# ACTA UNIVERSITATIS PALACKIANAE OLOMUCENSIS FACULTAS PHILOSOPHICA POLITOLOGICA 3

# THE 'THIRD WAY' IN ENVIRONMENTAL POLICY? MARKET SOLUTIONS TO ENVIRONMENTAL PROBLEMS

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ASSENZA, Gaudenz B.: *Mobilizing Private Finance for Sustainable Development: Wishful Thinking or Realistic Policy?* Olomouc, Periplum 2004, 384 pages. ISBN 80-86624-21-8.

ASSENZA, Gaudenz B.: Using Markets for the Environment: An Outline of 21st Century Environmental Policy. Olomouc, Periplum 2004, 174 pages. ISBN 80-86624-20-X.

# **1** Introduction

Traditionally, environmental policy has been regarded as a responsibility of the state. The experience over the past decades has shown, however, that state-driven environmental programmes can fall short of expectations because of a variety of factors, including insufficient political will, bureaucracy, lack of innovation, and other barriers. Public sector programmes have seldom been cost-effective due to friction caused by inefficiency, administrative delays, and a limited choice of instruments. At the same time, the deepening fiscal constraints worldwide have amplified the call for reducing the burden on scarce public finances. The result has been a wave of cost cutting, which can further erode the effectiveness of environmental policy. A key question, therefore, is whether it is possible to save scarce taxpayer funds while at the same time increasing the effectiveness of environmental policy.

Achieving more with less is possible, but it requires modernizing environmental policies and seeking new ways of promoting sustainable development. One stream of reform proposals relates to increasing the private sector orientation of environmental policy. This involves minimizing negative effects of environmental measures for the private sector, as well as introducing business friendly measures designed to commercialize environmental technologies and thereby synchronize environmental and business objectives.

As a contribution to the scientific debate and the formation of policy, Gaudenz Assenza has written two timely and well-researched books that deal with the new private sector orientation in environmental policy. Specifically, he addresses the gradual shift of financial responsibilities from the state to the private sector. The author pursues the question how the private sector can be made to increase financing for sustainable development while continuing to keep an eye on the bottom line.

According to Gaudenz Assenza, an environmental policy based on coercive laws and increased taxation is a burden to the economy and will always be resisted by the private sector. On the other hand, conventional 'right wing' solutions such as enhancing private property rights and voluntary approaches may not suffice to cope with the magnitude of environmental problems facing humanity. A new synthesis is therefore proposed, which relies on well calibrated state intervention and the profit motive of private actors. This type of synthesis would make markets a force for environmental protection rather than environmental destruction – a realistic policy according to the author, but surely wishful thinking for others who view markets as inherently destructive.

The books show that in the 21st century environmental policy could be founded upon bridging opposing camps, thus ending unproductive fights between environmental groups and pro-business communities. A broader social consensus can converge around policies that create win-win solutions for the environment and the economy. This requires revising incentive structures in a way to make it attractive (rather than costly) for private actors to behave responsibly toward the environment. The author makes the case that we should focus on private investment if the objective is to promote environmental improvements:

If the policy objective is to maximize environmental benefits at a minimum cost to taxpayers, paradoxically, the target should not be maximizing environmental benefits but rather private investment in clean technologies. The reason is that the higher the amount of private investment, the more likely is the commercialization of clean technologies. Commercialization, in turn, will maximize environmental benefits, because it ensures that future financing will not be dependent on the government or private philanthropy.<sup>1</sup>

The core themes of the two books are innovations in environmental policy and market solutions to environmental problems with a view to overcoming traditional left-right dichotomies. The books come from opposite ends to the analysis of the issue of making markets work for the environment: The first book is an abstract theoretical treatment of the question how to mobilize private capital for the global environment. As such, it contributes primarily to theory development and is targeted at academic audiences. The second book is oriented towards applied social science. It will be of benefit for students in undergraduate and graduate courses, as well as for academics and practitioners dealing with environment and energy issues.

