THOSE WHO WANT PEACE

RADAR

PREPARE FOR THE FUTURE

# 1ST STRATEGIC DEFENSE FORESIGHT AND ANTICIPATION DAY.

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Radar-defense.org

# EP1 PLASTIC

A scenario by Marguerite Imbert and Romain Lucazeau.

As I watched him die, I thought back to all the petitions he'd persuaded me to sign during our relationship, all argued with the same conviction. I had to admit that he was on the right side of history.

Elimination of plastic bags and disposable cutlery. Penalizing over-packaging. I would never have imagined that the world would grant his wishes with such deadly retaliation.

The room where I spent my last hours with the man with whom I had hoped to spend my life was strangely empty.

A few months ago, it would have been furnished with a hospital bed, a TV and a blinking monitor. An IV pole would have kept Clément alive. But these essential items could no longer exist.

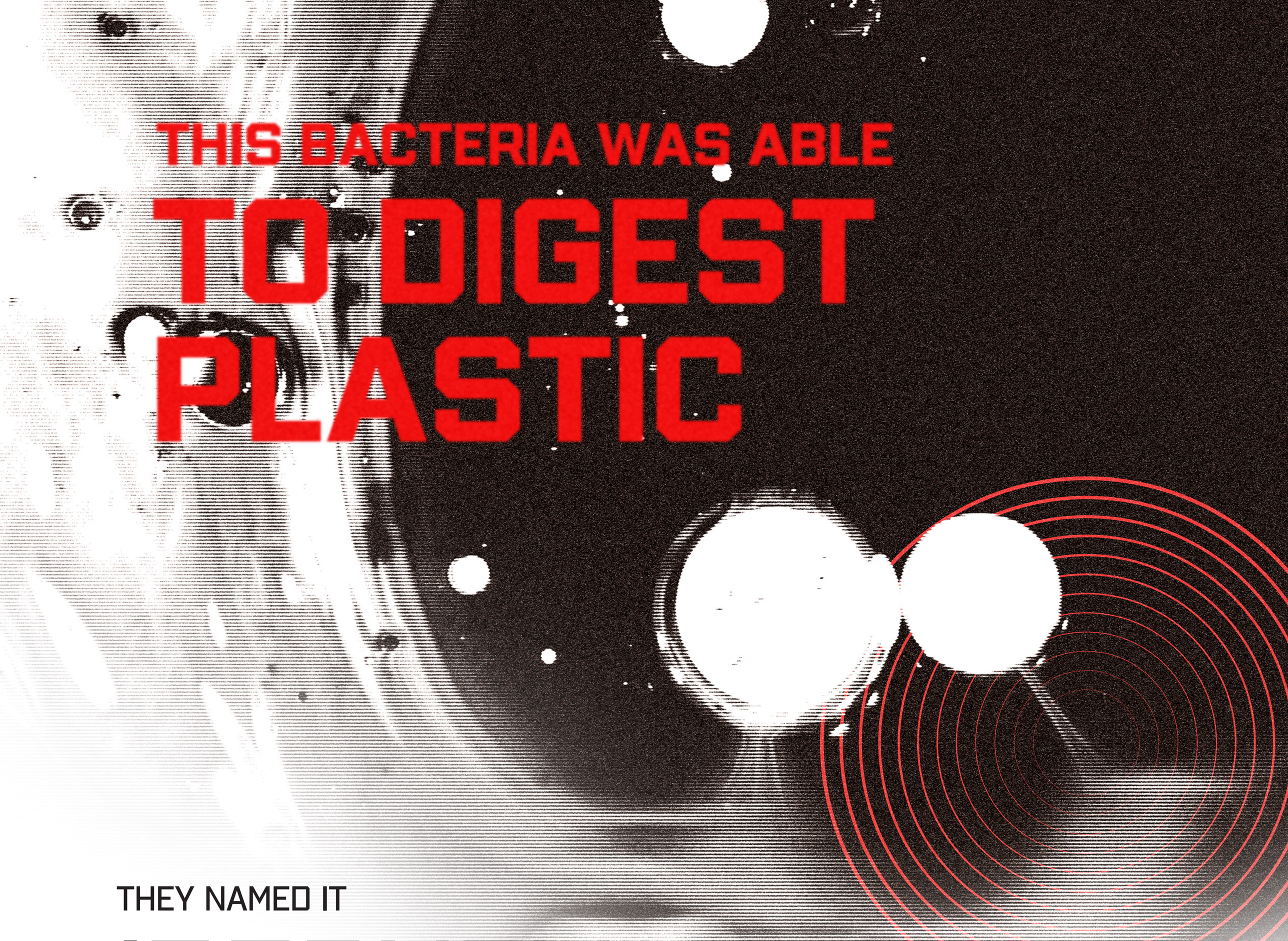
Instead, the body of my beloved lay on an old metal cot, his head resting on a cloth folded in four. I watched over him on an aluminum chair.

