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**GROUND RULES FOR THE 21ST CENTURY**  
**Chapter 23**

**NEW FORMS OF GROWTH IN AN ULTRA LOW CARBON WORLD**

The past several centuries have been one long journey upwards, toward greater consumption, longer range, more convenience and increasing power over nature. The history of mankind has been one long acceleration - and seen in that context it would be a depressing break with history if we should now limit ourselves to a more modest position in the ecosystem, or settle for the level we have reached. If there is a slogan for our civilization, it is: Gotta move on! We have so much to accomplish, we must compete, we have to learn and develop, we have to come up with something new - and preferably do it all in a hurry.

That restless drive has taken us far. But considering the mounting problems that our quest for growth is creating, it is worth giving a thought to why it all needs to go so fast. Do we all absolutely have to achieve so much?

Buddha said that desire is the root of all suffering. If we could only stop and appreciate what we have, we would be happier. It sounds alluring: who doesn't occasionally dream of quitting the job, leaving the rat race and finding time to live a deeper life? And in fact, wouldn't that be exactly what we need a lot of people to do: Take the time to do things properly and safely, taking care of each other and contributing positively rather than racing through life, grabbing and consuming everything we can, but without the time to enjoy it?

Yet I must admit that it doesn't fit my temper to live a quiet life - not for long. I want to move on, too. I have ambitions. I have dreams. I want to improve my situation when there is something I am not happy with. I need to have the feeling that things are progressing and that I can make a difference in making it happen.

It seems that the drive for continued growth lays deep in our nature. Since ancient times it has been the human condition that we had to work hard in order to simply survive. As God told Adam and Eve, when he expelled them from Eden: "Cursed is the ground because of you; in toil you shall eat of it all the days of your life... By the sweat of your face you shall eat bread until you return to the ground," Life has always been a struggle for the daily bread.

But in many respects, the reverse is now the case in our part of the world: We have plenty, and the more we toil, the more we destroy the earth's ability to feed us in the future.

**Growth is a paradox. On the one hand, growth seems to be driving our civilization into the ground. On the other hand, the individual's desire to improve his circumstances, and the competition among us for status and resources are a formidable force to solve problems.**

In 2009, the British Government's commission on sustainability produced a major report about growth and sustainability. The author was an economist, Tim Jackson, and in the report he pointed out what he calls "The dilemma of growth":

- On the one hand, society is unstable without growth. When growth slows, investment stop and people lose their jobs, their savings or even their homes. It hurts.

- On the other hand, there are large and growing risks associated with continued growth. Additional material growth gives us less and less additional joy, even though the costs of creating further growth are increasing rapidly - whether the cost is the strain on the natural environment, volatile financial pyramid schemes or stressed out people.

Which is why the central issue that Tim Jackson chose as the title for the report is: *Can we achieve prosperity without growth?*

#### From quantitative to qualitative growth

The growth we know is based on a cultural idea of happiness, which is linked to money and material wealth. It's about getting the maximum out of life, whatever the cost. We live only once, so life is too short to ride a bicycle or fold cardboard boxes and sort waste for recycling. Happiness is something ecstatic. More is better. If your experiences are bigger, nicer, more expensive, more lavish than ever, you are happy. And sure, it's great to burn energy! It would be nice if we could just do it without having to worry about the consequences. But rampant material consumption is not in the cards for us in the coming years. Quite the contrary.

**Our challenge here in the rich world is to maintain prosperity and a sense of progress, while radically cutting back on the consumption of natural resources. It is – by *necessity* - crucial in the coming year to get more benefit and value out of fewer physical resources.**

The system is already strained to capacity, and yet several billion people desperately need more basic material goods. For three quarters of the globe's population, an increased income and greater consumption of energy, food and transportation would still add very significantly to their quality of life, and it's hard to argue for not supporting them in their development. The developing countries' need for material growth stresses that mankind faces two tough and directly opposite demands: continued growth for a large part of the world's population *and* a reduced consumption overall.

