think
they can change the world
are the ones who do.”*

STEVE JOBS

Sorority to change the world

Interview with Soazig Barthélemy

300million women are entrepreneurs around the world even though entrepreneurship wasn't designed for them. Based on this observation, Soazig Barthélemy created Empow'Her in 2013, a non-profit organization aimed at empowering women around the world through entrepreneurship and the implementation of training programs and multifaceted supports - format, duration, level of commitment and location. Soazig now travels the planet to export her dream of an egalitarian world.



Soazig Barthélemy

FRANCE

“I’ve always wondered why women haven’t grasped that they outnumber men on Earth. And why, they’ve never rebelled.”

Who are you?

I was born and bred in Brittany (France), a land of adventure that opened up a lot of opportunities for me. I’m also obsessed with impact. I couldn’t imagine my life without it.

Finally, I’d say that I’ve remained an eternal teenager. I like to live life casually - work should be made of laughter and joy!

What is Empow’Her?

It’s a network of organizations and people who want to make entrepreneurship a real tool for the emancipation of women. We’re simultaneously an incubator, an accelerator, a training and coaching organization and a network. Our main job is to

provide training for women from very diverse backgrounds, entrepreneurs or those who wish to get into entrepreneurship. We follow up women in tech and industry, some in agro-ecology projects or market-gardening activities. All these women are linked by one reality - entrepreneurship wasn’t designed for them, like indeed most of our society. They don’t represent the sector, in any case not the system of representation that emanates from the sector. There’s a real issue of identification to be redefined.

What are the major limitations that women face in entrepreneurship?

Limitations are numerous and disastrous.

This is closely linked to the financial structuring of their companies, set up with their own capital and under-financed. They have less access to financial services, less access to support services... Entrepreneurship is an extremely difficult job which requires knowing how to do everything at the same time. It's a sprint that's run over the distance of a marathon. I don't know any entrepreneur who's succeeded alone, it's a collective adventure that has to be shared with mentors and support structures. However, there's little access to networks for them. We're present for those who don't have access to information, technology, finance and training. All these problems exist in the rest of the private sector too - we know it's women who occupy the most precarious positions, so they're more subject to partial unemployment, and we all know the consequences that can have on household life. Inequality isn't just measured in terms of unequal pay.

Why do women raise much less funds?

There are 3 reasons. The first is that there's a socio-emotional question that permeates our society - is this in the nature of men and women? I don't think so. On the contrary, it's a concept that can be worked on. The social norms defined by our society influence the course of women, bathed in a culture that's marked the way in which they've built their strengths. Second, the issue isn't that women don't

fundraise, but rather that the financial sector doesn't give them money! Empow'Her as an association, doesn't raise funds, but I recall juries asking me questions referring to the fact that I was a woman, thereby putting into question my ability to lead teams or to travel internationally. That was 5 years ago... yesterday in short. The investment fund industry works like a mirror. It's made up overwhelmingly of men. There's nothing abnormal about giving to your peers, to those you recognize yourself in. The problem stems from there too.

The third reason, which we are working on, is to redefine the definition of success as seen through the prism of the entrepreneur. Is the success of a business measured by the amount of funds raised? I'm convinced that isn't the case. Is it measured by the growth percentage? I'm sure that's not true either. It's out of the question that the women we follow adopt masculine behaviors or codes, or the ones we see as such. It's out of the question that they try to conform to a sector that hasn't been designed for them. We want to redefine a sector that's much more inclusive and that also involves the tools for measuring success.

The issue of fundraising among women is relevant because it helps track inequalities, but it isn't enough to measure the degree of inclusion in the sector, that would be too restrictive.

Are crises good for this kind of struggle?

I'm not sure. At any rate, the Covid crisis has been very negative for women. In one year of Covid, we've lost 35 years of equality, regressing from 100 to 135 years. It's monstrous. This shows how the smallest pebble in the gears can drastically increase the inequalities in an already highly unequal system.

Women's capacity to carry forward the feminist revolution is growing. There's a universality in what they experience. Even though I've read very many books on the subject, I've always wondered why women haven't grasped that they outnumber men on Earth. And why, they've never rebelled. I don't think anyone's able to give an answer... On the other hand, they've been gradually building a different world for decades. Today, with sorority, we're touching on the interesting concept of mutual aid, how not to reproduce the patterns of domination within the female gender and to rise up together, with men. It's a long process because it is very involves a lot of collaboration.

What solutions do you give them to get out of oppression, to reach their full potential and to develop their activities as best possible?

We give them 4 main tools. The first one is knowledge, especially for women who haven't had the opportunity to go further than primary school. Humans are curious beings, we never stop learning! It's so rewarding, it makes them grow, reconnect with a part of themselves, opens new pers-

pectives and arms them to move forward, to undertake, to challenge their own knowledge and their conceptions...

The second tool relates to leadership, although I prefer to call it posture or personal power. Here, Empow'Her is a catalyst, which makes them think about who they are, what their values and strengths are. What is leadership after all? Being the best version of oneself. We guide them onto this path and to be empowered by it.

Thirdly, relationships with others are capital, a source of learning. There's no one way to learn. We must keep in contact, cultivate mutual aid and reduce the isolation that can often be part of an entrepreneurial adventure. Finally, we redefine the notion of space by offering access to open centers, the Sist'Hers, places where they can come and meet.

For the past year and a half, you've been teaching social entrepreneurship courses at ESCP. Are you seeing a new movement, new beliefs in the female audience?

Yes! And in the male audience too! The social entrepreneurship course that I teach is overwhelmingly female, but that's no wonder. Two thirds of the positions in the Social and Solidarity Economy (ESS) in France are held by women. Yet, only a third of them have actually founded these structures. Schools and many training organizations are starting to include these subjects.

As a former ESCP student, what for you is the point of starting a business?

That's certainly a question. I don't believe the goal of a company is to maximize profit for shareholders, but it's still taught. Profound upheavals are taking shape and as in any transformation process, there are people who cling to old ways of operating. My course is part of this movement but remains a drop in the ocean as I teach only 30 or 40 students a year. I tell them what social entrepreneurship means and detach myself from the totally commercial vision. In my opinion, we must innovate, rethink the system, tackle inequalities and dysfunctions and break them. It goes beyond the concept of legal form, creation and income-generation.

You are currently in Colombia. What projects are you developing there?

I'm working on new ecosystems, going to countries where Empow'Her isn't yet present. We want to find out what women's rights are like in those countries and how our particular solutions could be applied there, without any political interference, of course. We just want to consider possible local partnerships to build win-win alliances that would advance women's rights. Yesterday I was in Rwanda and tomorrow I'll be in Mexico!

Are you optimistic?

To be honest, on the scale of our organization, there are days when I see the glass three-quarters empty. But I have hope, of course. We live in very interesting times, punctuated by so many human and environmental crises that present a real issue to be addressed. Above all, we mustn't lose sight of the goal for equality, it's not a secondary subject that we can put off just because there are more important employment issues to deal with. These subjects must be addressed across the board.

We can feel everyday that our current social model is obsolete, finished. We need to change the way our leaderships are formed and put in place. This requires diversification, and not only in gender equality. I believe the greatest strength and victory of mankind, beyond all the rights that have been acquired, is society awareness. The new generation won't compromise on feminism and women's rights. These topics come up repeatedly in conversations, in the media and there are things that we can no longer hide. The "Me too" movement has served a lot, but violence and patriarchal patterns are still causing too much harm.

What makes you happy?

When women carry out their projects successfully, when they realize their power to support other women, play the team game and create projects to address the issues they encounter! This is sorority.





“Heading to a new world economy”

Interview with Corinne Lepage

Corinne Lepage is one of those people who has chosen to go beyond the struggles of political shackles and their outdated cleavages.

Associate lawyer at the leading French law firm specializing in environmental law, Cabinet Huglo-Lepage, a former Minister of the Environment under the Juppé government, French member of the European Parliament from 2009 to 2014, mandated by President Hollande in 2015 to head a committee on the creation of a Universal Declaration of Humankind Rights, President of the citizens' ecological movement Cap21, Corinne Lepage is a leading figure in ecology politics in France.

Interview with the lawyer, the politician but above all, with the committed, passionate citizen who's really worried about the future.



Corinne Lepage

FRANCE

“Always ask yourself if what you are doing is fair. We can’t always do what is right. But we can always avoid doing what is wrong.”

First, we want to question the committed citizen that you are. What are the subjects that interest you in particular?

Without a doubt, I’d say intergenerational equity - our responsibility towards the youth, our responsibility towards our resources and living things.

And what worries you?

I’m also very concerned about the place that economic interests and lobbies have taken in contemporary societies. The deci-

sions taken are not those that should be taken in the interest of our fellow citizens and more generally of humanity, of the common good.

Our society evolves in a sort of triptych - citizen/State/business. However in 2009 you said, ‘Civil society can no longer count on anything but itself to ensure its future’. That was after the Copenhagen summit. Today, you’re chairing the Cap21 citizen gathering and your slogan is, ‘Let’s build tomorrow.’

row ourselves'. In the summer of 2020, the first Citizens' Climate Convention went in this direction. What's your view on this initiative?

