

# CHAPTER 9

# URBAN SUSTAINABLE DEVELOPMENT THE STOCKHOLM WAY

*Amy Rader Olsson and  
Jonathan Metzger*

## 9.1 INTRODUCTION

**THE PRECEDING CHAPTERS** have provided a broad introduction to some of the key issues, challenges, and knowledge areas in urban sustainable development, relating these questions to Stockholm's experience. This concluding chapter retraces some of the main themes of the book and asks what general lessons about urban sustainable development may be drawn from the specific case of Stockholm.

Knowledge is never eternal or neutral, but rather always irrevocably bound up within the wider societal conditions of its context of production. Half a century ago, KTH, the Royal Institute of Technology in Stockholm, published a summary of the then-current forefront of academic research, which on a wider level addressed the question, "How do we build a good city?" The authors who contributed to the anthology, *Bilstaden*, articulated this as a question of how to develop Stockholm into a modern city with vastly improved conditions for individual welfare through coordinated land-use and transportation planning (KTH, 1960). The anthology discussed many of the themes echoed in this volume: how to coordinate transport and land-use planning for high-quality workplace and residential development, how to balance central and suburban development, and how to work constructively to provide a balance of individual and collective goods and hence contribute to the general welfare. The difference was that in 1960 the solutions

promoted by the KTH researchers all revolved around how to facilitate the “automobile city” (*bilstaden*), with “a large degree of individual freedom of mobility made possible by a departure from the idea of the traditionally centralized city, which to a large extent is determined by public transportation” (ibid., p. 7). The measures of success were also somewhat different from those of today, focusing almost exclusively on income and car ownership per capita.

Even though there is a world of difference between the Stockholm of today and the Stockholm of 1960, there are also important similarities: the city and its surrounding region are yet again grappling with the pressures and strains of rapid urban growth, such as bottlenecks and accumulating under-capacity in the housing sector and transport system. Whereas the 1960s policy response to these challenges facilitated a flight to the suburbs, current approaches instead focus on meeting the strong contemporary demand for distinctly urban amenities and centrally located housing and business locations.

The economy of the Stockholm region is currently the largest and most rapidly growing in Sweden. Despite a national culture still characterized by a pastoral romanticism, reminding us that this is historically quite a recently urbanized nation, the notion that Stockholm is an engine for Swedish national economic development is becoming widely accepted. Consequently, the discourse of development is changing, and is increasingly focused on global competitiveness and the urban agglomeration benefits of metropolitan regions. Further, the personal consumption of goods, services, and housing was both quantitatively and qualitatively different in 1960. Private consumption is now a major economic driver, in Sweden in general and Stockholm in particular, and this can be highly problematic from a sustainability perspective – no matter how “green” consumption is labeled as being.

The search for solutions to urban sustainability challenges attracts many foreign delegations to Stockholm, and the current generation of KTH researchers are still occupied with the question of how to build the “good city.” Today, however, the response to this question reflects the revolution in ecological awareness and sensibility of the past few decades as well as the effects of an ongoing global economic recession, a global climate crisis, and looming resource crises. These fundamental insights provide the intellectual soil for conceptual innovations and areas of interest such as *ecological urbanism*, *active ground*, *green leases*, and *urban agriculture*, to name but a few of the emerging urban development concepts mentioned in the chapters of this book.

Nevertheless, the question remains as to what substantial and generalizable lessons can be drawn from Stockholm’s specific experiences in its ambitions toward urban sustainable development. How much of Stockholm’s development in this area is the result of knowledgeable and active decisions that could be replicated in other contexts, and how much is

a consequence of natural endowments, geography and history? The next section of this chapter tentatively addresses this question and then provides a quick review of some of the specific particularities and blind spots of the current loosely sketched “Stockholm take” on sustainable urban development. We conclude with a presentation of a few conceptual pairings that, based on the content of this book, serve to highlight some of the difficult balancing acts and tensions that must be negotiated in any policy development scheme aiming at promoting urban sustainable development.

## 9.2 CREDIT WHERE CREDIT IS DUE: HOW DID STOCKHOLM GET HERE?

As is aptly illustrated by the different perspectives represented within this book, it is definitely possible both to applaud and to deride Stockholm’s developmental decisions, both present and past. But perhaps more interesting and more valuable to urban professionals in other cities is to ask how Stockholm became what it is today. Have key policy decisions contributed to Stockholm’s contemporary international reputation as a global beacon of sustainable urban development? Phrased more directly: is Stockholm’s prizewinning urban environment merely the inevitable result of its natural and historical endowments in the form of its geographic setting, economic history, and cultural traditions – or can it also be traced to specific conscious and foresightful political decisions and investments?