**Could we imagine another kind of growth? A growth that doesn't trash the planet, and perhaps even promotes values that genuinely contribute to greater happiness?**

To answer the question, one needs to clarify what we mean by "growth". What do we need more of? Let's start by taking a look at what it is that gives people joy and a sense of prosperity. This has been a very active research area in recent years in disciplines such as positive psychology, happiness research and behavioral economics.

#### There is more to life than money

As we mentioned in the previous chapter, growth is typically measured and expressed in just one figure: the Gross Domestic Product. GDP is a measure of economic activity in society. Over the past decades many attempts have been made to create other indicators that are more nuanced and comprehensive. The most famous of these is the Human Development Index. The UN development agency, UNDP, compiles an annual inventory of growth in all the world's countries, which, in addition to the pure economic growth figures, includes the developments of a range of other factors that

clearly play a significant role in people's lives.

The first Human Development Report, UNDP was released in 1990. At the time, Mahbub ul Haq, who developed the index, said, "The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities."

The narrow economic focus on GDP as a measure of growth came under fire in a report produced by the American Nobel laureate in economics Joseph Stiglitz in 2009 for French President Sarkozy. In the introduction to the report, Stiglitz stated that the time has come to measure human wellbeing rather than just economic activity.

The Stiglitz report suggests - like many other studies of quality of life - that the growth of wealth can not be accurately measured and assessed without looking at factors such as sustainability, whether people are employed or unemployed, and whether there is political freedom and opportunity to influence society. Nevertheless, this is what we do: When push comes to shove, it's the economic measures that count in politics. Everything else is overridden.

As Stiglitz writes: "what we measure, affects what we do. If we have poor measures, what we strive to do (say, increase GDP) may actually contribute to a worsening of living standards. We may also be confronted with false choices, seeing trade-offs between output and environmental protection that don't exist. By contrast, a better measure of economic performance might show that steps taken to improve the environment are good for the economy."

#### A dematerialized economy

The values that the various reports on happiness list are a catalogue of the elements of a more sustainable way forward, and delivering those values, would outline a new economy based on producing values and meet needs that do not necessarily hurt the ecosystem further.

Many services are intangible, so they hardly require the use of natural resources - or they can be dematerialized in order to achieve much greater use or economic value relative to the amount of resources used.

**Health, education, security, beauty, a healthy natural environment ... These are qualities, which we confidently and enthusiastically can continue to grow because they don't depend on acquiring more stuff, traveling further or working harder.**

**It doesn't necessarily take more materials to make the things we use prettier, healthier, cleaner, smarter, manufactured under decent conditions and built to last long and to be recycled - perhaps even the contrary.**

**These are real needs and there may well be lots of jobs and money in achieving them.**

Much lower resource consumption does not necessarily imply lowering economic growth, prosperity and dynamism. It requires that we revise our attitudes towards what we want to achieve, and what gives status. Our idea of the good life and large

consumption must part. Perhaps it will turn out to be a chance to experience some qualities in life that have long been neglected in the quest for material consumption: tranquility, closeness, concentration, care, and other soft values, which ironically have become the greatest luxury for those that are most in a hurry to earn and consume.

#### Buffers: the consumption, we can easily do without

The good news is that there are plenty of ways to quickly cut down significantly in our consumption that wouldn't require more than a little bit less convenience, a little more forethought and an adjustment of some cultural norms. We have a number of large buffers in the form of consumption, which is not strictly necessary.

Clothes dryers are one example. In 1990, every fourth home in Denmark had a dryer; today there is a tumbler in over half of all homes. It is faster and more convenient to tumble dry your clothes than to hang it up on a clothesline, but it obviously requires a lot of energy. In the U.S., clothes driers are the second largest energy guzzlers in the home. In many residential areas there is an outright ban on using clotheslines; apparently it is too aesthetically offensive to have laundry hanging in plain sight.

If you study paintings from past centuries, you will notice that people often wear quite a lot of clothes indoors. Layers upon layers of sweaters, shirts, vests, jackets, scarves, etc. It is not just because fashion has changed. As the British sociologist Elizabeth Shove observes, we have changed the way we regulate temperature in buildings. Previously one would put on more or less clothes depending on the weather. Today we heat or cool rooms or entire buildings so they always have the same temperature. This in turn means that you have to wear the same outfit throughout the year to be comfortable indoors.

