

City, Public Value, and Capitalism

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New Urban Visions and Public
Strategies

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Contents

The Age of City Regeneration

- | | |
|---|----|
| 1. The Age of Urban Visions: From Global Cities to Civic Cities
— <i>Hiroyuki Mori</i> | 8 |
| 2. Public Value in the Late Modern City: From Global Cities to
Civic Cities — <i>Hiroyuki Mori and Ari-Veikko Anttiroiko</i> | 27 |

New Urban Visions

- | | |
|--|-----|
| 3. Smart City — <i>Tomoyuki Chikamoto and Toshiyuki Shimizu</i> | 45 |
| 4. Practices of Japanese Local Cities Coping with Population
Decline — <i>Kiyonobu Kaido, Keiro Hattori, Yasuyuki Fujii, Mihoko
Matsuyuki, and Tomohiko Yoshida</i> | 65 |
| 5. The Ecological City: With a Specific Focus on Participatory
Biological Conservation — <i>Ryo Sakurai</i> | 96 |
| 6. Building an Inclusive City — <i>Ari-Veikko Anttiroiko</i> | 115 |
| 7. Restorative Cities as Regulatory Governance — <i>Veronica
Taylor and Mary Ivec</i> | 136 |

Strategies for Inclusive City Making

8. Policies That Trigger Gentrification in Kyoto City — <i>Ari-Veikko Anttiroiko</i>	156
9. Title — <i>Ari-Veikko Anttiroiko</i>	157
10. Title — <i>Ari-Veikko Anttiroiko</i>	158
11. Digital Transformations in Planning: An Australian Context — <i>Matthew Ng, Christopher Pettit, and Balamurugan Soundararaj</i>	159

Cities and Capitalism

12. Title — <i>Ari-Veikko Anttiroiko</i>	177
13. Title — <i>Ari-Veikko Anttiroiko</i>	178
14. Title — <i>Ari-Veikko Anttiroiko</i>	179
Bibliography	180
Contributors	210

The Age of Urban Visions: From Global Cities to Civic Cities

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CITIES AND THE CAPITALIST ECONOMY

Human beings have built and resided in cities since ancient times. Cities throughout history have been the “flower of civilization;” they have contained the cutting-edge social resources of their times and have been a driving force shaping the history of humankind.

Most cities were originally created based on political and religious powers around which various social and economic activities were carried out and, ultimately, around which urban societies developed. Cities with a clear identity as a “political city” and “religious city” can still be found all over the world.

In modern times, the market economy itself has become the driving force for the formation and development of cities, and “industrial cities” or “economic cities” are now more common than political or religious ones. In some cases, private industry grew spontaneously, and in others the politically-directed market economy exerted great power. Both types of city growth result from the logic of constant expansion tied to the development of capitalism. Capitalism is an economic system dominated by capital that aims for an eternal process of economic value accumulation that subordinates entrepreneurs and workers. Capitalism pursues constant economic growth for society as a whole, and cities have been the centers of capitalistic economic development. Cities today are developed by the power of this capitalistic economy and have become a base for capital accumulation; land use and public policy are geared toward the purpose of economic growth (Harvey, 1985).

On the other hand, the accumulation of economic resources in the space of the city has threatened the lives of residents in urban societies. Big companies and high-income earners occupy land that is in good condition and benefits from infrastructure and other social and economic benefits, driving workers to poorer residential areas and suburbs. These workers are forced to live in poor housing and endure bad traffic conditions. Over time, the absence of public health and pollution control eroded their lives and health. Even the supply of social resources such as decent housing and water have been so inadequate that cities were constantly afflicted with fear of infectious diseases and pollution. These issues emerged as a new category of social problems called urban problems. Urban problems emerge at every point in the history of the industrial city. While urban growth under capital accumulation was actively driven by the market economy, the urban policy created to deal with the social costs caused by it was poorly designed and implemented.

The appearance and development of industrial cities continued into the twentieth century. The shift of industrial structure from light industry (e.g., textiles) to heavy industry (e.g., petrochemicals) has led to the development of cities where environmentally destructive industries were concentrated. Environmental problems such as air and water pollution have been extremely damaging to biologically vulnerable populations,

such as the elderly and children, and the socially vulnerable, such as those with low incomes. Cities are densely populated and required the presence of social services, public facilities, and infrastructure for residents to be able to live a decent life together.

However, under market-led socio-economic systems, public policies focused on economic growth were prioritized. The municipalities did not actively adopt urban policies from a positive perspective to actively solve the difficulties of living for people, so social movements stepped in to solve urban problems. However, even after these movements, since people in weaker social positions tended to be the victims of urban problems, the enhancement of social services and pollution control measures were frequently neglected.

The growth of the city has also had a significant impact on the natural environment. Natural and agricultural lands in and around the city became the target of development due to their inferior economic value. When municipal power for city planning was weak, the city developed in a chaotic manner, taking on an ugly appearance. These development activities increased the administrative and financial burden on local governments and caused waste in public finance. The unplanned accumulation of business establishments and housing in central areas led to delays in the development of communal social conditions, leading to a shortage of public services such as schools, nurseries, water and sewage systems, and transportation. Residential areas built one after another in the suburbs were often equipped with the necessary infrastructure and social services from the beginning and enormous transportation investments were made to connect them to the central areas. Infrastructure development for disaster prevention also had to be improved in areas where the risk of disasters increased due to business-led land development in both the private and public sectors.

CITIES OF THE TWENTIETH CENTURY— DEVELOPING INTO GLOBAL CITIES AND SUSTAINABLE CITIES

Nevertheless, in the decades after World War II, progress in urbanization meant that some of the fruits of high economic growth could be directed to public policies. The three conditions that formed the post-war welfare society were the market economy, the nation state, and democracy, and all worked together. These conditions made it possible to balance urban economic growth and necessary urban policies in a relatively even manner because economic growth increased central governments' and municipalities' tax revenues and allowed them to direct their fiscal resources to the urban policies necessary for the improvement of citizens' lives. In short, within the post-war socioeconomic system, the market economy came under control.

However, cities still faced economic and social problems. Under capitalism, national and local governments had no choice but to adopt public policies premised on economic growth, in which effective urban policies still tended to constantly fall behind. Yet while the rise in respect toward basic human rights during this period advanced urban policy, the change was short-lived.

Welfare states suffered from low economic growth and budget deficits. As a response, so-called neoliberal policies emerged in a search for solutions in the 1980s. Neoliberal economic thought is market fundamentalism, which seeks to entrust the socioeconomic system to market mechanisms as much as possible. The social services and public works projects provided by the central and local governments up to that date were marketized and commodified. Public sector functions were privatized and outsourced to the private sector. Deregulation in the public sector was also carried out to promote this trend, and the natural and social environment of urban and rural areas changed considerably. In the public sector, a type of organizational management that imitated business companies, called new public management (Hood, 1991), was introduced, and citizens were treated as customers/objects rather than sovereigns/subjects. Citizens who did not pay a fair amount of tax

became bad customers of the public sector, and the safety net for vulnerable groups—who needed the government most—became fragile.

The psycho-cultural impact of the spread of neoliberalism led to a prevalence of extreme individualism and self-responsibility. Under the neoliberal philosophy, deregulation, privatization, and fiscal cutbacks have been promoted since the late 1980s, and the market economy has been separated from political administration and civil society and has taken on a superior position. Moreover, in concert with this, “world cities” or “global cities” such as New York, London, and Tokyo developed as new fields of urban research (Friedmann, 1986; Sassen, 1991). The industrial structure of cities has changed drastically, and with the progress of IT, a specialized field called the creative industry expanded significantly (Florida, 2002). The development of these new, growing industries have been a major source of economic growth in the twenty-first century, and, when coupled with the deregulation of the labor market, have widened the wealth and income gap (Sassen, 1991).

This gap has also sharpened social conflict in the city. The city center has been redeveloped to allow for new business activities and to serve the lifestyles of the wealthy. Global money, which has been constantly moving on an international scale, flowed into cities, and urban real estate became the target of global speculative investment. Gentrification expelled the citizens who lived in the city (Smith & Williams, 1986) and has come to be called “urban enclosure” (Hodkinson, 2012). As a result, disparities and conflicts have sharpened not only in the economy but also in living conditions among citizens. This change was the logical consequence of economic growth associated with the shrinking function of the public sector. The dominance of the city by the market economy—a constant characteristic of modern history—was advanced to its limit.

In addition, the future of the global environment was jeopardized by the expansion of human economic activity. International environmental problems such as global warming, ozone depletion, acid rain, and marine pollution have become common issues for all humankind.

In response to these realities, deliberative discussions on how a city could best operate have been ongoing since the 1990s. Various opinions on alternative city images include the effort of sustainable cities led by

Europeans (Expert Group on the Urban Environment 1996). This was an urban movement that responded to the environmental crisis and tried to transform the economic structure of the city into one that was environmentally friendly. This movement was strongly influenced by the idea of sustainable development, which was the philosophy promoted by the report *Our Common Future*, submitted in 1987 by the United Nations World Commission on Environment and Development.

Sustainable development places the environment at the center of urban policy.

Unfortunately, the sustainable cities movement during the late twentieth century was based on the premise of maintaining economic growth and demanded that social costs—such as environmental destruction and resource waste—be internalized based on a fair distribution of environmental harm between present and future generations. Due to their economic priorities, sustainable cities had a relatively weak awareness of the other social issues that prevailed in the modern generation.

THE SPREAD OF SOCIO-PATHOLOGY AND VARIOUS RESPONSES IN CITIES

In the late twentieth century, the world entered the era of neoliberalism in earnest as its influence intensified in cities. Economic globalization, which encouraged the free movement of capital, weakened national borders and caused nation-states to suffer from chronic fiscal pressure. It was the same in cities. This situation prompted a battle among states and cities to attract capital through deregulation and corporate financial support such as tax reductions and subsidies for private companies. At the same time, the role of the public sector was decentralized from the central government to local governments and the private sector.

This battle also meant that people faced lower wages and reduced social services. Inequality widened and poverty intensified, and discrimination against immigrants and certain racial groups increased. In the discussion sustainable cities, however, these conditions were moved to the background. How to deal with growing social conflict caused by

reductions to income and social-service disparities has become a major social issue in cities.

As one factor in globalization, cities around the world embraced tourism as an important economic strategy, which in turn caused new social issues. Underlying this trend is the fact that cities have tried to compensate for the shrinking population and economy by developing tourism demand. This is especially true in cities like Kyoto, where tourism resources are abundant while the outflow of working generation is large and birth rate is extremely low. Middle-class and wealthy people from all over the world were rushing to cities in each country as tourists, and hotels and accommodation facilities for tourists were built in order to absorb demand. Traditional commercial stores shifted their aim from residents to tourists. Land and housing prices skyrocketed, a significant portion of existing housing was transformed into facilities for tourists, and some residents were expelled. Chronic problems with infrastructure such as transportation congestion and poor waste treatment occurred, which worsened urban residents' daily lives and aggravated their dissatisfaction. Cities around the world began to seek ways to balance residents' lives with tourism.

In addition, many cities in developed countries began to shrink due to declining population and employment. The most typical situation is found in Japan, which is in the midst of the fastest population decline among all countries, with a population aging more rapidly than any in human history. In particular, Japan has a rigid immigration policy, severely restricting the acceptance of immigrants from abroad, so the population decline has been sharp (Hollander, 2018). Due to the declining population in Japan, the country's urban spaces have been compared a sponge, filling with holes as population density has decreased and the problem of vacant houses has become a national social issue. Declining population density negatively impacts administrative and financial efficiency. Many cities in Japan aimed to be compact cities that concentrate people in the city center based on the 2014 amendment of the Act on Special Measures Concerning Urban Renaissance.

A compact city approach like Japan's causes gentrification because it concentrates administrative and financial resources in the city center. By deregulating land use to encourage compact city formation, the compact city promotes the consolidation of public buildings such as schools and the construction of high-rise condominiums that can accommodate a large number of people. This approach also tends to damage the community and the built environment.

Sustainable cities aimed for environment-friendly urban development. The explosion of the Fukushima nuclear power plants caused by the Great East Japan Earthquake in March 2011 made the shift to renewable energy an international trend. The normalization of atypical weather has made it clear that climate change is an unavoidable problem, and the number of cities that control greenhouse gases and save energy as much as possible has expanded. Smart cities, which seek to be energy-efficient through IT, are one outcome of this idea. Smart cities are a form of city created by a new industrial structure and initiatives to actively utilize the latest information technology for urban development.

Major efforts have also been made to reduce dependence on the neoliberal free market economy and to create an urban economic structure that is as independent and circular as possible. The guiding idea of the market economy is that the best way to purchase goods and services is to "buy good things as cheaply as possible." Based on the theory of comparative advantage in economics, it is rational to actively purchase cheap and good products and services from outside the city, and conversely to sell products and services with comparative advantage in the city to the outside. However, the logic of comparative advantage presupposes normal and stable times. In the event of a disaster or other emergency, the socioeconomic structure that presupposes such a division of labor exposes vulnerabilities due to long supply chains.

Therefore, the movement to create a resilient urban economic structure has aimed to increase the economic circulation within the city and diversify its industrial structure in order to construct a community-based or social-solidary economy as promoted worldwide through the "buy local" and "slow food" movements. This represents a reemergence of

the idea that the existence of the community should be valued. In addition, it has begun to develop into “municipalism,” extending into a movement that enhances the economic, political, and administrative independence of a city as a whole (Baird, K.S. et al., 2019; Thomson, M. et al., 2020).

On the other hand, there are still strong movements to develop cities as tools for economic growth. For example, the World Bank seeks to create jobs and mitigate poverty by attracting and growing private firms and industries through the development of more competitive cities (World Bank, 2015). Cities lead the economy, and so pursuing cities' growth may not be a mistake. However, current cities with their urban problems have emerged as a result of tracking productivity and competitiveness. It is clear from the results of neoliberal urban policies that such competitive cities do not promise to solve the environmental issues and correct the widening disparities among populations. A city's economic growth should never be denied, but the sound development of a city cannot be directed by the sole value of growth supremacy as it used to be.

Moreover, many recent studies have shown that economic growth and rising incomes are not directly related to people's well-being. The presence or absence of relatives and friends, health, freedom, the environment, and so forth, do not have a strong correlation with income levels, and it has been reaffirmed that increasing these universal values is an important role of public policy (United Nations, 2020). Recent disasters and the COVID-19 pandemic clearly show that people's well-being is based, above all, on safety and freedom from fear. Cities are the most vulnerable to these emergencies, and the promotion of safe cities is emerging as a new policy agenda.

Such new findings provide hope even in the age of shrinking cities. Even if the population and economy shrink, the well-being of the citizens may increase if a high-quality city can be created. To that end, cities that have been developed under the dominance of the market economy must be returned into the hands of politics and society, and new urban policy initiatives must be developed. The diverse urban practices that have spread in the twenty-first century are opportunities to explore new policies.

TOWARD A NEW CITY VISION

The situation outlined so far indicates that the present age is an era in which cities must develop into something new that is not strongly dependent on the single value of economic growth supremacy. The priority must be to develop cities so that people can jointly explore various forms of industry, society, culture, and environment and live happily together.

Notably, a city's values are diverse and its character will differ accordingly within a certain range of stances toward the public good. This means that we need to create a public discourse space within which people can articulate diverse public values and discuss and consider them carefully.

On the other hand, cities typically have less strong territorial and human ties than rural areas, so individuals are often isolated in them. This characteristic indicates that the operation of a public discourse space is challenging in cities. However, in the present age when neoliberalism has taken hold, regaining the public discourse space in a city is indispensable for creating a new future after a society long governed by market power and directed by the logic of economic efficiency has distorted the meritocracy and neutralized society's necessarily diverse public and moral discourses (Sandel, 2020). Since cities with economic supremacy are incompatible with the reality of a healthy society, people must carefully discuss issues based on their diverse public values, and develop a vision for a city that has appropriate systems for politics, economy, and civil society.

Such a vision is not created from a blank slate without a basis in reality. Because development processes repeatedly encounter various trials and errors, this will be reflected in the practices of cities.

As cities have developed along lines determined by economic systems, urban research has also become a central subject of social science. For example, Engels' book on urban problems in the 1870s is a classic analysis of urban problems under industrial capitalism (Engels, 2021). On the other hand, social sciences centered on economics have focused their analysis on atomized individuals and companies because they

pursued “scientifcity.” Individuals and companies are mainly regarded as actors that make up the market, and a model has been built in which the socioeconomic system functions most effciently when the government sector only responds appropriately to events that occur outside the market. The function of the civil society or community is neglected and viewed as an obstacle to an effcient socioeconomic system.

Karl Polanyi has positioned the market economy, government, and community as the main actors that make up the socioeconomic system, and therefore devised a more comprehensive and realistic model by integrating them (Polanyi, 1944). This framework was developed in economic anthropology and institutional economics and differs from orthodox neoclassical economics. In addition, Polanyi positions human beings as depending on the natural environment and ecosystems and living in institutionalized interactions with them. In that respect, his model depicts a holistic socioeconomic system.

Polanyi models the market economy as a system embedded in society, which he calls “modes of integration.” When applied to cities, such an integrated socioeconomic system is materialized in the most concrete sense. Because the market economy has grown unbalanced in relation to the government and communities, cities have become extremely large and have caused various social pathologies by disrupting proper social integration.

So far, governments have tried to compromise with the market economy, civil society, and the natural environment by curbing it with increasing public spending and enacting public regulations. However, neoliberal globalization has become extreme and put most municipalities under fiscal stress. As a result, the social integration model, by increasing the role of government, has reached its limit. However, many municipalities are promoting marketization, including commercialization in the public sphere, with the aim of maintaining urban society through short-term economic growth. This condition has led to further imbalances between the market economy and political and civil society, as well as increasing disparities and instability in urban societies.

Under these circumstances, Matthew Thomson and others argue for the application of Polanyi's model to a new model of urban governance (Thomson, M. et al., 2020). Polanyi attributed the functioning of the economy to provisioning for peoples' needs or livelihood, with the three elements of reciprocity, redistribution, and exchange weaving through mutual processes. Reciprocity means gifting and mutual aid, redistribution means the collection and distribution of economic resources by power, and exchange means the movement of goods in the market. Reciprocity and redistribution belong to non-market areas. Reciprocity is the economic function of community like the management of commons, and redistribution is mainly conducted under the jurisdiction of the government sector. The balance of these three elements varies by time and place and depends on broader social, cultural, political, and economic contexts. Currently, market exchange is the dominant process in cities. Thomson and others insist that modern municipalities should properly reintegrate Polanyi's three economic elements with urban economies using political, legal, and economic powers to create social justice and sustainable economic development. In that case, it is crucial to make full use of fiscal tools and public regulation, create public value, and revitalize the community beyond the logic of capital.

The dominant actors in Polanyi's three economic elements each have their own codes of conduct, as shown in Table 1.1. The codes of government and the market are widely understood in theory and practice. However, the code of conduct for a community may differ depending on the understanding of the basis of the community's existence. For example, if community is understood as a mere collection of individuals, as it is in mainstream social sciences, the idea of inclusiveness does not appear as part of its code of conduct. However, if companionship implied in reciprocity or mutual care is understood as a part of human nature that transcends individual profit and loss calculation and coercion, then "inclusiveness" is nothing but the original function of community. In this sense, the community code of conduct can be defined by inclusiveness. As the expansion of the market economy and the cutbacks by the government have caused the decline of urban society, the fate of the city in the future depends on how community can be activated through this function of inclusiveness.

Table 1.1: Logics of community, government, and market

	Economic role	Code of conduct
Community	Reciprocity	Inclusiveness
Government	Redistribution	Fairness
Market	Exchange	Efficiency

Source: Author

In order for a community to have strong inclusiveness, it needs to rely on a social philosophy (or communal value); some examples include autonomy, mutual respect, symbiosis, solidarity, self-esteem, empowerment, and democracy. The socioeconomic system that embodies these qualities holistically can be said to have public value. Community is an element of the nature of human society that has been passed down from the origin of human beings' group life, and is the most important viewpoint through which we can revive cities as a space where we live.

Municipalities should move toward becoming sustainable cities in the future by actively creating socioeconomic structures with this public value. For that purpose, it is crucial that the policy of community strengthening in the municipalities, which has been weakly grounded in theory and practice, is more fully developed.

Fig. 1.1 distributes public policy implemented by municipalities across four quadrants showing the success or failure of policies in terms of community and market effects. In mainstream social science (especially economics) so far, only market successes and failures have formed the basis of public policy. Public goods provision, redistribution, and economic stabilization have also been regarded as the role of public policy by the government, but none have been considered to have a direct relationship with the community. Therefore, for example, public assistance that has lacked a sense of community value sometimes caused emotional conflict between residents. Future urban policies must aim for the development of new cities by pursuing a model in which both the community and the market economy are encouraged to

develop (the area depicted in the first quadrant in Fig. 1.1). For example, urban industrial policies that utilize labor and economic resources within a city are put in the first quadrant area. This kind of policy will give the residents involved a strong awareness of their interdependence and strengthen social credibility and ties. This policy will also increase the community's trust in local governments and businesses.

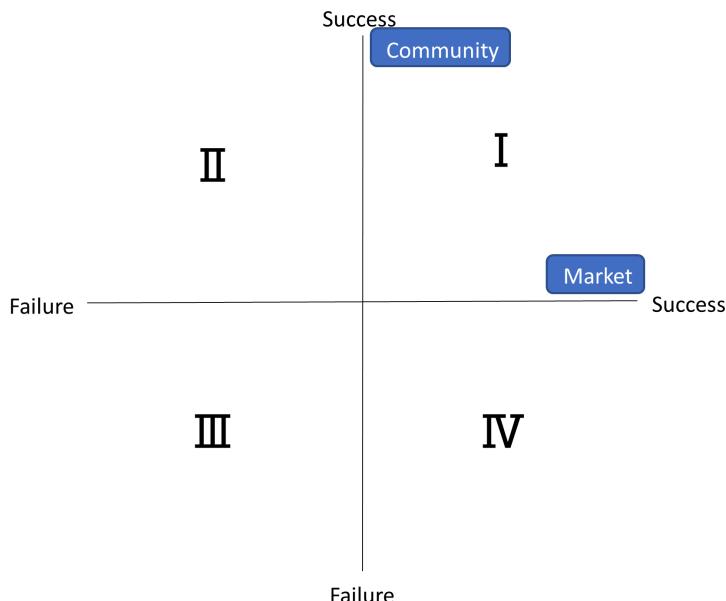


Fig. 1.1: Quadrant of Policy Effects of Municipalities (Source: Adapted and modified from Bozeman, B. 2007)

Fostering such a strong sense of trust in civil society is also important for the efforts of smart cities, which will have to progress rapidly in the future. Collecting and utilizing data on people's behavior won't be possible without their willingness to trust in information management and utilization by governments and businesses. Smartening without such trust violates people's privacy and deprives them of their freedom. In this case, smart cities become surveillance societies based on data controlled by governments and businesses. Surveillance is never acceptable in a society based on modern democracy.

In this book, we will discuss new methods of urban governance derived from each field as a platform of community perspective including sustainability.

BOOK STRUCTURE

This book sets out to explore the future of the city at the contemporary turning point in the neoliberal era from the viewpoint of public value. Public value is an obscure and dynamic idea, but that does not mean it is less important in science. Rather, it can be said that as a result of the spread of "scientific" economic activities and administrative policies in a narrow sense, the forms of community that underpin human existence have been weakened, leading to social, cultural, and environmental deterioration. Current public value should be based on the human rights of individuals and on restoring the nature of the community and environment. To help readers navigate the rest of the book, we have provided the following summary of the chapter contents.

Part I: The Age of City Regeneration (Chapters 1 and 2) gives an overview of the current situation at which the global market, led by neoliberalism, has arrived from the perspective of cities. The market has reconstructed the foundation of public value in its interest, yet it is indispensable for future city regeneration. Public value is essential for the establishment of a city based on community or civil society, which prioritizes the fellowship of its citizens. Public value is not a clear-cut idea, but it is very important to recognize that a constant orientation of citizens towards public value will promote a permanent movement for the creation of a good city and society.

Part II: New Urban Visions picks up typical directions for new urban development in the cities of the present based on the perspectives developed in Part I. Urban restructuring that employs rapidly advancing IT is an initiative that has obviously enabled the introduction of smart cities. Chapter 3 discusses the features of the smart city and suggests new directions to be taken for IT to be utilized in urban life.

Chapter 4 explores the situation surrounding shrinking cities in Japan and discusses measures for their revitalization based on the shared

conditions of cities in developed countries where the populations are also declining. The chapter suggests that, even if the city shrinks in size, this is not directly related to citizens' well-being and the city's livability. Rather, the autonomous policy capacity of the municipalities and citizens is crucial to determining how to create a livable city in the face of population decline.

Chapter 5 discusses the challenges of restoring and retaining the qualities of natural ecosystems that have deteriorated due to urbanization. From a purely economic perspective, it is desirable for cities to concentrate their economic and social resources on growing their economies as much as possible. From this perspective, natural ecosystems have long been treated as irrelevant to the market economy and evaluated only when valuable as "resources." Their intrinsic value has been treated as ancillary. In this chapter, new city efforts to restore them are discussed.

Chapter 6 explores urban practices that can positively impact various vulnerable or marginalized people and support their self-esteem and social reinstatement. Neoliberalism has created a significant number of vulnerable groups in cities around the world. Financial disparity and discrimination are based on a false meritocracy developed in the name of personal responsibility. However, human conscience and an innate community spirit prevents us from leaving such socially vulnerable people behind. Attempts are being made to walk hand-in-hand with them as citizens sharing the same city.

Chapter 7 discusses how to create an inclusive city that encourages participation by marginalized people. It can be said that this is important to the restoration of a true civil society, which is the key to true urban regeneration in the future. In this chapter, the best practices for and primary challenges of achieving this purpose are presented.

In the spirit of implementing the proposals in Chapter 7, the critical points for putting them into actual practice are specifically examined in Part III: Strategies for Inclusive City Making. Chapter 8 examines the reality of gentrification, which is a spatial expression of people's conflicts in cities, and discusses countermeasures. Gentrification is not a simple matter of people being segregated according to their income disparity,

but steadily unfolds through the effects of various economic and social factors such as tourism. This chapter discusses these factors from a comprehensive perspective.

Chapter 9 examines a practical strategy for regenerating the community. Community revitalization and strengthening includes a wide range of activities, from soft practices that directly restore people's connections to hard developments in built environments that naturally create networks of people. Without such integration, a community strategy cannot be fully functional.

Building on this point of view, Chapter 10 discusses the practical regeneration of the community centered around the development of a concrete architectural space conceived from the standpoint of the vulnerable. It is clear from the cases introduced in this chapter why the strategy for creating community from both software and hardware is important. This chapter shows that future community regeneration must be promoted by a strategy that integrates them both.

In Chapter 11, we discuss how to utilize IT, which will expand rapidly in the future, for urban planning that supports community regeneration and strengthening. This planning proposes the ideal state of smart cities from the perspective of community strategy, and this chapter explains how important IT is for the development of cities that serve a purpose beyond mere technological progress.

City visions and efforts in the above chapters encourage reflection on the state of the capitalist economy itself, which is the driving force behind the creation, development, and decline of cities. Part IV: Cities and Capitalism deals with this subject head-on. Chapter 12 argues that urban theories and policies that do not fully reflect the capitalist nature of the economy are ineffective in today's era of social change. It imagines a future city that incorporates all these points, the ideal form of which will vary depending on its location and conditions. Even within each country or region, cities make a difference depending on how they utilize their autonomy. With this premise in mind, we must develop the city as a spatial property common to all humankind.

