

The Improbable Resilience of Singapore

[John Richardson](#), [Elizabeth Ong](#)

The city of Singapore has rapidly advanced over the past four decades, posting average economic growth of 8.5 percent between 1965 and 2005. It has also managed this growth responsibly, argue the authors, a historical narrative that could offer insight into achieving goals of sustainable development.

When Singapore gained independence in August of 1965, the challenges it faced were unanticipated, multifaceted, immediately threatening, and without precedent. How Singaporeans coped with these sudden challenges—resiliently and effectively—provides an important message for other cities and countries coping with the encroaching limits of a resource-constrained world. Disciplined land-use planning, practical policies that look after citizen well-being, and flexible economic approaches are some of the political responses that helped Singapore emerge, over 50 years, as one of last century’s great development stories. A review of the policies and programs that shaped Singapore’s postindependence point to the value of avoiding strict ideology when managing resource challenges. Singapore’s solutions should ultimately be viewed as tools or indicators that other cities need not borrow whole-cloth, but might usefully adapt to local contexts and limitations.

Key Concepts

- **Overshoot:** Exponentially growing trends in population, resource consumption, and waste generation have the potential to overwhelm the earth’s carrying capacity.
- **Collapse:** A possible consequence of overshoot, collapse comprises a catastrophic decline in resource availability, industrial output, food production, population, and, consequently, the quality of human life.
- A few key indicators from Singapore’s successful development, postindependence, present lessons in light of overshoot and collapse: economic growth averaging 8.5 percent for more than 30 years; clean water and sanitary facilities available to all; 2009 infant mortality rate of 2.3, one of the lowest in the world; life expectancy for males and females over 80 years; virtually no homelessness; at the top of international rankings for livability and freedom from corruption (though much lower on indices of democratic governance).
- **Pragmatic adaptation:** the ability to respond creatively and resiliently to changes in political-economic “binding constraints” while sustaining nondoctrinaire policies that simultaneously emphasize human well-being and meritocracy.

The Challenge: Global-Scale Overshoot and Collapse

It was in the early 1970s that the profile of a possible global-scale overshoot and collapse was first highlighted in a publication, *The Limits to Growth*,¹ based on a computer simulation model. “Overshoot” referred to exponentially growing trends in population, resource consumption, and waste generation that would overwhelm planet Earth’s carrying capacity. “Collapse” referred to a possible consequence of overshoot: a catastrophic decline in resource availability, industrial output, food production, population, and, consequently, the quality of human life. This paper argues that the challenges of overshoot and collapse are likely to first manifest themselves in cities. It points to Singapore as an example of a city that faced challenges analogous to overshoot and collapse. Responding to these challenges, Singapore’s leaders crafted solutions that overcame them and produced a successful and sustainable development trajectory. There are lessons to be drawn from Singapore’s solutions.

Warnings of possible overshoot and collapse were further reinforced by a project that is unique in the history of public-policy modeling. Three *Limits to Growth* authors, Dennis Meadows, Jørgen Randers, and, before her untimely death, Donella Meadows, collaborated on two subsequent books, *Beyond the Limits*² and *Limits to Growth: The 30-Year Update*.³ These books presented new global development scenarios, generated by the original World3 model upon which *The Limits to Growth* was based, updated with new statistics on industrial output, population, pollution, resource availability, and food production.

Those who created global models and sought to publicize their results believed that the presentation of model results, coupled with a growing weight of evidence confirming the results, would change attitudes. They believed that changes in attitudes would produce changes in policies and that there was sufficient time to mitigate the socio- and political-economic momentum impelling humankind toward overshoot and collapse. Dennis Meadows reports that 40 years of experience provides little evidence to support that view. His research highlights indicators pointing to the conclusion that, in some areas, we have already reached overshoot, sooner than anticipated. “Where we once only had models, we can now get confirmation from the newspapers,” he has observed.⁴

Using Cities: A Focusing Lens for Viewing the Challenges of Overshoot and Collapse

We believe cities can provide a focusing lens to sharpen our understanding of how humankind can better respond to the threats posed by global overshoot and collapse. Cities are major sources of the problem but may also provide feasible, practical points of leverage for those seeking solutions. What are the challenges and opportunities that cities pose?

