

# Make or break time for the future of the environment?

Veolia  Usbek & Rica





# **Make or break time for the future of the environment?**

The twin health and economic crises are closely interlinked. We know all too well from first-hand experience, as our company was founded a century and a half ago to provide safe drinking water to urban populations devastated by waterborne diseases.

Right now, the Covid-19 pandemic reminds us of this direct relationship between public health and the economy. The coronavirus crisis went from being a localized health crisis to a world-wide one with added economic and social implications. In the space of a few weeks, this unprecedented crisis has managed the impossible by hurtling us towards a different reality, a different future.

The death toll and human suffering caused by this epidemic is upsetting, and so too are the environmental disasters which are both a sign of man's power and powerlessness. And so, Veolia is using all its experience and knowledge to continue providing urban, industrial and environmental solutions which help give hope to our anxious society, and reopen a future that suddenly seemed closed. →

As this eventful century begins, our lives are no longer affected by constant change but by constant disruption. Disruption to healthcare, the environment, socioeconomic factors, geopolitics... And so it seemed only right that for the 50th anniversary of Earth Day, our Group apply foresight to tackle the environmental and economic crises resulting from the Covid-19 pandemic. To bring this project to fruition, we teamed up with Usbek & Rica, the magazine which explores the future. Together, we questioned global experts from different and complementary disciplines, focussing on the following theme: “Make or break time for the future of the environment?”. Be they political scientists, biologists, climate scientists, oceanographers, agronomists or even philosophers, diplomats and economists, each specialist offers an individual critical perspective on the complex issues related to these various crises which are unravelling over time.

It may seem a little incongruous to be exploring the future while the world is increasingly in a state of uncertainty and the pandemic has highlighted our inability to envisage extraordinary events. It is also a gamble because the tyranny of the short term constantly brings us back to an immediate future, “at close range”. Despite these limits, foresight remains vital to enable each and every one of us to find our way through the world’s turmoil and history’s upheavals. Because this health crisis, as brutal and tragic as it is, must not divert our attention from the post-crisis period nor long-term action.

It’s a fact: modern man lives on ecological debt. But he also lives on financial credit and with healthcare insecurity. There is, however, a wide range of possible futures – each ranging from the best to the worst. This booklet explores these very boundaries of the future from an environmental, economic and public health point of view.



**ANTOINE FRÉROT**

Chairman and CEO  
of Veolia

## Summary

p. 6

**Preamble**



p. 8

**Dominique Bourg**

*Philosopher and professor emeritus of the University of Lausanne (Switzerland)*



p. 10

**Julia Marton-Lefèvre**

*President of the IDDRI Strategic Orientation Council, former Director General of the International Union for Conservation of Nature, member of Veolia's Critical Friends committee*



p. 12

**Françoise Gaill**

*Coordinator of the Scientific Board of the Ocean and Climate Platform, former head of the Ecology and Environment Institute at the CNRS (National Center for Scientific Research)*



p. 14

**Pierre Marc Johnson**

*Chairman of the Foresight Committee at the Veolia Institute, Premier of Quebec*



p. 16

**Magali Reghezza-Zitt**

*Environmental geographer at the Ecole Normale Supérieure, expert on city resilience*



p. 18

**Olivier Brousse**

*Director of Strategy and Innovation at Veolia*



p. 20

**Marion Guillou**

*Agronomist, former president and CEO of the Institut National de la Recherche Agronomique (INRA)*



p. 22

**Serge Morand**

*Health ecologist at the CNRS, researcher in Cirad (Agricultural Research for Development)*



p. 24

**Olivier Fontan**

*Executive Director of the High Council on Climate*



p. 26

**Céline Ramstein**

*Climate change specialist at the World Bank*

# Preamble

Veolia has been providing environmental services for more than 160 years. From water, waste and energy management, Veolia has demonstrated its ability to take into consideration economic, social and environmental factors as an indivisible whole. In early 2020, just before the Covid-19 epidemic paralyzed the whole world, Veolia asserted its climate transition ambition of becoming the benchmark for other companies to follow.

Embarking on a foresight exercise is a major challenge during today's triple economic, environmental and health crisis, as forecasting tools and prediction methods are being challenged and re-evaluated.

Foresight in these domains often comes in two forms: it can be a tool for validating scientific theory, or otherwise one for anticipating possible futures. One helps to shape knowledge, the other helps to apply it.

To understand the changes currently taking place and come up with solutions at a time when paradigms are shifting, we gave the floor to 10 international experts from various fields, and considered together these new futures.

Those taking part include: philosopher Dominique Bourg; Céline Ramstein, climate change specialist at the World Bank; Magali Reghezza-Zitt professor and researcher at the ENS; Serge Morand, health ecologist at the CNRS; and Olivier Fontan, Executive Director of the High Council on Climate.

Veolia has also enlisted the help of five important figures from within the Group, starting with: Marion Guillou, agronomist and member of the Veolia Board of Directors; Julia Marton-Lefèvre, environmentalist and member of Veolia's Critical Friends committee; Françoise Gaill, oceanographer and Board member of Veolia Foundation; Pierre Marc Johnson, former Prime Minister of Quebec and Chairman of the Foresight Committee at the Veolia Institute; and finally, Olivier Brousse, Director of Strategy and Innovation at Veolia.

These 10 interviews were first broadcast as podcasts. They have since been brought together in this booklet, which has been designed to offer a selection of different critical perspectives to help better understand the current crisis and its impact.



*“A step backwards is unfortunately a very powerful threat”*

### **Biography**

Dominique Bourg is a philosopher and professor emeritus of the University of Lausanne (Switzerland). His research fields include the study of ecological thought, the social construction of risk, the precautionary principle, productive-service systems and ecological democracy. He was president of the scientific council of the Nicolas Hulot Foundation up until January 2019. He recently ran in the European elections, leading the list of candidates for the “Urgence Écologie” party (Ecological Emergency) which champions the principle of integrated environmental solutions.