Chapter 13, the book's conclusion, re-proposes the citizen-centric principle by placing public value, a topic that runs through this book, as the foundation of the future city and the basis of urban governance.

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Public Value in the Late Modern City: From Global Cities to Civic Cities

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INTRODUCTION

Cities are dense urban settlements that serve as the loci of consumption, commerce, power, and security (see Kotkin, 2005). They are as such more than just a group of people who settle down and interact in a given area. Cities as urban dissipative structures facilitate processes that are both local and relational. This is evident in how wars, economic booms, disruptive innovations, depressions, and the rise and fall of trade routes have shaped cities throughout history. At the highest level of

abstraction this implies that each city as an instance of local choice evolves in a dialectic relationship with its societal and ultimately global contexts.

It goes without saying that people living in the same area is a necessary condition for the existence of a city, as is its physical environment. However, the social nature of the city becomes comprehensible only when we identify local instances of collective action, structures of human interaction, and the spatial organization of the local society. Regarding late modern cities in the developed world and their evolution both from industrial to postindustrial conditions and from local orientations to global connectedness, such an essence is usually associated with logistics (Cardenas et al., 2017), production (Henderson et al., 1995; Lobo et al., 2013; Helper et al., 2012), technological development (Castells & Hall, 1994), services (Jones et al., 2014), and collective consumption (Castells, 1977). A contextual perspective on such development has been articulated in the form of the world city hypothesis and global city theorizations (Friedmann, 1986; Sassen, 2001).

Regarding the recent developments that have reshaped these urban functions, dramatic changes took place in post-war decades, which witnessed economic expansion, Keynesian economic policy, the emergence of influential social movements, and the rise of the welfare state. Further changes took place in the 1990s due to the intertwining of globalization and an emergent information society, which appeared to be game changers in many respects. Keynesianism made way for neoliberal policies, the fall of the Berlin Wall epitomized the collapse of socialism, and the crisis of the welfare state prompted a search for alternative models for organizing the economy and society. For some time, it looked as if the Western liberal democracy and its underlying capitalist economic system had won the ideological war (Fukuyama, 1989).

A range of factors started to shake the global scene and increase tensions in the West during the 2000s. Namely, the triumph of neoliberal thinking seemed to have been accompanied by continuous economic crises, such as the dot-com bubble of 2000, the financial crisis of 2007, the late-2000s recession, and the EU sovereign debt crisis 2009, to name

a few. Other features included the accelerated intensity of the impact of global economic forces, the financialization of the economy, and the emergence of the so-called “new economy.” This had both positive and negative implications. Globally, millions of people were lifted from extreme poverty, especially after the opening of the economies of China and India in the late 1980s, but due to the consequent shift in production and services from developed to developing countries, unemployment and uncertainty increased in the West. In the urban world, the 1980s witnessed the emergence of neoliberal urbanism, which was expected to be the answer to the challenges posed by global competition. This was the time of the rise of urban entrepreneurialism (Harvey, 1989), in which local politicians, public managers and urban developers started to align the urban growth machine with the requirements of the global age (Anttiroiko et al., 2020).

The neoliberal city epitomizes this development (Hackworth, 2007; Pinson & Morel Journel, 2016; Storper, 2016). It emerged in the wake of the conservative and libertarian thinking in politics and society associated with economic liberalization and the promotion of free-market capitalism. Neoliberalism favors such policy measures and practices as dismantling trade barriers, privatization, competitive tendering, reductions in government spending, tax cuts, and consumer choice. In the management of cities, this led to the widespread adoption of the New Public Management (NPM) doctrine with its emphasis on marketization, managerialism, and customer choice (Hood, 1991; Knafo, 2020), on the one hand, and a competition-oriented development policy or urban entrepreneurialism, on the other (Harvey, 1989). The many faces of neoliberal urban policy are epitomized by such cities and city-states as New York, Chicago, Toronto, London, Frankfurt, São Paulo, Hong Kong, Singapore, and Shanghai.

Neoliberal thinking obviously reflects its liberal foundation, with roots in individual freedom. In urban life it has increased cost-awareness and competitiveness and contributed significantly to economic growth. However, it also has a negative effect that will be taken as the starting point of this chapter, namely in terms of social consequences. There are societal mechanisms that are supposed to bring about collective benefits from the full-fledged economic freedom of individuals. These

include the “trickle-down” effect, “voting with one’s feet,” consumer choice, and the like. Yet, due to a variety of reasons, the aggregate impact of neoliberal policy seems to produce unintended consequences and side effects that cannot be ignored, especially when considered from the point of view of collective welfare and the fundamental conditions of human relations and existence. One critical aspect of this development is the so-called “great decoupling” in which, despite productivity increases, a large segment of the population is excluded from the fruits of economic success (Brynjolfsson & McAfee, 2014). This is related to the polarizing tendencies of the new economy (Anttiroiko et al., 2020). A factor contributing to this is the gradual transition toward the greater role of value extraction in the economy (Mazzucato, 2018). Even if neoliberalism as such is not the only cause behind such problems in the economy, it appears to have contributed to increased inequality, urban poverty, economic exclusion, and deprivation. More importantly, neoliberal thinking provides insufficient tools for understanding the nature of the social consequences of global and national free-market policies, and is even less equipped to produce the means to tackle them. Taken to the level of urban governance, this implies that urban boosterism and streamlined competitiveness policies may not provide the answers to the fundamental problems faced by cities. It could be hypothesized that we need more balanced perspectives, reinterpretations, and refocusings in order to meet such daunting challenges.

In this chapter, we will address this issue by discussing alternative views of economic growth and their implications for urban policy and governance.

FROM GDP TO WELL-BEING

The conventional idea of economic growth is based on the implicit premise of most of the classic theories of urban growth and development that population and economy are typical indicators of urban growth. Let us begin with population.

Population growth as a global phenomenon has become a threat to sustainability. It is unevenly spread across the globe and produces huge economic inequalities between individual countries and locations. Interestingly, many developed countries have actually reached a point where their population is shrinking which, accompanied by the problems of a shrinking economy, has shifted the agenda from growth to shrinkage. For a long time, industrialization helped strategically well-positioned, advantageously located, and resourceful cities grow. There were undoubtedly declining areas too, but they were seen as exceptional, unlucky, or strategically incapable rather than as symptoms of a structural asymmetry. In the current situation many developed countries are entering a new phase in which the population is both aging and shrinking when migration is not considered. The challenge is that many countries are entering an era of shrinkage in all urban areas, as seen prominently in the case of Japan and a few other locations in Asia. While most Asian countries still experience stable economic growth, rapid aging and population decline are looming just around the corner and will eventually have an enormous societal impact, especially in the case of highly urbanized countries.

The previously discussed demographic trend has an equivalent in the economic life cycle as well. This is most relevant in urban economies, which have been very concerned with creating the preconditions for economic growth while treating citizens' well-being as a secondary matter. Approaches have been slightly more sensitive to context in political science and public administration, not to mention sociology and anthropology. However, it seems that irrespective of discipline, synthesizing views on the generative interplay of the economy and society have been rare. In addition, in most contributions the primary reference is still to urbanization, even if there is an obvious need to redirect the discussion to multi-dimensionality and the qualitative aspects of urban life. This becomes evident when discussing the conceptualization of urban decline, growth, and development.

Let us consider the following. When visiting a city, we sense its character, or as we may put it, its spirit or soul, which cannot be reduced to its population or economic scale or expansion. Rather, cities evince an important qualitative factor that resonates with something essentially

human. Such qualitative aspects of the perception of cities give hope for shrinking cities. No matter how small the city is, it can focus on qualitative development. More importantly, this shift is not limited to shrinking cities, but reflects a need for a deeper reassessment of our perspective on urban development. In addition to an increased focus on the qualitative aspects of development, there is a need to pay attention to the distribution of the benefits from these development efforts. Growth should be smart and inclusive in order to increase the well-being of all members of the community. A precondition for this is that local and national policies support such a holistic and inclusive view of urban development.

One indication of such a paradigm shift is increased interest in happiness as a core element of well-being. Especially since the early 2000s, academics have started to examine how economic indicators relate to people's sense of well-being (Easterlin, 2001; Frey & Stutzer, 2001) and how governments could use such data in a variety of policy areas to improve their citizens' quality of life (Bok, 2010). Important steps were taken in 2008 when Nicolas Sarkozy, former President of France, called on economists Joseph E. Stiglitz, Amartya Sen, and Jean-Paul Fitoussi to set up the Commission on the Measurement of Economic Performance and Social Progress. In 2010, the committee published a report titled *Mismeasuring Our Lives: Why GDP Doesn't Add Up*, which proposed three approaches to measure quality of life: (a) subjective well-being, i.e., understanding the determinants of quality of life at the individual level, (b) a capability approach for understanding the factors that expand life opportunities and options (health, education, income, etc.), and (c) fair allocations that reflect people's preferences regarding various aspects of the quality of life. Through these, the Commission advocated the importance of understanding the non-monetary aspects of quality of life, such as health, education, social ties, environment, and safety (Stiglitz et al., 2010).

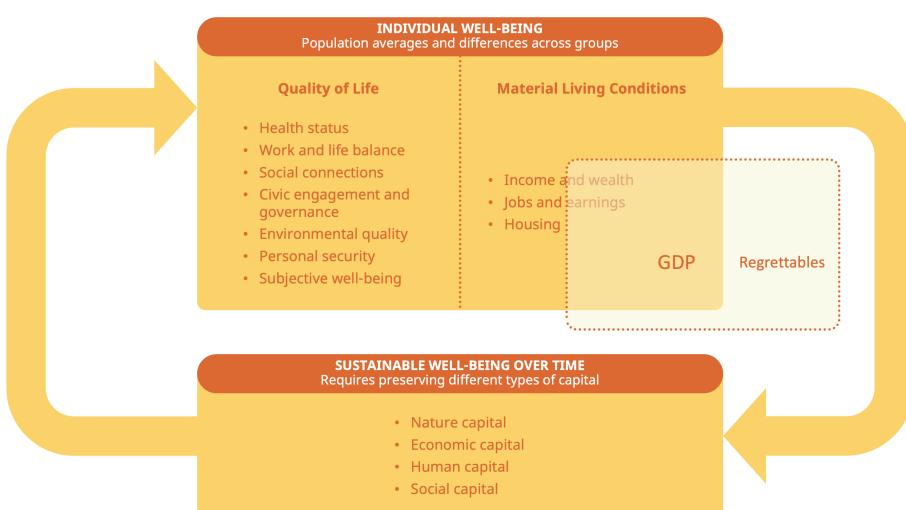


Fig. 2.1: The framework for measuring well-being and progress

In response to this, the OECD developed the Better Life Index (see <https://www.oecdbetterlifeindex.org/>), which lists 11 areas as indicators of personal well-being, grouped into two rather conventional main categories, “Quality of Life” and “Material Living Conditions” (see Fig. 2.1) (Llena-Nozal et al., 2019).

Although the indicators included in the “Quality of Life” category are not directly related to the economy, they are essential in determining and governing people's well-being. In addition, the OECD identified four categories of capital—natural, economic, human, and social—as the critical resources needed to sustain personal well-being. These are equivalent to such fundamental categories as nature, economy, individuals, and communities, which points to the contextual and holistic nature of human well-being.

The heightened interest in well-being and happiness provides a fresh view that challenges conventional conceptions of urban development. Most strikingly, it challenges the perception of economic growth as being the sole or the most important policy goal of city governments or as a privileged criterion for measuring success in urban development. Human and social factors thus have a vital role in the urban agenda, and

social sciences and urban studies have an important task in shedding light on them and integrating them with other aspects into a holistically understood development agenda.

POLICYMAKING FOR URBAN WELL-BEING

A few decades after World War II, interest turned to the promotion of industrial development and amplified economic and population growth as a premise for such a policy. A crucial factor behind this development was the fact that major indicators on urban economic development had been primarily quantitative, which inherently directed attention to activities that were reflected in such indicators. Such a narrow approach tends to keep the urban development agenda instrumentalist and one-dimensional. This is noticeable in the case of the shrinking cities previously discussed, which have started to build their development agendas on novel premises as a reflection of changes in their internal and external environments. They have done so by understanding that shrinkage does not equal decline and recognizing that there are important qualitative aspects of development that should be taken into account. In this setting, the previously discussed role of well-being is critical, as it hints at what kinds of premises the new urban development paradigm can be built on, both as an element of endogenous growth and as a factor that has the potential to attract capital, expertise, creativity, and people to the city (cf. Anttiroiko, 2018).

Guimarães et al. (2016) examined in a multiple case study the push and pull factors that affect residents of shrinking cities in Portugal. According to them, the overall picture shows that, while economic conditions (job opportunities and good working conditions) are the most important factors (especially among the younger generation), social ties and place attachments significantly impact residents' decisions regarding migration. The study points out that stronger a sense of community and a city's identity increase the resilience of the city. It is worth mentioning that in some historical cities in Portugal, "beauty and heritage" was the most important pull factor affecting the decisions of residents. Furthermore, the influence of environmental factors such as "recreational and environmental amenities" was noticeable. Lastly, the

study revealed that the factors that contributed significantly to the well-being of residents varied between cities.

Hollander (2011) has shown that people's evaluation of neighborhood quality is almost the same regardless of whether the city is growing or shrinking. In fact, from the point of view of smart growth, depopulation may occasionally be considered a strength. Along these lines, van der Land and Doff (2010) stated that, in shrinking cities, the neighborhood and social ties are strengthened and the relationships of trust between the residents are reinforced, leading to strengthened self-efficacy and collective efficacy. This hints that there is parallel between the strengthening of independence at the individual level and increasing social capital at the community level, which together serve as a positive force in shrinking cities.

Based on the evidence and insights discussed so far, we may conclude that it will be important for cities to design policies that consciously promote community capital, strengthen independence, and encourage place attachment. Such an approach combines different spheres of community life, including the physical environment, relational social capital, and urban symbolism ultimately geared around the well-being of urban dwellers.

PUBLIC VALUE GOVERNANCE IN CITIES

Discussions about how to assess and value economic growth vs. well-being in public policy are deeply rooted in the ideological landscape. Focus on economic growth, especially in the Western context, is associated with neoliberalism, whereas an emphasis of holistic and inclusive well-being leans towards progressive and collectivist ideologies. Rather than taking sides in this debate, our task is to point to the relevance of discussing the values on which urban public policies can be based. In fact, if we look at urban issues from an ideological point of view along the lines of a conventional liberal vs. conservative dichotomy, it reveals the need to determine on a case-by-case basis what combination of values best suits each respective urban community. In any case, there is a growing need to clarify the values on which urban

public policies should be anchored, which would benefit from broadening the perspective on urban development from a focus on mere monetary value (or economic growth) to a broader set of value categories, including well-being and happiness.

Capitalism is from the historical view a superior economic system in terms of organizing production and matching supply and demand. However, on the other side of the picture there are dysfunctional tendencies and socially polarizing outcomes that must be addressed in public policy. For example, Mazzucato (2018) has recognized that in modern capitalism, value-extraction is rewarded more generously than value-creation, even if the latter comprises the productive processes that essentially drive a healthy economy. She urges us to rethink capitalism, to redefine how to measure value in a society, and to rehabilitate the public sector as a key player in balancing such a development.

One of the most worrisome features of the global economy has been economic polarization. In advanced economies, top earners have experienced rapid income growth while the middle class shrinks and the lowest earners are left behind. This development is particularly striking in the United States (Bhatt et al., 2020; Brynjolfsson & McAfee, 2014). These kinds of changes have made traditional economic indicators, such as GDP, look problematic, if not obsolete. Polarization implies that the economic benefits of the increase in GDP are reaped primarily by the wealthiest segment of society, or rather, the transnational capitalist class. This urges us to reconsider the relevance of traditional economic indicators as the measure of success (Fox, 2012).

Measuring well-being, quality of life, or happiness has obvious challenges. Even if we use surrogate indicators and develop as many objective criteria as possible for determining such phenomena (e.g., aggregated holistic health data), the dilemma of subjective value and its methodological ramifications persists. A similar challenge to be faced is the multi-dimensionality of well-being, which makes this field conceptually fuzzy (see Stiglitz et al., 2010). This should not prevent us from seeking measures of a good life beyond quantitative indicators. Many attempts have already been made. For example, Skidelsky & Skidelsky (2013) proposed seven essentially irreplaceable values for

living a good life, namely health, security, respect, personality, harmony with nature, friendship, and leisure.

Another strand of thought that offers conceptual tools to deal with the challenge at hand is public value theory, which emerged in the 1990s (Moore, 1995). This discourse is of particular interest here because it shows how the concept of value is used in public administration, management, and policy. The original idea proposed by Moore (1995) was based on public managers' ability to create value in a society by using the means available to the government, such as service machinery, regulations, laws, resource allocation, and others. This is based on an idea that legitimizes the existence of government: government should be able to create value in a society in collaboration with a wide range of stakeholders from different sectors.

A watershed moment in this discourse becomes apparent when we consider what "public" actually refers to in this context, and what is the factual role of government in creating public value or ensuring that public interest is taken into account in all relevant aspects of community life. The minimum criteria for anything to be "public" are (a) collective or democratic decision-making, (b) community involvement in policy making, governance or management, and (c) public funding. So, for any activity to be deemed "public" in the given context it should fulfil these three criteria. When government is involved in creating public value, it is expected to base its actions both on collective values—e.g., fairness, equality, and social cohesion—as explicated in policy or legislative documents, and on the principles of good governance, including participation, effectiveness, responsiveness, transparency, and accountability. It is generally held that the impact of private-sector management doctrines and the New Public Management in particular have in fact diminished the "publicness" of public administration (Rugge, 2019).

The discussion of public value is rather government-centric and, to some extent, public-management-oriented. It is important to keep in mind that all individuals, organizations, and institutions create or at least have the potential to create public value irrespective of the degree of their publicness. This gave rise to new public governance, new public service,

network governance, and public value management approaches that brought values to the core of public governance and public-sector management. Especially, early developments surrounding public value management in the public sector became associated with networked governance methods that focus on the motivational side of stakeholder engagement, including loyalty, mutual respect, shared learning, and negotiated order (Stoker, 2006). This is seen as an approach built on values that go beyond efficiency, giving prominence to the application of democratic principles. Government serves as a collectively organized guarantor of the creation of public value, but it is worth emphasizing that the government does not have a monopoly on the agenda setting, public debate, and value-driven practices found in society because citizens, civic associations, and businesses have their stakes in such collective processes too (Bryson et al., 2014).

The public value perspective emphasizes the active role local civil society and the business community have in open discussions about the values and guiding principles applied both in the public sphere and in, partly, the private sphere in the community. This requires enabling community structures, such as open policy forums, deliberative mechanisms, and urban public spaces, as well as fostering a culture of openness and inclusion that encourages communicative action. It is important that, in addition to formal political institutions, there are informal arrangements, public spaces, cafeterias, parks, shopping districts, and other “third places” suitable for interaction and exchange of ideas (Habermas, 1991; Sandel, 1996; Oldenburg, 1989). We need to consider as well the use of digital technology, social media, and urban networks and platforms, many of which are locally embedded. A strategically critical mission is to integrate such civic discourses, forums, and platforms into the decision-making procedures of the city government in a dynamic and flexible manner. This integration requires a generative interplay between an unorganized discursive sphere and a democratically controlled decision sphere.

FROM THEORY TO PRACTICE

There are already many cities all over the world that reflect an alternative view on growth and pay special attention to the well-being of citizens. There are zero-carbon communities that aim for hands-on sustainability, wellness cities with a focus on holistic health, slow cities (like the Cittaslow Movement) designed to improve quality of life, shelter cities that pay special attention to human rights, and others. It is worth noting that there are many ways of promoting well-being and quality of life. For example, as in the case of the shrinking cities previously discussed, they can adopt various strategies for responding to their contextual challenges, as depicted in Fig. 2.2.



Fig. 2.2: Shrinking Cities and their diverse policies

When discussing cities with progressive policies that broaden the view of urban development, this book will address such cases both theoretically and empirically. These include city-concepts such as smart, compact, shrinking, sustainable, restorative, and inclusive cities, each reflecting particular aspects of urban well-being. One of the main policy challenges faced by cities is to be able to take a holistic view of urban development and thus to be able to pinpoint the interrelatedness of the environment, people, technology, and economic development. The path towards

urban futures should be sustainable, democratic, smart, and inclusive, as these qualities are conducive to a genuinely citizen-centric approach to urban development that is able to contribute to the holistic health, well-being, and happiness of the citizenry.

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Smart City

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WHAT IS A “SMART CITY” ?

Definitions and Trends of Smart Cities in the World

The Organization for Economic Co-operation and Development (OECD) defines "Smart Cities" as "initiatives or approaches that effectively leverage digitalization to boost citizen's well-being and deliver more efficient, sustainable and inclusive urban services and environments as part of a collaborative, multi-stakeholder process". However, it also states, "The smart city concept is still in flux and subject to debate. Definitions of smart cities vary across OECD countries and institutions according to the geopolitical context and to the specific issues at hand."(OECD, 2020)

In terms of global trends on smart cities, the G20 Global Smart Cities Alliance was established in 2019 with the World Economic Forum as its secretariat (G20 Global Smart Cities Alliance WEB site, 2019; The World Economic Forum, 2021). The alliance aims to develop international basic principles and guidelines for cities to use data and digital technologies. 36 cities from around the world are participating as pioneer cities, and 4 cities from Japan are participating: Maebashi, Kaga, Hamamatsu, and Kakogawa (Fig. 3.1).



Fig. 3.1: 36 Smart Cities in the world. Note that some of the initiatives of Pioneer Cities can be seen at the following website. https://globalsmartcitiesalliance.org/?page_id=714

There is also a report of survey results available on the benchmarking of building policies for ethical and responsible governance in smart city development. The standards used for benchmarking include "equity, inclusivity and social impact," "privacy and transparency," "Security and resilience," "Operational and financial sustainability," and "Openness and interoperability," and the results of a survey of 36 pioneer cities are presented.

Definitions and Trends among Smart Cities in Japan

According to the *Smart City Guidebook* (2021) published by the Cabinet Office of Japan's Ministry of Internal Affairs and Communications, the Ministry of Economy, Trade, and Industry (METI), and the Ministry of Land, Infrastructure, Transport, and Tourism (MLIT), smart cities can be defined as "sustainable cities or districts that continue to create new value by solving various problems faced by cities and districts through the provision of services that are close to each citizen, utilizing new technologies such as ICT and various types of data from the public and private sectors, and the advancement of management (planning, maintenance, management, operation, etc.) in various fields, and where Society 5.0 can be realized ahead of time." Smart cities as defined by the MLIT are classified and organized as shown in Table 3.1.

It should be noted as well that Society 5.0 is defined as "a human-centered society that achieves both economic development and solutions to social issues through a system that highly integrates cyberspace (virtual space) and physical space (real space)" (Cabinet Office, 2021). It refers to a new society following the hunting society (Society 1.0), agricultural society (Society 2.0), industrial society (Society 3.0), and information society (Society 4.0), and was first proposed as the future society that Japan should aim for in the Fifth Science and Technology Basic Plan.

As of August 2021, 184 projects are introduced on the Smart City Platform website. The main smart city-related projects promoted by the relevant ministries and agencies include: a) The Social implementation project for near-future technologies by the Cabinet Office; b) the Smart City Promotion Project for data utilization by the Ministry of Internal Affairs and Communications; c) the Regional New "MaaS" (Mobility as a Service) Creation and Promotion Project by the Ministry of Economy; Trade and Industry, d) the Project for the Promotion of New Mobility Services by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT); and e) the Smart City Model Project by the MLIT (see Table 3.2). The number of projects that include transportation as an issue is 158, and 143 projects include tourism and regional revitalization, indicating

that smart city initiatives in Japan are mainly focused on transportation issues (MaaS), tourism, and regional revitalization (Table 3.3).

Table 3.1: Classification of Smart Cities by the MLIT

Category	Description
Accessibility	All citizens can move around comfortably with a focus on public transportation, improved convenience and transportation services through the use of automated driving, demand-responsive transportation, and MaaS.]
Nature	Urban space exists in harmony with water and greenery.
Energy	Realization of energy conservation at the building/block/district-level from both passive and active aspects. Utilization of renewable energy such as solar and wind power, promoting local production and consumption of energy that is secure even in emergencies.
Safety & Security	Developing disaster-resistant cities, fostering local communities, and securing emergency power generators, stockpiles, and evacuation sites in urban development. Remote management of health conditions using wearable terminals, promoting walking through the use of apps, monitoring rivers using water level sensors.
Recycle	Storage and utilization of rainwater, use of reclaimed water from wastewater treatment as non-potable water, waste management (3R, waste heat utilization, etc.).

From Smart Cities to Super Cities

In order to realize regional development in accordance with the Super City concept, the Cabinet Office has invited applications for the designation of Super City-type National Strategic Special Zones, and a number of local governments have applied for this designation. While smart cities focus on demonstrations of one or more state-of-the-art technologies such as transportation and energy, super cities are future cities that will implement information technology as a basic social infrastructure.

Smart Cities and Sustainable Development Goals (SDGs)

The SDGs are international goals to be achieved by 2030 as stated in the "2030 Agenda for Sustainable Development" adopted at the United

Nations Sustainable Development Summit 2015; they consist of 17 Goals and 169 Targets.

Goal 11 of the SDGs reads: "Make cities and human settlements inclusive, safe, resilient and sustainable," and indeed the realization of smart cities is deeply related to the achievement of Goal 11. However, the scope of the SDGs is broad, and smart cities are related to all 17 Goals, as well as to 81 targets (MLIT, 2018). The Keidanren (Japan Business Federation) also states that Society 5.0 will contribute significantly to the achievement of SDGs because it is a new growth model that combines problem solving and future innovations. Since smart cities are the places where Society 5.0 will be demonstrated, the realization and implementation of smart cities is essential to the achievement of the SDGs.

Table 3.2: Number of Projects by Project Aim

Project Name	Number of Projects
Social implementation project for near-future technologies	34
Smart City Promotion Project for data utilization	18
Regional New MaaS Creation Promotion Project	29
The Project for the Promotion of New Mobility Services	57
The Smart City Model Project	45
MLIT Smart Island Promotion Demonstration Survey	1
Total	184

Table 3.3: Number of Smart City Projects in Japan by Issue Category (Multiple Answers Permitted)

Classification of Issues	Number of Projects
Transportation and Mobility	158
Energy	22
Disaster Prevention	36

Classification of Issues	Number of Projects
Maintenance and Management of Infrastructure	38
Tourism and Regional Revitalization	143
Well-Being and Medical	48
Agriculture, Forestry, and Fishery	17
Environment	17
Safety, Security, and Surveillance	21
Logistics	31
Urban Planning and Development	18
Total Number of Projects	184



Fig 3.2: Outline of the Smart City

ENERGY MANAGEMENT IN THE SMART CITY

The biggest element that constitutes a smart city is the decision to avoid sustaining life in the city through the consumption of large amounts of fossil fuel by supplying the necessary power by renewable energy while reducing energy consumption. In other words, the energy supply and demand are managed between the consumer side and the power generation side.