Urbanization has been occurring at an unprecedented scale. Cities have grown in importance as key drivers of economic growth in their regions and countries, with rapidly growing industry and service-related economies providing employment opportunities for millions of people. The 21st century has been named “The Century of the

City,” reflecting the prominent place that cities occupy in the global economy as well as the fact that cities are now populated by more people than ever before in humankind’s history.⁵

This unprecedented growth—both in the number of cities and the sizes of their populations—has two major consequences. Firstly, cities are placing greater strains and demands than ever before on the earth’s resources. Secondly, with exponentially rising populations and limited resources, cities themselves are in danger of overshoot and collapse. Thus, cities are central to the issue of global environmental sustainability. The lower the capability of cities in withstanding the pressures of urban expansion, the greater their negative impact will be on the earth, and the slimmer our chances will be for collective survival as a human race.

On the other hand, cities may offer a point of entry by which we can deepen our understanding of the situation at hand and move toward sustainable remedies. The manifestations of overshoot and collapse are more immediate and visible in cities than at the national or global levels. In response to these manifestations, cities exhibit a range of coping behaviors and capacities. Leaders and inhabitants have chosen different stances and approaches toward urban expansion and sustainability and have encountered vastly different outcomes.



When Singapore gained its independence in August of 1965 it was suddenly detached from one of its major water supplies: Malaysia. Singapore has since made water, along with goods like healthcare, education, and housing, a fundamental public provision. Pictured here is one of Singapore’s water treatment plants.

“Singapore’s Success:”⁶ Coping with Resource Challenges

Though challenges posed by overshoot and collapse are more immediate and visible in cities than elsewhere, they are rarely precipitous. The challenges foreseen by The *Limits to Growth* trilogy and highlighted in Jay Forrester’s *Urban Dynamics*,⁷ an earlier model-based work that focused on cities explicitly, are more often viewed as issues to be debated than realities that must be faced with urgency. For this reason, Singapore’s case is uniquely illustrative. Many point to Singapore, with justification, as a development success story. But parallels between the challenges highlighted by global models and those faced by Singaporeans, when independence was suddenly imposed upon them, are rarely mentioned. Yet how Singaporeans coped with those challenges—resiliently and effectively—may be the most valuable lessons Singapore’s success story has to offer to humankind.

The problems Singaporeans faced on Independence Day, in August 1965, were unanticipated, multifaceted, immediately threatening, and without precedent. With little warning, Singapore was cut off from its economic hinterland and from the role it had played as a regional entrepôt since Sir Stamford Raffles founded the colony in 1819. Trade dwindled to a trickle as Malaysia and Indonesia sought alternatives to an independent Singapore and threatened military intervention. Unemployment was 14 percent and rising, creating stresses in Singapore’s multi-communal society that threatened law and order.⁸ Most of Singapore’s water supply came across a causeway from Malaysia. Three years earlier, in speeches supporting a vote favoring union with an independent Malaysia, Prime Minister Lee Kuan Yew had argued that Singapore could not be viable on its own. The challenge Singapore’s leaders and her people faced, as independence was announced, was survival. In his autobiography, Lee wrote: “We had to create a new kind of economy, try new methods and schemes never tried before anywhere else in the world because there was no other country like Singapore... We had to make extraordinary efforts to become a tightly knit, rugged and adaptable people who could do things better and cheaper than our neighbors... We had to be different.”⁸ Today, few would dispute the fact that Singapore has attained this goal. What solutions contributed to this result and what lessons do they offer?

1. Flexible, pragmatic economic development strategies were implemented that adapted to changing international circumstances.