**U&R Dominique Bourg,  
are you sure  
we won't go back  
to the old world?**

**D.B.** Certainly not! I am quite sure that firstly we will probably come back to the old world. And actually, it's already happening with Trump. He is the most emblematic example but it is not surprising because he has been running this way since his election. So he turned this opportunity to remove all the environmental protections regarding motor vehicles pollution. It's crazy! And even in France, for instance, the third element of the bill on health emergency which has just been voted allows the government to overstep all the usual protections and norms. It's confusing!

So, a step backwards is unfortunately a very powerful threat. It doesn't mean that it will definitely occur but at this moment, it's very likely that it will. But, according to me, it won't last. First of all, because if we have another outbreak, we won't be able to stop the economy again and we will necessarily face a different death rate. Perhaps the link between the pandemic and the environment will end up raising awareness. And anyway, the upcoming decade will be terrible in terms of climate. It's clear the climate has dramatically changed since 2018-2019. But there will be more consequences of our carelessness and our Earth system's destructiveness. So even if we madly keep on going, we won't do it for a long time during the next decade. At some point, we will be stopped.

**U&R Do you think we  
will manage to resolve  
this crisis without  
economic growth?  
In other words, is  
an environmentally-  
friendly economic  
growth is possible  
according to you?**

**D.B.** Anyway, ecology is not compatible with economic growth. This narrative doesn't work. It's a tale we have been telling for 40 years... What is destroying the Earth system is materials and energies flows. And those are directly correlated to living standards. So green growth doesn't exist. We must stop talking about that. It's nonsense, it's a lie!

So actually, the only solution to avoid dying is to simply reduce our consumption. But as it concerns the richest individuals in the world, it makes it more complicated. But at the same time, this effort would be easier if we all had this in mind.

**U&R Don't you fear that  
the post-crisis leads  
to a social crisis?**

**D.B.** Of course but if we overcome the social crisis, we will face a much more severe crisis which will be almost definitive in terms of environment. In average, if we reach a 2-degree-increase in global temperature on Earth compared to the 19th century, then in the intertropical zone you will have some days when your respiratory capacities will be saturated. That is to say that you won't be able to withdraw the heat from your body, the internal temperature will increase beyond 41 degrees Celsius and you will die. Okay, but I would

rather be unemployed!  
And if we consume less and less energy, on the contrary, we will amplify the work intensity. So if we manage to reorganize the society, obviously with lower wages - it's clear, you must call a spade a spade! - and if we succeed in reducing the inequalities it will be even better, then, you won't have any unemployment.

Of course, the problem is that we need some bridging solutions. Some of them exist such as credit cards for the poorest ones etc. We can find some resources but it requires a great organization and a social consensus - which is hard to reach - in order to change the whole system over the next 20 or 30 years.

I call for a general effort including wages contractions, lower competition, etc. with clear objectives such as reducing output levels, items, extractive industries, and converting our traditional agriculture into agroecology. In short, a long-term policy which wouldn't last only one year. People could give their assent to this policy but it implies that they would understand the hard situation where we are. I think it's partly true, but not totally. Anyway, this is the way to reply to the unemployment crisis without bringing a frightening environmental crisis.

• Apr. 21st 2020

*“It’s very possible that this epidemic came to us directly from the natural world”*

### **Biography**

**Julia Marton-Lefèvre is a specialist in environmental politics. She was the former Director General of the International Union for Conservation of Nature. She was the rector of the University for Peace, an international academic institution created by the UN, and director of the LEAD International programme for the Rockefeller Foundation. She has received numerous awards from various countries and organisations throughout her career, including the Award for International Scientific Cooperation from the American Association for the Advancement of Science. She is a member of Veolia’s\* Critical Friends committee.**

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\* Veolia set up this committee in 2013 as a forum for collective thinking. The aim is to provide the company’s senior management with external viewpoints on strategically important issues that impact the Group’s social and environmental responsibilities. Committee members come from non-profit bodies, institutions and academia, as well as representatives of Veolia’s stakeholders. The aim is to develop and support the Group’s continuous improvement process.



**U&R To what extent does the crisis encourage us to reconsider our relationship to nature?**

**J.M.-L.** We have just celebrated the 50th anniversary of the first Earth Day. The poster for that celebration is now famous, with its simple message reminding us that "the enemy is us". While the crisis we are living now is a threat to human health, it is a close relative of the other crises we have been talking about for years: the crisis of climate change and that of the loss of biodiversity, which are both threats to our health and to the health of our planet. It's very possible that this epidemic came to us directly from the natural world, which we, human beings, with our huge appetite to occupy more and more land, have disturbed.

We need urgently to reconcile human beings with nature which gives us essential services for our health, our food and water, and for our ability to fight climate change.

In a recent report of the think tank More in Common, focused on France, it was clearly shown that whatever differences exist between people in this country, the protection of the environment is a strongly shared value. I have no doubt that this would be the same in most countries. However, there is still a huge gap between this understanding and the actions that our governments are taking to ensure that our behaviour is such that nature can continue to do its good work.

**U&R Do you think there will be a change after this crisis or the desire**

**to recover our economy will take us back to business as usual?**

**J.M.-L.** I am really hoping that we are capable of learning important lessons from this experience which for the first time is being shared by all countries, whether developed or the so-called developing countries. We are now truly all in the same boat and going back to our old ways, once a vaccine is in place for this pandemic, will not be enough.

I think we have now understood that human beings depend on each other and depend on a healthy planet on which we and future generations can continue to thrive. We have after all been talking about this for fifty years. Governments and the private sector must take this seriously, and rapidly agree with each other that measures which are well known must now be put into place. We have now demonstrated that we are capable of dealing with a crisis effectively with energy and speed. This is really good news! So, if as a result of this shared crisis, we can learn to behave more generously with each other and toward the planet, the pain of this pandemic will have been worth it, and we can look forward to celebrating many more Earth days ahead.