During the seventies oil crisis, the then U.S. President, Jimmy Carter, wore a cardigan to try to lead by example, but his attempt to teach Americans a simple way to save energy was completely ridiculed.

The Japanese "Cool Biz" campaign has been more successful - it has run every summer since 2005. In hot countries it is not uncommon that offices, hotels and restaurants are cooled down to 16-17 degrees - though it seems absurd that you have to keep your jacket on in order not to freeze indoors. In Japan, public buildings are not heated above 20 degrees or chilled to below 28 degrees, and to break the rigid Japanese norms for proper attire, the government ministers deliberately do not wear jacket and tie in the hot summer period. As a rule of thumb you will remain comfortable at a two degrees higher temperature, if you take the tie off.

So one can easily, quickly and cheaply save lots of energy by dressing in a fashion that's more appropriate for the weather. It is not difficult or uncomfortable to put on a sweater or vest. The obstacle is not technical, but a matter of fashion and manners.

#### Food has a greater impact on climate than transportation

Another possibility to reduce the environmental impact would be to change diet. People who are vegetarian or eat less meat have previously typically done so out of concern for animal welfare or to live healthier. In recent years there has been a growing awareness that eating less meat is a way to reduce one's personal impact on the environment and climate.

In 2008 the average Dane ate 225 grams of meat per day. It requires far more resources to produce meat than grains and vegetables. It takes approximately five kilograms of feed to produce one kilo of pork and eight kilograms of grain to produce one kilo of beef. In addition, meat production leads to a correspondingly higher

consumption of water and energy for cultivation, transport and the manufacturing of fertilizer. Furthermore, there is a significant emission of the greenhouse gas methane from producing meat. In a 2006 report, the UN Food and Agriculture Organization FAO estimated that 18 percent of global greenhouse gas emissions come from cattle - more than the emissions from transport.

Danish agriculture is mainly livestock production. We constantly have 500.000-600.000 cows and about 13 million pigs being raised – in a country of 5 million inhabitants. The Danish farmers cannot produce enough to feed all these animals. Instead, we import soy from South America and Indonesia, which to a large extent is grown on land from cleared rainforests. In effect, you lose not only the rainforest's ability to absorb CO<sub>2</sub>, and the biodiversity, which the forest offers. The fields are typically also eroded and depleted within a few years.

The global consumption of meat is rising. In the rich part of the world this is another example of a type of growth, which actually seems to lead to poorer health. In developing countries, more meat it is a welcome variation of the diet, but it puts a heavy pressure on farmland. The Chinese, for example, have more than doubled their consumption of meat over the past ten years. Fortunately, it is a problem one can quite easily do something about. Just as we can choose to drive a less CO<sub>2</sub>-emitting car, we can choose a diet that has less environmental impact. No one will suffer for that reason.

#### Racing through disposables

Not only do we live in a use-and-throw-away culture. We also live our lives at very high speed. The faster we consume new stuff, the faster we will use up resources, and the faster the waste accumulates to become a burden. A large part of our products are made from relatively rare materials and their manufacture requires large amounts of fossil energy. Nevertheless, they often end up in landfills after being used for just a few minutes.

At the rate we consume, there is neither time for nature to generate enough new materials, or for the waste to be recycled and used by others.

Much of this consumption is completely unnecessary - we hardly have any benefits from it. We print absurd amounts of paper - enough for every Dane to use 271 kilograms of paper annually. Packaging is another kind of consumption that has become too much of a good thing - and often it is more of a hindrance than a help. In the EU, the average citizen uses over half a kilogram of packaging daily.

#### Stay home

Transportation is another aspect of modern life which could use a critical re-evaluation, but restricting mobility is perhaps the biggest taboo, you can bring up in a socio-economic discussion. Increased trade, exchanging culture and knowledge, the free movement of labor ... moving around is seen as an absolute good.

But if you really want to do something to reduce your resource consumption, a very simple method would be to stay home. Don't travel so far for holidays, hold meetings over the phone, find a job closer to your home, and buy goods in local shops. It is immediate and concrete, and it's relatively simple to quantify the effect.