Those describing Singapore’s success most commonly highlight economic development. From 1965 through 2005, economic growth averaged 8.5 percent.⁶ Most noteworthy during this period was the implementation of a planning process that was sensitive to changes in global economic circumstances and flexible in seeking out ways to capitalize on them that would work to Singapore’s advantage. Henri Ghesquiere describes the strength of this process as an ability to reframe objectives in order to overcome a succession of “binding constraints” that threatened to curb

economic growth.^{6,9} Thus, “during 1967-73, Singapore opted for *export-oriented industrialization*, focused on the production of labor-intensive, low value-added items” while investing in petroleum refining and chemicals. “The 1973-84 period targeted *economic restructuring with technological catch up*.” When the 1985 recession revealed “the danger of excessive concentration of exports in a few sectors,” Singapore embarked on a new 12-year strategy emphasizing *economic diversification*, sector wise and geographically. “The focus turned to leveraging the city’s locational advantage and trade expertise to successfully develop air transportation, telecommunications, logistics, shipping, and cargo-handling facilities.”⁶ Singapore weathered the 1997-1998 Asian financial crisis with no major dislocations. However, this motivated another reassessment and new priorities, emphasizing the strengthening of Singapore as an “advanced and globally competitive *knowledge-intensive economy*.”^{6,8}

Free market principles have been at the heart of Singapore’s economic development strategy since Lee Kuan Yew first sought advice from former UN consultant, Albert Winsemius, on industrial, fiscal, and monetary policies. Success in implementing these principles is confirmed by international rankings.^{10,11} These rankings must not, however, obscure the disciplined role played by Singapore’s government in ensuring the stability and predictability that its “clients,” top executives of multinational corporations, sought. Moreover, the government did not shrink from establishing publicly held corporations, where attractive niches beckoned, and managing them profitably. The term “profitable public corporation” is not an oxymoron in Singapore. Singapore Airlines, regularly ranked by international travelers as #1, is the best-known example, but by no means the only one. Ghesquiere terms this approach, “pragmatic policy adaptation,” noting that it was not so much the framing of development plans as their consistent implementation that set Singapore apart. He concludes: “Singapore’s development experience by contrast [with those of other developing countries] shows many instances of policies that were highly predictable. They were carefully engineered to be mutually reinforcing, creating virtuous cycles.”⁶

2. Ensuring the well-being of Singapore’s people, especially through full employment coupled with adequate housing and health care for all, was a top priority goal that was achieved through innovative, cost-effective government policies.

We began our discussion of Singapore’s success with economic growth because it is as a leading free market economy that Singapore is best known. However, Singapore’s leaders have never viewed economic development as an end in itself. Rather, it has always been seen as a prerequisite to realizing two strategic priorities, regarded as interrelated. The first was securing the well-being of all Singaporeans in their daily lives. The second was securing national survival in a world viewed as economically and politically turbulent and in a region populated by neighbors with hegemonic aspirations that viewed Singapore, with its majority Chinese population, as an alien presence.^{8,12}

Academics and development practitioners have debated the meaning of human well-being for decades. The goals of Singapore Government leaders were practical and concrete. Priority was given to public security, housing, water and

sanitation, health care, education, and job opportunities. Later, public transport and creating physically appealing public spaces (“Clean and Green Singapore”) were added to the list.

Singapore’s achievements on these dimensions of human well-being are comparable to its economic development achievements. Clean water and sanitary facilities are available to every Singaporean. The estimated infant mortality rate in 2009 was 2.3, one of the lowest in the world. Life expectancy for both males and females is over eighty years. Adult literacy is over 96 percent, up from less than 65 percent in 1960. Nearly 90 percent of Singaporeans have secondary or higher educational qualifications.¹³ In fall 2011, television reports described Singapore’s current unemployment rate at just slightly higher than 2 percent.

The ruling People’s Action Party’s commitment to human well-being reflected its origins as a socialist party. But its philosophy differed radically from that of the Organisation for Economic Co-operation and Development (OECD) countries, which in 2001 expended more than 13 percent of GDP on welfare, while Singapore expended less than 1 percent. Singapore’s alternative was the Central Provident Fund (CPF), a program of government-mandated savings over which workers had control and which was intended for retirement and home ownership. Like Singapore’s health care system, the CPF system places maximum emphasis on individual discretion, individual responsibility, and the operation of market mechanisms to influence user choices.

3. Disciplined land-use planning policies were implemented that engineered trade-offs between the contending claims of housing, commercial development, national security, and recreation.

