



Why CEOs are worried about the Environment

Stars'09: The Stein am Rhein Symposium for Leaders of the Next Generation

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5 October 2009

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Why CEOs are worried about the Environment

Probably the most important guiding principle throughout my professional life has been that for any business to be successful in the long term it has to create value not only for its shareholders but also for society at large.

(Slide 3 – CSV Pyramid)

At Nestlé, we call this Creating Shared Value. It is a fundamental part of our business strategy, the way we do business and the "soul" of the Company. It is based on our deeply held belief that, in order to create value for our shareholders, we need to create value also for the people in the countries where we are present. This includes the farmers who supply us, our employees, our consumers and the communities where we operate. While others may create value and then share some of it through charitable or philanthropic donations, we believe it is not only more sustainable but also more beneficial if value is created simultaneously and undissociably as part of the business model.

But before we even can Create Shared economic and social Value, we need to demonstrate responsible behaviour and protect the future – by assuring compliance with laws, regulations and voluntary codes of conduct and by thinking and acting for the long-term. Our Corporate Business Principles state that "We will not sacrifice the long-term development for short-term gain". This long-term orientation has guided our decisions for the past 143 years, since our Company was founded by the German immigrant Heinrich Nestlé. The same principle ensures that we run the Company today in a way that we will have a successful business for at least another 143 years. In recent years it has become fashionable to call this concept "sustainability".

(Slide 4 – Sustainable Development definition)

The term was introduced in 1987 by the UN World Commission on Environment and Development, the so-called Brundtland Commission, which expressed "concern about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development"¹.

It established a paradigm shift from the previously accepted primacy of economic development and formulated a new "central guiding principle of the United Nations, Governments and private institutions, organizations and enterprises": that social and economic development must also become environmentally sustainable, "which implies meeting the needs of the present without compromising the ability of future generations to meet their own needs".

While this is the official UN definition, an African proverb, popularised by Antoine de Saint-Exupéry, has captured the essence of this principle already a long time ago, and much more poetically:

(Slide 5 – African proverb)

"We do not inherit the Earth from our ancestors. We borrow it from our children"

¹ "Our Common Future", UN World Commission on Environment and Development (Brundtland Report), 1987

If we look more closely at the dangerous trends in water, land and air pollution, the over-exploitation of resources, and the cutting down of rainforests, most scientists – and a growing number of business leaders - seem to agree that our current economic model already today is no longer environmentally sustainable. Ironically, according to the Ecological Footprint Network founded by ETH Zürich alumnus Dr. Mathis Wackernagel, the world was more or less in balance – another synonym for "sustainable" – until the year the Brundtland Report was published – 1987.

(Slide 6 – Earth's biocapacity)

Looking at the earth's biocapacity, or capacity to sustain human lives, we see a significant increase over the past 50 years (green line). Why? Despite the fact that we still only have one planet Earth, scientific and technological progress have led to a significant increase in both agricultural and industrial efficiencies - on a scale never believed possible even a few decades ago.

(Slide 7 – Malthus & Ehrlich)

Paul Ehrlich, the author of the neo-Malthusian book "The Population Bomb", predicted in 1968 – the year I joined Nestlé as an ice-cream salesman in Austria – that "India couldn't possibly feed two hundred million more people by 1980". At that time, India's population stood at around 500 million. Today, India counts some 1.1 billion people, and while malnourishment is still wide-spread, the disastrous famines of the 1960s have been successfully combated by the "Green Revolution".

(Slide 8 – Biocapacity exceeded)

On a global scale, however, we see that a combination of population growth and increasing affluence leading to more intensive consumption patterns has already outstripped the Earth's carrying capacity (red line).

(Slides 9, 10 – Biocapacity extrapolation)

And if all the 6.7 billion people living today, who are still at very different development levels, would have the same consumption intensity as North Americans, we would need – according to the WWF – four times the planet earth.

What happens today in environmental terms is not very different to what we saw last year in the financial markets: short-term thinking, profit-maximisation (rather than long-term optimisation) and greed led to an over-supply of credit and consequently to a consumption level that was beyond our collective means. In other words, we were using more capital than was sustainably available, in the same way as we're today using more of nature's capital than nature can sustainably replenish, according to the principle: "Consume now, pay later".

