



BERNARD GIRAUD

THE HANDS RESTORING THE EARTH

TALES OF A COLLECTIVE ADVENTURE



ateliers
henry dougier

THE HANDS
RESTORING
THE EARTH

Tales of a Collective Adventure

HD ateliers henry dougier © 2020
7, rue du Pré aux Clercs – 75007 Paris

Publisher: Henry Dougier
Director of Development: Julie Rovero
General Secretariat: Clémence Commelein
Layout: Nord Compo
Cover design: Fabrice Rondon
Translation: Andy Bliss

Book printed in french titled: Ces mains qui réparent la Terre

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Note to our readers:

Dear readers, you are holding in your hands a living book, which retraces the collective adventure of Livelihoods around the world: from Senegal to Araku Valley in India, from Peru to Mount Elgon in Kenya. The first 10 chapters of this book are dedicated to the men and women who make this adventure possible and are fully part of Livelihoods projects in the field. You will find at the end of each chapter a QR code that you can scan with your phone or on which you can click to access an online photo album that will bring to life every story you will read. Enjoy and have a good trip!

Preface.
A perfectly still spring

That spring the sky was an eternal blue, seemingly immune to the threat of dark clouds. Flowers and leaves were bursting forth on the branches, warmed by the dazzling light of a timeless April. The city was silent and deserted, or very nearly. You could even hear the birdsong. Everyone was confined within their own four walls to ward off the virus, connected to the rest of the world by invisible threads. We had come to realise how easily our lives and our comfortable habits could be upended by a huge spreading wave whose arrival we had never anticipated. 7

Other waves will come in their turn, and they will be much more dangerous. Like tsunamis, they will form way out to sea, far beyond the horizon, but they will be caused not by earthquakes on the ocean floor but by the actions of *Homo sapiens*, who has populated the entire planet and now dominates it to such an extent that he is wrecking the climate and endangering the natural world as well as his own existence. Stopping these foreseeable waves before they submerge us is our responsibility. There is an urgent need for us to rethink the way in which we inhabit the Earth our home.

This book is the tale of an adventure. In recent years in every corner of the world, rural communities whose livelihoods depend directly on the climate, the soil, the water and the plant and animal diversity of their environment have proved that it is possible to rebuild the foundations of their home while at the same time alleviating poverty and taking greater control of their lives. The millions of trees they've planted, the thousands of hectares of land they've restored, and the local produce they've commercialised may seem modest given the sheer scale of the challenges, but their successes are a shining role model for the rest of us. As I write these lines, the terrible Amphan cyclone has just ravaged the Sundarbans on India's Bengal coast. In the space of a few hours, gusts of up to 200 km per hour destroyed the fragile mud and thatch houses, and saltwater flooded into the paddy fields after the dykes gave way. And yet the 5,000 hectares of mangrove swamp replanted since 2009 held firm like sentinels—gigantic living shields against the violence of the winds. They succeeded in stopping the waves.

Another lesson of hope that Livelihoods has taken on board is that the marriage of opposites is possible. One might think that major international companies and isolated villages in Africa, Asia and Latin America would have nothing in common. That there is a yawning gulf between NGOs driven by ideals and businesses driven by profit, between the so-called private sector and the public interest. But our experiences over the last few years have proved that the barriers between the two are not set in stone and that alliances are necessary if we are to have a genuine impact. We can each draw on the strengths of the other, provided that our objectives,

strategies and modes of action are clear and mutually shared, for ultimately the transformation we have in mind concerns us all, individually and collectively. No one person or institution has the power on their own to pull off this transformation. The hands-on players who share their stories in this book are living proof that there are ways of moving beyond well-meaning but ineffectual statements of intent and of overcoming our sense of impotence.

The adventure continues...

Bernard Giraud
May 2020

10 TALES

The Song of the Bolongs

All collective adventures need a founding narrative—a point of anchorage to which we can cling when the coastal winds start to blow too hard. Our own story could be said to date back to 2009 near Ziguinchor in Casamance. It was a dark winter's month in France, but a fine, warm and clear-skied month on this large estuary that flows between Gambia and Guinea-Bissau in West Africa. We flew over this vast natural expanse on our way from Dakar. We could see hundreds of silvery water channels, or 'bolongs', which snake towards the ocean through stretches of barren earth and the corridors of green which are all that remains of the mangrove swamp which once covered most of the delta. We could also clearly make out amid the bolongs a complex patchwork of countless small fields. These were the paddy fields which, as we were to later learn, had mostly been abandoned on account of the incursion of seawater. What was once Senegal's rice-growing heartland was now swamped in brackish water and mud. The mangroves that used to silently absorb the salt like a gigantic filtering system and thereby protect the paddy fields had disappeared and given way to what the people of Casamance call the *tanne*—arid soil baked hard by the sun as the tidal water recedes.

To be frank, when we first arrived in Casamance our ignorance was matched only by our inexperience as we embarked on a new professional venture and a new stage in our lives. My accomplice Jean-Pierre Renaud and I have a background in industry. He is used to running large agribusiness plants while my speciality is corporate strategy—all seemingly a world away from the villages of Casamance. And yet we were both guided by the intuition that these two worlds were distinct on the surface only and that a network of invisible threads bound them together. Our challenge was to come up with solutions that would create a visible bridge between them. We also shared the firm conviction that nothing gets done without people, and that people are the true heroes of their own story. The years we had spent at Danone, a company that began life as a glassworks and went on to become an agribusiness giant, had taught us that change can only be brought about successfully ‘with and by’ the men and women concerned. ‘With and by’ was a familiar refrain within a company that had successfully developed a new vision and innovative management methods at the end of the last century under the guidance of its founder, Antoine Riboud.

Greeted on our arrival by our future Senegalese partners, we set off directly for a village several hours distant along poorly maintained roads, arriving after dark. The whole village was gathered in front of a flag hung over the top of a truck tarpaulin. This was their improvised cinema screen. A hundred or so children were sitting on the sand surrounded by a circle of animated women, while the village dignitaries and elders were seated on plastic chairs. The young men from the local football club were larking around in their colourful

jerseys and nudging each in the ribs. A small generator supplied the energy to work the projector and the ‘cinema and Q&A’ session could begin. I was impressed by how attentive the villagers were to the slightly shaky images of the mangroves and their stilt roots, and the close-ups of sand fiddler crabs and frogfishes. Jean Goepp from the non-governmental organisation (NGO) Océanium, sporting his bush hat, gave a running commentary on the images in Wolof, explaining what an important breeding ground mangrove swamps are for fish. Then he invited a fisherman from the village to speak, followed by an elderly farmer and the president of the women’s association that collects the oysters attached to the mangrove roots. They all had the same story to tell: the disappearance of the mangrove swamps had resulted in a sharp drop in biodiversity and the resources that are essential to village life. Jean then drew a simple graph on the sand and invited people to take shells from a bucket and fill out the graph to visually represent the catches of an elderly fisherman in the bolong when he was young compared to his catches of the present day. At the sight of the steadily descending curve, everyone could visualise the disaster that would befall them if nothing were done.

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There ensued a lively discussion about what steps ought to be taken. The deep-seated belief at the time was that mangroves could not be planted any more than the trees of the forest could be planted—they were a gift from God. It took all the persuasive talents of Haidar El Ali, the founder and head of Oceanium, to convince people that resurrecting a vanished mangrove swamp was possible. He explained that several villages had already succeeded in doing so and that, to protect what remained, people needed to stop using

mangrove roots for firewood and stop building roads without considering their impact on the circulation of the water. It was a long evening and the little ones started to get tired. Some were carried off in their mothers' arms to the nearby huts. But the gathering concluded with a clear commitment. The answer to the question posed by Océanium—Does your village want to replant the mangrove swamp?—was a resounding yes. And when asked how many villagers would volunteer to help with the planting, after much discussion a consensus emerged: around a hundred people. We agreed to meet again to identify which areas to replant and to schedule the planting dates.

16 On our return to Ziguinchor after several days in the field, we had discussions with the team at Océanium about undertaking a major joint project. Jean-Pierre cross-checked the data gathered and went over his calculations one more time. But what clinched it for us was the NGO's obvious capacity for motivating and mobilising the local population to rebuild the foundations of the ecosystem on which their livelihood depended. Every local lever was exploited to generate a genuine momentum for planting and even a friendly competitive spirit between villages. Villagers went on local radio to talk about their dedication to the cause, schoolchildren filled their exercise books with drawings of the efforts to protect the mangrove swamps, and shopkeepers and even policemen put up colourful cartoon posters on the walls of their premises. But we were also struck by the method that Océanium had perfected, which reminded us of the approach that we knew so well from our industry days: identify what's essential, focus on the key actions, simplify so that the model can be replicated, and organise the logistics so that it can be

significantly scaled up. From the gathering of millions of propagules (the elongated pods of germinated seeds) from healthy mangrove swamps to the transporting of them to the villages that would replant them, the NGO had successfully broken the replanting process down into simple steps that each village could follow with ease. Such an approach stands in sharp contrast to so many other development projects that may be wonderful in theory but are so complex in practice that they never get beyond the pilot stage.

By the time we arrived, the team at Océanium had already planted 300 hectares using this method and were convinced that they could achieve much more, were it not for their limited resources amounting to just a few thousand euros a year. Crews needed to be deployed on the ground and the gathering of the propagules needed to be funded, as did the trucks to transport them into the heart of bolongs, the motor-bikes, and the telephones to coordinate the challenging logistics. And everything needed to be done in the space of a few months to take advantage of the rainy season. Money was needed too for monitoring the quality of the plantations and ensuring that conditions were conducive to their growth. Without significant funding over several years, this project would not have the hoped-for impact. We therefore decided that this would be our first carbon offset project as it corresponded to precisely what we were looking for: mangroves growing in a humid tropical environment capture significant quantities of carbon and help to slow down climate change. As they grow, they recreate a sustainable ecosystem on which the livelihoods of local people depend. Investment would thus have a dual ecological and social impact.

Over the course of four years, a huge replanting programme was rolled out in Casamance and in the Sine-Saloum region further north. 400 villages managed to plant 80 million propagules across 10,000 hectares, an area the size of Paris. Despite all the difficulties encountered—the trucks bogged down in mud to their axles, the occasional lightning strikes, the minor dramas and the major ones—I was struck by the amazing energy and enthusiasm of the planting crews. Village bands would accompany the singing women as they advanced in unison across the mudflats. When I went out with a group of young villagers one day, they planted so quickly that I was left exhausted, whereas they did not even get short of breath as they waded knee-deep through the *poto-poto*, the black mud of the mangrove swamp. And each village would try to outdo its neighbour.

18 But one day we received worrying news: a small orange spider was spreading through the young plantations and spinning its web on the terminal buds, thereby suffocating the young mangroves. If we failed to halt the advance of this little arachnid, there was a huge risk that the young saplings would die, but our partners reacted with impressive sangfroid. Within weeks, schools, youth clubs and volunteers were kitted out with tin cans and set off at low tide to tend to the infested mangroves one by one. The invasion was rapidly stopped in its tracks—a further indication, if any were needed, that the local population was entirely committed to this project.

In 2018, nearly a decade after the project got under way, we decided to assess its impact. Evaluating the carbon impact posed no difficulties—using internationally recognised methodologies, experts are able to measure very precisely the

carbon stored as a function of tree growth and density. Every three years, plots of land mapped by GPS were audited using rigorous sampling methods, with drones being deployed if the swamp was too large or too dense for field measurements to be conducted. This meant that we were able to monitor with precision how many tonnes of CO₂ the project had succeeded in storing. But what did the men and women who did all the hard work resurrecting the mangrove swamp think about it all a decade on? Did they feel that their efforts had served a purpose and tangibly improved their family's lives? To find out, we turned to La Tour du Valat, a scientific research institute based in the Camargue in the south of France which has done a lot of work on coastal ecosystems in various countries. Their experts suggested using a method developed by DFID, the British government's international development agency, which involved field measurements and the conducting of 800 interviews with villagers from across the whole region covered by the project.

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When the results came in a few months later, they exceeded even our best expectations: the study reported that fish had returned in large numbers, and the fishermen confirmed that they were catching larger fish and a greater diversity of species. The experts at La Tour du Valat estimated that the restored mangrove swamp was producing an additional 5,000 tonnes of fish in Casamance. Their study also confirmed that the mangroves were once again playing their essential role of 'salt pump', protecting the paddy fields from the incursion of salt water. On account of this, they estimated that it would be possible to restore several thousand hectares of paddy fields in the grand delta. I found myself dreaming of an ambitious new rice cultivation project using smart farming

methods that were both productive and sustainable, giving a new lease of life to those vast spaces in the heart of the bolongs that are currently abandoned. But what was most striking and moving about the interviews with the villagers was the enormous sense of pride that shone through. Asked what had left the biggest impression on them in recent years in their village and what they were especially proud of, almost all of them answered: the planting of the mangrove swamp, ‘their’ mangrove swamp. They were proud to have collectively achieved something that everyone had thought impossible: planting millions of mangroves one by one in the mud. And they were determined to take care of it and protect it, having come to appreciate its immense value. After reading the findings of the report, I concluded that though the battle was far from being won, we had already come an awfully long way.

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View the online photo album
of Livelihoods project in Senegal



The Gems of Araku

When my friends call me from Calcutta or Hyderabad, I don't need to look at the number that flashes up. The din of the horns in the background is enough to transport me straight back to the hubbub of India's burgeoning cities, where everyone knows that a horn is an essential component of any vehicle. Urban India is an extraordinary cauldron of energy: new construction sites are popping up everywhere, hoardings are advertising the latest smartphone or beauty product to make you stand out from the crowd, tuk-tuks are pumping out exhaust fumes that make your throat tingle, and dense crowds are milling around the countless stalls.

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In autumn 2009, we touched down in Vishakaptnam, a major port on the eastern coast located in the state of Andhra Pradesh. We were there at the invitation of the Naandi Foundation, who were keen to show us their project in an isolated valley a few hours' drive away. Our driver turned out to be a virtuoso at slaloming his way through the traffic jams of the city centre and we were soon in the suburbs. The disparate urban sprawl gradually gave way to the tress and fields and then a hairpin road winding up the Eastern Ghats, a

mountain range that dominates India's eastern coast. It was slow going in the many villages that we passed through as we tried to thread our way through the market day crowds, overtake groups of children on their way to school, and negotiate our way around cows lying peacefully in the road. Amid the trees, we saw a family of monkeys observing the passing cars from a lofty parapet, but our driver had to keep his eyes on the road and the countless rickety old trucks and buses piled high with merchandise and passengers descending from the upper valleys.

22 And then suddenly the landscape opened up and stretching out before us was a wide valley illuminated by the late autumn sun. It looked incredibly peaceful. For as far as the eye could see, there were rolling fields and trees on the blue-tinted sides of the valley, which were still partially shrouded in mist. A river snaked between the terraced paddy fields which the local farmers were already beginning to harvest. We were finally in Araku Valley. There were no man-made constructions in sight, and we had the feeling that we were in a Constable painting. We later learnt that this land enjoys the special status of a scheduled area since Araku Valley is populated by the Adivasi, a tribal group considered to be the original inhabitants of India. Every family enjoys the usufruct of the land—they can plant and cultivate it and pass it on to their children, but they cannot sell it. No individual or property developer, no matter how rich, has the right to acquire the land or build on it. The villages nestling at the foot of the hills blend into the landscape. On the slopes in the shade of the large silvery oaks, we could make out the dark green of the coffee plants which have come to symbolise

the remarkable story unfolding here: the challenge of successfully transitioning to the modern world without the community losing its cultural identity. The crux of the matter is this: to what extent is cultural identity an asset (or alternatively an impediment) for historically marginalised men and women when they attempt to build a new future for themselves?

On hand to guide us through the learning process were two remarkable individuals who have since become very dear friends: Manoj Kumar, the head of the Naandi Foundation, and David Hogg, its chief agricultural advisor. I had first met Manoj several years earlier when we were accompanying our respective bosses to the board meeting of a large international organisation. We immediately hit it off and promised each other that one day we would work together, and that is how I came to be in Araku Valley one November's day. Manoj's eyes sparkle with intelligence and humour, but beneath his light-hearted demeanour you sense a man with a great capacity for reflection and action. For a few years he worked for a merchant bank where a fine career beckoned for him, but he chose instead to join Naandi, a foundation set up by an Indian entrepreneur who was convinced that the efficiency of the business world could be harnessed to combat poverty and social exclusion. In Sanskrit, Naandi means 'new beginning'. In the space of just a few years, the foundation rolled out a series of programmes across India to provide education for girls, school meals for children from disadvantaged neighbourhoods, access to safe drinking water, and the tools for sustainable farming in tribal areas.

In Araku, the authorities turned to the Naandi Foundation to help them with a tricky problem. The Adivasi are an indigenous people with a long history of being marginalised and driven up into the highlands. Sometimes they have rebelled against the powers that be, and at other times they have retreated into the forests. These days, there are 80 million of them, mainly living in a belt that stretches from the north-west of India to the north-east. The Adivasi of Araku used to be hunter-gatherers but the forests disappeared under British colonial rule on account of high demand for wood for construction and railway sleepers. Coffee plants were first planted some years ago but the venture was abandoned—the villagers lacked the necessary expertise and the coffee turned out to be of mediocre quality. So what did the future hold for the young people of these isolated tribes in an India in the midst of upheaval? Would they be recruited by the Naxalites, the Maoist guerilla group still active in the region today, and face a future of violence and despair?

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The forests that once nourished them are deeply rooted in the collective memory of the Adivasi of Araku, but those forests are now gone and have been replaced by bare hills where herds of goats and cows graze. The soil has been eroded away and bare patches of rock glint in the sun. There is a traditional rite of passage into manhood which used to involve the boys of the valley heading off into nature for several days and only returning to the village when they had bagged some game. Though the rite is sometimes still observed, these days the boys apparently hunt in vain, so impoverished has the local fauna become, and they end up returning with just a few paltry rodents. When we met with the villagers, many of

them expressed a desire to restore the forest, though they appreciated that it couldn't be like the forests of the past—the farmers were well aware that the outside world and the market economy offered them the chance of a decent standard of living. Wholesalers, middlemen and a whole variety of merchants are a common sight in the valley, their trucks and motorbikes criss-crossing the landscape to procure produce known for its quality, including fruit, rice and the foxtail millet with its remarkable nutritional qualities.

Together with our partners at Naandi, we decided to sound out several villages to see what they thought of various 'functional' forest scenarios, which combine the planting of fruit trees with the growing of trees for timber and firewood, as well as intercropping. And so it was that we found ourselves shortly afterwards in the shade of a large mango tree with a colour-coded sketch showing the plots of land belonging to one of the villages. At first, as we outlined the uses to which these plots could be put, the villagers listened in attentive silence, but then some of the leaders began to speak up and soon enough everyone was chipping in. One woman asked how they were going to protect the young trees from the unwanted attentions of the goats. There ensued an animated debate on the various options such as creating enclosures or posting villagers to keep guard. One young farmer announced that he wanted to plant mango trees and nothing else. The team from Naandi heard him out, but sought to explain that planting several species of trees is a way of diversifying revenues and also an insurance policy against the vagaries of the climate and the market. By the end of the session, we had come to a decision as to which

plots would be planted on, and what planting methods would be deployed.

The same story repeated itself over the following weeks, village by village, and all of sudden there was a vast planting project in the pipeline. Jean- Pierre Rennaud and I sensed very early on that all the prerequisites were in place for us to succeed in this venture in conjunction with our partners. We calculated the budgets for planting and managing these plantations over a twenty-year period and assessed how much carbon would be stored by the trees, the extent to which the soil would be restored, and the fruit tonnages that would be produced. The Livelihoods funding committee then decided to invest €2.5 million in planting six million trees on degraded land, which will ultimately be able to store 1.3 million tonnes of carbon. Mahindra, a large Indian company, teamed up with Livelihoods and contributed additional financing so that the project could go ahead. Naandi created a large tree nursery in the centre of the valley where the saplings are grown, and then further nurseries in several villages to facilitate the process. Each village takes care of transporting their saplings and digging the holes for them, which is no mean task in itself—most things are done on foot in the region, the plots of land are often quite a distance from the village, and machinery is a rare commodity. On top of this, there is a window of just two to three months for the trees to bed in as the monsoon arrives. The planting programme includes intensive training on fertilising the soil using elaborate composting techniques. I've visited a number of these small compost centres and been shown around by local farmers who take an obvious pride in them. The organic material keeps mortality rates down by

nourishing and protecting the saplings and retaining a certain degree of humidity during the dry season.

David Hogg is one of the central cogs in this venture. Born into a family of New Zealand farmers, he first pitched up in India as an idealistic young student some forty years ago and has since become an Indian in heart and soul. ‘More Indian than the Indians’, as our friends have been heard to say. After spending several years at an ashram, David became a farmer in southern India, growing fruit, making cheese and breeding racehorses. He knows what making a living from the land entails. In his time on the farm, which is regularly frequented by herds of elephants, he has acquired an extraordinary knowledge of life cycles, plants and the complex alchemy associated with micro-organisms living in the soil. One of my great pleasures is accompanying David on a walk along the little paths that criss-cross the fields and woods of Araku, listening to him talk about the landscape around us and explaining the properties of the plants that he picks along the way. He joined Naandi a few years ago and is their advisor on agricultural programmes in several Indian states. He has spent a lot of time observing, listening and providing technical training for Naandi’s field teams of passionate young people, who hail both from the valley and the cities. Together with committed local farmers he has developed solutions which work and has thereby won the trust of villagers, who are only too familiar with unkept promises and understandably believe in deeds rather than words. Manoj, David and their field team have transformed Araku into a sort of laboratory for social, cultural and technical innovation, combining an ambitious vision with great attention to practical detail and effective

implementation—in other words, precisely what we look for in a project.

Four years later, the trees had been planted and the project's aims achieved. The coffee plants had been planted on the most suitable plots, the first mango trees had already grown to an impressive size, and the farmers were eager to have photographs taken of themselves standing next to their favourite trees. I noticed how much care everyone was taking over the upkeep of the replanted plots of land. One farming couple showed us the hut they had built on a distant plot: 'we prefer to sleep here, close to our trees, to stop the animals coming and harming them.' Little stories like this are hugely encouraging, but of course we have had our stressful times too.

28 One October day in 2015, we received some alarming news: a cyclone had hit India's eastern coast and Araku Valley. There were no details on the scale of the damage, but we knew the plantations had taken a battering. We feared the worst—so much effort undone in the space of just a few hours... When I visited the valley two weeks later, I could see that some plots had been badly damaged but that others, just a few hundred metres away, were intact. It seemed the wind had gusted along certain corridors, and it turned out that only 10% of the plantations had been affected. The villagers lost no time in clearing away the fallen trees and erecting structures to provide shade for the coffee plants exposed to the harsh sunlight, and the Naandi Foundation and the local farmers decided to replant the damaged plantations. A few years on, there is now no trace of the cyclone damage and the project is very much back on track.

The Naandi team have been active in Araku Valley for several years and over that time a dream had gradually taken shape: to establish coffee as the valley's flagship product and a symbol of its revival. What was to stop this magnificent and still unspoilt valley becoming the poster boy for conservation, supplying to the urban world coffee of outstanding quality grown with respect for the land and nature's cycles? Could Araku Valley not become a byword for purity and excellence? Given their difficult history and the poverty that still pervades the valley, such a stark reversal in the Adivasi's fortunes may have struck many as unlikely. And yet, step by step, Naandi started to turn this dream into an economic reality with a tangible human impact by setting up a cooperative which nowadays boasts a membership of 10,000 small-scale producers.

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Every year, farmers are being trained in how to tend to the coffee plants, enrich the soil using biodynamic techniques, and create the conditions of shade and humidity required for growing the best-quality coffee. The plots of land have been selected with the help of a French expert who has applied his knowledge of wine and vineyards to the business of coffee planting. Part of Naandi's success derives from the fact that it has not only managed to inspire local producers but has also engendered a healthy spirit of competition between them, with each farmer striving to grow the very best coffee. They have achieved this through a simple but effective expedient: every year, the foundation organises the Gems of Araku competition featuring an international panel of coffee experts from all five continents who judge the entries and award prizes to the best producers in the valley. The highest-quality beans

are collected by a now-famous and highly visible red truck, whose progress around the valley from village to village is attentively tracked by the locals. Everyone knows that the cooperative will pay double the usual price for the coffee that it collects. And there is a clever guiding principle: red truck status is not awarded individually but to a group of farmers who have collectively attained the required quality standard. This gives the most dynamic farmers the incentive to encourage their neighbours to greater heights.

