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BOOK REVIEWS

A Handbook of Sustainable Development, Second Edition, by Giles Atkinson, Simon Dietz, Eric Neumayer and Matthew Agtinvcila, ISBN 978 1 78254 469 2.

The second edition of this handbook published in 2014 takes the reader on the path of exploring progress in understanding the intricate debate on sustainable development. The topics in this book remain in updated form which is important not only in making general sense of what sustainable development is but also in distilling these messages into a sensible interpretation for the construction of sustainable development goals.

The authors tend to underscore the spirit that it would be quite wrong to claim that there is a unified theory of sustainable development. Interest in sustainable development has always been drawn from a broad spectrum. For example, the Brundtland Report viewed sustainable development as serving many different (and possibly competing) goals: economic development, a better environment and a particular concern for human wellbeing both now and in the future. In fact, the debate has become far broader since then. The handbook continues to deliberately reflect this diversity, in terms of contributions in this volume, rather than impose a narrow and rigid interpretation of the issues.

The book begins by asking whether sustainable development can be defined in relatively succinct terms. A number of definitions can be found in almost all contributions to this volume. Several authors cite the famous Brundtland Report definition: 'development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs' World Commission on Environment and Development [WCED (1987) p.43]. Others have provided a change of emphasis perhaps by stressing that it is wellbeing or opportunities and options which should be sustained. Additionally, some chapters impose further requirements or perhaps riders about particular actions that meeting the stated goal of sustaining development might require. Nevertheless, despite these apparent differences, at the heart of almost all these definitions is a common concern about the way in which the fruits of development are shared across generations.

The opening section of this book starts by considering what determines the development prospects of different generations. As Kjrk Hamilton and Esther Naikal make clear in Chapter 2, the most fundamental element is the wealth possessed by any generation; and this is arguably so whether it is needs, wellbeing or options that we want to sustain. Hamilton and Naikal construe wealth, however, in a par-

ticular way: 'it is the potential wellbeing possessed by people within a particular generation'. A more tangible description of these prospects is given by the stocks of assets which comprise, for example, the wealth of a nation or the planet itself. This includes produced capital (machines and physical infrastructures) as well as the human capital which is embodied in people themselves. Crucially, it also includes those assets which have been provided 'free of charge' by the natural world. It is this idea of natural capital that has become a key concept in thinking about what distinguishes concern about sustainable development from previous debates about the long-term development challenge.

This book put forth a major challenge which lies in full understanding of the diversity of natural capital and different ways in which these assets influence human wellbeing. As van den Bergh discusses, establishing the building blocks for this has long been the province of ecological economics. Viewed through the lens of recent history, this exercise can perhaps be seen as the single most important contribution of this sub-discipline. An important idea in this respect is that of critical resources which are both crucial for human development and has no substitutes. A middle-ground in discussions about sustainable development, could then centre on identifying critical assets and managing these resources, accordingly. Unfortunately, the practical problem is that there exists considerable uncertainty about which natural assets are critical. Hence, there is corresponding uncertainty about the location of this middle-ground and how to assess sustainability as well as make better decisions in light of this ambiguity.

It is fair to say that ecological economists have reiterated strong sustainability. Chapter 4 by Paul Ekins, on strong sustainability and critical natural capital, thus naturally follows from van den Bcrgh's assessment of the role of sustainable development in ecological economics. Ekins makes a persuasive case that many forms of natural capital are likely to be critical, either already or soon to be so. Uncertainty coupled with the long-term nature of many environmental issues, irreversibility of destruction of natural capital, as well as, their broad impact on every aspect of human life should make us cautious, he argues, in adopting the optimistic assumptions about substitutability. He explores analytical methods for identifying these critical forms of natural capital which are in need of preservation and conservation for development to be sustainable.