**U&R What solutions would you suggest to avoid returning to an environmentally devastating economy after the crisis, which would ruin all the efforts already made?**

**J.M.-L.** Thank you for this question. If we agree that the health of human beings is closely linked to the health of the planet, the changes we need must deal with these issues as if they were one. I know that this is a serious structural challenge as we have always preferred to work on issues separately in neat silos, both at the national as well as the international level.

For example, countries' health and agriculture ministries, or the UN World Health or Food and Agricultural Organizations don't talk much with each other, or to their environmental counterparts. The UN convention dealing with biodiversity is totally separated from the convention dealing with climate, as if nature needed to be packaged in departmental labels. And none of these pay enough attention to the social and economic impacts of the loss of nature or our health. We see this clearly in today's pandemic.

So, we must bring these issues together and finally stop working in silos. This will demand political courage but I have no doubt that it will help us solve these interrelated challenges.

• Apr. 28th 2020

*“We have to introduce the ecosystemic vision in our way of considering the economy”*

### Biography

**Françoise Gaill is a biologist, specialist in ocean ecosystems. She started her researches at the National Museum of Natural History (France). She is the former head of the Ecology and Environment Institute at the CNRS (National Center for Scientific Research). She is now coordinator of the Scientific Board of the Ocean and Climate Platform and a member of Veolia Foundation.\***

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\* Since its creation in 2004, the Veolia Foundation has been supporting non-profit, community-orientated projects, contributing to sustainable development in France and abroad. It focuses its effort in three areas:

- humanitarian emergencies and development aid,
- social cohesion and support for jobseekers,
- environmental conservation and biodiversity protection.

Since its creation, the Foundation has supported more than 1,500 projects and carried out more than 200 skills volunteering missions.



**U&R Since the lockdown has been announced, we have heard a lot about animals coming back to mountains, fields, coastlines, even cities, but less about what was happening in the oceans, offshore. How has marine wildlife reacted since the beginning of the quarantine?**

**F.G.** It's quite difficult because concerning the ocean, you cannot see what is occurring under the sea surface, but we have some good news. For example, far away from French coasts but also Spanish ones and Portuguese, we have seen some animals which were not present before. These animals are dolphins or whales and it's interesting to see that there is a type of resilience in the marine ecosystems which allow us to discover that when we reduce all the greenhouse gas we may have some consequences and it's very hopeful news.

In Venice, we have also seen that the water is clarified by the light and we are able to see at the bottom all the alga, all the plants and the animals which are moving on these areas like crustaceans like crabs for example. It is even more interesting because Venice is not known for having a lot of marine animals.

**U&R According to you, what kind of risks would the planet and the oceans be exposed to, if after the crisis,**

**we choose to start again as before?**

**F.G.** If we do not change anything, it's obvious that the temperature of the ocean will increase. Since the last century with the industries, this temperature is elevating and we have the idea that such a temperature increase will have some consequences on the quality of the sea water. For example, the oxygen of the sea water will decrease and we will have a lot of what we called anoxic zones. These anoxic zones have been observed to be more numerous since the last decade and also larger when we consider the surface. Such anoxic zones will induce the death of all the animals crossing these zones.

We will also have other consequences, and it's demonstrated that the correlation between the temperature of the water and the increase of some vibrio bacteria, which are pathogens, will be also a dangerous question we will have to face.

**U&R At the end of the crisis, what do you think are the main challenges we should work on to protect our oceans and thus, our planet?**

**F.G.** I think we have to introduce the ecosystemic vision in our way of considering the economy, the social relationships and so on. It means also to introduce ocean literacy, with the kids for example. What we call ocean literacy is the way of thinking the world with ocean but it means to learn so-

omething also looking at the ocean, at the interactions between the species, at the complexity of this environment and also at the way in which our action to put something in a river will conduct to the sea and to the ocean. Everything is linked. I also think that we have to ensure that we do not have to give funding to non-ecological actions.

• May 5th 2020

*“The crisis might have generated opportunities to change where the world is going”*