# CLÉMENT WAS SURELY GOING TO DIE THIS MORNING

The PVC floor had been hurriedly ripped up, leaving bare cement. The window frames had suffered the same fate.

By now, most interiors were in a state of disrepair. But hospitals, in particular, had taken the full brunt of the disaster.

If someone from 2020 walked around here in the year 2034, it would probably take them a few minutes to realize what was wrong. Of course, he'd notice the chaos, the grounded airplanes, the skips continually burning in the squares, the torn objects, the clothes clumsily fashioned from mismatched rolls of linen. And then, guided by the feeling that he'd gone back in time in the wrong direction, he'd finally understand: plastic was on its way out.




In 2016, Japanese scientists discovered a strange bacteria while auditing a bottle recycling plant. It was a complete fluke, with dizzying implications. This bacterium was capable of digesting plastic. Better still, it seemed to love it. They named it Ideonella Sakaiensis. All over the world, people began looking for traces of its presence, or rather its appearance, which seemed to be the product of a lightning mutation. A few equivalents were found, fungi capable of degrading plastics, but nothing as powerful as the ISak strain, as the press had begun to affectionately call it. The headlines were laudatory, full of hope: with a little help from science, ISak would be able to clean up soils and oceans. **A decade later, however, the bacterium was betraying all its promises.**

I think it was the speed that caught us off guard. It can't be said that no foresight scenario, novel or scientific publication has ever issued clear-sighted warnings. But we had become accustomed to being alerted to so many potential threats! Potential is the operative word. From nuclear catastrophe to alien invasion. At some point at the turn of the century, we had already become wary of essential resources: water and food.

At the close of the 20th century, we all took food for granted, as a commodity that was both ubiquitous and cheap. Industrial progress had found ways to facilitate preservation, produce flavor enhancers and a whole host of ingredients and supplements with miraculous properties. The first warnings concerned saturated fats, then sugars, then preservatives and additives. The list went on and on. So did the threats and dangers singled out by the scientific community. Imagine my colleagues' horror when they discovered the presence of heavy metals in the powdered infant formula they were feeding their babies.

Reluctantly, we had lost our carefree attitude, learned to read labels, scan brand names and discern danger in absurd acronyms. We were beginning to admit that the peril was domestic. **But what to do when you're suspicious of everything and can't eliminate anything?** Household products, cosmetics, telephones, city air, all determined to kill us slowly. So what about plastic? The shady mysteries of its manufacture, its hazardous use, our dependence on this material? Just one more risk. One more damning parameter in the daily equation. Nobody was paying attention to this material any more, except in ecological terms.

