Towards an Asia-Pacific 'Depopulation Dividend' in the 21st Century
Regional Growth and Shrinkage in Japan and New Zealand

Peter Matanle

Abstract

Japan is shrinking. Current projections indicate a population decrease of around one quarter by mid-century. Depopulation is potentially good news, providing opportunities for reconfiguring living conditions and alleviating human-environmental pressures. Nevertheless, ageing and depopulation have outcomes that require adjustment. One of these is spatial inequalities, which have been accelerating since the 1990s. Japan is the Asia-Pacific's pioneer ageing and shrinking society. In East Asia both China and South Korea are ageing and expected to begin shrinking soon. Even high immigration Anglophone countries such as New Zealand are experiencing post-growth demographic processes at subnational level. Japan's significance is in how adaptive responses there inform prospects for others as they experience their own post-growth pathways. This article presents case studies of Sado Island in Japan and New Zealand's South Island in a comparative qualitative analysis of rural agency under population decline. Overall, I contend there is potential for benefitting from demographic shrinkage – what I term a 'depopulation dividend' – and for rural regions in the Asia-Pacific to progress towards a sustainable post-growth economy and society.

Key words

Japan; New Zealand; China; Asia-Pacific; Development; Post-Development; Population decline; Aging; Ageing; Growth; Shrinkage; Local; Regional; Environment.

Introduction

Japan is shrinking. Government projections indicate that under current trends the country's population may decrease by one quarter, from 128 million people in 2010 to under 100 million by 2050 (NIPSSR 2012)[1], due to a sustained fall in rates of human reproduction in the postwar era. In combination with increasing life expectancy, Japan is therefore one of the most rapidly ageing countries in the world. With 27.4% of the population aged 65 or over, Japan is a 'hyper-aged society' and the consequences of ageing and depopulation are appearing across the entire Japanese archipelago (Coulmas 2007: 5; MIC 2017a).

Population reduction is potentially good news, providing opportunities for alleviating human-environmental pressures, reconfiguring the built environment, and improving lifestyles (Butler 2015; Conly 2016). Nevertheless, ageing and depopulation have outcomes that require adjustment for affected countries, regions and sectors. One of these is spatial inequalities, on a national scale between provincial and metropolitan regions, and regionally between rural and urban locales. Rural-urban inequalities have been present in Japan since at least the early 20th century, but have become more acute since the 1990s, when the onset of economic stagnation coincided with the unwinding of the demographic tempo effects of the postwar baby boom and the long period of below replacement fertility. For example, the proportion of the population of working age has been declining since reaching its peak of 70% in 1990. By 2017 it had fallen to 60.2%, and may reach an anticipated 51% in 2060 (MIC 2015; 2017a), presenting challenges for the government in achieving fiscal stability and adequate care of older people. This is a pressing concern for rural regions, whose economic development and capital accumulation have lagged urban areas, but where the proportion of older residents needing interventions is larger. These and other issues exemplify a fissure developing between rural and urban regions, which looks set to deepen and widen.

What is significant about Japan's situation is how adaptive responses there might inform prospects for other Asia-Pacific countries experiencing their own post-growth pathways. Just as Japan's 20th century developmental leadership in Asia has long been acknowledged by scholars (See: Akamatsu 1962; Chang 2006), and occasionally by political leaders[2] (Vogel 2011), in the 21st century Japan might be seen as the pioneer ageing and shrinking society for trends that are becoming increasingly common on an Asia-Pacific and even global scale (Jackson 2014; Kaneko and Sato 2013; Matanle 2014; Matsutani 2006), with rural-urban imbalances and inequalities being key indicators of national stability.

This article develops a previously published book chapter on the dynamics of rural depopulation in Japan (Matanle 2017), and broadens its geographical reach and significance with the inclusion of research from New Zealand. Edited by David Chiavacci and Carola Hommerich (2017), *Social Inequality in Post-Growth Japan: Transformation during Economic and Demographic Stagnation* focuses on new forms of inequality emerging in Japan since the 1990s. Among three chapters that focus on rural-urban inequalities – the other two by Lützeler (2017) and Elis (2017) – my chapter presents a qualitative analysis of the means by which some rural residents in Japan are exercising agency in response to deepening and widening spatial gaps. The inclusion of research from New Zealand is intended to strengthen the contention that demographic and spatial imbalances are being experienced across the Asia-Pacific region, in countries with different circumstances and stages of development. Consequently it reinforces the broader argument underlying this research, by suggesting that agency as a response to ageing and

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depopulation within Japan's rural regions can deliver positive spill-over effects, with the rural experience being useful in assisting urban areas in their transition to shrinkage, and in contributing to an emerging post-growth and post-developmental relationship among Asia-Pacific neighbours.

The article begins by setting Japan and New Zealand within the world demographic context. With an emphasis on Japan, I will then describe some of the interactions of ageing and depopulation in both countries' rural regions, and use case studies of Sado Island in Niigata Prefecture and New Zealand's South Island to illustrate local responses. In addition, the article contains illustrations in the form of maps and photographs taken during research visits to Japan and New Zealand, as well as interactive elements, so that readers may explore growing and shrinking regions of Japan and New Zealand independently. Clicking on highlighted photo title text will reveal Google Maps and Streetmaps tools for the places featured in the photographs.

Overall, I contend that there is potential for benefitting from demographic shrinkage – what I term a 'depopulation dividend', and for rural regions in the Asia-Pacific to establish a sustainable post-growth economy and society. I define the depopulation dividend as *the achievement from depopulation of positive gains that contribute to socio-cultural, political-economic, and environmentally sustainable living*.

Japan and New Zealand in the World Demographic Context

In the 21st century a historic turnaround in world population trends is underway (Lutz, Sanderson and Scherbov 2001; Rostow 1998). Demographic transition theory predicts a convergence on below replacement fertility (Wilson 2011), whereby high-income countries with lower fertility levels (19.1% of current world population) will probably undergo depopulation, and middle-income countries (72.2% of world population) with intermediate fertility levels may experience shrinkage on reaching high-income status. The remaining 8.7% from low-income countries will either continue with high fertility or develop into intermediate or lower fertility regions (UNPD 2015).

In East Asia, South Korea and China are at the tail end of experiencing their 'demographic dividend' (Bloom *et al* 2003), whereby rapid demographic and economic expansion have gone hand in hand to deliver significant improvements in material well-being.[3] Other countries in East and Southeast Asia are experiencing similar developmental pathways. Indeed, the successful economic and demographic transformation of East Asia is undoubtedly a seminal achievement in human history, and Japan's spearhead contribution in helping to galvanize other countries' developmental regimes should not be underestimated. However, East Asia is ageing too, and about to begin shrinking. Once more Japan is leading the way. In fact the demographic transition to low fertility, ageing, and eventually depopulation is global – though not universal – with many countries experiencing variations of this post-growth developmental pathway. While Japan is in the vanguard in East Asia, even in Oceania among younger Anglophone countries with traditionally higher rates of immigration, both Australia and New Zealand are experiencing aspects of this transition, with lower fertility, ageing, and subnational depopulation processes underway (Jackson and Felmingham 2002; Jackson 2014).