<sup>&</sup>lt;sup>1</sup> ASSENZA, Gaudenz B.: *Mobilizing* ..., p. 6.

#### **2** Book 1: Mobilizing Private Finance for Sustainable Development

The first book uses an analytical framework derived from quantitative research methodology. The core theory chapters (Chapters 7-9) examine the elements of a causal model that traces how public interventions or incentives affect private investment decisions. The author describes two types of causal models: a two-step and a three-step model. The two-step model assumes that instruments to mobilize private capital *directly* affect investment decisions, whereas the three-step model introduces a set of intermediary variables. These variables can be either positive (*drivers*, i.e. factors that *increase* the likelihood of private investment).

In his justification of the three-step model, the author begins with the argument that investors care primarily about the feasibility (practicability) and the profitability (risk-adjusted rate of return) of their investments. Therefore, investors focus on all variables (barriers and drivers) that have an impact on feasibility and profitability.<sup>2</sup> Most of these variables can be affected by state action. In the three-step model, state action *indirectly* influences private investment decisions. In this context, the author stresses the importance of investor psychology and perception:

It is important to emphasize that the strength of the drivers and barriers depends on investor perception: If an investor thinks a barrier is prohibitive to the feasibility or profitability of a project, the barrier *is* prohibitive regardless of whether the barrier is real or merely a figment of the investors' imagination. Thus, what matters is investor perception, not reality. In some cases perception and reality will match, in other cases it will diverge.<sup>3</sup>

The causal model consists of three elements:

- (1) The *dependent variable* defined as the amount of additional private investment relative to the amount spent on stimulating that investment;
- (2) *Independent variables* defined as the mechanisms to stimulate private investment, and
- (3) The *causal pathway* consisting of the barriers and drivers to private investment.

Gaudenz Assenza points out that if policy makers operate on the assumption of a two-step model, they tend to overestimate their power, because they assume that their actions have a direct influence on investment decisions. In reality, however, policy makers rarely have such an influence. Private actors make their decisions based on a set of criteria they define themselves. *Only if policy makers are able to influence these criteria can they affect investment decisions*. Thus, if policy makers have a three-step model in their mind, they are much more likely to search and identify the 'trigger' variables

<sup>&</sup>lt;sup>2</sup> Another term for these barriers and drivers is investment criteria, i.e. factors based on which investors decide whether to invest or not.

<sup>&</sup>lt;sup>3</sup> ASSENZA, Gaudenz B.: *Mobilizing...*, p. 182.

that make a difference to investors, and policy makers will try to influence the most significant variables. These intermediary variables are critical for mobilizing private capital for the environment.

How the process of stimulating private investment for the environment works is not always easily traceable. For example, policy measures can successively influence several variables in an interlinked network of variables. It is therefore possible that a policy in a different field (e.g. trade policy) can through a domino effect influence environmental investment decisions. Only a three-step model can capture the existence of such a network of variables and take account of multiple and unintended consequences of policy making.

As if this were not complex enough, the author continues to consider further complications in what he calls a '3-D Plus Model', which incorporates unpredictability, multiple levels and linkages, implementation issues, context, endogeneity and nonlinearity. In an effort to link his work to previous theoretical developments, the author reviews one of the most widely used theories of private investment – the Capital Asset Pricing Model. In other words, he borrows ideas from neoclassical economic theory in order to construct a broader theory that incorporates political, psychological, and cultural considerations.

Despite the use of the Capital Asset Pricing Model, this book cannot be seen as a re-statement or application of any theory. It represents a new explanation that draws on concepts from political science, economics, and other disciplines. In Chapter 7, the author develops a set of eleven theory extensions that need to be taken into account if one is to gain a deeper understanding of private investment decisions and the process of mobilizing private capital. These theory extensions include win-win opportunities, imperfect markets, transaction costs, timing issues, imperfect knowledge, organizational differences, strategic behaviour, and group dynamics. In several chapters of the book, the psychological dimensions of investment are emphasized. The lesson is that policy makers need to improve their understanding of investor psychology if they wish to influence investment decisions and mobilize a greater share of private capital for sustainable development.<sup>4</sup>