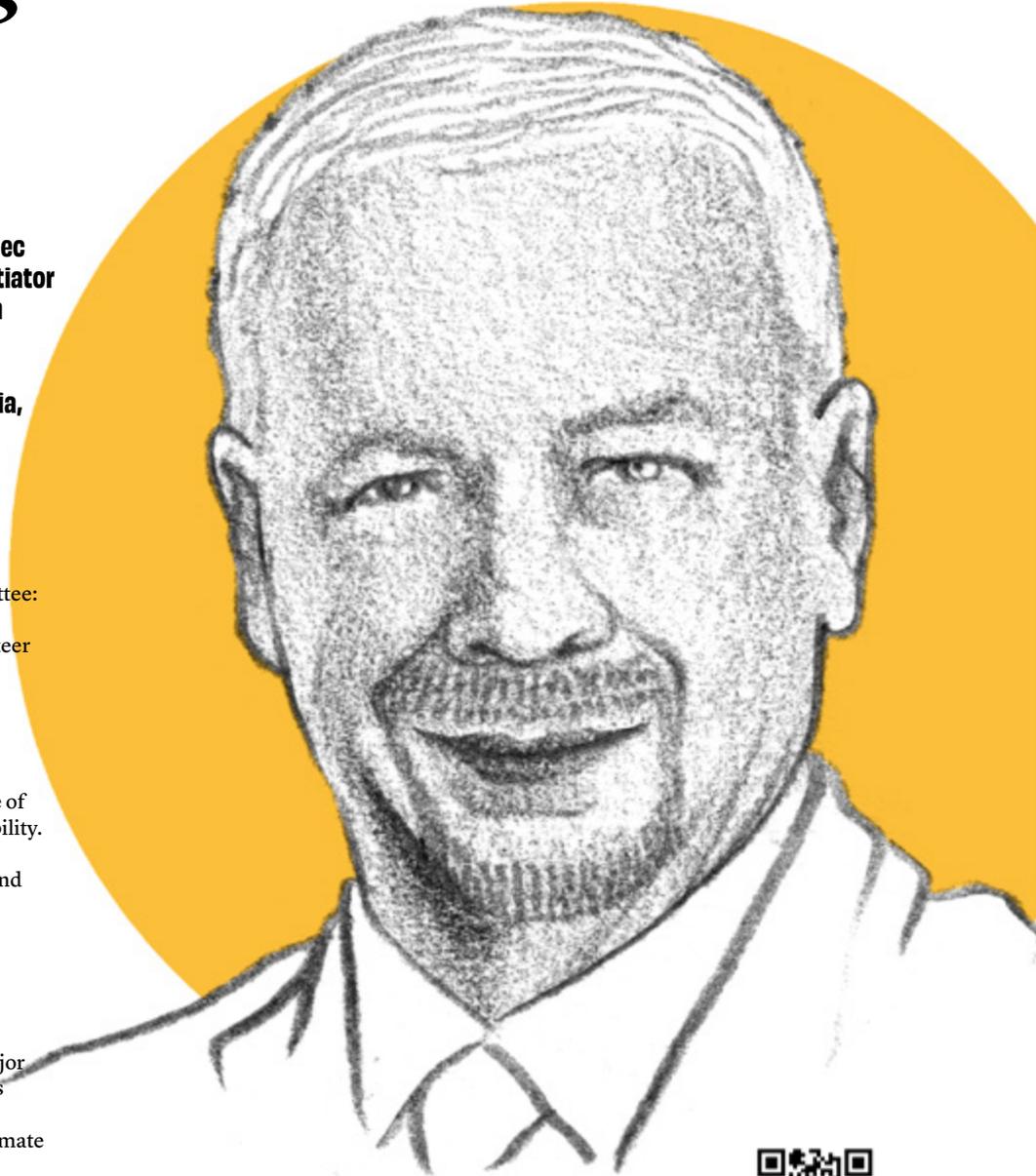
### **Biography**

**Pierre Marc Johnson is a Quebec lawyer, physician and politician. He was the 24th Premier of Quebec in 1985. He is also the chief negotiator in CETA (Canada-European Union Comprehensive Economic and Trade Agreement) within the province of Quebec. Among Veolia, he is Chairman of the Foresight Committee\* at the Veolia Institute.\*\***

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\* Veolia Institute’s Foresight Committee: the aim of this committee created in 2001 is to support the Institute and steer its development. The international reputation of its members and the specialised knowledge each of them contributes to their fields (human sciences, economics, public health, climate sciences) are the cornerstone of the Institute’s strong scientific credibility. During its meetings, the Foresight Committee defines future research and conference themes.

\*\* The Veolia Institute is a platform focusing on analysis and exchange. Since its creation in 2001, it has been enriching the Group’s reflections and its forward-looking vision on major global issues. The Institute addresses themes at the crossroads of society and the environment - such as the climate emergency and resilient cities, etc.



**U&R How does the current crisis impact international trade today?**

**M.J.** The main impact is restriction on people's movement. Then, it usually takes people to conclude contracts, and it takes people to bring goods across borders. The confinement and the necessity to contain the effects of Covid19 had brought governments to be bureaucratically involved in restricting the movement of people, and that affects commerce.

The World Trade Organization tells us that the impact of trade mid-April in the analysis and the projection they made would be affected anywhere between 13% and 35%, which is huge. And of course, that margin is quite wide because we're not used to this types of problems when it comes to trade.

**U&R Should we expect this sanitary crisis and the related environmental awareness to slow trade or on the contrary will the economic recovery sooner or later intensify it again?**

**M.J.** The crisis has made us more aware of where we are, to our senses: we can actually see the Himalayas now, when you're in Northern India, there's less smog, there seems to be more birds around us than before and our skin seems to be a little more comfortable. And that generates an extraordinary

sense of the importance of environment. When it comes to environmental concerns, there's a tendency to maintain the dichotomy between more environment is less trade or more environment is less economy, or more trade and more economy is less environment. That dichotomy is still there when it comes to governance in most societies. That said, this equation is not that simple. And hopefully, progressive governments, which have integrated the real concept of sustainable development and its three-pronged approach (the economy, the environment and the social development), might have the possibility to intervene in more radical ways than in the past. And in that sense, the crisis might have generated opportunities to change where the world is going when it comes to pollution and the environment. I think coming out of the crisis, the governments will address environmental issues not as much as concept of "command and control" through regulation but largely as a sector where investment becomes a source of satisfying concerns of citizens, jobs and the new economy.

**U&R This crisis has underlined the weaknesses of our global and interconnected economy. In your opinion, on what scale should our economies be reorganized?**

**M.J.** In practice, for most OECD countries, there's anywhere

between 15% and 45%, when it is not 60% of their GDP which is related to international trade. So the day you stop international trade, it is going to be worse than the Covid19. But there will be a temptation to try to build national capacity in all these sectors. Governments will probably try to subsidize national industries related to health, to heal services and mostly goods. And that is technically against most WTO and international trade agreements. Even with the existing WTO or some of the free trade regulation, states tempt to try to favor their national enterprises and I think there'll be more pressure for that and possibly some changes to international regulation. That said, I don't believe the WTO will be revolutionize, I don't think it could be abolished and I think free trade agreements are gonna go through some difficult moments but they will be maintained because the reality of growth and prosperity, which people want usually, goes through international trade.