Zero and Net Energy Buildings

Net Zero Energy Buildings (ZEB) and Net Zero Energy Houses (ZEH) are buildings or houses that aim to reduce the annual primary energy balance consumed while maintaining a comfortable indoor environment.

Since there are human activities in the building, energy consumption cannot be completely reduced to zero. Yet the total energy consumption is reduced through energy-saving processes which, when combined with renewable energy, lead to zero energy consumption.

The definition of ZEB / ZEH has been discussed and examined in various ways both in Japan and abroad. For example, in Japan, if an energy savings of 30% or more is achieved in a building, it is "ZEB Oriented." If an energy savings of 50% or more has been achieved and it aims to use renewable energy it is "ZEB Ready." Furthermore, it is classified as "Nearly ZEB" when it has achieved a reduction in energy consumption of 75% or more through energy saving processes and the use of renewable energy, and is at that point considered to represent a realization and popularization of the goals of the ZEB policy.

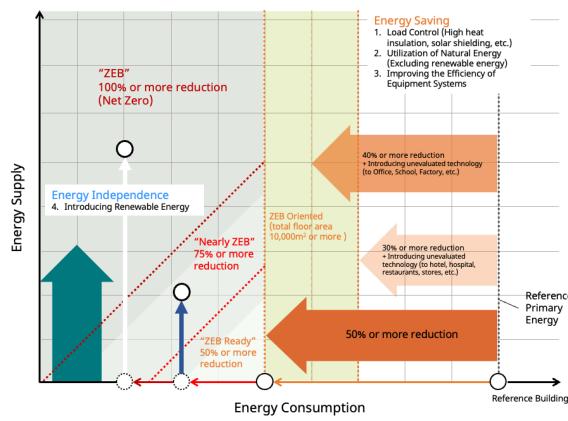


Fig. 3.3: ZEB Roadmap (Ministry of Economy, Trade and Industry “2018 ZEB Roadmap Follow-up Committee Summary”)

The Importance of Regional Power Sources

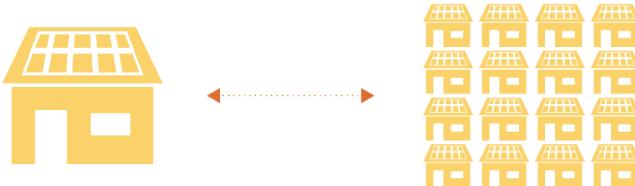
Until now, power systems have relied on demand control to shift to midnight power in order to stabilize nuclear power generation (base power) and power generation has been centrally controlled by the supply of large-scale power plants built according to power demand.

However, in the wake of the tightening of supply and demand following the Great East Japan Earthquake, it became apparent that it is important not only to strengthen conventional energy conservation but also to manage energy with an awareness of the balance between supply and demand. In addition, the introduction of renewable energy sources such as solar power and wind power is progressing, but the amount of power they generate depends on natural conditions such as the weather, and even in favorable conditions the area where the power trunk line is not as thick as necessary becomes the power generation limit. Therefore, generation needs to be stabilized on a regional basis by a control method other than a central power plant control system.

In addition, decentralized energy resources, including cogeneration methods like solar power and household fuel cells, along with storage batteries, electric vehicles, and “negawatts” (power saving), have been introduced to consumers on a wide scale.

For this reason, the conventional energy supply system that relies on large-scale power plants is being revised, and the construction of a mechanism for utilizing energy resources on the consumer-side of the electric power system is being promoted. Each of the decentralized energy resources available to buildings and homes are small, but they can be used to adjust the balance between the supply and demand of electricity by remote and integrated control using advanced energy management technology that utilizes the Internet of Things (IoT). This mechanism is called a virtual power plant (VPP). VPPs are expected to play an active role in future electric power systems, offering functions such as load leveling, absorption of excess supply of renewable energy, and providing supply in the event of power shortage. Moreover, not only in Japan, but also in areas where energy infrastructure is not well-developed or unstable, VPPs will lead to stable energy use on a regional basis without requiring large-scale infrastructure.

Toward the realization of VPP (virtual power plant) society



Each household has a power generation function, and the surplus is shared by the community.

Implementation of disaster-resistant system and its expansion into Asia

Suppressing Large-scale Infrastructure



Independent Energy Infrastructure



Supplementing energy from both upstream and downstream of the grid, not only to large areas of the grid but also to small areas. Contributing to curbing large-scale infrastructure development in semi-off-grid areas overseas.

Fig. 3.4: Infrastructure development using VPP will strengthen the region and is expected to be utilized even in areas where infrastructure is not developed in Asia.

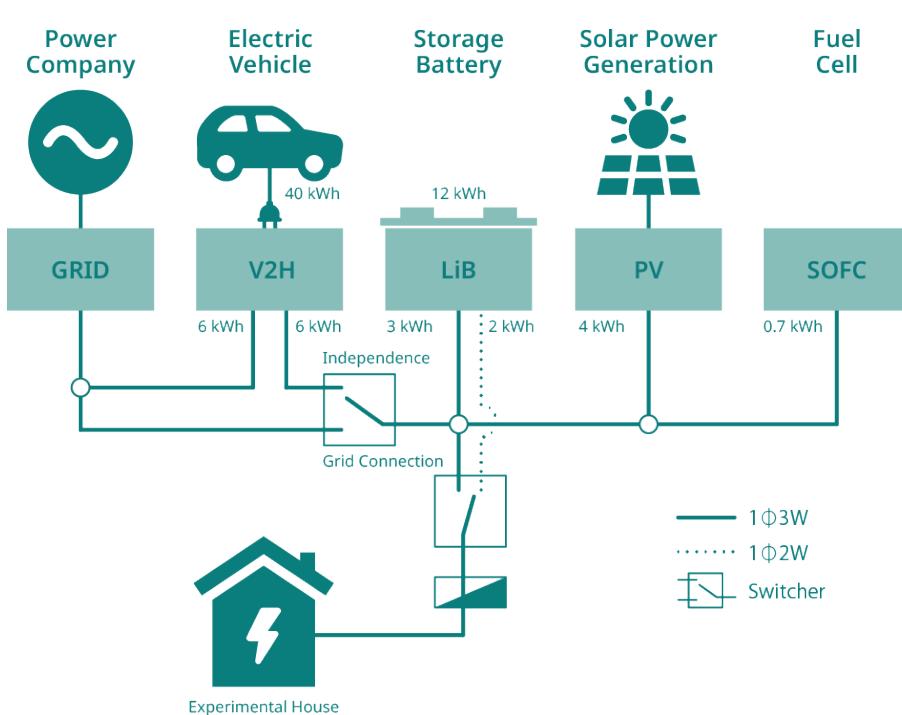


Fig. 3.5: Outline of the experimental setting

In a self-sustaining operational experiment—using an experimental house in my own laboratory during a power outage—a 40kWh electric vehicle (EV) was connected to a 12kWh storage battery (LiB, Lithium ion storage battery), and 4kW of solar power generation (PV) was used to generate electricity. So, depending on the ratio of the amount of electricity stored to the amount of electricity used, I was able to maintain a stable life for several days.

Based on these experimental results, we are constructing an energy independence model for the region and observing how much tolerance it has under various conditions, while also assessing introduction costs along with the usual merits and drawbacks. Verification is in progress.

Safe, Secure, and Healthy Living

A major feature of smart cities is the utilization of IoT to support an aging society. This is part of the reason that the IoT, in which all things are connected to the Internet, is being promoted to maintain a healthy standard of living. Through it, various things such as smartphones, smart speakers, personal computers, home appliances, and automobiles share information on the Internet and control other devices. A "sensor" that detects the environmental state of its surroundings is indispensable for realizing the full potential of IoT . In particular, the development of the Micro Electromechanical System (MEMS), which is a micron-level device that integrates sensors, actuators, electronic circuits, etc., and is constructed of miniaturized mechanical elements, seeks to provide this.

Even in homes, offices, factories, etc., MEMS senses the ever-changing environment, and various equipment such as air conditioning and lighting are linked to create a comfortable and energy-saving environment. MEMS can be incorporated into various equipment to create a safe, secure, comfortable, and convenient experience for inhabitants.

If the sensor is made sufficiently small, it becomes possible to sense the physiological levels and conditions of a person while wearing it. In this way, the activity and health status of the person can be easily confirmed. Additionally, using this information can lead to a more comfortable and healthy life.

The wristwatch-type wearable information terminal is equipped with a heart rate monitor and GPS in addition to a three-dimensional accelerometer that measures the amount of activity and calories burned. The life log (a "visualization" of the body) is recorded both throughout the day and during sleep. It is used for health management and measures the amount and intensity of sleep. Users can also measure the balance of their caloric intake by inputting meals and weight.

Due to the movement to improve the environmental performance of buildings (see, for example, the Leadership in Energy and Environmental

Design [LEED] of the US Green Building Council), interest in the health and working styles of people who spend time in buildings is changing (see also the WELL Building Standard of the International WELL Building Institute).

In my laboratory, while we acquire biometric information we are also exploring the relationship between subjective reports and physiological reactions that people feel, and we are also conducting research on working environment, working style, and productivity through Activity Based Working. I feel that human-centered design oriented toward human factors will become mainstream in the future.

WATER MANAGEMENT IN SMART CITIES

Japan has about twice as much rainfall as the world average, and due to the effect of water resource development such as dams, it could be said that the frequency of drought is relatively low. On the other hand, looking at the world, it is expected that water shortages will be caused not only in areas that are physically prone to drought due to small rainfall, but also due to overuse through socioeconomic factors such as population growth and the concentration of populations in cities. In addition, the unequal spatial-temporal distribution of limited water resources in the world is worsening because of climate change. In areas where water shortages are serious, rainwater use and water reclamation/reuse are very important. It would be particularly useful in these cases to actively utilize treated wastewater or reclaimed water as non-potable water for commercial facilities and factories. In addition, by centrally managing the operation data of water purification facilities and sewage treatment facilities alongside the status of water demand using smart methods, it will be possible to operate each facility efficiently and improve the management efficiency of the entire region. This is what the smart city is aiming for from the viewpoints of water infrastructure and water operations.

In Japan, population decline has become a major issue when it comes to managing and utilizing water resources. In Japan, aging facilities related to infrastructure such as water supply and sewerage systems

constructed during the high-growth period have become a serious problem, and huge costs are required for their renewal. On the other hand, in recent years, water demand has been declining due to population decline and the advancement of water-saving methods, so it is necessary to rebuild facilities with downsizing in mind. In Japan, water supply and sewage systems are managed by local governments, but wide-ranging cooperation beyond the boundaries of municipalities and, in some cases, prefectures will be required.

Wide-Area Water Supply in Smart Cities

In Japan, water utilities that provide drinking water are, in principle, managed and operated by municipalities and are required to be financially independent with full cost recovery. The business situations of the water supply utilities are expected to become more severe due to the declining population and aging facilities and pipelines. It is important to strengthen the management base, improve the efficiency of office work, and secure the technical level of their operations by promoting various wide-ranging cooperation such as utilities integration, joint facilities development, and wide-area processing in office work. Therefore, it is necessary to consider strategic widening with an eye on the future. Coordination between prefectures is important in efforts to extend the area of operations beyond the traditional administrative areas of municipalities. Therefore, the Japanese Ministry of Internal Affairs and Communications and the Ministry of Health, Labor and Welfare are requesting that prefectures formulate a promotion plan for a wide area of water supply as stipulated by both the promotion policy for wide cooperation and the content of particular efforts. Now is the time to make the best use of existing facilities and to consider water supply systems that utilize wide-area operations such as connecting pipes, common water purification facilities, and distribution reservoirs in cooperation with related business operators.

This concept of wide-area water supply incorporates a diverse range of initiatives, including the sharing of operation departments (fee collection, maintenance, water quality management, training programs,

etc.). There is also a proposal aiming to unite operations within one water supply system for the entire prefecture.

On the other hand, gaps between water utilities in areas such as tariff levels, financial conditions, and facility levels are barriers to the promotion of wide-area water supply. Wide-area water supply in a broad sense includes not only utilities integration but also joint operation and joint management, and it will be necessary for stakeholders to cooperate based on what the utilities concerned can do together. In particular, material ordering and inventory management systems are relatively easy to combine, and it is expected that operating costs could be reduced by introducing and operating the same system in several regions. The introduction of the latest information technology related to water supply operation and management is also an important point. The following are possible examples: a) Improving inspection efficiency by introducing sensors into the pipeline network; b) high-quality short-term demand forecasting through machine learning, etc.; and c) prediction of raw water quality and operation/management of water purification facilities using weather forecasting.

Smart Water Meters

In recent years, the introduction of smart meters in the water supply field has attracted attention. It is expected that various improvements in the efficiency of water utilities could be achieved by installing smart meters that can offer improved efficiency in meter reading through the visualization of detailed data such as demand fluctuations, early leakage detection, improvement of user services, efficient pipeline network management, and efficient energy use through improved water operation, etc.

In addition, the improvement of user services could include monitoring for elderly people living alone, and it is possible to quickly detect abnormalities due to illness or injury of residents by monitoring the amount of water used. At present, the installation cost is a major problem, but many water utilities are conducting feasibility projects for smart meter introduction. Also, by collecting water data together with

electricity and gas data, it will be possible for authorities to integrate data related to public utilities.

SEWERAGE IN SMART CITIES

Utilizing Information Technology

In Japan, the histories of water supply and sewerage systems differ slightly. Public sewerage systems were developed in each city from early on in the center of large cities, but there are many areas where prefectural governments have taken the lead in developing basin sewerage systems. Therefore, sewerage is a wide-area system compared to the water supply sector.

On the other hand, sewerage facilities are aging like water facilities. It could be possible to improve the efficiency of inspection work, prevent accidents through early repairs, and formulate a reconstruction plan by installing sensors and cameras in the sewer pipeline network and monitoring and collecting data. In addition, sewage sludge generated in the sewage treatment process has high potential as fuel and fertilizer. It is also possible to utilize sewage heat. By collaborating with water/biomass-related businesses and expanding the area of facility management, it would be possible to realize a more recycling-oriented and more energy-efficient city.

Also, one of the purposes of sewerage is to remove rainwater. In recent years, it could be said that the risk of inland water inundation is increasing because rainwater removal is not able to endure sudden torrential rain. It could be possible to disseminate risk information and reduce damage by controlling the water level in advance through the utilization of weather forecasts and water-level monitoring in pipelines and reservoirs.

Rainwater and Reclaimed Water Use

The rainwater collected from roofs is considered to have the highest quality among sources of surface water such as river water. Therefore, it

is relatively easy to treat and use rainwater onsite from the viewpoint of water treatment technology. In addition, rainwater use has the advantage of reducing the rainwater runoff. Furthermore, rainwater stored in a rainwater tank can be used as emergency water when the infrastructure is damaged in the event of a disaster. In the water treatment process, since it is assumed that the water treatment facilities may not be able to operate due to power supply interruptions, the installation of an independent energy system and rainwater system will also enhance disaster resilience.

As mentioned above, water reclamation/reuse is essential in areas where water resources are scarce. The water reclaimed through sewage treatment can be used as non-potable water for toilet flushing, cleaning, landscape irrigation, and industrial tasks. Throughout the world, reclaimed water is often used for agricultural purposes. Furthermore, reclaimed water is cooler in summer and warmer in winter compared to the outside temperature. A demonstration project for advanced combined use of reclaimed sewage water, which utilizes the temperature of reclaimed water as both a heat source and a supply for air conditioning, has also been implemented in Sakai City, Osaka Prefecture.

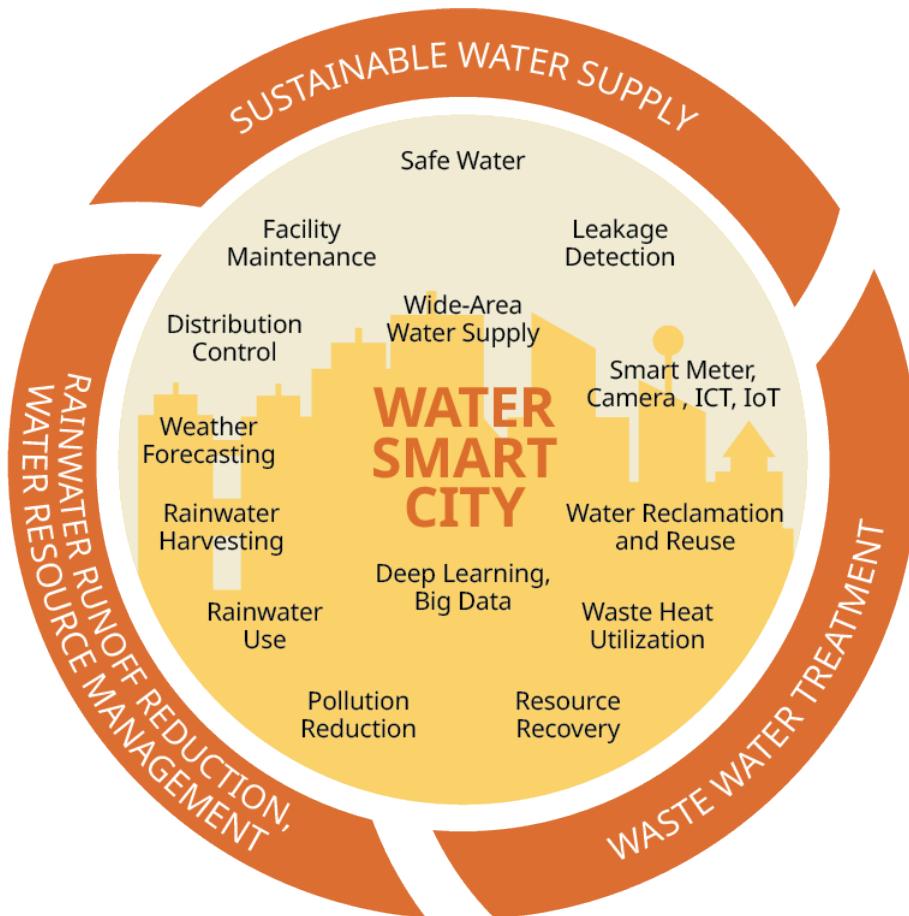


Fig. 3.6: Outline of the Water Smart City

TOWARD THE REALIZATION OF SMART CITIES

Various pilot projects are underway and there are often many good practices among them. In particular, the BIM (building information model) is an effective tool that is being utilized. The sharing economy is also becoming more common, and platforms for these new systems are being formed. Furthermore, web and digital society are changing city planning itself (Douay, 2018). However, smart cities are composed of many elements and are not comprised only by IoT, transportation, buildings, energy, resources, etc. In addition, some places have unique

needs, such as cities and villages in the mountains, that differ greatly from country to country, and so there is no universal solution. It is important to have a blueprint that accounts for these in each city. Above all, the active cooperation of citizens is indispensable.

More information must be collected and analyzed regarding the implementation of smart cities. Since various devices are connected to the Internet and utilize the associated information, smart cities can be said to be a citizen-participant cities. Therefore, it is also necessary to develop information management rules on how to maximize the use of personal information and corporate information while respecting privacy and information security.

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Practices of Japanese Local Cities Coping with Population Decline

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INTRODUCTION

The population of Japan reached its peak in 2008 and has declined continuously since then. According to the Basic Resident Register, the

population of Japan declined by approximately 0.8% from 2014 to 2019. The main reason for this population decline is a natural decrease in population (hereafter referred to as “the natural decrease”). Even in the 1960s, some municipalities experienced population outflow. The main reason for this population outflow was migratory population loss (hereafter referred to as “net migration loss”). Therefore, population decline, which many municipalities in Japan have experienced in recent years, can be understood as a social phenomenon that differs from the decline seen in the past.

It is extremely difficult to prevent the natural decrease through urban and regional policies, as these policies can take more than 25 years to show their effects after being initiated. As the historical demographist Kitou (2011) pointed out, “population change takes quite a long time, similar to the turnaround of a huge tanker.” However, certain policies can prevent net migration loss to some extent. These policies are directly effective for mitigating population decline. Although the overall population of Japan has decreased, the population of several big cities has continuously increased at the same time. Therefore, a population shift from these big cities to other areas where the population has decreased is considered to be in conformity with national strategy.

In the global context, Mallach et al. (2017) organized the discussion on shrinking cities as a conceptual model organized around “conditions,” “scholarly discourses,” and “policy and action.” They concluded that it was important to identify the existence of conditions adequate to create the “political will” necessary to address the shrinking city’s problems. A key characteristic of the Mallach’s model is that it is oriented toward action. The authors recognized that the nature of the shrinking city problem needed to be redefined for purposes of action as a specific and narrow issue because policy is not always generic. Martinez-Fernandez (2016) defines three areas that are commonly needed to tackle the worldwide decline of population in Europe, Australia, Japan, and the U.S. in terms of policy processes like community resilience, urban regeneration strategies, and tackling the social effects of urban shrinkage. As was the case in these previous studies, the present authors also pay attention to the social aspects of population decline.

The present authors examined municipalities with a population below 500,000 that had enacted policies considered to be effective for preventing net migration loss (policies to decrease the number of people flowing out and increase the number of people flowing in), performed on-site investigations of specific policies and trends in the private sector, and summarized the investigation results. These cases address the six municipalities of Kanazawa (Ishikawa Prefecture), Hirosaki (Aomori Prefecture), Fukui (Fukui Prefecture), Onomichi (Hiroshima Prefecture), Nagato (Yamaguchi Prefecture), and Kamiyama (Tokushima Prefecture).

Table 4.1: Natural increase or decrease and net migration gain or loss of municipalities investigated from 2014 to 2019

Prefecture name	Municipality name	Population (2019)	Population (2014)	Percent change	Natural increase or decrease	Net migration gain or loss	Contribution ratio of the net migration loss
Aomori Prefecture	Hirosaki City	172,031	180,370	-4.6%	-6,665	-3,175	0.32
Aomori Prefecture	Aomori City	284,531	298,416	-4.7%	-9,590	-6,671	0.41
Ishikawa Prefecture	Kanazawa City	453,654	452,144	0.3%	-2,937	4,812	2.57
Fukui Prefecture	Fukui City	264,356	267,978	-1.4%	-3,581	-685	0.16
Hiroshima Prefecture	Onomichi City	137,643	144,935	-5.0%	-7,011	-1,972	0.22
Yamaguchi Prefecture	Nagato City	34,305	37,384	-8.2%	-2,823	-902	0.24
Tokushima Prefecture	Kamiyama Town	5,319	6,128	-13.2%	-719	-263	0.27
Population between 200,000 and 500,000				0.1%	-243,723	269,898	10.31

Prefecture name	Municipality name	Population (2019)	Population (2014)	Percent change	Natural increase or decrease	Net migration gain or loss	Contribution ratio of the net migration loss
Same as above, excluding three metropolitan areas				-1.4%	-258,294	100,560	-0.64
Population between 80,000 and 200,000				-1.0%	-397,693	26,731	-0.09
Same as above, excluding three metropolitan areas				-2.3%	-325,777	-125,706	0.35
Population between 10,000 and 50,000				-4.9%	-684,438	-333,994	0.37
Population between below 10,000				-7.8%	-169,468	-88,811	0.42

Source: Created by the authors, etc. based on the Basic Resident Register

STUDY BACKGROUND: POPULATION CHANGES IN MUNICIPALITIES IN TERMS OF “NET MIGRATION GAIN OR LOSS”

Table 4.1 shows the population changes, natural increases or decreases, and net migration gains or losses in municipalities investigated from

2014 to 2019, along with the averages of these figures according to the population category. The populations of municipalities with populations between 200,000 and 500,000 slightly increased (by 0.1%) from 2014 to 2019 because the net migration gain was slightly larger than the natural decrease. However, the total population of municipalities excluding three major metropolitan areas (Tokyo, Kanagawa, Chiba, and Saitama Prefectures in the Kanto area, Osaka, Hyogo, and Kyoto in the Kansai area, and Aichi Prefecture), decreased by 1.4%. This is because the natural decrease was approximately 2.5 times the net migration gain in these municipalities, although a natural increase was observed.

During the same period, the rate of population decline in municipalities with populations between 80,000 and 200,000 was 1%. The reason for this population decline is that the natural decrease was 14.9 times the net migration gain in these municipalities. The net migration loss was also observed in municipalities when the three metropolitan areas were excluded. However, the contribution ratio of the net migration loss to the population decline was approximately 35%. The rate of population decline among municipalities with populations between 10,000 and 50,000 was 4.9%, and the contribution ratio of the net migration loss to the population decline was 37%. The rate of population decline of municipalities with populations of <10,000 was 7.8%, and the contribution ratio of the net migration loss to the population decline was 42%. The population decline rate increased as the population decreased. Both the natural decrease as well as the net migration loss intensified as the population decreased. In what follows, the authors discuss the characteristics of core cities in local urban areas and peripheral small towns of the core cities. Kanazawa, Fukui, and Hirosaki are defined as the core cities (having populations between 200,000 and 500,000). Onomichi, Kamiyama, and Nagato are defined as peripheral small towns (having populations less than 200,000).

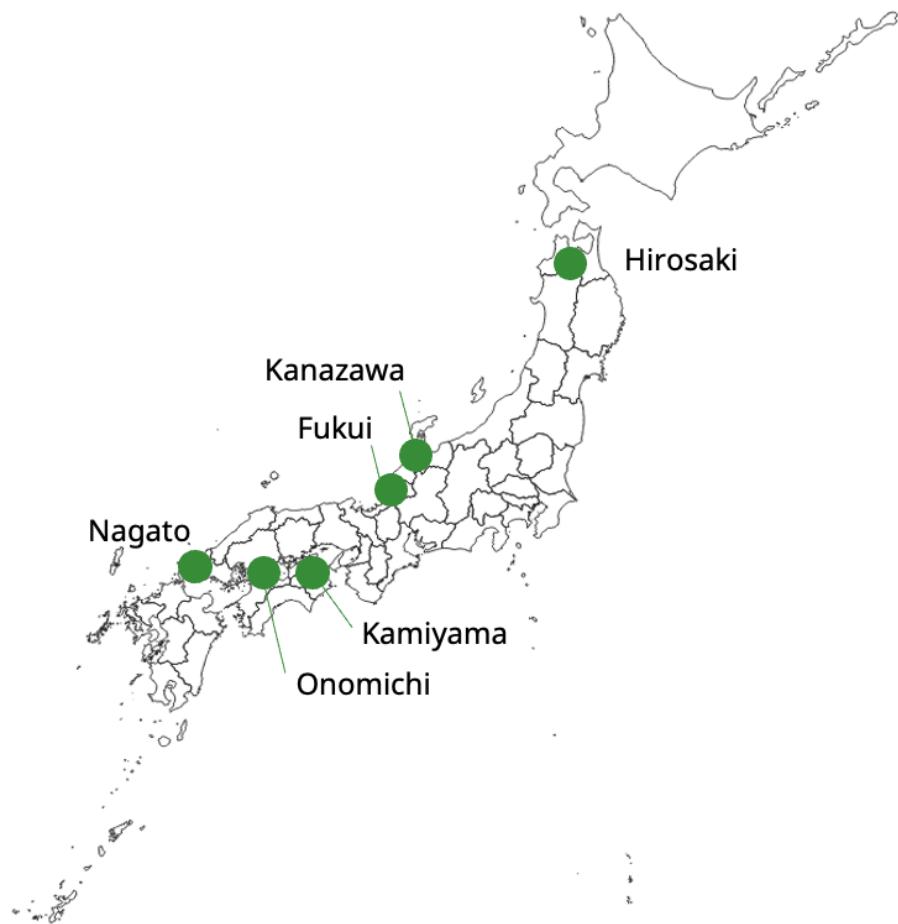


Fig. 4.1: Locations of the Selected Cases

CORE CITIES IN THE LOCAL URBAN AREAS

Kanazawa: Net Migration Gain as a Result of Gentrification

Compared to municipalities in the same population category (between 200,000 and 500,000 in Table 4.1), excluding the three metropolitan areas, the population growth rate of Kanazawa was higher.