In Chapter 5, Edward Barbier's starting point is that, while ecosystems are assets, they are special in the sense of not only providing multiple critical services but also providing these services in perpetuity if the underlying ecological asset is left relatively undisturbed. Of course, ecosystem assessments are increasingly confronting us all with evidence that, in practice, this is far from the norm. Indeed, depreciation is widespread through ecosystem destruction and degradation, as well as, biodiversity loss. Barbier shows how this loss of natural capital can be brought within the realm of economic theory and, in doing so, provides a crucially important

underpinning to natural capital accounting and efforts to understand better, the value of nature in decision-making. This is, by necessity, a complex task.

In Chapter 6, Neil Adger and Jennifer Hodbod focus on advances in knowledge about the concept of resilience. As they explain, resilience is central to sustaining ecosystem functions in the face of external pressures and perturbations. That is, too little resilience means that there is a greater chance that continued pressure or some unexpected events will result in precipitous natural capital loss. To the extent that this natural capital underpins economic and social activity, this loss of resilience translates into less resilient economic growth or human development more generally.

In the field of environmental ethics, there has been a traditional focus on whether moral considerations extends beyond humans to the natural world, that is, is there intrinsic value in nature? For Bryan Norton and Alien Thompson (Chapter 7), however, this focus has had limited practical purchase, not least because it is difficult to verify claims of intrinsic value. Furthermore, it has blocked the integration of environmental philosophy and environmental economics. Fans of neither approach, Norton and Thompson point to two alternative approaches in environmental ethics, which might transcend the debate. One is environmental pragmatism, which as its name suggests seeks to avoid a priori theoretical discussion of sources of value, in favour of learning the value of natural assets in the course of their management. The other is the environmental virtue ethics, an application of virtue ethics to environmental protection that gives priority to goodness of human character in evaluating our management of natural capital.

In Chapter 8, Geir Asheim summarizes an important perspective on the problem of allocating scarce resources across generations, which is offered by the field of inter-temporal social choice. This is a field which sits at the intersection of economics and philosophy, and focuses on deriving rules for evaluating different development paths - intergenerational equity criteria - from nothing more than a set of basic axioms.

The broad thrust of policy decision-rules intended to deal with threats to sustainable development, in a world with critical resources, is explored in detail by Alan Randall in Chapter 10. Randall's starting point is that simplistic and overly general stories about weak sustainability require far too much optimism about facilitating factors such as the ability of technology to get round impending constraints and the ability of markets to provide the correct signals about emerging scarcities. As a result, decision rules need to adapt to these ecological realities when needed.

In Chapter 11, Geoffrey Heal and Bengt Kristrom make a link between building current distributive considerations into analyses of sustainable development and the welcome resurgence in economic interest around distributive issues in cost-benefit analysis and policy appraisal more generally. This highlights an array of interesting issues. But perhaps the key message is a reminder that policy creates winners and losers; and knowledge of how the cards fall is important. There is probably no

escape from making hard choices in achieving sustainability. However, in order to ensure that such policies are socially acceptable, identifying the potential obstacles that undesirable distributive impacts present is crucial.

In Chapter 12, Julian Agyeman reminds the readers that concern for social justice is here, and has always been at the heart of the environmental justice movement. Indeed, it is arguable that some of the credit for the recent emergence of environmental equity concerns in economic analysis must go to this movement, that began as a grassroots campaign, originating outside of (and sometimes in opposition to) the mainstream environmental movement in the U.S. In this respect, it has evolved in parallel, rather than together with the sustainable development debate. However, as Agyeman notes, environmental justice proponents have identified much in common with the sustainability agenda. Emphasis is placed on the burden of pollution and how that burden is distributed across communities with different socioeconomic characteristics.

The link between disparities in living standards and differences in human 'Vulnerability' to environmental (and other) stress is increasingly, as noted in Chapter 13 by Neil Adger and Alexandra Winkels, apart of the vocabulary of sustainable development. The emphasis on vulnerability predicts that those living in chronic poverty, without access to the resources necessary to live a decent life, are those least able to cope or adapt. In this context, links are forged with key contributions from the poverty literature, notably the writings of Amartya Sen [(1981), (1984)].