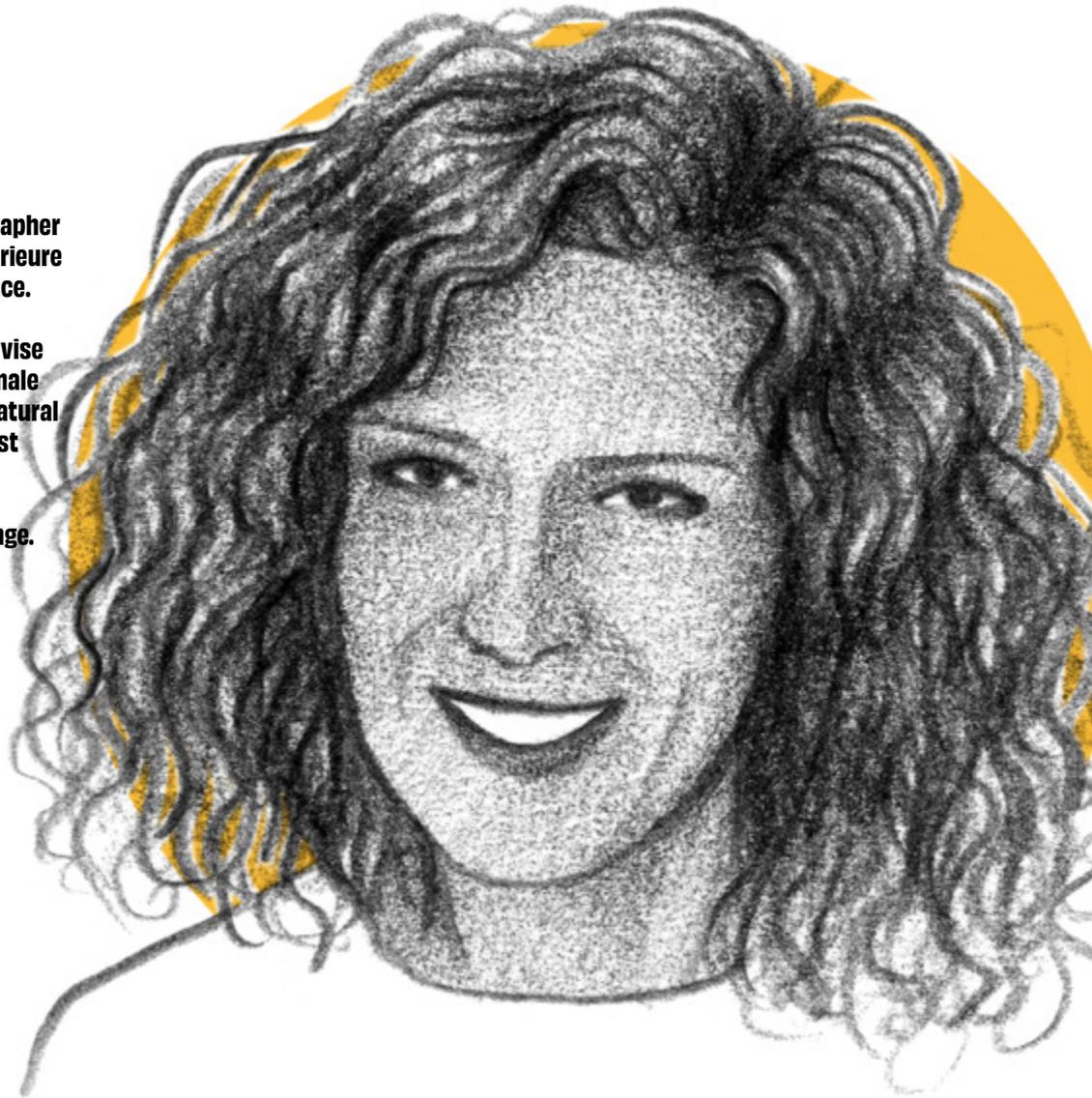
• May 13th 2020

*“We have to rethink public spaces to adapt them to future threats”*

### **Biography**

**Magali Reghezza-Zitt is an environmental geographer at the Ecole Normale Supérieure and expert on city resilience. Lecturer in geography, she is habilitated to supervise research at the Ecole normale supérieure, she is also a natural disasters studies specialist and an expert in crisis management and in adaptation to climate change.**

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**U&R Intense mobility and the high dense urban areas have been blamed for having spread the Coronavirus. Should this sanitary crisis be seen as a way to reconsider our urban and metropolitan ways of life?**

**M.R.-Z.** Yes, the Covid crisis could lead to reconsider density and lifestyles based on hyper mobility. However, we have to proceed very carefully. And on the one hand, a rebound effect is expected once the crisis is over and on the other hand, urban density and social interactions are very important drivers of creation and innovation. So, there are fundamental to individuals and communities. Density offers important resources in terms of resilience. It is therefore important to focus more on sustainable mobilities and prepare implement effective health measures in the event of a pandemic.

**U&R Is there any risk that the physical distance requirements and the nature's call generated by the confinement contribute to intensify trends we precisely tried to contain such as private car transportation or urban sprawl?**

**M.R.-Z.** Yes, there are many fears of a step backwards, especially with the use of private cars. A massive investment in the ecological transition is very important for recovery, instead of

returning to the past. For instance, reducing the use of fossil fuels and greenhouse gases is crucial. Soil preservation and consequently preventing artificialization and urban sprawl are also very critical.

**U&R In your opinion, how will our cities and our uses adapt themselves to the crisis in order to be more resilient to this kind of disasters? In other words, what might a healthy and environment-friendly urban planning look like?**

**M.R.-Z.** Health and ecology are closely linked. We know, for instance, that climate change will have strong health impacts, including on pandemics. Urban planning must therefore adapt to these future threats. For example, the thermal renovation of buildings helps to achieve carbon neutrality and to protect inhabitants during heat waves. The issue of water is also fundamental. We must therefore work on the resilience of water and sanitation networks. Mobility management also remains a critical point. It involves the relocation of economic activities, jobs and housing. Teleworking cannot be considered a miraculous solution, because it implies important social costs and probably significant greenhouse gas emissions.