In Chapter 8, the author presents what he calls the 'logic of public investment', by which he means the rules that should guide a rational policy of promoting sustainable development. He starts by classifying economic activity according to two dimensions: profitability and externalities.<sup>5</sup> He then argues that policy makers have traditionally spent scarce taxpayer resources on supporting projects with large negative externalities. In many cases, these projects were not only unprofitable but also harmful in terms of imposing huge costs on third parties. The projects could not even be justified on the grounds of creating jobs, because the use of the taxpayer money on alternative projects would most likely have created the same or a greater number of jobs, as environmental technologies tend to be more labour intensive than conventional polluting technolo-

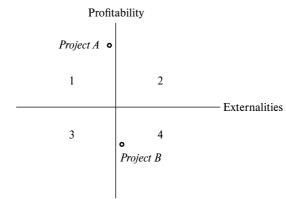
<sup>&</sup>lt;sup>4</sup> The relevance of this book is much wider than just for environmental policy, since it fundamentally clarifies the relationship between policy and investment, and between policy makers and investors.

<sup>&</sup>lt;sup>5</sup> The dimension of feasibility is left out in order to simplify the argument.

gies. In environmental studies, spending scarce taxpayer funds on harmful activities is known as 'perverse incentives'.<sup>6</sup>

In the rest of Chapter 8, the author develops the foundation for overcoming perverse incentives and re-directing state support toward the most worthwhile projects. In what is essentially a new way of presenting cost-benefit analysis, three policy strategies are examined: (1) 'irrational policy', (2) 'ideal policy', and (3) 'feasible policy'. These policy strategies are illustrated with figures that classify investments according to their profitability and the creation of externalities.

In the following, two figures from the book are reprinted to discuss the strategies. If we use Figure 1 as a starting point, activities in Quadrant 2 are likely to be financed by private investors, while projects in Quadrant 3 would ideally be shunned by all actors. According to a common view (often held by environmental activists), all projects in Quadrant 1 should not be pursued because the profits are achieved at a cost to the environment. The other way around, all projects in Quadrant 4 should be realized as they bring benefits to the environment. The author calls this an 'irrational policy', because it means that projects only marginally harmful to the environment (e.g. Project A in Figure 1) would be avoided at a huge financial loss to the economy, while projects only mildly friendly to the environment would be realized at an exorbitant costs to taxpayers (e.g. Project B). Since tradeoffs exist between profit and externalities, the author argues that policy makers must 'carefully balance these tradeoffs, rather than using absolute standards'. It is not a reasonable position to argue that 'if a project leads to environmental damage, it is worth preventing regardless of welfare loss.<sup>7</sup> And, likewise, it is not reasonable to spend taxpayer funds on marginally beneficial projects if better investment of public funds is possible.



# Figure 1 Irrational policy

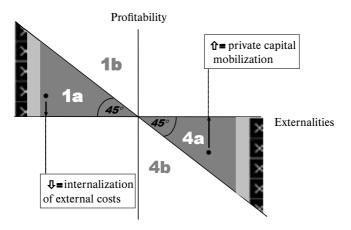
Source: ASSENZA, Gaudenz B.: Mobilizing..., p. 160.

<sup>&</sup>lt;sup>6</sup> Perverse subsidies are not a minor problem. Their total amount is estimated at \$1.95 trillion annually. For a comprehensive discussion of the issue see MYERS, Norman, and Jennifer KENT: *Perverse Subsidies: How Tax Dollars Can Undercut the Environment and the Economy.* Washington, Island Press, 2004.

<sup>&</sup>lt;sup>7</sup> ASSENZA, Gaudenz B.: *Mobilizing...*, p. 160.