Furthermore, the net migration gain was larger than the natural decrease in Kanazawa.

Kanazawa is the capital of Ishikawa Prefecture, boasting a population slightly more than 450,000 in 2019. Kanazawa initially grew as a temple town around the Oyama-Gobo Temple and then flourished as the castle town of the Kaga Domain ruled by the Maeda family. As Kanazawa managed to escape strategic bombing during World War II and other great disasters, the streetscape of the Edo period (1603–1868) remains in place even in the modern era. The population of Kanazawa already exceeded 100,000 in the Edo period. During the late Edo period, Kanazawa developed as a large city alongside the three capitals of Edo (Edo is an old name of Tokyo at the present), Osaka, Kyoto, and Nagoya. After the Meiji Restoration (1868), as cities facing the Pacific Ocean began to rapidly develop, Kanazawa lagged behind Kobe and Yokohama. After World War II, Toyama and Komatsu (which are located in the vicinity of Kanazawa) developed due to the growth of the manufacturing and chemical industries. Although manufacturing companies such as Tsudakoma Corp. and I-O Data Device, Inc., are located in Kanazawa, many people there are generally engaged in commerce and tourism. Thus, Kanazawa has developed as a consumption-centered city.

Although the population of Kanazawa decreased immediately after the Meiji Restoration, it has gradually increased since then. However, the population growth rate of Kanazawa was not very high compared with that of other local central cities. The population of Kanazawa exceeded 450,000 in 1995 and has remained largely stagnant since then. The population of Kanazawa in 2019 was 453,654. During nine recent years (2010–2019), the natural decrease was approximately 1% and the net migration gain was approximately 2%. Therefore, the net migration gain tended to compensate for the natural decrease. In Kanazawa before 1995, the natural increase tended to compensate for the net migration loss. After 2008, the net migration gain was larger than the natural decrease. After 2012, the natural decrease was larger than the net migration gain. Thus, the population dynamics of Kanazawa changed markedly after 2010.

The Hokuriku Shinkansen, a high-speed bullet train railway line, has facilitated the net migration gain. Kanazawa Station on the Hokuriku Shinkansen line opened in March 2015. According to a report by the Development Bank of Japan, the economic ripple effect of the Hokuriku Shinkansen on Ishikawa Prefecture was approximately 67.8 billion yen, which was markedly larger than what was predicted before the opening of the station (12.4 billion yen). Due to this economic impact, issues of gentrification have arisen in the urban district. Following the opening of Kanazawa Station on the Hokuriku Shinkansen line, increases in the home values in Kanazawa have been much larger than those of other cities in Japan, and the numbers of new offices and stores have increased. This marked increase in tourism demand has also prompted hotel-related investments.

These trends have led to the conservation of many traditional town houses (wooden buildings built before 1950) in Kanazawa through the establishment of new regulations. Although townhouses in Kanazawa are valuable urban resources, people in Kanazawa tend to avoid such houses because they are said to be “old, dark, and cold.” With the widespread demolition of these townhouses in Kanazawa, their numbers have decreased. As a policy to promote the use of townhouses in response to the needs of a new era while simultaneously conserving the structures, Kanazawa established the “regulations on promoting the conservation and utilization of Kanazawa town houses” in 2013 before the opening of Kanazawa Station on the Hokuriku Shinkansen line. Approximately 6,100 townhouses existed in Kanazawa when the regulations were established; however, 550 were lost within five years. Thus, the demolition of townhouses has continued in Kanazawa. Fortunately, there are several cases where the conservation and utilization of townhouses that can be considered model cases. Examples include Yaoyoroz Honpo, a multipurpose store opened in March 2015, HATCHI Kanazawa, a hotel opened in March 2016, and KUMU, a multipurpose hotel opened in August 2017. Following these pioneer cases, townhouses have been renovated into residences, restaurants, cafes, stores, galleries, studios, and guest houses. Thus, a new twist on old charm has been generated in the central urban area of Kanazawa.

Among the 35 prefectural capitals, excluding ordinance-designated cities, the population increased in only 11 from 2010 to 2019 (excluding Matsue, which merged cities, towns, and villages). Of these 11 cities, a natural increase was observed only in six. In contrast, a net migration gain was observed in 25 cities. In Kanazawa, the net migration gain has compensated for the natural decrease, and its population has been maintained. However, this compensation results in gentrification. Therefore, a policy to positively conserve urban resources, such as townhouses, is required. Although Kanazawa belongs to the group of cities exhibiting a net migration gain in the era of depopulation, Kanazawa highlights the need for an urban policy that generates subtle solutions to thorny problems.

Fukui: Repair of Old Buildings and Young Business Persons

The rate of population decline of Fukui is similar to that of municipalities in the same population category (between 200,000 and 500,000), excluding the three metropolitan areas. Although municipalities in this population category exhibit a net migration gain on average, Fukui has shown a net migration loss. However, the number of people counted in the net migration loss is small, being much smaller than the losses incurred by cities on the Sea of Japan side of the country, such as Aomori, Akita, and Nagaoka, although the number of people counted as part of the net migration loss of Fukui is larger than that of cities in three prefectures in the Hokuriku region (Fukui, Ishikawa, and Toyama Prefectures).

Fukui is the capital of Fukui Prefecture. The population of Fukui is slightly more than 260,000 in 2019. Fukui developed as the castle town of the Echizen Domain ruled by Katsuei Shibata, a military commander in the age of civil strife. In the Edo period, Fukui became the central city of the Echizen Province, which yielded 680,000 koku of rice (1 koku ≈ 140–150 kg). From the Meiji period (1868–1912), Fukui flourished as one of Japan's foremost textile cities. However, it suffered from strategic bombing during World War II, and the Fukui Earthquake occurred in 1948. Thus, Fukui was severely damaged. Since then, Fukui has

performed reconstruction projects and been renewed like a phoenix. From 1971 to 1974, Fukui merged with the surrounding towns and villages, causing the area of Fukui to increase from 33 km² to 339 km². The population of Fukui also increased from 77,000 to 230,000, reaching its peak in 1995 and then beginning to decrease. In 2006, Fukui merged with the surrounding towns and villages again, causing its area to increase further. The population of Fukui significantly increased but then tended to decrease again, although the decrease was insignificant. The population of Fukui decreased by approximately 1% over nine years (2010–2019), decreasing by 0.1%–0.3% every year except for 2013. Although the natural decrease in these nine years was approximately 2%, the net migration gain in the same period was approximately 1%. Because the net migration gain partially compensated for the natural decrease, the population decline of Fukui tended to be eased to some extent.

Due to the two above-mentioned events (strategic bombing during World War II and the Fukui Earthquake in 1948), Fukui was heavily reconstructed. However, the road toward reconstruction taken by Fukui differed from that taken by many other cities that were also recovering from war damage. Based on the firmly-held city planning ideas of Tasaburo Kumagai, the Mayor of Fukui at that time, Fukui placed emphasis on the construction of road networks. As a result, the urban structure of Fukui was able to keep up with the subsequent progress of motorization to a certain extent.

However, by executing the above-mentioned city planning, the automobile dependency of Fukui increased; the number of owner-driven cars per household in Fukui Prefecture came to be the largest in Japan, suburbanization progressed, and consequently, the central district of Fukui began to deteriorate. In the 2000 census, the move-in ratio of population from 1995 to 2000 of Matsuoka Town (Eiheiji Town at present), which was adjacent to Fukui City, was the highest (8.1%) in Fukui Prefecture. The move-in ratio of the town previously known as Shimizu Town, which was merged into Fukui City, was 4.7%. Thus, the move-in ratios of municipalities in the suburbs of Fukui were high, highlighting the remarkable population outflow to the suburbs of Fukui in the late 1990s. As a result, the central district of Fukui deteriorated,

the number of residents decreased, and vacant stores and parcels of land began to appear in the central district of Fukui.

To address these issues, Fukui has adopted policies to both encourage people to live in the central district and to attract customers. The placement of Fukui Station on the Hokuriku Shinkansen line, which will open in 2023, has facilitated these policies, and areas surrounding Fukui Station have already been redeveloped. In 2016, Happiring, a 21-story compound building, opened at the east exit of Fukui Station. In this building, the lower floors are used for commercial complexes, including a multipurpose hall and a planetarium, while higher floors are reserved for residences. Happiring is the highest building in Fukui Prefecture. On the east side of Happiring, a 27-story building is under construction. This building will house a large number of residences as well as commercial facilities, including a hotel. The number of people living in the central district of Fukui is thus predicted to increase in the future.

In addition to the above-mentioned large-scale developments, attempts to improve the charm of the central district have been implemented, including the adoption of a town-planning-like approach that promotes the repair of old buildings. For example, the floor space of wooden buildings over 60 years old accounts for 77% of the total floor space of buildings in a 0.8 ha area adjacent to Shinsakae Shopping Mall near Fukui Station (Fukui City as of 2013). Because the condition of this area is excellent, the implementation of an urban redevelopment project through an exchange of property rights system similar to that used in nearby areas, has been considered many times. However, no large-scale redevelopment project has yet been put into place because the ownership of property rights is extremely complicated. In cooperation with Harada Laboratory at the University of Fukui, Fukui investigated the intentions of property owners in the area in 2013. Based on the investigation results, a social experiment was performed. Consequently, a square called Shinsakae Terrace, in which wooden decks were laid on an outdoor parking lot, was installed. This square has been used for various events, leading to the development of a space in which a variety of people and organizations gather and interact with each other. A survey of visitors performed in 2015 revealed that approximately 90% of visitors felt that "the impression of the central area has improved for the

better" and the number of vacant stores in the area adjacent to Shinsakae Shopping Mall began to decrease in 2015 (Fukui City, 2018). Despite the presence of many old buildings in this area, we could find several young businesspeople who rented old vacant stores when we visited the site. Although the net migration gain is extremely small according to statistical analyses at present, the number of people from Fukui moving to cities in other prefectures is expected to decrease thanks to the implementation of urban regeneration projects for the central district of Fukui in the form of structural measures such as constructing new buildings, as well as non-structural measures such as renting out old stores.

Hirosaki: As a Case of City Center Residence

Compared to municipalities in the same population category (between 80,000 and 200,000), excluding the three metropolitan areas, the rate of population decline in Hirosaki was higher. The contribution ratio of the net migration loss to the population decline was also higher than the average. Compared to municipalities in three prefectures in the northern part of the Tohoku region on the Sea of Japan side of the country (Aomori, Akita, and Yamagata Prefectures), the rate of population decline of Hirosaki was the lowest, and the contribution ratio of the net migration loss to the population decline was the second-lowest, barely surpassed by Sakata. It is worth noting that the rate of population decline in Aomori was higher than that in Hirosaki and the contribution ratio of net migration loss to the population decline of Aomori was higher than that of Hirosaki. Aomori is the prefectoral capital of Aomori Prefecture, and the population of Aomori (more than 200,000) is much larger than that of Hirosaki. The reasons why the rate of population decline of Hirosaki was lower than that of Aomori are examined below.

As mentioned above, compared to municipalities in the same population category (between 80,000 and 200,000), the population decline rate and contribution ratio of net migration loss of Hirosaki were higher. For this reason, it may not be appropriate to include Hirosaki as a case to be evaluated in this study, yet the population decline rate and the

contribution ratio of the net migration loss in Hirosaki were relatively good for a city in the northern part of the Tohoku region on the Sea of Japan side, where the population decline has generally been quite rapid. Notably, the population decline in Hirosaki was smaller than that in Aomori. The correlation coefficient between the total population of 99 municipalities in three prefectures in the northern part of the Tohoku region on the Sea of Japan side and the population growth rate from 2010 to 2019 was 0.44. This value suggests that the population decline rate increased as the population decreased. However, the population decline rates of Aomori and Hirosaki in the same period were 6.5% and 6.4%, respectively. Furthermore, the net migration losses of Aomori and Hirosaki were 2.9% and 1.8%, respectively. Therefore, Hirosaki showed a greater ability to maintain its population level than Aomori even though the population of Hirosaki is approximately 60% that of Aomori. The reasons for the above-mentioned differences were examined on the assumption that differences in the urban policies between the two cities were involved.

We searched newspaper databases using “Aomori” and “compact city” as keywords and we found the first mention of the “compact city concept” advocated by Seizo Sasaki, the Mayor of Aomori in 1997. According to the article, Mayor Sasaki proposed the compact city concept in his 21st Century Creation Plan (1995), which was the new long-term master plan. This plan states that urban functions should be concentrated in areas surrounding Aomori Station and that the utilization of areas in front of the station is to be set aside for private initiatives. The Auga Building, which is located in front of Aomori Station and was constructed in the First-Class Urban Redevelopment Project and opened in 2001, became a symbol of this plan. The number of visitors temporarily exceeded six million per year, so the Auga Building sprang into fame as a successful case of the compact city concept. However, as reported in a newspaper article on a major portal site by Shouji (2016), Namioka Town was merged into Aomori City, Sasaki was rejected in the mayoral election, and many tenants moved out of the Auga Building. Before January 2018, Aomori City Hall was already using four floors (first to fourth floors) of the Auga Building for its functions, a situation that continues in the present. Therefore, Aomori City Hall took responsibility for the worsening of the management of the Auga Building. Aomori City

Hall and local shopping streets are now looking toward a better future while returning to the concept of “city planning to allow people to live comfortably while considering job creation” (Shouji, 2016). From the perspective of business administration, Aomori has sufficient experience in the plan-do-check-act cycle, also known as the Shewhart Cycle.

Therefore, Aomori can be considered the “pioneer of the compact city.”

When we searched academic papers using “Aomori” and “compact city” as keywords in Japanese, we found a study by Kaido (2001) in J-STAGE, the largest database of academic papers in Japan. This study performed a correlation analysis between population density and accessibility to local community facilities using 49 cities in Japan to investigate the “paradox of the compact city,” which arose in Europe and America. The “paradox” in this case refers to a phenomenon in which negative effects occur in a compact city due to overcrowding and congestion when its population density increases, resulting in a city becoming more inconvenient to navigate and live in as the city becomes more compact. Kaido (2001) concluded that although population density was correlated with market orientation indices such as traffic networks and convenience store availability, it was not correlated with parks and meeting places. Therefore, a location policy for these public facilities was considered important. Along with Kanazawa, Fukui, and Akita, Aomori is considered to be a city of the Hokuriku and Tohoku regions, where dwelling house sizes are large and accessibility to public transportation facilities is considered acceptable. From this viewpoint, Aomori can be understood to be on the way back to embracing a “location policy for public facilities” (Kaido, 2001, p. 426) following its painful experience with the private project surrounding the Auga Building as handled by Aomori.

Hirosaki was the castle town of the Hirosaki Domain, the popular name of which is the Tsugaru Domain. The urban structure of Hirosaki has accepted “historical constraints” as discussed by Yokoo (1987). In 1896, during the second half of the Meiji period, the garrison of an army division that had jurisdiction over the northern part of the Tohoku region was located in Hirosaki. Since then, urbanization has made considerable progress. After World War II, the urban district of Hirosaki expanded, centering on the castle town and garrison. Core urban

facilities, such as schools and hospitals, were built in places that had previously been used for military sites. The city area expanded at this point due to boundary changes. The main population growth spurt had already occurred between 1930 and 1945. The location of military sites is known to have markedly affected the urbanization process at that time (Yokoo, 1987). Along with old towns on the outskirts of the town located in the northwest part of Hirosaki, the educational, medical, and welfare facilities located in the southeast part of Hirosaki are considered to have played a key role in the promotion of urbanization after World War II.

Aomori was established as a port town of the Hirosaki Domain. However, Hirosaki conspicuously exhibits the characteristics of a castle town or political center due to the history described above. In the past, Hirosaki was called Naka Tsugaru (central Tsugaru), Aomori was called Higashi Tsugaru (east Tsugaru), and Kuroishi was called Minami Tsugaru (south Tsugaru). The history of Hirosaki shows that Hirosaki sits at the center of the Tsugaru region, which is why a national university and national medical institution are located in Hirosaki.

When we searched academic papers using "Hirosaki" and "compact city" as keywords, similar to our process for Aomori, the oldest paper found was a study entitled "City Center Residence" published by Kitahara in 2003. Since then, Kitahara has published many studies on city center residences, repeatedly asserting that "the compact city cannot be simply realized by a policy to encourage people to move from detached houses in suburban residential areas to apartment houses in the central district" (Kitahara, 2012, p. 23). Kitahara is the first person to assert that the so-called compact city cannot be simply achieved through redevelopment projects in the central district and the relocation of dwellings from suburban residential areas. The conclusion that "the sustainability of a suburban residential area can only be examined based on the existence of an idea that the area should be mainly managed by its residents, and this examination will result in the realization of a true compact city" is particularly suggestive (p. 23).

One of the characteristics of the Location Normalization Plan of Hirosaki established in 2017 is the placement of a "fresh food store," the area of which is between 1,000 and 10,000 m², in each central district of an

urban function induction area. The idea of a “city center residence” is clearly reflected in this plan. Hirosaki has put forth the idea of a “compact city + public transportation network + smart city.” Therefore, the proposal of the compact city of Hirosaki is not stronger than that of Aomori. However, Hirosaki has developed several facilities that will play a key role in solving the issue of shrinking cities. The Hirosaki City Machinaka Information Center is a symbolic facility and its location at the midpoint between the previous Hirosaki Castle site and the previous garrison of the army division is important. In the urbanization process of Hirosaki, the location of this center has connected these two cores. Hirosaki Station opened in 1927, and Chuo Hirosaki Station opened in 1952 located between these two historical cores that function as the third and fourth urban cores, respectively. Thus, these four cores form a well-balanced urban infrastructure.

As mentioned above, marked differences exist in the urbanization processes of Aomori and Hirosaki, despite similarities in population declines and economic trends between the areas. Regarding countermeasures against shrinking cities and the effects of such measures, Aomori and Hirosaki show markedly different characteristics. These differences may be the reasons for the difference in the net migration loss between the two cities.

PERIPHERAL SMALL TOWNS OF THE CORE CITIES

Onomichi: Migration by DIY Renovation

The rate of population decline in Onomichi was higher (-5.0%) than that of municipalities in the same population category (between 80,000 and 200,000), excluding the three metropolitan areas (-2.3%). However, the contribution ratio of the net migration loss was lower than that of the natural decrease. Therefore, Onomichi has successfully kept people in the city and encouraged new residents to move into the city to a certain extent, although the population has decreased overall.

Onomichi faces the Seto Inland Sea, and its population is slightly less than 140,000. In the Edo period, because goods-carrying merchant ships stopped at a port in Onomichi, it was the most prosperous city with a commercial port in the Seto Inland Sea. From the 1980s to the 1990s, many movies were set in Onomichi, and the city became associated with several famous writers. Onomichi attracted the attention of many tourists as a city with ties to movies and literature. Recently, Onomichi has become known as a city with many hills and sloping landscapes, and consequently many cyclists have visited the Setouchi Shimanami-Kaido Expressway. Onomichi has thus become a major tourist destination in Hiroshima Prefecture. However, the population of Onomichi has shown a decreasing trend, with the population of the previous Onomichi area before its merger continuously decreasing after its peak in 1975.

In the nine-year study period (2010–2019), although the natural decrease was approximately 7%, the net migration loss was only approximately 1%. In 2016, Onomichi experienced a net migration gain, although it only amounted to 39 people. The net migration loss has continued, but the contribution ratio of the net migration loss has remained low. According to the 2015 census, the number of intra-prefectural migrants into Onomichi was smaller than that out of Onomichi by 964 (a net migration loss). However, the number of inter-prefectural migrants from other prefectures was larger than that of other prefectures by 232 (a net migration gain). In Fukuyama, which is adjacent to Onomichi, with a population of 465,000, the number of intra-prefectural migrants into Fukuyama was larger than that out of Fukuyama by 1195 (a net migration gain). However, the number of inter-prefectural migrants from other prefectures was smaller than that of other prefectures by 904 (a net migration loss). Thus, Onomichi contrasts markedly with Fukuyama. In the micro-level inter-regional competition, the number of intra-prefectural migrants of Onomichi (-964) was much worse than those of Fukuyama (-623), Hiroshima (-295), Higashihiroshima (51), and Mihara (30). However, according to the macro-level inter-regional competition from the perspective of population change, Onomichi's performance is acceptable. In particular, the difference between the number of inter-prefectural migrants from the three metropolitan areas and the number of inter-prefectural migrants to these areas was +109 in 2010 and +114 in 2015. Therefore,

unique population movements can be observed in Onomichi. The difference between the number of inter-prefectural migrants from areas aside from the three metropolitan areas and the number of inter-prefectural migrants to these areas was +311 in 2010 and +118 in 2015.

Regarding the reason for Onomichi's unique population movements, town planning that utilizes its unusual historical and geographical characteristics can be cited, in addition to its above-mentioned strong competitiveness as a tourist destination. Onomichi is located on the graded land of the Onomichi Three Mountains. At present, this graded land, known as Yamate, is a tourist spot where only temples and shrines existed in the past. From the late Meiji period to the early Showa period (1926–1989), business tycoons began to build villas called saen ("tea garden" in English). Since then, various types of buildings of different ages, including Western-style buildings, Japanese-style inns, and tenement houses, have been built in this area. As a result, a unique landscape peculiar to the graded land has emerged. Because Onomichi avoided strategic bombing during World War II, many 40- to 100-year-old buildings still exist in Onomichi. However, because many old buildings do not satisfy the legal obligations of road abutment, these buildings cannot be rebuilt. Because of the graded land, vehicles cannot enter this area. As a result, the renovation cost in this area is approximately three times that of flat land. Therefore, many buildings have been abandoned and left vacant. Neither the owners of these buildings nor Onomichi City Hall can do anything about this.

Recently, a non-profit organization (NPO) called the Onomichi Akiya Saisei Project (the Onomichi Vacant House Renovation Project, known as Aki-P) has engaged in active operations centering on this Yamate area. Aki-P began to renovate vacant houses in the Yamate area and approximately 20 vacant houses have now been renovated. In 2009, Onomichi entrusted Aki-P with a vacant house bank. In the eight years that followed, the bank matched approximately 80 vacant houses with new users. Consequently, the number of migrants in the Yamate area has increased. Furthermore, bakeries, cafes, and pottery forges have been opened. As a result, the Yamate area has become more attractive than ever before not only for residents, but also for tourists. Many immigrants are married couples in their 20s and 30s. Young people have

migrated into the Yamate area, where the aging of the population has progressed, vacant old buildings have been repaired, and consequently, a new community has been created.

The renovation costs for vacant houses in the Yamate area are extremely high if contractors renovate these houses, as these houses are located on graded land that hampers vehicle access. However, many people have migrated to the Yamate area because they can live in individualistic and historical houses at extremely low costs, and they can perform repairs on these houses while renting them. Therefore, the majority of these immigrants renovate vacant houses by themselves (through do it yourself [DIY] renovation). Aki-P also supports these migrants. People who have already migrated and young people working at local drinking spots voluntarily help carry out household goods and garbage left in vacant houses, carry in renovation materials, and invite new migrants to move into the Yamate area. Aki-P supports migrants in various ways. For example, it holds events, such as workshops, in which migrants can learn professional skills from craftsmen, and flea markets in which household goods left in vacant house are sold. Aki-P also provides grants for repairing old houses in Onomichi to migrants.

The vacant house bank became more convenient after Aki-P took over its operation because it is open even on weekends. However, to obtain information on registered vacant houses, people must physically visit Onomichi. In many vacant house banks in other municipalities, anyone can obtain information on registered vacant houses through the internet. However, through Aki-P, the vacant house bank only introduces registered vacant houses to people who can patiently search their favorite vacant houses by themselves. Such patience is indispensable for people intending to live in Onomichi, with its many slopes and alleys. The DIY method of renovating vacant houses takes a lot of time and effort as well. Living in a place with many slopes is inconvenient, necessitating quite a bit of patience and an ability to enjoy such challenges. Aki-P provides a framework in which people can patiently perform DIY renovations while enjoying the challenge of life in an otherwise inconvenient location with the support of neighbors.

The majority of areas in which the population is declining are inconvenient places to live. To revitalize an area with a population decline, people who can acclimatize their lives to the unique conditions of the area or who truly *want* to live in the area should be selected, instead of a policy which accepts all comers. Aki-P has created a framework to encourage and support the lives of people who can adapt their lives to the unique conditions of Onomichi to immigrate.

Nagato: Master Plan with Private Sectors

The rate of population decline of Nagato was slightly higher (-5.0%) than that of municipalities in the same population category (between 10,000 and 50,000) (-4.9%). However, the contribution ratio of the net migration loss was lower than that of the natural decrease. Therefore, Nagato has successfully kept people in the city and encouraged people to move into the city from outside to a certain extent even though the population has decreased overall.

Nagato is located in the northern part of Yamaguchi Prefecture facing the Sea of Japan, and its population was 32,700 as of January 2020. Because Nagato lies outside of basic national traffic networks, no manufacturing industry has developed in the area. Even now, the fishing, agricultural, and stock-raising industries, their associated food processing industry, and the tourist industry are the main industries in Nagato. The population of Nagato reached its peak in 1955 (66,112) and has since continuously decreased.

Amid this state of gradual decline, Kuro Ohnishi, the former Mayor of Nagato, took office as mayor in 2011. Once instated, Ohnishi enacted a policy to increase the number of visitors, which he hoped would create jobs and stem the outflow of young people. Since then, Nagato has pursued a concept of town development that makes use of Nagato's advantages. In 2018, the road station "Senzakitchen" was opened (The words Senzaki Port and Kitchen are combined). This road station provides fresh fish and shellfish that have been harvested at Senzaki Port as well as barbecued chicken, a local specialty. This road station has successfully attracted tourists, the number of which has been larger than predicted. Furthermore, Nagato attempted to revitalize Nagato

Yumoto Onsen, a hot springs resort in Yamaguchi Prefecture located in the southern part of Nagato. Nagato Yumoto Onsen is a time-honored hot springs resort that opened in the Muromachi period (1336–1568). In 1983, 390,000 people visited the resort. However, the number of visitors decreased to 180,000 in 2014, less than half of that at its peak. In the same year, Shirokiya Grand Hotel became bankrupt despite boasting 150 years of history and being dubbed the “hot spring of the Lord of the Mori Domain.” The massive site of the abandoned hotel provided a powerful image of decline in the form of a deteriorated hot springs resort.

In an effort to improve this situation, Ohnishi decided to purchase the land and the hotel and to dismantle the building at public expense. Ohnishi then invited Hoshino Resort, Inc., to renovate the hotel facilities. In response to the invitation, Hoshino Resort proposed a master plan through which the future of the entire area, including the hotel site, could be shared by all parties concerned; this master plan was indispensable for future organization and investment. After the renovation process began, Nagato developed this master plan together with Hoshino, which proposed the plan while the administration carried out public investment based on the plan. This was an unprecedented project. Ohnishi, the Mayor of Nagato at that time, might have had a sense of crisis about the situation of Nagato Yumoto Onsen. His sense of crisis resulted in the subtitle of the master plan: “paying attention to existing resources, and local resources led Nagato Yumoto Onsen to be revitalized (renovation of the hot-spring resort by local treasures and powers)”(Nagato City, 2016, p.9). All of the parties concerned commonly understood that “this tourism town must be revitalized without compromise (Matsuoka, H., interview, March 9, 2020).” Under these circumstances, Hoshino Resort decided to invest in the unused space generated by the bankruptcy of the hotel.