Public spaces are very important in European cities. We have to rethink this kind of places and to adapt them to future threats. For instance,

when we compare American and European public spaces, they are very different. But in Europe, public spaces are the core system, the core places for social interactions. So we have to preserve and to implement new solutions to allow people to be together and to build strong communities in public spaces. It is extremely important to rethink in urban planning the role of these very specific and historical spaces and places.

There is a major challenge to adapt to future threats. And many actions undertaken like adapting to climate change will be remarkably useful in dealing with other risks and crises. Adaptation policies, as long as they reduce structural vulnerabilities, help to reinforce resilience in social organizations, communities and cities, to threats that are not even known to date. Now, it is essential to prepare our societies and communities to face the threats of tomorrow. We have to think about long-term measures and to transformational adaptation. Returning to business as usual is always counterproductive, as it reproduces the vulnerabilities that led to the disaster.

• May 20th 2020

*“The environment will not win at the expense of the social fabric”*

### **Biography**

**Olivier Brousse is the Director of Strategy and Innovation at Veolia. Former CEO of Saur Group and of the British company John Laing, specialised in investments for responsible infrastructures projects which respond to public needs, empower sustainable growth..., he also was Deputy Director General of Veolia Transportation.**

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**U&R The current global crisis leads us to question the purpose and relevance of our work. What is it at Veolia today?**

**O.B.** At Veolia we really believe that what we do is useful and being useful is really at the heart of our company, our business and what our people do perceive in the morning. This is not new. Our CEO Antoine Frérot has said now for several years that he strongly believes that Veolia is profitable because it is useful and not useful because it is profitable. This is fundamental for us. It's the heart not only of what we do in our different divisions but it is also at the heart of our strategic plan which is called "Impact 2023".

Of course today we are in the middle of this health care crisis with Covid-19 and I think everybody is aware that health matters are tightly linked to the environmental ones, especially in terms of biodiversity, and how we interact with nature. As it happens, everything Veolia does in terms of distributing drinking water, in terms of treating wastewater, waste in general, or in the energy sector or the air quality, everything we do is useful not only to the planet but also to the health care system.

At Veolia, for several years now, we've said that our prosperity in the long term would be ensured only by achieving a balance of performance between our different stakeholders. Of course our shareholders are a very important stakeholder for Veolia and we want to serve them well but we will only be able to serve

them well in the long term if we serve the other stakeholders including the planet, the society at large, our employees.

**U&R The issue is that there are many companies whose core business is not, like you, intrinsically oriented towards environmentally friendly alternatives. Assuming that we eliminate some of these environmentally harmful activities, how can we save all the workers linked to the "old world mentality" that are now seriously threatened?**

**O.B.** This is the key point, this is the key challenge and not an easy one and I'm glad you asked the question because we strongly believe that we can't just stop or get rid of the old activities just because they create pollution or carbon emissions. It's not about getting rid of them, it's about investing in their transformation and make them greener and cleaner. And you know the environment will not win at the expense of the social fabric, the social balance and the workers. We've got to bring everybody along with us.

If I take Veolia for instance, we highly focus on the reduction of greenhouse emissions and you know we are doing it for ourselves of course, our own emissions but also to help our clients, public authorities, cities but also industrial clients to reduce theirs. And again

we're trying to invent new models, new economic models that will allow them to transform their activity to clean their acts if I may say without social casualties because this will not work. So there should be no losers, otherwise nobody will win.

**U&R One of the characteristics of Veolia is that the company can count on an independent committee called "Critical Friends" that advise it on social and environmental issues. How can this committee support you in the ecological transition and in the management of the crisis we are going through?**

**O.B.** Having a form of experts such as the Critical Friends which have been meeting since 2013, made of some of the best experts from NGO, non-profit organizations who feel free to express solutions, criticism at times to the highest level of the leadership of Veolia is very important to us. It forces us to look in the mirror, to try to be better every day and in the end it's only this high level of demands that will allow us to stay at the benchmark and to stay at the credible benchmark in terms of ecological transition.

• May 27th 2020

*“With climate change, we will have natural disasters in big producing countries from time to time”*

### **Biography**

Marion Guillou is an agronomist, former president and CEO of the *Institut National de la Recherche Agronomique (INRA)*. She is an expert on global food security and a bridge, water and forest engineer. She is currently Agreenium's Chair and a member of the High Council on Climate and of the Veolia Board of Directors.

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**U&R The environmental crisis and the health crisis seem to be forcing us to rethink our agricultural and food system. At the same time, since no food shortages have really occurred yet during quarantine, isn't there a risk that some people might try to avoid reflecting on such matters?**

**M.G.** Maybe you have two timelines to look at. You know the urgency and the crisis of Covid and how to manage the end of the crisis and the fact that we re-launch the economy and that's short and medium terms, let's say two years. You have the long term tendencies, and there are still there of course. Climate change has not been influenced by Covid, there will be a slight decrease in greenhouse gases emissions but we know that it is very temporary and that it will come back. So it's not a long term tendency. We have to concentrate on the long term as we had before the Covid crisis. I think it doesn't change the main tendencies. What we realized during the crisis is that we should be more careful about food security than we were before, at regional level and not only at global level. We should be careful about what we called essential goods requirements to make sure that the population can have access to food and health products in the coming years. I think that's the main lesson that could be learnt and of course we need to be vigilant about the social situation in the coming months.

**U&R These days, there is a lot of talk about food sovereignty. As we know, the agricultural market is globalized and farmers are increasingly managing large farms to produce on a large scale and sell their stocks around the world. How can we ensure an ecological transition without causing production at a loss and food waste?**

**M.G.** We have to think about the incentives to get the production in field that is good for the economy and the environment. But we need financial incentives so that the farmers make the change. Of course, at the moment there is the CAP reform that is in discussion, it is a great opportunity to think about how to give the right incentives to help decrease the greenhouse gases emissions. Then we could increase the production of the goods that we are missing in Europe. The signal could come from the CAP, the discussions are in that framework at the moment.