### Natural endowments

Sweden is both rather sparsely populated and comparatively rich in crucial natural resources, with an economy that has for decades been geared toward high-value-added exports. As such, this small country has managed remarkably well in a globalized world economy. Early and comprehensive investments in hydropower and nuclear power, although hardly feedstocks without environmental impact, nevertheless provide Stockholm with a stable source of low-carbon energy. Stockholm, having been a national capital for many centuries, is the central node in the national road and rail systems, and also enjoys a strategic maritime position between Lake Mälaren and the Baltic Sea, although the fact that Stockholm is built on numerous small islands across a sound also creates persistent challenges for local mobility. All that water also generates both stunning aesthetic values and practical hygienic amenities, with an almost unlimited supply of fresh drinking water (that is, as long as the brackish water of a potentially rising Baltic Sea can be kept out).

A short answer to the question posed above is thus that Stockholm’s natural endowments and historical and geographical advantages have been

important to the development of the city and have contributed to generating favorable preconditions for urban sustainable development policies, perhaps more so than in many other cities. But that said, we can also pinpoint important focused and conscious steps taken by Stockholm's politicians and civil servants in the preceding two decades to secure, manage, and develop the historical endowments that they have been entrusted with for present and future generations.

## A mosaic of policies

The interesting questions now instead become: *which* policies appear to have made a real difference, *how*, and to *what effect*? These questions have been addressed in substantial detail in the chapters of this book, so here we can instead afford ourselves the opportunity to draw broad conclusions based on the insights provided in the preceding chapters. Roughly, we can divide these policies into three categories, which are also largely historically sequential.

*Promoting human welfare and prosperity:* This category includes sanitary improvements and transport investments that improved human life expectancy and preconditions for economic development, primarily instigated by liberal reformists around the turn of the last century with the broader purpose of increasing public welfare. These policies included the generally collectivistic and egalitarian public welfare solutions implemented under the auspices of the Social Democratic Party's welfare regime and the "People's Home" policy in the mid-twentieth century, stretching into the "Million (Homes) Program" for housing provision in the 1970s. They are also reflected in investments such as the extensive integration of public transport and other infrastructure with land-use planning, an approach manifested in suburbs such as Vällingby and Farsta and in district heating infrastructure. These policies provided practical solutions that improved basic human living conditions. Nonetheless, even if this was not their expressed aim, many of these interventions and investments also turned out to have unanticipated positive environmental effects. For instance, the extensive so-called green wedges between the suburbs and transport corridors today provide crucial ecological services, including recreational values for the city's inhabitants, support for biodiversity and species mobility, and carbon sequestration. Likewise, the high share of public transportation trips in the city, which keeps down pollutant emissions, owes much to the foresight of over-dimensioning the subway system during its construction between the 1940s and 1970s.

*Environmental protection:* In the late 1960s and 1970s, the state of the environment exploded as a central political topic, not only in Stockholm but all over the Western world. Fueled by NGO protests and activism, increasing ecological awareness led to demands for the legal protection of fragile ecosystems. Sweden was a forerunner and standard-bearer in the

international arena, forging ahead with comparatively bold and broad national legislation for environmental protection, for instance the banning of a number of environmentally hazardous chemicals in the 1980s and 1990s. At the city and regional levels in Stockholm, spontaneous protests and strong NGOs had since the late 1960s put local environmental issues at the forefront of city politics, and achieved some substantial policy and plan revisions. Still, it was not until the 1990s and the Agenda 21 movement that environmental issues began to become a standing concern for the city administration.

Finally, in this context it would be remiss to pass over the latest generation of policies in this area – aiming at *sustainable city branding and marketing*. This set of policies, emerging locally in Stockholm roughly from the mid-1990s and onwards, positions Stockholm as an international best-practice example of urban sustainable development to promote not only the city itself but also a wide range of Swedish urban clean-technology products and services, particularly using the eco-district of Hammarby Sjöstad as a live showcase for these technologies and processes. While often generating concrete and substantial improvements in urban sustainability, these policies are heavily focused on those interventions that can be “packaged” and “put on display” to advance the reputation of the city and other public and private collaborators. This has prompted some critics to ask whether exportability and commercial potential are more important in the eco-districts of Stockholm than actual sustainability effects.