I was very skeptical at first. But our fellow citizens have done a tremendous job in demonstrating the capacity of society in general, which they represent, to fully understand the issues. Unfortunately, some troublesome topics have been left out, such as the subject of energy. The issue of energy mix is completely missing from the debate. For me, it's unthinkable to talk about renewable energies and energy sobriety if we ignore the subject of nuclear power, which must be phased out over the next 20 years.

In the summer of 2020, the French government announced a €30 billion package (out of the total €100bn recovery plan) for ecological transition. Do you have any hope for the concretization of the proposals of the Citizen's Convention?

The question is twofold. In this €30 billion, what's new? What isn't the recycling of measures already decided? What do we put in it? If you include nuclear-related operations, I don't consider this to be ecological transition. If we include aid for the purchase of less polluting motor-engines, for me that isn't ecological transition either. I'm watching everything that's to be included in these investments very closely.

You were a member of the CoPol

(Political Committee) for the election of Emmanuel Macron. What are your ties to the government today?

I have no connection with the government. Within the Cap21 movement that I chair (I must point out that I decided not to run for office again), we in no way defend the government's current policy. I've completely detached myself from their environmental and social choices as well as the current mode of governance. It seems to me that we're moving further and further away from a truly democratic system and that doesn't suit me at all.

What's missing for public awareness to evolve rapidly?

Public awareness is slowly shifting. Since 2015, and initially at the request of François Hollande, I've been publicizing a text called The Universal Declaration of Humankind Rights, which is beginning to take off on a very encouraging international scale. It's a very simple text, easy for all to understand, with the advantage of having been pushed by a French President and the French State. Today, it's supported by civil society, including local authorities, several businesses and NGOs. It's been spread worldwide because it can serve as a universal basis for knowing what can be done today to assume our responsibilities. Translated into forty languages and signed by large cities, such as San Francisco, New York, Madrid, Copenhagen, Paris, etc., it has the support of the international organization UCLG (United Cities and Local

Governments), bringing together 240 000 cities in the world.

A few years ago, you were mandated by Ségolène Royal, then Minister of Ecology, to create a working group on the New World Economy. What became of that?

We filed our report in 2015 and started a movement that I co-chair with Myriam Maestroni, the MENE, the Movement of Entrepreneurs of the New Economy. We were talking about companies and lobbies earlier on. I don't put everything in one basket. More and more companies are focused on the New World economy, which is in the economic interest. It's undeniable that there's a real battle between the old

world and the new world, but economics isn't necessarily the enemy of ecology.

Are you confident for tomorrow?

Never have things seemed more serious and difficult to me than they are today. But it's not good to give in to pessimism. We must remain optimistic.

How could you sum up your discipline of life?

Always hold a sense of justice - in time, in space, permanently. Always ask yourself if what you're doing is fair. You can always decide not to do something. We can't always do what is right, but we can always avoid doing what is wrong









Lobbies, ecological transition, the common good - everything is political

Interview with Dina Rahajaharison

Dina Rahajaharison began his career in the private sector before joining the European Parliament to get closer to his convictions and work for the common good. An interview with a former chief of staff at the European Parliament, an actor of change with an unusual career.



Dina Rahajaharison

FRANCE

“Education is the transformative element and catalyst for changes in a society. It must be considered as a top priority.”

What were your missions within the European Parliament?

I had to make sure that the regulators (authorities responsible for maintaining the balance of the economic system) and financial institutions were taking into consideration the risks linked to climate change in their activities. Banks and regulators have a role to play so that funds are invested in projects that are more respectful of natural resources. Money doesn't have the same impact on the planet depending on whether it's invested in assets like oil or

in a fin motor like FinX.

To what extent is the Parliament committed to ecological transition?

The debate on environmental issues has existed for a long time at European level. But it's only recently that the European Union adopted a strategy to achieve carbon neutrality by 2050. This plan is part of the more global framework of the Paris Agreement of 2015. There is a clear political commitment at the macro level, but it's insufficient. Ensuring the integration

of the ecological component into each European law is a constant struggle.

Which brings us to wonder if responsible capitalism is possible?

The pursuit of profit remains one of the engines of capitalism, but that can't and won't exempt it from considering the ecological dimension.

Is the State all-powerful?

If the State doesn't regulate, change is slower. The State has significant striking power - it can incite, support, oversee or prevent when necessary. For example, banning GMOs makes production more difficult. The farmers concerned then have to relocate or produce differently.

What do you think of its role in energy transition?

Should we now help the civil aviation sector which has been hard hit by the crisis, or on the contrary, take the opportunity to tell ourselves that this type of mobility is harmful for the environment? This is an important question. As arbiter of long-term projects, the State has its card to play and must take a strategic role. It needs to reflect on the notion of the common good in the face of citizens or companies more oriented towards decisions that affect their daily lives. The entrepreneur who wants to earn a lot of money doesn't necessarily want to respect the environment, if left to his or her own devices. But if the State organizes economic activity in such a way

that the entrepreneur can earn money and save the planet, then it's building a win-win partnership. Norway has gone from a fleet of polluting vehicles to an electric fleet in a decade. Granted, this is a sparsely populated country, but it's a great small-scale laboratory. We mustn't forget that economic and ecological dimensions are inseparable from the social dimension. The Norwegian government had to think about those who didn't have the skills to build electric motors. The State must also have a supporting role in professional re-training and career changes.

Who is the State listening to?

We live in a world marked by the fragmentation of expertise, where it's getting difficult to speak of truth due to the rise in conspiracy theories. However, the state needs to learn to listen more carefully to the scientific world. This for instance is the advantage of the IPCC, which has been alerting the international community for decades about the dangers of global warming. Its role is political, having in view our common good. The nobility of politics lies in the defense of the common good and the construction of living together.

How is it possible to deal with lobbies?

First of all, it should be made clear that certain interests put forward by lobbies may be compatible with those of society. Sometimes their technical expertise can inform democratic debate. And we mustn't

forget that lobbies have always haunted the corridors of institutions, in Europe as in France, without necessarily hiding.

Good judgment is essential. You must know how to adopt an ethical attitude and treat them accordingly - some are mainly defending their own interests - they don't necessarily have at heart or in mind the common good but they have tremendous clout. Do we have standards that improve transparency? Do we know who meets the lobbies, on what subjects? If we do, we can raise awareness and take the chance to counter initiatives opposing the general interest, the initiatives of large private companies like BlackRock for example; whose slightest movement can move the entire market. Ultimately, politicians cannot ignore the voices of those who elected them.

In France, what do you think our conception of power is?

We have a very hierarchical view of it. The person in power must be able to impose him or herself on others. However, a leader should succeed in moderating, balancing, appeasing. We'd gain a lot by transforming our conception of power. But for the moment, the power is there to constrain, from top to bottom. What's missing? - Wisdom and humility.

Are citizen movements necessary for the State to move?

First, the individual as a citizen has a ca-

pital role. He has the right and the duty to vote. Second, citizen movements are valuable organs that permit dialogue with the State, by raising emergency issues. We all have in mind the movement of Yellow Vests. Obviously, the limit's reached in the case of violence. I believe in progress through institutions when they're democratic, just as I believe in protest movements if they're non-violent.

Which countries inspire you?

The Nordic countries, for their heightened awareness of fairness. Their education system isn't aimed at producing elites. Everyone - not just a few enlightened individuals - must be able to acquire a solid base of fundamental knowledge for the benefit of the whole community.

Costa Rica too, for its extraordinary environmental policy - we could use it as a basis for our public policies on biodiversity. Finally Germany, from the point of view of its respect for fundamental freedoms.

For a better tomorrow, what do you think is the top priority?

Education. It's the transformative element and catalyst for changes in a society. The State is only the reflection of a living democracy, the representation of a general will. Children must be taught the concepts of collective responsibility and the common good.







Mutual aid, a virtue of modern times

Interview with Maud Sarda

No search for profit, no dividends, no capitalization for the Label Emmaüs marketplace. Maud Sarda, co-Founder and Director, is rewriting traditional codes. This cooperative, whose aim is to professionally integrate long-term unemployed people through the online sale of second-hand products, is a digital innovation stemming from the Emmaüs movement in which Maud first thrived. The e-marketplace now has more than a million references, all categories combined. Meet an activist who has made a path of life out of her own struggles.



Maud Sarda

FRANCE

“The values of solidarity and mutual aid are the foundations of our society.”

You run Label Emmaüs, which you created in 2016. What is it?

This is an e-commerce site for second-hand products, built in the footsteps of the Emmaüs movement. The referenced products, put online by people in job integration that we’ve trained in e-commerce, come from Emmaüs shops and structures in the social and solidarity economy.

Anyone can subscribe online and can take a share in the capital! This is the first e-commerce site offering open governance, thus belonging to its buyers, sellers and employees. It’s a strong counter-model to traditional e-commerce sites, a marvelous solidarity and mutual aid movement, based on an economic model. We don’t live on donations or charity. The revenue

from our activity gives us the freedom to welcome unconditionally the most excluded people in our society. Who can do this today?

What do you expect from associations?

I like the economic and financial challenges, which one doesn't necessarily expect from associations precisely. I love to break the codes and think outside the box! My mission is to show that we can create economic and financial added value, even compete with the predominant models of the private sector, with the objects people throw out, accompanied by the people that society's rejected. We're very small of course, but we do have the merit of existing. I like this David vs. Goliath aspect and the inspiration that comes with it. Emmaüs Label destabilizes the established order and preconceived ideas.