Gaudenz Assenza notes that an ideal policy 'would be based on making tradeoff decisions, which maximize overall financial, economic, social and environmental welfare. Assuming for the sake of argument that one unit of financial profit and one unit of externalities are equivalent in monetary terms, the tradeoff between these variables can be illustrated by a diagonal line at a 45° angle to the X-axis, as shown in Figure 2.<sup>3</sup> Projects in Triangle 1a are indeed profitable, but at the same time the financial benefits from these activities do not offset the negative impact on the environment. Thus, they should be discouraged by regulation through internalization measures such as taxation or restrictive legislation. On the opposite side, projects in Triangle 4a promote both sustainable development and economic growth. But this growth is currently not utilized ('latent' growth), because private actors are not interested in the projects in Triangle 4a. Thus, the role of the mobilizer (the state or another actor) is to create the conditions that will change the mind of investors about these projects. The economic benefits (including tax revenues) of projects located within Triangle 4a are higher than the amount of taxpayer money needed for private capital mobilization incentives. Public spending is therefore justified.

# Figure 2 Ideal policy



Source: ASSENZA, Gaudenz B.: Mobilizing..., p. 161.

<sup>&</sup>lt;sup>8</sup> ASSENZA, Gaudenz B.: *Mobilizing...*, p. 161.

The ideal policy presented in the previous paragraph cannot be easily implemented in real life. To internalize all externalities from projects in Triangle 1a may be beyond the capacity of any state, save maybe the infamous Big Brother society described in Orwell's "1984". Moreover, numerous activities within Triangle 1a create the core of the economy and are protected by powerful constituencies. At the same time, to provide incentives to all projects within Triangle 4a is hardly viable due to budget deficits. A pragmatic approach is thus required. The *feasible policy* involves mobilizing private capital first for those projects with the biggest net benefits (the closest to the profitability axis and the outermost right side on the externalities axis). The feasible policy is practically limited by variables such as political will, budget constraints, and implementation capacity. These and other variables determine the angle of the axis in Figure 2.

Although the author hints at this possibility, he should have explicitly mentioned that the angle of axis for internalization of externalities and the angle of axis for private capital mobilization do not necessarily have to be the same. For example, for a state with a tight budget it can be more cost-effective to widen the angle for Triangle 1a and focus on de-mobilizing private capital through environmental taxation or other measures, while straightening the angle for Triangle 4a, thus saving money on private capital mobilization incentives.

The final chapter sums up the argument around several dimensions, including methodological conclusions, theoretical conclusions, and policy conclusions. Assenza points out that the promotion of private capital mobilization does not reflect an adoration of market mechanisms, but rather a concern with cost-effectiveness. Markets are not considered a panacea for environmental problems. In the author's words: 'This book shows on a theoretical level why there is no magic universal solution. Detailed empirical studies are needed to assess why certain policy and project designs have worked or why not. This might not give us a recipe to be applied in all circumstances, but perhaps further insights into the options available to environmental policy makers.'<sup>9</sup>

The book is a first-rate analysis of issues so-far neglected by the academic community. Nonetheless, there are several minor objections that could be expressed. Probably the most noticeable problem is the book's lack of empirical case studies that would support the abstract theory. The author acknowledges this drawback and justifies it by data limitations and disclosure issues.<sup>10</sup> The concern is resolved in his other book, entitled "Using Markets for the Environment: An Outline of 21st Century Environmental Policy", which is reviewed below.

Another issue is that the author's theory remains to be tested in real life situations. There are currently no large-scale experiments or long-term experience with mobilizing private capital as an avenue of environmental policy. For this reason, it is difficult to assess whether the author's theory can be applied in practice, or whether private

<sup>&</sup>lt;sup>9</sup> ASSENZA, Gaudenz B.: Mobilizing..., p. 189.

<sup>&</sup>lt;sup>10</sup> Ibid, p. 6.

capital mobilization indeed works as the author imagines. The recent experience with public-private partnerships in Germany,<sup>11</sup> Great Britain,<sup>12</sup> and other countries suggests that the collaboration between public and private actors is inherently problematic and does not guarantee success. Private capital mobilization for the environment, as outlined in the books, is different from traditional public-private partnerships, but the practical lessons from similar programmes should not be neglected.