Viewed negatively, ageing and depopulation could be considered a demographic burden, creating a series of systemic crises across the area, including higher levels of socio-economic inequality between growing and shrinking regions, whereby the winners from responses to changing socio-economic and population structures draw further away from the losers. In these circumstances it is also worth considering how these phenomena affect collective notions of social, cultural and political solidarity within nations that, even today, consider themselves to be relatively homogeneous and cohesive. Issues of rural-urban inequality are, therefore, deeply interwoven with socio-economic development and, moreover, resonate with people's overall sense of identity and connectedness.

Figure 1 uses UN Population Division data[4] to display actual and projected demographic change in Japan, China, and South Korea, showing similar population development pathways through rapid growth in the 20th century, and transitioning into post-growth shrinking societies in the 21st. Moreover, projections for the dependency ratio between working and non-working age cohorts in East Asia (Figure 2) point to challenging circumstances for the continuation of growth-oriented economic regimes into the future. The graphs show that 1990-95 was a turning point for Japan, as it marks the end of its demographic dividend, when the proportion of working age people reached its peak. It was also the moment that the economy made the transition to a lower growth regime. Thereafter the dependency ratio has risen and is expected to reach parity between working age and non-working age populations by 2040. China reaches its peak ratio in 2015-20 and South Korea in 2020-25, whereupon both are expected to follow Japan and experience greater pressures in maintaining contributions from working people to support growing numbers of older people, with South Korea reaching parity between working age and non-working age populations around 2050 and China around 2060. Importantly for overall world development, both Japan and South Korea achieved high income status before the onset of ageing and depopulation, while China is currently ageing and will likely experience depopulation as a developing middle-income country.

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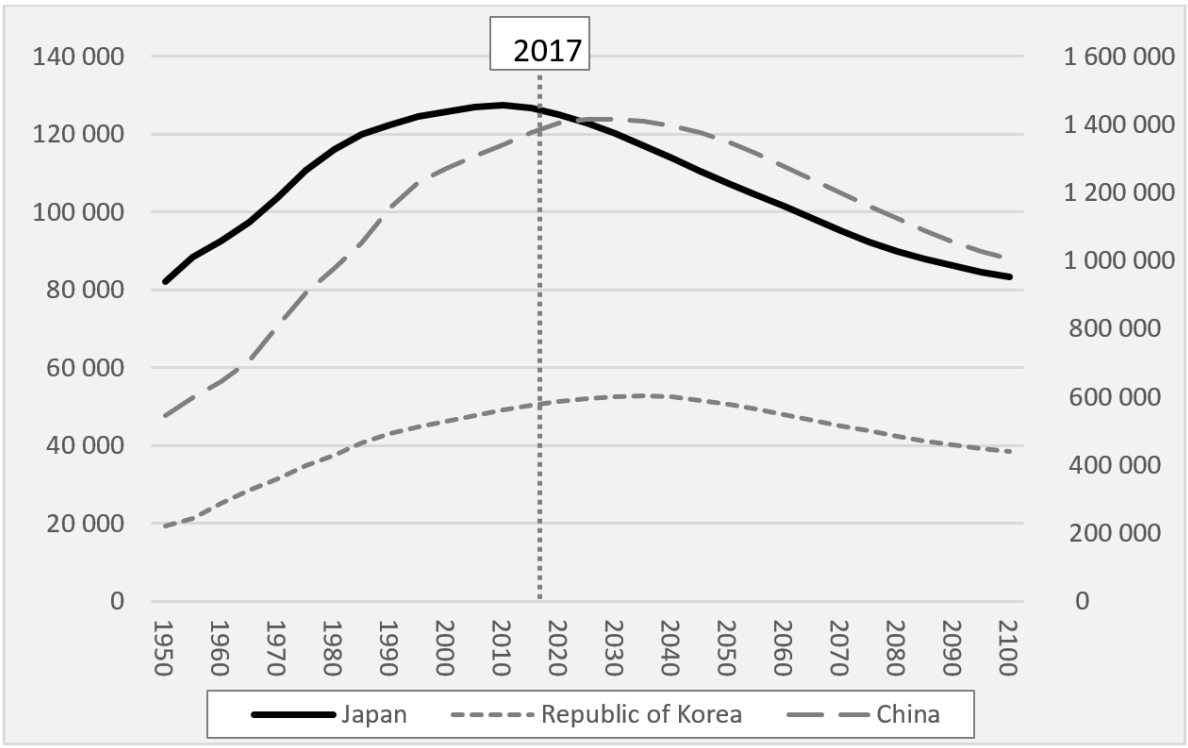
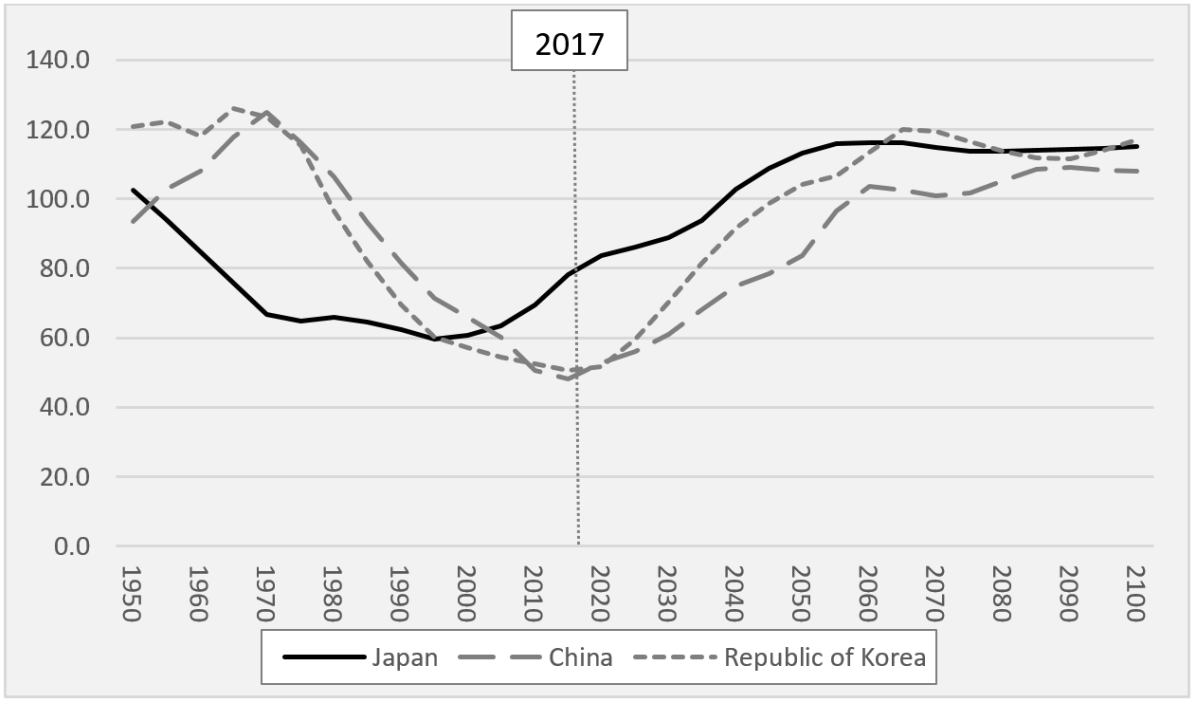
Figure 1. Actual & Projected Population Change in East Asia 1950-2100 (millions. Japan and South Korea left hand scale, China right hand scale).



Source: UNPD (2015). Note: Medium variant projections and variable fertility.