Do you believe in meritocracy?

Not really. For me, this'd be relevant if we all had the same chances from the start. It isn't only a question of social justice - each human being is different and carries within him or herself weaknesses of varying degrees. I believe that the values of solidarity and mutual aid are the glue of our society, much more important than meritocracy. That's what I found at Emmaüs - the possibility to tackle the weaknesses of our society and to welcome in the most excluded.

You worked at Emmaüs for a long time before founding Label Emmaüs. What inspired you to do so?

There wasn't really anything specific. I've been an activist for a long time and have always been struck by social injustices and what birth implies in the distribution of chances from the start. I've always wanted to work in sustainable or social development. I spent 5 years at Accenture, where I learned a lot, before embracing the commitment I've always wanted to make!

You claim to be in social innovation. Could you explain?

Innovation means not relying on a traditional model, but being on the lookout for changes in society, consumer and communication patterns. Our project is to mutualize resources and connect people. The sellers of our marketplace, the companions, are very connected with us - we organize surveys regularly and it's always the majority who decides. Since 2019, we have created an inclusive school, Label École, which trains job seekers for free in e-commerce professions.

What does successful business mean for you?

I could have created Label Emmaüs only with Master's degree graduates, except that it wouldn't have been a success in my mind. I believe that true success happens when everyone works together to achieve it. And that's what I love about Emmaüs. Very far from us the idea of calling com-

panions “recipients”. They don’t receive social aid from us; they share the same adventure and work alongside the permanent staff. Together we define what our processing tool looks like, our price list with the carriers - we are in a co-construction process. Emmaüs belongs to them as much as to us. That’s how I tried to build Emmaüs Label.

You’re also a member of the board of directors of the Movement Impact France, which brings together the structures engaged in the social and ecological transition of the economy. Why?

What interests me is the long-term vision, the desire to defend a different vision of the company, which targets a social and environmental impact based on the sharing of wealth and power. I work mainly on circular economy topics, particularly anti-waste laws, which are in fact starting to come into force. Note that this regulation doesn’t concern the book industry

- in France, 25% of what’s published is destroyed! With this new destruction ban, brands will be looking for solutions. Organizations like Emmaüs or Phenix are part of the solutions to recover these unsold items and reuse them. Regarding this, the last ADEME report in 2014 estimated the monetary value of destroyed goods at €600 million per year. The new report, which should be launched shortly, will double or triple that amount. It’s absolutely staggering. In 2023, brands will no longer have the right to destroy unsold items.

What message would you like to convey?

People eventually cope and regain their dignity through helping others. When Abbé Pierre met Georges Legay, the first companion with whom he founded Emmaüs, Georges was in despair and wanted to kill himself. Abbé Pierre then said to him “*I can do nothing for you, but since you have nothing to lose, come and help me help others.*”







Cultivating local ties - a social weaving job

Interview with Anne Charpy

Anne Charpy is committed to weaving neighborhood relationships. Within the French VoisinMalin network, she employs, trains and runs a network of residents who want to change society by going from door to door in working-class neighborhoods, to improve interaction between residents and local stakeholders.

With her network supported by Antropia, the social enterprise incubator of ESSEC, one of France's top schools, Anne is committed to making everyday life easier, working on urban planning issues and enabling companies and institutions to improve the service provided to inhabitants. Meet the initiator of a rich and promising project.



Anne Charpy

FRANCE

“When people feel confident they open up their horizons, discover that they’re able to appropriate subjects, transmit them and have a legitimate voice.”

What is the genesis of the adventure?

I’m a pioneer who likes to climb mountains, to meet and understand others. I’m a person who listens to my deepest desires and believes in them.

It all started in Chile 30 years ago during a work experience in microcredit after graduating from business school. I discovered

a system of networking, information and mutual aid which had developed there between micro-entrepreneurs living in poor neighborhoods, creating resources and wealth! This alliance between residents and institutions improved activity development. It’s a very virtuous system for the development of a territory. The same goes for France, so I came back with

the idea of adapting this system here. We need major public policy makers but they have to learn to rely on the inhabitants, who want to change their reality.

How do you choose the cities in which to locate?

If we choose them, it's because their mayor has a vision of developing his city in a way that gives a new role to the inhabitants. The city hall opens doors for us in the institutional world since it believes in our mission, allowing us to talk to local actors (social housing landlords for example), who plan to make changes. The goal? - first, to make these actors understand that it's in their interest to change the way they work and include residents from the very start of their project. Then, we recruit a local manager to meet the inhabitants, understand where the resources are and explain our approach. We also ask those who have local influence (shopkeepers, doctors, caretakers etc.), to recommend trustworthy residents who we then invite to join our network of door-to-door messengers! This is where the recruitment stage comes in!

Since the creation of VoisinMalin at the end of 2010, we've spoken door-to-door with 250,000 people who have emerged from a position of isolation, of withdrawal. We're like an NGO in a crisis zone. We offer a safe space of trust and appeasement based on a position of neutrality, respect for confidentiality and an ability to listen without aggressiveness, considering that

the other has legitimacy. Today we're also present in Barcelona and the city of Quebec has asked us to intervene.

How do you work with public policies?

Upon arrival, we obtain the approval of the city hall and make it clear that we need no finance, because we want to remain independent. On the other hand, public services or social landlords work with us and finance the door-to-door campaigns, to improve their service. With this citizen participation, I want to show that we can create value and that we need these resources provided by residents.

How does the network work?

On average, we have 10 people from very different backgrounds on part-time employment contracts for a neighborhood of 10,000 inhabitants. All these profiles form a micro society - 36 languages spoken - that interacts in a framework of trust and freedom in order to appropriate subjects that concern them on education, health, access to employment, city-planning, etc. We are present in 18 cities in the Paris region and around Lille, Lyon and Marseille. As for our partners, they pay a fair price for these services. Personally, I travel a lot so I delegate operational management. But I'm the one who welcomes the new teams, with two questions "*What is your particular talent and why do you want to put it at the service of VoisinMalin?*"

How are the home visits conducted?

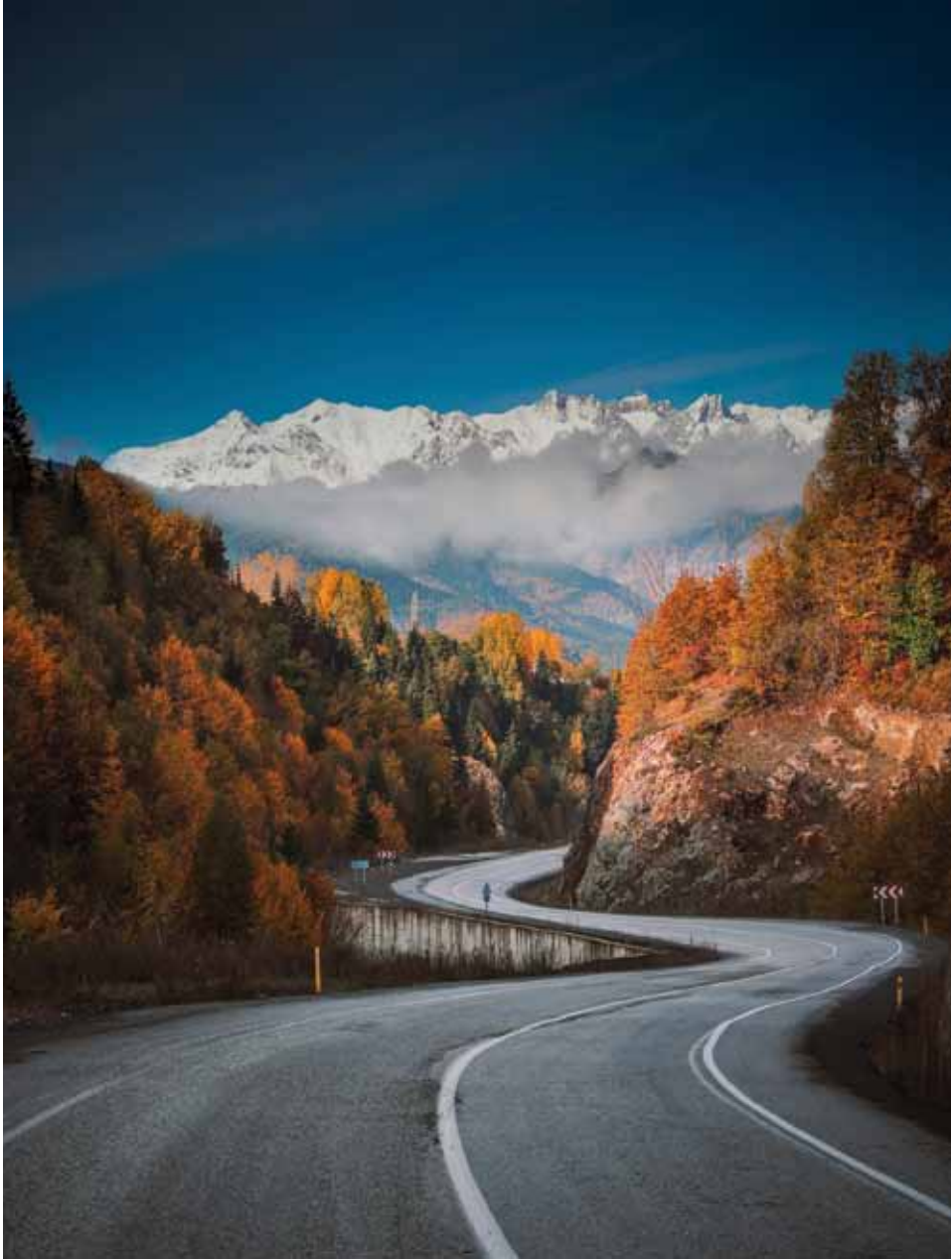
The members of VoisinMalin arrive at residents' homes with a targeted message relating to health, employment, training, housing etc., prepared with a partner who pays us. All of this requires thought on how to approach intimate and sensitive issues. As a result of these exchanges, the VoisinMalin team can refer people to structures. The people we employ are often shy at first but they have the desire to surpass themselves. They just need to feel confident enough to open their horizons, to see that they can assimilate issues, transmit and understand that what they have to say is legitimate. Their daily lives are thus punctuated by concrete victories. And the analysis of their surroundings is much better. It's the same for team leaders - I give