30 The whole approach is underpinned by a marketing strategy targeted at discerning coffee lovers. With the support of Indian and French business leaders, the first Araku store was opened in the trendy Marais district of Paris. The packaging, the colours used, and the layout of the shop have all been designed to reflect the values that the young Araku brand wishes to convey. Several large French retailers now stock Araku coffee and companies are also serving it at their head offices in the French capital. A little after the Paris shop was opened, the brand was made available online in India and a tasting and sales outlet was opened in Bangalore. Other shop openings in major foreign cities are planned. A fragile but genuine connection has been established between two seemingly disparate worlds: the comfortably-off clientele of the big urban centres with their perhaps somewhat idealistic notions of the natural world, and the inhabitants of Araku who are striving to carve out a niche for themselves to avoid being swallowed up by an increasingly urban world.

In 2018, encouraged by the success of the initial planting programme, we and Naandi came up with an idea for an

even more ambitious second phase: instead of just replanting certain plots of land here and there, why not attempt to restore the whole landscape? At the scale of a village, this involves organising how the land is used from the tops of the hills all the way down to the floor of the valley. The sunlit upper levels are conducive to coffee growing, grazing pastures and orchards, while the lower levels are better suited to growing rice. Reforesting the hills to create shade and humidity for coffee involves rethinking livestock practices, preventing cattle from wandering, and growing fodder on certain plots of land. A number of villages have already embarked on the process and are always proud to show us around their reforested slopes. The Livelihoods investment committee was approached with a proposal for a major agroforestry project, and we have agreed to become involved in an initiative to restore 18,000 hectares in 300 villages. In order to scale up operations to this degree, relying on compost made by the farms would not have been feasible, and so a new mechanical compost production facility has been set up in the valley. Using the abundant local biomass, it produces natural fertiliser in large quantities which is then commercialised by the cooperative. The aim of this latest project is to recreate a productive ecosystem that is underpinned by smart soil, water and biodiversity management and is in harmony with the natural cycles of the living world. The idea is to stop wrestling against the natural world and instead to work with it, much as a practitioner of judo uses the strength of their sparring partner to their advantage.

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A few months later, I attended a meeting of the cooperative. A small and colourful crowd had squeezed into the large hall

where the sacks of coffee are stored after the beans have been harvested and dried. The ochre-red walls were decorated with those elegant Adivasi motifs featuring groups of small geometric figures rendered in black ink against an ochre-brown background and depicting scenes of village life. There were no portraits or paeans to a providential figure—in this setting, the collective is more important than the individual. The participants were sitting on floor, silent but by no means passive. I could read in their attentive faces part of the story that is being written here in this valley. A man of slender build, the president of the cooperative, began to speak. He went through the results achieved and set out some of the problems encountered. His colleagues from the cooperative office chipped in with their own observations.

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Then an older woman stood up to speak. Like most of the women in the valley, her ears and nose were adorned with rings—in Araku Valley, you display your wealth through the gold that you wear. This lady had had to contend with losing her husband a few years back, and she was proud of how well she had coped. A few feet away from her in the middle of the group, I spotted a woman who must have been about forty and a girl sitting next to her who must have been her daughter. They were both listening in silence, but their posture and gaze reflected how things are changing in this region. The girl was following the discussions very closely and you could tell that she was actively engaged—she was not casting her eyes down like most of the older women, and her gaze was lively and direct. My friends at Naandi later told me that the girl had enrolled onto the Nanhi Kali programme that the foundation set up a few years ago for girls of school age.

Several girls have had the chance to study outside the valley and they could have decided, like many children from rural areas, to stay on in the city and choose a different path in life. But instead they have decided to return to the valley and some of them are starting to take on positions of responsibility. Are they a tangible sign of revival, or am I being overly optimistic?

Will the Adivasi of Araku suffer the same fate as most other indigenous peoples, whose cultural identity has been eclipsed by the implacable forward march of the so-called modern world. Or will they manage to hold on to that identity and in so doing carve themselves out a place—*their* place—in the India of tomorrow? Could their very marginalisation help them to trace out a path which will force us to question our own certainties?

View the online photo album
of Livelihoods project in Araku Valley, India



On the Flanks of Mount Elgon

Lying between Kenya and Uganda, the gentle slopes of Mount Elgon seem to stretch so far into the distance that it can be difficult to make out the summit on the horizon, which is often shrouded in clouds. Far away and lower down towards the south, the massive Lake Victoria would be visible on a good day. Along with Mount Kenya, Mount Elgon is one of the two great sources of water in the country, its waters sustaining the densely populated regions that straddle Kenya, Uganda and Tanzania. But these days the lake is under enormous human and ecological pressure: 'Fifty years from now, if radical action isn't taken, Lake Victoria will be dead on account of what we are pouring into it', declared Professor Nyong'o in 2018. He is the governor of Kisumu, a Kenyan city and county bordering the lake. For a long time thought to be an inexhaustible reserve of fish, the waters of this landlocked sea that stretches across 68,800 square kilometres (the surface of Ireland) are gradually being asphyxiated by pollution from the cities, overfishing and erosion. But people here don't have the luxury of thinking about the future, their priority being to survive in the present: over half of the population is living on less than \$1.25 a day. The farms

dotting the slopes of Mount Elgon rarely exceed one hectare in size. Tens of thousands of farmers are struggling to eke out a living from the land and to feed their cattle, which they send up into what remains of the forests in the highlands. Farming practices are aggravating the situation: the treeless soil is left bare after the corn is harvested, baked hard by the sun and then pelted by heavy rains. The washout and the sediment-heavy waters that flow away are robbing the land of its fertility. Deforestation, the deterioration of the soil and poverty have given rise to an infernal cycle.

36 I am put in mind of a story told by Wangari Maathai who, on returning to her childhood village close to Mount Kenya, discovered that the trees had been cut down to make way for large expanses of monoculture. The giant fig tree in whose shade she used to sit had disappeared and with it the little spring in which she used to catch tadpoles. Wangari spent her whole life campaigning against the destruction of the environment and was involved in planting millions of trees with the other women from her Green Belt Movement—an initiative that won her the Nobel Peace Prize in 2004. When we set up the first Livelihoods fund in 2011, we got in touch and asked her to become the honorary president of our venture since she embodied so perfectly the spirit in which we wanted to act. We had the chance to meet her when she came to Paris, and she offered us her encouragement while politely declining our offer. This formidable campaigner with a large and colourful scarf wrapped around her head struck us as a little fragile, and when we learned of her death from a serious illness a few months earlier, we understood why she had turned us down.

I can no longer remember the exact circumstances in which we became aware of Vi Agroforestry, a Swedish NGO that has been present in Kenya and East Africa since 1983. Their Kenyan team invited us to visit some farms in the Kisumu region. We were immediately impressed by the agroforestry models they had developed with small-scale farmers: an intelligent combination of trees and crops, allied with simple techniques to increase yields while at the same time improving the organic content of the soil. A variety of trees provide fruit, firewood and cattle fodder as well as nourishing the soil with their leaves, fixing nitrogen, and facilitating the infiltration of water through their roots. Over the years, the technicians at Vi Agroforestry have perfected a whole range of farming practices which encompass plants, animals, soil and water, all of which they have set down in an extremely practical manual. In these regions where annual rainfall exceeds 1,200 millimetres a year, change can occur rapidly and in sometimes spectacular fashion. This can be both a good and a bad thing: vegetation is abundant and the trees grow quickly, but the heavy rains wash out the soils when they are bare. One can gauge the impact of the methods developed by Vi by comparing two neighbouring farms located on the same slope and with the same soil type. The traditional one is a sorry sight in the dry season, while the other has engendered a veritable oasis of green in the space of just four years by following Vi's methods. The thing that I find most convincing about this model is that it is adapted to farmers who often work by hand and who have no money. It is therefore possible to replicate it on a larger scale if we invest in growing and distributing young saplings in large quantities and setting up facilities on the ground to advise and train groups of farmers.

One January day in 2014, the Vi Agroforestry management sent us a proposal which immediately caught our attention, not least because of the scale of the project: converting 30,000 farms to agroforestry across the vast expanses of Mount Elgon. What also appealed to us was the possibility of improving the connection between these smallholders and the marketplace by bringing a major Kenyan dairy firm on board. Brookside is a partner of Danone and owns a milk collection centre in the neighbouring town of Kitale. It had been looking to increase the volumes collected from local cooperatives but had run into a whole series of obstacles.

38 Milk is a key part of the Kenyan diet both in the countryside and the cities, and the country is a major producer. Most farms have one cow and sometimes two, but the average yield per cow is very low on the farms around Mount Elgon—ten times lower than in Europe. The dairy cooperatives are small and rather unstructured. Despite the efforts of the Kenyan authorities, few have the capacity to offer services to farmers such as artificial insemination and veterinary care. And yet milk production is a lifeline for many Kenyan farmers since it provides a regular income that is within the reach of even a modest smallholding. That said, the animals need to be fed appropriately without causing further damage to the environment.

The programme proposed by Vi Agroforestry involved increasing the production capacity of smallholdings by focusing on what lies at the base of all agriculture: the soil. This was too often left bare between harvests, it had become depleted in organic material, and it was being washed out by torrential rains. The NGO offered to draw up an inventory

of the smallholdings of farmers and to help them design a Farm Development Plan incorporating several elements: the planting of trees carefully chosen on the basis of the needs of each farm, techniques for fertilising the soil using plant and animal waste, methods for managing water to avoid washout and encourage the replenishment of groundwater, and technical assistance with growing crops and raising animals. In all, some fifteen best practices were set out so that the farmers could easily implement their own personal Farm Development Plan. It was suggested that every participant join a local group of fifteen or so farmers who would meet up regularly to review the situation and update each other on what they had been doing and the results they had achieved. Lead farmers were trained in each village and given responsibility for chairing meetings and acting as contact people for the programme. With the support of NGO staff on the ground, they were also in charge of keeping precise up-to-date records of the actions undertaken. The widespread use of mobile phones in the Kenyan countryside meant that we could set up a system of reporting that each local group could adhere to. And the decentralised structure and way of working meant that at a relatively modest cost we were in a position to replicate the model on several thousand smallholdings, with milk-collecting cooperatives functioning as central hubs. However, this required high standards of management, and we have learnt from experience that this is not always so straightforward.

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Investing in this major project was an opportunity for us to address several crucial issues simultaneously: climate change, water resources, and living standards in rural communities. The planting of millions of trees and the regeneration of the

soil would serve to store large quantities of carbon. Better fodder for the cattle and better veterinary care would soon increase the yields per cow and thereby improve the ratio between the quantity of milk produced and animal methane emissions. In total, the positive impact on the climate would be of the order of a million tonnes of carbon over a decade. With our partners, we agreed to use a method to measure this impact that has been developed by experts and complies with international standards for the allocation of carbon credits, but we wanted to go even further and demonstrate the impact on water resources too, both locally and at the level of the drainage basin as a whole. The enrichment of the soil with organic material, the tree roots that retain the soil in place, and the drainage canals on each farm all serve to reduce erosion, facilitate water infiltration and increase the volumes of water available from springs in the dry season. Together with our partners at UNIQUE forestry and land use, a German consulting firm that specialises in managing forest and farming ecosystems, we decided to invest in developing a method for monitoring and measuring the impact on water resources which would be officially recognised by international standards agencies. It was an ambitious but potentially rewarding scheme that would demonstrate we were capable of managing and monitoring three key components—carbon, water, and farmers’ revenues—using simple and relatively cheap methods centred on the key element in the equation: the farmers and the farming practices they adopted.

But speaking of farmers generically, as I have done up until now, does not really do justice to the reality on the ground and still less to the women who are playing a critical role in

this initiative, as they do in most Livelihoods projects. Responsible for looking after the children and the home, working in the fields and performing many other tasks besides, women constitute the pillars of these rural communities. Here as elsewhere, it is often they who take care of the future too by forming and running savings groups so that they have contingency funds and money to pay for their children's schooling needs. Dairy production in particular, from feeding the animals to milking them by hand, is the responsibility of the women. But officially they are not recognised as farmers, they have no access to land rights, and they can only join a cooperative if they are left widowed. Was there anything that we and our Kenyan partners could do about this, given that we had no power to change the law or alter the division of responsibilities, which is deeply rooted in tradition? As it turns out, the management team at Vi is made up of politically engaged Kenyan women: Wangu, who is responsible for the NGO's activities in East Africa, Elisabeth, who is in charge of operations in Kenya, and Caroline, who is overseeing the Mount Elgon project. All of them have firm convictions as well as extensive experience. As soon as the project got under way, for example, they immediately made sure that training was scheduled at times when the women could attend. They were also determined to ensure that women sat on the boards of the cooperatives and that they received training to that end. Thanks to their intimate knowledge of rural communities, they were well aware that the situation of women could only evolve if the men were fully signed up to the process. And as so they came up with a 'household roadmap' and deployed it on an extensive scale. It is a method that enables a farming couple to conduct an inventory of their activities and to look

several years ahead, outlining how their farm will look in the future and how tasks and roles will be allocated. With the help of this instructive tool, a conversation can be had about their ambitions for the future and what needs to change. The process has inevitably given rise to certain tensions, but the teams at Vi have unassumingly and tenaciously stuck to their task, bolstered by changes within Kenyan society at large and in particular by the big strides being made in terms of girls' access to education.

42 In the course of working on this project, we became aware of the challenges of coordinating the activities of entities as diverse as an NGO committed to the public interest, a leading company with its business imperatives, an investment fund trying to meet its carbon offset targets, and various other public and private stakeholders. On paper, everything makes sense since our interests converge: increasing production by employing better methods is beneficial to both the producers and the industrial companies, and the model is positive for the environment as well as improving people's standard of living. In theory, the conditions for creating a virtuous circle are in place. But the most difficult part is establishing mutual trust and understanding between people and organisations with very different outlooks, agreeing on objectives and how to achieve them, and jointly defining the roles and responsibilities of each stakeholder.

We quickly came to realise that there were large gaps to bridge. On the one hand, the NGO understood that working with a private company committed to collecting the region's milk was an essential economic lever, but it remained wary

of these business types and fearful of being perceived by the farmers as agents of the company. On the other, the company managers had been won over by the accomplishments of the NGO on the ground but were unsure that it understood the constraints on the firm and would be able to collaborate effectively.

On top of this, there was the radical new departure of financing from Livelihoods in the form of an investment rather than a grant, which is what the NGO had been accustomed to up until that point. The difference lies in a certain pressure on achieving results. Our investment involved providing the necessary financing so that the programmes could be rolled out on the ground, but it also needed to generate a return for our investment partners and for the purchasers of the raw produce in the form of carbon credits or the tonnage of milk produced. Producing an evaluation report would not suffice—we needed tangible and measurable results. In the end, it took us a year to size each other up and reach a mutual understanding before we were in a position to launch operations. Once again, the key to the project was the people involved. A year was needed to reassure each other, fine-tune the arrangements, and establish a relationship of trust, and friendship even, between very different groups of people, all of whom however were acting in good faith and were determined to make a difference.

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We also had to contend with the challenges of managing a project on such a scale in complicated circumstances. A comprehensive management framework was set up which included performance monitoring indicators, a system for

providing feedback from the field, and the creation of a committee that would convene on a regular basis. Over the first two years, everything unfolded as planned in terms of the collaboration with the Vi Agroforestry teams, the farmers coming on board, the general commitment to the programme, and the involvement of the cooperatives. This was born out by the facts and figures—there was the odd delay or difficulty here and there, but nothing serious. But as the months went by, we began to notice a discrepancy between our objectives and actual performance. We conducted an audit of the finances, the management systems and the functioning of the programme, the results of which came through a few weeks later. They revealed a number of shortcomings, including farmers being registered on the programme despite not being a part of it, and training sessions being charged for although they had not actually taken place. It was nothing major but was a cause for minor alarm nevertheless, and so we decided to thoroughly review the organisational set-up on the ground, the performance of the teams, and the management and monitoring systems. Over the months, it seemed that the team overseeing activities in the field had somewhat lost touch with the situation on the ground as they were too busy with admin, data analysis and report writing. They were spending too much time in front of computer screens and in meetings, and not enough in the villages. Our partners at Vi Agroforestry were initially shocked by the audit conclusions but they reacted in a positive way, showing their willingness to revise their way of working with our help. Laurent Jubert, formerly a senior manager at Danone and now retired, offered a helping hand. I know him well and had faith in his managerial experience and his ability to listen. I also knew that he would be able to

see to the heart of the problem and would come up with bold proposals if necessary. He was dispatched to Kenya with a mission: to do what was necessary in conjunction with our partners to get the project back on its feet, and to get our partners' feet back on the ground!

To be continued...

View the online photo album
of Livelihoods project in Mount Elgon, Kenya



A Living Shield Against the Cyclones

From the snowy summits of the Himalayas to the shores of the Indian Ocean, the Ganges and the Brahmaputra ('son of Brahma') transport their alluvial deposits over a distance of nearly 3,000 kilometres, fertilising the great plains of Bengal in the process. In the immense delta that straddles India and Bangladesh, the waters split into myriad branches, forming hundreds of islands that are at the mercy of the river: 'The river amuses itself by destroying one bank and creating another. The king of the morning is a beggar by night-time', as a popular Bengali song has it. The villages of the Sundarbans, some one hundred kilometres south of Kolkata, live to the rhythms of the river. This is a place where land and water compete and merge with each other incessantly. The islands, protected by mud embankments that people tirelessly seek to maintain with paltry resources, are at the mercy of the waves whipped up by the cyclones that sweep across this corner of the world with a frequency and intensity that is increasing with climate change. The price to be paid is the incursion of saltwater, which ruins the rice and vegetable crops. Engraved in the memory of everyone here is the destruction wreaked by Aila, a terrible cyclone which in May 2009 submerged the

embankments, battered the fragile mud and wood houses, and devastated the crops. At the time, the villagers noticed that the mangrove swamps that still subsisted in certain places offered an effective form of protection, a sort of living shield: the waves crashed up against the mangrove trees and were prevented from reaching the embankments. The problem was that the mangrove swamps had largely disappeared, destroyed by ignorance and the demand for firewood and building timber.

48 Reconstructing this natural shield has become the project of a small Kolkata-based organisation run by two remarkable individuals: Roy Chowdhury and Ajanta Dey. Roy is a nature lover who some years ago quit the world of business to devote himself full-time to preserving plant and animal diversity. He is the founder of Nature Environment and Wildlife Society (NEWS), an NGO which immediately impressed us with its professionalism and determination. Ajanta has a scientific background and shares Roy's passion for conserving the living world. She is also a people person with a deep understanding of the people who live in the Sundarbans, especially the women. Both are deeply rooted in Bengali culture and over the years, with their blend of empathy and pragmatism, they have established a relationship of exceptional trust with these villagers living so close to the city and yet so isolated in the face of the elements. In the course of their many exchanges with the local population, they picked up a very clear message from the women's groups still traumatised by Aila and sensed that the time and the circumstances were right to take action. The NEWS team had both the skills and the networks to undertake a highly ambitious project to resurrect the

mangrove swamps in the Sundarbans wherever the conditions permitted. But to succeed in planting millions of mangrove trees across thousands of hectares, they needed to scale up their operations and to have the necessary financial and human resources at their disposal, as well as sufficient time. It was at this point that our paths crossed.

In the space of a few months and with expert help, the detailed groundwork was carried out: specific branches of the river were selected, discussions took place with the villagers, the planting areas were identified, species were chosen and densities agreed upon, the tree nurseries were prepared, and an organisational structure was set up that could swing into action rapidly. We had to plan further ahead too, since planting on its own would not suffice; we needed to ensure that the plantations would be monitored and protected so that the conditions were right for them to flourish into a genuine ecosystem in which fish and crustaceans could also thrive. The Livelihoods fund decided to invest in the Sundarbans and to support this mangrove restoration programme for a period of twenty years. And thereupon began a battle between land and water which will always stay with me as one of the highlights of the Livelihoods adventure.

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The Sundarbans are an extreme environment—it might not be as extreme as at the frozen poles or in the great deserts of Africa, and yet life feels just as fragile here, with the locals having to contend daily with the water, the mud and the river currents. For millions of people living in the Sundarbans, surviving is first and foremost about extracting from the nutrient-poor soil and the river enough to feed a growing

population. Each island is the product of the incessant labour of men and women who are forever building and rebuilding the large mud embankments that shelter the villages: it is a complex patchwork of fields and narrow paths that are painstakingly maintained and then wrecked every year when the heavy monsoon rains arrive.

The river is a both of a source of life and menace to it. Wrapped in their colourful saris with water up to their shoulders, women wielding dip nets fish for shrimps and small fish for the family meal. Along with agriculture, fishing is their principal resource. A whole community of small-scale fishermen navigate the various branches of the river on fragile craft, casting out their nets as the tide ebbs and flows. Though isolated, the Sundarbans are not cut off from the outside world and they feel the ripples of a rapidly changing India. The huge conglomeration of Kolkata is close by and this major market would offer an obvious outlet for high-quality produce, if the small-scale producers of the Sundarbans were able to organise themselves effectively. The Sundarbans are also a transit point for the hundreds of boats of every shape and size that transport merchandise between India and Bangladesh on a daily basis. The dull hum of their diesel motors provides the sonic backdrop to life in the Sundarbans. Further upriver, human activity pollutes the quality of the water while the dams affect the flow of the current. One sure indicator of this is the fate of the *sundar*: this species of mangrove tree, which is specific to the region and gives it its name, is at threat of extinction. To honour a visitor, the villagers still make splendid crowns out of *sundar* leaves, which is an especially touching gesture considering how rare the *sundar* has become.

Opposite the inhabited islands lie the wild islands—natural reserves officially out of bounds to humans which are populated by some one hundred tigers. They are well adapted to this aquatic environment and swim from island to island to hunt deer, occasionally venturing into the villages when food is scarce. They will also sometimes attack a fisherman who has clandestinely come to cast his net in the fish-rich waters of these ‘tiger islands’. The tiger population has declined sharply in the space of a few decades on account of poaching and market demand in Asia, where all sorts of properties are attributed to tiger parts and products, and high metal fencing has recently been erected by the Indian authorities to separate the human and tiger worlds. The local perception of this legendary animal is a blend of fear and fascination. On the shores of the tiger islands, I saw small altars and offerings to Bono Bidi, the goddess of the forest. The incursion of a tiger into a village or an attack on a honey collector, wood gatherer or fisherman regularly makes the headlines in the local media and reignites the debate between environmentalists and the defenders of village communities. Our NGO partner NEWS is at the centre of this debate: they are well aware that their core mission to protect nature cannot succeed if it conflicts with the will of the local population, and so they are constantly exploring concrete ways of getting these two worlds to co-inhabit.

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Over the course of four years, the teams at NEWS and the villagers would pull off a remarkable feat: together they restored several thousand hectares of mangrove swamps in order to protect and feed the local population. As is the case with most of our projects, the women were at the heart of the

action. It was they who harvested the mangrove seeds and diligently looked after the nurseries of young saplings, transporting water to tend to them during the dry season. At low tide, groups of women bearing the mangrove saplings would head out onto the vast expanses of mud to be replanted. For several hours until the water rose, sometimes with mud up to their hips, they would advance with their bodies bent forward, planting a mangrove sapling every two paces. One afternoon I was with Roy out on the plantation and we said hello to a group of women who were relaxing, having just finished their planting for the day. The water was already high and they were sitting and reclining in the water in their colourful saris, chatting and joking. I sensed that Roy was anxious, which surprised me as everything seemed so tranquil in the fading light, with the vast river stretching out before us. ‘I hope there aren’t any crocodiles on the prowl. I don’t like the women hanging around here for too long’, remarked Roy.

52

A boat is the main working tool of NEWS. The NGO has fitted out a large, flat-bottomed craft in which they can navigate up the branches of the river and get as close as possible to the areas to be replanted. Between the islands, we cooked and slept on board, from time to time docking at the jetty of a village to hold a meeting or pick up a group of planters. The on-board cook would hail a fisherman and buy some fish off him for the evening meal. We used to review the day’s events on the boat and prepare for the next day, with maps and various documents spread out over the deck. With GPS, we colour-plotted the areas that had been replanted and, as the weeks went by, our computer screens filled up with colour, but there were a few unwelcome surprises too.

One April morning, Ajanta called us to say that a large mudflat that had been painstakingly replanted a few months previously had been displaced by the strong currents and thousands of mangrove saplings had been carried away by the river. I could hear the fatigue and despondency in her voice. In such circumstances, you have to possess cast-iron conviction to resist the temptation of throwing in the towel.

Another problem was how to ensure that the still-fragile saplings would not be grazed upon by the cows that wander along the shores in search of food, or be damaged by the passing boats. In each village, guards were posted to keep an eye on the plantations—a relatively effective solution, but costly and not really sustainable. In the course of discussions with the women doing the planting, a new idea emerged: they suggested keeping watch over the plantations themselves. In exchange, the NGO pledged to help them to develop commercial activities that would increase their income, providing guidance on raising animals, improving their agricultural techniques, and commercialising their produce. This marked a major new departure for NEWS; shifting from nature ‘conservation’ to ‘development’ requires very different skills, working methods and tools.