In addition to creating the master plan, Nagato formed a team to promote the master plan, composed of qualified local individuals like proprietors, experts, and administrative officers. Thus, the master plan was promoted in the form of a private initiative. The promotion team commonly understood that “in the age of population decline and financial difficulties, town activation led by administrative investment

without the involvement of the private sector, as in the age of economic growth, will fail, and the next generation will inherit debts" (Matsuoka, H., interview, March 9, 2020). This means that rather than seeing the revitalization efforts for Nagato Yumoto Onsen led by the local government and uninvolved citizens, local well-wishers should participate in the project as a "private business entity with a strong will to bear risks." Due to the promotion team's enthusiastic appeal, the previously public-operated bath was privatized. Ohnishi's approach produced a positive result. In 2018, the number of tourists visiting Nagato reached a record high. On March 12, 2020, KAI Nagato, a new hotel was opened by Hoshino Resort on the site of the previous Shirokiya Grand Hotel, and on March 18 of the same year, Onto—a public bath reconstructed by local young businesspeople—was opened. Due to the COVID-19 pandemic, KAI Nagato and Onto failed to make brilliant debuts. However, because all the parties concerned carried out their responsibilities with conviction, the local hot springs resort industry has gotten back on a path toward revitalization even while the population has continuously decreased and many businesses have disappeared.

Regarding the population decline in Nagato over this nine year period (2010–2019), the natural decrease was 11%, and the net migration loss was 3%. However, the number of people counted in the net migration loss has tended to decrease over the past five years. At the time of graduating from junior and senior high schools, some students want to leave Nagato to receive a good education. Therefore, during the graduation season, the number of people moving out is larger than that of people moving in. However, the number of people 25–29 and 30–34 years old moving in was larger than that of people moving out. This tendency has continued in recent years. Therefore, although some students move out of Nagato for better education opportunities, there are still young people who want to live in Nagato. When the results of the above-mentioned policy in Nagato are fully realized, the net migration loss will be reduced further.

Kamiyama: Promotion of Satellite Offices

The rate of population decline in Kamiyama was much higher (-13.2%) than the average among municipalities in the same population category (below 10,000) (-7.8%). However, the contribution ratio of the net migration loss was lower than that of the natural decrease. The main reason for the population decline in Kamiyama was the natural decrease. Although the net migration loss is larger than the net migration gain, the difference has been kept small.

Kamiyama in Tokushima Prefecture is a small town with a population of slightly more than 5,100. It is surrounded by mountains and filled with lush greenery but is only 30-40 minutes away from Tokushima City and one hour away from Tokushima Airport by car. Thus, Kamiyama is located in a convenient place.

The population of Kamiyama exceeded 20,000 in 1955. However, the population has continuously decreased year over year, rendering Kamiyama a so-called “depopulated town.” Recently, Kamiyama has been receiving attention as a successful example of regional revitalization due to a minor influx of migrants. Although the number of people counted as part of the net migration gain was 27 in 2011, persistent net migration loss has been observed since 2010, except for in 2011. However, more than 100 people have moved into Kamiyama every year, and young people in their 20s and 30s have accounted for approximately 50% of these new residents (51% in five-year period from 2013 to 2017). Approximately 100 people have moved into Kamiyama, with a population of around 5,000, and roughly 50% of the migrants are in their 20s and 30s. In addition, some 15 information technology (IT), design, and film-related companies have satellite offices located in the town, so Kamiyama cannot be said to be a depopulated town anymore in spite of the significant decrease of population after 1955.

Kamiyama was an exemplary depopulated town in the past, but in 1991, an International Exchange Committee was founded in the town after an old American blue-eyed doll of the type given to Japan to symbolize Japan-U.S. Friendship before World War II was found in the town. This Committee resulted in the establishment of an NPO called Green Valley.

Green Valley has mainly been engaged in actions called Kamiyama projects, which invite people and companies to Kamiyama from outside. Green Valley considers that Kamiyama should aim at “creative depopulation” to change the outcome of depopulation instead of seeking a population increase. In other words, they suggest that Kamiyama should invite young people and creative human resources from outside, restore population composition, and raise the value of Kamiyama as a business area where various ways of working are possible. Consequently, Kamiyama could become a well-balanced and sustainable area without relying only on agriculture and forestry.

An artist-in-residence program that started in 1999 was the first project in Kamiyama to invite migrants. By providing accommodations and ateliers as paid services for domestic and foreign artists, the town encouraged artists to live there. Subsequently, three projects in Kamiyama launched. In the work-in-residence program, bistros, cafes, bakeries, pizzerias, shoe shops, delicatessens, and guest houses have been opened in vacant houses on shopping streets in recent years. The difference in utilization between the above-mentioned vacant houses and those located in ordinary shopping districts is that the work-in-residence program does not simply provide vacant houses for those who want to buy houses, but appoints and invites workers and entrepreneurs necessary for the future of the town. Thus, this program helps design the town. A project related to satellite offices has emphasized the extension of invitations to IT, design, and film related companies, which do not need to be picky when selecting worksites. This project has facilitated the renovation of old private houses to provide an attractive workplace environment accompanied by an older appearance and a modern interior space for young people. As part of a project of the Ministry of Health, Labor and Welfare, the Kamiyama School was opened to provide supporting training for job seekers for six months. Approximately 50% of trainees who finished the program have since immigrated into the Kamiyama Town.

As mentioned above, when artists, entrepreneurs, creators working in satellite offices, and persons who manage shops in Kamiyama migrated into Kamiyama, a new influx of people was generated and new services were created. When restaurants use agricultural products from local

farmers, the economic benefits circulate within a specific area. This is Kamiyama's regional revitalization strategy. At present, Kamiyama is planning to open a technical college using the creative human resources in the town. Therefore, a further new influx of people is expected to be generated.

Kamiyama's efforts to invite creative human resources into the town are considered to be based on a cultural tradition of accepting the arrival of new people from outside the town, excellent accessibility from Tokushima Airport and Tokushima City, and the execution of projects by an NPO instead of the local administration. It took 13 years from a doll being sent back to the United States in 1991 to the establishment of the NPO. The people engaged in this activity shared their successful experiences little by little and expanded their fields of activity during this period of 13 years. Administrative projects must typically achieve a certain result within a short period of time, so successful experiences cannot be accumulated. If a project is performed by a private organization, however, the project can be continued for a long time. This is the reason for Kamiyama's success. Kamiyama established standards for human resources and for what stores would be invited to put down roots in the town, instead of accepting all comers, and designed the town based on these standards. As a result, Kamiyama has attracted creative human resources for a long period of time.

CONCLUSION

Given that policies for helping municipalities often aim to help cope with population decline, this study focused on attempts that successfully reduced the contribution ratio of the net migration loss instead of the natural decrease by presenting the results of on-site investigations of six large and small municipalities. The natural decrease is difficult to eliminate within a short period of time. The above-mentioned municipalities were considered to have succeeded in their attempts to mitigate the population decline. While there were some municipalities whose policy results could not be extracted from rough statistical data, by analyzing the statistical figures in detail, the results of the policies could be clearly demonstrated.

When Kanazawa's trend changed from a natural increase to a natural decrease, its net migration trend changed from a loss to a gain. As a result, Kanazawa's population successfully increased. While making full use of the opening of Kanazawa Station on the Hokuriku Shinkansen line, Kanazawa continues to cope with issues of gentrification and the conservation of traditional town houses, which require subtle solutions. By implementing urban regeneration projects through structural as well as non-structural measures and reducing the number of people counted as the net migration loss, Fukui has eased the damage of population decline caused by the natural decrease. Although the population of Aomori is larger than that of Hirosaki, the contribution ratio of the net migration loss of Aomori is larger than that of Hirosaki, probably because the idea of a "city center residence," which is a bottom-up approach instead of a top-down approach, functions effectively.

Regarding Onomichi, although the number of people constituting the net migration loss is not very small, the number of intra-prefectural migrants was negative and the number of inter-prefectural migrants was positive. Thus, unique population dynamics were observed. This is considered to be the result of the NPO Onomichi Akiya Saisei Project functioning effectively. Regarding Nagato, the number of people counted as part of the net migration loss has decreased in recent years while the number of people between 25 and 34 years old who moved into Nagato has been larger than that who moved out of Nagato. This is thought to be due to the success of the drastic regional revitalization policy. By establishing the artist-in-residence program and renting satellite offices, Kamiyama has successfully brought in more than 100 young people every year, more than half of whom are in their 20s and 30s.

By analyzing the demographics of the six above-mentioned municipalities in detail, it was revealed that a population decline, which damages the sustainability of a region, can be avoided or eased by adopting policies that make full use of regional characteristics and pay attention to the net migration loss. For example, see young migrants compensated for the net migration loss in Nagato and inter-prefectural in-flow compensated for intra-prefectural out-flow in Onomichi. In this context, this chapter can conclude that the private sectors' initiatives and bottom-up approaches are common values for avoiding rapid

population decline in these shrinking cities. The process based on bottom-up and private initiatives may be a kind of prescription for providing public value.

Table 4.2: Summary

Municipalities	Population (2019)	Policy characteristics	Comparison of cities in the same population category	Characteristics of the net migration gain or loss
Hirosaki City	284,531	The idea of a “city center residence,” which is a bottom-up approach instead of a top-down approach. Differences in the historical urban policy between Hirosaki and Aomori.	Although the population decline rate and the contribution ratio of the net migration loss were higher than the averages, Hirosaki has done relatively well for a city in the northern part of the Tohoku region on the Sea of Japan side.	Although the rate of population decline in Hirosaki was similar to that of Aomori, the contribution ratio of the net migration loss of Hirosaki was lower than that of Aomori.
Kanazawa City	453,654	Conservation of historical town houses and attempts to cope with gentrification following the opening of Kanazawa Station on the Hokuriku Shinkansen line.	The population of Kanazawa has increased.	In 2008, the net migration loss changed to a net migration gain and the net migration gain sufficiently compensated for the natural decrease, which tended to increase.
Fukui City	264,356	Urban regeneration projects in the	The rate of population decline in Fukui	The net migration gain compensated for the gentle

Municipalities	Population (2019)	Policy characteristics	Comparison of cities in the same population category	Characteristics of the net migration gain or loss
		form of structural as well as non-structural measures.	is similar to the national average but better than that in Aomori, Akita, and Nagaoka, which are located on the Sea of Japan side.	natural decrease, so the population decline was eased.
Onomichi City	137,643	Attractive town development through bottom-up-type countermeasures against vacant houses.	Although the population decline rate was higher than the national average, the net migration loss was small.	The number of intra-prefectural migrants was negative, but the number of inter-prefectural migrants was positive.
Nagato City	34,305	Drastic regional revitalization policy through public and private cooperation, such as the entrustment of a private company with the creation of a master plan.	Although the population decline rate was higher than the national average, the net migration loss was small.	Recently, although the contribution ratio of the net migration loss has tended to decrease, and the population has continuously decreased, Nagato has successfully kept people in the city and encouraged people to move into the city from outside to a certain extent.
Kamiyama Town	5,319	Adoption of a policy to proactively invite people from outside.	Although the population decline rate was higher than the national average, the net	More than 100 people have moved into Kamiyama every year, and young people in their 20s and 30s

Municipalities	Population (2019)	Policy characteristics	Comparison of cities in the same population category	Characteristics of the net migration gain or loss
			migration loss was small.	account for approximately 50% of this.

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The Ecological City: With a Specific Focus on Participatory Biological Conservation

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THE MEANING OF BIODIVERSITY CONSERVATION IN AND AROUND CITIES

In order to ensure the continued well-being and longevity of human life on Earth, it is imperative and critical that the environmental issues that the world faces today be resolved. International societies have formulated and declared common goals for people to work toward to promote the creation of a sustainable society. A notable example of such goals is the Sustainable Development Goals (SDGs) announced by the

United Nations General Assembly in 2015. The importance of conserving biodiversity is mentioned in several of the SDGs, such as Goal 14 (“Conserve and sustainably use the oceans, seas and marine resources for sustainable development”) and Goal 15 (“Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”) (United Nations 2021).

Researchers caution that planet Earth currently faces its sixth mass extinction period, as they estimate that an average of 40,000 species disappear every year (Miller & Spoolman, 2016). The difference between the current phase of mass extinction and the previous ones (including the one that occurred 65 million years ago when dinosaurs went extinct), is that the current extinction is caused by one species, human beings. Wildlife habitats have been destroyed by environmental degradation, and their populations have declined due to overexploitation by humans. Biodiversity provides various indispensable services to humans, which can be categorized into those with direct value (e.g., the use of nature's bounty for food, fuel, and medicines) and indirect value (e.g., recreational and educational). Biodiversity also plays an important role in providing ecosystem services such as climate control and nutrient cycling, and the loss of biodiversity directly threatens the sustainability of human beings' lifestyles (Primack & Kobori, 2008).

Biodiversity is not only found in remote forests or wildernesses far from cities, but also exists and flourishes in and around cities. In fact, numerous species live in and around cities and other human settlements worldwide (Oke et al., 2021). For example, a study conducted in home gardens in England revealed that more than 8,000 insect species thrive within them, accounting for about a third of all insect species in the country (Owen, 2010). Studies in Japan revealed that many wildlife species (except the endangered and threatened ones) have habitats in Satoyama (Sato means village and Yama means mountains in Japanese) and in areas in and around human settlements, including paddy and agricultural fields, streams, and village forests (Ministry of the Environment, 2001). As recognized in international societies and conferences—such as the tenth meeting of the Conference of the Parties (COP10)—cities play an important role in restoring and

conserving nature and contribute to the conservation of global biodiversity (Oke et al., 2021). It is for this reason that conserving biodiversity in and around cities and restoring natural expanses in residential areas have become an integral part of the process for mitigating the global biodiversity crisis confronting us today.

Ecological cities are broadly meant to promote the sustainable development of urban space (Chen et al., 2020), which entails various approaches from monitoring soil and water quality, to building green roofs, to optimizing transport structures in cities (Van et al., 2019; Oke et al., 2021). In this chapter, biodiversity conservation is used as a case study to understand how the creation of ecological cities might be achieved through a participatory process.

CASE STUDY FOR CONSERVING AND RESTORING BIODIVERSITY IN RESIDENTIAL AREAS

Protecting nature in residential areas and restoring greenery in cities not only conserves biodiversity but also positively impacts people's quality of life. Having greenery around their houses positively impacts the psychological health and well-being of residents (Campbell and Wiesen, 2009; Tan et al., 2017), and losing the cover of vegetation decreases their overall life satisfaction (Youngentob and Hostetler, 2005). In addition, creating greenery or protecting nature can enhance the participatory skills and governance of the people involved if it is conducted through a bottom-up and participatory process (Hill, 2008). Under these premises, there have been various participatory nature restoration or conservation programs implemented in and around cities worldwide.

One such project, in which the author was involved, was a participatory greening project implemented in Ushikubo Nishi District of Tsuzuki Ward in Yokohama City, Japan. Located about 30 km west of the Tokyo metropolitan area, Yokohama City is the second most populous city in the country with around 3.7 million residents (City of Yokohama, 2014). Due to the rapid development of the city in the 1950s and an increase in population, the city lost large expanses of its natural areas (Yokohama

Environmental Planning Bureau, 2013). To conserve and restore greenery, the city prepared and implemented a Green Community Development Project in which revenues from a “green tax” (taxes paid by city residents to conserve nature) were utilized. Through this project, the city facilitates community-based management and encourages residents to take the initiative to conserve and restore greenery in their neighborhoods by providing 90% of the necessary funding while the remaining 10% is paid by the districts. Ushikubo Nishi District, with 4,354 residents in 1,559 households, was used for this project and was designated one of 14 model districts in 2012; it received funding from Yokohama City for five years.

Restoring greenery and managing nature in and around residential areas cannot be done sustainably or effectively if the residents do not support or participate in such projects (Krasny et al., 2014). If the residents do not understand or appreciate the value of nature in their residential areas, they could be instrumental in its destruction in the process of the city’s further development; moreover, it is difficult for outsiders (e.g., other city residents, government officials, and researchers) to continually visit the area and manage such projects on behalf of the local residents. For these reasons, a community-based project is preferable to a top-down project. There are many examples of projects that fail to receive support and participation from the residents because project managers ignore the interests and motivations of the residents when trying to reach their goals (Hill, 2008).

To understand residents' needs, concerns, and other general perceptions related to greening projects and utilize this information to improve the effectiveness of such programs, the author conducted social studies in Ushikubo Nishi District. The first step of the research was to interview members of the district committee, the “Association of Flowers and Greening.” Ushikubo Nishi District was chosen as the research site since the campus of Tokyo City University is located within the area. Furthermore, this was the only place among 14 model districts where the project was prepared and organized in collaboration with the residents and the university. Therefore, the Association of Flowers and Greening, whose primary role was to design and implement the

greening project, consisted of committees comprised by residents and university faculty and graduate students.

Interviews were conducted with the seven resident committees (out of ten) and three university committees (out of six) who confirmed their ability to participate. The interviews aimed to reveal and evaluate the committees' perceptions and expectations from the project. While the details of the results of this interview are published in Sakurai et al. (2015a), some key findings will be explained here. Regarding their expectations of the project, three resident committees mentioned that they hoped to see "more flowers and greenery" in the district, while two university committees mentioned that they expected residents would "increase their interest toward wildlife" through the project. When asked how to best achieve the goals of the greening project, two resident committees mentioned that "motivation by residents" and "interaction and communication among residents" were important, and one university and two resident committees mentioned that "outreach to residents regarding the project" would be important.

The results of a data mining analysis also revealed differences in the language used by the resident and university committees in the interviews (Table 5.1). Resident committees used words like "flower," "kids," and "beautiful" more often, while university committees used words like "wildlife" and "know" more frequently. The results of these interviews were later shared with committee members, which gave them the opportunity to realize the differences in perception between resident and university committees and address how to overcome such differences and collaborate more effectively (Sakurai et al., 2015a).

Table 5.1: Words frequently Mentioned by Members of "Association of Flowers and Greening" Committee in Ushikubo Nishi District (Source: revised from Sakurai et al., 2015a)

Resident Committee

Ranking	Words	Jaccard	Frequencies	Words appeared per individual
1	Flower	0.073	57	8.1
2	Enter	0.064	48	6.9
3	District	0.055	41	5.9
4	Age	0.046	36	5.1
5	Make	0.043	34	4.9
6	Plant	0.040	31	4.4
7	Kids	0.039	31	4.4
8	Beautiful	0.034	29	4.1
9	Association	0.030	23	3.3
10	New	0.028	21	3.0

University Committee

Ranking	Words	Jaccard	Frequencies	Words appeared per individual
1	Wildlife	0.139	31	10.3
2	Greenery	0.135	42	14.0
3	Think	0.134	46	6.6
4	People	0.128	39	13.0
5	Plan	0.112	25	8.3
6	University	0.109	26	8.7
7	Know	0.102	21	7.0
8	Greening	0.083	20	6.7
9	Many	0.081	16	5.3
10	Have	0.080	16	5.3

Therefore, in order to implement participatory greening projects, citizens' demands and perceptions need to be considered. A survey was conducted among the residents of Ushikubo Nishi District (a total of 810 households registered in the district's residents' association) to

understand what kind of activities were expected or desired by the residents. Two questionnaires were distributed to each household so that two family members could answer them: one who was interested in greening/planting and another who was not. After distribution of the survey in August 2013, 544 questionnaires from 274 households were returned. (The details of the results of this survey are published in Sakurai et al., 2015b and 2016.)

Based on a multiple regression analysis, the results revealed that the strongest factors affecting residents' willingness to participate in "creating community greenery or biotopes" and "planting along streets" were their perceptions of whether the "greening project will enhance social interaction among residents" (Table 5.2). This had a stronger effect on resident motivation than the question of whether residents enjoyed taking care of greenery. Similarly, structural equation modeling was conducted using the same data to determine the factors that affect residents' willingness to participate in greening activities. The results revealed that, in addition to residents' willingness to improve aesthetic beauty by planting flowers and greenery, their level of interaction with neighbors affected their willingness to join in the activities (Fig. 5.1).

Table 5.2: Multiple Regression Analysis with Greening Activities as Dependent Variables and Socio-Demographic and Cognitive Factors as Independent Variables.
[B=standardized coefficient] (Source: Sakurai et al., 2015b)

Creating community gardens or biotopes	B	p	VIF	R2	Adjusted R2
A greening project will enhance social interactions among residents	0.245	0.001	1.351	0.256	0.241
Residents should collaborate in maintaining the natural environment of the district	0.223	0.003	1.527	0.256	0.241
I take care of greenery in a garden and/or around my house	-0.202	0.006	1.434	0.256	0.241

Creating community gardens or biotopes	B	p	VIF	R2	Adjusted R2
I enjoy taking care of greenery	0.258	0.001	1.592	0.256	0.241
Planting along streets					
Planting along streets	B	p	VIF	R2	Adjusted R2
A greening project will enhance social interactions among residents	0.248	<0.001	1.374	0.355	0.336
I enjoy taking care of greenery	0.206	0.004	1.553	0.355	0.336
Taking care of greenery is troublesome	-0.166	0.009	1.226	0.355	0.336
Residents should collaborate in maintaining the natural environment of the district	0.219	0.002	1.534	0.355	0.336
I know the Green Community Development Project	-0.163	0.007	1.115	0.355	0.336
There are plenty of flowers in the district	-0.117	0.044	1.035	0.355	0.336

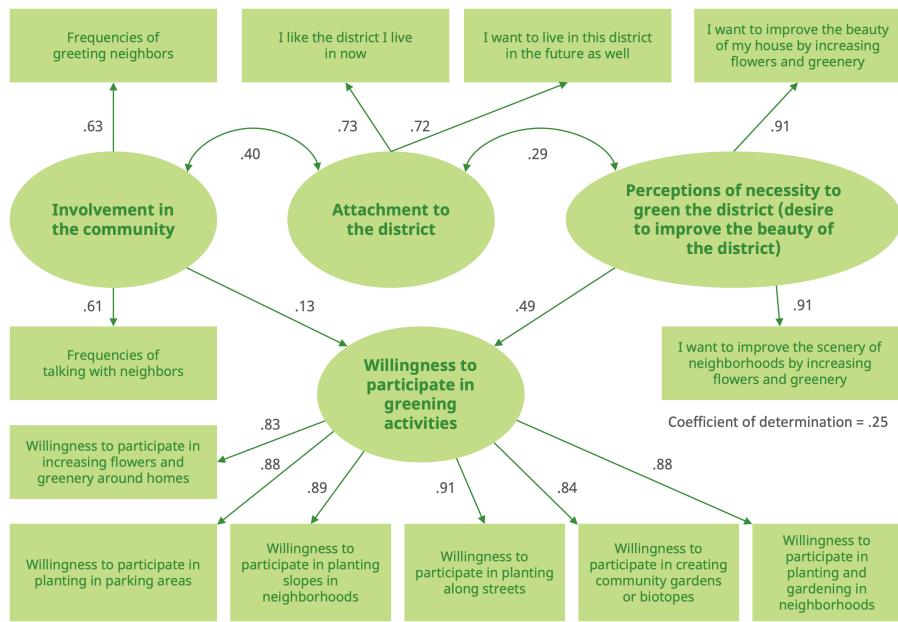


Fig 5.1: Result of structural equation modeling [$n=398$, $\chi^2=189.368$, $p<0.001$, $GFI=0.93$, $AGFI=0.89$, $RMSEA=0.08$; all values are at standardized coefficient ($p<0.01$) Source: revised from Sakurai et al. 2016

These analyses reveal that residents felt that the greening of residential areas was important from the perspective of enhancing community interaction. While increasing greenery and restoring nature in and around human settlements would increase the biodiversity level of the region, residents in Ushikubo Nishi District saw the project as a potentially critical opportunity to implement participatory community development. This implies that it is important for the government, researchers, and stakeholders to consider the social dimensions of creating ecological cities if they are to make such projects effective and sustainable. Since factors such as the relationship between government and researchers, government policies, and residents' perceptions of nature could be different in different countries and cultures, public interest and motivation to participate in such conservation or greening projects should be examined and understood clearly to effectively design outreach and recruit residents to participate in such activities not only in Japan but all over the world. The level of interaction and trust

relationships among residents constitute “social capital,” which is defined as trusting relationships among members of a community and is comprised by social connections and shared social norms (p. 174). Understanding and improving the social capital of the community would be a key factor in enabling sustainable and effective nature conservation/restoration in urban areas.

CITIZEN SCIENCE AND THE CITY NATURE CHALLENGE

This section introduces an international citizen science project called the City Nature Challenge (CNC). Citizen science, defined as the engagement of the public in a scientific project (Dickinson and Bonney, 2012; Kobori et al., 2016), has been recognized as an indispensable approach for fostering nature conservation. Citizen science advances research and science because, with the help of citizens, researchers can obtain international data within a short amount of time; data that are often impossible for most researchers to collect because of limitations in time and manpower. In addition, information on threatened species and their statuses—obtained by citizen science projects—could affect and improve policies and decision-making regarding conservation. Citizen science projects have educational effects as well, since citizens can gain a) skills to identify species and b) knowledge related to the natural environment and species by participating in various activities.

CNC is an international event in which residents observe wildlife species in and around their neighborhoods and submit photos and audio records via a mobile app. The event takes place annually from the end of April to the beginning of May. In the first half of this period, the “Observation Period,” participants submit their observations, and in the second half, the “Identification Period,” experts identify the species submitted by participants. CNC started in 2016 when the Natural History Museum of Los Angeles County and the California Academy of Sciences in San Francisco implemented an event where citizens in those cities came together to observe their surrounding natural environment. Year on year, the number of participants and observation sites increased, and in 2018, more than 17,000 people from 68 cities worldwide participated,

observing 8,600 species in 441,000 observations (CNC 2021). In 2021, 53,000 participants from 419 cities in 44 countries observed 31,000 species (Fig. 5.2).



Fig. 5.2. Citizens Participating in CNC and Observing Wildlife in Tokyo in 2021 Photo taken by the author

Collecting this data creates environmental education opportunities for city dwellers while providing valuable research data to identify the current biodiversity conditions in each city. It also provides the necessary data and incentives through which stakeholders are able to implement conservation and/or restoration projects. Some previous studies showed that participating in such activities not only enhanced participants' understanding and awareness of biodiversity, but also changed their behaviors (e.g., some citizens joined invasive plant removal projects and/or talked to others about invasive species after participating in citizen science activities; Jordan et al., 2011). Furthermore, the spread of COVID-19 had limited effects on restraining people from observing nature because the number of participating people and cities increased even during the pandemic in 2020 and 2021.

CNCs provide opportunities for citizens to not only understand the natural environs of the city, but also to think about how nature can be

conserved near human settlements. Such opportunities also provide citizens with the opportunity to connect with the nature that surrounds them (Oke et al., 2021). The survey of participants in 2021 revealed that people tried to avoid crowds but still went outside to record species (Kishimoto and Kobori, 2020), demonstrating that people remained eager to connect with nature.