responsibilities to people who would never have imagined that one day they'd become managers. We must break the codes! Nothing should remain static.

What message do you want to convey?

We're proud that our meetings generate so much richness around complicated subjects, with these people that we manage to reach and who are "off the radar". In these neglected neighborhoods, 40-50% of the inhabitants live below the poverty line. This concerns 5 million inhabitants and we've already reached 250,000. The good news is that there are in these same areas incredible human resources, a lot of agility, a sense of welcome, creativity, solidarity and resilience! These are precisely the values we need more of today.



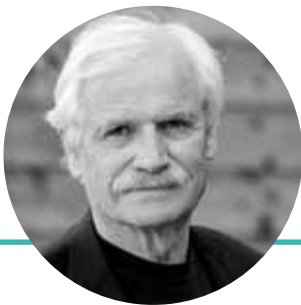




The dawn of a new world through the lens of Yann Arthus-Bertrand

Interview with Yann Arthus-Bertrand

Yann Arthus-Bertrand is one of the apostles of humanistic ecology. A photographer, journalist, reporter, film director and founding President of the French GoodPlanet Foundation, he talks about his new challenge as a filmmaker. In line with his documentaries comprising more than 10,000 interviews collected around the world, *6 Billion Others* (2004), *Human* (2015), *Woman* (2020) and *Legacy* (2021) he's taken on a new project, *Les 150*, which will certainly mark the History of our country and the fight for the climate.



Yann Arthus-Bertrand

FRANCE

“Each person is responsible for the planet and must protect it at his or her own level.”

What does your Les 150 film project consist of?

It's a film of interviews with 150 citizens who were drawn out of a hat to represent French society within the framework of the Citizen's Convention for the Climate *. I wanted to highlight those who took the time to think about concrete proposals for our future. This is a great first in France, notably at the initiative of Cyril Dion and the Gilets Citoyens collective. The only way for this initiative to work was for the debates to reach out to all French people, not just the chosen few represented by the

150. We must evolve towards a dynamic of generational solidarity. With the current health context, the film will surely fall behind schedule, but overall I remain quite positive. I'm convinced that this citizens' convention is the start of a new environmental policy.

What particularly interests you about this film-interview format?

To see these citizens changing and moving forward, to find out what they've learned, what has marked them, and to thank them as well. How did their awareness develop?

How did their families react? Environmentalists tend to forget that there are people who don't know anything about ecology. This style of interviewing has more impact than a written testimony. Some were climate skeptics at first. I'm sure that this citizens' convention has changed their lives a little and I'd like them to tell me about it.

At the GoodPlanet Foundation, do the many companies that support you ask you for advice?

There is indeed a whole Corporate Social Responsibility (CSR) program at the Foundation. We support certain companies on various subjects in order to limit their environmental impact (carbon emissions, product life cycle, sourcing, etc.) But we aren't in the hard business. We aren't economists. Here, everyone decides according to their convictions!

Do you believe in political ecology?

I believe in ecology, just that. Each one works in his or her area of influence. I think we're prisoners of our beliefs and our misunderstanding of growth. This tyranny has returned today along with the anxiety of unemployment. But yes, definitely, we have to combat growth as we know it today.

We were asking you this in light of Nicolas Hulot's departure from the French government in August 2018.

Indeed, it's an almost impossible task. Eco-

logy should be a common denominator for all parties. If you're not an activist, you pretty much get away with it. But if you are an activist, how can you fight against the hunters' lobby for example? Nicolas Hulot was certainly not made for that fight and I wouldn't be either. It's very tough when you always have to compromise. An environmental minister constantly lives compromise, which I think was impossible for Nicolas Hulot to accept.

Do you think that 'degrowth' is a sine qua non for a better future?

We're inevitably heading towards degrowth. So we might as well accept it and prepare for it. All good initiatives are welcome. The younger generations are well aware that we're at the dawn of a new world; that the current world is near the brink. I see powerful energy in young entrepreneurs who want to make sense of what they do. It's become a top priority. They're well aware that today you can no longer work just to earn money.

Is there a universal, key emblematic figure who inspires you?

It's definitely Greta Thunberg for me. She's incredible. So young, yet she's already created a planetary movement. I also really admire the nameless people and volunteers who work for Emmaüs, the Restos du Coeur, the Samu Social, etc. Anyone who commits, shares and cares, loves but tells nobody about it.



A peacemaker

Interview with Laurent Gounelle

Laurent Gounelle is one of those individuals who inspires by his wisdom, gentleness, and trueness. Some would speak of him as being an ancient soul. In his former life, Laurent Gounelle was a young executive in the financial management of a large company, before changing his career into personal development. Subsequently, "*late in life*" as he says, he embraced writing. Laurent Gounelle generously shares his thoughts and concern about what he's retained from 2020 - his job and role as a father, his artistic inspirations and aspirations and above all his wishes for a more harmonious world where biodiversity is reconsidered.



Laurent Gounelle

FRANCE

“Where our strengths and talents are, there lies our mission.”

How do you explain the world to your children?

Pierre Rabhi tells a rather instructive story in one of his books. One day, a friend of him came to help him chop wood. The latter remarked on a majestic tree whose outlines were surrounded by the evening light of the sun. His friend immediately exclaimed, “*There are at least 10 cubic meters of timber there!*” This story clearly illustrates our absolute dissociation from nature as we spend our time exploiting it. But ecology should be at the center of our lives. It questions the place of human beings on Earth. We’re part of the biosphere in our own right, but all too often we tend to extract ourselves from it, believing we’re separate from it. You have to (re) learn to love, to pay attention to, to admire. The

role of parents is crucial in this. Ecological values are transmitted quite simply through a love of nature. It’s essential to make children feel that they belong to nature, in my opinion, to educate their minds.

How do you see the evolution of the world?

The first Amazons used to say a prayer after taking an animal from the wild. We exploit animals and exterminate those which bother us; starting with those we call pests. However, even if the situation’s very worrying, I have faith in human beings and the awakening of consciousness. I’m an optimist, but not blissfully optimistic, because absolute optimism could be just putting one’s head in the sand and so

changing nothing. Nevertheless, more and more people are realizing that humanity belongs to nature. We operate within a network, interacting with animals, insects, plants, nature as a whole. I think we'll move towards preserving the harmony of the entire whole, towards a certain form of sobriety. Obviously there's no question of going back to candlelight, as some of our politicians like to say mockingly. In my opinion, the tomorrow's agriculture will be local which will change everything - our relationships with others, business and globalization, without at the same time excluding trade. Some people have a blind faith in technology so they needn't question their lifestyles. It's illusory to believe that technology will bring all the solutions. I'm convinced the decisions to be made must go first and foremost through individual responsibilities. I don't believe it's enough to ask our rulers to make decisions and I don't say that to blame them. When you're in power, you're there to run a country for a few years and it's human to wish for re-election. Ecological transition, like all transitions, is costly and involves suffering. But we don't like to ask citizens to make efforts. My bet's on the individual. I'm the one who's creating the world of tomorrow, by my decisions, by my choice of vacations, by my food choices, with my money. These acts require personal effort.

What could the business of tomorrow look like?

I believe there will be a lot fewer very large companies and that's good. The larger the company, the wider the gap grows between decision-makers and those working in the field. It's humanly easier to make difficult decisions and impose things on people when you can't see them. Empathy is bound to be less. I also think there will be fewer and fewer employees. Young people today are very attached to their freedom - they don't necessarily want to belong to a company. They listen more to their hearts and desires. They'll be more interested in occasionally joining a company on a project basis than being an employee and following a career like in the old model... Most of us tomorrow will be consultants coming together on different projects.

What do you think the success of a business is?

Believing in your project - if the entrepreneur can convey his belief in what he does and can make others want to believe in it, then he wins. The notion of meaning's essential. The allegory of the stonemason and the cathedral builder is often used in the consulting world. The stonemason cuts stones 7 hours a day, using his skills meaninglessly. On the other hand, if his boss tells him they're building a cathedral and he's also a Christian, he'll feel part of a project that's meaningful to him. His skills will improve tenfold, he'll find motivation and give his best. A business can raise mountains, as long as the team members share the entrepreneur's vision.