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They were initially wary of, and certainly unfamiliar with, what they perceived to be the world of money and business—this was not why they had become involved in NGO work. Our discussions on the subject were lengthy and impassioned. With their intimate knowledge of the communities of the Sundarbans, they appreciated that change was needed, and tentatively but bravely they decided to embark on this new venture while remaining faithful to

their ecological mission. We jointly decided to commission a specialist marketing consultant to conduct a study on commercialising produce from the mangrove swamps.

54 A few years later on a return visit to the Sundarbans, I was immediately struck by how much the mangrove trees had grown. They had started to form a genuine forest along the shores. A group of young fishermen joined us on board and sat cross-legged on the deck, telling us about how their hauls had increased and how shellfish were repopulating the mangrove swamps. They proudly described how they were defending ‘their’ swamp against unwanted intruders who might damage the environment. They asked Ajanta if it would be possible to procure an official document that would give them more authority to intervene when necessary. They also told me about the trouble they were having paying for equipment and repairs to their boats, and their reliance upon moneylenders who drove a very hard bargain. Their hope was that one day they would be able to commercialise their fish directly rather than having the fruits of their labour snatched from them by the middlemen, who were taking advantage of their isolation and their need for immediate cash to provide for their families. It was clear that we still had a long way to go.

A little further on, we got onto some curious little motorised tricycles that had been cobbled together locally and set off on a bumpy ride over disjointed cobblestones to a nearby village. Night had fallen and we rode through virtual darkness. In a dimly lit building, some one hundred men and women were sitting on the floor of the large communal hall: these were the

members of the new cooperative. They had laid out a fine selection of organically grown fruit and vegetables on large wooden tables. The cooperative leaders explained that they were selling this produce in Kolkata and that they had created their own Sundarbans brand called Badabon Harvest. The brand image was associated with fresh and healthy produce, respect for nature, and the well-being of the producers. The brand was starting to earn itself a reputation in the markets of the city and revenues were on the increase. The cooperative planned to procure itself some trucks that would serve as itinerant sales outlets, and at a later stage they wanted to set up a fresh fish operation in conjunction with the small-scale fishermen. I looked at Ajanta and gave her a wink: she had become quite the little businesswoman! We were still laughing about that as we thought back to all those discussions under the stars with her team, when we used to put the world to rights on the deck of a boat at anchor, gently bobbing in the current.

55

Epilogue

Wednesday 20 May 2020: Ajanta sends an urgent message. An extremely powerful cyclone called ‘Amphan’ was on its way and would hit Kolkata and the Sundarbans that evening. We followed developments by the hour, though communications were intermittent. For several hours, winds of up to 260 kilometres per hour and torrential rains battered the villages of mud houses, ripping off the thatched roofs, devastating the crops and uprooting the trees. The inhabitants took shelter in the few buildings made of concrete. We were all extremely

worried, desperately hoping that the earth embankments protecting the islands would hold and that the waves of saltwater whipped up by the screaming winds would not flood the paddy fields, adding the threat of famine to the destruction. The very next day, amid scenes of desolation, the NEWS teams were out in the villages. The damage was admittedly extensive, but they confirmed that the 4,000 hectares of mangrove trees planted since 2009 were intact—the odd broken branch here and there, but nothing major. The mangrove plantation had held firm, and better still it had played its role of living shield. The mangrove trees were by now large and robust, their stilt roots forming a biological lattice that was capable of stopping the waves and protecting the embankments. The inhabitants, and in particular the many thousands of women, who had pulled off the feat of planting millions of mangrove saplings in the mud, had been rewarded for their efforts. In these regrettably dramatic circumstances, we had proof positive of the ecological, social and economic value of this investment. We made an urgent appeal to Livelihoods’ corporate partners to provide emergency aid, contribute to the repair of the houses, and supply seeds and food.

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View the online photo album
of Livelihoods project in Sundarbans, India



Simple Answers to a Complex Question

Embu, Kenya, 5.30am Janet gets up earlier than usual. She wakes up her eldest daughter Numa, who will be twelve this coming summer, and lights a fire to heat up the cornmeal porridge. It is gobbled down quickly because this morning Janet and her neighbours are on wood detail. The other women are already there and can be heard laughing outside Janet's small house at the foot of Mount Kenya, which is visible in the distance. The little band heads off on foot, covering several kilometres to get to the neighbouring forest, and then they get to work. They cut the accessible branches off with machetes; most but not all of it is dead wood. Numa helps her mother to put together some large bundles. After a few hours' work, the women take a breather before hoisting the heavy bundles onto their backs and heading back home. Janet is carrying around 20 kilos of wood, held in place by a strap wrapped around her forehead. Numa is also carrying a small bundle and it is an arduous walk home for her.

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Like her neighbours, Janet has for years cooked on a traditional hearth consisting of three large stones upon which a pot is balanced. Also following tradition, she cooks in a little

hut separate from the house. The three-stone hearth, the *jiko*, consumes a lot of wood and produces a lot of smoke. Much of the heat, and plenty of smoke, escapes through the sides, and the walls of the kitchen are covered in black soot. For several hours a day, Janet breathes in this toxic smoke surrounded by her children. The youngest one is asleep on her back. But the previous month at a meeting of the women's group from her village, a young woman came from the neighbouring town of Embu to present to them a wonderful little device: a ceramic and metal stove painted a pretty green which consumes half as much wood, heats up much more quickly, and hardly smokes at all. It is also stable—an important consideration for Janet, who still has painful memories of the burns she suffered when a heavy cooking pot fell over onto her leg. The Hifadhi stove ('to preserve' in Swahili) is made by a small firm in Embu and sells for 300 Kenyan shillings (around \$3). Janet hesitates since 300 shillings is not a negligible sum for her, but ultimately the demonstration wins her over and she puts her name down on the list kept by the leaders of her group. A few weeks later there is much excitement in the village when a truck arrives carrying 85 new stoves ordered by the women of the village. Four out of five families have decided to purchase a Hifadhi, which will subsequently occupy pride of place in their homes.

According to the United Nations, Kenya has lost 50,000 hectares of forest in recent years—an area five times the size of Paris—and only 3% of Kenyan soil is now forested. Wood and charcoal are the main cooking fuel, and their use is ubiquitous in rural areas. A traditional household consumes an average of 13 kilos of wood a day. The objective of the

Livelihoods-Hifadhi project is to massively reduce wood consumption and to help the villagers to replant young trees that will provide them with fruit, fodder for their animals, and fuel. By combining replanting and a reduction in wood consumption, the Livelihoods model is designed to be carbon neutral. Kenneth and Aaron run Climate Pal, the social business that distributes the stoves. They realised that the best way of reaching as many families as possible in very isolated villages was to work with the many groups set up by women to put aside savings and help each other cope with the vicissitudes of everyday life. Mobilising these groups was absolutely key to the success of the Hifadhi. In the space of a few years, 80,000 families were equipped with the stoves and a further 40,000 will be equipped in the coming year. These more energy-efficient stoves will end up saving some 10,000 hectares of forest (equivalent to the surface area of Paris) and avoid more than two million tonnes of carbon emissions over a ten-year period. So why not extend this model right around Mount Kenya and ultimately to the whole of the country?

59

Toublongo, Burkina Faso, 9am. The sun is already beating down on the scorched earth as the dry season draws to a close in the north of Ouagadougou. The villagers seem overwhelmed by the light and the heat, the animals are huddled in the shade of the mud walls, and nothing is moving. Work in the fields will resume in a few weeks' time when the first rains arrive—assuming they do. But today Awa is in a hurry. She is joining the other women from her village gathered in the small square at the entrance to the market town for a workshop on making the energy-efficient stoves that will

replace the traditional three-stone open hearths. Well not entirely replace, actually, since the three stones symbolise the household: the union of a couple and a family. Dispersing the three stones signifies rupture and the destruction of the family. It has taken all the astuteness of an NGO to invent an improved stove that incorporates the three stones and therefore respects tradition but also considerably reduces wood consumption. In this northern region of Burkina, wood is especially rare and it has to be collected from further and further afield. The women cover an average of five kilometres with their loads on their backs, but with their income they cannot afford to use other fuels. Portable gas stoves do exist but they are beyond the means of these village women and there is no gas carboy distribution network nearby.

60 Awa and her neighbours start by collecting clay from a termite mound close to the village, which they transport in a cart pulled by a donkey. The clay is carefully wetted and mixed with chopped straw and donkey manure to form a compact and flexible paste of an attractive ochre colour: this is the loam with which the houses in the village are built. An activity leader from Tiipaalga, Livelihoods' partner NGO, explains to the women the stages in building the stove and gives a demonstration. The loam is rolled into sausage shapes which are then wrapped around in circles to form the walls of the stove, and a wooden measure is used to mark out the exact size of the opening for the cooking pot. The famous three stones are set within the loam walls and serve to support the pot. The atmosphere is upbeat and the women sing and joke. Within a few hours some twenty large stoves have been made and set out to dry in the sun. In a few days' time, they will be

transported to their houses and serve as open-air kitchens, which the women will decorate with colourful motifs. Awa gets a neighbour with a mobile to take a photo of her sitting in front of her new stove with her new infant on her lap.

Tiipaalga's energy-efficient stoves are perfectly adapted to the local context: they reduce wood consumption by 60% in this arid region where desertification is being accelerated by human activity, they make use of local materials which are free and accessible, and they are made by the women themselves using simple methods that have been perfected by the NGO so that they can be replicated from village to village. It came as no surprise that almost all of the women in the village jumped at the chance to attend the workshop offered by Tiipaalga and to adopt the new stove. To complement our rural energy programme, the Agence française de développement (AFD) is helping us to roll out with our Burkinabe partners an agroforestry project to help farmers to increase their production and income using simple but effective methods. These include stone cordons to retain water during the rainy season, composting to replenish the organic content of the soil, the planting of hedges, and the building of grain warehouses so that they can avoid selling their produce when market prices are low.

61

Over the course of three years, the teams at Tiipaalga have done remarkable work in village after village. Thirty thousand rural Burkinabe families are now equipped with these energy-efficient stoves that are carefully looked after by the women. Our partners at Tiipaalga suggested that we extend the project and double the number of beneficiaries, and,

though in principle we were very much in favour, we were overtaken by dramatic and bloody events in the country. Violence perpetrated by jihadist groups in the north forced many people to flee their villages. Burkina Faso, which translates as the 'land of honest men' and whose people have a reputation for being peaceful and level-headed, descended into a spiral of violence like a number of other countries in the Sahel. We were in two minds: giving up meant leaving the field clear for those determined to impose their will by force, but did we have any right to expose our teams to the rapidly escalating risks? The courage and the tenacity of the Tiipaalga leadership were impressive. With great sangfroid, they organised themselves so that they could keep going, reducing their presence in the zones most at risk, supporting their teams, staying in touch with the locals, and keeping the project afloat as best they could. Events in the world at large often leave a sour taste in the mouth...

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Ayacucho, Peru, 3pm. At more than 3,000 metres above sea level, the rocky landscapes of Ayacucho and Huancavelica in the Peruvian Andes, with their fertile valleys and snow-capped summits, are a dream destination for any hiker in search of adventure. But living in this environment on a permanent basis is another matter entirely.

The temperature plunges below zero at night, potato and quinoa crops struggle to cling to the steep slopes, and above all there is the isolation. Some remote villages in the mountains are only reachable by endlessly winding tracks, and the last few hours have to be covered on foot. In this region, where economic development and technology are still lagging far behind, 80% of families use wood for cooking and heating

their homes. The traditional hearths, which consist of stones set into the ground, produce toxic smoke that is a health hazard, and the fact that they are fuelled by wood contributes to deforestation. In the Peruvian Andes, the fire in the hearth is virtually never allowed to go out so as to conserve heat in the only room in the house.

And yet alternative technical solutions exist. We have known for a long time how to make smokeless stoves that don't consume a lot of wood and heat efficiently. The challenge lay not so much in identifying the most suitable technology but in ensuring that the solution was affordable and accessible for the very poor and isolated families of the Andes. We were put in touch with the Instituto de Trabajo y Familia (ITYF), a small NGO based in Lima which has developed a simple and highly accessible solution. Their enhanced model of stove can be constructed in less than a day using clay bricks and very durable metal parts that are manufactured in a Lima factory and supplied by ITYF. This brick stove, which looks a little like those to be found in Scandinavia, occupies pride of place in the home, and in the evenings the family gathers round it. Its simplicity is matched by its efficiency: it reduces wood consumption by around 60%. Thanks to the enclosed hearth and the chimney that channels the smoke to the exterior, the air indoors is breathable once again. The women can now decorate the previously soot-covered walls in bright colours and significantly brighten up the interior of their homes.

63

But how do you equip thousands of families who live between 3,000 and 6,000 metres above sea level? The true

innovation here lies in the remarkable human chain that ITYF has succeeded in creating so that all the villages identified, however isolated they may be, can benefit from this solution. Masons, teachers, mayors, doctors and volunteers work with the ITYF teams to raise awareness in the villages, transport material in trucks loaned by the local authorities, train the village masons in how to build the stoves, and advise the women on how to use the new equipment. This structured network and team effort really does ‘move mountains’.

64 The improved stove results in a healthier community in more ways than one. As well as eliminating pollution within the home, the new stoves have a second burner so that the women can boil water at the same time as they’re cooking. The drinking water in Ayacucho and Huancavelica is often polluted by the effluents from the village and constitutes a significant health risk for the inhabitants, affecting children’s development in particular. Access to boiled water therefore represents a key advance.

Following an in-depth study to understand this model and confirm its effectiveness, the Livelihoods investment committee decided to invest €3.5 m in equipping thirty thousand families and to monitor the use of these stoves over a period of several years. We estimated that one million tonnes of CO₂ emissions could be prevented.

I worked with Arquimedes Hamani, who is the local coordinator of the programme. A native of a neighbouring valley, he is in charge of the team that visits the villages. We were greeted by a group of women sporting the traditional felt hats

worn by the women of the Andes. They had prepared a meal of potatoes of a remarkable variety of taste, size and colour. Initially, they listened to us in polite silence but soon enough they actively engaged in the discussions. The ITYF team presented the equipment that would be supplied to each family in addition to the improved stove: sealed receptacles for storing boiled water and flasks for the children so that they could take the water to school. To encourage them to wash their hands regularly, barrels of water and soap would be installed in front of the houses in a simple arrangement, and each family would also receive free worm infection treatment for their children.

This kit is complemented by awareness-raising sessions and training in the steps to take to prevent illness, particularly in vulnerable situations: ensuring the best possible standards of hygiene when women are giving birth at home, systematically washing one's hands, and eating a balanced diet. Seeds are supplied for free so that families can grow a variety of healthy vegetables and gradually change their eating habits. The ITYF team and its network of partners make a point of advising families at each stage. The teachers make sure that the children have brought their flasks to school and alert the network of ITYF volunteers if any of them show signs of illness. The mayors pass on the villagers' requests for assistance, and a supervisor at the level of the village guides the women on how to use the stoves correctly and to maintain them. In the Andes, community solidarity is the key to survival and the success of the ITYF model is built on this principle. Within a year, thirty thousand families were kitted out. This is a lot, but there is scope for doing so much more and we are already thinking

of how we can take things further if our partner thinks this is viable.

66 According to the World Health Organization, nearly 4 million people die every year from exposure to toxic fumes emitted by traditional hearths, most of whom are women in Africa, Asia and Latin America. The consumption of wood and charcoal is rising in the countryside but also in the towns and cities, especially in Africa, and it is a significant cause of deforestation, which in turn accelerates the process of desertification. Year on year, it is possible to see this increasing pressure on forest cover in satellite images. These days, solar energy is much more accessible but it still doesn't work very well for cooking, or at least not when the women are carrying out so many other tasks at the same time. Gas is an appealing solution and its use is growing in the cities, but it will be a long time yet before it is an accessible solution for the millions living in rural poverty. This situation inevitably prompts us to spend a lot of time examining the latest, much-hyped technological solutions and vying to come up with next innovative gadget. The myth of a technology that will solve everything in one fell swoop is a tenacious one. But our partners in Burkina, Kenya and Peru have amply demonstrated that the best form of innovation consists of combining a technical solution with a business model tailored to the social context in which they are going to be implemented.

On a dazzlingly sunny Sunday in April, the Paris Marathon is in full swing. Over 60,000 runners of every nationality are making their way through the streets of the city on a grand loop that takes in the Bois de Boulogne in the west, the castle

in the Bois de Vincennes in the west, and the banks of the Seine. They have descended on the capital by car, train and plane, and hail from pretty much everywhere, some of them from very far afield. Our partners at Schneider Electric, the main sponsor of the marathon, have decided to offset the 26,000 tonnes of greenhouse gases emitted by the event by using the carbon credits from the enhanced Livelihoods-Hifadhi stoves, which have also saved millions of trees in the Mount Kenya region. As is often the case, the east African runners are in the lead. Lean almost to the point of fragility, they seem to float over the tarmac. The Kenyans and Ethiopians forge ahead and it is barely 11 o'clock when Purity Rionoripo, a 23-year-old Kenyan woman, breaks the Paris Marathon record, crossing the finishing line to the roar of the crowd and a shower of confetti. The moment is caught for posterity by the television cameras. At the same moment in a small village at the foot of Mount Kenya, Janet is preparing the family meal on her wood-burning stove. The previous day, she completed her own marathon. She and her daughter covered several kilometres on foot to gather firewood, and she returned home with a bundle of wood weighing over 20 kilos on her back. Two women whose destinies are inter-linked, in a subtle but very real way, by the work of Livelihoods.

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View the online photo album
of Livelihoods projects in Kenya,
Burkina Faso and Peru



The Colourful Reinvention of Batik

It is a bitterly cold winter's day in a Lyon suburb, and probably even more so for our Indonesian friends who have just arrived from the warm and humid climes of Sumatra after a brief stopover in Paris. But this doesn't seem to unduly bother Bambang, the head of Livelihood's partner NGO Yagasu, or the small group of warmly wrapped-up women accompanying him who are from the region of Medan, a large city in North Sumatra.

69

The journey down to Lyon in the TGV was high-spirited as we recalled the funniest episodes in the huge project that the Yagasu team had successfully pulled off: restoring the mangrove swamps that had been damaged by ignorance and the seeking of short-term profit and then finished off by the huge tsunami waves that battered the coasts of Sumatra a decade ago. In the space of three years, with the help of the inhabitants of the coastal villages and investment from the Livelihoods fund, Bambang and his team replanted more than 6,000 hectares of mangroves. More recently, we decided to up the ante again by investing €6 million to replant the parts of the coastline that have not yet been restored. But on that particular day, we had not come to Lyon to talk about

plantations. The Yagasu delegation was greeted by our partners from Hermès in a large workshop with bay windows. It is here that the renowned company makes its superb silk fabrics. At first sight, the juxtaposition might seem strange: what common ground could there be between planting mangrove trees in isolated Indonesian villages and the manufacturing of luxury items in a Lyon silk factory?

To answer that, we need to step back a few years: Hermès has been a discreet but extremely loyal investor and partner ever since the first Livelihoods fund was set up in 2011. It took me a little while to get to know Hermès better and I only began to understand what made the company tick when I visited their workshops in Pantin just outside Paris. I got the chance to talk to their leather craftsmen and see for myself the importance they attached to precise technique and the tiniest detail, often barely visible to the naked eye. It was clear that showboating had no place here. You can't pretend in this profession and there are no shortcuts—you have to patiently learn your trade.

Perhaps that's why everybody immediately hit it off when we settled down around a large table in the Lyon workshop. Our Indonesian friends unwrapped the fabrics they had brought along and spread them out so that we could appreciate the colours, touch the material, and admire the finish. Everyone crowded round: the top dyeing specialists, designers and workshop managers were all present. The Yagasu team was bombarded with questions: 'How did you obtain this superb ochre?' 'How do you set the colours on the fabric?' 'Where are those superb fabrics made?' Bambang then told the extraordinary story behind this batik, which the villagers

of Sumatra had reinvented using the new mangrove trees. They had rediscovered the traditional techniques of making dyes using mangrove bark—techniques that had been abandoned in favour of chemical dyes, much to the detriment of the environment. Batik factories, which are often lacking efficient wastewater treatment systems, produce large volumes of polluted water that destroys biodiversity further downstream. Yagasu has spent several years perfecting the processes for making natural dyes from mangrove trees. The range of colours has expanded: from the dominant browns and ochres at the outset, there has been a gradual shift towards more vivid yellows and reds. In the villages, the women have been trained in using computer software to design the motifs. Looms have been installed and these ‘natural’ batiks are now sold by stores that specialise in high-quality products.

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I was quickly out of my depth on the technical details but as I observed the attentive faces, I sensed a mutual respect between these village women in traditional veils who hailed from a distant island and the representatives of this prestigious brand, the majority of whom were young women who lived in a major European city. They were listening and talking to each other as equals, as if geographical and cultural distance had been abolished for a brief moment as they indulged in their shared passion. There were of course considerable differences between these two worlds, and getting them to work together was going to be a gradual learning curve, but the momentum was there right from the outset. Pierre-Alexandre Bapst, the director of sustainable development at Hermès, played a pivotal role. Very committed to the Livelihoods project as well as being immersed in the corporate culture of

Hermès, he was able to find the right ways forward and to seize opportunities when they arose. One day, Pierre-Alex called me: the human resources department had asked staff if they would be interested in spending a week planting with the teams from Yagasu. In the space of two days, eighty people volunteered and in the end around fifteen men and women of varying ages and job descriptions were selected from various sites. I met them before they left for Indonesia and we discussed this major mangrove restoration programme that they were about to discover. I described the days they would be spending in the mud planting mangrove saplings and the villagers they would be working with, and their enthusiasm was palpable.

72 Bambang Suprayogi is a remarkable person, like so many of the NGO leaders I've met and without whom no Livelihoods project could have succeeded. He has a combination of qualities that you rarely find in a single individual: he is a relentless champion of the environment, an avid consumer of scientific research, and a creative entrepreneur who will stop at nothing. For a long time he worked for the forestry commission in Sumatra and became a leading specialist on forest ecosystems threatened by growing pressure from oil palm and rubber tree plantations. Also a recognised expert on elephants, he has acted as a consultant for several Asian countries in this domain. Indeed, when he decided to set up an NGO after leaving the forestry commission to help repair the damage caused by the tsunami, it seemed natural to call it Yagasu (the Indonesian word for elephant). Bambang grew up on the island of Java, where his family had a small business that his wife continues to run to this day. He was quick to realise that

nature conservation is only possible in conjunction with the local people whose livelihood depends on those natural resources, and that Yagasu has to take into account both sides of the equation.

Some years ago, the government of the time granted large concessions all along the coastline to businessmen who had promised to create industrial aquafarms on these sites. They duly did so, with many focusing on farming shrimps for export. But to create these big aquafarms, they had to dig large basins that were filled by the tides, and in the process they destroyed much of the mangrove swamp. A few years later, diseases spread on these farms and gradually they had to be abandoned. As a result, the coastal villages were left completely in the lurch: the mangrove swamp that had been their source of fish and crustaceans had disappeared, and so too had the promised jobs on the industrial aquafarms. Yagasu's master stroke was to devise an aquafarm model that was integrated into the mangrove swamp. When a village commits to restoring the destroyed mangrove habitat by planting thousands of mangrove saplings, it is helped by the NGO to create family or community farms amid the mangroves. These are natural habitats for fish and crustaceans, including the soft-shell crabs that are so sought after in the markets of the region and especially in nearby Singapore. Bambang explained to us that scientific research had identified a species of mangrove whose leaves contain an antibiotic. When they fall into the water, the leaves help to protect the species being farmed. Yagasu is highly attentive to maintaining natural balances and encourages farmers as much as possible to use resources from their immediate environment to sustain their farms.

But how were we to move from local experiments to a project on a scale that would have a genuinely significant ecological and social impact? We had lengthy discussions with Bambang over how to strike the right balance between ecology and business. On this project, there was no divergence of interests—far from it. But the twin components obey different rhythms and require very different skills and management approaches. Like many before them, the NGO was faced with solving a problem it had not encountered hitherto: how to stay loyal to its guiding principles while creating enough economic and social value to ensure that the solutions were genuinely sustainable? Bambang took the decision to set up a social business branch to focus on developing commercial activities through technical support, financing and commercialisation. It will work in tight conjunction with Yagasu, whose long-term mission is to restore and protect the foundations of the home: the mangrove swamp. Yagasu has set itself an ambitious objective: to set up a thousand small aquafarms along the 300 km stretch of coastline between Medan and Bandah Aceh on the far north of the island. It's a big gamble but what we have already achieved over these last few years has given us confidence. And the considerable impact that this is expected to have on climate change is even more reason to be positive: in all, some 4 million tonnes of CO₂ are being, or will be, stored in the mangrove trees of Sumatra and the ground in which they grow.

