



GET READY!
It's time to prepare a plan B

Text by Luca Mercalli. Photos by Anton Zarev

GentleBooklets

#4. GET READY! IT'S TIME TO PREPARE A PLAN B

*Text by Luca Mercalli
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GentleBooklets It is a series of long-form articles written by different authors. The booklets, designed for a quick read, feature texts and images. We have kindly asked to the authors to comment on the term “kindness.” Authors and photographers have donated their work.

The motivations behind the project are the same as those of Gentletude, the desire to spread awareness about the need for “kindness” in our society, a society too focused on personal success to remember the basics of everyday living and respect for the environment that hosts us.

Our decision to present these ideas in a series of publications is due to the awareness that, in order to stimulate people to think about these issues, it is necessary to present some concrete examples. In this case, the examples will be provided in the texts written by the authors.

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GET READY! IT'S TIME TO PREPARE A PLAN B

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CRISIS? CRISES!

Everywhere we hear talking about crisis, the financial and economic one, actually the least important. There are so many crises, as the philosopher Michael Serres wrote in his very clear pamphlet *The Times of Crisis*: “In the future decades, a lot of relationships (for example the relationships between the world, bodies and their suffering, the environment, social mobility, the hope for life, the decision to live or, sometimes, to die, the global demography, the space habitat, the nature of collective bonds, knowledge and power) have drastically changed. What happens when there are such radical changes?” Too many fast changes are evolving and interacting. I imagine them as drops of oil on the internal surface of a funnel. We are at the bottom of it. All the drops are streaming down towards the bottom, some of them are fast, others slow. When a big, fast drop joins the others, it becomes bigger and faster. Sooner or later they will all drop on us.

WHAT HAS CHANGED: THE ANTHROPOCENE ERA

The story of human evolution began in Africa about six million years ago. *Homo sapiens* evolved in Africa about 200,000 years ago. For millennia men have been

dominated by the environment and its limits. Many factors, such as the long hunting and harvesting season, then – in the last 8,000 years – the different quantity of agricultural products (which had been sometimes abundant, sometimes scarce, because of the climatic changes or parasites), the low chance of mining minerals and producing power from water, wind, or wood, the fact that men were unable to face illness or wounds, all these things kept men bound to the physical world, because humans were not conscious of how the natural phenomena worked and they were quite accustomed to fatalism. This situation did not prevent the birth of language around 50,000 years ago, and the development of civilization with magnificent expressions of art, ideas and wit.

After the invention of the steam engine, with two centuries of the industrial revolution, man has completely changed his approach towards nature: the power extracted from the treasure of the fossil fuels has transformed man from slave to undisputed dominator of the world environment. We have improved the quality of life with oil and many great things have been accomplished, such as the dispatch of space probes to other planets. We also got “drunk” and “addicted” by speed and gigantism, that at the beginning of the 21st century the forces of seven billion people can compete with those of the biogeochemical cycles on the Earth. We seal the soil, we eat more and more vegetables and animals, we burn and cut wood, and we destroy more than what erosion, earthquakes, landslides and eruptions would do.



Because of the possibility that human life conditions are at risk on the planet Earth, we should use the whole corpus of knowledge that we had acquired. Probably this is the greatest adventure that humanity has to face since the beginning of human life on the Earth: we need to learn how to live longer, together with other species, on a planet with limited resources without compromising renovation and aiming at a “good life”.

LIMITS TO GROWTH

In 1972 the famous book *Limits to Growth* came out, wrongly translated in Italian with the title of “Limits of Development”. The purpose was to make predictions through a computer modeling, of future scenarios based on the growth of population, the usage of finite resources (minerals, power, food supplies, wood) and the accumulation of waste and pollutants. The answer was simple: within a few years the world would “run out” of various resources. For a few years also supported by the oil crisis of 1973, the thesis of this research was taken seriously, and the first measures to improve power efficiency and to reduce pollution (known as “austerity”) were taken. But then, when the oil started to flow again, the report sank into oblivion.

In autumn 2006, the third version, entitled *Beyond the limits to growth* was published. This is an essential book for every responsible person. The authors – Dennis Meadows and Jorgen Randers, two of the veterans of the first edition, (the third was Donella Meadows, who died in 2001)- declared in the preface of the book:

“When we wrote the limits to growth, we were hoping that this work would have made humanity do something to avoid the collapse[...]. In 1992 after twenty years, we updated our original study and we published a new edition entitled Beyond the Limits to Growth.[...] Our conclusion was that twenty years of history confirmed our theory and that humanity was going toward the unsustainable world. The result is that now we are more concerned about the world future compared to 1972. It is bitter to see that humanity has wasted these last thirty years in useless debates and good but lame ideas in the ecological global challenge”.