How can you transpose this into the real world of business?

In my view, team leadership should be put into 2 separate roles - leadership and management. Management is day-to-day management, whereas leadership is the transmission of the vision, the mission, the why and what you want to convey as an entrepreneur. As companies develop, it gets harder because the entrepreneur no longer has time to convey his message and the managerial relays don't necessarily know how, or can't do so due to lack of time. In fact, everyone in a managerial position should know the vision of the company, understand the importance of carrying it and know how to share it. The beautiful phrases presented to you are often developed by consultants and sometimes have little to do with what really shaped the original idea. They correspond to positioning, marketing segmentation, often far from what lit up entrepreneur's eyes.

Here's something that happened to me as a writer. My first book was translated in Spain, but didn't sell very well there. Some time later, my French publisher submitted my 2nd book (a thick tome!) to her Spanish counterpart who asked to cut out 20% of the text, arguing that thick books are hard to sell. I absolutely opposed it. That was the final version and I was never going to change. As you can imagine, the Spanish editor refused to publish me. Then, one of the largest publishers in the world contacted me, we signed and that publisher made

it a bestseller in Spain with number 1 in sales in Argentina and Colombia. So why? It wasn't due to the intrinsic qualities of the book, but because the editor deeply believed in my work. She knew how to transmit what she wanted and believed to the sales team network in the different countries and to booksellers. That's the key, really believing in what you do.

What do you want to take away from 2020?

The virus has changed our lives and led to distrust in others. It's really scary to see our alter ego as a threat.

It's very likely that our relationship to nature is the cause of this virus, directly linked to overpopulation. We can no longer continue to talk about ecology without talking about this. If this virus is wreaking so much havoc today, it's because there are too many of us. In under a century, humanity has grown from 1 billion to 8 billion people. It's a matter of individual responsibility. Human beings believe they're above other species, an idea I completely refute. 2020 will have had the merit of making us a little more humble ("humble" also comes from "humus" and "homo" which mean "earth"). 2020 is the amazing opportunity to change the things that need to be adjusted, to change the paradigm. It's also up to our leaders to seize this opportunity.

Artists, musicians, writers, what are your inspirations?

I'm naturally moved by the classical. I find

Chopin, who was inspired by God, if God exists, particularly moving. I'd stopped playing the piano for 20 years but have taken it up again in the last 2 years! I like Rachmaninoff, Beethoven, Bach, Brahms and Liszt very much too.

In pure literature, I think Yourcenar's *Memoirs of Hadrian* is my favorite book. I'd bring it to a desert island if I had to choose one. Then I'd mention that most psychologist of writers, Dostoyevsky, from whom we learn more about the human psyche than by reading Freud or Jung. He had an extraordinary understanding of how the human mind functions.

Joseph Campbell, a great American mythologist and professor, has also been a great inspiration, as well as Milton Erickson, a great American psychiatrist and father of hypnosis and Robert Dilts, author and speaker specializing in NLP. In philosophy I'm naturally very attracted to the Stoics because they were convinced of the individual's role in the achievement of happiness, in our way of looking at the world, of living, of thinking and changing our perception, whereas others saw it as the responsibility of society to make human beings happy.

Finally, in painting I'm deeply moved by the great Dutch masters. Often, artists have this capacity to perceive the reality of the world in a non-intellectual way, which they transmit in their art by giving messages. Rembrandt can give me access to another state of consciousness. When you're moved by a painting, you perceive

that reality, you understand it and make it your own, until you feel a form of truth.

How can you discover your talents?

Each of us has unique talents. I believe you come to Earth with a mission and a good way to discover it is to listen to your talents. What do I like to do? What turns on that little light deep in my eyes? I think our consciousness comes to inhabit a body and allows us to experience and achieve our mission. We come with a soul and an ego. Our ego would like us to believe that we're better than the others by holding on to false identities. By bringing everything back to what values us, the ego distracts us from our mission and therefore from ourselves. On the contrary, certain things will rally us and make us commit ourselves to the point where we'll surpass ourselves. Believing in a mission means that it touches something deep down in us. When we're caught up in our mission, we become one with the action; we become the action, the mission. Everyone benefits from discovering his or her talents, which can be done through introspection. Where our strengths and talents are, there lies our mission. You know, I was unemployed for two years. This period helped me reach something that I'd never known before - I existed outside of all that, regardless of professional success. I understood that it wasn't so important to succeed or fail. And above all, I understood that my worth was elsewhere.





Towards a regenerative economy

Interview with Guibert del Marmol

Guibert del Marmol is a futurologist, lecturer, and writer and one of those broad-minded, enlightened people. At 30, his career as a business executive ended due to a pituitary tumor and a major operation that caused great upheaval and changed his look on life. Despite his gratitude to medicine, nothing that he'd been told proved to be correct. With resilience and a new lifestyle, he widened his field of consciousness and grasped the link between body and mind. From business leader, Guibert del Marmol became a coach for leaders (in particular), helping them to work for the common good. Since then, he's placed humanity, meaning and wisdom at the center of his all his life and business projects. He's also co-director of the Lunt Foundation (created in 2012), which contributes to raising awareness by supporting social and sustainable entrepreneurship. He identifies pioneers who are changing the world and makes them shine - promoting a new model for society.

A regenerative societal model, a bio-inspired company, new measures of performance and values are some thoughts shared by a “pragmatic utopian”, as he likes to define himself.



Guibert del Marmol

BELGIUM

“If we reduce 4.5 billion years to 24 hours, Homo sapiens appear on Earth at 23 hours 59 minutes and 50 seconds.”

Let’s start by taking an overview. You say “We live on a star that’s existed for 4.5 billion years. If we reduce 4.5 billion years to 24 hours, Homo sapiens appear on Earth at 23 hours 59 minutes and 50 seconds.” We need a leap of consciousness. The way to a better future, according to you, is through the advent of an integral society. What is that?

Integral society encompasses, in my opinion, the key elements of concern for the common good, access to dignity and awareness of the interdependence between all things. We’re steeped in false beliefs. We think we’re separate from and in competition with each other. That’s wrong, everything is interconnected. The common good must be seen as a state force in the service of, and not as power. A change in

governance is absolutely necessary. We have to move from a logic of competition to that of cooperation, from a logic of war-lord to that of conductor. The economy, on the other hand, must be a force for achievement - you need work to do something meaningful, not to be successful. However today, we can clearly see that the exact opposite is taking place. Finance governs everything. The economy revolves around it. Politics works for both and from time to time we talk about the common good. With the Lunt Foundation, it's that whole system we're trying to shake up.

How can we imagine the advent of such a society?

For the system to change, not everyone has to change. It's the mission of an enlightened, active minority to show the way. We have to imagine a new political and economic model and an invitation to move from I to We. The economic model that can lead us there is a regenerative, relocated, collaborative, functional and circular economy, therefore bio-inspired. Inspirational models are symbiotic models that are necessarily inspired by living things. The new economic model must move from a model of predation and capitalism to a regenerative model, i.e. it will create more value than it consumes. Biomimicry is a tremendous source of inspiration. In permaculture, it's about respecting people, environments and creating shared abundance. That's exactly the concept of the regenerative economy, a perma-economy that respects humans, en-

vironments and creates shared abundance for the entire ecosystem. These solutions exist, and I've been witnessing them for the past 15 years as I travel the world to meet entrepreneurs who are changing societies.

What are the pillars on which this concept of regenerative economy is based?

The regenerative economy is based on the need for a glocal (global and local) economy. It must be relocated for the production of the fundamentals - food (urban agriculture e.g), energy and monetary production (use of local, citizen currencies). Many cities are thinking about their resilience in terms of food self-sufficiency. For example Albi, a French town in the South of France, has planned in 2022, to be self-sufficient in terms of food, fruit, vegetables and small poultry. Permaculture vegetable garden roofs are another solution, as well as the provision of public spaces for market-gardening, the development of towers and buildings into organically-operated farms, the creation of green belts around cities, etc. It's more relevant to have a greater number of small multi-culture farms rather than large monoculture ones.

Then there's the question of electric and energy autonomy. We have the capacity to put houses and buildings in energy autonomy. Denmark's doing this as is Scotland, using solar, wind, hydro and other biomass solutions. It's the communities of citizens who own the infrastructure who use it. Not only do they no longer pay their energy

bills, but they resell their electricity on the territory and benefit from a return.

As for money production, I think it would be relevant to have an enlightened use of a local currency, which obviously doesn't mean avoiding the euro or the dollar. In Switzerland and Germany, local and citizen currencies boost local consumption. It's good for local taxes and for employment.

The glocal economy makes it possible to stay connected to the world, if only to exchange good information and best practices. What are the other pillars?

First of all, the collaborative economy. I'm thinking of KisskissBankBank, BlaBlaCar, these citizen exchange platforms that call on collective intelligence. This economy has endowed within it key resources for the life of a community, called common utilities (water, air, energy). Managing a utility means thinking together about the management, the use and safeguarding processes that guarantee the sustainability of this common resource.