### 9.3 PARTICULARITIES AND BLIND SPOTS

Several cycles of policy intervention – some with environmental ambitions, others with unanticipated environmental benefits – have come together to generate the preconditions for Stockholm’s strong development and reputation in the area of urban sustainability. But what are the specific particularities of the contemporary Stockholm “take” on urban sustainable development? And conversely, what important aspects are perhaps left out of Stockholm’s approach – that is, what are its *blind spots*?

#### **A culture of consensus – for better and for worse**

Thomas J. Anton, professor of political science at the University of California, Berkeley, produced a major study of Stockholm’s regional governance system in the early 1970s, resulting in the book *Governing Greater Stockholm* (Anton, 1975), in which he argues that Stockholm has had a unique political evolution. This would seem to leave little room for drawing lessons that might be applied elsewhere. However, he does note one thing that other places could learn from Stockholm: the masterfully executed techniques

employed in bringing together and generating agreements between politicians of different party affiliations, public servants, and professional experts, as well as between different municipalities and between municipalities and the national government.

This ability, which has come to be known as the *Swedish political consensus culture*, is an amalgam of formal and informal techniques and institutions for generating broad agreement in the Swedish political system with respect to major development priorities (see also Chapter 2). It has been widely praised both nationally and internationally as providing stability and steady progress in Swedish society (“evolution rather than revolution”), but has also been heavily criticized for marginalizing minority opinions and interests – even raising claims that the Sweden of the mid-twentieth century can be described as a corporatist society in which the political and business elite, together with the strong unions, staked out the direction of societal development without much real regard to fluctuations in public opinion. In the Stockholm context, the consensus culture has played out as a highly informal but quite stable pro-growth coalition between the biggest parties: the Social Democrats and the conservative Moderates. Even if some major and contentious issues such as housing policy have been left out of this consensus, and even if it has at times been forced to yield to pressure from NGOs and public opinion, this informal political “meta-agreement” has nevertheless proven remarkably robust and resilient over the decades.

In relation to urban sustainable development, one problem with this stable agreement on broad development parameters has been the risk of producing equally broad definitions of key concepts so as to avoid consensus-threatening disagreements – with the result that these concepts become highly superficial and thus unable to guide action in any substantial way. Stockholm’s city development policy promoting walkability, for example, is often communicated as a major goal, but is not linked to specific indicators or parameters that developers must meet. Stockholm promotes neighborhoods with a mix of ethnicities and socioeconomic backgrounds, but does not mandate them in the way that some cities do, for example through allocation rules for public housing. Thus, a risk inherent in the Swedish consensus culture is that crucial differences are brushed over and important decisions avoided, so as not to upset the consensus. In Stockholm, this means that though all the major players are “for sustainability” as a key development goal, a concrete operational definition of the concept is repeatedly avoided so as to maintain consensus on the overarching goal. When push comes to shove, the question of what sustainability substantially entails and demands in the form of trade-offs and sacrifices is generally avoided. When consensus becomes such a central goal in itself, it can engender a very specific kind of decision-making sclerosis, despite broad agreement concerning the key parameters of urban development.

## Global, local – and the missing in-between

Stockholm's policymakers and research community would seem to be getting better at using models, methods, and processes that can analyze, predict, and to some degree engineer quite complex interactions in extreme detail. The Swedish high modernist intellectual tradition of systems analysis has found new expression in fine-grained analysis and solutions at the neighborhood and building levels. The chapters of this book highlight research insights related to the understanding of functional interactions – among people and firms in urban agoras (Chapter 5), integrated social-ecological systems (Chapter 4), closed-loop eco-districts (Chapters 4 and 7), between owners and tenants of green buildings (Chapter 6), and within the economic geography of metropolitan regions (Chapters 2 and 5). Eco-districts and their closed-loop resource cycling models are attracting worldwide attention owing to their ability to integrate both technological and management systems for water, sewage, and energy. The space syntax approach described in Chapter 4 and the urban agriculture trends reviewed in Chapter 8 are also good examples of neighborhood-level development based on an understanding of complex interdependencies between human and biophysical systems.