Fig. 2. Actual and projected child and old age dependency ratio in East Asia (per cent).



Source: UNPD (2015). Note: Dependents are persons 0-19 & 65+.

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Together with overall changes in Japan's age structure has occurred a shift in its spatial distribution, due to familiar processes of agricultural transformation, industrialization, and urbanization that accompany modern economic development (England 2005; Egglestone and Tuljapurkar 2011). Whereas in 1950 53.4% of Japan's population lived in urban regions, by 2015 this had increased to 90.5% (UNPD 2015). Simultaneously the total population was initially also expanding rapidly. This produced a massive expansion of Japan's metropolitan areas and core cities (Maps 1-3), as well as high levels of urban population density, requiring enormous investments in housing and infrastructure (Photos 1-3), and coinciding with rapid increases in per capita incomes. However, in the 1990s and 2000s both demographic and economic growth stalled. With the onset of national-scale depopulation in 2008, and with the crucial exception of Tokyo, nearly all settlements are now shrinking, including the majority of provincial core cities (Map 4). This has produced a gradual awakening in Japan since the 1990s that depopulation can no longer be ignored as an unfortunate rural expression of successful national economic development, but as a significant national problem confronting nearly all settlements (Matanle and Rausch *et al* 2011).

Significantly, the unwinding of demographic tempo effects produced by the combination of increasing longevity and long-term low fertility has meant, first, that most urban populations have followed rural regions into an era of ageing and depopulation and, second, the rate of population loss in rural regions has continued, even accelerated in many areas since the 1990s, as an increasing proportion of the rural population reaches advanced old age and passes away (Map 4) (Matanle and Sato 2010). Consequently, while urban areas experienced enormous pressures in accommodating demand for housing, infrastructure, goods and services in the early postwar decades, ageing and shrinkage are now a concern in cities, and urban questions continue to be the focus of human geographers interested in Japanese spatial patterns. Less remarked, perhaps because it is less frequently noticed, have been the stresses that population ageing and loss place on rural regions.

Despite every country's journey through development being an outcome of its own circumstances, distinct patterns of demographic change are evident in East Asia, as well as among other groups of Asia-Pacific countries, such as Anglophone Australia and New Zealand. Notable throughout the region, for example, has been the appearance of extreme differences in rural-urban population size and density. Huge urban metropolises have emerged, supplied with sophisticated high cost infrastructure to enable complex economies and diverse societies to function. These cities generate an enormous gravitational pull, drawing in people and resources from their suburban, periurban, and rural surroundings, as well as internationally. This accumulates into a widening gap between dynamic and prosperous metropolitan centres and declining and disconnected peripheries. In Japan the Kanto region can 'boast' that it is the world's largest urban area by population.[5] China possesses at least six megacities of more than ten million persons, and five of the world's ten largest urban areas are located along the western arc of the Pacific Ocean – in order of magnitude: Tokyo, Jakarta, Seoul, Manila, and Shanghai (Demographia 2016: 19). And at 1.4 million people Auckland has 33.4% of New Zealand's population within its environs (SNZ 2013).

Projections for Australia and New Zealand indicate that both will grow steadily over the coming decades (Figure 3), presenting a different pattern at the national scale to East Asia. Nevertheless, this masks some subnational population dynamics whose outcomes are more redolent of the Japanese experience. First, both countries exhibit high rates of domestic rural-urban migration, producing strong urbanization trends, with 89.4% of Australians and 86.3% of New Zealanders now living in urban areas (UNPD 2015). Second, although Australia and New Zealand receive higher levels of international migration in comparison with East Asia, patterns of settlement have changed. 21st century migrants increasingly are settling in metropolitan centres rather than provincial regions, and higher income individuals exhibit exceptionally mobile living patterns akin to being global nomads, frequently moving internationally between multiple domiciles. Third, New Zealand exhibits substantial population losses to out-migration, mostly of educated young adults to other Anglophone countries. Many return, but some do not; and at any one time approximately one-fifth of the country's population is resident overseas (Inkson and Thorn 2011).

Significantly, both Australia and New Zealand appear to exhibit some post-growth demographic trends, as yet less strongly than East Asian countries. Australia's net reproduction rate, an earlier indication of underlying fertility trends than the total fertility rate, fell below the population replacement rate of 1.0 in 1975-80, as did New Zealand's in 1980-85. Australia's total fertility rate subsequently fell below 2.1 in 1975-80 and has hovered around 1.8-1.9 since then, while New Zealand has maintained a relatively higher level of 1.9-2.1 since 1980-85 (UNPD 2015). Ageing is also deepening, from 10% of both countries' populations in the 1980s, through 15% in 2015, and is projected to exceed 20% by 2030/35 (Jackson 2014; UNPD 2015). Both countries' total dependency ratio is therefore increasing (Figure 4), and their progression through the late 20th and early 21st centuries is similar – though less steep – to that of East Asia.

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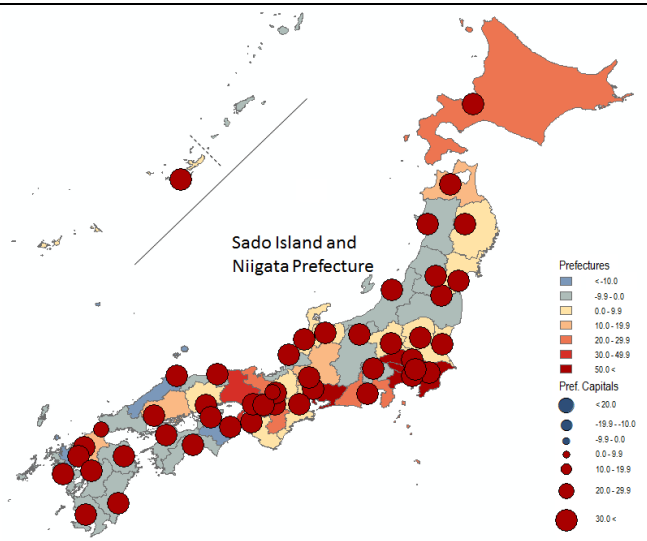
Maps 1-4. Actual and projected population change in Japan by prefecture and prefectural capital city (1950-2030). Note. ArcGIS software used for all maps.

Map 1. Population change in Japan by prefecture and prefectural capital cities, 1950-70.

Blue areas show rural depopulation due to heavy out-migration of mainly younger people to metropolitan centres and prefectural core cities during the era of rapid economic growth. Beige and red show growing regions, reflecting strong urbanisation trends in prefectural core cities.

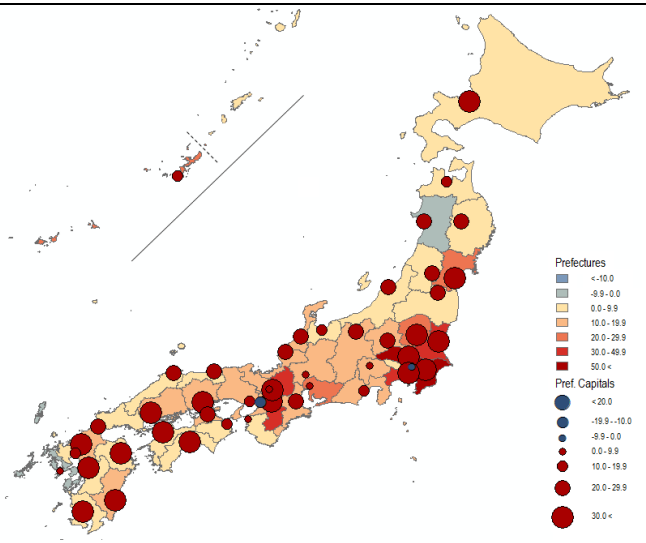
Source: National Population Census, 1950-70.