Secondly, the economy must be based more on function rather than ownership. Basically, you don't need to own the items you have. You don't need to own your fridge, but you do need a cooling solution. What if you paid a monthly rental? In a virtuous circle, the producer would become responsible for the product he created as well as its usage and recovery, and would ensure that it's recycled and recyclable. Planned obsolescence would then be only a distant

memory! Which brings me to the last pillar, that of the circular economy - recycling and being recyclable. In this type of economy, one person's waste is another's energy or raw material. That's how nature works. Everything I just mentioned to you leads to a bio-inspired economy. Nature is by definition local, collaborative, functional and recycles everything. This is the 4.5 billion year experience curve. Everything's interdependent. The feeling of separation, competition or duality needn't be because it doesn't exist.

What could the business of tomorrow look like?

I think it will be, in its form and its mode of organization, less hierarchical and more symbiotic, holistic, like a living organism. You have to be agile, flexible and act efficiently. Efficiency is not effectiveness - it's doing the right thing at the right time in the right place, with minimum effort and maximum impact, just like nature! You have to take inspiration from molecular biology. Like us, the company has several bodies - it's not rigid, it interacts with its physical body (structure, infrastructure), mental (know-how, intellect), emotional (personality) and spiritual (raison d'être, which gives meaning).

I also think that the company of tomorrow will be on a mission. The goal of a business is to go beyond mere profitability. It must think about the meaning of its existence - not to be the best in the world in your industry, but to be the best for the world in

your industry. The essential purpose is the creation of shared values. Profit is only the consequence.

Are leaders able to develop this vision?

Yes of course. What's more complicated is to move the lines internally. If you decide to change the rules of the game, you'll delight the younger generation who expect something else, but perhaps less so the executives who've made their careers in the former model.

Many companies have recently come forward with another business model. Danone for instance, adopted a legal framework for enterprise in June 2020 and became the first listed company to take this form of approach introduced by the PACTE law of 2019.

It's also absolutely necessary to change the measures of performance and values, too often based on financial ratios, which is a total aberration. It's like going to the doctor and being told only one thing: *"Your blood pressure is 12.8."* It's a measure but what about the rest? I draw a parallel with the GDP, used as a justice of the peace. While it measures sales and turnover, it doesn't measure induced effects or external factors. A very concrete example - the more cancers there are, the more the GDP increases! But I must admit that we're seeing the emer-

gence of international certifications such as B Corp which measure performance and value by considering the external factors created.

What do you imagine for very large companies, called "liners", which are less agile and perhaps possess less of that collaborative dynamic?

They must turn away from devouring capitalism towards a regenerative capitalism and embrace another managerial posture - perhaps by making employees more responsible to their alter egos rather than to their management; or by emphasizing functions more than titles. Finally, to think that the only reason for a company to exist is to maximize profit is a heresy, a false belief that goes against universal laws. I think companies that don't see this are making strategic governance mistakes. The company must be absolutely at the service of the common good.

What is the key to the development of the human being?

Listening - listening to oneself, to others, to nature because we're an integral part of it and listening to universal laws in order to avoid any dogma (such as religions for instance). You have to listen to understand before you can respond and act appropriately.





Claire Vallée, the star to follow

Interview with Claire Vallée

“*They didn’t know it was impossible, so they did it*” said Mark Twain. Who better than Claire Vallée to fit this quotation? In her former life, she had a doctorate in archeology. But her many travels, her passion for cooking and her ecological awareness took over and led her on another path - the restaurant business. She chose Ares, in the Arcachon basin of western France, to set up ONA, her first vegan restaurant (Non-Animal Origin). A risky bet - this rural region is very far removed from vegetal-based cuisine. “*With a brave heart, nothing’s impossible*,” says Claire. Supported by relatives who believed in her, by the French ethical bank La Nef, by crowd-funding campaigns and countless kind people who came to lend a hand with the creation of the place (more than 80 volunteers), ONA finally opened its doors in the fall of 2016. It was a resounding success - 2 “toques” awarded by Gault & Millau only 6 months after the opening, 1 “plate” and 1 “fork” awarded by the Michelin Guide in February 2018, all crowned with a star in 2021... as well as a green star, the reward for eco-friendly establishments!

ONA has thus entered the extremely closed circle of French and world gastronomy, undeniable proof of a growing awareness.



Claire Vallée

FRANCE

“In my ideal world, humanity would cultivate an intrinsic, much deeper connection with nature. Nature has always been the great source of inspiration in my life.”

What would your ideal world be like?

In my ideal world, humanity would cultivate an intrinsic, much deeper connection with nature. Nature’s always been the great source of inspiration in my life. How can I, in my daily work, make the world suffer less? This question had haunted me for a long time and reflecting on it led me

to change my course. It became essential for me to be part of the great family of builders who were striving for a better future.

What’s your view on the evolution of eating habits in France?

We’re far behind. France is a country of meat and dairy traditions. It’s still a very

hard slog to bring vegetal products to the table. On the other hand, an appreciation of the French territory has been emerging for several years, as well as a real reflection around vegetarianism, even veganism. We must welcome all these advances. Consumers are returning to organic, many favor short circuits and more and more chefs are offering a variety of vegetarian and plant-based dishes, calling on local producers. The same's true for wine – there's great demand for organic wine. Beyond the trend aspect I can observe a real awareness. Consumers want to eat in a fairer, more reasoned way, true to their conscience.

How do you imagine cooking in a few decades?

You know, we're not going to have much choice. In our grandparents' time, animal and dairy consumption was minimal and the planet wasn't then home to 8 billion human beings. If we persist in condoning ferocious animal over-exploitation, we'll hit the wall. I'm not fighting against small farms, but I am fighting against lobbies and industrialists. They damage the planet, all living things and our health.

You're inspired by Thailand where you lived. Why?

I observed an interesting reflection around the nutritional and spiritual value of food. Thais are in many ways vegetarians - they eat vegetables, spices, insects, roots. They're slim and healthy. The Thai diet is interesting in several ways, firstly in

terms of quantity. Their dishes are more balanced than our French diet and don't revolve around meat or fish, which are eaten sparingly. Not at all like our 1 kilo prime rib for 3! They also eat much less wheat and gluten. Finally, there aren't many dairy products in their diet (except those imported) – there's no cattle breeding. They use coconut milk which is very rich nutritionally.

In France, we have a wheat culture, a meat culture and a dairy culture, whereas they have the tofu and seitan culture, nothing to do with trends as they've existed since the dawn of time in Asia. We can really do otherwise but still using lots of flavors.

What do you think should be the priorities for moving away from animal food?

Everything happens mainly through education. We must have a real vegetal offer and encourage restaurant owners, school canteens and manufacturers to follow suit. It's up to us as adults to bring a new impetus, which also involves voting - we have the power to elect representatives who are more touched by the planet, biodiversity argument than the profit one.

What do you think of the manufacturers who are launching into imitation meat dishes?

You have to understand that there are people who'll find it difficult to go for the vegetable option. We must find interesting palliatives at the nutritional level. Manu-

facturers are doing it because there's a demand. I'm not against that. It's much easier for the consumer to turn away from the animal if the new flavors taste similar, so why keep them out? But as with everything, vigilance is required with industrial dishes that add additives, fats, sugar, etc. However, if manufacturers can lead consumers towards a more plant-based diet, then so much the better. Nonetheless, I think this is only one step, it's a long-term job.

You were right to choose audacity. Your success was almost overnight and the overwhelming majority of your clientele is non-vegan (95%)! Have you built up a loyal client base? Do they like more plant-based dishes?

I have a curious, gourmet clientele, attracted by word of mouth, food-guides and magazines. We've had a lot of media coverage for a few years. It must be said that the location is a jewel! Some customers, who had indeed a very meaty diet, became flexitarians, even vegetarians. ONA's cuisine opens the mind and helps raise awareness. I even had a visit from some hunters and butchers who came out of curiosity and who told me at the end of the meal *"Your cuisine is poetry, rich in herbs, flavors and textures. It gives off a real emotion that makes us forget the absence of meat."*

What is the main source of motivation that can lead to a change in diet? - Health, the planet, animals?

For me, it's all of these. There are people who think more about their health and stop or drastically reduce dairy products, for instance. Many turn a blind eye to the cause of animal welfare - even if they're sympathetic to it, they prefer not to see. I'm not throwing stones at them. The choice of vegetarianism or veganism is a commitment, the result of personal reflection and awareness. I'm not a vegan ayatollah. If people are interested, I believe they will come to see me. They'll be able to see for themselves that this food is good, tasty, healthy and sustainable. The best way to convince in my opinion, is proof by example. You can't change habits with a scathing speech.

Is plant-based cuisine more expensive?

I don't think it's more expensive, quite the contrary. It's the same old argument - if you choose seasonal and local products, they'll be cheaper. You'll save money on meat, except of course if it's industrially-farmed meat.

What are the benefits of plant-based food?

More energy and dynamism. That's the first thing that struck me when I stopped eating meat - no feeling of heaviness at the end of a meal. Customers say it themselves. You feel that you're eating healthier and your skin shows it too. It's a whole. And that's not to mention muscle mass. Many athletes are vegan, vegetable pro-

teins are very nutritious. We must stop thinking that meat makes you strong and makes you grow. That isn't the case.