Methodological and technological advancements supporting systems science have surely contributed to the focus on the fine-grained in many of the above-mentioned urban sustainability advances. Closed or semi-bounded systems at the smaller scale are easier to engineer and manage than the open-ended complexity of a whole city or urban region. At the national scale, the necessary level of abstraction makes systems approaches also fairly helpful as devices for thinking and planning with, although with large error margins and substantial degrees of uncertainty. But what of the middle scale? The focus on closed-loop local systems informed by fine-grained systems analysis, coupled with Stockholm's focus on international showcase neighborhoods, has led to a situation where the "broader picture" of the urban fabric becomes indistinct. For, notwithstanding the world-leading, cutting-edge eco-district developments of Hammarby Sjöstad and the Royal Seaport, what about everything around these areas? How, for instance, are we to retrofit and upgrade the large suburban housing estates of the Million Homes Program, with 200,000 apartments in Stockholm County (approximately 65,000 within city limits) in urgent need of renovation and improved sustainability performance? These make the city's designated eco-districts (Hammarby Sjöstad, the Royal Seaport, and Liljeholmen-Lövholmen), comprising a total of 26,500 apartments when fully completed in 2025, pale somewhat in comparison. And what about all the other new areas being constructed in the municipalities of the Greater Stockholm region but not designated as eco-districts, including the city's own major developments Västra Kungsholmen, Liljeholmskajen, and Hagastaden?

In relation to the sustainability-retrofitting of the Million Homes Program areas, there are promising experiments under way (see Chapter 8) – but these are nevertheless small-scale interventions, encompassing a few hundred apartments in total. Some argue that ecodistricts and small-scale demonstrations facilitate broader implementation of environmental innovations both locally and globally, but the question still remains as to the mechanisms by which this diffusion is to occur. Sustainable urban development, if implemented only in a piecemeal, market-led fashion at the neighborhood scale, may in the long run engender literally and/or symbolically secluded “premium ecological enclaves” (Hodson and Marvin, 2010) for a wealthy urban elite while failing to tackle the wider context of the surrounding urban fabric.

If we zoom out to the global scale, we find that Sweden is an active participant in international negotiations, regulations, and governance systems to protect global resources and ecosystems and that Stockholm has benefited from this stance. With an economy dependent on multinational enterprises and exports, and consumers dependent on imports, the Stockholm region’s politicians and firms are keenly aware of the region’s relation to the rest of Sweden, to the Baltic region, to Europe, and to the world. The general picture of Stockholm presented in the previous chapters is that of a metropole with well-developed mechanisms for global cooperation that help this medium-sized city in a small country act as a global player in sustainability issues – both in the public sector and within industry.

But between the global and national levels on the one hand, and the municipal levels on the other, there appears to be a lack of a stable “in-between” scale for efficiently dealing with urban sustainability issues – not least in Stockholm. The OECD (2006) has suggested that the Stockholm region’s “weak middle” may be the result of metropolitan-level governance institutions that lack the legal authority to enforce land-use planning principles. This can be contrasted to Chapter 5 in this volume, which acknowledges the inherent conflict of interest among diverse municipalities, and between public and private actors, but sees a real potential for new metropolitan-level cooperative regimes and partnerships. At the broader regional level, the complexity of addressing both large- and small-scale change, slow and fast processes, and hundreds of goals and interests becomes overwhelming. Regional planners have responded by focusing more attention on subregional initiatives, acting successfully as mediators and coordinators – but perhaps again running the risk of losing sight of a bigger picture.

There is also a third missing “in-between” related to the relational geographies of sustainable urban development discussed in Chapter 8 – that is, the impacts and implications of action and consumption in one specific location on other local places, perhaps on the other side of the globe. Policymakers and the general public in Stockholm have a fairly robust



comprehension of the connection between local activities and consumption and their possible detrimental global effects in the form of direct emissions of greenhouse gases that contribute to climate change. Nevertheless, there is still little general understanding of, and responsibility taken for, the ways in which the contemporary lifestyles of Stockholmers are fully dependent on an exporting of environmental “bads” to other places around the globe. Has Stockholm merely displaced its local emissions and pollutions rather than mitigating them? Stockholm is a metropolitan region whose population, trade, and growth dynamics are heavily influenced by – and highly influential upon – other regions and countries. It is no longer a cozy and somewhat isolated little hamlet at the edge of the extensive Scandinavian forest, but rather is part of the “global village,” yet still with only a dim general understanding of its relation to the whole *ecumene* of life on the planet.

### **Urban social engineering in a cult of individualism?**

The Swedish concept of a “people’s home” (*folkhemmet*) was articulated in the late 1920s as the philosophy guiding the development of the “good society” that would give individuals and families the environment they needed to prosper. Even though the 2010s are radically different from those times, this very broad vision still permeates much of Swedish society and political culture – an ambitious welfare state striving to balance the needs of the individual with those of the collective. Several chapters in this volume highlight the challenge of not only maintaining these ideals but translating them into relevant principles in an ever more rapidly changing world.