Map 2. Population change in Japan by prefecture and prefectural capital cities, 1970-90.

Beige provincial regions show population growth as government spatial equalisation measures took effect in the 1970s and '80s. Urbanisation continued, but there was a slowing down in some core cities, especially in northerly prefectures.

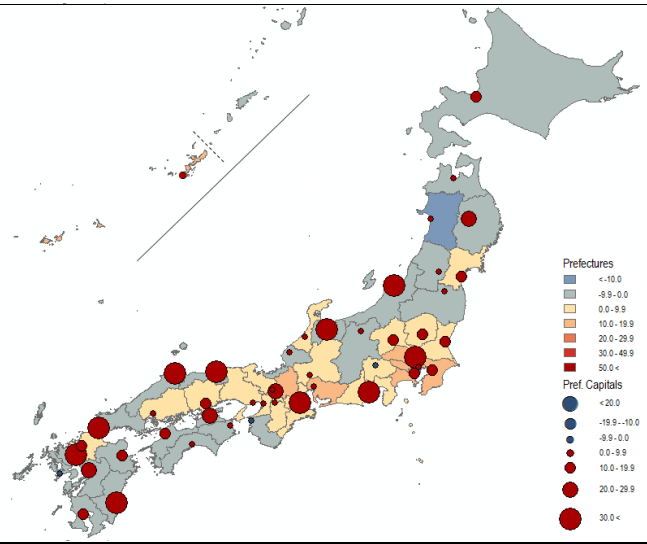
Source: National Population Census, 1970-90.



Map 3. Population change in Japan by prefecture and prefectural capital cities, 1990-2010.

Blue areas show widespread rural depopulation returning to peripheral areas. This time rural depopulation is due to a combination of out-migration of mainly younger people to urban areas, lower fertility, and an excess of births over deaths in rural locales as population ageing reaches an advanced stage. Urbanisation continued, but at slower rates than before in a majority of core cities.

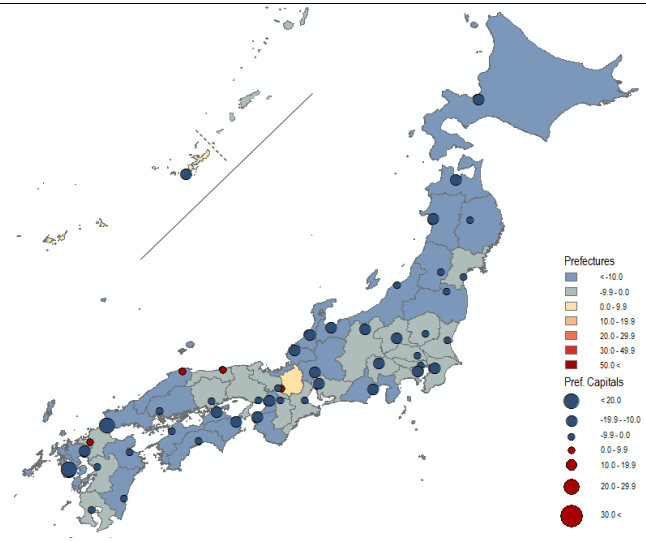
Source: National Population Census, 1990-2010.



Map 4. Population change in Japan by prefecture and prefectural capital cities, 2010-2030 (projected).

After 2010 depopulation pressures appear nationwide, except in a few cases, due mainly to the unwinding of the tempo effects of increasing longevity within a long-term low fertility society. Nearly all urban centres are now shrinking and depopulation can no longer be considered a rural phenomenon.

Source: National Population Census, 2010 and NIPSSR, 2011.



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Photos 1-3. High density housing and sophisticated urban infrastructure in the Tokyo metropolis. (1) Housing in western Tokyo; (2) Tokyo Metropolitan Government building in West Shinjuku; (3) The Rainbow Bridge, Tokyo Bay. Click on highlighted text for Google Maps tools for these locations.

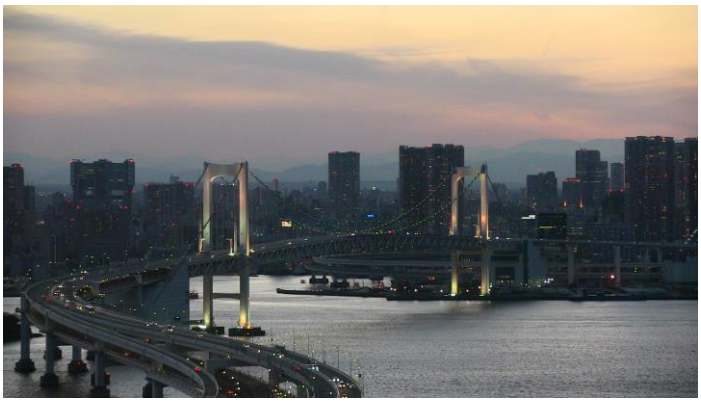

Photo 4. Auckland, New Zealand, with port facilities in the foreground, and city centre in the background.