When you – once again – are stuck in traffic in a big city there is plenty of time to consider whether our mobility is another example of a type of growth that has become

too much of a good thing. In 2008, the Danish government infrastructure commission in a major report on the future of traffic assessed that motorists on the roads around Copenhagen were stuck for 100,000 hours - every day. Nevertheless, the commission estimated that the volume of traffic would increase by another 70 percent toward 2030.

We do not become happier by driving our car more - on the contrary. In studies of people's quality of life it is rated very high on the plus side to have short commutes to work. Seen in GDP terms, less transportation generates less economic activity – so growth is negative. But at the real, human level it feels like a big improvement to be able to take the bike for work. Two cars in a household is not only a sign of prosperity, it is also an indicator that the family leads a life with long distances and hours of transport daily.

Considering how much attention and concern there is for energy and the climate, it seems almost like a collective amnesia that nobody seriously questions how we are all flying around for vacations. We are very concerned about switching to energy saving light bulbs or buying new cars with a slightly better mileage, but if we really wanted to reduce our emissions, it would be much more effective to choose a holiday destination that does not require that you release tons of CO<sub>2</sub> into the atmosphere - or that you tried to avoid one or two of the business meetings, you fly around to during the year.

In 2009 more than 150,000 Danes traveled to Thailand. The flight there and back again emits about 1.3 tons of CO<sub>2</sub> per passenger. However, CO<sub>2</sub> is not the only factor about flying that affects climate. The planes also emit nitrogen oxides and sulfur particles and form trails of water vapor, which contributes to global warming. Scientists disagree about the exact extent of impact, but they typically estimate that the CO<sub>2</sub> emissions must be multiplied by a factor of between 1.7 and 2 to account for the actual climate impact. Thus a trip to Thailand would result in a climate impact equivalent to the emission of 2.4 tons of CO<sub>2</sub>.

If a Dane chooses to spend the holiday in Barcelona rather than in Bangkok it saves the atmosphere the equivalent of almost two tons of CO<sub>2</sub> emissions. Should you choose not to fly, but travel by car or train around the country or to one of charming neighboring countries, the saving of course would be even larger. To get a sense of the proportions, the average Dane emits in the order of 11 tons of CO<sub>2</sub> each year (but flights are not included in the figure). Seen in this light one can understand why the Indians - who on average emit one ton person per year – find it difficult to accept that they should exercise restraint in their future emissions.

### Green schizophrenia

Why can't we figure out how to protect the environment? It's not as if we don't know that something must be done. Climate disaster has long been an integral part of global culture and aesthetics. You would have to be deaf and blind not to have reached the level of nausea over all the articles and TV-programs about the poor polar bears in the melting Arctic.

Yet it is extremely limited what the awareness has led to in practical terms. The looming climate disaster is just one of several stories that vie for our attention. Perhaps the main reason that our knowledge hasn't been translated into action is that - as Al Gore said - it is *inconvenient*.

The American journalist and commentator Thomas Friedman has, with usual wit - pointed out that any effect from the changes that most of us make to address climate change, are immediately eaten up by the rapid growth in emissions from developing countries.

Approaches of the "100 easy things you can do for the climate"-type have almost no significance compared to the size of the challenges we face. "We're having a green party," as Friedman says, "If you look at how much we have achieved over the last five years, it can feel as though we are in the middle of a green revolution. But looking at how far we have to go in the next ten years, it's as if we're having a party. Who has ever heard of a revolution where no one gets hurt? "

At times it seems completely schizophrenic. Like when you sit in an airplane and read the in-flight magazine, which features several articles focusing on green lifestyle: politically correct spa visits at exotic destinations, frugal electric cars for millionaires, designer clothes and exclusive jewelry made from recycled materials, ultra- organic Michelin star restaurants and non-toxic, handmade cosmetics. Buy, buy, buy - the more you buy, the cleaner your life becomes. Sustainability is simply a form of aesthetics, a style among countless others. Beneath the surface, everything continues to run as usual.