The examination of both environmental justice and vulnerability shines light on the role which the social relationships play in achieving sustainable development. In Chapter 14, Allister McGregor explores further, the relationship between the society and what is meant or indeed what could or should be meant, by the 'development' aspect of sustainable development. Grounded in Aristotelian philosophy and economic treatises ranging from Adam Smith and Jcremy Benthatn to the more recent Amartya Sen and Daniel Kahneman, McGregor identifies human wellbeing as the ultimate goal of development. This perspective emphasizes both an ability to pursue one's goals and the maintenance of good relationships - with other people, society, institutions, norms and the natural environment - as important components of (sustainable) development.

Increasingly, interest in relationship between growth and the environment is focusing on the concept of 'green growth' (Alex Bowen explains in Chapter 15). This interest, arguably driven by policy-makers, stems from the recent economic crisis, which has underscored for the imperative growth, alongside rising concerns about natural capital depletion, especially the impacts of climate change and possible resource scarcities in the near future. Yet despite confidently taking its place in the public policy lexicon, Bowen explains that it is unclear what green growth actually means. Moreover, the leading definitions bear a strong similarity to earlier definitions of sustainable development, is that they usually reference the three pil-

lars: economic, environmental and social; albeit with the emphasis unapologetically on economic growth.

Cross-country empirical studies in the early 1990s seemingly showed that, for certain pollutants, as the economy grows, the environmental quality first deteriorates but then actually improves. This is the so-called Environmental Kuznets Curve {EKC). Matthew Cole and Andrea Lucchesi, in Chapter 16, review the evidence from EKC studies for local and global pollutants. While these studies have seen their fair share of criticism on a variety of grounds as discussed by the authors, Cole and Lucchesi note that recent development in the literature have sought to provide a more thorough explanation of the process of economic change driving the EKC (where it exists).

How can we, being blessed with natural resource assets turn into a curse? As Richard Auiy shows in Chapter 17, the fact that a large number of countries in the former category appear not to have benefited in this way has led to considerable efforts, being expended in seeking to understand why the resource curse arises and, more impor-tantly, whether it can be avoided. This has included the unintended economic effects of resource booms as well as observations about the political economy of resource-rich countries.

Tim Jackson takes up this challenging issue in Chapter 18. He explains that much of the sustainable consumption literature, especially (and without any great surprise) at the political level, has shifted to reflect fundamentally on over-consumption, instead of restricting itself, as how to achieve incremental shifts in consumption towards ‘greener’ products. A world population peaking somewhere between 8 and 10 billion people will also leave considerably less space for all non-human living beings, in Chapter 19, Geoffrey McNicoll sets out this integral part of the sustainable development story, which itself has roots in historical debates, about relationship between population and development. Recent interventions have, in McNicoll's view, generated more heat than light, focusing on elusive (and perhaps even futile) questions about 'how many people the world can support' and arriving at extreme prognoses whereby population levels can increase without limit.

Interpreting how knowledge is created and how new and cleaner innovations diffuse into production (and consumption) is discussed by Timothy Foxon in Chapter 20. He makes it clear that there are important lessons to be learned from, in effect, 'backward engineering' the actual adoption of new technologies and thereby understanding the technical and economic circumstances under which change occurred. In doing so, examples are uncovered of existing technologies that have become 'locked-in', even though possibly 'superior' technologies exist. Identifying the reasons for such phenomena is also important. A prominent environmental example is the pervasiveness of carbon-based technologies in modern economies.

Consumption, economic growth and environmental degradation impact sustainable development in complex and often in contradictory ways. The question is:

how do we know whether overall, we are on a sustainable development path? If the rhetoric of policy makers committed to sustainable development is to be judged against the reality of performance, the means to measure and monitor sustainable development must be found.

