Boštjan Videmšek PLAN B

How Not to Lose Hope in the Times of Climate Crisis

Photos: Matjaž Krivic



Boštjan Videmšek

Рнотоя: Matjaž Krivic

PLAN B

How Not to Lose Hope in the Times of Climate Crisis



Ljubljana 2021

Boštjan Videmšek PLAN B

How Not to Lose Hope in the Times of Climate Crisis

Original title:

PLAN B

Pionirji boja s podnebno krizo in prihodnost mobilnosti

Copyright © Boštjan Videmšek, 2020, 2021

© Photos: Matjaž Krivic

All rights reserved.

First published by UMco, d. d., 2020 *Publisher:* UMco, d. d.

Editor: Samo Rugelj

Co-Editor: Andrew Clement

Photos: Matjaž Krivic

Maps: Depositphotos Ljubljana 2021

CIP - Kataložni zapis o publikaciji Narodna in univerzitetna knjižnica, Ljubljana

502.131.1(4) 629.331-83

VIDEMŠEK, Boštjan

Plan B : how not to lose hope in the times of climate crisis / Boštjan Videmšek ; photos Matjaž Krivic ; [maps Depositphotos]. - Ljubljana : UMco, 2021

Prevod dela: Plan B ISBN 978-961-7050-84-4 COBISS.SI-ID 34469891

Table of Contents

Introduction: Humanity's Key Front Line	9
Part One	
Coming Clean	
How Communities around the World are Fighting the Climate Crisis	
Chapter 1: Greece	
The First 100% Self-sustainable Island	
in the Mediterranean	25
Chapter 2: Scotland	
The Orkneys' Marine-Energy Revolution	39
Chapter 3: Iceland	
The Geothermal Future	65
Chapter 4: Austria	
A Model Community	101
Chapter 5: Norway	
Carbon Capture and Storage	121
Chapter 6: Switzerland	
Direct Air Capture	135

Part Two

The Lithium Road

The Future of Mobility

Chapter 7: Bolivia	
Lithium, the Driving Force of the 21st Century	153
Chapter 8: USA The Lithium Rush	177
Chapter 9: China Future is Now	209
Chapter 10: Norway The Electric (R)evolution	229
Bibliography and Web Resources	255

»Everybody talks about the weather, but nobody does anything about it.«

- Mark Twain

INTRODUCTION

HUMANITY'S KEY FRONT LINE

We already have all the facts and solutions. All we have to do is to wake up and change.

-Greta Thunberg, climate activist

On a number of occasions, I have promised both my closest ones and myself that my war-reporting boots have been hung up for good. I was among the youngest ones when I started out. When I started feeling that enough was enough, I was one of the oldest. I had been stripped of all comforting illusions and comprehensively addled by recurring pointless tragedy. I was at my wits' end. Along with my illusions, the wars I covered cost me a number of friends. It was also glaringly clear that I had already used up all of my 'get-out-of-jail-free cards', and then some.

Enough is enough, I kept repeating, especially given my mounting disillusionment with the power of my vocation.

For me, journalism was never merely a job. From when I started as a sixteen-year-old, it was much more of a life-style, or even life itself. This made it so much harder for me to accept that my work had swiftly and irreparably lost most of its value to a society that was apparently content to drown in its own madness.

The post-fact order that we have dreamed up overnight is a place where cranks like me and my colleagues are tolerated at best. The rise of the (anti) social networks with their echo chambers of pre-chewed opinion based on zero expertise has ushered in a new age, one that is not yet named but is getting more powerful with every millisecond. The best description that I, personally, have come up with for this current and possibly final stage in our species' evolution is 'The Dictatorship of Nothingness'.

In this new and increasingly powerful realm, there is little place for journalists. Or even, for that matter, scientists.

Many of the wars I used to cover never ended. They just smouldered on. Most of them – Iraq, Afghanistan, DR Congo, Syria, Libya, Somalia, Darfur – keep smouldering to this day, their embers regularly fanned into new explosions of previously unimaginable violence. In the still-resplendent citadels of the West, the refugees, who these wars leave behind have been increasingly seen and treated as nuclear waste.

The open and free society we have been programmed to expect is now comprehensively riddled with walls, watchtowers, barbed wire and paramilitary insignias that exude the wholesale resurgence of racism, xenophobia and hard-core fascism. All of the old ideological divisions have been strengthened. Brand-new ones are rearing their revolting heads with each passing day. Our capacity for historic recall seems to have withered on the vine again. Our capacity for shame seems to have been euthanized somewhere in the foxholes of internet-guaranteed anonymity. Others' pain is now a business category at best.

If one's work has little to no effect on the world, it amounts to little more than participant observation. You may be quite good at it and even deemed a success by your peers; however this usually only hastens the realisation that one's line of work is just another *ego safari*.