View the online photo album
of Livelihoods project
in Sumatra island, Indonesia



Aromas of Vanilla

When I was a child, my mother used to keep a few precious vanilla pods in a drawer and would occasionally use them to flavour a cake for a special occasion or some rice pudding, which was one of her favourite things to eat. I can still remember those slightly crinkled stalks with their powerful aroma that my sister and I would inhale with closed eyes before wrapping them back up in baking paper and storing them for another day. Having grown up in France on the banks of the Loire, I had no idea what a remarkable journey these strange pods had been on. Originally found in the forests of Mexico, sailors and traders brought them back from their colonial travels and acclimatised them to new regions.

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Ultimately, vanilla found a natural home in the warm, humid and shaded climate of the north-eastern coastal regions of Madagascar. The most reputed variety is Bourbon vanilla. These days, Madagascar produces 80% of the world's vanilla—an extraordinary boon for one of the poorest countries on the planet. In recent years, the market price has rocketed to new heights, which you would think was nothing but good news for the producers. But unfortunately it has its

downside too: the little pods have become highly sought-after and have attracted speculators with few scruples. In the villages, as much as 80% of the vanilla is stolen in situ before it reaches maturity. Not only is this distressing for the producers, but it also results in vanilla of mediocre quality since the pods have to be harvested at the right time and prepared according to a very precise procedure in order to guarantee maximum flavour. Fetching a high price in proportion to its volume, vanilla is easy to store and keeps for a long time when vacuum-packed. This attracts all sorts of less-than-scrupulous middlemen and resellers, not to mention the launderers of ill-gotten gains from the illegal trade in rosewood, one of the most coveted and now endangered forest species. The small-scale producers are very much at the mercy of the ubiquitous middlemen to whom they promise to supply their pods in exchange for a handful of banknotes. Woe betide those who cannot keep their promise, because their vanilla will be stolen before it is mature.

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This situation is unsatisfactory for the major industrial operators too: the high price of the raw product together with its inconsistent quality has prompted them to seek alternatives such as synthetic vanilla, which is less expensive and these days can almost rival the natural product in terms of flavour. A number of companies which are members of the Livelihoods funds and use significant quantities of vanilla approached us to find a viable solution for the producers and vanilla processors. After several months in the field acquainting ourselves with the situation, listening to the various stakeholders and trying to identify appropriate partners, the Livelihoods team came up with a project that was to become one of our

proudest achievements to date. Our ambitious aim was to transform a chaotic business jungle into a more ‘civilised’ commercial arrangement.

The initiative owed a lot to Serge Rajaobelina, a Madagascan who had lived and studied in the United States and then returned home to found Fanamby (‘challenge’, in Malagasy), an NGO dedicated to conserving Madagascar’s remarkable natural resources. The island’s biodiversity is unique: 90 % of its animal and plant species are endemic but they are increasingly endangered by deforestation. Madagascar has lost nearly half of its forests over the last fifty years and the pace of deforestation picked up in the mid-2000s. Strong demographic pressure, poverty, the plundering of resources for short-term gain, and weak or complicit central authorities have combined to destroy a treasure that all of humankind ought to cherish. There have been any number of reports, conferences and pledges, and countless experts from international institutions have set out what needs to be done. There has been no shortage of development aid either, but on the ground, there has been little sign of initiatives that seem likely to reverse the trend.

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And so it was that Serge decided to launch himself into the fray. He is a well-built, reserved, almost shy man, but his easy-going demeanour hides a steely determination which only becomes apparent when you get to know him better. He is a true man of action and a natural organiser who in the space of just a few years has turned Fanamby into a highly effective field operation. Like most environmental NGOs, Serge has prioritised the conservation of the most biodiverse and

endangered regions, and his organisation now manages numerous reserves and protected zones. However, he was quick to realise too that these conservation efforts would be in vain if the problem of poverty was not tackled at the same time. Madagascar has a population of 25 million, 75% of whom live below the poverty line. Like Livelihoods' other partners around the world, Fanamby has succeeded in developing economic activities which actively contribute to the protection of the natural world. The social businesses created and supported by the NGO have afforded thousands of small-scale producers and workers a livelihood. It was quickly apparent that we were on the same wavelength, and so Fanamby and Livelihoods decided to embark on a joint project.

78 The first step was to establish a relationship of mutual trust between the project partners, namely between the industry players (each with their own specific strategies and objectives), the NGOs, and the local and national authorities. This task fell to the Livelihoods team, which patiently canvassed the views of all the stakeholders and shared their own expert analysis in order to reach a consensus on the solutions to be implemented jointly and how to ensure their sustainability over the longer term. Contrary to our expectations at the outset, the process taught us that a project of this kind requires constant monitoring since there are so many unpredictable factors, such as fluctuating market prices, shifting corporate priorities and unforeseen weather events. And then of course there is the human dimension: dealing with a wide range of people from different backgrounds, and contending with cultural differences and varying management standards.

Our first decision was not to focus on the main vanilla-producing region of Sava on the north-eastern tip of Madagascar. Instead, Fanamby and our fund's partner companies decided to roll out the Livelihoods project further south in Analanjirofo ('the clove region' in Malagasy) opposite the island of Nosy Boraha—a magnificent location, though hard to access. The hills overlooking the Indian Ocean soak up the rains brought by the trade winds, and the lush, humid vegetation is conducive to the growth of all manner of plants with evocative aromas, including vanilla, cloves, ginger, pepper vines and mango trees. However, the region's remote location has hampered its economic growth. It takes several hours to reach these villages by car from the capital Antananarivo or the island's chief port of Tamatave. During the rainy season, the bush taxis bump along on rut-ridden roads that are more like rivers of mud. Pirogues are the most convenient means of transport for the villages located close to the major rivers that flow down towards the coast.

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One question that we are often asked is: won't the expansion of vanilla production contribute to deforestation? In other words, in trying to alleviate poverty, won't you be further destroying the island's biodiversity? It is a legitimate question, not least because the Pointe à Larée, the thin strip of land that extends out into the ocean from the heart of the project zone, is host to a virgin forest which experts stress is very rare: a tropical forest on sandy ground that is home to numerous rare plant and animal species.

Guided around by a specialist from the Missouri Botanical Garden (MBG), an American NGO which has long been present in Madagascar, I was lucky enough to spot a group

of lemurs huddled together on the branches of a tree, and my guide also showed me various species of orchid. MBG is responsible for managing this protected forest and has done a fine job of involving local village communities in the conservation efforts. MBG's patient work in the field has demonstrated that these communities can be the best forest conservationists if they are helped to develop activities that afford them a decent livelihood.

80 Vanilla is a good example of this: if it is run well, a vanilla plantation that incorporates subsistence crops enables a family to make a reasonable living on a modest plot of land. Vanilla fields, which are planted with all kinds of tree species to serve as supports for the vines, are rich in biodiversity. With our partners at Fanamby and with the help of the Fonds français pour l'environnement - mondial (FFEM), we decided to bring MBG on board to coordinate our efforts to preserve this beautiful forest at Pointe à Larée. This would involve creating sanctuary spaces within the forest where all human activity is off limits and developing viable economic activities outside them which in no way endangered the natural environment. Though this would be a big challenge, there were enough factors in our favour to justify taking the chance.

Our second decision was to develop a large vanilla production hub in the region to accommodate the ambitions of its producers, who were well aware that the opportunity for a better standard of living was within their reach. But what were they to do in the face of their geographical isolation, the thefts, and the cut taken by the middlemen? It was hardly surprising that many of the plantations had been abandoned.

The Livelihoods project consisted of several components. The first was to organise the producers into well-structured associations, which would enable them to act collectively. Within three years, 18 associations comprising 1,800 producers had been set up, the ultimate goal being to attract 3,000 members. The next step was to ensure that all members wishing to develop their production could procure vanilla saplings for free. There was very high demand, and nurseries were created to distribute several hundred thousand young vanilla vines. These nurseries are especially well tended to since they serve as a training ground. Each vanilla sapling is supported by a tree which also provides it with shade. The roots are fertilised with plant waste and compost that provide it with the necessary organic nutrients—no chemical products are used here. The vines are delicately wound around the trees in loops to promote flowering and hence production. Farmers' associations take it in turns to receive training in the best techniques from Fanamby's advisors and they also organise surveillance parties and alert the local police in the event of theft, which greatly diminished in the space of two years.

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Our third decision was to create Tambatra, a social business whose shareholders are the farmers' associations. Its role was to oversee the initial processing of the vanilla and to construct a facility to prepare it with the aim of guaranteeing the producers the added value that at the time eluded them. There is a significant price difference between the vanilla sold green straight after picking and the brown variety produced through a lengthy and rather complex process of heating, drying and fermentation. We financed the construction of a large

industrial building near the coast in Andrangazaha, right in the centre of our vanilla production zone.

When I last visited, I was welcomed by the site foreman in his white smock. As in any food factory, I had to follow the hygiene protocol and don special shoes and a mobcap to prevent external contamination. The staff, the impeccably clean facility, and the lovingly tended lawns surrounded by vanilla nurseries all testified to how far we had come and to the huge effort put into training and structuring the operation. Tambatra is the only ‘industrial’ plant for dozens of miles around, where informal activities and subsisting with the means at hand are the rule. Tambatra is scrupulous about paying its taxes to swell the coffers of the local authorities, who are sorely lacking in resources. Dozens of crates of vanilla rich in aroma were lined up, sorted by size and quality and ready to be dispatched.

82 They opened a few crates to show me samples of the diverse varieties sought by the big industrial companies, which will transform these brown pods into extracts to flavour a vast range of products for consumers all over the world. The crates before me were probably worth several million euros—a fortune when you consider the general poverty here. Gendarmes are paid by Tambatra to guard the site day and night.

The vanilla produced by the small-scale producers of Tambatra is purchased by a group of companies who have entered into an arrangement with the Livelihoods fund to procure a supply of high-quality vanilla. These companies have made a firm commitment to buy all the vanilla produced by the farmers’ associations and have signed a contract to procure their vanilla from Tambatra for a minimum of ten years. The certainty that the vanilla will be sold, together with

the investment from the Livelihoods fund, means that the new production system will have the necessary time and resources to bed in. Agreeing such a contract was no easy matter, since it entails a commitment that is alien to the procurement practices of the industry, which are based on the principles of bulk purchasing, flexibility, price and quality. The raw products of agriculture have become commodities in the same way as petrol and electricity. Provenance, region, local expertise and environmental impact have disappeared from the equation, and the result is an anonymous product standardised for the global market. What we are trying to do with our colleagues from Danone, Mars and Firmenich, all of whom have invested in the Livelihoods family farming fund (L3F), is to ‘reconnect’ with the food supply chain. The buyers know where the vanilla comes from and the story that lies behind what they are purchasing.

83

Naturally in this new business arrangement, the question of price is central for the producers. It wasn’t so much of an issue in the early years of the project since world prices were at an all-time high, and the priority therefore was to get producers to commit to selling to their associations and not to the middlemen. This proved not to be so difficult thanks to the work of the association leaders, who preached the right message, and above all because the promises made were kept: the construction of the plant, the nurseries and the purchase of the prepared vanilla at an acceptable price were all concrete achievements that could be appreciated by everyone. They served to nurture trust and overcome scepticism and a certain tendency to become disheartened. In 2020, however, vanilla prices have been faltering. The very high price of natural

vanilla in recent years has deterred a lot of the major industrial companies and they have turned instead to synthetic flavourings. The fall in demand combined with large surplus stock has suppressed prices. If the downward trend continues, as it has done at certain points in the past, and the prices fall so low that small-scale producers can no longer make a living, there is a serious risk that they will give up on vanilla and the whole edifice that has been constructed will come tumbling down. And it's no easy matter to resist the harsh logic of the market: why would industrial clients agree to pay more for their vanilla and deprive themselves of the opportunity to buy for less, especially as they have been paying high prices for several years? Happily, the contract signed by the partners of the Livelihoods project provides for such a situation by establishing a minimum price that will guarantee the producers a decent standard of living. Following lively discussions to set a price that would be acceptable to both parties, an agreement was finally reached. The industrial buyers involved in the project agreed to pay a minimum price to the cooperative to protect the producers, who have invested so much time in training, planting and producing high-quality vanilla, thereby preserving everything that has been achieved so far. It was a sign that everyone understands the importance of what is at stake here.

It is easy enough to design wonderful plans on a computer spreadsheet but quite another matter to successfully put them into practice. As always, everything depends on the people you're working with. Some are bold and most are well-meaning, but some are also wary and you get the odd tricky customer. On this project, what they have in common is that

they have had to bear the brunt of a situation which is not their fault: over the years, the Madagascan elites have all too often plundered for their own gain a country that is tremendously rich in natural resources. Madagascar is one of the few countries whose GNP has shrunk over the last thirty years despite all the international aid that has been injected into its economy. The consequences are clear for all to see in the dilapidated state of the roads and the health and education systems. The many NGOs present in the country are doing their best to compensate for these shortcomings, but their interventions often generate a dependency on charity which does nothing to help the inhabitants take control of their own destinies. Investing in men and women to help them become autonomous was obviously one of the keys to the success of our project, but did we have the means to achieve such a transformation? We decided to focus our resources on three areas: firstly, technical and business training for the producers of the associations, followed by support to help the women take up positions of responsibility, and finally the training of young people to pave the way for a new generation of farmers.

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In the village of Manompana located on the northern edge of our project in a stunning bay opposite Nosy Boraha, I had the chance to visit the rural boarding school created a few months earlier with our support. This is where some twenty young people, most of them boys, are receiving an academic and vocational education, spending two weeks at school and then two weeks in the field, either on their parents' farm or the farm of a mentor. The school has temporarily been set up in a large old wooden house which must have been rather

stylish once upon a time but now looks rather fragile. In the evening, they put mattresses on the floor and turn the classroom into a dormitory. But all of this is going to change: the local authority has donated a huge plot of land on which a school and accommodation are going to be built. Facilities out in the field for learning about vanilla, market gardening and orchards are also planned.

86 We had dinner with Edouard, the director of a network of 30 rural boarding schools in Madagascar. He explained to us how important it is that parents contribute to the school fees and the running of the school, and that limited resources at the outset are not a problem so long as the parents commit to the project and appropriate it: this school is their school and their children's school. We shared Edouard's perspective, but the truth was that it would be difficult for such poor families to finance the entirety of the school budget. Several of the young pupils had already been unable to bring along the ration of rice requested of each family for the meals at the boarding school. We could only offer temporary financial support and so the help of Tambatra would be needed if the school was to survive. We envisaged that part of the profits of the social business could finance training and education for the next generation, which would also avoid a situation where idle young people with no school to go to might turn their hand to stealing vanilla instead.

During a meeting in a village classroom, I noticed a pyramid on the wall which showed the age groups of the pupils attending the school. Up until the age of 11 or 12, there were as many girls as boys but then the girls disappeared—instead of going to school, they were busy helping their mothers, and

some were even pregnant by the age of 13. What could we do about this situation? Firstly, we could help the women who had begun cultivating vanilla. Some were widows who needed to support their families, and others had their own fields. Zo, the young woman in charge of this programme at Fanamby, took us to see a group of forty women who have come together and set up a large market garden to provide for their families and sell their surplus produce. Enriching the rice-based diet with fruit and vegetables is essential in Madagascar. Zo's aim this year is to create similar groups in each of the eighteen farmers' associations. We are conscious that we have so far made only modest progress on this difficult journey.

Aboard the boat taking us away from Madagascar, I looked back at the high hills that form the splendid backdrop to this coastal landscape. They are certainly very green, but if you look at them closely, you can see that only strips of forest remain here and there. Burning is still practised to grow rice on the slopes: a part of the forest is burnt down and then planted during the rainy season. Initially, the ash fertilises the soil but not for long. After one or two meagre harvests, the plot has to be abandoned and another part of the forest is burnt. Demographic pressures and the number of mouths to feed have sped up the planting cycle. Once upon a time it was every ten years, then five, and now it is often only two. This means that the forest has no time to regenerate and so it has become a self-defeating exercise. A vast programme to restore the low-lying paddy fields, install irrigation facilities and train and support the producers would be needed to meet food needs without increasing the environmental pressure on the highlands, and all of that is beyond our means. The

relevant ministries and several international institutions have been discussing such a project for the last two years. We can only hope that it will not get bogged down in endless red tape and that the money will be used wisely.

88 In this isolated corner of an island in the middle of the Indian Ocean, seemingly sheltered from major global trends, the little brown pod of my childhood now seems to go the heart of the contradictions and uncertainties of our age. The tangled chain of causes and the complexity of the solutions required has left us in no doubt that, without systemic transformation, no action that we take can be sustainable. It is not enough to pull a few easy levers like magic wands. In those moments when doubt assails me, I think back to our meeting with a group of women vanilla producers when the heads of Livelihoods' partner companies visited our project. As we sat in the shade of the large trees, one of the women in the middle of the silent group calmly stood up, looked these ladies and gentlemen from afar directly in the eye, and asked a very simple question: 'Can we trust you? Are you going to buy our vanilla in the coming years and continue to work with us?' All of us on that day felt the immense responsibility on our shoulders.

View the online photo album
of Livelihoods project in Madagascar



An Uneven Playing Field

There are some battles that it might have been better not to wage. Sometimes because the playing field was too uneven, and we failed to sufficiently appreciate the complexity of the situation and the risks involved. At other times because the situation at the outset of a project was radically altered by events unfolding in the wider world. For Livelihoods, Guatemala is one of those instances. We started out with great hopes but we came up short, and found ourselves battling it out in an environment where the odds were stacked against us.

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The setting was Cerro San Gil, a large mountain which lies between the Caribbean Sea and Lake Izabal, a magnificent haven of blue water where generations of seafarers and pirates have dropped anchor to break their journey or to take refuge. Cerro San Gil is a major water source, the mountain streams cascading down the wooded slopes into the port city of Puerto Barrios below. Migrating birds stop over here on their long journey between the Americas. The mountain is recognised as a haven of biodiversity and is classified as a nature reserve. The Guatemalan NGO

Fundaeco has been entrusted by the Ministry of the Environment with the task of protecting and managing this vast forest reserve.

90 Maya communities who speak the Q'eqchi' language have settled in the wooded foothills of Cerro San Gil. The land slopes steeply here, and the Q'eqchi' farmers do their best to eke a living out of the nutrient-poor soil. In order to survive, they hire themselves out as labourers on the haciendas dotted across the plain around Cerro San Gil, working on the cattle ranches and rubber tree plantations and in the orchards. For many years, the American company United Fruit was a major player in this region, and its ships still sail from Puerto Barrios laden with banana cargoes. The large estates are owned by rich individuals and local and foreign companies. It is no secret that certain ranches are owned by drug traffickers, who flaunt their social ascension by parading around on horseback with their men. The contrast between the poverty in the Q'eqchi' villages and these grand haciendas is striking. It is the product of several centuries of history during which the indigenous communities have been culturally and politically dominated and forced to retreat to the land with the least potential.

Here as elsewhere, the champions of the environment have realised that the natural resources that are still intact here can only be successfully preserved if the local inhabitants are brought on board and come to appreciate that conservation is in their interests too. In Cerro San Gil, there is strong pressure on the Q'eqchi' communities to exploit the land higher up the mountainside where valuable wood grows that

can easily be exported from the port situated a short distance away. Unscrupulous buyers are waiting in the wings and encouraging young Q'eqchi's to turn their hand to illegal logging. If nothing is done, this major reserve will gradually be destroyed. But what *can* be done?

Fundaeco got in touch and presented a well-structured project to us. It involved helping the Q'eqchi' villagers to make better use of their land by adopting agroforestry models which combined crop growing with tree planting. The objective was to improve revenues and food security for the families through the planting of rubber trees, fruit trees, and trees for timber. Corn and vegetable crops would be interspersed among the young trees, which would let enough light through while also providing shade against the heat. The NGO had set itself the target of planting on several thousand hectares of the foothills, where the land has become severely degraded. The idea was that the intelligent 'intensification' of land use would help to relieve pressure on the protected nature reserve higher up Cerro San Gil. The professionalism of this agroforestry model, which promised to have a twofold social and environmental impact, as well as our field visits, convinced us that this project was worth presenting to the Livelihoods investment committee.

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In every village where we met with community representatives, we could see that there was a determination and an expectation on their part. After years of promises that had not always been kept, there was a genuine hope that this time something tangible could be achieved. We visited the areas that were going to be planted, and a group of young people

proudly showed us the tree nursery they had created close to the village. There were animated discussions with the technical advisors from Fundaeco about the action plan, and you could sense the excitement. But before we embarked on this grand planting venture, we needed the blessing of the gods, which we duly received in a cave up the mountainside. Hundreds of candles were lit and a sizeable crowd paid their respects in the half-light. A few weeks later, groups of farmers began planting on a large scale with the help of their families.

92 The Livelihoods company network also gave us a helping hand: our colleagues at Firmenich, a leading Swiss company specialising in flavours and aromas for the food and perfume industries, put us in touch with Nelixia, a small NGO set up by a young, plant-loving Guatemalan woman and her French engineer husband. Firmenich has been one of Livelihoods' most committed partners from the outset. The company purchases hundreds of plants and spices from many different countries, and it is always a pleasure to listen to their experts recounting their experiences of sourcing rose petal, peppers, patchouli and jasmine from valleys in the middle of nowhere. One of their priorities is having a reliable supply chain based on long-term partnerships with local producers and processing plants, which is why Firmenich decided to supply Nelixia with equipment and offer it a commercial outlet as soon as the NGO was set up.

Nelixia was quick to identify the potential of Cerro San Gil for growing perfume plants and cardamom in particular, which requires a very specific climate if it is to flourish. The 'food of the angels', whose medicinal properties and scent have been appreciated for centuries, grows well in the foothills

of the mountain. Although a few farmers do cultivate it, the prices quoted by the ‘coyotes’, the middlemen who prowl the countryside, are often so unattractive that few small-scale producers are inclined to harvest it. In conjunction with Nelixia and Fundaeco, and with the support of Firmenich, we decided to invest in setting up a stable operation that would bring in revenues for the producers while catering to industrial demand for a high-quality product. As the plant could not be transported, an oven was constructed so that initial processing could take place in situ. Nelixia supported the farmers who were interested in growing this crop and undertook to purchase and distil the cardamom at its production plant.

To supplement the substantial funding from Livelihoods and scale up the size and impact of our joint venture, our partners at Fundaeco applied for a grant from a government funding body dedicated to reforestation called PINFOR. Since being set up, this fund had mainly been used by large landowners to finance large-scale projects, but very few grants had been awarded to small-scale producers. The complexity of the application procedure and all the red tape involved were formidable obstacles, but Fundaeco stuck at its task and set up a service to help the villagers obtain this funding. In the presence of community representatives, we eventually signed a ‘historic’ deal in great pomp with the minister of agriculture. There were speeches, much self-congratulation, and offerings were made in a traditional ceremony—the future seemed decidedly rosy.

Alas, we were in for major disappointment in the months and years that followed. The funding applications fairly quickly

became bogged down in a labyrinth of red tape and when they were finally approved, we were told that the funds were no longer available. For our part, we had honoured our commitments, financed the tree nurseries, and trained the farmers. The NGO's technical teams had been deployed and the planting was under way. If a government does not honour its pledge, what recourse is there for a private (and moreover foreign) investment fund? Our partners pulled out all the stops, activated all their networks, and spent an unconscionable amount of time pushing each application, but their efforts went largely unrewarded. In all, less than 10% of the promised sums were released, prompting disillusionment and anger among the local communities, who felt they had been swindled.

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A few months later, we received a press cutting with a photo of the agriculture minister who had signed the deal. He was standing in handcuffs between two policemen. I've no idea if he was guilty of whatever it was he was accused of, but other episodes were to follow that revealed a deeply dysfunctional administration. This was a country which, after the collapse of the dictatorship a few years previously, had seemed determined to return to more democratic ways. But appearances can be deceptive, and behind the scenes powerful interest groups appear to be calling the shots. The courts and the police seemingly lack independence and come across as weak in the face of the powers that be. Violence trumps law and order. A few months apart, two of the NGO's staff responsible for protecting the Cerro San Gil forest were murdered for reasons unknown, and the guilty parties were never found. The influence of the all-powerful

drug traffickers is forever present in the background, and the promise of easy gains can be hard to resist for country folk living in great poverty. A band of young Q'eqchi' villagers decided to occupy a property with the backing of parties campaigning for the rights of indigenous communities. This brought national politics into the equation and our partners were fearful of a confrontation. The armed forces were sent in to restore a semblance of order, and the NGO found itself in a difficult position. Its official mandate is to protect the natural reserve, including against illegal logging. And so although it is an ally of local communities in trying to help them out of poverty, it is in the front line in opposition to them when community members are manipulated into participating in trafficking.