As could be already noticed from this review, the book does not constitute an effortless reading from cover to cover. The theoretical core (part 2 of the book) begins after a lengthy introduction, a chapter with definitions, followed by the literature review, methodology, and the establishment of the causal model. The theory itself is sometimes hard to understand. It must be noted, however, that the difficulty is neither caused by a lack of logic nor an unclear style of writing, but by the abstract nature of the theoretical treatment. To his credit, the author tries to alleviate this hurdle and help the readers by using instruments such as examples and illustrative metaphors.<sup>13</sup> Also the definitions of the concepts provided in Chapter 2 assist in gaining a better understanding of the text. Still, the nature of the book makes it a contribution to academic debates rather than a blueprint for immediate action. Policy makers, bankers, and business executives, who should be the main target groups – and who are the main protagonists of private capital mobilization in real life – will hardly take the time to read books of this category.

The book ends with a note, concluding that the argument in the book is influenced by assumptions and ideas based on the current foundations of economic theory and philosophy. According to the author, a comprehensive critique of these assumptions and the theory extensions he proposes could lead to the conclusion that the entire enterprise was quite limited'.<sup>14</sup> While it is true that any theory is by its nature limited, I found this conclusion puzzling. This sceptical remark applies probably to most, if not all, works of social science and it unnecessarily underrates the value of this particular work.

# **3** Book 2: Using Markets for the Environment

The second book starts where the first one ends. While *Mobilizing Private Finance for Sustainable Development* focuses on constructing a causal model to explain how certain stimuli mechanisms affect barriers and/or drivers in ways that trigger positive investment decisions by private actors, the book *Using Markets for the Environment* 

<sup>&</sup>lt;sup>11</sup> The problems connected to the project to construct a state-of-the-art toll collect system (the "Maut") in Germany could serve as the case in point. See for example ZASTROW, Volker: *Maut im Aufklärungsstau*. Frankfurter Allgemeine Zeitung, 23 February 2004, 1.

<sup>&</sup>lt;sup>12</sup> For an analysis of the British Private Finance Initiative see Centre for Public Services: *Private Finance Initiative and Public Private Partnerships: What future for public services?* Sheffield, UK, 2001, available at <a href="http://www.centre.public.org.uk/briefings/pfi\_and\_ppp.html">http://www.centre.public.org.uk/briefings/pfi\_and\_ppp.html</a> (accessed 19 March 2004).

<sup>&</sup>lt;sup>13</sup> See for example the metaphors used to explain the causal model on p. 66, or the iceberg metaphor (p. 76ff) illustrating the relationships among externalities, feasibility, and profitability.

<sup>&</sup>lt;sup>14</sup> ASSENZA, Gaudenz B.: Mobilizing..., p. 203.

follows up with a question why private capital has not been mobilized for sustainable development in practice, despite the long-term efforts of governments or multilateral organizations.

At the outset, the author identifies three financial gaps relating to sustainable development:

- (1) *The state financing gap*: the disproportion between the growing demands on public budgets and the worsening fiscal situation of many states;
- (2) *The multilateral financing gap* (a variation of the state financing gap): the disproportion between the scarce funds multilateral institutions have at their disposal and the scale of global problems these institutions are assigned to address;
- (3) *The private financing gap*: the disproportion between the huge amounts of private capital in financial markets and the tiny share that is allocated to purposes related to sustainable development.

In order to increase funding for sustainable development, all three gaps shall be ideally narrowed. Figure 1.1 on page 14 in the book places the policy objectives of narrowing the financing gaps into a broader perspective on the problem of financing sustainable development. The author then narrows the analysis down to the state financing gap, 'since the other two financing gaps (concerning multilateral institutions and the private sector) are merely variations on the same theme.'<sup>15</sup> The subsequent chapters, however, are oriented primarily toward discussing issues concerning the private sector financing gap, as private sector financing offers potentially the largest additional source of capital for sustainable development.