The autumn of 2016 saw my return from Mosul where I covered the savage clashes between the Iraqi government forces and the self-proclaimed Islamic State. At that particular moment, I was all but certain I would have to take up another line of work. I was so tired and fed up with the darkness descending from all sides that I knew I would have to become my own cult-deprogrammer, slowly but surely extricating myself from my old and defeated religion of journalism.

So what could I do? How could I reinvent myself in this world where sheer reflexes were now king, where nothing consequential was of any consequence, and where many of its most august members were acting as if it wouldn't be a problem if the sun never rose again?

* * *

"Listen, it's about time we did something together! Let's meet up for a cup of coffee. Come on, don't just fucking tell me you haven't got a free minute, like you always do! All I need is ten minutes to pitch an idea to you. Trust me, you'll like it!"

This was the call I got on an especially grey autumn morning from my friend and colleague, the photographer Matjaž Krivic. Out of genuine regard for the reader, I have omitted most of his trademark invective.

My gut reaction was a profound sigh. Yet another project, yet one more time-draining obligation. Hadn't I just promised myself a sorely needed time-out, a chance to step off the ball and afford myself some time to reflect?

But repeat it as I might, the *mantra* didn't work; it never has.

"Let's hear it," I replied somewhat brusquely. Back then, I had not quite realized what a master petitioner Matjaž was and what a smasher of both physical and metaphysical barriers he could be. In all my times as a global traveller, I have never met anyone as childishly innocent of the meaning of the word 'No!'

"I'm just fresh from Bolivia," he beamed at me over the cup of coffee that we had arranged and continued.

Salar de Uyuni, high up in the Andes. The world's largest salt flat – and one of its most magically beautiful places to boot! Anywhere up to 70 percent of the world's lithium reserves can be found there. This place

will be powering our electric vehicles and virtually all our electronic devices for decades to come! So let's do it; let's do a story on lithium! What do you say? Let's cover it properly, in-depth, from the extraction phase to electric car manufacturing.

That was pretty much all I needed to be sold. Especially since I knew Matjaž was something of a hellion, a one-man assault team of old-school photo-journalism whose unconventional approach and unique aesthetic have already bagged him all the relevant prizes in his highly competitive field.

"You've got it. When do we start?" I nodded, without needing as much as three seconds to ponder the implications.

"Oh yeah?" Matjaž looked more shocked than he would have been if I had just brutally insulted his mother. For a few seconds, he just stared at me appraisingly.

Then he purred, "As soon as possible."

* * *

From the beginning, we both realised that the story of lithium, the driving force of the 21st century, was just our entry point into a much larger story, the kind of story that both of us had been seeking for quite a while; we had both travelled far and wide, and had faced the horrendous wages of climate change with every step.

Without realising it, we had both been searching for a format to tell this story, one that should be on the tip of everyone's tongues all the time.

With Matjaž's help, I effortlessly managed to find my new front line. The climate crisis, you see, is nothing less than a global, total and all-encompassing war. It is humanity's war against itself – a war against future generations, against entire ecosystems and against the natural order itself. It is a brutal frontal assault on the very planet that so generously provides our sustenance. It is a war against balance and co-existence. It is, in short, a war on the very concept of the future.

The climate crisis is the key front line of our times. Our prospects are far from good.

* * *

The Earth is heating up faster than even the most pessimistic experts have predicted. Even the habitually conservative IPCC estimates bear this out.

The target set by the Paris climate summit of 2015 – to limit the temperature increase to 1.5 degrees Celsius by 2100 – now seems like a mere unrequited prayer. The summer of 2020 recorded two hottest months in the history of temperature measurement. In Verkhoyansk, officially Siberia's coldest town, the thermometer showed a record breaking 37.8 degrees Celsius in late June. It was small wonder then that Matjaž and I could observe the glaciers melt in an Iceland, when the island country got shocked by a summer with evening temperatures that easily reached twenty-five degrees Celsius. This was an increasingly iceless Iceland, where farmers had to switch to working at night when the

heat dropped to a point where the toilers could actually catch their breath – all of this in the immediate vicinity of the Arctic Circle.

At the Akureyri port in the north of Iceland, we could observe ship after ship returning from the Arctic – all of them filled with the shocked, soot-streaked faces of researchers who were witnessing fires when they should have been freezing half to death. Alaska, Greenland and Siberia were burning – all at the same time. The permafrost was irretrievably melting; it continues to do so as we speak. Yet pundits and policy makers seem to have almost completely missed this stark fact.

Methane, a greenhouse gas far more devastating to the climate than carbon dioxide, keeps seeping up into the atmosphere. Small lakes are sprouting all over the no-longer-permanent frost. When, inevitably, oxygen gets introduced to the equation, violent detonations are the natural result.