**We used it all the time, for everything, without even realizing it.**

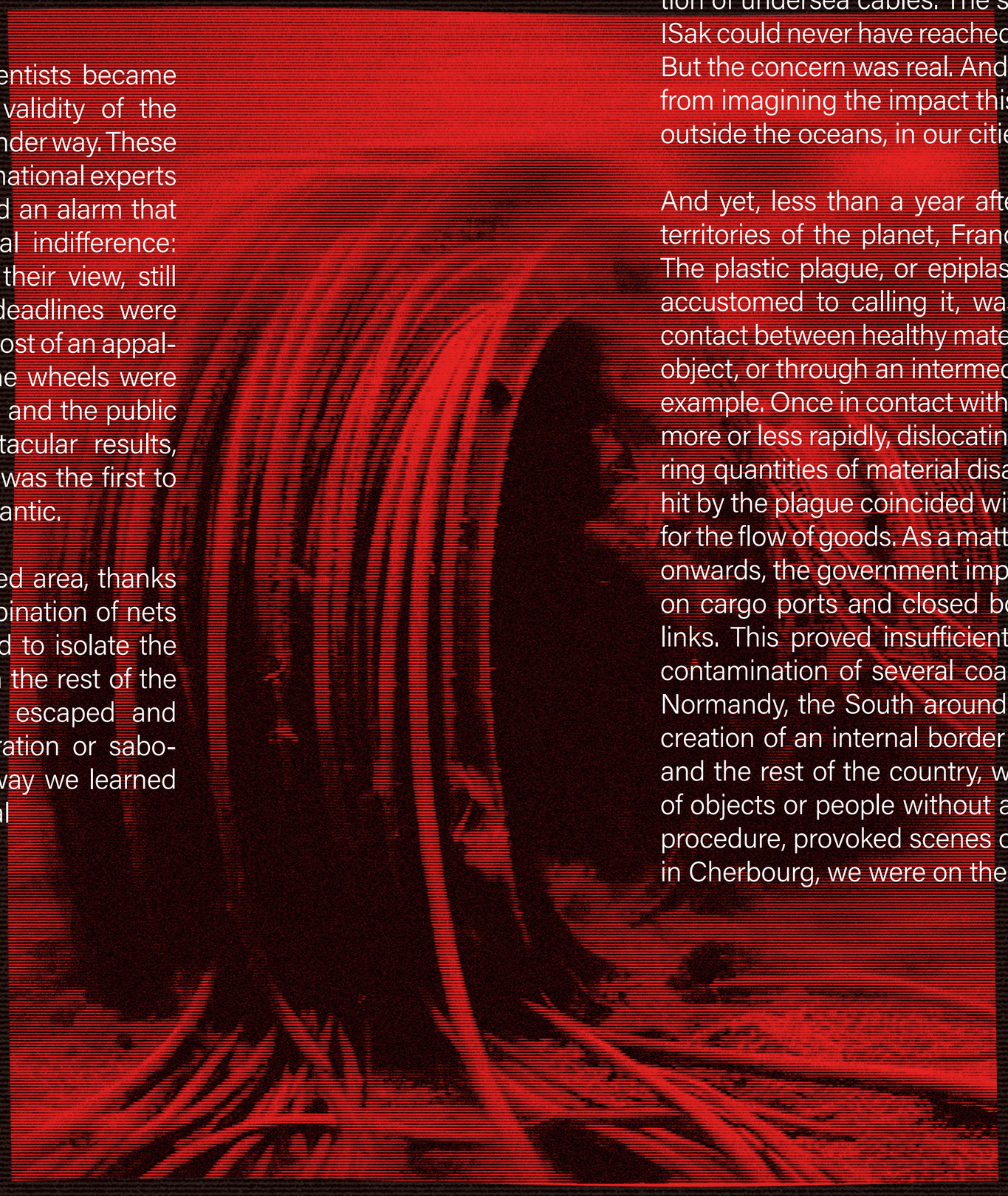
I, for one, didn't have the energy or patience to get involved. So when I heard about the start-ups that were springing up and raising millions to unleash ISak's potential, I was delighted. I didn't wonder how these labs were controlled, or whether they themselves had any control over what they were exploiting. I just thought that the water tables would finally be able to breathe.