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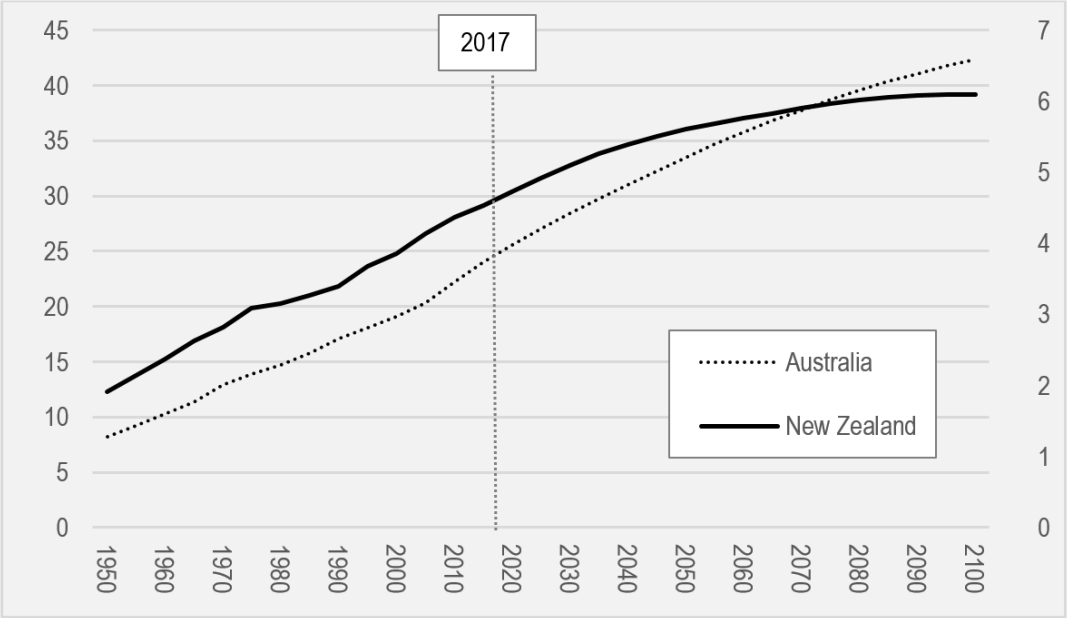
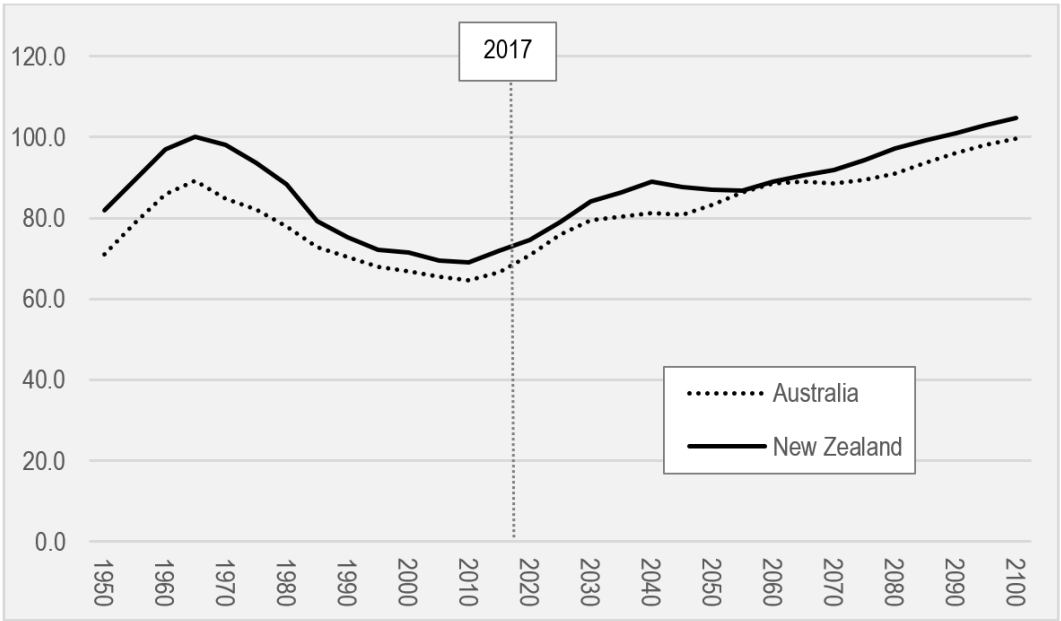
Fig. 3. Actual and projected population in Oceania 1950-2100 (millions. Australia left hand scale, New Zealand right hand scale).



Source: UNPD (2015). Note: Medium variant projections and variable fertility.

Fig. 4. Actual and projected child and old age dependency ratio in Oceania (per cent).



Source: UNPD (2015). Note: Dependents are persons 0-19 & 65+.

Theorising Regional Growth and Shrinkage in the Modern Era

Theoretically speaking, while a national population is expanding it is probable, even an expectation, that the majority of communities will grow more or less continuously; and growth is still almost universally recognized as a positive and normative condition of modernity. Accordingly, population shrinkage and decline are considered aberrations requiring correction by the re-establishment of growth. Despite this, there is little acknowledgement that growth, at least at rates commonly achieved in the 20th century, is anything but 'normal' when viewed from the perspective of the *longue durée* (Münz and Reiterer 2009). Furthermore, there remains as yet inadequate acknowledgment of possible alternatives to growth, of whether and for how long growth is sustainable, or of whether and under what circumstances shrinkage might be preferable. This is partly because nearly every

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country in the world is currently growing and examples of shrinkage at the national scale of a sufficient duration from which to draw valuable empirical lessons are few.

At the national scale demographic growth and shrinkage are easily definable with reference to statistics, and there is never a third outcome; at any particular time a country's population is either expanding or shrinking. Yet, when we examine population dynamics at the subnational level an intermediate stage becomes discernible. This is when the national population continues to expand due to demographic momentum[6], but fertility and internal migration indices have already dropped below replacement rates. This process becomes visible with the appearance and expansion of areas undergoing a 'double negative population disequilibrium', revealing the potential for future national scale depopulation (Matanle and Sato 2010).

This situation started to become apparent in Japan from the late-1950s, when heavy rural-urban migration coincided with rapidly declining fertility. Maps 5-8 display sub-regional population change in Niigata Prefecture, beginning in 1950, demonstrating that even as Japan's national population continued to grow through to 2008, rural depopulation processes have been continuously present at many, particularly mountainous, local levels since 1950. Moreover, although Japan's total fertility rate fell below the population replacement rate in 1974, reaching 1.26 children per woman in 2005 and slowly climbing thereafter, the net reproduction rate fell below replacement as early as 1956 (MIC 2015). At the time this was considered a welcome and necessary counter-balance to the rapid expansion generated by the postwar baby boom. However, in these circumstances it is inevitable that, if conditions persisted, and in the absence of significant international migration, the number of deaths would eventually overtake the number of births and depopulation ensue. Conditions did persist and, sure enough, in 2008 the population of Japan began to decline.

Under national-scale depopulation it is a mathematical certainty that population growth in one settlement is balanced by proportionally greater shrinkage in another. Consequently, as Planet Earth's largest settlement Tokyo continues to grow, drawing in people and resources from elsewhere, in a depopulating Japan nearly every other settlement is shrinking. Indeed, the capital region's strong unipolar concentration has even produced demographic destabilising effects in the Keihanshin urban region of Kyoto-Osaka-Kobe (Buhnik 2014; 2017). In peripheral rural areas some communities are now collapsing and others are empty, leaving ghost towns and villages behind (Photos 5 and 6) (see, Grist 2014). This is what Japanese social scientists mean when they describe '*genkai shūraku*', or 'communities on the edge' (Ono 2005), where more than half of the residents are over 65 and the community unable to reproduce itself.

In these places there is little economic activity, few children are being born, much of the built environment lies empty and deteriorating, and agricultural land is left for scrub. Forests encroach on residences, leaving villagers with less light and giving cover for animals such as monkeys, bears, deer, and boar to approach and raid allotments and orchards, ransack houses, and confront elderly residents (Knight 2003). According to the Rural Development Planning Commission, in 2005 there were 1,403 communities in imminent danger of collapse in Honshu, Shikoku and Kyushu (NKKI 2006: 33). In its most recent report on rural depopulation, published in February 2017, the Ministry of Internal Affairs describes 14,487 of Japan's 65,440 settlements (*shūraku*) as having more than half of their population aged 65 or over, with the proportion being identified as such rising dramatically from 7.5% of settlements in 2001, to 15.5% in 2011 (10,091 settlements), and 22.1% of settlements in 2016 (MIC 2011: 7-8; 2017b: 37).[7] Most striking of all, whereas in 2011 there were 205 settlements which had 100% of their population over the age of 75, by 2016 this number had risen to 280, representing a rise of 36.6% in just five years (MIC 2011: 7-8; 2017b: 38).

One method for contributing to this emerging discussion is to compare processes and outcomes of demographic development in different areas of the world. For example, the experiences of Japan and New Zealand could be used as a basis for theorising the construction of a dimension of analysis for the Asia-Pacific area, with thresholds of demographic development placed along it. At one end lies Japan, the first Asia-Pacific country to pass over the transition to national scale depopulation, while New Zealand would be mid-way along, as a high income country potentially exhibiting early signs of a 21st century post-growth regime. Or we could model depopulation by gathering countries into groups according to similar geographies of development, with East Asia (Japan, South Korea,, China etc.) in one, and Anglophone Oceania (Australia, New Zealand etc.) in another. As a qualitative examination of two countries' experiences, this article establishes a theoretical framework for comparing different scales and locales of depopulation in specific developmental contexts, and consequently moves towards a more systematic understanding of the regional dynamics of growth and shrinkage in the modern era.