If we talk about food sovereignty, I prefer to talk about food security. That means : how do you make sure that people can have access at the right price, in sufficient quantities and in good quality to the food it needs. When you think about the world situation, some countries will always need to import food. The Middle East and African countries are net importers and globally these zones in the world will always need a lot of imports, and in-

creasingly because the population is developing very quickly. With climate change, we will have natural disasters in big producing countries from time to time. Think about the Australian drought that has been terrible, the cereal production decreased a lot and they'll need food trade to compensate. Food trade will always be there in the landscape and for many years.

**U&R It was often believed that technological innovations would save the agricultural sector, whether it is mechanization or chemistry. The current situation inspires doubt. How do you imagine the agriculture of tomorrow?**

**M.G.** We said before that technology is finished. Obviously mechanization is still useful, computers will help during precision farming and precision farming will help to spare some fertilizers, to spare greenhouse gases emissions and to adapt the dose that we need for the plants at the right time. Yes, some technologies or technics were made to improve our way to farm in our countries. I think technology is not finished : we need technology in agriculture but it will require different technologies that are more adapted to local conditions. Computerization helps for that and do custom made solutions and the agroecology needs custom made solutions.

• June 10th 2020

# *“We have to increase the resilience of the territories”*

## **Biography**

**Serge Morand is an health ecologist at the CNRS and based in Thailand, he is also a researcher in Cirad (Agricultural Research for Development) and a field epidemiologist. He teaches at the Mahidol University, Faculty of Tropical Medicine. Furthermore, he conducts studies about the effects of global changes (climate change, land-use change...).**

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**U&R In 2016, you wrote the book *The Next Plague*. According to you, was this pandemic expected?**

**S.M.** It was clearly expected. When you look at the data, what is the main driver? First there is an increase of the cattle, livestock. At the same time, we lose biodiversity and we have an increase of the outbreaks. What happened since 1960 with the great acceleration was an acceleration of the number of domestic animals, the livestock. The number of cattle went from one billion in the sixties to 1.5 billion now. Actually, the total rate of cattle is more than the total rate of humans. Simultaneously, we are facing the increase of the number of threatened animal species. And on top of that, the number of the air passengers and air traffic have exploded: from five hundred millions in 1970 to 2.5 billions of travel passengers in 2018. With the global mobility of humans and goods, everything is transported all over the world.

**U&R Well, at first glance, the link between health and the environment may seem counter-intuitive, since the greater the biodiversity is, the more infectious diseases there are, and yet the fewer epidemics there are. How can this be explained from a scientific point of view?**

**S.M.** When you are looking at the number of infectious diseases

or parasitic diseases that have been recorded in a country, there is a good correlation with the number of birds and mammal species described in the country. It's very paradoxical but it's normal! Indeed, parasitic infectious diseases are microbes or are parasites. And this diversity is completely linked with the diversity of wildlife. Actually, when the biodiversity decreases, you lose the regulation of the reservoir of the virus and bacteria by the predators or by the competitors. It is very important because we need all the regulation of the vectors by some other predators. In these habitats, with a reduce biodiversity, we have no more regulation of the transmission of infectious diseases.

**U&R While there are those who advocate for a reconciliation between man and nature, others seek to protect it from human coexistence, and create a refuge for the natural world. Others talk about commercializing ecosystem services between natural and inhabited areas. How should we change our relationship with nature?**

**S.M.** You summarized the three potential paths we have to take and I will start with the first one which is mentioned like half of the planet (*Half-Earth*). Edward O. Wilson worked on this concept. It is about completely saving one half of the

planet for nature, while the other half is given to all the other humans who can do what they want with it! This will never work because we have a global planet. The second path is the ecosystem services. We have already discussed about the use of ecosystem services in terms of regulation of infectious diseases. The only problem with this is that you have to put some prices with the market, it's an economical valuation which is very difficult. It also causes potential problems in terms of neoliberalism of nature. And the last path, which I really advocate for, is the ecological solidarity. Considering that we have to think in socio-ecology, we have to increase the resilience of the territories, the local territories, local landscapes... In this case, we will improve ecological resilience, increase the solidarity and also increase the resilience facing the risk of infectious diseases.

• June 16th 2020

*“The low carbon transition has to address a global system”*

**Biography**

**Olivier Fontan is the Executive Director of the High Council on Climate and also a diplomat. He took part in international climate negotiations: from COP20 to COP24 until Paris Agreement and One planet summit.**

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**U&R Today, everyone agrees that the exit from the crisis and the recovery must integrate the climate emergency, but what must this exactly involve? What are your concrete recommendations?**

**O.F.** The main principle is to have the recovery plans inside the low-carbon transition, in order to have investments which contribute directly to the low carbon transition or which could have a positive co-benefit for the climate. We also try to remind the government not to invest in anything that could contribute to a lockdown toward a carbon economy. This means that we should forward the recovery package toward the energy efficiency mainly, through renewable energy, strong investments in buildings. We also need to invest in low carbon transportation like trains or bicycles which have benefited from a great success during the lockdown weeks. These are the kind of structural changes, and structural reforms we are expecting from the governments and from the recovery package that governments are planning or at the European level.

**U&R The first measures that have been taken don't always take into account climate emergency and environmental protections. Why is that?**

**O.F.** This is complicated because the low carbon transition has

to address a global system and the global functioning of society and the economy. And of course, it is difficult for individuals, for people, for society, for the governments because we have to change many things. Now, in the short term, governments have to answer to the unemployment question and to the economic crisis issue. For governments, it is reassuring to be able to be provided with answers with quick effects and not to try something new, that could possibly fail. Then, they would have to bear responsibility, especially during the next elections.

To address the case of the fair transition, which is mentioned in the preamble of the Paris Agreement by sending a message to people and governments. It would be : "yes we have to make this transition but no, it has not to be at the expense of working people. We have to think both transitions at the same time."