I met Dennis Meadows in San Rossore (Pisa) in July 2006 and he thinks that:

“in the end, we will do something to avoid the worst, global collapse. [...] After all, the world will choose a relatively sustainable future, but it will be late, after serious global crisis. The situation, because of this delay, will be a lot less pleasant that it would have been with a prompt intervention. Along the way, many of the beautiful ecological treasures of the planet will be destroyed. Many of the political and economic choices would not be possible; there will be serious and persistent inequalities, and society will be increasingly hostile. [...] The growth will be acclaimed, long after its entry in the unsustainable world. The collapse will be without notice, to everyone's surprise.”

THE CURRENT STATUS OF ECO SYSTEM AND EXPECTATIONS

On September 24th, 2009, in volume n. 461 of the journal *Nature*, there was an article entitled *A Safe Operating Space for Humanity*, written by Johan Rockstrom of Stockholm University and by other twenty eight colleagues, among whom Paul Crutzen, Nobel prize for chemistry.

Briefly, the markers of the Earth system state that the mines are being exhausted, the dumps are filling up, the climate is changing, and the biogeochemical cycles are being altered. There are some boundaries that human actions must not pass, because that would cause drastic and irreversible changes. These boundaries have already been passed for the quantity of CO₂ in the atmosphere, species extinction, and introduction of nitrogen in the biosphere.

About climatic changes, which I base my research on, I have already written a book, together with my colleagues, and I do not want to be repetitive, so I refer to the book *Che tempo farà* (What will the weather be like?) (Rizzoli 2009) and to the website of the Intergovernmental Panel on Climate Change. The most complete look at the status of the ecosystem and future predictions can be found in the *Millenium Ecosystem Assessment* (published in 2005 by the UN after five years of work done by 1360 researchers from 95 countries), and by the *Earth System Science Partnership*, a research organization created in 2001 after the declaration of Amsterdam on global changes and the work of ISCU (Internation-

tional Council for Science). The main objectives of this organization on science and global sustainability are: to anticipate, to observe, to limit the risks, to react and to renew. As you can see, there are thousands of people who are racking their brains looking for solutions.

To sum up, the main factors of our time, which represent a new and great challenge for our society are:

1. The climate change due to CO₂ emissions, which will raise the temperature of the planet by around 2°-5° C degrees by the end of 2100. The Mediterranean sea is destined to become hot and to dry up in summer: imagine a permanent summer like that of 2003.
2. Alpine glaciers will be extinct by mid-century and the European rivers will have less capacity during summertime with negative consequences on agriculture and production of power.
3. Extreme events, such as flood or tempests, will increase in intensity and frequency, with more damage for human activities.
4. Sea level is rising and around the end of the century it could be 1 metre higher.
5. Oceans are becoming more acidic, due to increasing atmospheric carbon dioxide, putting many life forms at risk.
6. The nitrogen cycle is heavily altered.
7. Phosphorous, a fertilizing element indispensable for plants, is overexploited and the result will be



- limited agricultural production.
8. Population is too great (7 billion people) and it is still growing.
 9. "Easy" world oil sources are being exhausted rapidly.
 10. Natural resources, forests and fish stocks are over-exploited.
 11. Biodiversity is seriously threatened and many species are dying out at a much higher than average rate.
 12. Building and erosion are reducing the quantity of fertile soil.
 13. Pollution and waste are increasing everywhere and they are threatening the health of human beings and other life forms.
 14. Market economy is not working and inequality is growing.

These conditions are already causing many reactions such as:

1. Global economic and financial crisis, with huge public debt.
2. Conflicts between states and new wars for natural resources (oil, land-grabbing) and energy resources are growing.
3. The cost of power is increasing.
4. Agricultural productivity and food sources are reducing because of the growth of the cost of oil and because of climatic changes.

5. There are social instability, migrations and displaced people beyond control due to the climate.
6. Reduction of well-being and quality of life.
7. Increase of social inequalities.
8. Increase of unemployment.
9. Risks of authoritarian power and a decrease in democracy (where it exists).

THE RECIPE TO START PLAN B

Plan A is everyday life. The alarm clock rings. You can switch on the lights when it's winter, you can have a hot shower, you can have breakfast with products that have been previously sealed, in packages with happy families and nice cornfields drawn on them, you can drive your car in heavy traffic, switch on the computer in your office, go to lunch maybe leaving your plate half-full (knowing that what you leave will be thrown out in the waste), you come back home and think about your weekend, when you will do more or less the same things but far from home, maybe taking a low-cost flight. You live in a world where water flows from the tap, power runs in the cables, gas in the burner, fuel in the petrol station, heaters and air-conditioners are working, lorries throw away waste, other lorries bring food, others bring you useful things and even more lorries bring useless things, trains leave and arrive, (even when they are late), planes take off and land, hospitals (sometimes barely) can cure your illness, the government protects you.