With hindsight, what lessons can be learnt from this difficult project? Optimists will tell us the glass is half-full: after all, several thousand hectares of Cerro San Gil have been planted by these poor communities, who will benefit from the initiative; several hundred small-scale producers have been trained in agroforestry techniques; and most of them are continuing to take good care of their plantations. And yet this experience has left a bitter taste in our mouth. The most frustrating aspect is the feeling that the social momentum that could have been created was stopped in its tracks before it could really get going. The feeling that, despite the urgency of the situation, the conservation of natural resources still counts for little in the face of short-sighted economic and political interests, not to mention widespread corruption. In Cerro San Gil, Livelihoods managed to create a ray of hope but it takes time for the effects to make themselves felt, for

the trees to grow, and for a new generation of farmers to believe in the future. Unfortunately, they weren't given enough time. They were overtaken by violent events before we could demonstrate to them that another path was possible.

View the online photo album
of Livelihoods project in Guatemala



Regenerating the Tree of Life

It is not generally appreciated the coconut is the sixth most cultivated fruit in the world. Coconut trees produce coconuts throughout the year that can be put to a rich variety of uses in the food, construction, and pharmaceutical sectors. It is not for nothing that the coconut tree has been dubbed the ‘tree of life’. The natural dietary qualities of products made from coconut have led to a leap in consumption and hence in exports from the countries where it is grown. With the surge in popularity of coconut water and milk, the demand for fresh coconuts has risen steadily. Between 2013 and 2018, the global market for coconut water ballooned by 150% in terms of volume.

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And yet rather paradoxically, the Philippines, which is the world’s second largest producer, has seen its production stagnate and even decline. Filipino coconut growers are the poorest people in their country, over half of them living on less than \$2 a day. On Mindanao island, 70% of the local population are under 35 but the average age of the coconut growers is 50-plus. Harvesting coconuts can be a perilous business. The farmers either have to climb to the tops of the

trees, thereby risking a fall of up to 30 metres, or use long poles with a knife attached to the tip and then dodge the falling coconuts. And to dehusk them, they strike them against a pointed blade, often without any protective equipment at all. Given all of this, young rural people are often not interested in taking over the family coconut plantation and many end up working in town as taxi drivers, construction workers and the like.

98 Producers find it difficult to make a living from their very modest plantations, which average two hectares in size. This is a legacy of the agrarian reforms of thirty years ago which stipulated that no producer can own more than five hectares of land. These little coconut plantations are often poorly run as well, since the growers receive precious little technical training and lack the means to invest. Productivity per hectare is two to three times lower than in Brazil and India. Barely solvent, small-scale producers have to turn to middlemen and traders, who help them out financially but at very high interest rates. The producers are then unable to repay what they owe and either become entirely dependent or else have to sell their land.

The idea for a Livelihoods project involving 5,000 small-scale producers stemmed from the needs of two major international brands, Mars and Danone, which use coconut in their products, and of a local business called Franklin Baker, which supplies these multinationals via its Davao factory in the south of Mindanao. To meet increasing global demand, these companies need to be able to rely on a steady supply both in terms of quantity and quality. Helping the small-scale

growers to increase production makes business, ethical and social sense. There is an increasing demand for traceability, which is to say guarantees that producers have been fairly remunerated and ingredients have been produced using sustainable methods that respect the land and the natural environment. When the project got under way, we were a very way long from this goal. The coconuts were collected by the complex network of middlemen who traverse the countryside and buy their coconuts directly from the small-scale producers. These transactions were anything but transparent and all manner of vehicles bearing coconuts would arrive at the Franklin Baker plant every day. It was impossible for the multinationals to know exactly where the coconuts came from or to have any influence over their quality or the conditions in which they were grown.

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As so often with Livelihoods projects, it is the determination and commitment of certain individuals which make an undertaking viable. Jerry Lorenzo, who at the time was the managing director of Franklin Baker, played a key role—he was very quick to appreciate what the Livelihoods proposal could bring to his business. The story of Franklin Baker began over 120 years ago when Franklin Baker Sr, a miller from Philadelphia who sold flour to the Cubans, received a whole consignment of coconut from one his customers by way of payment. He started processing them and ultimately built up a substantial dried coconut business in the United States—coconut pie became the second biggest seller after apple pie, pushing chocolate pie into third place. Consumer demand grew to such an extent that in 1921 Baker set up the first dried coconut factory in the Philippines to ensure a steady

supply. The company offered a diverse range of products, including dried coconut, virgin coconut oil and coconut flour. In 2006, a Filipino family acquired a majority stake in the business, determined to remain faithful to its rich history but also to expand it and make it more sustainable. It embarked on an overhaul of its business model, convinced that the coconut growers were the cornerstone of the company (since they are at the beginning of the supply chain) and that it was essential to establish a direct relationship with them.

100 Jerry was born in the Philippines and grew up in the United States, where his parents had emigrated to. He opted to do his management studies in the Philippines so that he could return to his family roots. and he subsequently returned to the States to work in the oil industry for the Chandran family—the same family which now owns Franklin Baker. Since 1997, he has been the financial director of the Chandrans’ oil company and he oversaw its listing on the stock exchange in 2006. He joined Franklin Baker in 2013 and made corporate social responsibility a priority, with initiatives including accommodation for disadvantaged communities, medical and dental programmes, and the planting of trees. Jerry is a business leader with his heart firmly in the right place. He is convinced that the company and the producers have a mutual interest in making Franklin Baker’s new business model work. Back in 2006, the firm processed 600,000 coconuts a day, and its current aim is to exceed two million in the near future. When I met him, I sensed that he has a very strong sense of civic responsibility—he wanted to do something for his country and he realised that his big brand clients had similar social responsibility concerns. He fully committed Franklin Baker to

the Livelihoods project by involving all of his teams, acutely aware that the venture was going to require all the human resources at his disposal to handle the supply logistics, the costs, the coconut purchasing procedures and the introduction of a system of traceability for the coconuts arriving at the factory.

Another key player in this story is a woman. Arze Glipo runs the Integrated Rural Development Foundation (IRDF), a Filipino NGO which she set up thirty years ago. At the time, Arze was responsible for coordinating training programmes for rural communities and she was quick to appreciate that training needed to be part of the business picture if the venture was to succeed. IRDF is a genuine field operation that currently works with some 16,000 farmers and fishermen in various parts of the Philippines. It has a simple guiding principle: understand the needs of the community and help it to organise itself so that joint solutions can be found. When it started out, the NGO focused on land rights so that small-scale producers had a firm claim to the land on which they worked. Arze then developed programmes centred on productivity, access to water, financing and the equipment needed by the growers. But she had never really worked with the private sector and still less with an investment fund backed by major international companies. Both sides had to get to know each better in order to establish a relationship of trust.

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I can still clearly remember the first time I met her. After a series of discussions with the Livelihoods team, Arze developed a strong interest in the project as she could see what a tremendous lever it could be for lifting small-scale

producers out of extreme poverty. She decided to come and see us in Paris before committing to a long-term venture with foreigners whom she didn't really know. This resolute woman was initially on her guard, attentively observing and seeking to understand why we had created Livelihoods and what really made us tick. We got down to the nuts and bolts in the space of a few minutes and I watched as her initially impassive expression gradually gave way to a smile. She came to life and began with great poise and eloquence to tell us the story of her work and what she believed in: 'We have to take it step by step so that each farmer becomes an architect of the project and not simply a beneficiary. This project shouldn't simply be about supply, it should be an integrated programme that will bring benefits to the producers and to their communities.' We discussed the difficulties that lay in store, first and foremost the scaling up of operations. IRDF had never had to manage a project of this size that was going to be scaled up so quickly. It would involve expansion, and significant changes in methodology and organisation. The second challenge would be cooperating on the ground with a private company. When Arze met Jerry, they immediately hit it off. But would the NGO's teams be able to work effectively with their counterparts at Franklin Baker on a daily basis?

This project could not have existed without the involvement of the Livelihoods team, its receptiveness to the stakeholders' needs, and its determination to overcome the obstacles one by one. This largely invisible but essential role of intermediation, of acting as go-between, is crucial. It involves creating the conditions for two very different types of stakeholder—international companies and local NGOs—to

work together successfully, and it also entails negotiating with producers, politicians, and government authorities. It is this skill set, combined with solid technical and financial expertise, that allows us to build coalitions and find solutions that work.

In the space of a few months, we managed to put together a deal that would ensure that this project would become one of our finest achievements: the Mars and Danone procurement departments committed to purchasing their supplies from the project. They signed a ten-year contract with Franklin Baker and specified precise volumes, which meant that Franklin Baker had the commercial guarantees it needed to commit fully to the project. The Livelihoods Family Farming Fund undertook to prefinance the project to the tune of \$ 2.5 m, which would be reimbursed by the companies over several years when they received their deliveries of ‘sustainable’ coconuts. This funding afforded IRDF the resources and the time needed to reach out to 5,000 farmers.

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Our joint objective was to create a virtuous circle: the producers would earn more thanks to enhanced productivity and the guarantee of a structured and stable commercial outlet for their produce; Franklin Baker would procure high-quality and traceable coconut with reduced collection costs and build a relationship of trust with the farmers; and Mars and Danone would procure traceable coconut for their products and fulfil their aim of enhancing the lives of the producers in their value chain.

The first stage of this project was to improve revenues by increasing coconut production at the plantation. IRDF trained the farmers in simple but effective techniques for enhancing

productivity such as pruning the branches, cleaning the crowns and bases of the coconut trees, and fertilising the soil with compost rather than chemical fertilisers. Many of these small-scale producers had old plantations that were not very productive, so 30% of the trees were gradually replaced with more prolific varieties. Each new tree can produce around 100 coconuts every year by the time it is just three or four years old. The young saplings raised in the nurseries that were set up as part of the project are distributed freely to the producers, who pledge to implement good practices on their plantations.

104 A second component involved diversifying the farmers' revenue sources and reducing their exposure to market fluctuations. A hundred or so coconut trees per hectare leaves a lot of space on the often bare ground, and various species can be cultivated that grow well together. The producers organise their plots on several levels to optimise space and light, cultivating cocoa trees and coffee and banana plants in the shade of the coconut trees and using composted banana leaves to provide the cocoa trees with the phosphorous they need. A small two-hectare coconut plantation can support up to 300 cocoa trees and increase revenues by 30% to 40%. Subsistence and cash crops such as sweet potatoes, legumes, ginger and maize take up the ground storey of the plantation. Thanks to the project, around 10,000 hectares are being managed using farming practices that promote biodiversity, the resilience of the yield, the fertility of the soil, and its capacity to retain water and store CO₂.

A third component was aimed at improving the working conditions of farmers during harvesting. They have been trained in safety precautions and are supplied with appropriate

equipment (pole, scythe, helmet, harness, and protection when dehusking the coconuts). It was hoped that these combined initiatives would double the average productivity of the plantations, but that on its own would not be enough. One essential question remained: how to ensure that the small-scale producers retained for themselves the cut that was taken by the middlemen who collected the coconuts and sold them on to the big companies via rather opaque circuits? The aim of the project was to establish a direct connection between the producers and the company. Every producer can join one of the fifty associations that are members of ten farmers' cooperatives. Each association collects the coconuts from its members and delivers them to warehouses where Franklin Baker trucks come and fetch them and transport them to the factory. An IT system tracks the coconuts and ensures that producers are paid according to a transparent price mechanism that can be accessed by everyone.

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Leonardo Ailing, who is the president of an association of producers in the village of Kidapawan, described how things have changed: 'Until now, our only contact with the market was through middlemen. We had very little information about the prices and we couldn't really take control of our sales. Now, by selling our coconuts directly to the processing plant according to a clear price mechanism, we can anticipate and improve our revenues.' Producers are thus paid their due, Franklin Baker has direct control over its suppliers, and Mars and Danone can trace the provenance of the products they purchase.

It all sounds wonderful, but of course things have a habit of not quite going to plan. In the project's second year, as

everything was being slotted into place, our fragile edifice was dealt a violent blow: in the space of a few months, the price of coconut on the world markets, which is indexed to the price of palm oil, fell by half. A lot of dispirited farmers stopped harvesting and wondered what point there was in continuing with the project, and the recently created farmers' associations began to falter. Without rapid intervention, the whole momentum of the project could have been lost. But good news came from the companies, who sensed the danger and agreed to introduce a minimum price for all the producers involved in the project. Together with the farmers' associations, a bonus system was also introduced to guarantee every farmer a decent income from coconut providing they played by the rules, implemented good practices and remained loyal to the associations. The project was saved and could move forward.

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There are sometimes pleasant surprises too. We were contacted by Biogros, a highly innovative European company active in the agriculture and organic food sectors. Biogros has developed a growth substrate using coconut shells on which fruit and vegetables can be grown. It is an excellent retainer of water, free of chemical fertilisers, and is used a lot in hydroponic systems for growing plants without soil in the world's major cities. The company was looking for a coconut collection and processing operation and intended to construct a large processing facility. It didn't take long for us to strike a deal. The Livelihoods project would be able to provide the necessary infrastructure through several thousand small-scale producers organised into associations, while the IRDF teams would help to train them. The plan was to train sixty small coconut dehusking and crushing units, each consisting of ten to twenty families. Ultimately, nearly one

thousand jobs associated with the various processing stages would be created.

From our very earliest discussions with Arze and her team, the situation of the local women was a central preoccupation of the projects. IRDF has extensive experience of working with groups of very poor women to help them to take greater control of their lives. But business opportunities are fairly rare in this region. Every two months, the women helped their husbands to harvest the coconuts but they didn't have any other revenue-generating options in between. Families cannot depend solely on coconut, and so the women have been playing a major role in diversifying the crops promoted by the project. They have been trained in growing new subsistence crops, rearing animals and selling their produce at the local markets. This project to recycle the coconut shells discarded by the producers has created a wonderful opportunity for the women's associations set up with the help of IRDF.

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As with so many of our projects, the nagging question was that of scale. But by pooling the energies of all our partners, we gradually succeeded in bringing about a genuine transformation: a systematic scaling up of operations involving several thousand producers. To what extent could this model be replicated? Could it be scaled up even further and involve tens or even hundreds of thousands of producers in the Philippines and elsewhere, making it the norm rather than the shining exception? That is all a long way off, and the role of the Livelihoods fund is above all to pioneer new approaches and to light the way—a modest and yet important role. In the development world, where grand pronouncements are often more common than concrete achievements, demonstrating

that alternative avenues are possible is no mean feat. The Filipino project has gathered a genuine momentum of its own, and companies impressed by our initial successes have expressed an interest in becoming a part of it. Development agencies are selecting the project for co-financing and scientists are offering to measure its impacts. Through the coconut growing, the recycling of the by-products and the diversification of crops, a platform has been created whose various stakeholders are mutually supporting and strengthening each other. A sort of ecosystem consisting of small-scale producers and a variety of economic actors is evolving, creating conditions that are conducive to future development. We can only hope that a chaotic world will give us the breathing space that we need.

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View the online photo album
of Livelihoods project in the Philippines



A Precious Resource To Be Shared

With an annual average rainfall of 500 mm, the State of Aguascalientes in central Mexico is as dry as Burkina Faso in the Sahel. The semi-arid landscapes of the high plains surrounding its main city, which is 1,800 m above sea level, bear this out: water is a rare and precious commodity in this part of the country. And yet the city, which shares its name with the state, is booming. In a country blighted by drug-related violence, the Aguascalientes region is comparatively speaking a haven of peace. With a population of close to a million, the city has a positive reputation—it regularly ranks as the Mexican city with the best standard of living and has attracted many prestigious companies, especially in the automotive sector.

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Aguascalientes (which is named after the many hot springs in the region) would therefore seem to have everything going for it, were it not for a recurrent problem that could ultimately seriously compromise the development of the city. The water source for the entire region is an aquifer, a vast layer of underground water that stretches across several dozen kilometres. This gigantic reservoir is primarily recharged by the rare rainwater that falls in the region. The city, its industry and its

agriculture all depend on the aquifer for their water, with farming accounting for 70% of total consumption, followed by the city and then the local industries. And this is where the problem lies: their needs significantly outstrip the rate at which this groundwater is being recharged, with the result that the volume of water in the aquifer is falling by some 280 million cubic metres every year. If nothing is done to reverse this trend, the situation will become critical within the next few years.

The Livelihoods fund was approached by Veolia, one of our industrial partners. It has a long-term contract to manage the city's water supply and wastewater collection services, and as it happens, another one of our partners, Danone, has a plant in Aguascalientes which bottles water into the 20-litre carboys that are distributed throughout the region. These two companies clearly have a direct interest in the sustainable management of the water resources, but they are also aware that this can only be achieved by bringing together all the relevant stakeholders and working in the common interest. We sought inspiration in the approach that France's water agency has adopted to manage the country's major drainage basins. The main users (local authorities, companies, and farmers) make a financial contribution to the budget of the agency, which puts into place the infrastructure needed to protect the water resources. Quite similar models have been developed in Latin America—the so-called water funds—but the appropriate regulatory framework for such entities is often lacking, and good will in this particular domain rarely suffices. In any case, nothing of the kind yet existed in Aguascalientes and it looked like we were in this for the long haul. How

then to get things moving and try to build up some momentum?

We decided to focus on the largest consumer of water, namely agriculture. This region used to be known for the vineyards that stretched across several thousand hectares, but phylloxera and competition have more or less put paid to the industry. It was replaced by dairy production, spearheaded by dynamic entrepreneurs and backed by public policymakers. In the space of a few years, the growing of fodder crops to feed dairy cows has become so prevalent that the state is now one of the largest producers of maize (over one million tonnes annually). Growing fodder crops generates only modest revenues for the farmers but they can rely on a stable commercial outlet for their produce. It is a good example of an approach to regional development that promotes economic activity without taking into sufficient account the environmental implications, and the direct result has been a sharp increase in water consumption to irrigate the water-intensive crops and provide the cattle with drinking water. This has in turn taken a heavy toll on the groundwater reservoir.

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There are about 1,800 wells in the region that are used for agricultural purposes, and they are generally managed by associations consisting of ten to twenty producers who take it in turns to draw water from them. The local authorities issue a pumping permit for each well which specifies the maximum volumes that can be extracted, but there is no getting away from the fact the associations regularly exceed these volumes by a significant margin. On-site inspections and fines have done little to deter certain associations from pumping up to

25 times the permitted volume. How could the pressure on the aquifer be relieved if punitive measures were not working and a spirit of civic responsibility seemed to be absent?

In these situations, the Livelihoods teams know from experience which lever to pull, and it is one that we use everywhere: the farmer's self-interest and self-motivation. All we needed to do was to come up with a model that would save water and at the same time increase the income of the producers. Most of them were small-scale producers who possessed a few hectares irrigated by a nearby well, and then all around there was land used for cattle or for crops that had to rely on rain-water. The irrigation techniques were terribly inefficient: water was pumped by electric motors and then flooded into the furrows of the fields. This traditional furrow irrigation method consumes a lot of water, a large proportion of which simply evaporates or seeps into the soil. Only a small volume of the water is actually used by the plant, which will find itself short of water until it is irrigated again. Energy consumption is also quite high, which increases the farmers' overheads.

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Fortunately, more efficient methods do exist including drip irrigation, which provides the plant with just enough water for its growth while reducing water consumption by over 50%. The small number of producers that have adopted this technique in Aguascalientes have seen a sharp increase in their yields per hectare: often as much as 50% and in some cases up to 75%. And they have cut their electricity bills by half. In the course of the many discussions we had with producers and irrigation associations, it was clear that many farmers were now aware of the advantages offered by these solutions

and were keen to adopt them. So why wasn't the use of these techniques spreading more quickly?

First and foremost, it was because these small-scale producers couldn't afford to invest in the relatively expensive irrigation equipment required. Public subsidies had been made available but the complexity of the application procedure had put a lot of them off. And secondly, there is more to it than possessing the equipment: to achieve the best results, farmers need proper training in the drip irrigation approach. This encompasses not just the technical side, but also business and management training so that they are able to seize the opportunities for diversification offered by such irrigation techniques. For want of such investment and training, a lot of producers had simply lost heart—in several places, we saw drip-pipes abandoned in a heap in the corner of a field, which seemed like a terrible waste.

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A change in approach of this kind can only be achieved by pooling the resources and skills of several different stakeholders. Firstly, we needed to bring on board the local authorities and the public agency SEDRAE, which is responsible for implementing the state's agricultural policies. They responded positively to our project proposal and pledged to make subsidies available so that producers could purchase the necessary equipment. For its part, the Livelihoods fund undertook to finance technical support and training for the farmers over a 30-month period. The local teams at Veolia and Danone, who were involved in the design of the project, were highly motivated and provided strong backing. The two companies committed to reimbursing the Livelihoods fund on the basis of results-driven criteria, namely a reduction in water

consumption and the concrete benefits accrued by the producers. However, we still needed to identify an organisation capable of implementing the project on the ground. This would involve raising the awareness of the farming community, explaining the nature of the project, helping farmers with the administrative procedures, making sure that the financing was in place, helping to install the equipment, overseeing training, and providing guidance. This was no easy matter as there are not many NGOs present in this region. We eventually found a consultant with a small team who was very familiar with the local context and had a solid track record in training. Here like everywhere else, the quality of implementation counts just as much as the quality of the initial plan. It wasn't easy either to coordinate our actions with the local authorities, who have to work to an annual budget and cannot commit themselves over a period of several years. We were lucky to find motivated and competent partners, but they were at the mercy of frequent rule changes and directives issued from on high.

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We rapidly agreed to conduct an initial phase involving 250 producers in order to test the model, with the dual objective of reducing water consumption and increasing the farmers' income. If this first phase proved to be successful, we hoped that it could gradually be scaled up. If 5,000 farms were appropriately equipped, the aquifer deficit could be reduced by some 60%, which is a lot but still not enough. Scaling up the project would require a joined-up approach to the drainage basin: a system of financing and water management which involved the public and private sector, public institutions and consumers. This would be difficult

to achieve without strong political commitment over the longer term.

Earth has been dubbed the ‘blue planet’ because 75% of its surface is covered in water, but freshwater accounts for only 3% of this total and less than 1% is currently accessible to us in the form of rivers, lakes and groundwater. In theory, these water resources are sufficient to meet the needs of the current global population, but they are very unevenly distributed due to varying climatic conditions across the globe. In some places too abundant and elsewhere too scarce, rainfall varies from region to region and even from one valley to the next, creating huge disparities. Water is a global concern but above all a local challenge, and it is not a level playing field—some countries possess plentiful resources while others are situated in arid or semi-arid zones. And these inequalities generate tensions in many corners of the globe which are exacerbated by climate change and a mismatch between water availability and the geographical distribution of the population. The OECD forecasts that 65% of the world’s population will be living in urban environments by 2050, and cities require durable infrastructure for supplying drinking water as well as for sanitation to prevent the spread of disease. Water will be a major factor in geopolitics in the coming years.

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However, the good news is that this stock of water is constantly being renewed thanks to the natural water cycle. The continuous evaporation of the oceans gives rise to precipitation over the continents, which in turn replenishes the rivers, lakes and groundwater. Rural spaces soak up this rainfall, the rocks and soil of the drainage basins filter the

water, and the rivers and streams redistribute it. Once again, in theory at least, the natural water cycle replenishes and purifies the water that we need. But as so often, human activity spoils the picture by contributing to growing pollution and by putting pressure on water resources. This is where the Livelihoods funds come in. We don't seek to intervene in the cities themselves or in relation to the major industries since we don't really have any added value to offer at that level. Rather, we intervene upstream in the drainage basins, the farmland and the wide-open spaces that are the natural reservoirs and filters of water.

116 In Brazil not far from Rio Janeiro, the challenge has been to protect water from chemical contamination by helping smallholder farmers to convert to organic farming and to band together to sell high-quality fruit and vegetables at nearby markets. Once again, the model is based on a convergence of interests: the need to preserve water quality and the aspiration of poor small-scale producers to a better standard of living. Elsewhere in Latin America but also in Africa and Asia, the challenge is often to combat the soil erosion caused in so many places by harmful farming practices: deforestation, hill slopes left bare between harvests, the lack of trees to retain the soil, the disappearance of canopies that offer protection against violent rains, and the loss of humus which reduces the soil's capacity to absorb water.

The farmers are the first to be hit by this cycle of erosion and poverty but its consequences are felt lower down in the valley too. Heavy rains deposit large volumes of sediment from the land into the rivers and streams, which carry them

downstream to the dams and water treatment stations. There is thus a problem of loss of soil fertility upstream and the accumulation of sediment downstream. The cost is considerable both for those living off the land and those generating energy or supplying the towns and cities with drinking water. From Mount Elgon in Kenya to the hills of Rwanda and the rivers of Sumatra, experience has shown that smart management of farmland and the landscape can solve both problems at once and reduce the overall costs incurred by rural and urban communities. But the initial challenge in implementing such joined-up solutions is convincing city-dwellers and country-dwellers that their destinies and their interests are closely intertwined.