When an economic crisis happens and growth rates fail, you can hear heads of state or finance ministers encourage citizens to make an effort and help strengthen the economy by going out to shop. The climate challenge, however, is somewhat more complex for consumers, because part of the solution is to *refrain* from shopping for more and bigger stuff. Instead, we need to start spending money on a completely different kind of consumption.

#### You can never have enough of power and status

The aversion to abstinence runs deeper than just being a matter of convenience. It is also about power and status. From a raw jungle law-perspective, we are all in a competition with each other to secure the resources we need to continue the game. Life is about gathering wealth and power, so others can't bully you. The more you have, the more you can get, so it makes sense to hog.

In every country you can hear worried politicians and business leaders argue that we must work harder, and invest more, otherwise others will take over our market and wealth, while we stagnate.

**There is a close link between power and resources. If you want to accomplish something substantial, you need to spend energy.**

**If you have your own jet, you can really get things done - a lot more than if you take the time to sort your waste for recycling, or drive a little slower on the freeway to reduce the petrol consumption.**

**It's ironic: If you abstain from the consumption that is driving civilization into the ground, you lose influence on the development.**

It's also about status. For the individual person, company or nation it's important to appear stronger than everyone else. We need other people's recognition and respect, and with our status, we can attract partners, clients, brainpower and investment. Wealth and status is *relative*. You feel rich if you have a little more than those around you. Although objectively we may have everything we need, we need even more in order to maintain our position in relation to our peers. In the terms of systems

thinking, this is a zero sum game. Measured in absolute terms, a group of people can all become significantly richer, but in relation to each other there are still as many rich and (relatively) poor.

Another psychological mechanism, which means that you can apparently never have enough, is that we very easily adapt to the wealth we gain. When you've just moved a step upwards to a better wage, bigger house or a nicer car, it feels good and satisfying, but we soon begin to take the new level of comfort for granted, and then the progress we achieved, no longer add to your happiness. We need more to feel satisfied again. As Tim Jackson concludes, this has the consequence that there is no end to the need for growth.

#### Nobody will take the lead in cutting back

Besides losing the ability to assert yourself and exercise power and status, the problem with a more frugal approach is the imminent risk that the resources you save, will just being used by others to increase *their* consumption. If it should make sense to show responsibility and act for the common good it would requires that everybody recognizes the shared interest and all do their bit to save resources - otherwise you end up looking as an naive idealist.

There are two mechanisms at play - we have mentioned them earlier in the book: One is the *Tragedy of the Commons* effect, where a shared system collapses because all the participants each try to take as much as possible out of the system for themselves.

The other is the *Prisoner's dilemma*, where lack of trust and transparency means that the participants in an interaction choose to fend for themselves, although it would be beneficial for everyone if they could figure out how to work together.

The conundrum of both mechanisms is that the logic appears quite different depending on whether one looks at the situation from a personal and short-term perspective, or whether one considers it in a long-term, systemic perspective. The easiest for each of us is to pursue our own immediate interests, and it seems almost naive to think that we should all start to surrender some of our own power and convenience for the benefit of the common good. The most probable scenario is therefore that each of us will continue to maximize our own share of the good things in life.

But - as it should be clear from reading the previous chapter – the current growth scenario, unfortunately, could lead to the collapse of the whole system in the longer term.

**This is the central dilemma we face: It is in everyone's interest that we radically reduce our draw on the common resources, but for each of us individually, so far there are no compelling reason to give anything up. On the contrary. We weaken our position by holding back for the community. And so consumption continues to grow.**

It may sound insurmountable. How can we save civilization if everyone is busy trying to fend for themselves? The answer sounds almost trite: The state must pursue a policy that creates greater convergence between what is in our individual interests as consumers and businesses, and what benefits the common good.



The state works top down, it can set limits and rules. Market forces work bottom up, trying to make the most of the circumstances. Capitalism can act as a profit-obsessed monster, out of control and devouring everything of value, by stimulating blind, excessive consumption. However, it also by the mechanisms of capitalism that we organize most value-creation and innovation. We will not overcome the challenges we face without drawing on the market forces. How to balance the productive and the destructive sides of capitalism is the subject of next chapter.