History has taught us that the dividing line between individual responsibilities and rights and the sphere of collective decision making, institution building, and the provision of services is in no way set in stone, but rather is a fluctuating frontier determined by constant renegotiation based on the priorities and necessities of a specific society at a particular point in time. Chapters 7 and 8 argue that the contemporary strong and largely unquestioned focus on individual liberty, particularly in relation to personal consumption choices, may come at the cost of local and global sustainability. While the influential Swedish historical culture of the yeoman farmers, the *allmoge*, includes strong traditions of group consensus and community responsibility, the urban culture of consumption in the Western world in general – and major metropolitan regions in particular – has generally been described as highly individualistic and hedonistic. This tendency is further augmented in Stockholm by the fact that its population so far has been only mildly affected by the global financial recession of the early twenty-first century, and with a comparatively rich and young population, the personal consumption of resource-dependent products such as furniture, home appliances, cars, fashion, and luxury food items constantly reaches new record levels. With the highest share of single-person households in Europe

(over 60 percent), housing prices are skyrocketing as individuals seek an urban lifestyle living in the studio and one-bedroom apartments that only a century before housed entire families.

Chapters 3 and 8 ask whether or not this current culture of consumption can be maintained in a city striving for sustainability. The right to express individual preferences through private consumption choices is something of the holy cow in Western late-modern liberal society, as evidenced by the storm of protest that erupted when it was suggested that such lifestyle choices might be regulated for residents in the new Royal Seaport eco-district (Chapter 7). But conversely, it may be that in an ever more individually based urban social framework, signals and banners of sustainability become important personal investments that accrue gains to both individuals and communities. In other words, conscious urban consumers may be willing to pay more for organic food with clear labels, to live in neighborhoods with “clean” reputations (such as eco-districts), and to use transportation modes marked as sustainable, so as to show that they are “part of the solution, not the problem.”

Nevertheless, to base a sustainability strategy on visibility and prestige also poses dangers, for there are examples in Stockholm that indicate that sustainability issues with a low visibility factor may have difficulty in finding champions. The planned western ring orbital highway, the Stockholm Bypass, has been highly contested, in part owing to the projected increase in car traffic and greenhouse gas emissions associated with the project. However, when the project was redrawn and relocated mostly to tunnels passing under, instead of through, the attractive and wealthy areas rich in natural amenities on the outskirts of Stockholm, public discussion concerning the projected increase in greenhouse gas emissions became conspicuously muffled. Public opinion, even regarding invisible emissions, would seem to be dependent on visible manifestations of development and change. Even more worrying, the same highway link does in fact run overground next to some of the most socially and economically stigmatized neighborhoods of the city (those abutting Järvafältet), raising suspicions that even though enormous investments are made to keep the discomforts of increased car traffic out of sight of the relatively well-off, preserving their local landscapes, no such consideration is taken in less-well-off areas in the city.

As was discussed in Chapter 3, much current “sustainability talk” also builds upon the twin foundational notions that unlimited economic growth is possible within a sustainable future (“green growth”) and that we can rely on individuals to make enlightened choices in their consumption if they are provided with sufficient information concerning the effects of those choices. But can we really put the future of the world in the hands of situated consumers, constantly burdened by economic, social, and practical pressures in their everyday choices? Chapter 3 raises concerns that individual pressures to save money, “keep up with the Joneses,” or just grab something off the

shelf in a hurry may increase the gap between stated environmental sustainability preferences and revealed preferences in consumption behavior.

From a certain perspective, investments in “clean tech,” or green technologies, can avoid complete reliance on the situated consumer as the fundamental leverage point of sustainable development. Innovations such as smart windows, efficient water and sewage management systems, renewable energy, and energy management can establish frames of action that make sustainability outcomes less dependent on the everyday choice of individuals. These investments can to some degree, and with little drama, relieve people of the difficult daily choice between habitual comfort and making sacrifices (economic, social, practical) for the sake of “saving the planet.” But when legislation does not require, or at least provide some form of reward for the use of, green building technologies, for example, those technologies must rely on accepted and established calculations of marginal cost advantages for their application – that is, they must “pay for themselves” by offering direct economic gains to developers and inhabitants in the form of energy savings, as exemplified in Chapter 6. Or they must be part of an eco-district or green building package, with tenants prepared to pay a little extra to be seen as “conscious consumers.” This raises the question of whether ostensibly (but not necessarily substantially, as noted in Chapter 7) “sustainable lifestyles” are reserved for those with the extra cash to pay for the personal prestige afforded by owning an eco-district condo or choosing more “eco-friendly” or “biodynamic” goods and services. Should sustainable development be an *optional* choice for the *individual* few (and predominantly rich and well educated) or a *collective* endeavor paid for, managed, and executed collectively?