While the significance of citizen science projects in terms of enhancing education, conservation, and science has been pointed out by many scholars (Bonney et al., 2015; Kobori et al., 2016). If policy makers hope to implement effective and sustainable projects, it is important to understand what motivates residents to participate in such activities. However, few studies have been conducted to understand participants' perceptions and reactions to these international citizen science events. The author conducted a survey of CNC participants worldwide to reveal their cognitive responses to the activities in 2018. Details of the findings of this survey are published in Sakurai et al., 2022. Among the 361 responses that were received in this survey, 145 respondents had participated in events in the US, 113 in Japan, 34 in the UK, and 28 in Malaysia. Other respondents represented eight other countries, while some others did not specify the countries that they represented.

When asked about what they enjoyed the most, Japanese participants (mostly from Tokyo) mentioned connecting with nature (Fig. 5.3). While nobody in Japan mentioned saving the environment as an enjoyable factor, a fair number of global city participants raised it.

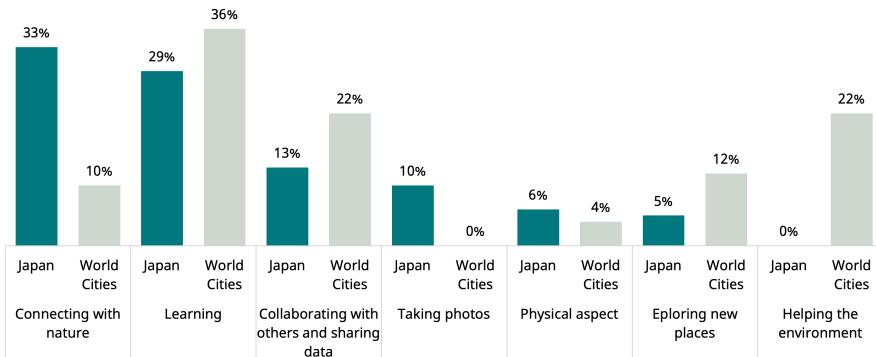


Fig. 5.3. Results of open-ended questions on what the participants enjoyed most in the activities.
(Japan: n=113, World cities: n=239)

A stepwise regression analysis was conducted on American and Japanese responses to understand the factors that affect their intention to participate in similar citizen science activities in the future. The results revealed that in both countries, participants having the chance to learn about wildlife in their local areas affected their willingness to participate in future events ($p<0.05$) (Sakurai et al., 2022). In other words, the more the participants learned about wildlife in their neighborhoods, the more likely they were to join future events in both the US and Japan.

Program managers could incorporate such information when tailoring their messages for participant recruitment and enhance participants' satisfaction during the activities. For example, explaining how such citizen science activities could contribute to conserving the natural environment (e.g., by providing important information on threatened species) before and during the events could raise the participants' satisfaction levels. Managers could also ensure that the participants have enough time to connect with nature (especially in countries like Japan where many people's motivation for participation is to connect with nature) and that they learn about the wildlife in their areas, which could increase future and repeat participation. Citizen science projects would play an important role in creating ecological cities if both nature conservation authorities and the public are involved in such activities.

Sense of Place as a Potential Key Factor in Building Ecologically and Socially Vibrant Cities

This chapter shows how a participatory greening project and a worldwide citizen science project are potentially useful for creating ecological cities. While the goal of both projects is to create ecological cities by effectively conserving and restoring nature in and around cities, both cases reveal how residents value their connection to their surrounding social and natural environments. Such public attachment to a specific place or the way people confer meaning to a certain place is called “sense of place” (Stedman, 2002; Ardoine, 2014). This specific place includes both social and biological spaces, as well as both their social and cultural facets. The sense of a place is established through the actual experience of people being in that area (Krasny, 2020). The most important implication of a sense of place is that the more attachment people feel to the area, the more likely they are to take action to protect and conserve that specific area (Jorgensen & Stedman, 2001; Krasny, 2020).

The first example of participatory greening projects suggests how people’s sense of place, which is determined by how much time they spend in the place and interacting with their neighbors, enhances their willingness to join greening events. The CNC citizen science project increased participants’ connections to their natural environment, and their learning about neighborhood wildlife encouraged them to participate in future events. By developing relationships with the natural environment existing around their neighborhoods, they became more aware of and cautious about such places. These factors seemed to enhance their attachment to places, including both biological and social environments. Studying people’s sense of place in more detail and providing more concrete data on this concept could reveal more about the indissoluble link between the social and the natural environments.

If planners only look at the ecological aspects and concentrate on restoring nature and increasing diversity while ignoring residents’ perceptions and concerns, such projects will not be effective or sustainable. Similarly, we cannot create a sustainable city if we are only

concerned about the social aspects, ignore the species that live around the city, and destroy nature. To create cities that are not only ecologically friendly but also socially vibrant with active interaction both among residents and between residents and their natural surroundings, it is important to understand residents' sense of place and how such place attachments can be nurtured in cities.

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Building an Inclusive City

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INTRODUCTION

Living in a society implies that we are conditioned by various kinds of situational, traditional, and institutional in/out or on/off “relays” that determine our social statuses and relations with other people, groups, and organizations. Such social relays serve both exclusionary and inclusionary purposes. The uses of these mechanisms have evolved over time, with the major transformation taking place in the transition from the customs and hierarchical rules of tribal, agrarian, and imperial societies to the complex institutional matrix of durable institutions in functionally differentiated late modern societies. In this latter context, practically all exclusionary practices have been exposed to ideology critique and moral evaluation. Many activities that used to be seen to reflect a legitimate group-based exclusion are today condemned as prejudicial practices or discrimination. In short, it is widely agreed that developed countries have become more open, inclusive, and democratic

than what they were in pre-modern times (Pinker, 2018). Inclusiveness is, indeed, a critical element of social development, and, as concluded by Estivill (2003), the transition towards an inclusive society has become a prevailing trend throughout the world. That said, developed countries may not be as inclusive as commonly believed. This urges us to take a closer look at exclusion and consider possible opportunities to make improvements in terms of social, political, and economic inclusion.

This article discusses the localization of the inclusion agenda and asks: on what kind of framework should urban communities in the developed world build their inclusion policies? This chapter is based on a realist, domain-specific universalism, which is reflected in an emphasis on common humanity and harmony among people living in an urban community. In addition, this discussion is oriented toward improving people's chances to participate in value creation to benefit themselves as well as the surrounding community, which is an under-researched topic in urban and community research (Murie & Musterd, 2004; Short, 2021) as well as in other branches and subfields of social sciences (Allman, 2013; Mascareño & Carvajal, 2015; Silver, 2015). This implies a shift in concern from social to economic inclusion or, in other words, from entitlement to value creation. Such an approach is expected to catalyze economic inclusion and lead to the improvement of quality of life among all segments and sectors of the community.

REMARKS ON EXCLUSION

Discussion about inclusion can begin with a discussion of *exclusion* because inclusion is supposed to intervene in a social setting in which some unnecessary, unjustified, or immoral exclusionary mechanisms are in place (Anttiroiko & de Jong, 2020). It is necessary to point out that exclusion, despite its negative connotation, has been and still is a natural and even necessary feature of social life. Exclusionary rules or actions define boundaries between "us" and "them" when governing social interaction, determining people's positions in local decision making, controlling borders, proving ownership of a property, organizing family life, and keeping communities safe (Allman, 2013). Let us consider such instances as *identities* based on kinship, marriage or citizenship, *activities*

such as business transaction, military service, or a football game, or *organizations* such as hospital, school, or convenience store, which all exclude and include people in one way or another—based on assent, submission, birth, payment, special requirement, role-playing, and so forth—vis-à-vis the given social spaces, institutions, and activities even in open and democratic societies (e.g., Rawal, 2008; Estivill, 2003; Espino, 2015).

However, there are instances in which exclusion is not based on a legitimate function or tradition but appears to be unnecessary, unfair, harmful, unjustified, or immoral. This is the essence of exclusion that is referred to in the global inclusion agenda. For example, the UN Department of Economic and Social Affairs states that “social exclusion describes a state in which individuals are unable to participate fully in economic, social, political and cultural life, as well as the process leading to and sustaining such a state” (UN DESA, 2016). This statement refers to societal conditions in which some people are unjustly prevented from participating in mainstream society.

Even if both justified forms and subjective views of exclusion relativize the inclusion agenda, it is ultimately based on observations on the existence of the forms of exclusion that reflect sexism, racism, religious discrimination, classism, ageism, discrimination against obese people, or ableism in working life, the subtle acts of unjustified exclusion in everyday life, or complex processes relating to unemployment, attainment gaps, or problems with substance abuse, which eventually exclude people from mainstream society. Even if society *per se* is hardly the sole reason behind individual hardships in an open and democratic society, there is an ethically grounded obligation to develop inclusive structures and practices that are conducive to enhancing quality of life in the population at large.

THE EMERGENCE AND MAINSTREAMING OF THE GLOBAL INCLUSION AGENDA

Social inclusion as it is commonly understood today evolved through small steps during the development of civilizations rooted in the

European cultural heritage and the Enlightenment in particular (Zafirovski, 2011; Pinker, 2018; McCloskey, 2019). While the eighteenth-century Enlightenment itself was rather Eurocentric in many respects and can be seen to reflect white supremacy to a degree (Freter, 2018), it nevertheless enriched the ideas of individual freedom and equality and challenged the conventional justifications for colonialism (see Carey & Festa, 2009; Kohn & Reddy, 2017). Even if nation-building processes of the modern era contained some inherent exclusionary elements, radical shifts pushed development towards inclusion especially after the revolutions of 1848, as evidenced by demands for more citizen participation and greater freedom of the press, the lifting of restrictions on political assembly, the improvements in working conditions and the respect for labor rights, the introduction of national social insurance schemes, and the introduction of women's universal suffrage and their right to stand for election (Anttiroiko & de Jong, 2020).

The first half of the 20th century witnessed a gradual weakening of colonialism, the rise of communism and fascism, and the eruption of two world wars. World War II was a watershed in the ideological landscape, marked by a considerable weakening of conservative ethnocentrism due to its war-related legitimization crises, while at the other side of the ideological spectrum the rise of Soviet-led Eastern Bloc, radical countercultures, social movements, left-wing politics, and the building of the welfare state increased the prominence of collectivist thinking. A left-leaning cultural semi-revolution in the late 1960s evoked a persuasive identity struggle reminiscent of the century-old Marxist idea of class struggle, which legitimized attacks against market economies, institutions, authorities, and belief systems that were the building blocks of modern societies (Anttiroiko, 2019). Such fundamental ideological and structural elements of Western civilization were seen to represent the interests of the white supremacist capitalist elite, and thus to serve inherently exclusionary functions built for safeguarding its material interests. Radical movements directed attention to marginalized people's ability to participate effectively in economic, social, political, and cultural life—this effectively stretched the scope of the concept of exclusion to cover practically any kind of subjective alienation and distance from mainstream society (Duffy, 1995). This view has been

instrumental in the gradual mainstreaming of the progressive inclusion agenda.

Western democracies began to address social and economic exclusion on a larger scale during the 1980s and 1990s. One of the starting points for the institutional promotion of social integration and inclusivity was the World Summit for Social Development held in Copenhagen in 1995. This idea gained significant ideological and institutional support from international organizations, such as the OECD, the IMF, and the World Bank, and regional organizations, the most influential among them being the European Union (Sen, 2000; Rawal, 2008). They contributed to the creation of high-level inclusion agenda, which indirectly affected the integration of inclusion into national and local policy agendas (Estivill, 2003). Similar developments are evident in the mainstreaming of DEI (Diversity, Equity, Inclusion) in the corporate world and in the wide range of inclusion-oriented activities conducted by civil society organizations at different institutional levels.

FROM PARTICULARISM TO HOLISTIC INCLUSION

As mentioned earlier, a critical historical turn took place after the World War II due to the retreat of ethnocentrism and nationalism as a reaction to their association with the absurd violence of the two world wars (cf. Furedi, 2017). The subsequent moral confusion that emerged created a fertile breeding ground for radicalism and progressivism that in the 1960s boosted the wave of movements fighting against drastic injustices and demanding equal opportunity, especially for women, workers, racial minorities, and the poor (Haidt, 2017; Lukianoff & Haidt, 2018).

The turn from the demands for *equality of opportunity* in the 1960s to the *entitlement thinking* of the 1990s and the following decades depicts a dramatic change in identity politics. The radicalized identity politics started to essentialize identity, rendering its relationship with inclusion somewhat problematic (cf. Moran, 2020). Mainstream politics were challenged by two camps of essentialist identity politics in particular, those of *right-wing populism*, which represents ethnocentric, reactionary,

localist, and revanchist responses to global solidarity, “uncontrolled” migration, and a democratic deficit, and *left-wing identitarianism*, which is associated with a heterogenous group of radical, anarchist, and progressive forces with particularistic agendas, while at the same time being united against their arch-enemy, portrayed as a white supremacist heteronormative capitalist patriarchy (on identity politics, see Heyes, 2020; Furedi, 2019).

Various identity groups play a positive role in public policy by pinpointing the forms of exclusion in society based on their experiences and their views of historical, structural, and/or cultural aspects of exclusion (Hornung et al., 2019). However, problems arise when *identity politics* radicalizes and becomes openly divisive, antagonistic, essentialist, and particularistic. Such “common enemy politics” relies as a rule on misconstrued epistemology and social ontology (Furedi, 2019; Flanagan, 2021; McWhorter, 2021; Valdary, 2021; Lukianoff & Haidt, 2018). It attributes *a priori* practically all barriers to need satisfaction as well as all observed socio-economic disparities to structural discrimination, which builds a shaky epistemic ground for inclusion (see, e.g., Sowell, 2019; McWhorter, 2021). On top of this, the salience of identities in politics tend to increase their manipulation for political gains (Bleich & Morgan, 2019). Therefore, understanding the role of identities in local policymaking calls for unbiased, empirically grounded policy research and analysis—and ultimately de-essentialization of identity categories—as the epistemic precondition for a sound policy (on empirical analysis of social exclusion, see e.g. Good Gingrich & Lightman, 2015; Loktjeva, 2016). This is particularly important because inclusion policy hardly ever addresses only disadvantaged groups but involves also other actors in the given asymmetric or discriminatory setting. This highlights the role of *relationality*, which entails, due to its implicit boundary conditions, situational ambiguities, and changing subject positions, that inclusion must be seen ultimately partial by necessity (cf. Dobusch, 2021). The articulation of this through three main categories—identities, disparities, and policies—and four schematic action categories is illustrated in Fig. 6.1.

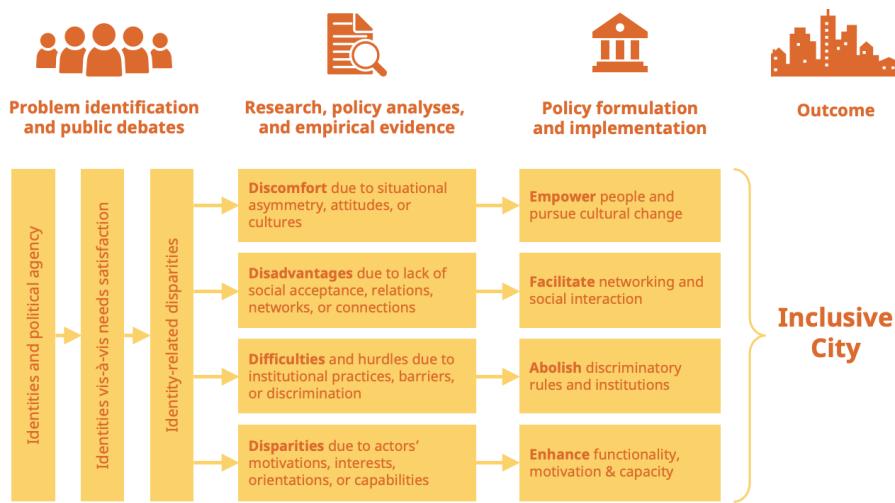


Fig. 6.1. Identity groups and evidence-based inclusion policy.

It is noteworthy that inclusion programs and trainings tend to increase divisiveness and even inject toxicity in workplaces, as claimed by Chloé Valdary (2019), which may be the case with local communities as well. The message to city governments is that they should refrain from becoming handling centers for sectional interests and particularistic policy demands (Anttiroiko & de Jong, 2020). Another problem with essentialist identity positions among separate groups is their tendency to feed a *victim mentality* (Bar-Tal et al., 2009), which in turn fuels antagonism and leads to the articulation of social problems in the way that makes them look unsolvable.

There is a risk that raw emotions overtake politics and, further, that victimhood anchors emotional guidance to resentment and hatred rather than to compassion and forgiveness (cf. Valdary, 2019). Emotional dimensions play a role (especially at an individual level) in laying a moral foundation for an inclusive city—most notably in the context of a multicultural and racially divided society (see Monroe et al., 2000; Taylor, 2006). It has its pitfalls too, however, as pointed out above. Heightened emotion may exacerbate political polarization and even lead to a politics of demonization (see Lukianoff & Haidt, 2018).

A true policy challenge lies in understanding how the problems identified with exclusion should be articulated and addressed at the institutional level within the local policymaking process. At this level, local government should show *place-based leadership* as a balancing and unifying force that acknowledges equivocality, democratic dialogue, a search for common ground, the importance of a shared common vision, and strategic actions that reflect the compassionate “common humanity politics” (cf. Hambleton, 2015; Anttiroiko & de Jong, 2020; Lukianoff & Haidt, 2018). Open and democratic local institutions contribute to the *local political culture of inclusion*, which is a critical piece of the puzzle, as variations in local political culture explain to some extent the differences in the patterns of relationships between identity variables and political outcomes (Deleon & Naff, 2004).

A FRAMEWORK FOR URBAN INCLUSION

Pathological forms of exclusion have historical precedents in dynastic elitism, caste systems, apartheid systems, and legal discrimination against ethnic minorities. Such cases represent the systemic and institutional exclusion of certain groups from the mainstream society. Modern Western societies have abolished such systems altogether, even though some existing disparities can be assumed to persist as a reflection of the injustices and discriminatory practices of the past. Developed countries enacted laws during the post-war decades to make discrimination illegal, which is a significant step forward. Moreover, many public and private institutions have included inclusion in their operational principles, values, or brand attributes. Consequently, in advanced democratic societies the major problem is not large-scale discriminatory behavior as such but the culture that may underpin some subtle exclusionary elements or produce cognitive biases that lead to the underutilization of people’s capacities. The message to local governments is clear: they should put structures in place to support, enable, integrate, and empower those who are not able to participate fully in mainstream society.

Hilary Silver (2015, pp. 2-3) emphasizes that social inclusion has two sides: inclusion in *social interaction* and inclusion in *institutional*

environments that open access to participation in various spheres of social life. According to her, social inclusion is “a multi-dimensional, relational process of increasing opportunities for social participation, enhancing capabilities to fulfill normatively prescribed social roles, broadening social ties of respect and recognition, and at the collective level, enhancing social bonds, cohesion, integration, or solidarity.” The UN Department of Economic and Social Affairs emphasizes similar elements in its definition, even if its emphasis is explicitly on participation of disadvantaged groups: “social inclusion is defined as the process of improving the terms of participation in society for people who are disadvantaged on the basis of age, sex, disability, race, ethnicity, origin, religion, or economic or other status, through enhanced opportunities, access to resources, voice and respect for rights.” (UN DESA, 2016).

Inclusion is in essence an intervention into an extremely complex societal setting comprised by interrelated factors. The building of an inclusive city is a holistic endeavor that cannot be managed by the city government alone. A move towards an inclusive city is possible only if the institutional stakeholders and community members in different roles internalize the idea of inclusion and practice it in their everyday lives. This means that actions should be taken to implement inclusivity in underlying cultures, social structures, and institutional practices. It is important to seek common denominators of inclusion, which are the building blocks of the vision of the city, inclusive policy design, and inclusion-oriented local leadership (e.g., Hambleton, 2015). If the political leaders and public managers adopt an inclusive, empowering, and democratic *leadership style*, it promotes inclusion throughout the municipal organization and extends an influence through numerous actors and various channels into the local community, eventually reshaping *local culture*.

A precondition for successful holistic interventions is to approach inclusion as a *multi-layered phenomenon*. Regarding physically disadvantaged groups, Schleien et al. (2003, p. 8) state that the concept of inclusion may be best viewed as a continuum that includes three levels of acceptance:

1. *Physical integration*. At this level an individual's right to access is recognized.
2. *Functional inclusion*. This refers to an individual's ability to function successfully within a given environment.
3. *Social inclusion*. This refers to person's ability to gain social acceptance and/or participate in positive interactions with friends and peers during recreation, hobbies, and other leisure activities.

In the case of marginalized identity groups, measures designed for them may include the following categories of policy intervention: (a) anti-oppression psychotherapy and counselling; (b) improving motivation, awareness, self-esteem, and opportunity enhancement; (c) capacity-building and the provision of support services to create preconditions for functional capacity and individual or collective performance; (d) incentivization and nudging that fosters inclusive mindsets and behavior changes; (e) barrier removal and institutional finetuning to guarantee equal access, fairness, and equality of opportunity across the institutional landscape; (f) group-specific inclusion programs or affirmative actions designed under carefully scrutinized case-specific conditions; and (g) supporting participation in value-creation processes and entrepreneurship (cf. Anttiroiko & de Jong, 2020).

The key elements of inclusive city policymaking are illustrated in Fig. 6.2.

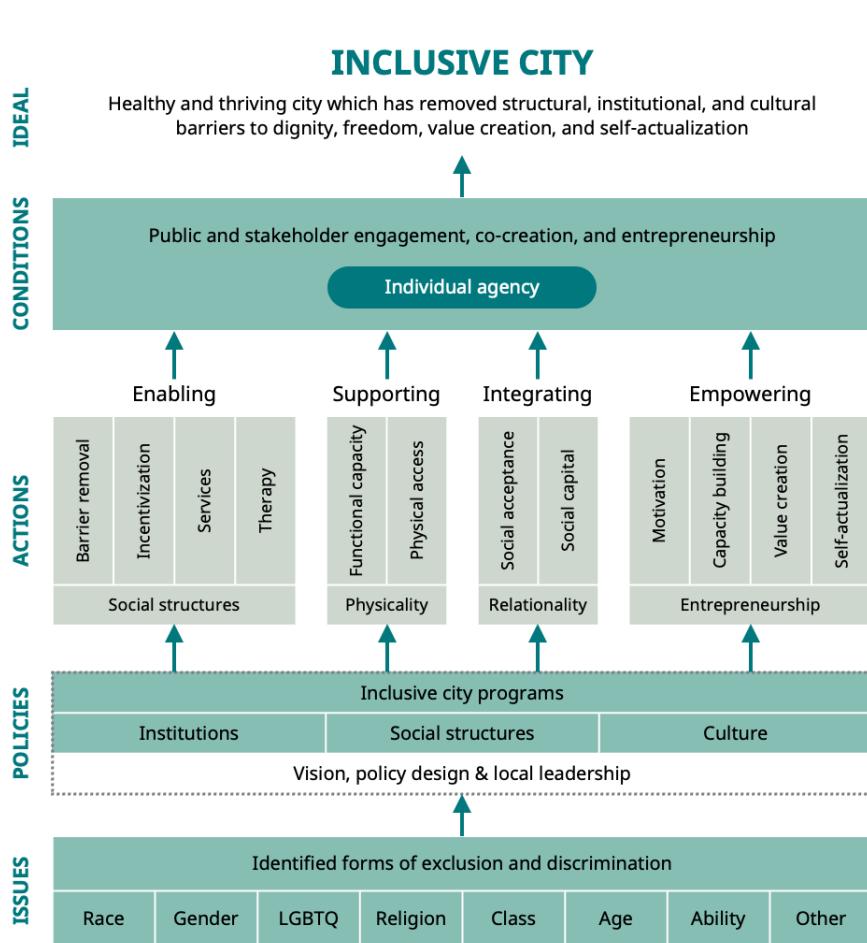


Fig. 6.2. Key elements of inclusive city policy. Modified from Anttiroiko & de Jong, 2020, p. 67

PROMOTING VALUE CREATION THROUGH INCLUSION

One of the aims of this chapter is to highlight the need to focus on economic integration, which may facilitate holistic inclusion in a more constructive way than what we might call the “victim-centered” and “rights-based” approaches. While a *victim-centered approach* is a must in traumatic and criminal processes, and *rights-based approach* has its place in addressing grave human rights violations, they are not

conducive when coaching people in strengthening their human capacity, contributing to co-creation within a local association, becoming a member of local cooperative, or starting a small business. Such processes require a *value creation approach*, which in a democratic society urges us to redirect attention from human rights to people's ability to use their competencies and resources to generate something of value that is sold to a customer base, offered as publicly subsidized service, or provided for free to those in need. It is an effective way of integrating people into society through a simultaneous promotion of awareness, identity-building, capacity-building, relational capital, empowerment, and material reward. Following this logic, the classic models and typologies of citizen participation can be changed into a model of value creation, as illustrated in Fig. 6.3.

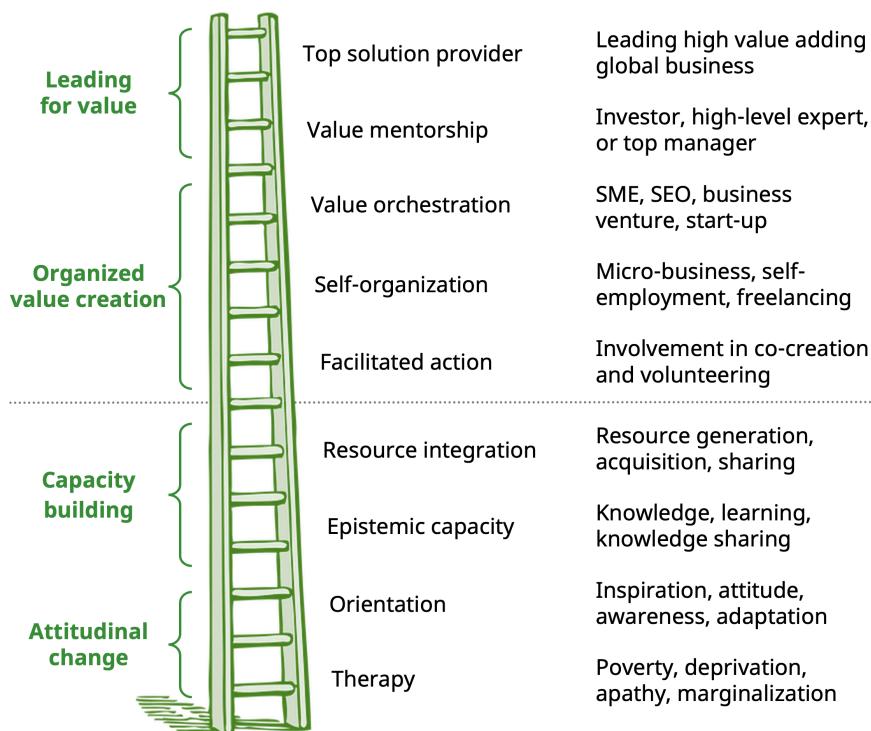


Fig. 6.3. The ladder of stakeholder value creation. Modified from Anttiroiko & de Jong, 2020, p. 84.