This is a mere glimpse of what our common future has in store.

You'd better believe that this is a front line. You had better believe that this is war.

* * *

As I was writing this book, we have just lived through the warmest January and February in recorded history. On a global level, winter seems to have been all but cancelled. As ski-resort managers in Europe were finally figuring out they were through, vast swathes of Australia got burnt to the

ground. A billion animals were killed in just a few weeks. This got dismissed as mere collateral damage, if that at all.

Australia, it bears to keep in mind, is the continent most exposed to climate change.

These apocalyptic scenes have come on the heels of the recent Amazon forest fires. In the blink of an eye, we have become accustomed to such devastating images, not believing them to be any more real than the reality show climaxes and dime-store spectacles that much of the population has retreated into.

The list goes on and on.

There is the sixth mass extinction, directly traceable to mankind's effects on the planet. As of right now, the planet supports only half as much wildlife as it did in 1970. The human race makes up for thirty percent of the combined mass of all existing vertebrates, sixty-seven percent is accounted for by farm animals, while the vertebrates living in the wild take up a measly three percent.

Or how about the demise of Australia's Great Barrier Reef, or the vanishing of anywhere up to 80 percent of the planet's insect life? How about our lethally warm oceans? According to a 2015 study published in *The Journal of Mathematical Biology*, the current warming rate means that by 2100, oxygen production by phytoplankton could stop because the hotter temperatures will disturb the process of photosynthesis. This would likely result in the mass mortality of animals and humans.

How about 'the black holocaust' perpetrated around the globe by fossil-fuel lobbies, whose thirst for profit remains the biggest driving force behind our imminent demise? Or how about the rapidly shifting marine currents, or the ever increasing emissions of carbon dioxide into the atmosphere? (At the time of writing, the tally stands at 417 pp) How about all of the polar bears, who have to swim for 200 kilometres without pause as their natural habitat keeps vanishing around them, and they must hunt belugas to survive?

Or, for the more cold-blooded among us: how about the cost to the global economy, estimated at 1.2 trillion dollars in 2018? How about January's flourishing springtime flowers high up in the Alps? How about Donald Trump? How about the hordes of climate-related refugees, human and non-human, who are absolutely certain to dramatically influence our near future? According to 2018 World Bank estimates, the effects of climate change are set to drive 143 million people from their homes in Asia, Africa and Latin America alone.

This is also a tale of a world rapidly drying up. A world whose fate is increasingly being increasingly determined by a series of water wars. The world that we thought we knew is now rapidly disintegrating as we keep nodding off in front of the television.

* * *

I could go on *ad nauseam*, quoting scores and scores of scientists, listing hundreds of figures, cementing the facts, explaining what should be clear to any three-grader by now (and we live in a time when many three-graders are indeed

much more savvy about these dangers than their parents). But I have grown to fear that any such roll call of the evidence would be largely in vain.

Everything, after all, has been said: endlessly, ceaselessly, while the average attention span, the paramount casualty of our age, has shrunk to almost nothing.

The science is clear. Yet in most of the first world, the effects of climate change are still filed under the category of 'something that happens to other people'. Something far from an actual, existential threat that, therefore, hardly merits a forceful response.

Let us put it even more bluntly. This rapidly advancing crisis is something our evolution has left us dearly unprepared for. Even worse, our survival mechanisms seem to keep dividing us, when we should be sparing no cost to join together.

* * *

And so, instead of reciting figures and spewing forth yet more apocalyptic forecasts, Matjaž and I decided to highlight the communities and individuals who are bravely taking on the calamity. It is high time to add them all up, the members of the *homo sapiens* true elite who have chosen not to be swept away in the tide of indifference and arrogance, the visionary women and men who are not banking on miraculous salvation from elsewhere.

Our ambition has been to turn this book into a monument for these intrepid foot-soldiers on humanity's key front line, the ones who are amassing the knowledge, experience and technology that we will need if we are to have a prayer at all.

From Tilos, the first energy self-sufficient island in the Mediterranean, to the geothermal and thoroughly future-oriented Iceland. From the promising sea-power developments on the Orkney Islands in the north-east of Scotland, where surplus energy is already being converted into 'green' hydrogen, to the biomass-centred Austrian townlet of Güssing, whose inhabitants have taken the progressive route as far back as a quarter of a century ago, and who have by now managed to reinvent themselves as a key hub for the development and production of renewable-energy technology.

So here they all are, humbly requesting your consideration. From the Swiss-based Climeworks company, capturing carbon dioxide directly from the air to inject it into Iceland's underworld, to a number of self-sufficient Scandinavian villages and Iceland's holistic transformation. From the lithium constantly travelling between Bolivian salt flats and Chinese electric-car factories to the electric-mobility revolution in Norway. From the waste-incineration plant in Norway that plans to store the captured CO_2 in underwater caves, to all of the individuals and communities who are standing behind these projects, raising their voices to remind us that we must hold on to our hopes at all costs.