But, do you have a plan B, just in case all the things that you take for granted now were not available any lon-

ger? Obviously not.

This is absolutely not a prophecy of misfortune, but it should be a realistic realization of the frailty of our environmental and economic systems, so that a small part of our brain can process day-by-day some parts of plan B, that one day might be useful. If then we do not need plan B, so much the better! But we give the impression that we are sleepwalkers in a minefield.

Therefore, the recipe to start is:

1. Try to save energy and to extract it from sustainable sources.
2. Stabilize world population and in the long run reduce it to 2 billion people, a number that is thought to be sustainable.
3. Recycle all the recyclable.
4. Try to produce and eat local food. In this way there is less globalization, more self- production.
5. Minimize luxury and the superfluous.
6. Avoid wasting, everywhere!
7. Abolish the GDP.
8. Reduce the work timetable.
9. Use telecommuting as much as possible and dematerialize the economy.
10. Redefine the concept of wellbeing.
11. Recover the contact with planet earth and its marvellous natural beauty.
12. Don't let the economy lead politics.
13. Have ecologists and philosophers working side by



side with economists.

14. Adopting new coinage, based on energy content and the material of objects and services.
15. Recast tanks and aircraft carriers in more useful things.
16. Go from competitiveness and competition to cooperation and sharing.
17. Listen to science, promote research and favour the exchange of information.
18. Vote for young and competent politicians.
19. Reject advertising and do not be obliged to follow a social role model based on the appearance.
20. Form groups with the people who have the same problems and do not follow pipe dreams.
21. Prefer reading newspapers and books, to watching junk television.
22. Choose how to use scarce resources and give priority to the guarantee of the essential levels of well being: home, hot water and heating, sufficient food supplies.

RATIONALITY AND SPIRITUALITY: WE NEED BOTH!THE ECONOMY CANNOT PUT A PRICE ON EVERYTHING

In the era of economic power, we get the feeling that we do everything considering costs and benefits in a rational way. But if we observe our everyday life, is that really so?

We buy those shoes or clothes only because the advertisement said so, we “fall in love” with them, and after a

few weeks we've gone off them. We buy cars beyond our means even though we know that they will lose value. We waste money to buy a million useless things. We are not able to estimate the price of objects and services. Many things that we consider expensive are, in reality, sold at a discount, while we consider other things, of no value, very important and we spend too much money on them. So why do we have to apply rationality and calculation only to "environmental" choices and not to other things? It seems like hedonism is the final aim and the care for our health, but landscapes, the climate, air quality and food are not worth it.

The economy cannot put a price on everything. How much is the sadness of a displaced person worth, when s/he is obliged to leave the Carteret islands because of the rising of the sea level? Or the suffering of old people during the heat wave in Paris 2003 and Moscow 2010? Or the fact that the glaciers on our mountains are melting? Or the worsening our health because we are exposed to a polluted environment? All the behaviours that we define as "environmentally virtuous" should be absolutely followed because they are based on rationality and logic, but they should be internalized subsequently, touching the emotions of our being so that they can be spread universally. I do something because I want to, I am convinced, I know that it is the right thing to do, it gratifies me, it gives my life a sense, it raises my - and the community's - wellbeing where I work, it decreases my fears and my anxiety.

Unfortunately, man is a complicated species of animal

life, and his behaviours are very often bizarre. Geoff Beattie, Professor of Psychology in the School of Psychological Sciences at the University of Manchester, observed that: “People pretend to be concerned about climate change, and they are ready to do a lot of good things to limit it, but all the evidence demonstrate that they are not actually doing anything.”

ENERGY MYTHS: THERE ARE NO MIRACULOUS SOLUTIONS

As Charles A.S. Hall, Professor at State University of New York (in the College of Environmental Science & Forestry), states, the first problem is that there are some indicators called EROEI (energy return on energy invested) or EROI (Energy return on investment) which are decreasing. The right question is not how much oil stays under the surface, but how much oil can be extracted with a significance energy gain. One thing is certain: energy will cost more. It is true that energy will be obtained from the sun, wind, biomasses, but in a limited quantity compared to the present.

ENERGY RESOURCES

Oil is liquid, easy to transport, and easy to use in mechanical devices. It releases around 10 kWh for each kg. To obtain the same quantity of energy as 1 kg of fuel oil, we need at least 3 kg of wood (more difficult to cut, transport and it produces ash), or 15 m² of photovoltaic panels (EROEI around 10) working for a whole bright day in the summer. All the electricity that we need