Chapters 21 and 22 set out the substantial progress made in national accounting for natural capital. First, Glenn-Marte Lange, in Chapter 21, appraises the efforts of a number of countries. This makes it clear that, while a large amount of work is being done, only a handful of countries have serious, active programs. An example is the work of Australian Bureau of Statistics. Across the world, most of this work is deliberately carried out in a way consistent with the United Nations System of Environmental and Economic Accounting (SEEA). This is designed as an adjunct to - not a replacement for - the conventional System of National Accounts (SNA). Clearly, this falls short of an earlier, more radical entreaty, which can still be heard, to overhaul entirely the core national accounts. It takes the more conservative (but in all likelihood correct) view that satellite accounts best permit experimentation with relatively novel methods, without compromising uses associated with the conventional accounting framework.

In Chapter 23, Philip Lawn evaluates efforts to measure Sustainable Economic Wellbeing (SEW), which can be broadly construed as a measure of consumption (typically the largest part of national income), adjusted and extended to flows of goods and services as well as changes in stocks (such as natural capital), which are not included in the calculation of conventional GDP.

In Chapter 24, Mathis Wackernagel, Gemma Cranston, Juan Carlbs Morales and Afessandro Galli provide detailed explication of the measurement and rationale of Ecological Footprints - their policy is relevant and shows how they are linked to sustainable development. Like Lawn in his defense of SEW studies, provide a detailed rebuttal to the many criticisms that - rightly or wrongly - have been raised against the Ecological Footprints. However one stands on this issue and whether or not agrees that decision-makers should base policy directly on this information; no doubt there is a success of Ecological Footprints as a rhetorical device and as an elective convincing tool of the message of over-consumption that appeals to policy-makers, the media and lay people, alike. But possibly even more significantly, sustainable development is about coming to terms with the planet's limited resource budget - whether it is through demand management, efficiency gains or boosting supply. Emphasizing this may be Ecological Footprint accounting's main contribution.

In Chapter 25, Louis Dupuy and Matthew Agarwala provide an overview of some of these controversies and, in doing so; outline an array of candidate pathways whereby trade and sustainability might be linked. The first is a matter of timing of resource extraction and trade liberalization. At what point should a country undertake trade liberalization in order to maximize its welfare gains, and how do changing terms of trade and long-run resource price trends affect the Hartwick rule? For

some, increasing resource prices justify extra short-term consumption, allowing (resource exporting) countries to invest less than the Hartwick rule requires. For others, this is seen as fuelling the resource curse. Continuing in controversy, the chapter explores contributions from various perspectives - weak versus strong sustainability and production versus consumption-based accounting - and invites the reader to take a stance in these ongoing debates. Finally, Dupuy and Agarwala explore how trade policies, and in particular, eco-tariffs, might impact the gains from trade. For best results, they argue, such policies should be agreed at the global level, perhaps at the World Trade Organization or a potential World Environmental Organization. Of course, the international politics of this are deeply complex and fiercely debated.

In Chapter 26, Carlo Carrara takes stock of what we know about the propensity of countries to cooperate in managing natural capital sustainably, based on insights from game theory. Game theory is an attractive way to analyze international environmental cooperation, where countries' actions are interdependent. It is often the case that when a country acts to conserve a natural capital stock, it provides spillover benefits to other countries (for example in cutting greenhouse gas emissions or protecting biological diversity). This creates an incentive for countries to free-ride on each other efforts. At the same time, there is no supra-national institution with the authority and legitimacy to enforce resource management regimes on sovereign countries, so any agreements between countries are voluntary and, for them to be effective, they must be self-enforcing.

In Chapter 27, John Voglcr offers a complementary analysis of international environmental cooperation from the perspective of polities and institutions. He charts shifts in the political debate on sustainable development, from primary emphasis on environmental issues at the 1972 Stockholm Conference, to a tripartite focus on environmental, social and economic development at the Rio de Janeiro Earth Summit in 1992.