With the difference, as Al Gore recently put it, that "mother nature doesn't do any bail-outs".

While, as we have just heard from Prof. Stocker², many today believe that climate change and greenhouse gases pose the greatest threat to the environment, I firmly believe that another inconvenient truth – global drying, or the world's water crisis – is at least as important and can be felt already today very concretely in many parts of the world.

² The previous speaker talks about "The Scientific Consensus on Climate Change"

Even though globally enough freshwater would be available, in many parts of the world – India, Pakistan, China, but also southern Europe and the south-western parts of the United States – more water is withdrawn than is being replenished through the natural water cycles. In other words, water use in these and many other areas in the world is already today unsustainable.

(Slide 11 – "Global Drying" - facts & figures)

While it has become popular in some countries over the past couple of years to point to bottled water, Nestlé – the world's largest bottled water company – only uses some 0.0009% of global freshwater withdrawn. Even households – representing about 10% of total consumption – and industry, using about 20%, are hardly the core of the problem. The key challenge is that today more than two thirds of all water is withdrawn, and up to 90% of water is actually consumed, and often misused, by agriculture.

This is naturally a very major concern for the Chairman of the world's largest food & beverage company. All our raw materials come from nature and agriculture. It is therefore obvious that we are worried about the state of the environment. Ending dangerous trends in air and water pollution and mismanagement is basic to our being able to sustain a growing Food and Beverages business, and even more so for completing our transformation to become the leading Nutrition, Health and Wellness Company that is trusted by all stakeholders. But we all share one home – planet Earth – and it is therefore not only the future of our own business that is inextricably linked to the future of the planet. It is the future of agriculture and food security that is at stake if we are not able to solve the world's water crisis.

(Slide 12 – From water shortage to food shortage)

Dr Frank Rijsberman, former Director-General of the UN's International Water Management Institute, claims that "If present trends continue the livelihoods of one third of the world's population will be affected by water scarcity by 2025. We could be facing annual losses equivalent to the entire grain crops of India and the US combined."

(Slide 13 – Water, the top environmental problem)

Fortunately, after years of the environmental discussion focusing almost exclusively on climate change, it seems that the public opinion has shifted and now recognises water as top priority, as a recent opinion poll in 15 countries showed: While "climate change / global warming" made it only to rank 6, "water pollution" and "fresh water shortages" came up number 1 and number 2.

So what can be done to avert the combined doomsday scenario of global warming and global drying?

Let's look at the "IMPACT" equation originally developed by Commoner in 1972 in his seminal work "The environmental cost of economic growth":

(Slide 14 – IMPACT equation)

According to this model, sustainable development or "absolute sustainability" - a term recently established by the World Economic Forum's "Driving Sustainable Consumption Initiative" - is achieved when the world's carrying capacity is greater than the combined effects of population size, affluence, consumption intensity, and technology or eco-efficiency.

Let's look at these one by one:

- Population size is not something we can do much about. According to the latest predictions by the UN, despite drastic measures by the Chinese government and decline in some European countries, world population is likely to grow to at least 9 billion by the middle of this century, before it will probably stabilise and eventually even contract again. We should therefore concentrate our efforts on developing the means to feed this growing population with the lowest environmental impact possible.
- Affluence, in turn, is something most people would want to increase. It is both a driver for, and a consequence of, economic development.

So if we want more affluence, i.e. more economic growth, during a period of growing population size we need to look at the two other levers, consumption intensity and technology.

(Slide 15 – Sustainable Development – "not absolute limits")

As already mentioned in the Brundtland Report "The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities."

By stressing the "relativity" of limitations, this report points beyond the over-simplistic doomsday scenario painted by the report to the Club of Rome³ in 1972, entitled "Limits to Growth". Yes, there are limits, but these limits are indeed not absolute. There is hope that human ingenuity will continue to provide the solutions to overcome current limits. Just as oil overcame the limits imposed by horse-powered transportation, there will be other innovations, both social and technological, that will overcome the limitations of oil and other resources.