ALL COUNTRIES WERE RACING TO EXPLOIT ISAK, FOR MORE OR LESS ETHICAL REASONS.

**THE BACTERIA HAD BEGUN TO EAT AWAY AT THE SUBMARINE CABLES.**

In 2031, a group of scientists became concerned about the validity of the advances supposedly under way. These brains, the leading international experts on the subject, sounded an alarm that was lost in international indifference: the bacterium was, in their view, still very unstable. If the deadlines were kept, it would be at the cost of an appalling catastrophe. But the wheels were in motion, shareholders and the public were hoping for spectacular results, and in 2032, CleanSoil was the first to release ISak into the Atlantic.

In a supposedly confined area, thanks to a sophisticated combination of nets and tarpaulins designed to isolate the experimental zone from the rest of the ocean. But ISak soon escaped and spread. Lack of preparation or sabotage? No matter. The way we learned of the escape was brutal



**The bacteria had begun to eat away at the submarine cables, starting with Atlantic Crossing 1.** Public opinion panicked at this announcement: Internet transmissions could be compromised in a large number of countries? No more web browsing? No more international calls? No e-commerce? Data transfers stripped of most of their bandwidth? Banking systems at half-mast? If the bacterium kept on eating away, disaster was certain. Very few of us knew the precise composition of undersea cables. The scientific reality was that ISak could never have reached the fibers at their heart. But the concern was real. And at the time, we were far from imagining the impact this bacterium would have outside the oceans, in our cities and industries.

And yet, less than a year after ISak fled to the land territories of the planet, France was unrecognizable. The plastic plague, or epiplastic, as we had become accustomed to calling it, was transmitted by direct contact between healthy material and a contaminated object, or through an intermediary. A human hand, for example. Once in contact with the plastic, it digested it more or less rapidly, dislocating it and making staggering quantities of material disappear. The first regions hit by the plague coincided with the main entry points for the flow of goods. As a matter of urgency, from 2032 onwards, the government imposed a strict quarantine on cargo ports and closed borders, airports and rail links. This proved insufficient to stop the irresistible contamination of several coastal regions: the North, Normandy, the South around Marseille, Corsica. The creation of an internal border between these regions and the rest of the country, with a ban on the transit of objects or people without a strict decontamination procedure, provoked scenes of panic, then riots. Here in Cherbourg, we were on the wrong side.

**THE PLASTIC PLAGUE**

# AN ENDANGERED PLANET ?

*The diversity of reactions to ISak around the world, from adaptation to economic crashes, not forgetting positive externalities.*

***#1. China has adopted a drastic protection strategy, reminiscent of its measures against COVID19:*** *control of industrial equipment and materials, massive population testing campaigns, widespread protective measures, including in companies and warehouses. The country closes down completely, authorizing exports only. The economic health of this giant in plastics production is finally assured thanks to a new discovery: a next-gen bactericide, patented and sold at a premium. Available in various formats, it is used in particular to disinfect industrial equipment via a shower system.*

***#4. Europe is harder hit, suffering in various ways from the areas infected by ISak.*** *In Germany, the economic consequences are significant. This country, one of the world's former leaders in plastics production, is struggling to cope with the closure of some 3,000 companies in the plastics sector. These companies were forced to cease all activity at the first signs of bacteria eroding their infrastructures, resulting in massive lay-offs.*

***#3. On the contrary, Burkina Faso, Cameroon and Mali are among the countries that rejoice in the ISak epidemic, with an unexpected effect that is beneficial to public health:*** *by nibbling away at the plastic waste littering streets and waterways, colonies of bacteria have gradually helped to eliminate pools of stagnant water, sources of life for mosquitoes, responsible for deaths from malaria.*

***#2. Vietnam's reaction to ISak is divided, between fear and gratitude.*** Indeed, the bacteria colonies have cleaned up its heavily polluted land and coastline, while causing it to lose a considerable financial windfall from plastic waste imports (estimated at over $1 billion by 2020).