In Chapter 28, Samuel Fankhauser, updating a chapter from our first volume written by David Pearce, argues that securing sustainable development requires those making a sacrifice to see it as being in their interest. The rationale for this is informed by eminently sensible economic arguments. One source of inspiration, for example, is the notion of a Coasian bargain [Coase (I960)], whereby a ‘polluter’1 has a property right underpinning their current (unsustainable) behaviour - perhaps because a threatened biological resource is sovereign property - such that it is in the interests of the ‘sufferer’ (or beneficiary of conservation) to pay the polluter to change its behaviour. As the authors point out, overcoming well-known-obstacles to these Coasian bargains remains a challenge, but if they can be navigated then it motivates possibly substantial financial flows linked to the protection of the ‘environment’.

In Chapter 29, Gary Yohe looks at sustainable development in the contest of adapting to climate change. After being for many years - but for no good reason -

the poor relation of mitigation (that is, abatement of greenhouse gas emissions) in climate change policy, the imperative to adapt is now widely accepted. Crucially, it is now firmly on the radar of policy-makers' attention.

In Chapters 31 and 32, we explore the role that water resources play in sustaining development and the idea of sustainable agriculture. Thus, in Chapter 31, Matthew Agarwala and Tony Allan argue that water resources deserve special attention from those truly committed to sustainable development. Water's privileged position as a non-negotiable prerequisite for life and an integral component of all ecosystem services means that any future wellbeing hinges critically upon its availability and quality. Agarwala and Allan explore how water's unique characteristics distinguish it from other resources, and how these affect the economic rules that could, and the political realities that do, determine its use and distribution. Unique among natural resources, a staggering 90 per cent of all the water required by mankind is used in a single sector, agriculture. Water is used to produce crops and livestock which enter a global food supply chain which is blind to the value of water. As such, the authors argue that it is the world's 1.5 billion farmers who ultimately manage this crucial resource, and that politics and economic incentives must align to ensure its sustainability.

Water availability and quality is clearly then a crucial element of agricultural sustainability. Clement Tisdell in Chapter 32 also makes it clear that the idea of sustain-ability in this sector has its roots in a wide range of policy concerns. Certain countries may well place a premium on food security and this might further motivate concerns about sustainable agriculture within nations. Enhancing and sustaining the livelihoods of rural people and rural communities might also be an important criterion. Sometimes, the emerging emphasis evolves with novel challenges or contemporary villains. Recent examples include oil palm plantations and 'land-grabs' in different parts of the world.

In Chapter 33, Richard Green, Yacob MuKigetta and Zhong Xiang Zhang explore nexus of energy with development. While broadly, the apparent importance of energy resources as (literally) the fuel for resource-based development seems not to be in dispute, these links - as well as the risks that these give rise to - are manifold. This includes economic and social vulnerability to volatile prices and particularly, price spikes as well as physical interruptions to supply.

Inevitably much of the emphasis in this volume is placed on the challenge of sustainable development for public policy. However, it is clear that this challenge is only part of the story. Individuals and communities of people might play their part too. This is important but not least because it is this public which must accept the costs of behaving sustainably for the benefit of future generations. However, as Yvonne Rydin explains in Chapter 34, much of the impetus for current thinking about local sustainability was supplied some time ago by Agenda 21 in 1992. This local perspective has led to ambitious policy aims; for example it has been argued

that, as 'global' environmental problems have their roots in ultimately local behavior, this places an onus on tackling such problems at local levels.

Another crucial group of sustainability actors is the business or corporate sector. A great deal of debate has surrounded whether, and to what extent, businesses will respond to this agenda spontaneously or need to be coaxed by public policy or changing consumer demands. Andy Gouldson, Rory Sullivan and Stavros Attorns, in Chapter 35, gives us a flavor of these debates about business governance and sustainability. Much of this, they note, has its roots in the notions of Corporate Social Responsibility (CSR) and the expectation that those who own and control businesses should act morally as well as within the law.