Let's now look at consumption intensity: Our current economic model is to a large degree based on producing ever more goods, which require ever more resources and create ever more pollution – despite improvements towards more "relative sustainability": While car fuel efficiency has significantly improved over the past 30 years, these efficiency gains have been more than compensated by the far greater number of cars running today. In the US alone, the number of vehicles increased over this period by 1.7% per year, while fuel efficiency only improved by 1.3%⁴.

A big part of the solution to reverse consumption intensities will therefore have to come from "de-materialisation". For many industries, this means a shift from products to services. An already classic example is the shift from music LPs to CDs to internet downloads. And companies like International Business Machines today make more money from selling services than from selling machines. While de-materialisation is arguably more difficult in the food sector, as a company we have undertaken considerable efforts to promote a balanced, healthy diet and to discourage over-consumption. And we also expanded into service areas such as weight management, where we combine, in our Jenny Craig business, product offers with consultancy services.

But still, today it is cheaper to throw away a faulty radio – and, despite some recycling, much of the resources that went into the making of it – than getting it repaired. This must change. The true cost of consuming large quantities of scarce or non-renewable resources will inevitably come into the picture as demand continues to grow. The consequence is not necessarily to consume "less", but to consume

³ Martin Lees, General Secretary, The Club of Rome, talks during the opening panel about "Towards an Integrated View of the Challenges facing Humanity"

⁴ www.bts.gov/publications/national_transportation_statistics/html/table_04_23.html

smarter. And economic growth and profitability don't have to suffer either: The trend to premium and super-premium products is a clear example for this. Our Nespresso or premium chocolate businesses are far less resource intensive per Swiss Franc of revenue generated. But the pleasure of consuming small quantities of these products can far outweigh the pleasure of larger quantities of other, more conventional products. This shows that even premium products – one of our four strategic pillars – can go together with a lower environmental impact.

Another form of de-materialising food would be to eat less meat. Especially in the highly intensified cattle feedlots it takes at least 10 plant calories to produce 1 meat calorie, and consequently also at least 10 times more water to eat a steak than the equivalent amount of soy- and maize based alternatives. Also in this area, we have a number of very interesting developments where we already produce vegetarian meat alternatives in three factories on three continents, with growing success. These products sold under the Tivall brand do not only taste great, and are healthy and nutritious. They also help consumers to lower their own, individual "environmental footprint of eating".

However, especially in the food sector, de-materialisation has its obvious limits. While many individuals would do well by eating less (but better), we still need food, and lots of it, to feed the still growing population.

The key question therefore remains: How can we feed the world sustainably, that is with an environmental impact, which – again in the words of the Brundtland Report – does not exceed the "ability of the biosphere to absorb the effects of human activities".

Some people believe that the solution must come from a romantic return to local, small-scale farming methods of the 19th century, where we only eat what is "in season" and prepare everything at home from scratch. This may be a sympathetic and "feel-good" aspiration that resonates well with many consumers, and especially with those who are far removed from the realities of manual farm work. Apart from the organisational feasibility and the significant requirement for labour, this cosy scenario does not stand up to scientific scrutiny.

German researchers Schlich and Fleissner investigated the popular claim that "locally produced" is better for the environment than products transported over large distances. One example they looked at was lamb produced in Germany and England vs. imported lamb from New Zealand. The conclusion was that the natural growing conditions in New Zealand – year-round out-door extensive herding without need for daily shepherding, stables and additional feed in winter – outweighed the energetic and environmental costs of long-distance transportation. Many other studies for many other products came to the same conclusion. In a way, they have extended to the environmental dimension the "theory of comparative advantage" formulated by 19th century economist David Ricardo, which has been the basis for wealth creation through international trade.⁵

(Slide 16 – Ecologies of Scale)

But even more importantly, Schlich and Fleissner found another principle during their studies: "A strong degressive relation of the specific energy turnover and the business size". In other words, the bigger farms and the bigger processing plants did not only have "economies of scale", i.e. lower overall production costs per unit compared to smaller operators. Also the environmental "costs", or environmental "footprint", decreased per unit with higher production volumes. In analogy to the

⁵ Ricardo argued that there is mutual benefit from trade even if one party (e.g. resource-rich country, highly-skilled artisan) is more productive in every possible area than its trading counterpart (e.g. resource-poor country, unskilled labourer), as long as each concentrates on the activities where it has relative productivity advantage.

established "economies of scale", which today makes food more affordable to more people, they called this the "Ecologies of Scale".⁶

At Nestlé we have undertaken numerous so-called "environmental life cycle assessments" (LCAs). The key reason for doing these studies is to identify the environmental impacts of our products along the entire product life cycle, from the manufacturing of fertilisers (often a significant source of environmental impact), through farming, transportation, processing, distribution and consumption, and then to focus on the biggest improvement opportunities.