What do you say to people who think meat-based food is necessary?

I'm an archaeologist and in our profession new theses are constantly appearing. It's not good to keep looking backward. You have to move with the times. The era of meat is over. You have to get out of your comfort zone, ask yourself the right questions and find solutions; to move forward. School canteens are changing and putting more vegetarian dishes on the menu, for example. Plant-based cuisine is natural, elegant and refined, subtle, with a panel of unparalleled flavors, textures and colors. But, it's not easy to get out of the pattern that's been hammered into us from childhood. Do you remember the '80s slogan "*Dairy products are our lifelong friends?*" It's a question of mental reconditioning. We

have to take on board that we're the only species in the world to consume milk from other species. Humans don't feed their milk to other animals. Milk is for calves.

In my opinion, plants will become the cuisine of the future, meeting our precise needs - ecology, biology, ethics, human beings and health.

Would you like to extend your project elsewhere, downtown for example?

I did have a project in Bordeaux but the Michelin star has changed things. So, I'm going to stay here and open something much bigger, in the Arcachon basin. ONA will develop a new concept, maybe a grocery store. I'm very attached to this region where we have excellent producers. And the exceptional setting is ideal for developing my ideas. Since the star award, we've become visible worldwide and that's set to grow even further... proposals abound!





Suzane gives voice to her struggles

Interview with Suzane

A French author and singer-composer, Suzane is part of a new wave of committed artists, vibrant and free. Her multicolored work is steeped in an ultra-fine, empathetic perception of the world around her and her anxieties. A vegetarian and feminist (the latter started in the primary school yard), Suzane uses her notoriety to celebrate the causes of associations close to her heart, proposing a fairer and more humanistic society. She's just signed a collaborative partnership with the young French brand, Awake, whose watches promote upcycling and waste recovery (recycled fishing nets). The profits are entirely donated to the French NGO The SeaCleaners¹. At 31, Suzane has started preparation for her tour that will include a show at the legendary Paris Olympia theater in April 2022. An interview with a warm-hearted artist with a futuristic outlook, a figurehead of her time.



Suzane

FRANCE

“A sense of injustice triggers in me a will to commitment.”

How would you define yourself?

I feel human above all, connected to others and to what surrounds me. I can be utopian and am generally over-sensitive because I don't wear blinders. It's really brutal for me to see the violence, distress and the misery in which the world moves every day.

How did your commitments to the planet and feminism come about?

It happened in stages. A sense of injustice triggers in me a will to commitment. I think my commitment to feminism started

very young in the elementary schoolyard. Back then, of course, I wasn't aware that this was about commitment. I played a lot of soccer with the boys up to the age of 7 or 8, until one day when they banned me from playing with them. They told me I couldn't play with them anymore because I was a girl, which came as a shock. I was deprived of something I loved just because I was a girl. That's when I realized the significance around the concept of strong and weak sexes. The school system supports this, telling kids all day long that the masculine takes precedence over

the feminine. You end up feeling rejected. So I started a girls' club – we'd meet in the toilets to prepare our defense against the boys and try to change things in the playground. Looking back, I realize that behind the cloak of child's play, we'd already become aware of the problem.

In fact I'm not surprised when I find myself writing songs like *SLT* today, or even talking about these topics as an ordinary citizen. I make the connection.

You're committed alongside the French group NousToutes, which combats violence against women. Can you tell us more about it?

I am committed to NousToutes and for NousToutes. I follow them on social media and share their actions as much as possible at my own humble level. The people who follow and listen to me include a lot of men who are also very concerned about these causes.

And what about your commitment to the planet?

That came later. As a child, I remember seeing picnic trash thrown on the highway and cigarette butts on the ground but it shocked very few people at the time.

My first really sad moment was discovering the magnificent and supposedly protected Espiguette beach in the Camargue (the beach of my childhood in the south of France), littered with cans, cigarette butts, ice cream wrappers... That beach was everything to me and I felt soiled.

Then, some biology friends started telling me about these topics. They'd worked in Canada, Reunion island and the Kerguelen islands on polar animals and birds, and studied the impacts of global warming on their animal life, habitat and eating habits. They told me how certain species, no longer able to feed themselves, were disappearing. That's when I wanted to understand the impact of our actions. This Earth doesn't belong to us. I feel like I've become fully conscious since realizing there's a world around me including animals and that the ecosystem is entirely linked.

To quote Yann Arthus-Bertrand: *"Everything is linked, nothing is self-sufficient."* And that realization makes me feel good! I feel sorry for those who are unaware of it and continue on with their heads down. The same goes for meat - steak is animal abuse and a lot of water. It's important to be informed about this system that we've created.

Can you see any changes in the musical world?

Yes, people are generally more aware, particularly at festivals. There's less garbage on the ground but there's still a lot to pick up. I've also noticed a reduction in the use of plastic and a lot of eco-friendly toilets are being built at small-scale festivals. All of this is moving in the right direction, even if to my mind, there are still too many plastic bottles - teams and artists should all use water-bottles. That's what we've been doing on our tour. And of

course artists are committing themselves more. They breathe the same air, see the same worrying scenario, and inevitably it's comes out in their art. We're a new generation of artists.

When I sing "*We broke the planet*", I say it simply so that children can also hear the words and get the message. But, others are in total denial and refute this message, even though they know our world's doing badly and is in need of healing. Nature needs to be taken care of. These people will tell you it's not enough to throw a cigarette in the trash bin to make a difference. But it's in fact through small gestures that we do big things. Others again simply don't want to hear the message.

Personally, I don't want to remain passive. Getting together, just by listening to a song, is already a step towards the other person. As artists, our texts can open the debate. Where there's a gap, music can create a link and provoke debate in a fun way. Finally, we enjoy dancing to "*Il est où le SAV?*" which actually contains a message of hope at the end.

What are your inspirations?

I would say it's my anxieties, related to what I experience outside of music, when I leave home, on social media, or for instance when I go on Hugo Clément's profile². I just want to cry. What inspires me is what surrounds me, those around me, the violence of our surroundings and what I digest. The human being's fascinating. With the same model everyone will paint

a different picture. That's art. And that's life too. We don't all have the same outlook and it's inspirational to listen to what others have to say.

You've signed an Awake x Suzane capsule partnership. The profits are donated to the NGO The SeaCleaners. This brand is dear to you. Why?


Awake designs recyclable watches made from recycled fishing nets from the North Seas selected for their catastrophic environmental impact, and are reinforced with glass. The watch is worked by light - its sensor absorbs any form of light. It took a lot of innovation and detailed work to come up with this watch which has the lowest environmental impact on the market. In addition, the total profits are donated to the NGO The SeaCleaners, which is designing the Manta, a boat of the future which will collect waste to make energy, thus helping to preserve marine ecosystems.

Our collaboration's only recent but I've already seen lots of people wearing this watch on social media! I was recently invited to Yann Barthès' set³, he really appreciated this concept of an ecological loop between Awake, The Sea Cleaners and me! He ended up buying the watch backstage.

You will be on stage at the Paris Olympia April 12, 2022 - a magnificent achievement. What's the program before that?

I'm preparing the next album and the tour! It's fantastic, but it's also a source of anxiety because I'm on two fronts simultaneously - creation and touring. To create, I need to be in the process of introspection, and right now I'm fully exposed. Artist cycles are generally more intros-

pection, light, introspection again and so on. I hope this second album will be more human than ever considering the very particular time it was conceived and written in a time with no human contact. So, it'll be very special too.



¹ See interview with *Yvan Bourgnon*.

² French journalist and author, strongly committed to the environment and animal causes.

³ Famous French TV presenter and journalist.



Knowledge for transmission

Interview with Jamy Gourmaud

Do we still need to introduce him? Alongside Frédéric Courant on the famous French TV show *C'est pas sorcier*, French journalist Jamy Gourmaud met several generations of curious people, thanks to an extraordinary talent for popularizing science. In spring 2020 with a thirst for more knowledge, he embarked on a new adventure - the production of YouTube content - a real success story. Jamy Gourmaud thus continues to pursue and honor the passion that's always driven him - the transmission of knowledge.



Jamy Gourmaud

FRANCE

“I will continue transmitting knowledge to the best of my ability so that tomorrow, others will make it theirs and go much further in finding the solutions; so that we can continue living in harmony.”

How do you define yourself?

I am a science storyteller who listens carefully, constantly on the alert. But let me get this straight – I don’t mean science in the sense of the work of scientists who use data as instruments to support their hypotheses. My work is to relate science with the aim of helping to enrich personal culture. So I’m not a scientist, but I do have a scientific culture. As a science storyteller, I like to

illustrate what I’m talking about.

How do you satisfy your curiosity today?

I created an eponymous YouTube channel during the first lockdown in 2020. My partner and I made 55 videos during this period, one per day. Initially, we posted short videos of less than one minute on social media. Very quickly, we were asked

by teachers to make these videos more accessible, on YouTube. Since then, we have continued on a bi-monthly basis with videos that are a little longer and more scripted. And I don't intend to stop there because it's a medium I really like.

How can we trigger the wish to learn?