Practically all holistic inclusion schemes attend to people's stakes, contributions, and other aspects of value creation. For example, O'Brian's (1989) five accomplishments that support valued experience and build community competence include the following: growing in relationships, contributing, making choices, having the dignity of valued social roles, and sharing ordinary places and activities. This list is based on a thorough understanding of the needs of disabled people, and the consideration of how human service programs should be designed to contribute to this target group's lives. "Contributing" points to the need to allocate resources to assist people with disabilities in discovering and expressing their gifts and capacities. Everyone has some capacity to contribute to their local community, and when society is able to utilize such a capacity it can integrate people in a meaningful way and eventually provide them with a source of greater self-control, happiness, and meaning (cf. Cheung et al., 2014; Ward & King, 2017; Deci & Ryan, 2000).

The construction of an inclusive city must have a foundation in the local institutional and cultural setting. Therefore, the precondition for building an inclusive city is poverty alleviation, inclusive infrastructures, and the provision of a supportive institutional framework. When targeted initiatives for supporting, enabling, integrating, and empowering people are introduced with the support of physical, institutional, and social infrastructures, they have better chances to bring about sustainable results. Finally, the strategic actions that support urban value creation can be grouped into three core areas: (a) access to skills and employment; (b) entrepreneurship and access to finance; and (c) access to services that enhance economic opportunities (EBRD, 2017). These three points form the operational core of the support for local value creation, and this core can be extended to a broader set of grassroots-level value enhancement practices that harness diverse capitals and potentials from people and communities for the purposes of value creation. Ultimately, inclusive policy should create an environment that is conducive to entrepreneurship (Acs & Stough, 2008) and to the creation of an inclusive capitalism (de Jong, 2021)—this is illustrated in Fig. 6.4.

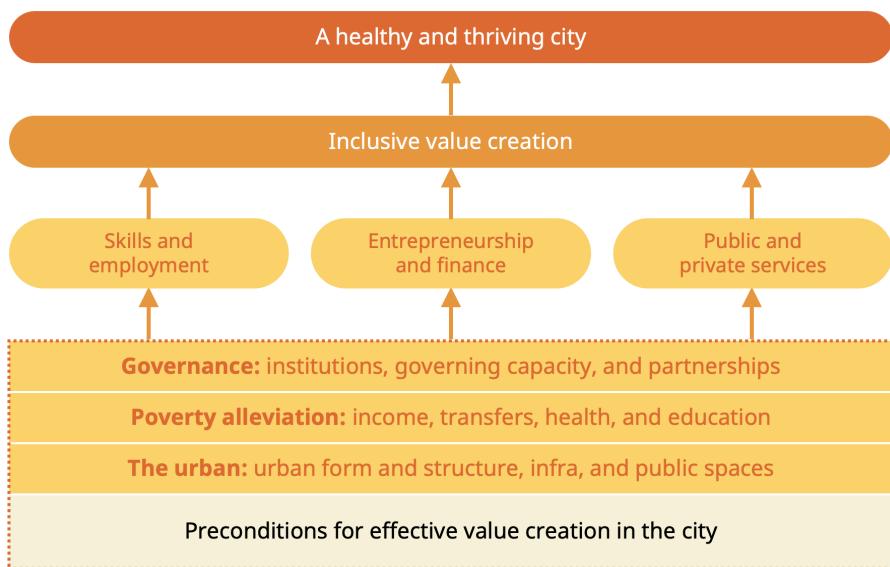


Fig. 6.4. Three aspects of economic inclusion: skills, finance, and services. Adapted from Anttiroiko & de Jong, 2020, p. 71

The above model is a conceptual scheme that highlights the most vital elements of urban economic inclusion policy. Specific actions depend on the situation and features of each community, which may vary from cities operating within a welfare-society framework, to those affected by municipalism or progressive movements, to ones that are undergoing profound industrial restructuring (Anttiroiko & de Jong, 2020). Approaches that exemplify citizen-centric economic inclusion include self-employment and working-class entrepreneurialism (Birelma, 2019), microbusiness, family business, and home-based business (Houston & Reuschke, 2017), popular economy (Gago, 2018), social and solidarity economy (Mendell, 2014), and a range of special forms of entrepreneurship, such as senior, youth, academic, women, LGBTQ+, social, green, minority, ethnic, indigenous, immigrant, informal, prison, and disability entrepreneurship (Cooney, 2021; Cederberg & Villares-Varela, 2019). All of these incorporate entrepreneurship into various domains of community life in their own ways. Such approaches serve as bridges between social and economic spheres of urban life and form an important supplementary side of urban economic inclusion.

CONCLUSION

Building an inclusive city is a surprisingly complicated process, demanding thorough conceptualization of the theoretical premises of such an endeavor, the anticipation of trade-offs between different groups demanding inclusion, and a recognition of the challenges of creating unity and harmony at the local level. The above discussion points out that exclusion and inclusion are complex, multi-dimensional, and relational phenomena that call for smart policy responses. First, in such a sensitive and knotty area as exclusion/inclusion, epistemic accuracy and sophistication are a necessary precondition for sound policy. Second, as inclusion as a phenomenon is complex, so too must the policy be complex; as such, one useful simplifying scheme would be to divide actions into four categories—i.e., supporting, enabling, integrating, and empowering—each responding to a particular form of exclusion. Lastly, rather than antagonism and divisiveness, policies should reflect holism, unity, and compassion in order to create a genuinely constructive and inclusive atmosphere.

This chapter has argued for the critical role of economic inclusion, as it is supposed to serve as a catalyst for holistic integration due to its natural tendency to inspire, empower, and bring together city dwellers and other local stakeholders. The aim of this policy is the creation of an inclusive city that is not only open, democratic, and fair but also entrepreneurial and economically thriving. Such a city would aim to promote the idea of a shared prosperity, which by cultivating co-creation and other ensuing processes would contribute to the pursuit of meaningfulness and happiness in the lives of city dwellers.

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Restorative Cities as Regulatory Governance

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INTRODUCTION: THE RESTORATIVE CITY

The restorative city has multiple meanings. In the world of urban design it points to ideas about building the physical city in ways that promote mental health and well-being (e.g., Roe & McCay, 2021; Masoudinejad & Hartig, 2020; Cahn & Segal, 2016). In this chapter, we use “restorative city” to mean an idea, a philosophy with a set of practices, and a social movement advanced through relationship building, in which participants seek to reshape the lived experience of a city for its residents as they interact with government, other institutions, and each other as

community members. Of course, urban design and urban governance can (and do) intersect in ways that are “restorative,” but our focus in this chapter is on the regulatory effects of restorative practices (rather than physical environments) on individual and group behaviors and city governance.

Cities that are adopting a restorative philosophy are doing so in order to create communities in which “restorative justice” is a shared value. Most restorative cities began with a program or project grounded in restorative justice, and then build this project out to city-wide scale through one or more policy portfolios. Restorative justice is a concept drawn from the field of criminology that prioritizes social cohesion and reintegration of offenders over punitive sanctions, particularly imprisonment. We explore this definition in more detail below.

The restorative city idea has applications beyond the criminal justice system, with potential applications in schools, workplaces, homes, and communities. In this broader sense, a city grounded in restorative justice norms is one in which people are more intentionally focused on their relationships with one other and with—and within—institutions.

Relational flourishing and minimizing relational harm are central to a restorative city, as community and government actors build social and cultural resiliency, and continually work to create a safer, empowered, accountable and happier society through increased social capital and more cohesive and healthy communities. Addressing harms, including historical wrongs, is an important feature of “becoming” a restorative city. In Canberra, the city site that we discuss in more detail below, addressing the relationships of harm that Traditional Owners and local Indigenous communities—particularly local Ngunnawal Elders—have experienced has indicated that the voices of our First Nations peoples must guide restorative efforts.

This sounds like an appealing vision for any city, but the question that we ask in this chapter is what experience to date tells us about the conditions a restorative city requires to germinate and flourish. In other words, what is required to make the practice match the rhetoric and move beyond “regulatory ritualism” (Braithwaite, Makkai, & Braithwaite, 2007), or the risk that political actors will simply invoke “restorative”

values as a way of improving the image of a city and its governance without transforming its institutions or service delivery?

We approach this chapter as “insider-outsiders.” Taylor is the former Director of the Regulatory Institutions Network (now School of Regulation and Global Governance) at the Australian National University, established by her colleagues, John and Valerie Braithwaite. John Braithwaite is recognized internationally as a leading theorist of restorative justice and is an empirical scholar who has tested the practices flowing from that idea both domestically and internationally (Braithwaite, 2002). Ivec is a social worker whose career includes non-government and government sectors. Her policy development role in social welfare led to research collaboration with Valerie Braithwaite, a leading thinker on responsive regulation (e.g. Braithwaite, 2007). Ivec convened the Canberra Restorative Community¹ for six years as a grassroots network of over 500 members with an interest in restorative approaches to Canberra’s social problems. The restorative community network is made up of individuals: Ngunnawal Traditional Owners and Indigenous Elders, those with backgrounds in, or currently involved with, civil society activism or non-profit organisations, academics, retired and current public servants, and a range of practitioners across legal, health, education, justice, social welfare domains. Together, the network has charted the policy course for many of the elements necessary to make Canberra a restorative city and community.²

FROM RESTORATIVE JUSTICE TO RESTORATIVE CITIES

The “restorative” quality of a restorative city does not have a universally agreed-upon definition but has its roots in the concept of restorative justice, which is a relational theory about how to build “community capital” (Braithwaite, 1989). The essence of relational justice is its focus on repairing relationships after conflict or harm, whether at the individual or the group level. The key idea is that healing the relationship between a marginalized person or group and a community is the basis for reintegration. This marginalization could be socio-economic, or it could involve ethnic enclaves; it could describe the situation of First

Nations people, or it could relate to people in contact with any stage of the criminal justice system.

Restorative justice emerged as a critique of conventional modes of dispensing justice, particularly criminal justice, and the socially disintegrative effect of adversarial and punitive processes. Conventional criminal justice processes that emphasize retribution did not seem particularly responsive to an individual's circumstances—particularly those of young or first offenders—or to admit the possibility of diverting people from pathways to prison. By focusing exclusively on the offender and the offender's crime against the state, conventional criminal justice paid little or no attention to the victim—the person or community affected by the harmful behavior. A key idea in restorative culture is establishing prevention and intervention procedures at an early stage—at the community level for situations of unrest or conflict (Mannozzi, 2019, p. 289)—rather than simply relying on the state to provide remedies after the harm has occurred.

The “restorative” character of restorative justice relocates the offender into human relationships with family and community as well as with those affected by the harm. It seeks to reduce the likelihood of recidivism by the offender, as well as recognizing the importance of making good the harm experienced by victims. The hope of restorative justice is that it will influence offenders in ways that help them avoid re-offending, but regardless of whether this actually happens, it seeks ways to recognize and repair the social relationships impacted by their behavior. It seeks to heal.

A paradigmatic “practice” in a restorative justice system is conferencing: the consensual, facilitated conversation between offender and victim, often joined by other supporting or affected participants. This may take place in addition to, or in place of, any stage in the criminal justice procedure. A criminal justice setting is by no means the only space in which restorative practices are used. Today, this style of facilitated conference is used in a wide range of remedial processes in workplaces and within large institutions:

Restorative practices aim to strengthen relationships, increase effective communication skills, and repair harm and inappropriate behaviour in

settings including education, workplaces, the local community and the sporting field. (Anderson & Ross, 2018, p.5)

"Circle time" is also a prominent restorative practice where students, co-workers, or other groups of people come together in a circle to talk to each other and develop relationships (Anderson & Ross, 2018, p. 6).

One domain where a restorative approach has worked well in Canberra is in the Circle Sentencing Court,³ part of the Magistrates Court (court of first instance). Galambany means "We all, including you" in the Ngunnawal language spoken by local traditional owners of the land in the Canberra region. The purpose of the Galambany Court is to provide effective and restorative processes to Aboriginal and Torres Strait Islander defendants through community involvement in sentencing. The Magistrate sits alongside panel members and Elders who are invited by the Magistrate to contribute to the sentencing process.⁴ A cost-benefit analysis found that a circle sentencing process helps persons appearing before the Court better maintain employment; improves the health of offenders and their families; improves educational opportunities; reduces the risks of homelessness; helps to reduce violence against women and reduce the number of children in care and protection. Overall the approach was an effective use of resources, with significant benefit to the local community. The Galambany Court also plays an important role in enhancing relationships between the Aboriginal and Torres Strait Islander community and the Canberra criminal justice system.

A fairly common domain for the application of restorative practices in other cities is in the delivery of child welfare and social services. A family group conference, for example, is a space in which family members can talk together about problems and issues faced by the family, and develop plans and solutions that will allow them to move forward. State agencies or child welfare organizations are represented in these conferences, but the ideal is that the family members involved have agency in formulating a parenting plan or narrowing the issues in dispute to find a way forward that will work in their particular context.⁵

What restorative practices like these have in common is a desire to go beyond the limitations of the fairly blunt instruments of state

intervention and an explicit preference for democratic, rather than hierarchical or oppressive practices.

Restorative, Responsive, Inclusive, Accountable

When we translate restorative justice as a feature of city governance, it takes on qualities that clearly intersect with theories of responsive regulation (e.g., Braithwaite, 2002). In many of the restorative city manifestos, “restorative” also means respectful, fair, and democratic processes that shape service delivery. Or as Straker puts it,

The development toward the new paradigm of a restorative city would suggest a rejection of the existing patriarchal paradigm of city governance and existing patterns of engagement of individuals, groups and communities (Straker, 2019, p. 325)

Conceptually, this would seem to intersect with the idea of the “inclusive city” narrated by Anttiroiko in this volume, but the “restorative city” is one in which government is *an* actor, not *the* actor, and where government is called upon to change its behaviors, not simply to exhort other actors to do so. It also points to the qualities and behaviors we seek in state and non-state professional actors as they help to meet the relational needs of individuals and communities. A restorative community calls upon each member to reflect upon and enact an intentional, relational way of being. The concept of “ubuntu”, or “I am through you,” provides a deeper sense of the essence of the restorative city. How all these elements are designed and operate varies with the host environment. We discuss some of these variations below.

RESTORATIVE CITIES WORLDWIDE

There is no single definition of, or international standard for, what constitutes a “restorative city” (Straker, 2019, p. 325). Those cities that wish to define themselves as “restorative” do so by self-nominating, as in the case of Hull, a city in the north of England that was the first mover in 2010. This, then, is a relatively new movement, but it has inspired

similar efforts and announcements by cities in various parts of the world, including:

- ◆ Australia: Canberra⁶, Newcastle⁷
- ◆ New Zealand: Whanganui
- ◆ United Kingdom: Hull, Leeds, Brighton, Bristol
- ◆ United States: Oakland (California)
- ◆ Europe: Leuven (Belgium); Como, Tempio Pausiana, and Lecco (Italy); Wroclaw (Poland); Tirana (Albania)

These cities are also part of one or more transnational networks,⁸ along with various local networks and epistemic communities comprised of researchers, community activists, and practitioners that are nested within, and continuously draw upon, their wider communities. As new restorative cities emerge, they generate an informal set of design characteristics and features against which aspiring restorative cities can assess themselves (e.g., Newcastle Law School, n.d.).

What we also notice in this list is that these tend to be mid-size, provincial cities—even Canberra, which is a national capital, is actually a medium-sized semi-rural city of 400,000. They also tend to be cities facing one or more economic and social challenges, often triggered by industrial decline. But being in crisis is not a necessary precondition for becoming a restorative city. What seems to be more important is

the sensitivity of the individuals working in strategic sectors to start-up restorative city projects: they could be school managers, university lecturers, representatives from the social services and from the non-profit sector and magistrates. Much depends on the ability of these individuals to meet and dialogue (Mannozi, 2019, p. 289).

The catalyst is often a call to action for a new way of thinking about and addressing social harms, which in turn builds social capital and cohesion. Newcastle in Australia, which is an aspiring restorative city, describes its challenges this way:

The city of Newcastle in New South Wales has faced significant challenges in the last two decades due to the erosion of traditional industry and employment opportunities. Across the city there is now growing evidence of much needed urban renewal . . . some residents, including young families, continue to be disadvantaged by a lack of suitable employment opportunities, and education, housing, child welfare, and criminal justice systems that do not adequately address harms and hardships, with the potential to exclude these residents from a variety of opportunities open to others. Social, cultural and economic renewal could be furthered by Newcastle becoming a restorative city. (Anderson & Ross, 2018, p. 1).

Mannozzi (2019) suggests that there are nine essential elements, or steps, for those who wish to establish a restorative city:

1. Identify the key values of restorative justice to detect the main inspiration behind the interventions to be implemented;
2. Be aware of the linguistic challenge, which implies the need to promote and encourage the ability to use, where necessary, a restorative language (which is careful, welcoming, nonjudgmental, and cooperative) in the various contexts where they intend to intervene;
3. Know the best practices already in use elsewhere that implement a restorative approach;
4. Raise awareness in the community of the meaning, the potential, and the limits of restorative justice;
5. Enter into agreements and memoranda of intent with institutions and organizations operating within the territory;
6. Identify gatekeepers capable of intercepting conflict and understanding its extent;
7. Be able to create practical roots for the restorative management of conflict;
8. Understand the need to rely on adequately trained, qualified mediators and facilitators;

9. Take the opportunity to scientifically supervise the project in synergy with institutions and universities. (p. 290)

In practice, as Straker (2019) points out, no single city has followed all of these steps. The way in which each city defines itself as “restorative” and what kinds of policies and programs they prioritize is different in each case.

Whanganui, New Zealand has a particularly well-articulated definition of what a “restorative city” looks like when viewed through the experience of its residents:

A Restorative City is where the population:

- ◆ Enjoy a safe, calm environment
- ◆ Value relationships based on equal respect, concern, care, and dignity
- ◆ Enjoy a positive cultural identity
- ◆ Understand both the negative and positive impacts of our behaviour
- ◆ Take responsibility for our actions and repair harm we may have caused others
- ◆ Have our voices heard and are tolerant of differing views

A Restorative City can be measured by:

- ◆ Reduced child abuse, domestic violence, and other criminal activities
- ◆ Reduced absenteeism / stand downs and increased academic achievement in schools
- ◆ Reduced absenteeism / bullying and sabotage in workplaces and increased productivity
- ◆ Increased satisfaction when interacting with government and non-government agencies
- ◆ Increased feelings of safety in homes and walking the streets

◆ Increased sense of community belonging⁹

However, this is not a universal definition. Some cities focus on addressing conflict and crime; this may involve interventions with young people, initiatives to address antisocial behavior, or work to reduce community polarization and hate crime. Others may focus on reducing tensions that lead to intergroup conflicts and building opportunities for dialogue and tolerance. In some cities, the emphasis will be on changing city service delivery. Many restorative city projects focus on children and young people:

the goal is to ensure that, by the time these young people grow up and move into leadership positions within the cities, restorative practices have become second nature (Anderson & Ross, 2018, p. 2).

More recently, some cities have also focused on redressing historical institutional abuses of children and vulnerable people in the wake of waves of disclosures in Australia, the United Kingdom, the United States, Canada, and Europe that have uncovered decades of abusive behavior in church-run and charitable institutions.¹⁰ These restorative processes and schemes of redress can operate across multiple national and sub-national levels and within networks of institutions. Restorative approaches have been important in these cases because the time limitation periods for making civil or criminal claims against the perpetrators of harm have often expired, either because the victims are elderly or dead or because gathering evidence for adversarial proceedings is impractical, impossible, or would further harm the victims (e.g., Vernon, 2018).

In the case of Whanganui, the intention was to “dispel the idea . . . that the restorative approach was only applied when there is conflict or harm done” (Straker, 2019, p. 326). Leuven, on the other hand, adopted the restorative city project explicitly to deal with conflict (Straker, 2019, p. 327). It is worth noting that many other cities worldwide adopt policies or practices that would align with the Whanganui model; alternatively, they may consciously design restorative practices for dealing with one or more types of social policy challenge without necessarily declaring themselves to be a “restorative city.” Halifax, Nova Scotia is one such example.¹¹ Extensive use of restorative approaches by key institutions

including Restorative Boards of Inquiry as an alternative to traditional Boards of Inquiry are now well established in the Province (e.g. Human Rights Commission,¹² Nova Scotia Government¹³). Braithwaite et al (2019) and Tito-Wheatland (2018) provide further analysis of restorative networks in other jurisdictions not mentioned in this chapter. These networks are at the core of the restorative city model.

As Straker points out, while the malleability of the “restorative city” concept is a strength, it can quite quickly become an operational challenge when the declaration bumps up against the pragmatic need to show what the values mean: “how restorative approaches fit within existing contexts and what impact that existing context will have on its development” (Straker, 2019, p. 327).

This becomes important when, as is inevitable, restorative projects are evaluated, quantitatively and qualitatively—and, crucially, when there are failures or unintended consequences. The answer to those effects cannot simply be that restorative practice are intrinsically good or ideal simply because they exist (Straker, 2019, p. 329, citing Wonshé, 2004)

WHAT MAKES A CITY “RESTORATIVE”? POLICY INTERVENTION EXAMPLES FROM CANBERRA

In early 2015, the Australian Capital Territory (ACT) Legislative Assembly committed to Canberra becoming a restorative city.¹⁴ The idea of “becoming” is important, because most restorative practitioners put a significant emphasis on the quality of processes, rather than technocratic measurement of “outcomes.” The government endorsement of the restorative city concept was built on a previous decade of work, including a pilot project, the institutionalization of the idea of restorative justice, and the formation of a wide-ranging consortium of interests that supported the idea.

The initial empirical research projects were carried out as a partnership between the Regulatory Institutions Network at the Australian National University and the ACT government, its justice portfolio, police, and prison administration. The Re-Integration and Shaming Experiments

(RISE) carried out in Canberra were based on earlier work devised by John Braithwaite and his collaborators in the nearby country town of Wagga Wagga. Those experiments showed that restorative practices that engaged with offenders and victims delivered positive results for both while also reducing the likelihood of offenders reoffending.

Based on the successful pilot program, the ACT government adopted restorative justice as a policy approach within its Justice portfolio. It established a Restorative Justice Unit,¹⁵ which operates under the *Crimes (Restorative Justice) Act 2004* (ACT) and provides young offenders with the opportunity to engage in restorative justice conferences. By 2016, the program was expanded to allow for participation by adult offenders in restorative justice conferences. The conferencing itself resulted in payments of financial compensation by offenders to victims and also for the undertaking of a significant amount of work by young offenders to benefit their victims and the broader community. (Anderson & Ross, 2018, p. 3).

An important build-out of the Restorative Justice Unit was the addition of an indigenous guidance partner to increase indigenous participation in conferencing. The more recent iteration of this has been the Warrumbul ("Youth") Circle Sentencing Court¹⁶ for young Indigenous offenders aged 10 to 17 years, which entails meetings between a magistrate and Indigenous community elders to develop a rehabilitation plan as an alternative to a criminal justice process. This application of restorative justice is particularly important in the ACT, where approximately a quarter of the people serving sentences at the Alexander McConachie Centre (the ACT jail) are indigenous even though Indigenous Australians make up just 2% of the national population.

From those beginnings in the modification of criminal justice processes in Canberra, restorative approaches have expanded to Indigenous Circle sentencing, the Gallambany Court, and to family and intimate partner and sexual violence (Phase 3)¹⁷. The new University of Canberra hospital has become a sister hospital to Whanganui, New Zealand, with both working to develop a restorative healthcare model based on Indigenous and Maori leadership.¹⁸ An important new development is the announcement that the ACT government will establish its own specialist

coronial service (ABC News 2021) based on a restorative coronial reform process.¹⁹ It might seem unusual that a Territory that is functionally the equivalent of a State would not have a Coroner's Office, but for many years the ACT rotated the role of coroner amongst nine sitting magistrates. That had the effect of constraining the ability of magistrates to acquire the specialized skills needed for a coronial inquiry. Long delays in performing inquests are highly distressing for the family and friends of the deceased, particularly in cases where the deceased was an Indigenous person. Australian judicial institutions have a shameful history of both causing the deaths of Indigenous people in police custody, and of covering up investigations into such deaths, so there is a deeply-felt and legitimate distrust of these institutions in some communities. The restorative hope for the new coronial service is that it will increase respect for bereaved families and communities and deliver more privacy and responsiveness when deaths requiring inquests are investigated.

CONDITIONS AND CHALLENGES FOR RESTORATIVE CITIES

The restorative city aims to displace the prevailing ideology of retribution and punishment for social harms and to simultaneously change institutional culture and practices. But as Burford (2018) observes, it is not easy to change urban, school, or welfare microsystems from within by challenging inveterate standard practices. We see those challenges in even the most committed and apparently successful examples of restorative city policy. So, for example, when we quiz our annual cohort of regulators from the ACT who are undertaking a course in the *Policy and Practice of Regulation* at the Australian National University, we ask them whether they are aware that Canberra is a restorative city. This cohort of regulators is drawn from outside the Justice portfolio of the government, and their answers, unfailingly, are "no".

What this "casual empiricism" tells us is both that the restorative city label and the ideals that underpin it may have been institutionalized in the Territory's justice system—exemplified by the Restorative Justice

Unit discussed above—and that it may have very little traction in the non-justice regulatory operations of government and among the stakeholders, community groups, and individuals impacted by them. This is notwithstanding the fact that the ACT Government has dedicated staff within the Justice and Safety Directorate who are responsible for developing a cross-portfolio understanding of restorative approaches. The Canberra Restorative Community itself includes citizens who are committed public servants working in that same government.

What that points toward, of course, is one of Teubner’s “regulatory trilemma” problems: the risk of regulatory incoherence (Teubner, 1983). In this case a government, through its agencies and in its interactions with community co-regulators, proclaims itself to be restorative in some of its operations but is clearly not in others. Of course, this begs the question of just how restorative a government needs to be in order to produce a genuinely restorative city. The second challenge, which is common to all transformative policy ideas, is that they can be hostage to the present, particularly the availability of a political champion. In the case of Canberra, a succession of Attorneys-General have been supportive of restorative approaches, due to the deep roots which took hold as a result of the work in the 1990s under John Braithwaite.

Currently, the Justice portfolio is held by a politically progressive Minister who also led the Greens Party, a long-time junior coalition partner to the Australian Labor Party, which has held government in the ACT since 2001. Canberra, as a capital city, has an unusual demographic that is both more educated and wealthier than the average Australian city and has supported progressive governments for more than two decades. As the next federal election approaches in 2022, a bipartisan approach is being built by the network members described in this chapter, with the current Opposition indicating strong support for restorative approaches in child protection and other areas. All these efforts have been made with the explicit intention of avoiding the restorative city being a “one person show.” We see this sometimes in school environments with a school principal who may be a restorative champion: once they leave, so too does the restorative ethos. So when key individuals rotate out of office or retire, there is an open question about how appealing the restorative city concept would be to their successors.

In an era of populism, there is always the risk that any prospective government will campaign on a “hard on crime” platform or invoke social divisions as a way of appealing to the electorate’s baser instincts. What this suggests is that a restorative city needs to institutionalize its practices and values as a way of protecting them from political oscillation.

A third challenge lies in sustaining the coalition of intermediaries that nurture relationships with and among individuals and community groups so that they can maintain a steady pressure on the government to respond to legitimate requests to adopt restorative practices. This is a kind of civic-minded volunteerism that is increasingly rare in post-industrial societies. In Straker’s overview of six restorative city case studies (2019), he identifies the common elements in a restorative city “start-up” as a community of interest or a community of practice:

A group or groups of professionals, agencies, and practitioners coming together to respond to a perceived need within their communities [and] all working in communities where restorative justice was already established to some degree (Straker, 2019, p. 326).