After discussing the nature and causes of public budget difficulties, three policy options how to close the state financial gap are discussed. The first option is to *stimulate economic growth* and thereby increase tax revenues. However, growth does not guarantee a sound state of state coffers. Moreover, the higher the growth, the higher are the expectations of the citizens, who create yet more pressure for growth. The consequences of this policy for the environment and the exploitation of natural resources can be fatal in the long-term. And finally, increasing growth is hardly an innovative policy prescription. Most governments are trying to maximize growth with the help of accumulated knowledge in economic science. The attempt to maximize growth is already underway.

The alternative policy option, *reducing needs, wants, and expectations*, is controversial, as it would lead to a decrease of demand on public finances and a shrinking economic pie. Of course, we can ask ourselves at which level of wealth do we have enough material goods, and surely, everyone can decide to stick with a compact car and an apartment instead of a Mercedes and a castle; but as the author acknowledges, it is not viable to have the boundaries of 'essential' and 'unessential' goods set by the government.

<sup>&</sup>lt;sup>15</sup> ASSENZA, Gaudenz B.: Using..., p. 13.

This leaves the third option, *private capital mobilization*, as the most feasible solution. To quote the author: 'The basic idea is to reduce the number of areas, for which the state assumes the primary financing function, while at the same time finding substitute sources of funding and implementing alternative financing arrangements.'<sup>16</sup> This recommendation of the shift of responsibilities is difficult to implement in practice. First, we must know in what cases and to what extent is private capital mobilization desirable and feasible. Second, it is realistic to assume that under current conditions the private actors will not voluntarily surrender large amounts of money in order to promote sustainable development. The state must apply a mix of sticks and carrots for the private sector (e.g. subsidies, taxes, fines). We do not know whether these incentives will work in any concrete case - they may affect investments decisions of private actors or they may not. An appropriate mix should accelerate the commercialization of clean technologies, which is presented as the main objective of environmental policy.<sup>17</sup> When environmental technologies are commercial, there is no longer a need for taxpayer subsidies.

The second chapter closely examines the issue of clean technology commercialization. The basic assumption is that private capital mobilization is a necessary but not sufficient condition for commercialization. For example, if the public sector provides lavish financial incentives, private capital would be attracted, but the objectives of commercialization may not be met. Indeed, aid dependency may develop, which means that private funding for the environment remains linked to state support.

Gaudenz Assenza defines commercialization as 'the creation of self-sustaining markets that thrive without any form of subsidy in a level playing field with other technologies.'<sup>18</sup> He attempts to answer the question why the commercialization of clean energy technologies has progressed so slowly despite all the attempts to fuel it, while some other technologies, such as the Internet, have enjoyed rapid commercialization with much less support from taxpayers. The causes of this paradox are explained and classified.

In the subsequent chapter, the issues of private financing and private capital mobilization are applied in a case study of climate change mitigation. The history of climate change development, its projected impacts, and international negotiations dealing with the problem are outlined as an introduction and context for readers not familiar with climate policy. The issues concerning climate change remain hotly debated by many politicians, scientists, journalists, but also by the general public. One broad group, referred to as *sceptics*, are confronted with the stance of *supporters* – those that believe that climate change is a reality, that it is caused primarily by human influences, and that its consequences will be dire unless action is taken. The differences between sceptics and supporters are analyzed along conflicting issues: the state of scientific

<sup>&</sup>lt;sup>16</sup> Ibid, p. 12.

<sup>&</sup>lt;sup>17</sup> Private capital mobilization is not the sole component of sound sustainable development policy, and other elements (education, public participation, etc.) are mentioned in the text.

<sup>&</sup>lt;sup>18</sup> ASSENZA, Gaudenz B.: Using..., p. 26.

knowledge, alternative explanations of climate change, the precautionary principle, economy-environment tradeoffs, and benefits of climate change.