Accordingly, what are some of the conditions of living and working in Japan's and New Zealand's rural regions and what have been some of the responses to community decline, in particular since the post-growth era began in the 1990s? In the next section I present description and analysis from 25 years of personal experience of and research into rural depopulation and decline in Japan, focusing first on issues of employment and over-capacity in Niigata Prefecture and Sado Island (see, Matanle 2006; Matanle and Sato 2010), and then on rural agency in response to the region's emerging circumstances. I will then supplement this with research conducted in 2015 and 2016 in New Zealand.

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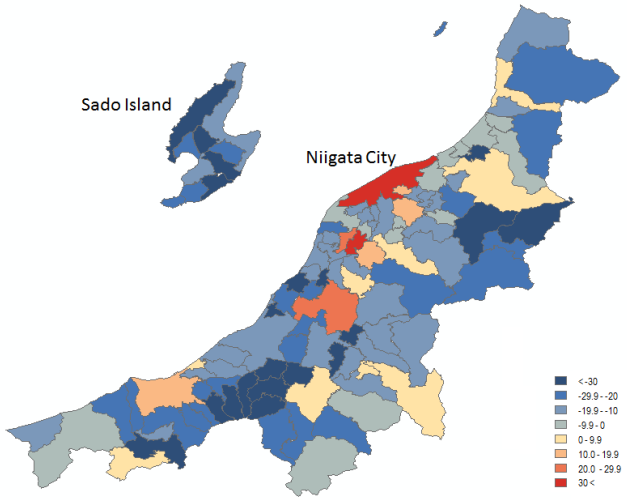
Maps 5-8. Regional population change in Japan: Niigata Prefecture (1950-2030). Note: Pre-2004 municipal boundaries used for more detailed spatial definition of demographic change.

Map 5. Population change in Niigata Prefecture, 1950-70.

Blue areas show depopulation of rural areas due mainly to out-migration of younger people to metropolitan centres and prefectural core cities during the era of rapid economic growth. Beige and red show population growth and urbanisation in core cities.

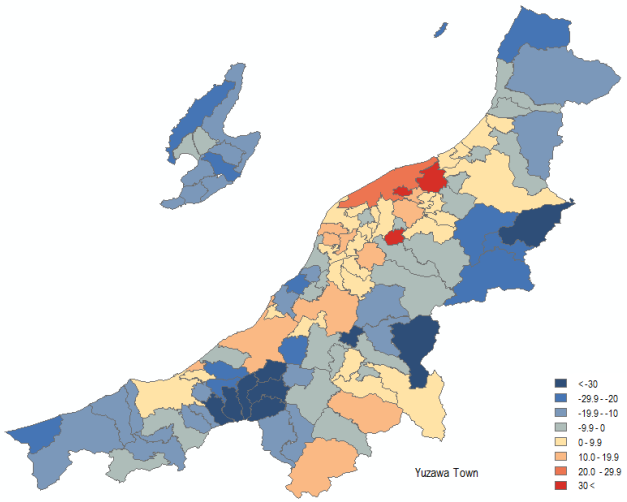
Source: National Population Census, 1950-70.



Map 6. Population change in Niigata Prefecture, 1970-90.

Beige provincial regions show growing cities and towns as a result of government spatial equalisation measures. Blue areas show rural municipalities continuing to shrink, despite government efforts.

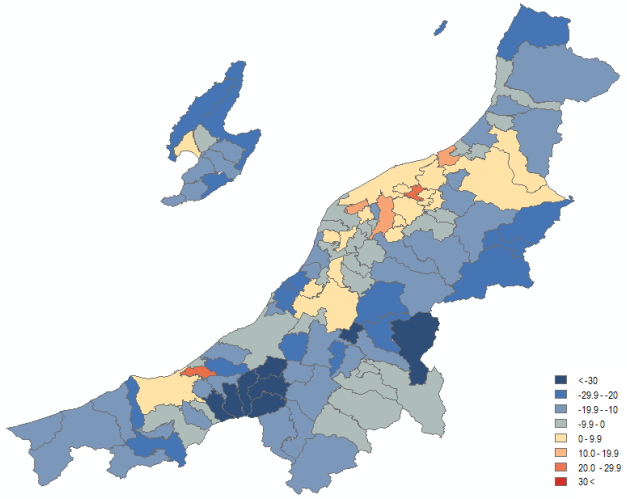
Source: National Population Census, 1970-90.



Map 7. Population change in Niigata Prefecture, 1990-2010.

Beige areas show the tail end of national population growth as the rate of urbanisation slows. Previously growing towns begin to depopulate, and rural mountainous areas continue to shrink.

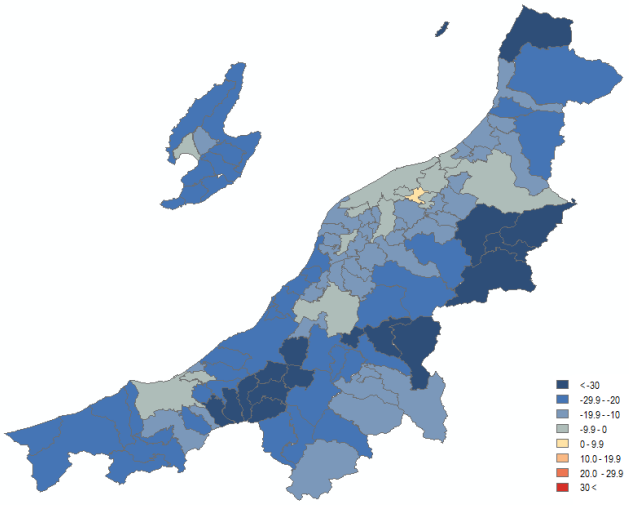
Source: National Population Census, 1990-2000. Niigata Prefecture Website, 2005-2010.



Map 8. Population change in Niigata Prefecture, 2010-2030 (projected).

All settlements are now shrinking, including prefectural core cities, except for one small suburban area of Niigata City. Depopulation in rural and mountainous municipalities is deepening and broadening.

Source: Niigata Prefecture Website, 2000-2010. NIPSSR, 2011.



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Photos 5 and 6. (5) The main street in Hashima, abandoned in 1974; (6) Rows of empty houses in Horonai, Mikasa, Hokkaido. Click on highlighted text for Google Maps tools for these locations.

Employment and Overcapacity in Japan's Shrinking Regions

Despite stable employment being the foundation for a durable and resilient community, well-paid secure full-time jobs are in short supply in rural Japan. Traditional routes into employment are disappearing where economic functions are in decline, services in reorganization and retreat, and government redistribution measures being cut back. For example, over-capacity in educational infrastructure due to a drop of approximately 50% nationwide in the number of school age children means that prefectural and municipal authorities are merging and closing schools, leading to fewer teaching opportunities. This culminates in empty school buildings dotting the landscape, reminding residents of once thriving communities alive with children's play (Photo 7).