Stockholm’s experience suggests that effective technical solutions for improving the sustainability of urban lifestyles must continually be balanced against the potentially issue-obfuscating and enthusiasm-dampening effects of passive sustainability technologies and infrastructure solutions. There appears to exist a need for constant reminders of the gravity of the current climate and environmental situation to individuals, firms, and society taken as a whole – particularly when effects are invisible or unfelt. Solutions that raise public awareness such as GlashusEtt, that provide economic incentives for more sustainable behavior such as the congestion charge (Chapter 7), or that facilitate new management or contracting arrangements such as green leases (Chapter 6) all appear to serve such a purpose.

The historical frontier between the private sphere of personal preferences and rights and genuinely collective concerns has been redrawn on many occasions, and perhaps we again need to think through how exactly to negotiate this divide as we confront a challenge to our survival as a species of unprecedented complexity that can never be fully addressed solely by individuals. Notwithstanding Sweden’s international reputation for reliance on

social engineering, for many decades the concept has primarily figured in the Swedish debate as a derogatory slur denoting undue governmental interference in citizens' private lives and legal impediments to the free market. But perhaps the evolving climate crisis and other global environmental threats motivate some form of foresightful and democratically governed "social engineering" more than ever – that is, collective action to set necessary frames for individual choices. Clean-tech investments arguably function as a form of social (/technical/environmental) engineering aiming at securing sustainable behavior and lifestyles. Perhaps such an updated conceptualization of social engineering can remain open to include any tools that help both individuals and governments find democratically legitimate ways of reaching towards sustainable development in the city.

#### **9.4 KEY STRATEGIC PARAMETERS FOR URBAN SUSTAINABLE DEVELOPMENT: LESSONS FROM STOCKHOLM**

Those working toward achieving urban sustainability around the globe can find much inspiration in the experimental urban technologies, policies, and governance cultures of the Greater Stockholm area. But it is important not to let inspiration slip into seduction, for there are also some blind spots in the contemporary "take" on urban sustainable development currently being implemented in the city and region. Hopefully, this book has helped facilitate a fair and evenhanded appreciation of the strengths and weaknesses of current efforts toward urban sustainability in Stockholm. For there are definitely components of both hype and real substance in Stockholm's current reputation as a world-leading city in sustainable urban development. But what substantial lessons can be drawn from the case of Stockholm? The answer to this question most probably varies greatly for different readers in different local contexts. Thus, we will not conclude this book by offering some sort of marked score-sheet tallying up Stockholm's "sustainability score" compared to that of other cities and regions. Such simplifying summations can be important eye-openers, but they fail to convey an account that does justice to the entangled complexities of urban sustainable development.

Instead, we will conclude by building on Stockholm's experience, strengths, and blind spots in sustainable urban development to formulate a list of conceptual pairs that, taken together, suggest key strategic urban sustainable development parameters. The concepts in each pair are in no way mutually exclusive. Rather, they illustrate some crucial tensions, conflicts, or trade-offs in urban sustainability policies, as they encompass divergent but in a policy context often mutually reinforcing approaches – where ignoring one or the other term may obfuscate the importance of crucial angles.

### **Generating awareness or getting gritty**

The City and region of Stockholm have spent considerable resources generating awareness of urban sustainability issues, both at home and abroad. And as Chapter 3 shows, the introduction of the environment as a topic of political discussion has had a tremendous impact on the decision-making climate, as has the contentious subject of climate change thereafter. Chapters 6 and 7 discuss the many efforts to raise public awareness regarding climate change, and Chapters 1 and 8 note the center-staging of sustainability issues in the city's current branding strategy.

At the same time, such information efforts always need to be balanced against – or, even better, combined with – concrete interventions that directly impact everyday life in the city. Such interventions might include the technological refinement of infrastructural systems, green construction, the creative use of pricing mechanisms or other economic incentives, or other new policies and tools to influence and affect the everyday habits of firms and urban denizens. While Stockholm's experience underscores the need to constantly communicate the challenges and potential of sustainable urban development, it also suggests that communication must be balanced with a comprehensive portfolio of concrete investments, regulations, and incentives. Likewise, action without communication may backfire if people do not understand the value of policies and investments.