The second edition of this volume comes after the twenty-fifth anniversary of publication of Brundtland Report [WCED (1987)]. The debate on what is sustainable development, how-to measure 'progress towards it and how to put sustainable development into practice' has come a remarkably long way. This volume has been an exercise in account-taking of what has been achieved and on which aspects consensus has emerged. Much more is known now than 25 years ago. Indeed, significant progress has been made since the publication of the first volume in 2007. For example, more is known about important components of natural capital such as ecosystems and how these relate to the fundamentals of sustainable development, as well as substantial progress made in constructing practical sustainable development metrics. It can be said that, as this volume has illustrated, there are many complex and contested areas of continued disagreement. This suggests that there is much more to be learned and that the study of sustainable development will continue to be a thriving area of research.

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Water Supply in Karach: Issues and Prospects, by Noman Ahmed

The book under review, though written and published about a decade back on the issues and prospects of water supply in Karachi – still remain a very important issue in the present days when the situation is more graved than the book was written.

The importance of water is must for the entire population (rich or poor) of the country, as it is a basic necessity for life. Water supply is an important issue and responsibility of the government for survival of its entire population. Karachi the mega city of Pakistan is facing the issue of water supply since many many

years. The situation instead of improving, has continuously deteriorated. The author tried to point out the various formal and informal methods which would help in improving the situation.

In the introduction of the book, the author gave a general overview of water supply. The author painted a very scary situation as he compared the water supply issues, specifically the supply of drinking water. As per the analysis in 1995, 29 countries with population totaling 436 million experienced water stress or scarcity, which by 2025, about 48 countries will do so and the number of people who will be adversely affected will exceed 1.4 billion. Majority of these belong to the least developed countries. Moreover, during 2035 an estimated 3 billion people will live in water stressed countries [UNEP (2002)]. This clearly makes a point that as the city expands at a phenomenal rate the issues will multiply. The author has given a detailed table showing Alternative arrangements for water supply. Generally in the urban/urban planned areas there are formal piped water supply arrangements for which the consumers of water have to pay to the government. In the Figure 1.1 and 1.2 detailed descriptions is given of options and water supply arrangements in the urban areas.

In chapter two an important issue (of public and private sector) if water is a free commodity or a tradable good has been discussed. This issue is followed by a detailed review of literature on the topic. Rest of the book and chapters focus on the case studies in Karachi, the largest city of Pakistan. Chapter three focuses on the identification of case studies, method of data collection and concepts and variables used in the book and how the planned and unplanned areas were compared.

High rise building mark one of the major problems in an urban planned settlement which adversely affect the issue of water supply. Why the alternative arrangements are not made, even the posh locality of Defence/Clifton/PECHS face the issue of water scarcity. The residents of these localities are deprived of piped line supply of water and are forced to buy tanker-water for daily their consumption.

The section of case studies is supported by tables, graphs and detailed description which keep the interest of readers and force them to think on the topic of the book/issues. The finding of case studies discusses the different models of water supply used by various stakeholders, basically the consumers. For residential consumer of urban/peri urban settlements, the piped mode usually works with the help of suction pump. The alternative arrangements are commercial water tankers, and boreholes. Whereas in rural areas water is supplied through donkey carts and or manual water canners as well as bare holes. For the very remote areas a new term of Awami Tanker is used. This service was introduced locally for local consumers. The detailed research reveals that consumers belonging to various categories use different modes of water supply, depending on their financial capacity/willingness to pay. The sensitivity of the issue is simple

but detailed; and very realistic approach of research undertaken, keeps the interest of the reader till end of the book.[1]