***#5. The Gulf countries are very worried.*** *Some, like Saudi Arabia, are already suffering. According to estimates, between 15% and 20% of its oil production is used to make plastics. But concerns are growing: what if ISak manages to nibble away at the oil itself? What would become of the regional powers? What would be the consequences for the stability of the already precarious relations between these countries, but also throughout the Near and Middle East?*

There is, however, no fatalism in the face of ISak: every country, every community is trying to adapt. A veritable race for innovation is underway, between the search for technological solutions, a return to more traditional techniques and materials, and scientific advances in bacteriology. The whole world is waiting for the long-awaited, but as yet unachieved, "breakthrough": a method of detection that will enable faster determination, of the presence of ISak bacteria, and above all, quantification of the identified colony. Like all bacteria, ISak acts in colonies, and the size of a colony determines its capacity to act and cause harm. The larger the colony, the more extensive and rapid its "nibbling". We were all caught up in a race to find the miracle substitute.

# WE WERE ALL CAUGHT UP IN A RACE TO FIND THE MIRACLE SUBSTITUTE.

**Plastic can't be replaced with a snap of the fingers,** with its unique properties and low production costs. Our whole society was organized around its transformation, from the most crucial objects (perfusion bags, batteries, tires, food packaging, insulation, syringes...) to the most trivial (superhero figurines, glitter bars).

The magic catalog had been emptied. It seemed as if the mysterious 3D printers that filled our dreams and closets had gone on strike. This is only just an exaggeration: the robotization that was supposed to save us all had turned against us. Mechanical arms were eaten away by the plague, rails cracked, synthetic floors splintered. Assembly-line production that had become indispensable to our survival as a species was radically compromised. We had to get back to work, but with whom? With what tools and for how long? How could we convince people to turn back the clock on years of progress on the promise that science would find the solution in no time, and that everything would soon be back to normal? We'd been promised this before, and most of us believed it. I did. Not so Clément, who was considered a radical among his circle of friends.

True radicals had always existed, but they had long since moved away from the cities. The best organized, those who had prepared themselves to face any form of collapse, divided themselves into autonomous communities. They wove hemp, blew glass and worked metal. They didn't need to pack their food for long journeys: they grew it at home. Some communities did not hesitate to declare their independence in the very first weeks of the epidemic. At first, city dwellers scoffed at what they took to be a hysterical seditious reaction. We were going to find a way to kill the bacteria. Or, failing that, to put mass production of a substitute on track. But when they lost their office jobs for lack of a network, for lack of computers, for lack of a medium-term future, they panicked. Watching your toaster deteriorate before your very eyes can have that effect. ...

***People took to the streets, calling heaven and government to account, looting stores. After all, most banknotes were made of plastic polymers, as were all credit cards.***

# FRENCH ARMIES UNDER STRAIN.

*Between protective measures against ISak, rehabilitation of old equipment (worn, outdated, but without plastic) and rising tensions in mainland France and French overseas territories.*

***Like many other individuals and companies, the French armed forces have had to adopt new work routines and organization.*** *Strategic equipment incorporating plastic must be protected. Rafale fighters, for example, are kept under cover in warehouses, and regularly rinsed with bactericide. This creates new strategic and economic dependencies, at a time when the leader in industrial bactericide solutions is Chinese. Equipment maintenance also had to be rethought to limit any risk of contamination and proliferation of ISak. In 2024, the same toolbox was used to work on different pieces of equipment. Tool sharing is unthinkable today! Every Rafale, every Navy ship, every piece of equipment, even the most insignificant, now has its own dedicated toolbox.*

***Growing tensions around France's exclusive economic zones (EEZs), rich in algae, a promising substitute for plastic.*** *The appetites of neighboring powers are growing, and some aren't hesitating to sacrifice their own boats to the plague (remember that ISak first proliferated the oceans) in order to mine "algae fields". After all, what's a single ship worth when it comes to capturing a strategic resource? Tensions are therefore heightening around malicious acts of "algae poaching", supported more or less officially by nations.*