As a small island state, scarcity of land imposes what could be severe physical constraints on both Singapore’s economic development and quality of life. Yet both goals have been attained. Statistics that describe land-use patterns are surprising. Despite a population density of 7,022 per square kilometer, one of the world’s highest, only 15 percent of Singapore’s land has been allocated to housing and only 17 percent to recreational and community needs. The rest is used for commerce (4 percent) and industry (10 percent), infrastructure, utilities, and transport (17 percent), and reservoirs, defense facilities, and “cemeteries and undeveloped land” (37 percent). Plans are underway to set aside an ample proportion of the latter to support additional high-technology commercial development.¹⁴

How has Singapore overcome the obstacle that is often highlighted as one of the major impediments to sustaining a vital urban economy: a preponderance of substandard housing? In 1960, only 9 percent of Singapore’s population occupied public housing, and much of the city’s housing stock resembled the overcrowded and deteriorating stock described in Jay Forrester’s hypothetical city.⁷ Today, an astonishing 82 percent of Singaporeans live in Housing Development Board managed apartments (HDB flats), clustered in high-density public residential estates. HDB flats are ubiquitous in Singapore’s landscape. A second statistic is equally astonishing to those familiar with the failed public housing projects in large U.S. cities and on the outskirts of cities in Russia and former Communist bloc

countries: *Virtually all of the HDB flat residents are homeowners.* The Singapore Government's Housing Development Board functions as a nationwide condominium association, with locally elected community associations playing an active role.

When the program was created, HDB flats were targeted for lower- and middle-income residents with means-tested subsidies provided to those who could not otherwise afford home ownership. This practice has continued, though as Singapore has become wealthier, the value of flats has appreciated. Housing Development Board staff are continually adjusting rules and procedures to strike a balance between allowing for the operation of market forces and keeping the program true to its objectives, though in a very different Singapore than when it was created.



More than 80 percent of Singaporeans live in Housing Development Board high-rises, like this complex. Unlike similar public housing projects in the U.S., the occupants are also owners in almost every case.

Flats are located in public-housing estates, each of which is equipped with amenities such as markets and food centers, schools, community or regional libraries, places of worship, shopping and entertainment complexes, and parks. They seek to achieve the ambiance of small communities—often there are also government-sponsored community centers. High quality maintenance and periodic modernizations are top priorities. Homeowners demand this. Singapore's efficient public transport system provides easy and affordable access for residents to commute and travel to other parts of the city.

Land-use planning has been greatly facilitated by another distinctive Singapore practice. Passage of the 1966 Land Acquisition Act began a process through which Singapore's government now owns about 90 percent of the total land area.⁶ Balancing the limited supply of land with competing demands has only been possible through combining officials' integrated, long-term approach to land use and infrastructure planning with major demolitions.⁸ But commercial development has by no means been the only priority. For instance, park connectors have been built to allow the public to travel between parks on foot, bicycles, and rollerblades. New integrated activity hubs are being developed to spatially distribute economic activities. Government planners have initiated procedures to measure land productivity in terms of its yield, using indicators such as jobs, spillover, and value-capture per hectare.¹⁴

4. Practices were put in place to guarantee selection of a stable, highly capable, incorruptible leadership cadre that would implement and sustain foresighted development policies, reflecting a long-term perspective.

The People's Action Party (PAP) has ruled Singapore since self-rule was granted in 1959. Singapore's world ranking of 81 (just below Albania) on the Economist Intelligence Unit's 2008 *Index of Democracy* and comparably low rankings on similar scales contrast with its high rankings in other areas. However, PAP leaders take pride in this continuity in office. They believe it has been a pivotal factor in sustaining the coherent policies and long-term planning that have been keys to Singapore's success. They argue that this achievement, which has been ratified in successive elections, affirms their approach to promoting Singaporeans' well-being and retaining public trust.⁸

The key element in the system is a process of political succession that is systematically and painstakingly planned, with peaceful handovers and ex-prime ministers remaining in the cabinet as influential members. This protects Singapore from the destabilizing and unpredictable leadership changes that have damaged other developing countries. Salaries for public officials are pegged to those of private sector executives holding comparable positions. Government ministers earn only slightly less than heads of major corporations. Penalties for corruption are draconian and rigorously enforced. In 2010, Singapore tied for first place on Transparency International's Corruption Perception Index (the US tied for 22nd place).¹⁵ New leaders are untiringly sought, rigorously tested, and groomed; among the criteria for their selection are their powers of analysis, sense of reality, imagination, quality of leadership, and dynamism. Character and motivation are emphasized by Singapore's present leaders as the most important criteria of all.^{8,16} Members of Parliament, from among whom cabinet ministers are selected, must have the ability to reach out to constituents and campaign effectively. Though Singapore is described as a "one party state," there are opposition parties. Elections are freely contested and the results taken seriously.