Interestingly, the impacts under our own direct control – manufacturing, and to a lesser degree transportation – are often rather small. I'm not saying this as an excuse. On the contrary. This is where we have focused for many decades. For example we have reduced our water withdrawal and energy consumption per kg of product over the past ten years by 58% and 42% respectively, and we are fully committed to reduce our direct environmental footprint even further in future.

But we also realised during these studies that there is a significant environmental footprint of eating, independently of whether there is a food industry or not. We have therefore started to compare industrially produced food, incl. our highly optimised agricultural supply chains, with more traditional, local, small-scale ways of growing and preparing food at home from scratch.

(Slide 17 – Environmental Life Cycle Analysis - Coffee)

What we found, confirms the "ecologies of scale" concept. Let's take our most valuable brand, Nescafé. Even though it takes additional energy to dry the coffee we make in our factories to obtain a coffee powder, the efficiencies of our industrial processes have improved so much over the past 70 years since Nescafé was invented, that the environmental footprint of a cup of Nescafé today is only half that of a cup of traditionally – and inefficiently – home-brewed coffee⁷. And every Nescafé consumer can help to reduce their footprint even further: If every one of the more than 4000 cups of Nescafé that are consumed every single second would be prepared by boiling just the amount of water necessary (rather than half a kettle, as often observed) this would save collectively as much energy as is needed by all Nescafé-producing factories together!

Even ice-cream made industrially can have a lower energy and environmental footprint, despite the fact that commercial ice-cream has to be kept frozen during transportation and in the stores. This is to a large degree due to lower waste of raw materials and ingredients during industrial processes than what would be possible at home.

Don't get me wrong. I also love cooking at home and using fresh ingredients. And I don't want to replace all fresh and locally grown products with processed foods made on the other side of the world. But I want to balance this romantic vision of "small and local" being always better for the environment with scientific facts and figures that enable sound strategies to feed a growing world population.

Independently of the type of food you prefer there is one opportunity where each and every one of us can make an immediate personal contribution for the better: food waste. A recent study in the UK⁸

⁶ An everyday example: If you prepare a plate of pasta for 1 person it requires more energy and water per serving than if you prepare the same dish for a group of people.

⁷Humbert S, Loerincik Y, Rossi V, Margni M and Joliet O (2009). Life cycle assessment of spray dried soluble coffee and comparison with alternatives (drip filter and capsule espresso). Journal Cleaner Production

⁸ "The food we waste", UK Waste & Resources Action Programme, May 2008

showed that almost a third of the food bought by consumers is thrown away – and that much of this waste could be avoided if consumers had planned, stored or managed it better.

(Slide 18 – Losses along the value chain)

Add to this the losses that occur upstream, during agricultural production, harvesting, transportation, processing and distribution, total waste from farm to fork easily average about 50% of the initial production. Here again the food industry with its highly efficient supply chains, processing and preservation techniques minimizes losses at all stages. Milk powder is early example from the 19th century. At a time when no fridges and no transportation infrastructure existed to deliver fresh milk to those who did not live close to a farm, Nestlé had pioneered a technology that preserved the goodness of milk from a day to more than a year, thus benefiting millions of people with a nutritious and affordable food source that would otherwise have been out of reach.

Today, with countries like China, South Korea and Saudi-Arabia buying up agricultural land beyond their borders, highly efficient value chains that minimize losses, reduce negative environmental impacts and create shared value for all partners involved are becoming again a competitive advantage. At Nestlé, we have a long tradition of engaging our farmers and suppliers in creating better and more efficient value chains. For example, we buy fresh milk and coffee beans directly from some 600,000 farmers worldwide and employ some 600 agronomists to train them in better agricultural practices. Collaborating along the value chain is key to realising truly sustainable solutions.