**U&R Do you have any examples elsewhere in the world of environmentally friendly post-Covid recovery plans that could be inspiring for other countries?**

**O.F.** I think it is too soon to have many recovery plans, but we have two examples in Europe. The first one is the package announced by the European commission. It would be a seven hundred and fifty billions euros which is a huge amount of money for this kind of package in the European Union. One of the first countries to have presented a colossal recovery plan is Germany. This is an impres-

sive package because we have a strong support to all the green sectors and we did not see any strong support to the grey sectors of the economy.

In 2020, we are expecting inside of the framework of the Paris Agreement that countries which are part to this agreement present new nationally determined contributions (NDCs). NDCs are action plans and investment plans that countries present to the international community to explain how they will implement efforts to diminish their greenhouse gases emissions. So that collectively we could stay under the limit of the +2 degrees which is specified in the Paris Agreement. With the Covid 19, everybody is thinking about everything else, yet countries have to present their nationally determined contributions this year. Paradoxically, we think that this could be a good moment to articulate recovery plans with the NDCs so that we have a strong coherence between the necessity for the economies towards green pathways and low carbon pathways and the recovery plans. We can expect France to have an important role to play due to its responsibility in the sign of the Paris Agreement. Together with the United Kingdom, the next COP presidency, they could exert their influence with foreign countries to incite them to present new NDCs which are coordinated with recovery plans and contributing to the low carbon transition.

• June 24th 2020

*“How can we build development pathways compatible with sustainability and climate objectives”*

### **Biography**

Céline Ramstein is a climate change specialist at the World Bank. Her work focuses on carbon taxation issues. Beforehand, she coordinated IDDRI's (a French think tank working on sustainable development and international cooperation) COP21 activities. She also worked at the French Embassy in Washington, DC on issues related to climate, energy and environment.

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**U&R Today in the world, we have on one hand the European Commission that's preparing a Green Deal to soften the crisis and on the other hand national governments that support polluting but nevertheless job-creating sectors such as civil aviation and the automobile industry or that are going back on their environmental legislation. How do you analyze this double bind?**

**C.R.** It is a really difficult time. Everyone wants to know what to do, with many different questions and answers. But the key issue right now is really the sanitary and social emergency: How do we respond to the health crisis? how do we ensure that it does not lead to a major social crisis? In this process, environmental and climate considerations don't come first, which is perfectly understandable. However, what we are trying to do and to discuss with governments, with the civil society and many stakeholders, is to see if there are policies that respond to all of these dimensions. For example policies that can help respond to the current health crisis and future pandemics, create jobs and make society stronger and more sustainable in the longer term. The good news is that there are many of these policies that can check all those boxes. Investing in renewable energy

and energy access to power clinics for examples is one of these solutions. Investing in renewable energy or energy access creates more jobs than investing in fossil fuels. In developed countries, you can look at investing in energy efficiency in the building sector, which creates a lot of jobs and then helps poor people lower their energy bills. It is also good for the environment and climate, and it is positive for growth and jobs.

**U&R In the context of this economic crisis, we might imagine that it's easier to achieve a green recovery in developing countries than in OECD countries. What is precisely happening in developing countries right now?**

**C.R.** I don't know if it's easier to do so in developing countries. In developing countries, the main challenge is how to finance it. The needs and the rationale to do so is there, but when Europe can finance its own Green Recovery, it is much more complicated in poorer countries. They don't have these "deep pockets" that the US for example can use to invest in its economy. So that's where we come in to help finance these emergency and recovery plans. After the emergency health and social response, the question in developing countries is very much how can we build development pathways that are compatible with sustainability and climate objectives.

It might be easier to do it in a sense because the infrastructure is not there yet. So there are more opportunities to build it right the first time whereas in developed countries you need to retrofit or improve what's already built, which of course is more expensive and more complicated.

What is very important to keep in mind though is that with the Paris Agreement there is an all hands on deck approach, in which all countries need to act. Because emissions are so high and climate change consequences are so grim, climate is no longer just a question for developed countries and developing countries are well aware of the consequences they will face from climate change if they cannot adapt. So all countries need to engage into long-term development pathways that integrate the consequences of climate change. Once you've said that, there are still many questions and challenges like how much each country needs to do, who finances it? etc. And we are trying to work with all countries to respond to this "how do we do it" question. But the need to do it is very clear.

**U&R In your opinion what kind of public policies could help us to decarbonize our economies in a sustainable way?**

**C.R.** For economists it's very clear that putting a price on carbon is the most efficient way to reduce emissions and meet climate targets. Although it's in theory the →

most efficient way, it's not always doable, possible, or acceptable for many reasons. A better approach is probably to consider packages of policies, in which carbon pricing plays a role, but within a broader range of policies (including policies to support the transition, build alternative to carbon-intensive transportation for example). To put it simply, the most important thing at the end of the day is that the incentives are right throughout all types of policies: so when an investor or a citizen has a choice to make, it must be more expensive and complicated to go the carbon route than the low-carbon one. We can learn from experiences in many places around the world: California, South Africa, British Columbia, or Chile. There we can see that often these instruments raise money, which is then invested in new technologies or returned to citizens to help them adapt to the energy transition. For example, you can have "energy checks" to help people pay their energy bills as they increase in the short-term while programs or investments are made to improve energy efficiency in the longer term. There are many ways of designing such programs and it's important to make sure they target the right people. To make sure that the transition will work for the people and not against them.

Another dimension of carbon pricing that is worth mentioning is how to integrate a price on carbon in fiscal policy and investment choices. Particularly at this time, when we see a lot of investments flowing, we need to make sure that these integrate climate

considerations and that decisions are made with this long term vision in mind. Using a carbon price to internalize climate externalities when making these strategic decisions can therefore be a very important tool.

• May 20th 2020



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For having shared with us their vision of economic and social consequences of the Covid19 crisis.