View the online photo album
of Livelihoods project in Mexico



5 REFLECTIONS

The Foundations of our Home the Earth

Most of us have a rather distant relationship with the natural world. It's true that recurring heatwaves, spectacular forest fires and polar bears adrift on melting ice sheets are increasingly part of our collective imagination. We sense that something serious is happening not so very far away from us and that it is going to have an ever-greater impact. But our daily lives, and the resources we need, are not yet massively affected by climate change or the collapse in biodiversity, or at least not directly. Yes, the summers are getting hotter, sometimes unbearably so, and our cities are becoming increasingly polluted, but we are persuaded that we still have the means to protect ourselves and adapt.

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The situation is quite different for those whose survival depends directly on natural resources. When a mangrove swamp or coral reef is destroyed, the thriving ecosystem of fish and crustaceans disappears too, and fishermen lose their livelihoods. When the frequency of droughts and torrential rains increases, farmers see their crops go to ruin. When the soil is depleted through excessive use or washed out by erosion, millions of hectares of land become infertile. When

pollinating insects, birds and plant diversity are wiped out by the intensive use of chemical inputs or by monocultures, this has direct longer-term consequences for those who live off the land.

Those with financial and technological means at their disposal are better placed to anticipate and adapt to changes in the climate, or else seek their livelihoods elsewhere. But the situation is quite different for small-scale producers. The size of their smallholdings, their limited financial means, and their lack of training leave them little room for manoeuvre, and we are familiar with the outcome: for many, and in particular for the young, the only hope is to move to the nearest town or to the major urban centres, either in their own countries or abroad. Through the projects that Livelife has supported in Africa, Asia and Latin America, we have witnessed these changes directly. For example, the cocoa producers of West Africa have reported that the dry season is lasting longer and that the average life span of the cocoa trees is shortening. This has been confirmed by scientists, who have mapped out the zones which will no longer be conducive to cocoa cultivation in a decade or two from now. The reports we receive from farming communities around the world very much tally with each other. On our own modest scale, since the Livelife fund was set up nearly ten years ago our projects have been hit by a cyclone in India that destroyed 10% of the plantations in an area that is usually at low risk, affected by El Niño in Latin America in 2015, which saw a spike in the mortality rates of young trees, and disrupted by floods in Sumatra, which swept away mangrove plantations.

This situation is to a large extent what motivated us to set up Livelihoods in the first place: we wanted to help restore the foundations of our home the Earth. Our starting point was a fact that has become self-evident: the exponential growth in human activity over the last century has thoroughly compromised our relationship with the resources of the planet which we inhabit. Confronted for millennia with natural forces that he struggled to master, *Homo sapiens* has acquired the power not only to dominate but also to destroy his natural environment. We have entered into a new era in which human activity has a significant overall impact on the Earth's ecosystem.

An increasing number of the world's citizens, mainly but not exclusively the younger generation, are now convinced that there really is no Plan B, or indeed a Planet B, and that we urgently need to reverse the trend and speed up the transformation of our lifestyles and our models of production and consumption. This transformation will require us to deploy all the intelligence, knowledge and creative capacity at our disposal to meet the needs of the human race without destroying the foundations of our home the Earth: the cycles of the living world.

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Our first priority is to reduce CO₂ emissions as substantially and as rapidly as possible if we are to stand a chance of keeping global warming below 2 °C between now and 2050. If we don't manage this, the scientists on the Intergovernmental Panel on Climate Change (IPCC) predict that the consequences will be virtually unmanageable and probably irreversible. Politically and economically, this message is

beginning to hit home and increasing numbers of people are taking action, whether it be at the level of companies, cities or citizen campaigning movements. More and more of them are setting themselves a target of carbon neutrality by 2050 at the latest. The financial sector is finally responding and starting to revise its investment priorities. There is a genuine and growing environmental awareness among citizens of all ages in pretty much every corner of the world. Social media is abuzz with initiatives and ideas for new economic models.

124 Currently, the weak link in the chain are national governments, which are struggling to reach agreement on the ambitious and binding measures that need to be taken if the targets of the Paris Agreement negotiated at the COP21 (21st UN Climate Change Conference) in 2015 are to be met. The international scene is at present dominated by the defence of national interests, geopolitical considerations, populist rhetoric, and the protection of vested interests and sectors that could be affected by the required transformations. Europe, which has made a strong commitment through its Green Deal, is a relatively isolated case. At grass roots level, by contrast, in many countries we are witnessing a growing shift in the priorities of the electorate: environmental issues, so long the preserve of ecologist pressure groups, are becoming mainstream and political parties are embracing them to avoid losing ground to citizen movements. But as is the case with all profound change, conflicting forces are at work and nothing can be taken for granted. What is certain, however, is that time is limited.

In addition to efforts to reduce emissions, there is another lever at our disposal: the sequestering of carbon. When we

created the first Livelihoods fund a decade ago, we sensed that although reducing emissions is an absolute and urgent necessity, it will not on its own suffice. Population growth, which is still significant in several corners of the world, increased consumption by communities which have been lifted out of poverty, especially in Asia, and greater energy needs will all limit the overall impact of emission reduction policies. Carbon neutrality can only be achieved by combining both levers: reducing CO₂ emissions and storing CO₂. The good news is that our home the Earth still possesses considerable resources for slowing down the pace of climate change: soil (humus), plants (forests, prairies, peat bogs) and oceans (plankton, algae, coastal ecosystems) are huge carbon sinks which have the capacity to capture the CO₂ generated by human activity that is circulating in the atmosphere.

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Plants absorb CO₂ through photosynthesis, storing part of the carbon in their leaves, branches and roots and releasing oxygen into the atmosphere. Along with the oceans, trees play a massive role in the storage of carbon. The Food and Agriculture Organization of the United Nations (FAO) estimates that expanding forest cover could offset 15% of fossil fuel emissions in the first half of the 21st century, providing they are not destroyed by fire or other causes. On account of the biomass they contain, the oceans are the principal natural carbon sinks. It is estimated that they hold 50 times more carbon than the atmosphere. But this potential is under threat: 50% of corals are currently ailing or threatened by rising sea temperatures, and the acidification of the oceans is increasing sharply due to the higher levels of CO₂ in the atmosphere. Until recently, we underestimated how much carbon could

be stored in soil. At the end of the 20th century, it contained around 2,000 gigatonnes of carbon in the form of organic matter, which is nearly three times the amount of carbon in the atmosphere and four times that contained in plant biomass. But this capacity has been depleted across the board, particularly on farmed soil. The use of chemical inputs in place of plant or animal biomass has progressively reduced the amount of carbon present in the soil, which affects its fertility and its ability to retain water as well as having an inevitable impact on the climate.

126 Acting on the biosphere is an especially important lever because its impact extends to domains closely related to the climate. By restoring a forest ecosystem, a prairie, or a mangrove swamp, we can also restore biodiversity. By restoring the fertility of depleted soil, developing agroforestry models, and encouraging sustainable farming practices, we can help producers to make their operations more resilient. This is true for the majority of agricultural concerns regardless of their size, but it is absolutely vital for the millions of small-scale producers who are currently feeling the direct effects of climate change, especially in the intertropical convergence zone. Restoring the foundations of our home the Earth is a priority that is just as important as reducing our CO₂ emissions, and it is vital if we are to meet the food needs of a global population that is expected to reach 10 billion individuals by 2050.

For companies and public or private bodies which have committed to the path of carbon neutrality, acting simultaneously to reduce emissions and sequester carbon is a necessity. It would be very difficult to achieve ‘zero carbon’

by 2050 through emission reduction alone. Admittedly, technological advances will increase energy efficiency and give rise to new modes of transport, urban living and low-carbon consumption, but this will take time and we don't have much of that. The initiative known as 'carbon offsetting' is a means of moving towards our goal by supporting projects which have an impact on the climate. Take the example of an airline that has set itself ambitious emission reduction targets. Of course, there is a radical solution: to cut down on flights, or cut them out altogether, and indeed this is the path that some people are starting to take. Be that as it may, air travel is not about to disappear and it will continue to be a major generator of greenhouse gases. The airlines are reliant to a large extent on the aircraft manufacturers and on technological advances. Perhaps one day hydrogen-propelled aeroplanes will revolutionise the airline industry. Until that day comes, an airline has two options: to make every effort to reduce the emissions directly associated with its operations, and to support carbon offset projects not directly associated with its sphere of operations. By supporting serious projects, the company can contribute to curbing climate change.

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Some have been critical of this carbon offset concept, branding it 'a right to pollute' and a means for companies to assuage their guilty consciences over the environment by purchasing 'carbon credits', which is to say certificates indicating the number of tonnes of carbon that have been stored (or not released as emissions). The criticism would be justified if companies contented themselves with offsetting their emissions without making any effort to transform their own value chain. The offsetting process has to be just one part of the company's

strategy to reduce its carbon emissions. To return to our example of the airline, carbon offsetting is necessary but not in itself sufficient. The alternative would be to massively reduce air travel, but is this realistic? It's true that citizen movements urging people to choose other modes of transport are starting to have an impact on consumer behaviour—in Sweden there were recently the first signs of falling demand. But at the global level, the industry continues to grow: last year, 4 billion people around the world boarded a plane and this figure could double by 2040, by which time the number of planes in operation could have risen from 24,000 currently to 40,000. These forecasts may turn out to be wrong if, for example, consumer behaviour continues to evolve and people increasingly use technology to communicate virtually rather than travelling to meet up in person. But this doesn't alter the fact that the aviation industry will continue to be a massive source of carbon emissions for many years to come. The same goes for most other sectors. Carbon offsetting is one lever among others that enables us to take action now instead of just waiting for the clock to tick down.

When we founded Livelihoods, we didn't want to be just another investment fund making use of carbon credit mechanisms. We wanted to be part of a much broader movement that is helping to combat climate change by restoring the world's natural capital. In choosing the name Livelihoods, we wanted to signal as clearly as possible that the battle against climate change cannot be won without addressing poverty and issues of social justice. The rural communities with whom Livelihoods works are among the poorest people on the planet and also the most directly exposed to climate change, despite

the fact that for the most part they generate extremely low levels of CO₂ emissions. We therefore insist that both the social and environmental dimensions are incorporated into a project from the outset if we are to support it.

We were also keen to create a link—a bridge—between two worlds that on the face of it are completely distinct: the world of international companies and that of rural communities who are deeply rooted in their home territories. Carbon knows no borders: CO₂ emitted by a factory in China or a cargo ship transporting merchandise across the Pacific contributes to the world's overall carbon footprint. By the same token, the sequestering of carbon courtesy of a major agroforestry project in East Africa or the restoration of mangrove swamps in south-east Asia will improve the planet's carbon footprint. By investing in the Livelihoods funds, companies are contributing financially to projects with a 'positive' carbon balance sheet. The capital held by the funds is used to help rural communities develop production models which sustainably improve their standard of living and are more resilient in the face of climate change. And all of this is very tangible: since they were set up, the Livelihoods funds have financed the planting of over 150 million trees, helped over a million people out of poverty, and contributed to the restoration of thousands of hectares of depleted land. Every year, the carbon savings are measured using methodologies certified by the United Nations, verified by independent experts, and certified by internationally recognised standards agencies. A company that, in conjunction with other investors in the fund, takes the risk of financing such projects for a twenty-year period receives

carbon credits in return for its investment, which is to say certificates indicating the number of tonnes of carbon that have been stored (or not released as emissions). It can use these credits to offset some of its own emissions that it has not yet succeeded in reducing.

For their part, the rural communities benefit from all the economic, social and ecological advantages of the project in which the carbon fund has invested. These may include the revenues from the fruit trees planted or from the restored soil, the fish from the replanted mangrove swamp, or the training for women's groups in agroforestry methods. An essential principle is that the Livelihoods fund does not own the land or the trees. It lays no claim to the harvests and in no way seeks to control the social businesses that it supports.

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This principle often comes as a surprise to investors, who are used to traditional models whereby their investment assumes a tangible form, such as ownership of the land or a stakeholding in the business. But our experience of working in partnership with rural communities for several years suggests that this principle is probably an important factor in our success. It is because they know that they and their children will reap the rewards of their labour that the farmers commit themselves to the project, and it is also crucial to establishing a relationship of trust that will endure. The fact that this was 'their' project was the reason why, just weeks after a cyclone had hurtled through Araku Valley, the plots of land had been cleared and were ready for replanting. And it is also why the women of the Sundarbans keep possessive watch over the mangrove swamps that they have restored.

I often call to mind something an Araku farmer said to me some years ago. He had proudly shown me around his handsome little plantation on a slope overlooking the paddy fields lower down in the valley, and we were sitting in the pleasant shade of his finest mango tree, chatting about this and that. At one point he looked me and said: ‘In your cities and factories, you produce a lot of pollution. And with our trees, we help you to clean the air!’ And in those few words, he summed up our mission: to establish a bridge—a sense of solidarity—between two worlds which are wholly unfamiliar with each other but whose interests can nevertheless converge. The investors in the Livelihoods funds are helping this Araku farmer to enjoy a better standard of living, while he is helping them to reduce their carbon footprint. And by doing so, both parties are helping us to collectively avoid a catastrophe in the making.

A Field of Infinite Possibilities

Mine was the generation of the baby boomers born in Europe after the Second World War, and in France it was a period of growth in which consumption soared after the deprivation of the war years and the Occupation. In the working class district of the Val de Loire where I spent my childhood, every Monday morning was a big moment in the playground: those of whose parents had bought the first black and white televisions would talk about the film that had been broadcast on what was then the only channel. As they hung the laundry out to dry, the neighbours would natter with my mother about the first washing machines. We used to admire the fridge at my aunt's house. And some fathers enjoyed the boundless admiration of their children and all the kids in the neighbourhood after they came triumphantly home one day at the wheel of a Renault 4CV or Dauphine, which when the good weather came would be taking the whole family to the countryside or seaside for the day.

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Though it was still a rural suburb, buildings were gradually starting to encroach on the fields. At the end of our garden, I used to spend hours every spring transfixed by the sight of

Mr Lelait ploughing the field with his horse Bijou prior to sowing the seeds. When they matured, the ears of wheat would undulate in the wind like a golden ocean. A few years later, the bulldozers arrived and soon the field of my childhood was no more. Residential blocks sprang up next to the suburban house that my parents had saved so hard to have built. Then a supermarket was built on the spot where a few years previously my friends and I used to catch tadpoles in a pond surrounded by weeping willows.

134 It's a very familiar story of a moment in history when the Old Continent, in thrall to the images emerging from America, was caught up in a frenzy of seeking happiness by buying things that had finally become affordable. It's easy in retrospect to dismiss such consumerism, but when I look at the old yellowed photos and see the emaciated face of my father just after the war, I can understand what that time meant for a whole generation, and doubtless it's the same today for millions of people from emerging countries who are gaining access to the mass consumer market for the first time.

We never knew hunger. That spectre, which had hung over people for centuries, had disappeared, at least in our region and for a good deal of the population of the rest of France. In the space of a few years, the great plain of Beauce near to our family home was transformed into a huge production hub for cereals and sugar beet. Machines rapidly replaced men, the plots of land were merged and extended, and the hedge-rows uprooted to make way for vast open expanses of land, dotted here and there with huge grain silos and electricity pylons. The animals that grazed on the stubble gradually

disappeared as the farms became more specialised, and with them the manure, which was replaced by the increasingly widespread use of artificial fertilisers to compensate for the depletion of the soil. In the space of a few years, yields soared at a dizzying pace. I can still remember the ‘50 Quintal Club’ consisting of the most successful farmers of the 1980s. By 2011, it had become the ‘100 Quintal Club’. Industrial crops gradually came to dominate, replacing the traditional varieties that generations of farmers had selected. In a short space of time, polyculture gave way to a much more limited range of crops. These crops were high-yield but as fragile as thoroughbreds and needed to be protected from disease, rodents, insects and weeds. They were progressively enclosed in a chemical straitjacket devised by industrial scientists. To cope with dry summers and to water these thirsty crops, ever more wells were drilled for irrigation, and drilled ever deeper. In half a century, the farmers of Beauce and elsewhere were integrated into a system of agricultural production on an industrial scale, buoyed up by public subsidies.

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We did benefit from this massive transformation. The increase in yields brought prices down and spending on food, which accounted for a major part of the budget of modest families in the mid-20th century, fell as a proportion of families’ overall expenditure. The food and retail industries churned out a vast range of ready-to-consume products, and the marketing industry was on hand to ensure that demand never faltered. In less than half a century, a blink of an eye in the history of *Homo sapiens*, a small number of countries succeeded in producing a surfeit of calories to feed not only their own populations but also to export to less developed countries at

prices which the local farmers could not compete with. While this model brought its benefits, we are now also aware of its shortcomings in both environmental and nutritional terms. The illnesses associated with dietary deficiencies that our grandparents suffered from have given way to conditions associated with the excessive consumption of sugar and fat. And the collapse in plant and animal biodiversity is a sad reality that nobody can pretend to ignore any more. So what avenues are available to us to feed a future 9 billion human beings without destroying what is left of our natural capital?

136 In a curious twist of history, a critical attitude to agribusiness has now become *de rigueur* among right-thinking educated urbanites. What was once modern has now become passé. Today it is all about organic, locally produced food and short supply chains. People pride themselves on growing their own tomatoes and parsley on their balconies, beehives on office roofs are all the rage, and permaculture has become a topic of dinner party conversation. Certain trendy restaurants tout their urban agriculture credentials by serving incredibly pricey little dishes of vegetables cultivated hydroponically on a terrace or in a converted warehouse. The environmentalist Pierre Rabhi is a star in France and senior execs yearning for nature are queuing up to do residential courses in the countryside to learn about ‘virtuous abstinence’. If Molière were still around, it would doubtless have amused him to write an eco-version of *Les Précieuses ridicules*.

In between the intensive production models that have to be radically overhauled and this well-meaning urban idealism,

there is the vast universe of small family farms, which currently produce 70% of the planet's needs. Michel Griffon, one of the leading agronomists of our age, has perfectly summed up the challenges we face: 'The Earth is readying itself for 9 billion inhabitants by 2050. But is it really preparing itself? One is entitled to doubt it when one considers that over 600 million people rely on agriculture for a living but are unable to produce enough food even for themselves, and that agriculture contributes to greenhouse gases, climate change, the loss of animal and plant species, and pollution. One of the greatest challenges facing science today is to find ways for people to be able to meet their basic needs while taking care of the biosphere, and to help the poor of this planet—most of whom are farmers—out of poverty.'

Michel Griffon's philosophy was a major influence behind the creation of Livelihoods. We drew on his agroecological research when drafting the Livelihoods Charter, which sets out the principles underpinning the work of our funds. And what are those principles? To profoundly change the relationship between humans and the rest of the living world. Griffon uses boxing and judo metaphors to characterise the two major agricultural models. The form of agriculture that has become the norm in developed countries in the last half-century 'boxes' against the living world in that it strives to reduce biodiversity to favour the growing of high-yield crops, eliminating anything that might harm them. The intensive use of crops designed specifically for these ultra-specialised systems, of inputs to fertilise the soil, and of pesticides and herbicides to protect the crops is consistent with this logic of extreme simplification.

Agroecology is based on a different philosophy: instead of fighting against them, it uses the cycles of the living world in the same way as a practitioner of judo uses the strength of their sparring partner. Given that, in their natural habitat, plants coexist with other living beings, whether it be microorganisms in the soil, other plants or insects, the goal is to identify the best combinations for a productive ecosystem that is more robust. The steamroller of industrial agriculture is replaced by a more subtle assemblage. Needless to say, this approach is more complex to implement on the ground than simply applying the dose of input recommended by the manufacturer. If it is to succeed, farmers need to have a subtle understanding of how their soil and their crops function, and how they interact. There is no one-size-fits-all solution. A collaborative effort is required to invent, test and hone solutions that are suited to the specific conditions of a given agricultural concern. This is of course a constraint, but at the same time it is a way of doing justice to a noble profession—that of a highly qualified gardener of nature. And of rediscovering a sense of pride in a profession that feeds our fellow human beings without destroying the environment around us.

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Are these new agroecological models as productive? The experience of the thousands of farmers who have committed to this path indicates that, while the yields decrease appreciably, the costs of production fall as well, meaning that profit margins remain stable or indeed increase. On top of this, the crops are more resilient to the vicissitudes of the climate. So, these low-carbon models do have a positive impact on climate change, but are they capable of feeding the world's population? Isn't there a risk that we will destroy what is left of the great tropical forests in order to free up more land for

farming? To minimise the amount of arable land required, should we not on the contrary focus on food production models based on high-yield crops?

How do we overcome this troublesome dichotomy between the need to feed ourselves and at the same time conserve our natural resources? A recent study carried out by the Institut du développement durable et des relations internationales (IDDRI),¹ a French think tank, casts an interesting light on the situation in Europe: the scenarios elaborated by IDDRI indicate that converting European agriculture to agroecology could sustainably feed 530 million Europeans, reduce greenhouse gases by 40%, substantially reduce our reliance on imported proteins that significantly contribute to deforestation, and restore biodiversity. But this objective can only be achieved through profound changes to the European diet, which is becoming increasingly unhealthy and is too rich in animal content. As we know, this has now become a public health issue, with our diet contributing to increased obesity, diabetes and heart disease. In other words, the transition to agroecology concerns not only the farmers but society as a whole.

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However, the challenge facing the small-scale producers in emerging countries whom Livelihoods supports is often rather different. Whether it be in the Sahel or Burkina, on the slopes of Mount Elgon in Kenya or the coasts of Madagascar, the

1. 'An Agroecological Europe in 2050: Multifunctional Agriculture for Healthy Eating. Findings from the Ten Years for Agroecology (TYFA) Modelling Exercise'

yields per hectare are low and breaking out of the cycle of poverty involves agricultural intensification. The challenge is to conserve, or better still restore, natural resources at the same time, and also meet the needs of a steadily growing population. Certain countries opted to partake in the 'Green Revolution'. The large-scale use of chemical inputs and high-yield crops enabled India to significantly increase its food production in the 1980s, while Vietnam was able to achieve very high yields from its paddy fields. But we now know that this model has its drawbacks in terms of public health and the environment.

As far as Livelihoods' projects are concerned, the situation at the outset is often distressing. From slash-and-burn rice cultivation in Madagascar to the monocultures of cocoa in Ivory Coast and palm oil in Sumatra, examples abound of yields that are more or less acceptable in the first few years and then deteriorate rapidly. With each harvest, the organic content of the soil is depleted and it becomes more vulnerable to drought. If the farmer can afford it, he compensates through the use of chemical fertilisers, which are subsidised in certain countries. But this artificial boost is only effective in the short term because it does not sustainably replenish the soil. And if the cocoa, palm oil or coconut plantation is old, the yields are even lower and the farmer will not have the means to invest in renewing his plantation, diversifying his crops or restoring his soil. Poorly informed and with little or no technical guidance, he is at the mercy of the middlemen who seek to buy his crops at the lowest possible price, sell him inputs, and lend him money at prohibitive interest rates.

It would be misleading to suggest that it is easy to break this vicious circle of poverty. Many have tried, without a great deal of success. And yet many examples of well-balanced models do exist. The agroforestry techniques perfected by Vi Agroforestry in Kenya prove that it is possible to transform a smallholding within a few years, to substantially increase production and income, and to restore the fertility of the soil, its ability to retain rainwater and hence its resilience in the dry season. The coffee production techniques developed by the Naandi Foundation in Araku Valley in India and the diversifying of revenue streams for coconut producers in the Philippines are other positive examples. All of these initiatives share some common traits: techniques that are accessible, inexpensive and can be replicated on a large scale, efficient organisation on the ground to inspire trust and support the transition, promises kept, and investment over the longer term. There is nothing miraculous in all of this, but how many development programmes meet these criteria?

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More so than the financial investment, it is the human investment that will make the difference, and this is also where the challenges arise. How does one go about preparing and training a new generation of farmers capable of farming intelligently against a backdrop of climate change? In the capital cities of the countries where Livelihoods has invested, technical colleges do exist but their graduates will not become farmers. They aspire to be civil servants in a government ministry, executives in a leading company or managers at an NGO. Young people from the villages who could in theory take over from their parents are not afforded this opportunity: after attending the often oversubscribed and poorly equipped

primary school in their village, they receive no vocational education because there is virtually no such thing. On none of the projects that we have undertaken has there been training available nearby for young farmers. This was what prompted us to create a rural boarding school in the middle of our vanilla production project in Madagascar where the youth of neighbouring villages could combine work experience with training in farming and management techniques. It was a very modest undertaking, but it did serve to highlight a scandalous state of affairs: given the major economic, environmental and social importance of agriculture, why are we investing so little in the men and women who will be feeding future generations? For all the grand declarations and grandiloquent promises, is it that deep down we view these small-scale farmers as an irrelevant fringe group whose inevitable destiny is to join the ranks of the poor in the cities or the cohorts of migrants?