There is another area that is central to food security and environmental sustainability, and where life cycle assessment provides helpful insights: the totally irresponsible and environmentally disastrous promotion of biofuels from food crops wasting billions of taxpayers' money. Let's look at the term first: "bio"fuel. "Bio" is the Greek term for "life". If you take a closer look at this development you should actually call these "thanato fuels", according to the Greek word for "death". About a third of the US corn harvest is used today to produce ethanol for cars, leading to higher prices, with catastrophic consequences especially for the poorest of the poor. The UN's World Food Program is facing "dangerous and unprecedented" funding shortfalls due to significantly higher prices⁹, which were in part due to the boom of – let's call them neutrally – agrifuels¹⁰.

(Slide 19 – Agrifuel – Carbon footprint)

But the agrifuel boom is not only questionable from a social and ethical point of view. Even environmentally it doesn't make sense. According to a life cycle study funded by the Swiss government¹¹ most agrifuels made from food crops in Europe and the US don't lead to a significant reduction of greenhouse gases, and in some cases even lead to an increase. But there is one exception: ethanol made from sugar cane in Brazil, which can reduce greenhouse gases by up to 70%. There are some people who advocate a "carbon label" on various consumer products. Sounds like a good idea. If you look at this graph, I believe we all would agree that we should convert our cars from fossil fuels to Brazilian ethanol. But "environmental footprinting" is more than just "carbon footprinting".

⁹ World Struggles To Meet Urgent Hunger Challenge, 30 July 2009
<http://www.wfp.org/stories/world-struggles-meet-urgent-hunger-challenge>

¹⁰ FAO (2009) THE MARKET AND FOOD SECURITY IMPLICATIONS OF THE DEVELOPMENT OF BIOFUEL PRODUCTION, <ftp://ftp.fao.org/docrep/fao/meeting/016/k4477e.pdf>

¹¹ Ökobilanz von Energieprodukten: Ökologische Bewertung von Biotreibstoffen. Schlussbericht, April 2007. Empa, Im Auftrag des Bundesamtes für Energie, des Bundesamtes für Umwelt und des Bundesamtes für Landwirtschaft.

(Slide 20 – Agrifuel – Environmental footprint)

But if we add other important dimensions, in particular water, even the "best" agrifuel performs worse than standard petrol. This shows that over-simplification and focusing only on one aspect in a complex situation can lead to the wrong policy and purchasing decisions. Environmental footprinting is more than just carbon footprinting.

But even if agrifuels could be made less environmentally harmful, and if valuable rainforests would no longer be sacrificed, the targets set out by politicians are absolutely ridiculous. Since the energy market is about 20 times larger than the food market in terms of calories today's entire world food harvest could replace only 6% of current transportation fuels. Just by driving more defensively and buying the latest models of cars we could already save more energy!

(Slide 21 – Nestlé CSV webpage)

Let me conclude. We see our environmental performance increasingly as an important strategic element for competitive differentiation, in addition to taste and nutritional value. I firmly believe that the environmental and social impacts of products all along their value chains will become an increasingly important purchasing criterion for many consumers, both in industrialised countries and emerging regions such as China and Brazil. We have therefore decided that caring for the environment is not only an absolute necessity to ensure the future availability of agricultural raw materials – and hence the very basis for future business success as well as food security.

We already have in place a concept called "60/40+", which makes sure that every new product is preferred by at least 60% of consumers in a blind taste trial, and that it also has a nutritional advantage or "plus". We have now complemented this concept by a dimension that we call "Quality means more". This is our consumer-centric translation of Creating Shared Value, of which environmental sustainability is a core component. "Quality means more" serves as a guidance for innovation and renovation to develop products and value chains that deliver not only great taste and sound nutrition, but that also help consumers to lower their individual environmental footprint of eating.

In summary: Yes, there are many reasons why CEOs should be worried about the environment, and water over-use is probably the most important of them. But every crisis contains an opportunity. In this case the opportunity to differentiate your products, services and value chains through innovation in a way that also – in addition to your core value proposition, whatever that might be – helps to lower the environmental footprint of those who buy your products and services: your customers and consumers.

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