5. Regulations intended to cultivate and maintain social cohesion in a multi-communal society were not only enacted as law but also rigorously enforced.

One of the most oft-repeated messages from leaders to Singaporeans emphasizes the importance of fostering social cohesion, which is seen as an imperative for Singapore's national survival. Communalism was the issue that broke

apart the Malaysian Federation. In other Asian nations, most notably Sri Lanka, it has fostered divisiveness and sapped promising economic development prospects.¹⁷ In Singapore, political appeals based on communalism are illegal. In neighboring Malaysia, preferential treatment for Malay citizens is government policy. At the time of Singapore's forced independence, Prime Minister Lee highlighted this contrast by noting that a statement of government policy on communal issues in Singapore would be viewed as treason in Malaysia and that a statement of government policy on communal issues in Kuala Lumpur would be viewed as treason in Singapore.⁸

Singapore's population is a melting pot of immigrants from different racial, cultural, and religious affiliations and backgrounds. Singapore's leaders were mindful of the dangers communal conflict posed from the outset. S. Rajaratnam, Singapore's first minister for foreign affairs, emphasized that "the communal problem...must be and will always remain one of the major problems which, if we do not resolve intelligently, could break our society, especially of an independent Singapore."¹⁸

6. Immigration policies are designed to support Singapore's sustainable development goals and are implemented in a consistent, disciplined manner.

Foresighted, disciplined immigration policies are regarded by Singapore's leaders to be critically important for national survival. The nation faces an impending working population decline due to a very low total fertility rate of 1.2,¹³ further aggravated by having one of the fastest aging populations in the world. In tandem with efforts to promote marriage and parenthood, in order to boost this low fertility rate, policies have been designed that give priority to attracting foreign talent to fill job opportunities using Singapore's high-performing economy and high quality of life as recruiting tools. These policies have, so far, contributed to a doubling of Singapore's immigration rate from 7.98 per thousand in 2002 to 14.3 per thousand in 2008. There was an average of 48,300 new permanent residents over a five-year period from 2003 to 2007. A target of 20,000 new citizens annually was set in 2010 in anticipation of the shrinking of the resident population after 2025, when projections show deaths beginning to outstrip births.¹⁹ The most recent publications on this subject show an average intake of 28,500 residents per year from 2010 onward.²⁰



Though sometimes criticized as authoritarian, Singapore's government is also one of the least corrupt in the world, a result of the rigorous political vetting process. Here, prospective members of the People's Action Party, Singapore's ruling political party, march through town.

The rationale given by Singapore's leaders for this aggressive intake of foreigners is that immigrants make up for the children that Singaporeans are not having, address the threat of a declining economy with a shrinking labor force, and reduce the future burden on young Singaporeans.²¹ Nevertheless, measures have been put in place to control the size and capabilities of immigrant pool members. Only those who exceed Singaporeans' average level of training and proficiency are accepted; they must have needed skills and at least secondary, preferably tertiary education.²² Care is taken to monitor the intake of immigrants so that the racial balance in the city-state is not upset. Housing regulations prevent enclaves of immigrants of the same race or nationality from forming, and newcomers are required to undergo education in Singaporean social norms. In addition to such attempts to preserve the character and values of Singapore society, policies seek to protect the interest of present Singapore citizens through measures targeted at widening the gaps in benefits between those accorded to permanent residents and those accorded to citizens in the areas of housing, education, and health care.¹⁹

Lessons Drawn from Singapore

The potential challenges posed by overshoot and collapse provided an entry point for a discussion of what we view as more than forty years of successful, sustainable development in Singapore. The more we have steeped ourselves in this experience (and we still have much to learn) the more important we have come to view the imperative of national survival in shaping Singapore's experience. This imperative justified the emphasis on disciplined leadership, the making of tough trade-offs, and the taking of long-term views. Statements articulating this justification have been

repeated hundreds of times by Singapore's leaders from the days following independence until now. What we find particularly interesting about Singapore, however, is the degree to which achieving an irreducible minimum standard of public well-being—in housing, health care, employment, and educational opportunities—has been viewed by postindependence leaders as a key element of the national survival imperative.