### **Raising the bottom or shooting out peaks**

Sweden's national approach to environmental protection has historically been to raise the bar on everything, using various forms of legislation to constantly push up the bottom and bring everyone up to par at a minimum level. Stockholm's local sustainability policy in the past two decades or so appears to have been almost the reverse: to maintain a low regulatory bar but show dramatic leaps over it – or, when the goals are more ambitious, to allow ample time to reach them or renegotiate them. As was highlighted in Chapters 4 and 8, international delegations flock to visit Stockholm's showcase projects and facilities, many of which demonstrate highly efficient, closed-loop, no-waste systems. In practice, however, these projects may be difficult to ramp up or out to other areas or contexts. This is partly a technological challenge, since showcases and pilots often use custom-designed or modified systems optimized to a limited site, building, or area. These may be better suited to high-budget urban brownfield redevelopments than to older public housing areas that were themselves, ironically, once the modernist showpieces that attracted those international delegations to the region.

So while there may be many marketing and branding advantages to be gained from "shooting out peaks" of sustainability performance, such as the construction of high-budget eco-districts, doing so may risk losing sight

of the bigger picture: the rest of the city and all its inhabitants, and its relations to the surrounding world. It remains to be seen whether or not Stockholm's focus on showcases will facilitate the implementation of sustainable technologies and practices in more mainstream developments (as many claim) or contribute to the development of the fragmented and isolated urban gardens or eco-islands, as discussed in Chapters 5 and 8.

For sure, the City of Stockholm's new policy, demanding energy performance roughly equaling that of a *Passive House* (maximum of 55 kWh/m<sup>2</sup>) for all new developments on City-owned land (totaling approximately 70 percent of all land within City limits), makes an important and bold step in this direction and a foresightful early implementation of the EU directive EPBD2.

### **Building consensus or forging ahead**

Modern Swedish political culture has historically had a strong focus on consensual action, a firm agreement on central principles that allows for mobilization of collective resources. But as was argued in Chapter 3, broad consensus can also have a curiously paralyzing effect, for when it becomes of central importance to "get everyone on board," the risk is that concrete concepts and policies become so watered down that they are rendered practically inoperationalizable or extremely close to "business as usual," thus making them quite toothless as tools for change.

Admittedly, one of the strengths of the concept of sustainable development is that it promotes synergies in the form of solutions that can both secure the necessary resources for future generations and contribute to increased prosperity in the present. But in such a mind-bogglingly challenging quest as that which seeks to secure the preconditions for life on this planet, painful trade-offs are inevitable. Sustainability policies always generate winners and losers, and threaten powerful interests and regimes. Several chapters in this book seem to suggest that Stockholm could benefit from a reexamination of its own history, which at critical junctures managed to make bold policy and investment decisions while maintaining a firm focus on broad consensus regarding desired substantial outcomes.

### **Local benchmarking or a global outlook**

As evinced by many of the chapters, including Chapters 1 and 8, Stockholm works locally to achieve urban sustainable development while proceeding from a fundamentally global outlook in its communication and marketing. What remain somewhat obfuscated in this geographical perspective are the concrete relations between places and the related displacements of environmental bads that occur by way of, for example, offshoring of production, as discussed in Chapter 8.

Greenhouse gas emissions and other forms of environmental damage do not disappear just because they are not produced in Stockholm. And it can be argued, as in Chapter 8, that if such emissions and environmental damage can be directly traced to the lifestyle choices and consumption practices of Stockholmers, they should also count toward the city's sustainability tally, which then becomes less impressive than currently claimed. Whether or not this is practically feasible, such a perspective highlights the fact that globally integrated urban areas support, hinder, and affect each other in complex ways. The lesson that Stockholm has yet to draw is that any effort to measure local policy impacts must proceed from a thorough understanding of interactions and influence chains that more often than not reach far beyond the borders of both the region and the country.

### **Durable, predictable frameworks or flexible, experimental solutions**

Chapters 5 and 6 remind us that most built infrastructure is slow to change, and that this relatively fixed nature has lasting impacts – for better and for worse. It leads to stability of function over time, and helps individuals make decisions based on expectations that the road or bridge or airport or rail track will be there both today and tomorrow. Of course, such stable elements of the urban environment may facilitate more or less sustainable behavior, as discussed in Chapter 7. Even widely accepted sustainability measures – such as building a comprehensive metropolitan transit system – have in Stockholm contributed to a more dispersed and in some ways less energy-efficient settlement pattern, as described in Chapter 5.