Theirs – and ours – is an exceptionally difficult task. But if we all don't rise to the occasion, it is sure be our last chance.

I truly get how hard it must be for some to believe that the impending cataclysm can still be prevented – or, failing that, that its effects can at least be mitigated.

Humanity is a species marked by, among other things, wars, genocide, ecocide, racism, greed and every imaginable form of violence. After more than two decades covering the globe's countless flashpoints, I have been afforded a succession of ghastly insights into the workings of the global economy. Such a rallying cry for hope as presented here sometimes strikes me as a form of cognitive dissonance; I often have trouble mustering up the optimism that, realistically, something can still be done.

"A writer doesn't owe a reader hope," writes the legendary environmental activist Bill McKibben in his new book *Falter*. "The only obligation is honesty – but I want those who pick up this volume to know that its author lives in a state of engagement, not despair. If I didn't, I wouldn't have bothered writing what follows."

I couldn't agree more.

If Matjaž and I have struck out to impart one message, it would be that there are people and communities out there, who are able to keep curbing their cynicism and fear. And to use the energy thus saved to actively search for solutions. Even if we may already be in overtime and losing 4:0, these brave centre-backs and defensive midfielders keep sliding and tackling and leaving their heart on the pitch. This is how they shall remain until the final whistle.

This is a book about such communities and the heroic individuals that form them. Should they fail, hope will not be the last to die. The last to die will be our children and grandchildren.







CHAPTER 1

GREECE

The First 100% Self-Sustainable Island in the Mediterranean

High above the ocean, amid the springtime's fragrant and colourful plant life, one can easily see the Dodecanese islands and Turkey. The sun is already baring its teeth, almost as if it is already summer. The light bounces sparklingly off the surface of the sea. The powerful wind howls like a wolf. When it dies down for a bit, it is overpowered by the chirpings of countless birds and insects, currently on a procreative work brigade.

Paradoxically, the countless natural sounds coalesce into a deep yet also vulnerable silence. Goats chase each other along shepherd paths reconstructed from the times of yore, precipitous in many places. There are hundreds of goats – both domestic and wild. Their astonished fright quickly reveals that they are not exactly used to human company. The

long rainy winter – the rainiest in the last forty years – has ensured a rapturous greening of the island and provided an abundance of food to these insatiable climbers.

Up here, one can easily merge into the idyll furnished by the ancient feel of the surroundings.

Yet Tilos, a small island in the southern Mediterranean, only *feels* ancient. In reality, its tiny local community is surfing the crest of ultra-modernity. The island is the first in the Mediterranean to have achieved energy self-sufficiency – and with wholly renewable power sources to boot! More precisely, this consists of a unique combination of wind and solar energy, which officially became part of the Greek power system (grid) in March 2019.

Tilos' energy project was granted its funding in competition with eighty other projects from all over Europe. The EU's scientific research initiative *Horizon* 2020 has allocated 11 million euros to the project coordinated by the Technological Educational Institute from Piraeus (now University of West Attica). All in all, thirteen partners from seven European countries are involved in the venture.

In January 2019, *Eunice*, the Greek private company in charge of the project, signed a contract with the state-owned electric network management company, *HEDNO*. In this way, the green energy from Tilos – history's first small hybrid network of its kind – was incorporated into the Greek electrical system.

The Tilos energy project, whose special energy-storage battery system (BESS) allows for the possibility of storing up winter supplies, is currently already producing more power than the island needs. The managers of the small local network are even exporting some of the surplus electricity to the neighbouring Kalymnos and Kos islands, via an underwater line.

Previous to this magnificent breakthrough, electricity used to flow to Tilos in the reverse direction, from an oil-powered power plant on Kos.

* * *

Maria Kamma has been serving as Tilos' mayor for seven years. In her modest office in the ancient, charming, white-blue townlet of Megalo Chorio, she replaced the 'irreplaceable' Tassos Aliferis, who brought the island back from the dead. During his tenure, the permanent population doubled, ecological tourism underwent a rapid boom, the ancient shepherd trails were reconstructed and many roads were built. All of this only begins to sum up his contribution.

Tilos was the first Mediterranean island to abolish hunting in 1993, transforming the hill-strewn natural paradise into a sanctuary for numerous birds and other species. Long before it was legal in Greece, Tilos – with the help of the late Aliferis – saw its first same-sex marriage in 2008, along with countless other progressive developments. Between 2016 and 2018, the islet was home to the *Tilos Hospitality Centre* for refugees and migrants. Within its walls, the