Chapters 4, 5 and 6 contain three case studies at micro level. Findings of the first case study are for planned and unplanned settlements, which consist of single unit residences and apartments. The main focus is on issues of water supply services. Chapter 4 describes the residents' profile of planned and unplanned settlements. The location covered includes the Federal-B Area, Gulshan-e-Iqbal, Nazimabad, Gulistan-e-Jauhar and PECHS, in Karachi. The survey reveal that 80 per cent of the population in these areas are house owners and belong to different occupations, such as government service, bank, employment, private service, and a great number of this population is engaged in their own small business. The residents' survey was conducted and several factors were reported which affected the water supply in the area. These factors include legal status of house settlement and legal status of water supply among others shown [Figure 4.8(a)] in book the book. It is also observed that very few localities and households are lucky to have a 24 hours water supply, while majority of the households get the supply on daily basis i.e. for two hours in the morning and two in the evening. The author has also explained the Municipal Water Supply arrangement in [Figure 4.34] in book the book. and the operation of a suction pump in a typical single unit house is shown in a diagram [Figure 4.8(c)] in book the book. In the same way it deals with the apartments. In the case of apartments each owner has fixed the storage tanks individually within the apartment. Similarly the survey was conducted in unplanned settlements the results of which are shown with the help of bar charts and the boxes. These unplanned settlements include colonies in North Nazimabad, Clifton, Orangi, Korangi and other areas. Residents of these Katchi Abadis are also engaged in different occupations. Water is needed equally by both the groups. However, in planned settlements they receive water charges bills regularly while residents of Katchi Abadis never receive such bills.

Chapter 5 deals with the 'retail beneficiaries of bulk water consumers'. Here the author explained the working of the city district government of Karachi. A separate unit of KWSB/WSD overseas the bulk water supply system. In the book, nine categories of the 'bulk water supply' are identified, including the domestic and industrial consumers.

In Defence Housing Authority where water is inadequately supplied, suction pumps are a must. In this area water tankers are used regularly as alternative water supply arrangement.[2] In Chapter 6 of the book, detail description is given in Tables 6.3 and 6.4, regarding distribution of water through Awami Tankers,

[1] However, currently a reader is compelled to think as to why, even after a decade the situation of water supply remain the same and the government authorities did not bother to improve it. Rather, it has got worse - though for Karachi some urban experts and researchers paint a very gloomy future.

[2] Here it may be be noted that even today after a decade, the situation is still the same. Rather it has worsened in most areas of the city.

problems, irelated issues and other possible solutions. This part of the book analyzed the Awami Tankers in the locality of Orangi Town. In the book the author has given the self explanatory flow chart of water supply through Awami Tankers. The system is such that commercial water tankers obtain water from the KWSB/WSD hydrants and then supply it to the designated Awami Tankers. These tankers reaches poor people's areas where people take water to their homes in their buckets, canes, etc. Table 6.4 (in the book) gives details of water related finances, operation and maintenance, Chapter 7 is all about the alternative water supply arrangements. Very interestingly, only in one case for those who get water through pipeline, considered that it is a public good and a public utility and thus is a government responsibility to provide it. While those consumers who buy water from alternative sources, consider it as a saleable good. Water is an essential necessity of life, equally important to rich and poor, for urban settlements, peri-urban and poor settlements.

The book has a substantial bibliography/references, index and explanatory notes in the boxes in each chapter. The book is highly informative and proves to be a valuable addition to the available literature on water supply. It covers and focuses on the most important aspect and problem of the society's basic need in detail. The increased pace of expansion of the city has led to deterioration of the basic needs and the urban environment in the overcrowded settlements and urban poor. Among other services like housing, transport, health and education; the water supply and sanitation remains on top.

The book will be particularly helpful to the elected members of the government, urban managers, researcher, scholars and students of urban and the environment sector. Nevertheless, due to the easy way of narrating problems and the way the case studies are done even the general reader values the book in terms of knowledge and information. The author has made a very important and valuable contribution by penning down this research with sincerity and devotion and conveyed almost every aspect of the problem. Finally, the author of the book should be appreciated on excellent work by reviewing and giving the account of water supply in the largest city of Pakistan. Even today it remains a major problem that should be on the top priority, for the government to solve. In the end the author has also given the guidelines for further research which the researchers and students should take up.

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