Here are four overarching lessons that we draw from Singapore's solutions to the challenges posed by overshoot, collapse, and sustainable development.

1. Singapore's solutions should not be dismissed as an advantaged "special case."

The challenges Singapore faced at the time of independence were real and daunting. They do embody many, though not all, elements of the precipitous overshoot and collapse scenarios that Dennis Meadows and his colleagues have described. Singapore's success was an improbable outcome, not one preordained. There are lessons of general relevance to be drawn from Singapore's solutions. We must emphasize, however, that the lessons we seek to draw point to the value of decision processes that have emphasized creativity, adaptability, and resilience in the face of continually changing and continually challenging political, economic, demographic, and ecological circumstances. We are not arguing that other cities should adapt specific elements of specific Singapore programs, such as housing development, public-private partnerships, land-use planning, or immigration policies. Cities such as Detroit, Calcutta, Jakarta, São Paulo, and Shanghai must overcome challenges and sustain resilience in very different geopolitical, social, cultural, and ecological texts. Nondoctrinaire solutions will be necessary to cope with existing challenges and the challenges of overshoot and collapse that Dennis Meadows and his colleagues believe lie ahead. However, the processes by which Singaporeans have overcome the challenges they have faced need to be taken seriously. Our second overarching lesson follows, namely:

2. Singapore's solutions do not comfortably lend themselves to ideological stereotypes.

When describing Singapore's development strategies to those unfamiliar with the country, especially those whose views have been shaped by critical news accounts, we often struggle to find simple language that is appropriate. Is the political regime "democratic" or "authoritarian"? Is the political economic system "socialist" or "free market"? Do the nation's development goals emphasize "economic growth" or "sustainable development"? Are policies that celebrate communal diversity but define communalism as a crime embracing or repressive? How can Singapore have a "national language" that is not used in commerce, not given priority in education, and that relatively few Singaporeans actually speak? Seeking answers to such questions as these may point to important lessons about coping with survival imperatives and sustainable development. The following is one of them.

3. Pragmatic, nondoctrinaire, nonideological approaches may be required to meet the challenges of overshoot, collapse, and sustainable development.

Henri Ghesquiere's description of how Singapore changed its development policies from decade to decade in order

to overcome “binding constraints” merits particular attention. All too often, political leaders can remain wedded to doctrine-driven political-economic policies, for example communism or the unregulated “free market,” and/or particular forms of “democracy” long after their shortcomings have been demonstrated. This is not to say, however, that Singapore’s political-economic policies, varied and nondoctrinaire though they may be, are not deeply rooted in an underlying philosophy of governance that has guided the island nation since its founding. This governance philosophy is, we believe, broadly generalizable. Its principles underlie many governance philosophies in “word,” but, alas, all too rarely in “deed.” The philosophy is this:

4. The physical well-being of all Singaporeans is viewed as an overriding national priority and acknowledged as an essential ingredient of social stability, but within the context of a meritocratic society in which financial wealth and the rewards it brings are not only tolerated but celebrated.

Here is another Singapore paradox: How can a society exist in which the gap between rich and poor is substantial, but in which (in contrast to the United States, for example) there are virtually no homeless persons, and every Singaporean has adequate health care? In this, like other areas, Singapore’s leaders have sought to make trade-offs based on pragmatic assessments of what works rather than ideology. What they regard as realistic views of human nature and differences in human endowments have been important considerations.

Conclusion: “Solutions” should be viewed as tools for pragmatic adaptation

This article has identified six solutions to the challenges of overshoot, collapse, and sustainable development that emerge from examining Singapore’s forty-plus years of successful, sustainable development. They point, we believe, to four broader insights drawn from Singapore’s experience that we have identified as overarching lessons. We offer these six solutions and four insights as tools for pragmatic adaptation not as candidates for another “sustainable development” doctrine. Indeed, pragmatic Singaporeans would reject doctrinaire adoptions of their own development path as much as they reject other doctrines.