When we founded Livelihoods, we chose a seemingly rather ordinary utterance by Mahatma Gandhi as the subtitle for the charter that laid out our guiding principles: '*The future depends on what we do in the present*'. It is a sentiment that has never been more relevant.

Companies and Their Contradictions

The Livelihoods funds emerged out of the corporate world and were designed and developed in conjunction with companies. Many people find that odd, and I can see the questioning, even doubtful, look in the eyes of the people I talk to, including my friends. Livelihoods goes against the grain of people's image of companies: the world of business is the world of money, seeking profit, winning market share and 'optimising costs', as the jargon has it. A world where on the face of it business imperatives crowd out broader and more altruistic concerns. Why would a company get involved in a venture whose aim is to improve the lives of poor communities or restore forests? In people's minds, that is the job of NGOs, humanitarian organisations and public authorities, not businesses. If companies do get involved, it must be either a Mickey Mouse project or a simple PR exercise.

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The question is a legitimate one and it's worth going into a little detail to answer it. It is undeniable that a company's first priority is to be financially viable, but there is more to it than that. A company is also a social institution in the sense that it exists in, and is part of, society. For some years now

opinion has been divided between those who believe that the only purpose of a company is to create value for its shareholders and those who feel that it should do so for all its stakeholders (its shareholders, but also its clients, staff, suppliers, etc.), or what one might call its 'ecosystem'. Defenders of the first proposition dominated managerial thinking for many years and still exercise a huge influence, particularly among financial investors. But they have lost ground because everyone can now see the limitations of such a narrow approach in the face of environmental and social challenges on such a scale that they threaten the very future of our species.

144 I have been fortunate enough to work for a company that was one of the first to embrace a dual approach that has a social as well as a business dimension, though not without a struggle. Almost fifty years ago in 1972, Antoine Riboud, the then boss of BSN (which would become Danone a few years later) encountered a great deal of hostility when he outlined this vision in a speech in Marseille to an audience of French business leaders, who were dismayed to hear one of their own claiming that 'the responsibility of a company does not end at the door to the office or factory'. What he went on to say now sounds remarkably prescient: we should strive, he said 'to satisfy man's deepest aspirations and identify values that will improve his life and domesticate growth', adding that 'there is only one Earth and we only live once'. Antoine Riboud's words have a curiously contemporary resonance when he asserts that companies should cater not only to the imperatives of Having ('Having is obtaining one's share of the riches one reaps from the Earth through growth') but also Being ('Being is having one's place and understanding one's

role in the company’) and Being Empowered (‘Being empowered is being able to deploy one’s creativity in one’s job and to show initiative in acquitting oneself of one’s responsibilities’).

Implementing this vision in practice in the face of countervailing winds was far from plain sailing. But the strength of the ‘dual approach’ lies in accepting the contradictions of a company, finding the right compromises between conflicting impulses, and arbitrating between the short and long term. It involves charting a course of progress without losing sight of one’s destination. Franck Riboud, who took over from his father at the helm in 1996, battled hard to safeguard the company’s independence and to implement this dual approach. He rightly judged that this very distinctive company culture was the best protection against predators and he cultivated it diligently. Franck inherited a rare quality from his father: his anti-conformist mindset. He has a capacity to think outside the box, to approach things from a different angle and to resist being unduly influenced by prevailing opinions and the exhortations of so-called experts. It is always stimulating, if challenging, to work with such a character, as I can testify. These qualities, combined with a strong intuition, have helped Danone to overcome many a challenge and to launch a series of highly original initiatives, such as the social business created in Bangladesh with Professor Yunus (winner of the Nobel Peace Prize) to produce and distribute fortified yoghurts to combat malnutrition. Not everything turned out as we hoped, but we were able to demonstrate that companies do have a certain latitude for helping to make the world a better place.

It was this same corporate vision that prompted Danone to become involved in the battle against climate change fairly early on. In 2008, the management team set a target of reducing the company's greenhouse gas emissions by 40% within four years—an ambitious but very positive move. It encouraged our teams to alter their perspective and to revisit product design, production techniques and logistics. It became clear to us that our models had been developed at a point in time when carbon was by no means a central consideration; at most, it was an indicator of energy costs. By setting itself an ambitious target, the company was opening up the range of possibilities. Fiddling around at the edges was not going to suffice—we had to thoroughly rethink our approach and reinvent the company. It would take years, but at least the process was under way. And a few years later, Danone announced a new target: net zero by 2050. In other words, we were going to 'neutralise' the company's carbon footprint by drastically reducing emissions right across the value chain, including the agricultural component which supplied us with our raw materials and our milk and plants in particular. In addition, we would offset the emissions that we were not yet able to reduce ourselves.

This was the context in which the idea for Livelihoods emerged. We needed to offset our emissions, but how could we do that in a way that was in keeping with our core business activities? Producing food involves working with the earth, air, water and living world. Helping to protect and restore this natural capital seemed like a logical step for a company whose livelihood depended on it. But how? We weren't in possession of anything like the specialist knowledge that we

have today but others did have that knowledge, especially the NGOs that had been campaigning on these issues for years. At the time, they were still very wary of the corporate world but we were fortunate enough to establish relationships of trust with several of them. It was through discussions with Christophe Lefebvre from the International Union for Conservation of Nature, who had helped us to protect our source of Évian mineral water, that an idea took shape for projects that would simultaneously store large quantities of carbon, restore endangered biodiversity, and improve the lives of local communities. It was Christophe who put us in touch with our first partner, Océanium in Senegal, with whom we launched our first major mangrove swamp restoration programme.

I can still remember the discussion I had with Franck Riboud when I suggested to him that we invest in this project, which was so divorced from our usual business activities. Intrigued, Franck gave his approval but set two criteria for undertaking initiatives of this kind: firstly the size of the project, as a large company like Danone would not be credible if it merely supported small-scale projects, and secondly its scale. We needed to develop an economic and financial framework so that the model could be replicated in other countries at an affordable price. With the financial support of Danone, we therefore launched our first large-scale plantations in Africa and Asia. This incubation phase gave us time to hone our model, and we realised fairly quickly that it made no sense to jealously guard this initiative for ourselves—we should invite other companies to team up with us. By pooling our resources, we would be able to fund more

projects, reduce the risks, and increase efficiency for the benefit of all.

The creation of the first Livelihoods carbon fund in 2011 was founded on this very simple pooling principle: a company invests by buying shares in the Livelihoods collective investment scheme and receives carbon credits proportional to its investment. We contacted colleagues at companies with whom we worked closely and who shared our values, and we did not have to wait long for a positive response from three of them: Schneider Electric, Crédit Agricole and Voyageurs du Monde. And then thanks to word of mouth and networking, others came on board: Hermès, SAP, Michelin, Firmenich, La Poste, Caisse des Dépôts and Eurofins.

148 These companies are not merely investors. They are involved in defining the orientation of the fund and making investment decisions, and the deliberations of the investment committee are a lively affair. Everyone brings their own perspective to bear based on their particular field of competence and their experience of other projects, and a sort of collective expertise has gradually been built up. The most striking thing is that although over the course of almost a decade there have been some impassioned debates, there has never been a fundamental disagreement over the social or environmental purpose of the projects that we support. This is perhaps because everyone is actively involved in moving things forward within their own companies and is aware that addressing problems requires not just conviction but also a great deal of pragmatism. They are all convinced that companies can be part of the solution because they have the resources, talent, marketing capacity and skills of persuasion. So long as ‘their

skis are pointing down the slope', as Franck Riboud likes to put it.

In 2015, we decided to take things further and participate more directly in the transformation of companies by creating a new tool: the Livelihoods Fund for Family Farming. This involves supporting companies that purchase raw ingredients and are keen to contribute to bringing about the necessary changes in farming practices. These firms buy large quantities of milk, cereal, cocoa, vegetable oil, fruit and so on. They are therefore important players at the beginning of the supply chain before the raw ingredients reach their factories to be turned into products for their consumers. They can bring about change by actively engaging with their suppliers to encourage farming practices that respect the environment and also afford farmers a decent standard of living.

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And the sea change in public opinion has given them an added motivation to do so. The links between food, health, agriculture and the environment are now better understood, and this is reflected very directly in the changing habits of consumers, who these days are looking for organic, locally produced food whose provenance is known. At the outset, this shift could have been taken for a fad spearheaded by a few trendy urbanites and environmental campaigners, but it is now spreading across different social groups and taking root in very different countries. Everybody now knows that the decline in bee numbers is linked to the widespread use of pesticides, and the media are quick to relay NGO warnings about endangered plant and animal species.

Business leaders are also coming on board. Emmanuel Faber, who has taken over from Franck Riboud at the helm of Danone, was very quick to appreciate that a genuine food revolution is under way that will affect every link in the chain. Both a visionary with strong personal values and strategically astute, Emmanuel set the company on a completely new course in the Danone Manifesto published in 2017: ‘At Danone, we believe that each time we eat and drink, we can vote for the world we want to live in. This powerful idea is at the heart of the ongoing food revolution, a movement inspired by people who care about where their food comes from, how it was grown, how it arrived on their plates and how it impacts their health and the health of the planet. We call those people the food generation.’

150 The Manifesto conveys a vision of health and agriculture that reflects the company’s determination to reposition itself: ‘A healthy body needs healthy food. And only a planet in good health can sustain healthy crops and provide healthy food while also benefiting local communities. The two go hand in hand. Danone’s vision is based on the idea that it is possible to produce food in harmony with people, communities and the environment. We want Danone to become a symbol of positive change that brings about a healthier world through healthier food. We want our brand image to stand out and to inspire trust in consumers, and by increasing the appeal of our various brands in this way, we can be a motor of growth.’

Once this ambition has been stated, the key question is whether, and how, large companies can succeed in transforming themselves and transmitting that change right the way across their supply and distribution chain. This is what

motivated us to set up the Livelihoods Fund for Family Farming (L3F), an investment fund designed to help producers transition to agroecology and companies to alter their purchasing policies. We discussed this project at length with Emmanuel, trying to decide on the mode of farming that we wanted to promote and the ultimate purpose of this new investment fund. I have always been struck by his enthusiasm for these issues, which I believe can be traced back to his childhood in the valleys of the Hautes-Alpes. Despite his crazy schedule, he has made time to visit most of the countries where we are present, from India to Kenya to Senegal. I've always sensed that he is in his element during these brief interludes spent in the field with a group of farmers or NGO activity leaders after a long 4x4 ride far off the beaten track. I can remember how curious he was to find out more about the agroforestry model in use at Mount Elgon and its impact on water resources, or the role played by women and the dietary habits of people in Araku Valley. In discussing these experiences and many others, we became convinced that the real world cannot be neatly packaged up and that the ecological, economic, social and cultural dimensions are deeply intertwined. How can you motivate small-scale farmers to adopt environmentally friendly practices if they derive no benefit themselves and have to work even harder? All the various dimensions need to be incorporated if change is to be brought about. A statement of the obvious, some might say. But for companies which are used to simplifying and prioritising by focusing on a restricted set of objectives, it is sometimes by no means obvious. Accepting complexity already represents a major step, and having done so, the challenge then is not to lose the thread and to choose the right levers of change.

One leading company showed an immediate interest in the L3F model. Mars was founded in the United States in the early 20th century by the chocolate entrepreneur Franklin Mars. It has since become a global company with a turnover in excess of \$30 billion, but it nevertheless remains a family business whose shareholders are descendants of its founder. The Mars management team came up very early on with an original conception of the company involving what they called the *mutuality of benefits*: a company should create economic and social value for all of its stakeholders, not just its shareholders, and indeed this is a precondition for its success.

152 Although the history of the two companies is very different, with one deeply rooted in European culture and the other profoundly American, Danone and Mars share a similar vision: they both believe in the company as a force for progress, providing it is managed in this spirit. So, it is not so surprising after all that the two companies should become involved in the Fund for Family Farming in order to transform their supply chains. Mars is a major buyer of cocoa and other raw ingredients produced by thousands of small-scale farmers in emerging countries. For many years, the company purchased from big industrial suppliers and its principal criterion was value for money. Its buyers had only a vague and indirect knowledge of agriculture and the material circumstances of smallholders. Influenced like many other companies by the growing debate on these issues in recent years, it gradually came to appreciate the importance of the social and ecological dimension to its purchases and decided to become one of the pioneering companies in this domain. As befits Mars, which has a reputation for excellence throughout

the industry, it went about things seriously, analysing all its supply chains, locating producers and identifying the major impacts. Under the aegis of Barry Parkin, its chief procurement and sustainability officer, it elaborated a strategic vision and roadmap, and put into place the resources for a transition which the Mars management knew was going to take a while. It was at this point that our paths crossed and Mars became one of the leading partners of the Livelihoods Fund for Family Farming with the aim of transforming its supply model by turning to small-scale producers of cocoa, palm oil, coconut, shea nut and other raw ingredients. Victoria Mars is the co-chair of their board. When the two of us visited our projects in Madagascar and Kenya, I could see that she had a real passion for what we were doing and a determination to achieve concrete results, especially regarding the situation of women.

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L3F bases its operations on the needs of the company, which every year purchases thousands of tonnes of raw produce from many different family farms in a particular country. The commitment at the highest level of the company is a prerequisite as is the engagement of its various departments—first and foremost its teams of buyers, but also increasingly its marketing teams. A second stage involves identifying a supplier, since brands rarely purchase directly from farmers. They source products that have already been processed locally or internationally. In the Philippines, for example, the coconut project could not have existed without the commitment of Franklin Baker, a firm that purchases the coconuts and carries out the initial processing in its factories. Once we have found a supplier who is committed to

our approach, we need to select a growing area that will enable us to roll out the project on a sufficiently large scale. In Madagascar we chose a small coastal region that is comparatively isolated but very conducive to growing vanilla. This is an especially delicate phase. It is crucial to understand the circumstances of the farmers, what will motivate or fail to motivate them, the aspirations of these rural communities and the constraints on them, the political and climate risks, and much else besides. And of course we also have to conduct extensive research to identify which technical and commercial techniques to promote and assess their potential impact, both positive and negative. This could not be achieved without a partner who knows the terrain well and has substantial experience of working with rural communities.

154 The choice of NGO is crucial. As with any other sector, the NGO world is a mixed bag. Not all of them have the capacity (or desire) to carry out large-scale projects. Some are efficient while others are not. A few have become bureaucratic machines that swallow up international funding and have little contact with the reality on the ground. Over the years, the Livelihoods teams have developed a real expertise when it comes to finding the right partner. We prefer to work with local organisations which over the years have built up a relationship of trust with the villagers, have managed to achieve results with limited resources, and are willing to do so much more if only they are given the means to do so. None of Livelihoods' investments could have succeeded without the involvement of NGOs that are often not very well-known but demonstrate on a daily basis their understanding of the situation and their ability to find the right answers and develop relationships of trust.

When we have found our partners, we embark on the long process of devising the project together. Over the course of several months, the Livelihoods teams, the buyers and sustainable development officers from the companies, our partner NGO and various experts hammer out all the details, and a business plan spanning several years is drawn up. Quantifiable targets are set for production volumes, the increase in farmers' revenues, carbon and biodiversity. In every project, there is an emphasis on training, the division of responsibilities, and the inclusion of young people. The necessary resources are costed and an implementation schedule is discussed with our partners. Time is an essential component: we need to strive for a few tangible short-term outcomes in order to generate a dynamic. But the transformations in question require time: for the plantations to grow, for harvests to be improved over the course of several years, and for the soil to gradually regain its fertility.

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The changes are not unilateral—they concern not only the farmers but also the companies and their buying habits. They have to commit themselves to a territory and its producers. They have to sign long-term contracts with their suppliers and the farming cooperatives so that there is enough time for the transformation to take place. And they need to protect the producers from price fluctuations which can destroy in a few months what it has taken several years to build. In short, it involves a systemic change in the relationship between industrial companies and farmers, a sort of mutual progress pact which is in the interests of all the stakeholders: the major retailer, who consolidates the quality of their supplies and their brand reputation, the supplier who expands their

business by becoming a supplier of choice, and the producer whose income increases and whose farm becomes more resilient. And the more general public interest is served too, whether it be in terms of the climate, biodiversity or poverty reduction.

At least, this is what would happen in an ideal world—the reality is of course more complicated. The vicissitudes of business, the economic climate, political and social developments, and climate events can all derail a project, however well designed it is. Change needs to happen both on the farms and within companies, and in the latter case it will only come about if the true ecological and social costs and impacts are taken into account in the company's results. Are shareholders ready to accept such changes? There's not a simple answer to this question. The world of investment funds is starting to change, albeit too slowly. Under the influence of society as a whole, the trend towards 'responsible' or 'impact' investing is growing. Financial products that incorporate a social or environmental dimension are still in the minority, but they are proving to be popular among savers. More generally, the rapidly evolving expectations of consumers is a strong lever of change. Having come under widespread scrutiny on social media as well as in the traditional media, practices that just a few years ago were commonly accepted or brushed over are no longer tolerated today. Price naturally remains a crucial factor in customer choice, but a growing proportion of consumers are attentive to the conditions in which products are made. How much longer will it take until food is purchased at a price that enables producers to make a decent living while taking good care of their land?

The first step in changing a company is for the management to make a clear commitment which sets out a new roadmap and objectives for their teams. This signals the start of the lengthy process of transforming company practices: agreeing to enter into contracts of several years' duration, selecting suppliers according to criteria that are not exclusively financial, and paying a little more to help finance the transition at the farmers' end and soften the impact of price fluctuations, which can often discourage producers. The marketing teams need to learn how to market differently, and the legal and financial departments need to adapt to the new realities. It is a major undertaking that upends familiar habits, mindsets and procedures. The obstacles are many and the risk of failure is real, but experience has shown that these new approaches can really motivate and engage staff.

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The change is systemic for companies too and it is an arduous process. They neither deserve the criticism levelled at them, nor for that matter the praise that they sometimes heap on themselves. They are human institutions that are both imperfect and essential to the functioning of our societies. They can and they must change, but this change will only be brought about if we work with companies rather than against them, chivvyng them along from time to time but above all giving them plenty of support.

A Development Model Running Out of Steam

Our home the Earth is cracking at the seams. The world population has already exceeded 7.5 billion and is set to approach 10 billion by 2050. Natural resources are under pressure. In 2019, by the month of July the human race had consumed all the resources that the Earth is capable of regenerating in the course of a year—two months earlier than twenty years ago. This means that year on year we are consuming an increasing proportion of the natural capital of our planet. And yet we tend to react passively when we learn of the litany of disasters that await us, such as the melting of the polar ice caps or the number of species who will go extinct in the coming year. When a pandemic like Covid-19 poses a threat to our lives, there is understandably a massive worldwide effort to combat the virus. But is the human race really only capable of mobilising itself in the face of an immediate threat? In his book *Collapse*, the remarkable American scientist Jared Diamond documents the fate of human societies which at a certain point have collapsed after failing to anticipate the future and adapt before it was too late. From the Vikings of Greenland to Easter Island, the forests of Japan, the Australian desert and the great plains of the American Midwest, examples

abound of blindness and foresight, conservatism and boldness. Except that this time the stakes are global, not local. Those who live far from the coast may imagine that they will be unaffected by rising sea levels, and Europeans may believe that the growing frequency and intensity of cyclones only concerns the warmer regions of the world. In short, people tend to think that the danger is far off in time and place, and that by the time it arrives human ingenuity and technology will be up to dealing with the problem. This way of thinking is probably the surest means of ensuring that disaster occurs sooner rather than later.

160 Gross domestic product (GDP) remains the benchmark for measuring a country's level of development and yet it has long been known that it only reflects one reality: the sum total of goods and services produced and consumed. Sometimes the accounting is absurd: road accidents that require the intervention of the emergency services and hospital care are counted as wealth creation. An arithmetic that measures human happiness in terms of material possessions is no longer tenable. The limited resources of our planet make a nonsense of our obsession with the production and consumption of goods which are often not genuinely useful. We have no choice but to learn how to live differently on the Earth and to revise our conceptions of wealth and poverty.

I often think back to a conversation I had with a Senegalese friend who runs an NGO in a village in Casamance. One evening we were sitting on some benches in the shade of a large kapok tree and chewing the fat. Gangs of boisterous children were chasing each other around the houses and into the fields bordering the village. An old man or a mother would

gently reprimand them from time to time. Further off, we could hear women singing as they returned from their day's work in the paddy field. Were these children 'poor'? Undoubtedly so if we were to measure their family's income in CFA francs or dollars, as international institutions tend to do. I won't forget in a hurry the slightly irritated remark that my friend made: 'Why do you say that these children are poor? They live in a family and a community who take care of them and pass their culture on to them. They are surrounded by a plentiful natural world which is still relatively well-preserved. Generally speaking, they are properly fed, they have a rich social life, and they are happy. Of course they don't have all the possessions of a child from a comfortably-off family. But I wouldn't say they are "poor" because they have other riches.' And then he went on to say: 'When I visited Paris a few years ago and saw the miserable look on the faces of the people in the Metro, their coldness and their indifference, I thought to myself: that's what poverty looks like.' Needless to say, my friend was well aware of everything these village children lacked, including access to decent healthcare and a proper education that would enable them to develop their full potential. Nevertheless, his remark rang true. There is an urgent need for us to ask ourselves what is really important and what humans really need in order to flourish in society. We need to learn how to re-inhabit Planet Earth.

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I grew up in a period of economic growth in France known as *les trente glorieuses*, and those three decades of plenty from the mid-1940s to the mid-1970s were seen as synonymous with progress. Producing more goods and services while reducing costs was the order of the day. Access to a mass consumer

market profoundly altered lifestyles, at least in 'developed' economies as they came to be known some years later. Resources seemed inexhaustible and the future was radiant. At that time, the main debate was over the distribution of this wealth and all over the world the left and the right were at loggerheads over this question. The unions campaigned for more spending power for their members while champions of the Third World lobbied for a fairer distribution of wealth to the newly independent nations. The question of fairness is still very much on the agenda and indeed has become more pressing, now that there is such an intolerable gap between an increasingly rich minority and whole populations who have been left on the sidelines. People's frustration is all the more acute as they are well aware of the plethora of goods on offer. Young Africans living in villages or city suburbs may not have

162 any money but they can see for themselves the wealth of the world via their mobile phones. The continent is home to a billion people and this number is expected to rise to 2.4 billion by 2050, by which time half of the African population will be aged under 25. Already today, 60% of the unemployed in Africa are young people, and 95% of those who are lucky enough to have a job work in the informal economy. In Africa and elsewhere, it is impossible to see development, which is to say the creation and redistribution of wealth, as an issue that belongs to the past. On the contrary, it is a burning issue. The absence of hope, and the attendant despair, plants the seeds for violence. Migration continues to divide opinion. And most governments just don't seem up to the challenge of addressing these problems. Many play on ignorance and fear to consolidate their power and enrich their clan. But for how long will their citizens continue to tolerate this situation?

Escaping poverty remains a central preoccupation for nearly 3 billion human beings living on less than 2 dollars a day. 80% of these people live in rural areas and 65% are dependent on agriculture. The average carbon footprint per US citizen is 400 times higher than that of an inhabitant of the Republic of Congo. And the carbon footprint of rural communities is in turn lower than this national average. Smallholders in developing countries bear only a tiny responsibility for greenhouse gas emissions and yet they bear the brunt of some of the most devastating effects of climate change. In creating Livelihoods, our aim at our own modest scale was to combat climate change and poverty simultaneously. The incomes and standard of living of rural communities are still to a very large extent dependent on natural resources, so the degradation or alternatively the enhancement of those resources has a direct impact on their lives, albeit a delayed impact. The challenge lies precisely in taking advantage of that window of opportunity and successfully managing the transition: restoring mangrove swamps, replenishing the soil, planting millions of trees according to agroforestry principles, and developing sustainable farming skills requires time, which is to say several years. And time is running out: the effects of climate change are being felt ever more harshly and more frequently. So how do we win this race against time and speed up the transition?

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Can we count on the ‘development’ world and the many institutions that have set themselves the task of achieving this? Coming from a corporate background as we did, we were curious to get to know this world without getting lost in it. The development sector is first and foremost a world of words where people speak a lot, churn out concepts and acronyms,

attend countless conferences and write up endless papers. Development is the kingdom of the experts, or those who proclaim themselves to be such, and international institutions are their natural home. Working groups, missions, evaluations and reports of every imaginable kind abound. The opinions of academics and researchers are highly valued. Every international conference is an opportunity to dramatise the situation and make grand declarations. Millions and even billions are pledged. Everyone makes commitments, which may or may not be honoured—the main thing is to garner media coverage. People want to be seen in their best light, close to the seats of decision-making. So are these grand circuses entirely pointless? By no means. International institutions at least afford states a forum for dialogue, for reaching compromises and for sealing alliances, even though the outcomes are still ultimately dictated by national priorities. In the absence of a world government, multilateralism is better than conflicting nationalisms, whose dramatic consequences we are familiar with from history and contemporary events. International institutions have the merit of driving the agenda on major global issues, but the tangible results can be so disappointing that the general public has become increasingly sceptical of them.