In multi-children households in the past the eldest son, or another of the children, would remain near to the family holding and take employment in public services or teaching, for example, to look after the family business, farm or property as his (or her) parents aged, and this would allow younger siblings to migrate to urban locales safe in the knowledge of household continuity (Matanle 2006). However, Japan is now a low fertility culture; meaning that the majority of adults of child-bearing age were themselves born into a low fertility family as an only child or with perhaps one sibling. In a society where having one or perhaps two children is considered the norm, then a lack of long-term employment opportunities can have disastrous impacts on rural community reproduction. As economic opportunities have contracted, particularly since the 1990s, younger people who have felt the need to move away to seek educational, employment and social opportunities in provincial cities or metropolitan regions, leave their parents alone and deprive the community of its reproductive potential. Few return.

In these cases family businesses disappear, and leave residents – predominantly older people – dependent on a depleted community base. These households are often small-scale crafts manufacturers, niche food and beverage producers, local retailers, restaurants, guest houses and small hotels (Photo 8). Their closure causes secondary damage to economic potential, just as municipal authorities are seeking to boost the

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locale's attractiveness to outsiders to strengthen economic sustainability. Following is a statement by a teacher with responsibility for career education at a senior high school (ages 15-17), describing the employment situation there and younger people's aptitudes.

> When they graduate most [students] leave and the number that return is small. Even if graduates want to return [to Sado], there are few places that can employ them because their skills and knowledge are not suited to the work here .... There are no big companies and manufacturing has almost disappeared, construction is scaling down, agriculture is more difficult ... managers tend to be from outside, while temps and part-timers are usually locals. *Senior High School teacher and careers advisor, Niibo, Sado City, Niigata Prefecture.*

Similarly, as a result of central government measures aimed ostensibly at providing local autonomy through decentralization and rationalization, and partly with the intention of providing the tools to respond to ageing and depopulation in rural regions, a wave of municipal mergers took place through the early 2000s which saw the number of municipalities decrease by 45%, from 3,229 to 1,788 between 1999 and 2008 (Rausch 2012: 187; Yokomichi 2007: 6-7). Niigata saw the greatest proportion of mergers of any prefecture, with the number of municipalities dropping 69%, from 112 to 35 (Yokomichi 2007: 20). In 2004 Sado Island, which had lost nearly 50% of its 1950 population, went from ten municipalities to a single Sado City.

Municipal mergers have driven an ongoing reorganization and centralization of essential services, resulting in the closure of public facilities and buildings in peripheral areas. As of December 2013 Japan's local governments planned to demolish 12,251 redundant municipal buildings at a projected cost of JPY404 billion, with none being scheduled for renovation or rebuilding, and only 40% of which were in use (*NKS* 03.12.2013). Moreover, as services have become more distant from users, and public transport cut back, residents feel forced into cars, which disproportionately affects older people, who often have mobility restrictions, but who may not drive. Hence, younger and middle-aged people then spend resources and time helping and caring for elderly relatives and neighbours in compensation for reduced formal service provision. Although such kindness is admirable, it reduces the opportunity that able citizens have for economic sustenance activity. Furthermore, as organizations close facilities, remove duplication, and slim workforces through retiree attrition, businesses located nearby such as restaurants and cafés lose customers, as indicated by the following quotation.

> The municipal merger has meant that there are fewer public officials working here, as jobs have been closed down or moved to the new city office. So, the bulk of our lunchtime business has now gone ... My husband's bar also gets fewer customers in the evening as public officials do their evening eating and drinking in the new restaurants in Sawata, which is closer to the city office. *Café and restaurant owner, Aikawa, Sado City, Niigata Prefecture.*

The preference among urban Japanese for travel and tourism overseas means that tourism related employment is also declining in many domestic rural destinations, particularly for women seeking part-time or seasonal jobs to supplement family incomes and enable informal social care roles. Although international tourism to Japan is increasing, foreign visitors rarely venture beyond the most popular sites in Tokyo and Kyoto. In response to the decline in their populations and economies through the postwar period, many regional municipalities had attempted to revitalize their declining economies through the development of tourism facilities, which have since failed, leaving towns saddled with huge debts and a declining tax base. Indeed, for the purposes of tourism, many rural areas in Japan are considered remote marginal communities unworthy of a visit.

Accordingly, overcapacity has recently become a serious concern in non-metropolitan regions, as communities shrink, leaving excess housing stock, underused infrastructure, and underworked land (Photos 9-13). Provincial real estate markets are failing as houses remain empty and property reinvestment is falling, leading to shabby and derelict neighbourhoods, further depressing the atmosphere, reducing land values and encouraging out-migration by those who can – leaving behind those who cannot! The prefectures with the most rapid depopulation also, not unexpectedly, have the lowest land prices; Tokyo (JPY309,700/m2) is more than 20 times as expensive as Akita (JPY15,300/m2) (MLIT 2014). Empty houses, or *akiya*, indeed entire neighborhoods, are becoming unsellable due to colonization by fauna and flora, and thousands of shops and businesses lie empty and deteriorating or are underused. Data from the government's 2013 Housing and Land Survey show 8.3 million vacant dwellings in Japan, up from 7.6 million in 2008 and 3.9 million in 1988, 3.2 million of which (2.7 million in 2008 and 1.3 million in 1988) were categorized as being left unattended or whose owners had died (MIC 2013; 2008).

It is difficult to imagine that one could derive benefits and opportunities from such circumstances. In the next section, however, I will show that some people are attempting to do so, as a result of a gradually emerging change in personal orientation away from 20th century values that prioritize economic growth and demographic expansion, towards 21st century values that emphasize the achievement of personal and community wellbeing. Here's how.

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Photos 7-8. (7) An abandoned elementary school in Sotokaifu, Sado Island – since the photo was taken the school buildings have been taken down and a paved area is all that remains; (8) An abandoned hotel in Tōyō Town, Kochi Prefecture, at the time of the photo inhabited by squatters - hence the original flower beds being used as vegetable allotments. Click on highlighted text for Google Maps tools for these locations.

Community Responses Under National-Scale Depopulation in Japan: (Re)Valuing Localism, Environment, and Lifestyle Aesthetics

Outside Japan's metropolitan centres the prospect of community growth is now impossible for the majority of settlements, in the absence of an unlikely sudden or dramatic change in migration or fertility. Indeed, in 2015 ageing and shrinkage were occurring in three quarters of Japan's municipalities, including many urban and suburban locales, with this proportion predicted to rise to more than nine out of ten municipalities by 2030 (MIC 2015; NIPSSR 2012). How are rural residents adjusting to the new dynamic of national-scale depopulation? In particular, can the emergence of a 'depopulation dividend' be observed; one that might provide some lessons for other Asia-Pacific countries about to encounter similar dynamics? In this section I focus on community and individual responses to rural depopulation and link these to changes in value orientations. For it is values which inform human motivation, which in turn feeds behaviour, and which together constitute part of a complex series of psychological and emotional dimensions that constitute 'agency' (Giddens 1991).

Throughout most of the postwar era government interventions into the rural-urban divide in Japan have been dominated by a complex system of financial transfers to boost investment in rural infrastructure. To a great extent these measures have failed, principally because they were as much rooted in co-dependent political and financial relationships – the 'iron-triangle' of

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the bureaucracy, business and politics and the 'construction state' (Feldhoff 2002; McCormack 2001) – as they were intended to resolve regional imbalances. Indeed, these so-called 'spatial equalization measures' may have made the situation worse, for example by incentivizing villages to exhibit the characteristics of a collapsing community in order to receive state '*kaso*' (depopulation) subsidies (Mizohata 2010).