Among the controversial issues of the debate on climate policy are the divergent estimates of future damages and the costs of climate change mitigation. Assenza points out that the exorbitant sums anticipated by many sceptics are usually worst-case estimates and do not include the use of market-based mechanisms or no-regrets options, not to mention the prevention of damages caused by climate change. Several studies have shown that appropriately selected actions to mitigate climate change could bring net economic gains. The use of these cost-effective measures should be encouraged. The most cost-effective options are called 'no-regrets', because they could be implemented at zero or negative economic costs – 'they make sense regardless of whether climate change is happening or not, regardless of its causes and consequences.'<sup>19</sup> Although we do not know how many 'no-regrets' opportunities exist, it is possible to take advantage of them by removing barriers to private capital mobilization, as explained in the first book reviewed above.

Environmental policy has traditionally relied on command and control instruments. Although these measures can have the desired impact, they are sometimes less efficient than market-based instruments. According to the author: 'The main idea of market-based mechanisms is to solve environmental problems in an economically efficient way by sending appropriate price signals to private investors to internalize the societal costs of their business decisions and to provide an economic incentive to reduce those costs.'<sup>20</sup> In the climate debate, emission trading is frequently viewed as a promising way to reduce greenhouse gases. Assenza notes that a well-designed system of carbon trading can be a cost-effective policy option with significant climate change mitigation potential. He emphasizes the role of multilateral institutions in developing and implementing international emission trading schemes, arguing that the performance of multilateral institutions can be improved and suggesting how performance can be assessed.

The book ends with a discussion of private investment in sustainable energy from the perspective of project financing. The distinctions between traditional project finance and environmental project finance are outlined. The author analyses the factors that are crucial for successful project financing in any sector (not only the environment): clarity of objectives and expectations, managing differences, broad collaboration and financing mix, transaction costs, risk mitigation, and driver stimulation. With a proper understanding of the requirements of financiers who want to make a profit while minimizing risk, the frontier of project finance can be extended to the environmental sector.

In the past, many ambitious, innovative, and risky projects were implemented with the involvement of private capital, for example the construction of the Suez Canal. Why then is there so little interest in investing large sums in clean energy today, when

<sup>&</sup>lt;sup>19</sup> Ibid, p. 84.

<sup>&</sup>lt;sup>20</sup> Ibid, p. 89.

the sums of capital available for investment are much larger and the methods of risk minimization much more sophisticated? Part of the explanation, according to the author, is a phenomenon he calls the 'paradox of increasing timidity'. In this view, the primary problem is not the feasibility of profitability of clean energy projects, nor it is a lack of capital. Rather, 'the main bottleneck appears to be a lack of leadership, vision, and political will'.<sup>21</sup> In order to depart from this status quo, policy makers and financiers may need to consider bolder, more visionary, approaches (comparable to the vision that established the Suez Canal) rather than the valuable but ultimately too slow incremental progress which has characterized the field of clean energy for several decades without major results.

Because of its applied orientation and its topic, the second book is complementary to the first one. It provides the empirical material and examples to explain and illustrate the abstract models developed in *Mobilizing Private Finance for Sustainable Development*. Although the text is by no means easy to read, it is accessible even to audiences without previous background on issues concerning environmental finance and sustainable development. There are only a few minor matters that could be questioned. It seems to me that the author is rather too biased against nuclear energy (see for example pages 46-7). Since many people view this option as a potentially significant contribution to climate change mitigation the argument on nuclear energy should have been more carefully laid out.<sup>22</sup> Finally, it should be noted that the two books should ideally be published in one cover, since their topics complement each other perfectly. However, this option was probably not chosen because of size and marketing issues, as the first book is targeted at purely academic audience whereas the second book has a broader appeal.

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<sup>&</sup>lt;sup>21</sup> Ibid, p. 144.

<sup>&</sup>lt;sup>22</sup> Although most new constructions of nuclear power plants take place in East Asia, also in some European countries there may be a resurgence of new construction as a result of climate change and other considerations. Witness the recent decision to start building another nuclear reactor in Finland. Bertel and Morrison claim that 'recent experience demonstrates that nuclear power plants perform well in deregulated markets'; BERTEL, Evelyne, and Robert MORRISON: *Nuclear Energy Economics in a Sustainable Development Perspective*. NEA News no. 19, 2001, 15.