And yet change is occurring—it may be insufficient and too slow, but it is genuine nevertheless. The gulf that used to separate public bodies and NGOs on the one hand and the corporate world on the other is gradually being bridged. Some will say that the NGOs are selling their souls and will end up being dominated by the world of money. Others, including us, see this as an opportunity to pool our complementary resources. This marriage of opposites can sometimes lead to paralysis, but our ten-year experience of Livelihoods projects

has shown us that it is possible to form coalitions between stakeholders from different backgrounds that can have a real impact, providing we are on the same page in terms of objectives and how we are going to work together. In this domain, principles are not enough—the devil is in the details.

Change is also taking place on the funding front. In the past and still to large extent today, the development world has been guided by a logic of aid: aid from rich countries to poor ones, philanthropic aid, emergency aid and so on. For decades, governments and NGOs have worked on the basis of ‘project tenders’ that give access to grants. Though evaluation reports have to be written up to justify how the funds have been used, the money is donated as opposed to lent. This approach has fostered a charity mindset that you can see almost everywhere. NGOs and local officials jump from one programme to the next, receiving funds from the British and German aid budgets and then from the EU, USAID and UNEP. When confronted with a problem, the local authorities turn to the ‘donors’, which is to say the national and multilateral agencies whose mission it is to finance development programmes. The return on these programmes varies a great deal. The complexity of the procedures and the red tape can severely hinder projects, as can simple incompetence and corruption. Most of the time, whether they are successful or not, programmes are rolled out one after another like waves breaking on a beach. The donors also have to justify their own existence. I once asked the director of one of these development agencies if he was satisfied with what they had achieved, and he replied: ‘Yes, it’s been a very good year. We’ve disbursed a lot of funds.’ It would have been nice if he’d taken satisfaction instead from achieving a lot with

relatively little money spent, but in general the staff working for these organisations do not remain for very long in a given country. There is an international career in which they switch jobs fairly regularly and they are just not in post long enough to witness the long-term results of the programmes that they finance.

We had this fact in mind when we opted to set up an investment fund rather than a foundation, as we were determined that the stakeholders in our projects should assume their share of responsibility for them. An investment means that some form of return is expected, though it doesn't necessarily have to be of a financial nature. For example, Livelihoods has invested in helping thousands of small-scale producers to increase their incomes using sustainable farming practices. The money from our funds finances the actions implemented on the ground by a local NGO and by farming cooperatives who commit to achieving results, whether it be in terms of the number of trees planted, the tonnes of carbon captured or the quantity of vanilla produced. We also sign purchasing contracts with these NGOs, and the companies involved in the fund commit themselves contractually for the duration of the project. The managers of the fund are accountable to the investors who have placed their trust in them. The investment model is not virtuous in and of itself—everything depends on the objectives of the investment. But it does have one advantage: investment that entails a risk as well as an obligation to achieve results forces us to high apply high standards when choosing our partners and devising and implementing the project. The obligation to achieve results confers a sense of responsibility on all parties to the contract.

The time frames are another major obstacle. Most development programmes are funded for short periods, most commonly for three years. This is not enough to bring about systemic change. In this domain too, there is much talk of the need for long-term commitments, but the reality on the ground is rather different. This is because there is greater uncertainty and risk associated with long-term projects, and those with political power rarely look beyond the next election. For their part, private investors are rarely willing to commit themselves over many years. And it is admittedly true that the political, social and environmental situation in many countries does not encourage long-term commitment. Agriculture is a good illustration of this contradiction: it requires time to successfully transition to low-carbon farming that promotes biodiversity and is capable of meeting food needs. This transition is difficult for many producers in developed countries even with all the subsidies available, especially in Europe. But it is almost impossible for small-scale farmers in developing countries, who rarely have access to credit facilities (and even if they do, the interest rates can be very high).

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One example of many are the cocoa plantations in West Africa, which are usually modest family concerns of a few hectares in size. Quite a few of these plantations are old and need to be replaced, since the yield from a tree that is more than 25 years old will gradually tail off. A new cocoa plantation can produce 1,500 kilos per hectare, whereas ageing plantations will not yield more than 300 kilos. Renewing a plantation requires an investment in high-quality saplings and a labour force to clear the terrain and plant them. And above all money is needed to make it across the 'valley of death': the four or five years in which families still have to make a

living until the young trees become productive. Financing this transition to guarantee the future of a sector of such global economic importance would seem like an obvious thing to do, and so we spent a long time searching for examples of loans made for replanting purposes. We didn't find a single one. The only loans we came across were so-called 'seasonal' loans granted for just a few months: a small sum of money to buy fertilisers or to tide farmers over until the harvest, whereupon the money had to be paid back. No public or private institution was willing to take the risk of lending to smallholders over a period of five to seven years. Admittedly, a traditional assessment of financial risk will tend to exclude the option of extending this type of financing to small-scale producers, who are both numerous and frequently insolvent. And yet 90% of global cocoa production derives from some 5.5 million small-

168 holdings. Why are we incapable of moving beyond the short term? Once again, coalitions of banks, public authorities, industrial companies and NGOs are needed that can share the risks, make the money available, and give the necessary technical support to a new generation of producers.

The Livelihoods funds have opted to invest over the long term—twenty years for ecosystem restoration programmes, ten years for rural farming and energy programmes—because resurrecting an ecosystem or successfully transforming a production model is impossible if we fail to take into account the cycles of nature and the social realities. And to replicate these large-scale projects, we need a variety of stakeholders and funding sources. Some private financial investors are starting to take an interest in 'impact investing', but they will only invest significant amounts in the transition phase if the risk is shared. Public authorities can potentially attract private

investment and spend public money more effectively by taking on part of the risk and financing the ‘public goods’ generated by such investment. These might include a positive impact on the climate, water resources and biodiversity, training for women and young people, or poverty reduction. This system of payment on the basis of results would probably be more effective than many of the current state subsidy or loan schemes. The private companies which purchase and process the raw ingredients can play a major role, in conjunction with their suppliers, by introducing purchasing contracts that not only offer guarantees to producers but also impose certain social and environmental requirements. Many of them, prompted by consumer demand, are beginning to take this path. No single player can solve the problem on their own—the process is too complicated, too risky, too costly and too slow. We urgently need to develop operational models of cooperation that can bring about genuine transformation. There is an increasing recognition of the need for change, but for that to happen we need to pass from fine words to tangible deeds. And above all we need to do it soon.

A Question of Commitment

The Livelihoods adventure may be viewed by some as a charming little tale of well-meaning idealists. A sort of La La Land inhabited by slightly naive boy scouts. Given the brutality of the real world, they could be forgiven for thinking that. Rising nationalist sentiment, the mushrooming of demagogues and authoritarian governments and massive rearmament all hark back to darker days. Although the stakes are clearly planetary, there is a growing temptation to batten down the hatches and champion all that is local, as frictions between different religious, ethnic and social groups intensify. Not that this is anything new. Nations vying for dominance has long been the rule in the geopolitical sphere. Human beings defending their own immediate group interests is nothing new either. Taking the long perspective, we might be tempted to say that our current trials and tribulations are just another rocky patch in the forward march of history. Except that never before in its history has the human race been confronted by a situation that threatens its very existence. As the Canadian astrophysicist Hubert Reeves has put it, 'we are embarking on a planet-sized experiment which could turn out to be interesting. The only problem is that we are the ones in the test tube'.

172 But there are other forces at work and it is not yet game over. In reaction to the tenacious attitude of ‘us first, then others, and we’ll see about the planet later’, a sort of global conscience has been emerging. Younger generations who are educated, well-informed and connected are increasingly aware of the urgency of the situation and the extent to which our problems are interrelated. From Delhi to New York, Paris and Jakarta, many people in their thirties and forties, some of whom are now occupying positions of responsibility, have realised that what happens now will have a decisive impact on their own lives and their children’s lives. They are striving to alter their lifestyles and consumption habits, with some taking action in their own individual way and others getting involved in organised local initiatives or signing up to causes further afield. The youngest among us seem to be the most keenly aware of the stakes. This movement is no fad and it is no longer restricted to a few privileged social groups who are missing their green space—you come across it almost everywhere. The mountains of plastic waste, the diseases associated with air and water pollution, and the suffocating air of the cities with their monster traffic jams are just as common, if not more so, in the cities and towns of emerging countries. The quality of food and its impact on health are an important factor in this increasing global awareness since food is what connects us most directly with the Earth.

Needless to say, these movements are shot through with contradictions, just as our lives are. Such is the nature of profound transformation, which is a mixture of the old and new, of an attachment to the past and a craving for change. And the scope of these movements is not restricted either to

championing the environment. They often promote an open-minded and optimistic vision of how society ought to evolve and how our attitudes to material possessions, fairness and living together ought to change. Some will dismiss such an outlook as utopian while others will claim it is based on idealised notions of the past, but these movements do not content themselves with mere words. They have given birth to many innovative and concrete initiatives, whether collective, individual, entrepreneurial or associative, and they are increasingly influencing the attitudes of the general public and political and corporate decision-makers. Will their vision eventually become mainstream, winning out over the still very-powerful counter-currents? We certainly cannot rule out further human folly, which has been a recurrent theme of history, but the urgency of the situation demands commitment.

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Like everybody else, time and again I've had to contend with the despairing objection that 'there's nothing we can do, that's just how the system is'. I've heard many a variation on this theme: in companies ('the shareholders won't allow it'), in public bodies ('we have to take account of public opinion', 'we don't have the resources', and of course 'there are more urgent priorities') and in our private lives ('it's not up to us, it's the responsibility of the government and the public authorities'). There is a grain of truth in all of this, but as the great American anthropologist Margaret Mead wrote: 'Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it's the only thing that ever has.' Companies, for example, operate under certain constraints and not all companies are alike, but in our given fields we often have a certain latitude of action. The key thing is to

seek out those opportunities. There has to be a desire and a determination to create the conditions for change. At the company where I worked for several years, we were always conscious of the need to combine aspirations with pragmatism. By demonstrating year after year that the company was well run, we were in a position to suggest gradual but far-reaching changes to our business model. Each in their own way, our shareholders, staff and customers have endorsed and supported these changes. But if we had not been fortunate enough to have a series of chief executives who possessed the vision and determination to get things done, we could always have come up with excuses for not doing anything.

174 What determines whether people act or not? Why is a commitment to the cause not more widespread? The fear of environmental disaster certainly raises awareness, but you can't build the future on foundations of fear or by harking back to the past. An awareness of history helps us to put into perspective what is happening before our eyes, but we should not fall into the trap of yearning for a bygone golden age, which needless to say never existed. The Livelihoods projects are not about resurrecting a lost rural idyll, which was often far from idyllic, nor are they about replicating farming practices of the past. They are about inventing a new rural ethos in an increasingly urbanised world. Knowledge and technology should be placed at the service of production models which work with the living world rather than destroying it. Farmers come in for criticism these days because many of them no longer have any freedom to act—they have to comply with the dictates of agribusiness. For their part, poor farmers in developing countries often have no choice but to continue

working the land. And yet we now have the means at our disposal to reinvent a complex and fascinating profession where a deep knowledge of the local environment, plants and the cycles of the living world is a prerequisite for finding the most appropriate solutions. A profession which affords people a decent standard of living by growing food of which they can be proud, maintaining the fine balances of nature, preserving the landscape, and nurturing a harmonious relationship with plants and animals. Why are we dragging our feet over training a new generation of farmers on a global scale? The need to do so is increasingly acknowledged, and yet we are still not taking sufficiently robust action to reverse the trend. Why all this foot-dragging when the evidence is clear for all to see?

It probably comes down to the fact that changing things involves changing ourselves and our relationship with the world around us. It requires us to realise that we are not the centre of the world but merely one of its many components. Our mindsets and behaviours are still profoundly shaped by an anthropocentric conception of the world. Ever since Aristotle, we have viewed Man as the central and most significant entity in the universe and we have apprehended reality from a purely human perspective. This mindset has driven us to build remarkable civilisations but also to behave as if the world had been created solely for us to exploit to our own ends. We extract its raw materials, exploit its natural resources and accumulate possessions. Examples of this frenzied exploitation of the Earth are legion, and they often tip over into absurdity. We slaughter the few remaining rhinoceroses in Africa to traffic horns endowed with imaginary

magical properties. We pillage the virgin forests that have not yet been destroyed for the few remaining rosewood trees because they command a high price on the international markets. My Madagascan friends were telling me recently about the foreign traders who are paying young divers to break up the magnificent local coral reefs so that they can sell chunks of it to the Asian markets. These are just a few anecdotal examples of a global system which, from the Inca gold brought back by the Spanish galleons to the rare metals contained in our computers, has always functioned on the basis of appropriating natural resources. Introducing regulations will not suffice to contain the damage. The question is, can we build a different world if we don't fundamentally revisit our relationship with the natural world around us? According to an Amerindian proverb, 'peace can only come about in this world when more men become aware of the unity of living things'.

At some point or another, we all assailed by the question 'What's the point?'. The thought might occur of an evening after a particularly trying day or during a bout of insomnia. Particularly when we are tired, we can only see an insurmountable hill of problems. Why should we devote so much time and effort to distant and perhaps illusory causes? Does it really make sense to plant all these trees at the ends of the Earth with people whom we scarcely know? We find ourselves thinking that all this hustle and bustle is slightly ludicrous—that it's like trying to empty the ocean with a teaspoon.

Sometimes I can read such thoughts in other people's eyes, particularly people of my generation. Some of them did once believe that their commitment could make a difference but they have since become disillusioned. Ours is a hedonistic age—we look out for ourselves, enjoy ourselves, cultivate our

garden and protect ourselves from a sometimes unpleasant and troubling world. And no one is denying that making the most of one's free time, delighting in a balmy summer's evening, or enjoying the company of a good friend are exceedingly pleasant experiences.

So why are we not faltering in our commitment when everything else seems to be faltering around us? Perhaps quite simply because the feeling of having some control, however modest, over the real world is a source of personal satisfaction and even deep joy, which is enough to keep us going amid all the frustrations. When I sit in an old boat at anchor on the river and listen to the fishermen telling me how the fish have returned thanks to the mangrove swamp they have replanted, or I see the pride of the women in Araku Valley when they talk of their top-quality coffee being sold in far-off Europe, I feel a simple sense of joy at a mission accomplished, rather like a craftsman admiring the timber frame he has just built or the farmer who picks up a handful of the grain he has just harvested. That is enough to motivate us even though we know our achievement is a humble one. 'One step at a time is enough for me', as Gandhi said.

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And why do we persevere when the path is so rocky and there are so many reasons to just give up? Perhaps quite simply because that's the way we were brought up. When I think back to my earliest childhood memories, a central figure was my maternal grandfather who genuinely believed in the possibility of a better world. A metalworker in a factory in the suburbs in Paris, as a trade unionist he fought all his life for what he considered to be justice. He used to tell me about

the general strike of 1936, the great hopes invested in the Front populaire, and the joy of the first paid holidays. I still have the yellowed photos of my mother standing between her parents, both of them in shorts, smiling and winking at the camera on a beach near Coutances. My childhood was marked by the personalities of humble but resolute people. After my father's death, I was sorting through some old family papers one day when I came across an official document by chance which revealed that during the Second World, he and some railway workers who had joined the Resistance had saved hundreds of people from being deported to the camps of Nazi Germany by derailing a train and enabling them to escape. He had never spoken about it. The posture of a hero was not for him, any more than the commemorations.

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Going even further back, there was my great-grandfather from Limousin, who cuts a very singular figure in our family history. He was a stonemason from the high granite plains who like so many others used to leave his barren lands behind every year to earn a living on the construction sites of Paris, where he used to build pretty white stone houses which he found very charming. This migrant worker from the heart of France also had a very forceful personality. Like so many others, he believed that there should be peace between peoples who deep down were not so very different from each other. A portrait of Jean Jaurès occupied pride of place next to the fireplace of the stone house that he had built with his own hands. When war broke out in 1914 and the men in his village of fighting age were called up for what turned out to be the most terrible bloodbath in European history, he remained faithful to his convictions and refused to join his regiment. In

the end, he was escorted off to the front by the gendarmes. Also featuring prominently in my memory are the many women in my family, always hard at work. My mother was a cheerful and optimistic character. The daughter of a labourer, she was brought up by a father who believed in emancipation through education and sport. This set her apart from the other women of her generation and social background. As children, we were impressed by how far she could swim out at sea, waving to us from afar amid the waves. She passed on simple but solid values to us. For her, honesty was a cardinal virtue, and not only when it came to money. It was a question of moral probity, of being able to look oneself in the mirror every morning.

All of this may seem rather detached from the preoccupations of this book. Tales of another time are not really a reliable guide to the future, but perhaps what they have given me is the strength to try and to not give up. In the words of the African proverb: 'If you don't know where you are going, look at where you have come from.' Nourishing ourselves from our roots is another fine lesson that trees have taught us. It is what enables us to reach for the sky.

WHAT IS LIVELIHOODS?

Livelihoods was born out of the observation that combating climate change and preserving our natural resources is inseparable from fighting for the dignity of the men and women who look after the land and make a living from it. And that coalitions of local communities and public and private stakeholders are the key to achieving the transformations that are so urgently needed. Livelihoods is also founded upon a conviction: that nothing can be achieved without the full involvement of those most directly concerned. And that a philosophy of the strong giving aid and assistance to the weak needs to be replaced by a logic of investment and shared responsibility.²

Livelihoods makes use of two complementary levers. One is the lever of finance: impact investment funds which are used to prefinance our projects. The other is the lever of skills and expertise: **Livelihoods Venture** is a social business which is responsible for identifying, structuring and supporting the projects that are implemented by our partners, who in most cases are local NGOs with strong roots in rural communities. The Livelihoods Venture team is made up of agronomists, foresters, carbon experts, financiers, and company managers. They all share a common passion for the Livelihoods mission. Hailing from Europe, Asia, Africa and Latin America, they have extensive experience of field operations and managing complex projects.

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2. To find out more about the Livelihoods Charter: https://www.livelihoods.eu/wp-content/uploads/2017/11/Livelihoods_Funds_Charter_V2015.pdf

The Livelihoods Carbon Funds invest in large-scale projects to restore natural ecosystems and promote sustainable farming practices and renewable energies. These projects have a positive impact on the environment while at the same time improving the standard of living of rural communities. These investment funds were created by companies that are committed to combating climate change and transforming their own production model. Following an incubation phase, the first Livelihoods Carbon Fund was set up in 2011, followed by a second in 2017. We are currently in the process of creating a third.

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The investments have a twin objective: to help combat climate change by storing large quantities of carbon in trees and the soil, and to help poor rural communities to sustainably enhance their resilience and their standard of living. The carbon is measured and certified in line with benchmark international standards. The carbon credits allocated enable companies to offset the greenhouse gas emissions generated by their value chain which they have not yet succeeded in reducing. The fruits of the Livelihoods projects belong to the local communities: they can keep the produce from their forests, farms and fisheries for themselves and also sell it on.³

The Livelihoods Fund for Family Farming was created in 2015 at the initiative of Danone and Mars Incorporated. This fund was born out of our joint conviction that the deterioration of the environment, climate change and rural poverty are

3. To find out more about the Livelihoods Carbon Funds: <https://www.livelihoods.eu/lcf/>

interlinked. It adopts an innovative approach to transforming companies' supply chains while at the same time improving the lives of smallholders. The objectives are to invest in regenerative farming projects, improve the quality and traceability of produce, and preserve natural resources. L3F focuses on raw ingredients which are mainly produced by smallholders in Asia, Africa and Latin America and are strongly affected by environmental, economic and social factors; They include cocoa, milk, palm oil, vanilla, coconut and shea nut, and we also work to protect water resources (by preserving drainage basins).⁴

The companies that to date have invested in and support the Livelihoods funds: Danone, Eurofins, Firmenich, Groupe Caisse des Dépôts, Hermès, Groupe Crédit agricole, Groupe La Poste, Mars Incorporated, Michelin, SAP, Schneider Electric, Veolia, Voyageurs du Monde. The Livelihoods funds have an investment capacity of €300 million at their disposal. Since they were set up, they have improved the lives of around one million people and helped to restore 100,000 hectares of land and plant 200 million trees.⁵

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4. To find out more about the Livelihoods Fund for Family Farming: <https://www.livelihoods.eu/l3f/>

5. To find out more about Livelihoods' corporate partners: <https://www.livelihoods.eu/who-we-are/>

Acknowledgements

My thanks go first and foremost to the thousands of anonymous men and women who inspired this book. The women especially have played a central role in our projects. By planting millions of trees, restoring the soil and adopting farming practices that are respectful of the living world, these men and women are the true heroes of the Livelihoods adventure. What they have achieved has improved their often difficult circumstances and enhanced the lives of all us.

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As we have seen in the stories told in this book, nothing would be possible without our partners on the ground, who bring the local communities on board, and organise and implement the projects supported by Livelihoods. We can never thank the NGO leaders and their teams enough for their sterling commitment, their readiness to act, and their capacity to withstand all the obstacles that are thrown in their way.

This book is the story of a team with a shared dream and a stubborn determination to make it come true. The Livelihoods Venture team is the veritable engine room. This is the team that devises, structures and coordinates the

projects to ensure that everything runs smoothly. It plays the indispensable role of a conduit between two worlds that are often very separate and it displays remarkable unity in the face of adversity. And it also remains keen to learn and to stay abreast of developments that could help us to take things even further. I am especially grateful to Jean-Pierre Renaud, who was the pioneer and an ally from the very outset. And also to Guillaume Bouculat, who played a major role in developing Livelihoods, first as a financier and then as head of operations, to Éric Servat, who has placed his extensive experience of companies and projects at the service of Livelihoods, and to Christine Porta, our astute and efficient office manager. I wish I had the space to thank by name every member of the team that contributes day in day out to bringing to life our dream in the highlands of Kenya and Ayacucho, the valley of Araku, the sun-baked villages of Burkina and the humid mangrove swamps of Sumatra. The agronomists, carbon experts and financiers from all four corners of the earth who work with us share the same stubborn passion and determination to achieve results, and this helps to drive us forward.

Livelihoods would not exist without the companies who have placed their faith in this venture and have had the courage to invest in funds whose success was by no means guaranteed. They have actively participated in the adventure, involving themselves in the projects and contributing their valuable expertise. They have always been on hand when there were difficulties to contend with. This book is a tribute to their commitment and their determination to transform themselves. I would especially like to thank the managers and

their teams who have been personally involved in managing the Livelihoods funds.

My heartfelt thanks as well to the many people who have inspired, advised and supported me in the course of this adventure, which has taken shape thanks to our many discussions. Unfortunately, it would be impossible to name them all here. Deserving of a special mention are my farming friends in France who gave me a taste for the produce of the land from a very early age. And I would also like to thank Michel Berry, the founder of the *École de Paris du Management*, and Henry Dougier, the publisher of this work. It was they who they had the idea for this book. Henry's kindly attention, his unflagging enthusiasm and his encouragement were much appreciated.

And last but not least, this story would not exist without my family. The support, suggestions and humour of Nicole and my children, Vincent, Fabien, Clara and Luis, have helped me to maintain the necessary critical distance.

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BERNARD GIRAUD

THE HANDS RESTORING THE EARTH

'Asked what had left the biggest impression on them in recent years in their village and what they were especially proud of, almost all of them answered: the planting of the mangrove swamp, 'their' mangrove swamp. They were proud to have collectively achieved something that everyone had thought impossible: planting millions of mangroves one by one in the mud. And they were determined to take care of it and protect it, having come to appreciate its immense value. After reading the findings of the report, I concluded that though the battle was far from being won, we had already come an awfully long way.'

Eschewing technical jargon, this is the living, breathing story of a unique venture by the Livelihoods impact investment funds and their partners to restore damaged ecosystems and reinvent more sustainable methods of farming.

Right across the world from Sumatra to Senegal, Madagascar and the Ganges Valley, rural communities whose livelihoods depend directly on the climate, the soil, the water and the plant and animal diversity of their environment have proved that it is possible to rebuild an ecosystem and alleviate poverty at the same time. If there is one lesson to be learnt from Livelihoods' experience in the field and its bold experiments, it is that seemingly disparate worlds can find common cause.

One might imagine that major international companies and isolated villages in Africa, Asia and Latin America have nothing in common. That there is a yawning gulf between NGOs driven by ideals and businesses driven by profit, between the so-called private sector and the public interest. But in practice, the ongoing adventure of Livelihoods is proof positive that this apparent gulf can be bridged to form productive and beneficial alliances.

For the first time in book form, Bernard Giraud, the President & Co-Founder of the Livelihoods Funds and a veteran advocate for sustainable development, tells the story of communities around the world who are striving collectively to reconcile their human needs with those of the natural world.



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