Notwithstanding those views, realistic appraisals of present and potential challenges that overshoot, collapse, and the imperatives of sustainable development portend must not be ignored. This is no less true in Singapore, than elsewhere. Leaders and peoples who fail to heed the warnings of these challenges and to learn, flexibly and pragmatically, from lessons that Singapore’s solutions have to offer do so at their peril.

References

1. Meadows, DH, Meadows, DL, Randers, J & Behrens, WW III. *The Limits to Growth* (Potomac Associates: Washington D.C.; New American Library, New York, 1972)
2. Meadows, DH, Meadows, DL & Randers, J. *Beyond the Limits: Confronting Global Collapse: Envisioning a Sustainable Future* (Chelsea Green, White River Junction, Vermont, 1992)

3. Meadows, DH, Meadows, DL & Randers, J. *Limits to Growth: The 30-Year Update*. (Chelsea Green, White River Junction Vermont, 2004)
4. Meadows, DL, 2009, "Economics and Limits to Growth: What's Sustainable." Presentation to a Public Forum Organized by The Population Institute in Washington, D.C. (October 6, 2009).
5. State of the World's Cities 2008/2009: Harmonious Cities. United Nations Habitat, Human Settlements Programme (Earthscan: London, 2009)
6. Ghesquiere, H. *Singapore's Success: Engineering Economic Growth* (Thomson Learning, Singapore, 2007)
7. Forrester, JW. *Urban Dynamics* (MIT Press, Cambridge MA, 1969)
8. Yew, LK. *From Third World to First: The Singapore Story 1965-2000* (Singapore Press Holdings, Singapore, 2000)
9. Palmade, V. World Bank Policy Research Paper 3551. (The World Bank, Washington D.C., 2005)
10. The Heritage Foundation, The Link Between Economic Freedom and Prosperity – The 2010 Index of Economic Freedom. [online] (2010) <http://www.heritage.org/index/>
11. World Economic Forum, Global Competitiveness Report 2009, 2010. [online] (2010) <http://www.weforum.org/en/initiatives/gcp/Global%20Competitiveness%20Rep...>
12. Plate, T. *Citizen Singapore: How to Build a Nation – Conversations with Lee Kuan Yew*. (Marshall Cavendish Editions: Singapore, 2010)
13. Economic Strategies Committee (ESC) Subcommittee, Singapore. Maximising Value from Land as a Scarce Resource. [online] (2009) <http://www.esc.gov.sg/recommendation.html>
14. Yearbook of Statistics Singapore. Department of Statistics Singapore. [online] (2012). www.singstat.gov.sg/sts
15. Transparency International, Corruption Perceptions Index 2010. [online] (2011) http://www.transparency.org/policy_research/surveys_indices/cpi/2010/res...
16. Han, FK, Fernandez, W & Tan, S. *Lee Kuan Yew: The Man and His Ideas* (Times Editions Pte. Ltd., Singapore, 1998)
17. Richardson, J. *Paradise Poisoned: Learning About Conflict, Terrorism, and Development from Sri Lanka's Civil Wars* (International Centre of Ethnic Studies, Kandy Sri Lanka, 2005)
18. Kwa, CG. ed. 2006. *S. Rajaratnam on Singapore: From Ideas to Reality*. (World Scientific Publishing Co. Pte. Ltd., Singapore, 2006)
19. Hussain, Z. Fewer new PRs, citizens last year: DPM Wong allays concerns about influx of immigrants. *The Straits Times*. 5th March. [online] (2010) <http://www.aboutsingaporeproperty.com/fewer-new-prs-citizens-last-year/>
20. *Our Population, Our Future*, Issues Paper. National Population and Talent Division. [online] (2012). https://www.nptd.gov.sg/content/NPTD/home/_jcr_content/par_content/downl...
21. Singh, B. *Politics and Governance in Singapore: An Introduction*. (McGraw-Hill Education (Asia), Singapore 2007)
22. Oon, C & Goh CL. MM: [Minister Mentor] Foreign talent is vital: Dangerous to shut off flow as Singapore's economy will decline. *The Straits Times*. [online] 14th August, 2009. http://www.straitstimes.com/Breaking%2BNews/Singapore/Story/STIStory_416...