

Preface

There are risks and costs to a program of action, but they are far less than the long-range risks and costs of comfortable inaction.

John F. Kennedy

This book is borne out of almost 20 years of research in various fields. In the 1990s, I studied cost management, life cycle costing, life cycle assessments, environmental impact assessments, design for the environment, engineering design, simulation models using Monte Carlo methods, and so on. When I started to work as a consultant around 2000, however, I quickly ventured into financial modeling, more cost management, business development, and risk management (both quantitative and qualitative). Then, upon leaving consulting and starting my career in industry in 2004, I studied lean, planning, general management, language and communication and other areas related to the aforementioned areas. All in all, however, this gave me a quite broad background, and as my background widened, I realized more and more the futility of some of the avenues many academics are pursuing and ultimately the current climate approach.

If you have been in a contract meeting and witnessed the amount of energy put down in haggling over relatively minor details, we can just start trying to fathom the amount of disagreement value-laden science will cause of huge, global issues like global warming and general resource usage. I realized two relatively obvious things: (1) Without strong political leadership on global scale, the current approach will never succeed and (2) value-laden approaches make the leadership issue even more demanding and in my opinion impossible. From this, other obvious conclusions are drawn for me—we need (3) a simple and rugged/robust approach free from value judgments and hence no special interest discussions and (4) we must properly engage the economic/financial system because at the end of the day economic/financial considerations prevail in a free market.

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With these ideas, I felt an urge to test my thinking on a qualified audience, so I wrote some papers on the topic and topics related to it. One of the papers resonated with Anthony Doyle at Springer Verlag in London. He read the paper¹ I published in 2013 and found it interesting enough to contact me concerning writing a book—so, here it is.

I have tried to write the book starting from the premises and main ideas in Chap. 1 via the observations I and others have made concerning current efforts as discussed in Chap. 2. The topic of the book is very complex, large, and difficult to present in a clear and coherent fashion because it touches almost every aspect of human civilization. Clearly, this book has greatly reduced the scope of study down to what we can call the capitalist/systemic side of sustainability. This means that I have limited the discussion to issues that have to do with transactions in the global economy as well as changing these transactions via innovation, risk management, public policy, and the like. This is purely systemic issues, and they are far from enough to find a complete solution toward sustainable development. For example, the social aspect of sustainability is a huge field in its own right as is regional issues related to pollution, biodiversity, and the like, but these are omitted in this book due to space restrictions and it is also outside my area of expertise. However, with all these limitations in mind, I still believe that the book can offer valuable discussions or hopefully perhaps trigger some valuable discussions by more competent people.

Both finance and innovation are issues that come natural as a part of this book, so there are chapters discussing finance (Chap. 4), capitalism in general (Chap. 5), and technological development or innovation (Chap. 7). The purpose of these chapters is to show not only that there are significant problems today concerning these topics, but also that in the same topics, there are probably solutions as well known today.

I have provided a more technical discussion on both risk and uncertainty in Chap. 3 because I believe that these twins are often mistreated both in finance, as shown in Chap. 4, and in technological development (innovation)—particularly when we talk about technology with major potential for destruction, as discussed in Chap. 7. Some people may find these technical discussions out of place in relation to the main themes of this book, but I have provided them because the devil is in the details and I believe that we in a number of areas blindly apply theories of risk developed for entirely different purposes. This is a problem as it leads to erroneous decisions. The same is also true for some basic issues like discounting factors, which is why I have included a discussion about that as well. The fact is that much of what we need to know to embark in a more sustainable direction is already known—connecting the dots and making decisions thereafter is perhaps the most important thing we can do in the next years ahead.

But it is probably not enough if we want changes to take root relatively quickly. In the corporate world, it is well known that an important part of change

¹Emblemsvåg, J. (2013). “How economic behavior can hamper sustainable development.” *World Journal of Science, Technology and Sustainable Development* 10(4):pp. 252–259.

management is to change performance measures. Therefore, I have launched a relatively straightforward idea as well in Chap. 6—Energy Accounting. Today's climate issues arise from our quest for energy, which is not strange since energy is such a critical input to socioeconomic development. Instead of making complex trading regimes that do not work, why not simply start keeping account for energy consumption in a rigorous way across the economy—just like monetary accounting? Then, the economy will get the information flow necessary to start focusing on energy explicitly and not like today where energy costs are mingled with everything else and are completely lost for most of the economy.

Then, in Chap. 8, it becomes natural to discuss the role of the government—the great leviathan. Political governance and corporate governance are two sides of the same coin, and it is simply naïve to believe that we will have significant changes unless there are significant changes made in political governance. Corporations respond to the frameworks provided by politicians—unfortunately, the reverse has been increasingly true in the shape of special interest groups winning the day and adds to that the fact that political governance is very unclear in many cases. Obviously, this cannot continue. Political leadership is paramount, but not the kind that seeks to satisfy current wants—we need leadership that seeks to take us where we ought to go.

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