***Conspiracy theories abound on the origin and spread of ISak.*** *Some go so far as to denounce the abandonment of the part of the French population trapped in the affected regions, who would have been deliberately sacrificed by the ecological agenda in order to "save the oceans from plastic pollution" with the blessing of the government.*

***Operation Sentinelle has to be maintained on national territory because of these internal tensions, with a reinforced presence in over-infected regions.*** *It's a strange sight to see these military personnel moving around in colorful vehicles borrowed from civilians. It even seems that an old Panhard has been seen, alongside First World War wagons from museums!*

People like us, like me, with no manual skills, who were neither microbiologists nor engineers, no longer had any role to play. We were confined to deprived towns, at the mercy of curfews and rumors. Just before Clément fell ill, we were planning to flee Cherbourg. Of course, nothing was running, neither cars nor trains. Our rucksacks and hiking boots had been eaten away by the bacteria.

But we had our cotton bundles, our leather sandals, and enough food to survive a few weeks. We were to join my parents in the Dordogne, where they owned land and a house. But, as I said, this bacterium is voracious and mutates rapidly. A human body ingests and breathes micro-plastics every day. It can absorb up to 5 grams per week and eliminates them very slowly. The day before our departure, bloody stains began to appear on Clément's body. He writhed in pain all night until help arrived.

None of the specialists seem to understand what's going on. One has put forward a theory that terrifies me: what if ISak has made its way into his body and is devouring the plastics it finds there, embedded in the flesh, leaving behind deadly galleries all the way to the brain?

As I watch over him, my head resting on his shoulder as if we had all the time in the world, I find myself hoping. They say a great famine is coming. They also say that one of China's innovation giants has begun producing a substitute. That this is a time of resilience and solidarity. That human ingenuity will triumph.

Suddenly, fire department sirens echo through the city. The echo reverberates off all the buildings. I don't know it yet, **but we're entering a new era that will begin with the dismantling of the known world.**

**DESTRUCTION IS FAST, BUT I'LL SOON FIND OUT IF WE ARE CAPABLE OF REBUILDING.**

# WHAT IS THE RADAR PROGRAM ?

## AT A TIME WHEN DEFENSE MUST MOBILIZE THE ENTIRE NATION, THIS NEW INITIATIVE SUPPORTED BY THE FRENCH MINISTRY OF ARMED FORCES AIMS ATWORKING WITH CITIZENS ON DEFENSE FORESIGHT AND STRATEGIC ANTICIPATION.

The aim of the RADAR program is to mobilize a new force for collective reflection, capable of thinking about future threats and building responses and preparation for these defense challenges. Following in the footsteps of Red Team Défense, the RADAR program adopts the same open and multicultural approach, bringing together the military and civilian worlds, from all fields (ecohe nomic, cultural, academic).

**By mobilizing all these forces, the RADAR program aims to :**

**Better understand potential threats.**

**Propose appropriate responses** to strengthen the nation's defense capabilities.

**Strengthen cohesion and cooperation** between economic, cultural, social and military actors.

### RADAR IS FIRST AND FOREMOST A CONVICTION.

Tackling uncertainty more effectively through new approaches to strategic foresight and anticipation is necessary to collectively face up to them, reflect on their nature, and envision what their impact might be at national and local level, in both military and civilian fields.

### IT IS ALSO AN AMBITION.

Gathering all relevant parties willing to contribute their skills, thoughts, ideas and knowledge to defense purposes.

### ABOVE ALL, IT'S A COMMITMENT.

A commitment to propose concrete solutions that strengthen the nation's defense and to be prepared for future disruptions.

RADAR is an initiative that mobilizes an **open and active ecosystem**, enriching Defense foresight and strategic anticipation.

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