can be produced by sun and wind, but we have to bear in mind that it is an intermittent source, and we should solve the problem of the energy storage during nights, cloudy days or alternating seasons. Hydroelectricity is a great sustainable source (EROEI 30-40), but the places suitable to build big dams have already been exploited. Wood can produce heat (EROEI 30), or it can be distilled in order to produce a kind of gas easy to burn after a while, but if we wanted to use just wood instead of the petrol that we use at the moment, we would cut down all the woods in Italy in a few years, even the trees in the cities, as happened, after all, during the WWII, when life conditions were worse and population was much smaller. We would have the same problem if we produced ethanol distilled from corn (corn ethanol) or rapeseed oil (EROEI around 1, too low!): at the moment, if we want to have a car on the road for 20,000 km per year – considering that an economy car covers 15 km with a litre - we need around 1,300 litres of fuel, derivable from 1 hectare of excellent land. In Italy, we have 35 million cars, so – to be simple – we should dispose of 35 million hectares of soil: the whole area of Italy, with mountains and buildings included, is only a little more than 30 million hectares! An unattainable goal, for the rest of the world too! These are only a few examples. Miracles do not happen: waiting for an effective solution, that we cannot see at the moment, the only reasonable way is the one of perfect efficiency – doing more with less – and savings, so that the sustainable sources will be enough.

HOW TO CUT DOWN WASTE

A family composed of 3 people, owning the most common household appliances, wastes 3200kWh per year: if we consider a price of 0,2 euro/kWh, we get 640 euro. The most “voracious energy waster” is the electric boiler, which uses up about 1,500 kWh per year. If you have one, replace it with a gas one, better if complete with solar panels. You can replace the bulbs with eco-save bulbs, you can use class A (or better) household appliances (fridge, dish washer, washing machine, all the better if it has a solar hot water system), and remember to switch off all the appliances provided with stand-by button at the socket or unplugging them.

I live in a small old home in the Western Italian Alps, the roof covered by solar panels that provide all the electricity and the hot water I need. I reduced energy consumption insulating walls and windows, I built a tank to collect rainwater for vegetable garden irrigation. I cut my energy bills and food expenses in order to reduce emissions which contribute to global climate changes. I am more resilient and I am happier!

CONCLUSION

Therefore, it is better to be prepared, as soon as possible, without panic, but with clear-minded alacrity: there is much work to do and, whatever happens, the work will not be wasted, as the classic fable of The Ant and the Grasshopper teaches us. Up against the overwhelming size of the target, without being paralysed, I still follow

Raffaele Scolari (a Swiss philosopher), who observes how simple actions - that can be done immediately – constitute “a place of freedom where one can be oneself again”. So let’s face the abyss courageously and build the road to go down into it, knowing that the unpredictable details of the future will require many sacrifices, but they will also offer new possibilities, and maybe more happiness. The important thing is not to fall: nails, ropes, stairs, maybe a hang-glider, could help us.

Get Ready! It's time to prepare a plan B



AUTHOR

Luca Mercalli, climatologist.

He is head of the Italian Meteorological Society and of the Magazine "Nimbus" (www.nimbus.it).

He is responsible for the weather and climate section in the newspaper "La Stampa" and he takes part in tv programs such as "Che tempo che fa" ("What's the weather like?") and "TG montagne" ("TG mountains"). He is the author of various books: *Filosofia delle nuvole* (Rizzoli 2008), *Che tempo che farà* (Rizzoli 2009), *Viaggi nel tempo che fa* (Einaudi 2010) and the most recent one *Prepariamoci* (Chairelettere editore 2011), which won the Bancarella Award in 2012.

PHOTOGRAPHER

Anton Zarev, photographer.

He was born and grew up in the heart of the mountain. There he had the unique chance to fall in love with the nature and to learn how to live in peace with the land. After he moved to the big city he discovered the charm of urban life. There he had the opportunity to meet and get to know different social groups, ethnicities and people that inspired him in life. Anton had never thought he would become a photographer until he started to work as a photo-reporter for an online media source. For this work he took more than 200 photos every day. There he fell in love with photography and influenced by urban life he became a street photographer. Anton's photos represent the dualism and the contrasts of our daily life based on his own worldview.

GENTLETUDE

Gentletude is a neologism composed of the words “gentilezza”(gentleness/kindness) and “attitudine” (attitude). It pursues the aims for a better world without violence, arrogance and rudeness. A world where caring and paying attention to others, common sense and balanced competitiveness are the most important things. The production provided by the association was completely free, based on the Commons Creative Criteria. Gentletude in Italy is a non-profit organization (NPO), and in Switzerland is a non-profit association. Contact Gentletude on the website:

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The 10 commandments for the 21st century

I.

Thou shalt have no other planet before me.

II.

**Thou shalt not think that the earth has
infinite resources.**

III.

Remember to contemplate Nature.

IV.

Honor the sustainable resources.

V.

Thou shalt not pollute.

VI.

Thou shalt not waste.

VII.

Thou shalt not build.

VIII.

Thou shalt not produce so much waste.

IX.

Separate your waste and recycle.

X.

**Thou shalt not desire the power of others,
but try to be more moderate and efficient.**