Having an “already established” form of restorative justice itself implies shared literacy in the concept, some form of pilot, and then the integration of the idea into one or more public processes. This suggests access to relevant ideas and the availability of like-minded people in a network willing to test them in practice. It is not surprising, then, that where restorative communities of interest or communities of practice have flourished, they have done so with help from established institutions from which they can borrow both ideas and resources. This has certainly been the case in Canberra, where the Canberra Restorative Community (facilitated initially by Mary Ivec and since 2021 convened by colleagues at the University of Canberra) has borrowed resources and institutional continuity from the city’s two universities.

CONCLUSION

The restorative city is a recent experiment in reconceptualizing relationships between a city government and residents, between social

institutions and residents, and among residents themselves. It seeks to redefine the way in which major institutions in a city should deliver services and contribute to the well-being and resilience of their residents. Because there are no agreed-upon definitions or features of a restorative city and because restorative cities themselves define their missions differently, it is difficult to assert with confidence that being “restorative” matters in ways that are measurable. It also opens up the risk of a kind of “regulatory ritualism,” where politicians become enthused by the idea of a restorative city as a way of either improving their political credentials or spruiking (explain) an imagined future state of a city that is currently experiencing economic and social dislocation. In Australian English, when someone “spruiks” a product or a project in public, they extol its virtues like an old-style carnival salesman who does not quite believe the inflated claims he is making—politicians of all types tend to be masters of this.

On the other hand, the restorative justice concept and the practices from which the restorative city idea draws have been extensively studied and empirically assessed. This work tends to show, on balance, that restorative practices are successful in preventing reoffence and recidivism. More importantly, however, restorative practices are also shown to repair important social relationships and to attend to the needs of victims and those affected by harmful acts.

This insight is important at a time when we observe an ever-widening scope of harmful behaviour in schools, sporting contexts, workplaces, shops, institutions, natural environments, and digital spaces. Harms that are not immediately or easily dealt with through criminal procedures, such as bullying, intimidation, racial slurs, vandalism and property damage, petty theft, cruelty to animals, pollution, and destruction of natural habitats are all corrosive to community well-being, but they stem from perpetrators who are disconnected from community norms and values that prioritize tolerance, cohesion and well-being. What restorative practices offer at an individual level—and more importantly, in an aggregated way—is the opportunity to correct that misalignment and reconnect people in ways that are more likely to support and encourage positive behaviors. That, by itself, should be of enough value

to recommend serious consideration of the potential of a restorative city approach.

1. Mary Ivec acknowledges with grateful thanks here colleague and friend Fiona Tito Wheatland, who agreed to join her as they embarked on the Restorative City journey in 2014 on our visit to Whanganui, New Zealand at the invitation of the then Chief Social Worker, NZ, Paul Nixon.
2. See: <http://www.canberrarestorativecommunity.space/restorative-justice>
3. <https://www.courts.act.gov.au/magistrates/about-the-courts/areas-in-the-act-magistrates-court/galambany-court>
4. ibid
5. In Canberra, the restorative city that we discuss below, political pressure is building to allow family conferences and for the family to lead on the decisions made in a parenting plan as a matter of right. This is in part a response to the high rates at which Indigenous children are separated from their families in state-led welfare interventions. See:
<https://www.canberratimes.com.au/story/6849461/family-conferences-would-be-legal-entitlement-under-canberra-liberals-plan/> Retrieved 19 October 2021
6. See <http://www.canberrarestorativecommunity.space/>
7. See <https://www.researchgate.net/project/Newcastle-as-a-Restorative-City-Justice-Community-Education-and-Health>
8. See, for example, the European Forum for Restorative Justice (euforumrj.org) Working Group on Restorative Cities; and the International Institute for Restorative Practices ([IIRP](http://iirp.edu)) (iirp.edu)
9. See <https://restorativepracticeswhanganui.co.nz/the-restorative-city/>
10. For an illustrative list see: <https://caranua.ie/useful-resources/international-inquiries-into-institutional-abuse/> Retrieved 19 October 2021
11. <https://www.dal.ca/news/2020/06/10/dalhousie-officially-launches-first-ever-international-restorati.html> and <https://novascotia.ca/news/release/?id=20210414002>
12. <https://humanrights.novascotia.ca/resolving-disputes/about-process/restorative-approaches>
13. <https://novascotia.ca/just/RJ/>

14. See, e.g., <https://the-riotact.com/canberra-a-restorative-city/198949>
15. See: <https://justice.act.gov.au/justice-programs-and-initiatives/restorative-justice>
16. See: <https://www.courts.act.gov.au/magistrates/about-the-courts/areas-in-the-act-magistrates-court/warrumbul-circle-sentencing-court>
17. <https://justice.act.gov.au/justice-programs-and-initiatives/restorative-justice>
18. See https://www.youtube.com/watch?v=8WnJfLB4cfg&list=PLFcZjYDP_3PgXoZss2gk67PH3k9vrUORY&index=1&t=2s
19. Rhian Williams, a member of the Canberra Restorative Community, has developed papers to explain and support a restorative coronial reform process describing the key elements of restorative approaches. These can be found at <http://www.rhianwilliams.com.au/>

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Policies That Trigger Gentrification in Kyoto City

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Digital Transformations in Planning: An Australian Context

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INTRODUCTION

Australian cities face numerous housing challenges, the most prominent of which is the housing shortage faced by the country over the past three decades (Yates and Wulff, 2005). Indeed, up to 2009, it was estimated that approximately 180,000 additional dwellings were needed

to meet housing demand (NHSC, 2010). However, to date, this gap has since continued to widen (Phillips and Joseph, 2017; Pawson, 2020). Today, the disparity between housing supply and demand has become a highly topical subject. It has been credited as the root cause of the housing stress¹ experienced by many Australians (Rahman and Harding, 2014). Most recently, the Australian Institute of Health and Welfare (2021) estimated that, in 2018, approximately 17% of Australians spent over 30% of their gross annual incomes on housing costs, with a more concerning 5.5% of the population spending more than half of their incomes on housing. This figure had risen year-on-year since 1994, when 13.8% of Australians were considered to be under housing stress (see Fig. 11.1; AIHW, 2021).

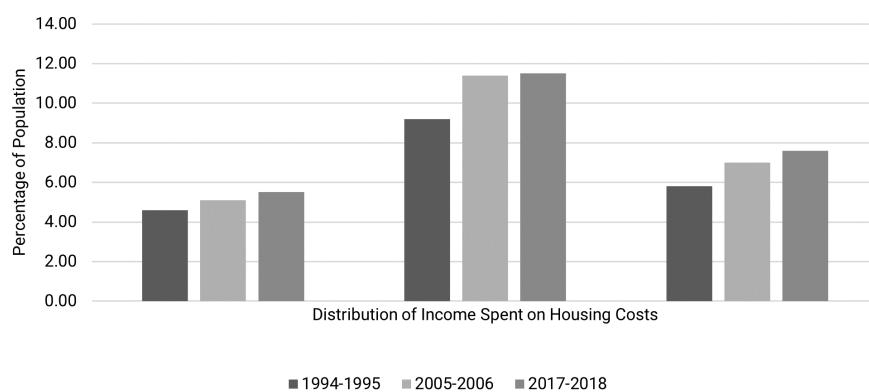


Fig. 11.1: Housing Stress in Australia between 1994 and 2018. Figure adapted from ABS, 2019

This is an issue that has become particularly pressing when considered in terms of demographic characteristics and geography. Not surprisingly, it was noted that lower-income households disproportionately feel housing stress; in more urban regions, close to 48% of low-income households were considered to be under some financial stress concerning housing costs (ABS, 2019; AIHW, 2021). Having been poorly addressed, these issues have continued to contribute to numerous urban challenges. In many Australian cities today, issues such as homelessness, housing affordability, and increasingly disparate

intergenerational home-ownership rates have become the most tangible symptoms of the housing crisis (Yates and Bradbury, 2010; Parsell and Marston, 2012; Wood et al., 2015; Wilkins & Lass 2018). Moreover, coupled with their persistence over time, these issues have made achieving urban equity amongst the country's most vulnerable demographic groups all the more difficult.

However, despite these longstanding consequences, housing delivery in Australia remains hindered by a multiplicity of unresolved factors. These include land supply issues, zoning and development restrictions, lengthy planning processes, and a lack of coordination between the development bodies overseeing infrastructure and housing delivery (Gurran and Bramley, 2017; Phillips and Joseph, 2017; Murray, 2020). Pawson et al. (2021) add that, whilst increasing capacity for home building is undoubtedly crucial, housing policies addressing it need to be more carefully considered to ensure the consistency of housing delivery and its accessibility across all demographic groups both financially and geographically.

If we consider these issues more tangentially, it can be argued that the facilitation of better housing delivery is crucially lacking in the critical exchange of data and information surrounding the housing stock at present. Indeed, for housing development processes in Australia to be more efficient and transparent, critical pathways to improved data management, visualization, and analysis of housing stock need to be considered (Pettit et al., 2017). This is a gap that has not been fully addressed yet and which has contributed detrimentally to housing delivery in the country. In fact, up to more recent years, aspects of data management and analytical communication had been relatively overlooked. This has since changed, with an increase in the digitization of planning data and the proliferation of analytical tools that seek to create more data-driven and responsive urban services (Barns, 2018).

These linkages between digitization and housing are explored more deeply in this chapter with respect to housing data as a critical resource in the digital transformation of planning in Australia. Opportunities that accompany this shifting paradigm are discussed with a view toward potentially shifting planning practice through the introduction of a

singular housing database for Australia. In this context, we detail how citizen-centered approaches in this ongoing transformation may facilitate more granular communication around current housing development conditions, greater community engagement and ownership, and the democratization of planning technology and data that enable greater community participation. Furthermore, it we show how such a platform may facilitate the essential exchange of knowledge that precedes development and delivery.

BACKGROUND

In 2020, the Planning Institute of Australia released a statement on the guiding principles for the future of digital planning systems. It was noted in the report that, whilst there had been a marked proliferation of tech- and data-driven planning assistance tools, there were reformations of Australia's underlying digital data infrastructure that also needed to be considered (PIA, 2020). Indeed, it has since become clear that, given the increasing digitization across all domains of planning and development, strategic decisions need to be made in both data administration and operationalization. These are pressing requirements that shed light on the central role that national governments must play in this ongoing transformation (Dunleavy and Margetts, 2015) which, ultimately, will shape the future models of Australia's data governance. Considering this, Pettit, Lieske, and Jamal (2017) posited that approaches to the development of data management systems and downstream analytical tools needs to be more collaborative. They put forward the notion that government agencies (as data providers) and external agents (as the developers of these necessary toolkits) both require mutual support in identifying and addressing a city's national development priorities.

This integral step was also noted by Barns (2018, p. 5), who suggests that, whilst a more cooperative dynamic was essential, national government also needed more tactical direction in their "curation and management of data assets to support strategic [planning] priorities." In this vein, there is a growing call for the government to foster a more enabling environment in the co-design and co-development of digital

platforms in Australia. As such, policies that underpin this movement need to be aligned across all sectors (Barns et al., 2017). In this process, there may be more opportunities for individuals, institutions, and commercial entities to aid with and co-create data-driven approaches and formulate solutions that can meet the remit of future development planning goals. Goldsmith and Crawford (2014) and Barns (2018) maintain that this will require current data custodians to recognize the value of open public data, prioritize their access, and work towards their standardization; this, in turn, may dramatically boost innovation in a way that has not yet been realized in Australia.

Globally, the digital transformation of planning and city data has in fact now become almost commonplace. In cities around the world, access to key information on the city has burgeoned in the form of city dashboards. For example, in the United Kingdom's London CityDashboard, climate sensors and real-time public transport and traffic data are integrated into a single interface (De Lange, 2018; Li et al., 2020; Young et al., 2021). Additionally, in San Diego, the PerformSD dashboard summarizes key metrics on public service performance, crime, transportation, and other important socioeconomic data obtained from numerous public service departments that pertains to the progress and improvements of numerous policy indicators (City of San Diego, 2021). In Australia, similar work on city dashboards has also been undertaken (e.g., the Sydney City Dashboard by the University of New South Wales) to offer citizens a single point of access to similar data (Pettit et al., 2017). These examples provide their citizens ready visualizations of key city information; this provision allows citizens to make informed decisions about engaging with their environment, and these choices can ultimately be quantified in their feedback (Reponen, 2017).

However, as pointed out by Kitchin et al. (2016), caution should be observed given the level of abstraction that accompanies the representation of city data and given the choice of what data is presented. Further, it has also been suggested by Mattern (2013) and Barns (2018) that these initiatives provide citizens only superficial access to data. Instead, separately, they suggested that more value could perhaps be gained should citizens or other development agents be allowed access to government data, in addition to being given choices

about its utilization (Kitchin and McArdle, 2016). Platforms that offer these services, colloquially named data stores, place less emphasis on the moderation and selective communication of data, leaning instead towards open or paid access to a larger gamut of data formats to all user types (Barns, 2018). These platforms are aligned with the “Government as a Platform” digital strategy, where the delivery of data is completed through shared registers and APIs. Yet at the same time, their downstream use remains undetermined (ref. Fig. 11.2; O'Reilly, 2011; Al-Ani, 2017). The objective here can be loosely articulated as to make available the widest diversity of data at the largest volume to the highest number of people. This is reflected in their “one-to-many structure”, wherein numerous distinct applications can be derived from the same datasets (Pope, 2019).

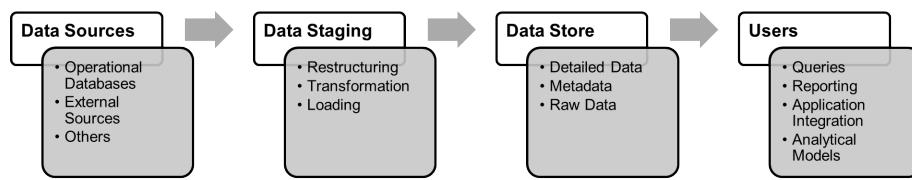


Fig. 11.2: A possible schema of use for data stores in Australia.

Considering this, data stores need to be designed around the needs of the user given the far-reaching impacts that alterations or modifications can have on services and the analytical models that depend on it. However, there presently also remain numerous challenges to making data stores operational both in Australia and globally. As indicated by Lopez et al. (2012) in their development of QuerioCity—an integrated database of city data—critical structural, functional, and semantic considerations must be made to make the integration of existing datasets possible. They stress that urban data is often highly disparate and exists in multiple formats and structures. Consequently, datasets ingested into data stores need to be restructured, linked, and made relational to meet the primary objective of creating a single comprehensive data ecosystem (Pan et al., 2016; Schieferdecker, 2016).

This includes the creation of a common semantic structure across dataset properties that allows rapid queries to be made by users, instead of a manual “mapping” of attributes within these large datasets (Schieferdecker, 2016).

Critically, this remains a difficult task as it may be unrealistic at present for many data custodians to adopt a single schema. These challenges appear to be ubiquitous and are also applicable to Australia (O'Reilly, 2011; Al-Ani, 2017; Gil-Garcia and Henman, 2019). Here, key city data are also held by a diverse set of custodians in an even more varied range of formats. For example, Geoscape Australia, the national provider of location data, offers numerous data products that include key building attributes (e.g., building footprints, materials, height, area), land parcel data (e.g., land ownership, zoning codes, valuation information), and geocoded address files; however, these exist as separate datasets that need to be queried individually. The resulting datasets include numerous data forms (CSV, GeoJSON, JSON, ESRI shapefiles, etc.) that will also need to be made relational. Utilizing these datasets and ensuring their interoperability requires significant time costs for processing and restructuring.

Specific housing datasets in Australia are also highly disparate and disjointed. There is often little information on the housing stock available to the general public; and, where data is available, they are fragmented or available only on an aggregated scale. Furthermore, these datasets are only made fully available through a paid subscription, which adds an additional barrier to both research and the development of downstream tools. Furthermore, should these datasets be utilized in tandem with other relevant datasets from other major providers such as the Australia Bureau of Statistics or the Commonwealth Scientific and Industrial Research Group, subsequent analyses may become less granular given the varying levels of data aggregation. As a result, there are numerous bureaucratic and procedural barriers facing researchers and policymakers alike if they desire to implement evidence-based planning and downstream analytical modelling in the country.

AN INTEGRATED AUSTRALIAN HOUSING DATA PLATFORM

The challenges mentioned above distill only a minute part of the multidimensional challenges researchers and policymakers face in obtaining and operationalizing available housing data in Australia. These challenges often manifest themselves tangibly in the coordination between developmental and institutional agents, which invariably leads to disruption and delay in activities related to housing delivery. Further, given the current pace of growth and urbanization in the country, there is mounting pressure on resource allocation and planning capacities for much-needed housing delivery. These are issues that the national government has recognized, and with smart infrastructure and planning policies now introduced (e.g., New South Wales [NSW] Smart Infrastructure Policy and Smart Places Strategy), active calls for technology-focused, citizen-centered approaches are now being made (Brown, 2012; Pettit et al., 2017). Moreover, since its introduction, the NSW Government's smart city development policies have stimulated many discussions on rethinking how the country's planning and development systems and processes can be enhanced (Pettit et al., 2015; Yigitcanlar, 2020). Despite this, however, a more systematic and coordinated means to facilitate these vital exchanges has yet to be developed or adopted.

Nevertheless, opportunities to address these issues do exist with particular respect to the nation's ongoing pursuit of the digital transformation of its planning system. Here, there is potential not only to remedy Australia's need for a coordinated system of data management and exchange, but there are also actionable avenues to create more efficient, transparent, and responsive systems than those that already exist today. In particular, it is believed that tangible change can be affected by the consolidation of the diverse existing housing datasets, the maintenance of their relevance and validity, and the prioritization of data accessibility for all stakeholders, including the general public. These activities are integral in promoting several required downstream activities concerning Australia's housing data: first, they facilitate the standardization of common built-environment

data, sources, and processes to allow data integration and interoperability between multiple platforms and applications; second, they allow for more rapid large-scale data exchanges to be made from a single platform without the need for lengthy pre-processing steps. By reducing the impact of these initial impediments, the development of such a data governance system would inevitably be valuable in promoting and expediting innovation and development in terms of policymaking and other high-value technological advancements.

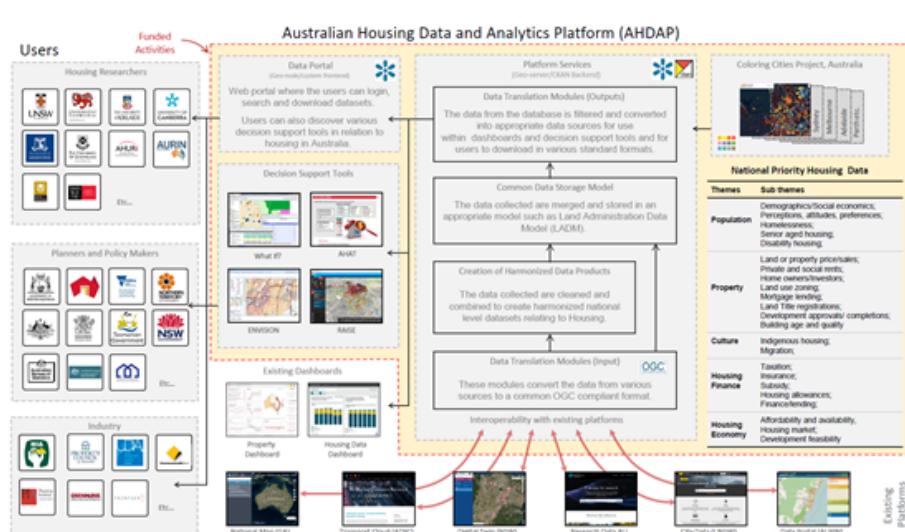


Fig. 11.3: Conceptualization of the Australian Housing Data Analytics Platform, its functionality, users, and services.

These are the opportunities and challenges recognized by the University of New South Wales City Futures Research Centre in their ongoing development of a novel Australian Housing Data Analytics Platform (AHDAP). AHDAP seeks to address Australia's housing data disparity by creating a consolidated and harmonized housing data governance model. In its current stage of development, AHDAP is a federated data platform capable of large-scale ingestion, standardization, and management of all digital data on housing and the built environment in the country. This includes the integration of the many existing and varied datasets held by individual custodians across the nation. For the

first time in Australia, the platform connects numerous critical private and public institutions in academia, industry, and government who also recognize the concerted effort required to deliver and implement such a novel data governance model in the country.

AHDAP is able to overcome the current shortfalls of data management in Australia through several essential tracks. First, by harmonizing the large mass of housing data in accordance with global management standards (Kresse and Fadaie, 2013), rapid, multiscale, and multidimensional analysis and simulations can be implemented using previously disjointed datasets to evaluate and substantiate future development scenarios more holistically. Moreover, this addresses present redundancies for policymakers and researchers by commissioning surveys to repeatedly collect the same data used downstream. As a result, significant time and opportunity costs associated with such activities are effectively minimized with a single trusted repository. The breadth of data and the ease with which it can be rapidly obtained and analyzed using AHDAP are central to accelerating policy evaluation and development delivery; however, more importantly, they are crucial to better understanding the linkages between housing, communities, and underlying land use dynamics. Indeed, for policy and research in Australia to be relevant, they must be supported by data that allows for timely and dynamic interventions at the correct locations and spatial scales.

Second, with its planned suite of analytical and decision support toolkits, the development of AHDAP holds significant potential for improving the interrogation of current and future housing development scenarios. In particular, the integration of the proven and validated RAISE and WhatIf? toolkits that preceded AHDAP creates an extensive capacity to hypothesize and simulate possible development futures with regard to land and property value changes, infrastructure allocation, and real-time development decision support (Pettit et al., 2015, 2020). These are critical insights that are often inadequately addressed in reviews of the complex land supply, demand, and allocation issues that have contributed to the country's current housing delivery situation. The advancement of these indispensable tools creates opportunities to develop and elevate current metrics to account for these issues, and to communicate and visualize more effectively the impact of planning and development choices with

respect to aspects such as mobility, accessibility, well-being, and diversity, which are fundamental dimensions of the lived experience of Australians. These outputs are made accessible by AHDAP to essential development stakeholders and agents, as well as to the general public, where such data can inform and empower citizens through the insights gained from such spatial intelligence.

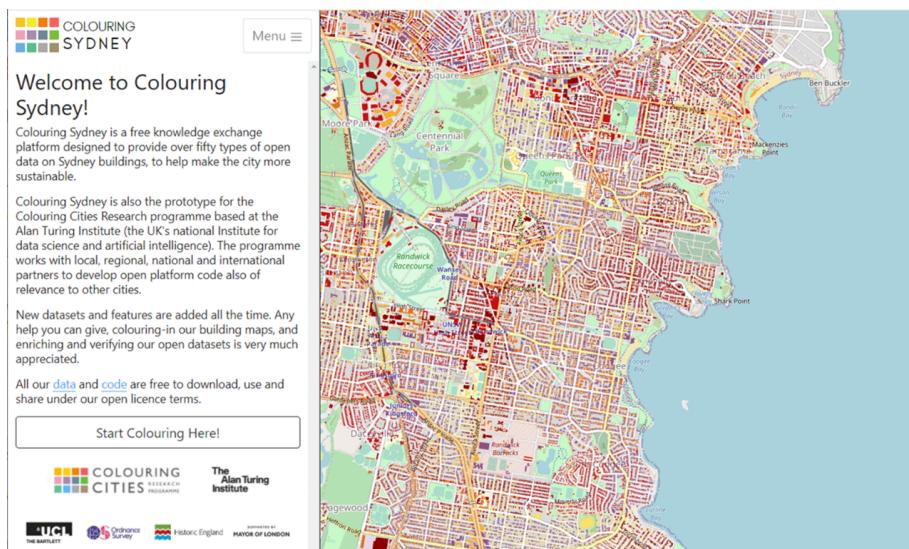


Fig. 11.4: The newly launched Colouring Sydney Platform, as part of the Colouring Cities Research Programme, as novel tool for collecting voluntary geographic information and increasing public participation.

Finally, with the integration of Colouring Australia—a collaboration with the Alan Turing Institute’s Colouring Cities Research Programme—AHDAP can leverage new public engagement methodologies and data collection approaches. The Colouring Australia tool was born from the acknowledgement that obtaining accurate and granular building-level attributes is not typically feasible given that it is an onerous exercise. As such, Colouring Australia is positioned as a novel citizen science platform that is able to rapidly collect and disseminate voluntarily provided geographical information on Australia’s building stock. Indeed, amidst the ongoing COVID-19 pandemic, digital engagement has become further legitimized and its role in enabling better outreach to

more traditionally excluded audiences has been proven. Diversity and inclusion are central themes in its design and development; this can be seen in its focus on the “local” with data collection and inputs open to almost all demographic groups. As such, it allows local communities to both contribute voluntary geographical information and validate data within their local environment in a way that does not require extensive digital training.

These benefits of this are multifold; primarily, in light of aspirations to encourage participatory policy and solution formulation for local urban challenges, the empowerment and data ownership gained from this engagement are important to increasing support for and trust in Australia's planning processes. In a similar vein, community engagement and data collection through this citizen science space offer a more novel approach to enhancing data granularity and accuracy, which will ultimately be used to improve the current data offering in AHDAP and elevate the accuracy of its corresponding toolkits. Further, as part of the Colouring Cities Research Programme,² the platform is approached in highly collaborative ways with both global and local research institutions, which allows for significant knowledge exchange in terms of both policy and operationalization. This also includes peer-reviewed work on data analytics and machine learning models to ensure the development and deployment of rigorous toolkits for all cities. Ultimately, there is vast potential for a singular housing data platform such as AHDAP to herald a new shift in the way communities, public stakeholders, and development agents in Australia engage with technology and data throughout the entire planning and development process.

CONCLUSIONS

In this chapter, we have discussed the changing landscape of planning and development in Australia. First, we have indicated how critical data is as a commodity for policy makers and other development agents when it comes to creating more value and driving innovation in tech- and data-driven services and applications. In this respect, we have highlighted how widening access to data for these key user groups may

aid in identifying key areas of improvements and development, particularly in the realm of Australia's housing delivery. With this in mind, we have introduced the Australian Housing Data Analytics Platform, which is a digital platform in its infancy. The platform is able to support urban researchers, policy makers, and industry by providing access to a comprehensive array of data and decision-support tools that assist in addressing the challenges facing the Australian housing market, including housing supply, affordability, and stress. The platform endeavors to follow the PlanTech principles developed by the Australian Planning Institute, including the directive that digital planning infrastructure should be public infrastructure built with open technology. In this chapter, we have also outlined one of the key digital components comprising AHDAP, Colouring Australia. This open-source digital platform provides a means for democratizing access and contributions to knowledge of the city through a crowdsourcing approach. This platform conceives of data as a public good and enables citizens to access information and analytics in a way that is not currently possible in the country. The next steps in the development of AHDAP are to improve the accessibility of a wider range of digital housing assets across Australia which in themselves provide public value by supporting evidenced-based decision making and improved planning of our cities.

1. Housing stress is identified in households that spend over 30% of gross income on housing costs ABS, 2019.
2. Current (2021) partners include The American University of Beirut (Lebanon), The University of Bahrain and Bahrain Authority for Culture and Antiquities (Bahrain), The University of New South Wales (Australia), University College London and the Alan Turing Institute (London), The National Technical University of Athens (Greece), and The Leibniz Institute for Ecological Urban and Regional Development (Germany).

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12

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212

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