As a child, I was stuck in front of the TV watching Alain Decaux telling the History of France. It takes a set of factors to inspire a desire - a clever marriage between the choice of words and the medium, a balance between humor, popularization, rhythm and tone.

Passionate about adventure and understanding the living world, are there any subjects that you're extremely curious about?

What a complex question! I'd say botany and volcanology, my two great favorites. I'm also very fond of astronomy, geology, and hydrogen-related topics. Generally, nature fascinates and excites me as it becomes more and more a model for technological innovations.

How do you see the future?

I have the weakness to believe in the future

and to trust people. I'm resolutely optimistic, but I don't hold an angelic vision. Countless parameters alert me.

Does a radical transition in our lifestyles involve going through degrowth?

Be careful, because there are a lot of things behind this word. Carbon decrease yes, but economic decrease, not necessarily. If tomorrow we were to witness an economic decline on a global scale, the consequences could be worse than the remedy put forward by some. The risk? - a backlash with the refusal to move towards carbon reduction and the start of a new infernal cycle.

What's essential to progress?

Knowledge to counter obscurantism - knowledge is essential to achieve a goal, to take up a challenge. Without knowing, good intentions are useless. But it's also necessary that the follow-up arguments are based on facts in order to let reflections mature.

I will continue transmitting knowledge to the best of my ability so that tomorrow, others will make it theirs and go much further in finding the solutions; so that we can continue living in harmony.





Inform to act – HugoDécrypte is bringing news into a new era

*Interview with Hugo Travers
alias HugoDécrypte*

The new face of French news is Hugo Travers. Every day, he offers his community of 15-25 year olds, an analysis of current events in less than 10 minutes on Youtube, and in the form of short illustrated texts on Instagram. During Spring 2020, the number of subscribers doubled. Juggling rapidly between media networks, posting videos and editing at a frantic daily pace, the 23 year old from Sciences Po Paris has innovated a new type of journalism. And the numbers are staggering - his Youtube channel and Instagram page exceed one million subscribers. Coming from the Gen Z of “digital natives”, the first generation immersed in the digital, horizontal and ecological era, Hugo Travers cheerfully offers a new version of the art of informing.



Hugo Travers

FRANCE

“The positive is a vector attracting audience - it’s our most popular format, and that’s great news!”

How do you get your information?

By combination of several media. I’m really interested in international news! I’m an avid reader of *Courrier International*, a so-called classic medium. Social media are incredible sources of information though they’re often criticized for the amount of fake information circulating there; it’s true they are very polarizing platforms. I have a lot of fun on Twitter but curation is important and following the right people!

You’re a very influential personality. How did you get there?

We often see people through the lens of their success. We wonder how they became known without necessarily thinking about what they did before. In my case, I launched Radio Londres when I was 15. It was a participatory medium where young people could publish their writings. It was a very formative experience that confirmed my interest in journalism and helped

me see what wasn't working. A few years later, I launched my Youtube channel, because the right time had come!

What was the trigger to launch your channel?

I found that the traditional website format (I had a blog at the time), wasn't suitable for those I wanted to reach - young people. Since the start of my channel 5 years ago I've been constantly striving to improve the content. It's a project that can make your head spin. At first we tend to look at what other people are doing and think it'll be difficult to reach their level. When I started, I didn't even have a computer to edit my videos, I had to call in a friend to help me!

What can help to get started?

You need a dose of naivety and innocence. In my case, it was important not to tell myself that I'd better study journalism before launching a news channel and follow the usual steps. I dropped out before graduation without worrying about how my channel was going to be received. I did it because I felt it might be helpful or beneficial. This dynamic lets you make mistakes, move forward and avoid falling into something traditional. If I hadn't had this naivety, I'd have followed each stage of the sign-posted route. Reproducing an existing course would never have worked for me.

What's the essential quality of a journalist?

Intellectual honesty. For a long time I made the mistake of saying that a journalist should be objective or neutral. Today I aim to offer factual content on a daily basis and I'll stay with that. Neutrality is not necessarily an objective – you might have to take sides, make editorial choices. The journalist isn't a robot, he necessarily has a vision. I'm thinking of political journalists who have the intellectual honesty to offer constructive debate. Jean Jaurès was a journalist who also founded the communist newspaper *L'Humanité*. The key is, not to act in bad faith. You have to be very careful not to convey fake information and to avoid alarming rhetoric.

The press often echoes the falling tree and not the growing forest. How do you make your community aware of ecological issues?

I want to be able to inspire by sharing initiatives taken in favor of the environment. We can all make a difference, at our level. I publish on Instagram the "5 good news items of the week." It's a dynamic, an editorial line that I try to encourage. The positive attracts audience – it's our most popular format and that's great news!

What do you think of the place of ecology in politics?

All the political parties are now taking this subject on board, integrating the issues into their vision of society and structuring

their programs around it. Ecology's definitely going to have more importance. The climate walks have made that obvious.

What could the media world of tomorrow look like?

An interesting underlying trend is emerging from the United States – individual journalism, which is a bit like Twitter except that it becomes sellable. We can see journalists leaving their media and

launching their own. One example is the newsletter format. By becoming experts on selected subjects (rather than joining media where subjects are imposed on them) and by exercising the art of informing with editorial freedom, they get support from readers who appreciate their analytical capacities, and agree to pay to read them. We pay to read a person, not a medium. This profitable model's starting to work really well in the United States.





CONCLUSION



*Claudie Haigneré,
a French astronaut, scientist, doctor and politician*

Let yourself be overcome with wonder.

Between certainty and uncertainty, spur the desire to explore the unknown.

Between predictability and unpredictability, see the possibility of transforming the unforeseen into the unexpected.

Between usefulness and uselessness, cultivate beauty, increase knowledge and let yourself be overcome by wonder.

Between difference and indifference, immerse yourself in otherness by enriching yourself with diversity.

Between discipline and indiscipline, combine the rigor of training and preparation with the daring to take side roads and new paths.

Between the imaginable and the unimaginable, get out of the box, push back the limits for the joy of discovering them and don't be overwhelmed by the unthinkable.

Between the human and the inhuman, always place the human at the center with dignity, respect, education, transmission, responsibility to control the future of humanity in harmony with this magnificent planet Earth.

With all the respect I have for the rational and critical spirit of Cartesianism, I had the chance to live exceptional moments where the non-rational wasn't irrational, where the non-logical wasn't illogical, where the unrealized wasn't unlivable, where the unrealized wasn't unrealistic, where the improbable could become a possible and where the unforeseeable could become the unexpected.

In fact, I dreamed and this dream has come true.

CLAUDIE HAIGNERÉ



TOWARDS ANOTHER FUTURE,
POWERED BY NATURE

ACKNOWLEDGMENTS

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Thank you, dear readers, for having followed us so far. We hope this will be for you a life-changing click. FinX proves, by force of evidence, that alternative solutions are possible.

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May this book carry the vision of FinX far and wide and may it shine a light on the numerous positive actions that are shaping tomorrow.

TABLE OF CONTENTS

Preface - Loïck PEYRON, Harold GUILLEMIN, BaseX	5
Interviews	13
Alain RENAUDIN	15
Kalina RASKIN	23
Loïck PEYRON	29
Maud FONTENOY	33
Paul WATSON, Lamyra ESSEMLALI	39
Yvan BOURGNON	49
Raphaëla LE GOUVELLO	55
Marie TABARLY	61
Simon BERNARD	67
Stéphanie GICQUEL	73
Romain TROUBLÉ	79
Laurent BALLESTA	85
Hyojeong KIM	91
Fabien COUSTEAU	95
Benoît LECOMTE	101
Jérémie LAGARRIGUE	107
Hervé GASTINEL	111
Sabine ROUX DE BÉZIEUX	117
Michel ANDRÉ	125
Antoine RABAIN	133

Jean-François GALLOÛN	139
Jeanne BRETÉCHER	145
Laëtitia VAN DE WALLE	151
Didier BOULLERY	157
Clémentine GRANET	163
Caroline RAMADE	167
Anita DE VOISINS	173
Estelle BARTHÉLEMY	179
Soazig BARTHÉLEMY	183
Corinne LEPAGE	189
Dina RAHAJAHARISON	195
Maud SARDA	201
Anne CHARPY	207
Yann ARTHUS-BERTRAND	213
Laurent GOUNELLE	217
Guibert DEL MARMOL	223
Claire VALLÉE	229
Suzane	235
Jamy GOURMAUD	241
Hugo TRAVERS	245
Conclusion - Claudie HAIGNERÉ	251
Acknowledgments	257

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We're at the beginnings of a world to be created,
with our hands, our words, our actions.

Let's be the builders of a fairer world,
let's first choose nature and love.

Let's rejoice in sketching the outlines,
let's encourage optimism, understand otherness
and decide to want what will happen.

Let's love the living, let's detach ourselves from egos,
let's marvel at this nature of which we are an integral part.

Animals and plants are the partners of our fabulous journey on Earth,
this planet's so small and so beautiful that it would be more accurate to call it ocean.
The ardent desire to live in a better, gentler world must not cease to animate us.
For tomorrow. For nature. For us.

Let's build tomorrow, for love!

*This book is a BaseX initiative, the FinX think-tank.
We spoke with those who are changing the world.
This book is their testimonies.*