Today, engineers and urban policymakers further recognize that adaptability and flexibility may be keys to the long-term success of major investments, and subsequently try to incorporate these properties into new infrastructure developments and institutional designs. But this is sometimes easier said than done. Some critics, for instance, argue that the ongoing construction of the Stockholm western bypass motorway locks the region into an unsustainable reliance on automobile transportation instead of facilitating a shift toward increased public transportation use. Others argue that without the bypass, the radial transportation corridor structure forces both public and private transport trips through ecologically and historically sensitive bottlenecks in the city center and isolates the northern and southern parts of the city – in other words, perpetuating a socially, economically, and ecologically unsustainable urban morphology.

Stockholm and Sweden are perhaps best known worldwide for large-scale investments in durable capital such as transit systems and the Million Homes Program. Nowadays, Stockholm's sustainability approach is more aptly characterized as a number of smaller-scale sustainability experiments and demonstration projects. These tend to be serious demonstrations, large enough to have measurable impacts and high visibility – such as the

congestion charging experiment discussed in Chapter 7 – but still limited or tentative enough to guard against the risk that goes with implementing new technologies and policies. Historically, many of these demonstration projects have also been scaled up and expanded over time, for example the sewage management and district heating systems in Stockholm (Chapters 2 and 5).

Even if there are other drivers behind many of the contemporary experimental projects, as discussed in Chapters 1 and 8, Stockholm's emphasis on demonstration and pilot projects (which often become permanent) may nonetheless be an interesting component in any urban sustainability strategy if properly combined with broader measures and interventions. There are two important lessons to be drawn, therefore, from Stockholm's experience. The first is that the sustainability performance of durable capital infrastructure such as a new road can be radically affected by the short-term policies, incentives, and regulations regarding its use. The second is that progressive policies with strong sustainability potential, but clear winners and losers (such as congestion charging), may motivate experiments or demonstrations. Experiments and pilots can reduce uncertainty regarding effects and therefore allow policymakers to craft compensatory policies within the context of political negotiations.

### **Individual or collective action**

In the past two decades, Stockholm's take on sustainable development has generally been market led, or at least market oriented, generating the necessary preconditions for market developments that favor sustainable outcomes. Examples include planning specifications requiring performance standards and supportive planning processes (as in the case of Hammarby Sjöstad), pricing and subsidy schemes (as with compost collection), or municipal procurement and sourcing policies favoring environmentally superior goods and services. Parallel to this market orientation, however, Stockholm also demonstrates reluctance to introduce new broad local legislation or planning regulations – with a few notable exceptions, such as the ban on studded snow tires along Hornsgatan in central Stockholm to reduce particulate emissions as well as the previously mentioned new energy standard for construction on City-owned land.

Market forces can have substantial transformative power, as manifested for example in the rapid increase in green building (Chapter 6), which is an entirely market-driven process. But nevertheless, Stockholm's experience illustrates that the market-based initiatives have limitations as a policy tool because they generally assume that individuals and firms are rational actors who can make informed judgments about the consequences of their choices. But taking into consideration all the various pressures that bear down on any individual in a specific situation of choice, reliance on the "enlightened consumer" may be shaky ground upon which to base a broad sustainability



strategy. “Passive” sustainability technologies such as low-energy lightbulbs or smart windows take this responsibility away from individuals and thus create preconditions for more sustainable urban lifestyles that transcend the everyday choices of sometimes fickle consumers. But Stockholm’s experience also indicates that passive solutions may engender apathetic consumers. If the lightbulbs are low-energy, why bother turning them off?

## 9.5 FINAL WORDS

Up to the end of the twentieth century, actions toward protecting the environment were generally considered to significantly improve quality of life through major innovations and investments in increased transit accessibility, cleaner water, and protected recreational and living environments. In more recent decades, and paralleling the rapid global diffusion of the Western consumerist lifestyle ideal, environmental measures have often been cast as threats or restrictions to the comforts of the “good life.” The policies that have been most easily accepted are those that save consumers time, energy, or money as well as the environment. Recently, interest has turned to innovative and often “silent” or “passive” green technology, neatly avoiding uncomfortable discussions regarding established ideals of personal consumption, freedom and individual lifestyle choices. Nevertheless, if Stockholm is serious in its ambition to achieve sustainable urban development, the day may come sooner rather than later when some difficult choices have to be made. These concern not only how to ramp up innovations in technology and facilitate green consumption and green growth, but also how to balance individual and collective needs in the longer as well as the shorter term – taking into account the local, trans-local, and global impacts of local activities. In Stockholm, as elsewhere, this will require some form of broad common agreement, but an agreement that also grants a democratic mandate to experiment with both mundane and more spectacular policy interventions that impact how we live our individual lives.

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