Furthermore, Japan's centrally managed postwar development has wreaked havoc on the country's natural environment (Kerr 2002; Matanle and Rausch *et al* 2011; McCormack 2001). The felling of original growth mixed-leaf forests and replacement by cedar monoculture, the concreting of virtually all of Japan's major rivers for flood control, the construction of 102 commercial airports, 3,076 dams, and 1.2 million kilometres of roads, and the presence of 'bridges to nowhere', 'tunnels without exits', and 'ports without ships' must be familiar to anyone with a knowledge of Japan's 20th century regional development (ICOLD 2014; Kerr 2002; McCormack 2001; MIC 2015; World Airport Database 2015). Yet, despite these decades of spending – perhaps in part because of them – Japan's regional communities continue resolutely to shrink and deteriorate.

Where official policies continue to promote the notion of revitalization as a synonym for growth, however vaguely that is defined, some residents of rural areas express frustration because they recognize that in circumstances of national-scale shrinkage these are unattainable goals for their communities. The response among some residents is to conflate socio-economic, cultural, and environmental decline, to ascribe these to Japan's top-down and urban-centred modernization, and to work towards a more balanced accommodation with their surroundings. Consequently, some are including or even prioritizing other values in their decision-making; their rationale being that, where growth is unattainable, and to maintain a hopeful outlook, it makes sense to place importance on values that can be realized. Of these, three orientations have been expressed, and these represent a turn towards the local or regional, environmental conservation, and lifestyle aesthetics.

A new localism has been emerging in Japan's provincial regions since the 1990s. This is expressed via endogenous small-scale activities for the purposes of rejuvenating community sustainability through, for example, cultural and social development, creating a comfortable and functional built environment, promotion of health and well-being, care and compassion for more vulnerable citizens, micro-energy generation, clean agriculture, bio-diversity conservation, and the development of a regional and local politics. Recently this movement was given powerful extra impetus after the 11 March 2011 tsunami and nuclear crisis in Tōhoku/Fukushima, because the central government's regional policies were associated with contributing to the severity of the unfolding disasters (Feldhoff 2013; Matanle 2011).

These movements are specific to local contexts and are usually neither anti-Tokyo nor anti-growth, though scepticism is present among some as to whether the political, bureaucratic and business elites in Tokyo understand, and are therefore able to respond to, local concerns. Consequently, for example, on 5 June 2013 50 municipalities representing 4.3 million people signed up to the newly established 'Association of Municipalities for Improving Residents' Sense of Well-Being' (nicknamed the 'Happiness League'), for the purposes of developing small scale local projects that promote personal well-being, sharing information between municipalities, and by-passing the central government in Tokyo (ISHES 2013).

Together with those who are raising social, political, and environmental concerns, many people in rural areas are preferencing lifestyle aesthetics. This can be seen in the number of lovingly restored houses and other buildings using locally sourced materials, and craftspeople using traditional methods. In some cases initiators have been long-term foreign residents who are disappointed with the aesthetics in postwar planning and architecture, or are seeking to contribute to community sustainability, and have begun with restoration of their own properties, which then galvanizes others nearby to do the same. Some of these properties serve as businesses and have become focal points for local cultural and socio-economic revitalization efforts. While these can be profitable, the owners' focus has also been personal, social, and cultural (for example, Kerr 2013).

In Sado Island in Niigata Prefecture examples of the above change in value orientations, and their behavioural manifestations, are numerous (Photos 14-18). They are to a great extent responses to what residents view as geographical, or regional, gaps (*chiiki kakusa*) that have been widening, particularly since the 1990s when Japan went into its long-term economic slowdown and the 2000s, when the central government adopted a more stringent approach to supporting rural areas, such as with the Trinity Reforms enacted by Prime Minister Koizumi (Elis 2017). What is interesting about these developments is their concern with community restoration and cohesion, and not growth *per se*. They are anchored in local particularities and show concern for the past as well as the present and future. They acknowledge that growth is no longer possible and instead represent a turn towards local well-being. They are as much a consequence of the impacts of depopulation as they are about taking the opportunities that depopulation presents. It is important also to acknowledge that they are also derived from wider concerns, such as for climate change and biodiversity, and enable the people of Sado to reach out beyond traditional networks and political structures to appeal to a more global audience. Here are some examples.

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Photos 9-13: Abandoned and empty buildings are now a common sight in Japan's provincial regions. (9) A row of empty shops in Shibata City, Niigata Prefecture; (10) A farmhouse with a tree growing outwards from the inside in Tōyō Town, Kochi Prefecture; (11) An office building and shops in Ueda City, Nagano Prefecture; (12) An abandoned farmhouse in Ryōtsu, Sado City, Niigata Prefecture; (13) A former business in Aikawa, Sado City.

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Photos 14-18. (14) A hand-painted sign on a roadside in Sado. The caption reads 'Towards the Toki in the sky once more'; (15) Taiko Exchange Study Center, the Kodo taiko drum group's base in Ogi Town, southwestern Sado; (16) Saké produced exclusively by Hokusetsu of Akadomari in Sado for the Nobu international restaurant chain; (17) Original growth temperate rain forest in northeastern Sado; (18) The satoyama landscape near Aikawa, in Sado Island. Click on highlighted text for Google Maps tools for these locations.

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Under Mayor Takano (2004-2012), Sado City launched a series of town hall hearing sessions to learn of local people's concerns more directly, and to engage in direct dialogue with citizens. The results have translated into the mayor's goal of making Sado into a '*sumiyasui tokoro*', or comfortable living space, for local people. Part of the development of a *sumiyasui tokoro* has been a campaign to establish Sado as an 'eco-island' and an example for people elsewhere to live in greater harmony with their natural surroundings. This includes various initiatives, such as eco-tourism to the original growth temperate rain forest in northeastern Sado, and has centred on the conservation of the symbolic *toki*, or Japanese crested ibis (*Nipponia nippon*), whose only remaining habitat in Japan is Sado. For some the survival of the island's society and culture is associated with the continued future residence of crested ibis such that, rather like the ravens at the Tower of London, the disappearance of the *toki* would presage the end of Sado as a human community.

The desire to nurture the *toki* and return it to sustainability in its habitat, after a long period of the systematic promotion of conventional modern industrial agricultural techniques, is expressive of a revival of traditional food production and consumption practices in Sado (FAO 2010). This is manifested in, for example, the conservation of the *satoyama* landscape and agricultural system, which is unique to Japan, but which has valuable lessons for Asia in preserving bio-diversity at the human-forest interface under wet rice agriculture. This led to the award to Sado in 2011, in conjunction with the Noto Peninsula in Ishikawa Prefecture, of Globally Important Agricultural Heritage Status (GIAHS) by the Food and Agriculture Organization of the UN (FAO 2011). The award was notable because it was the first time any region in a developed country had been recognized for the importance of its agricultural heritage and the efforts of local people in conserving the natural environment for sustainable food production. Interestingly, the project joined multiple actors unused to working together in a coordinated effort going beyond traditional bureaucratic channels, including local, national and international organizations, academic and non-governmental institutions, and corporations (FAO 2010).

Sado City government is also participating with a regional private education provider to develop vocational education relevant to local needs and sensibilities. NSG has opened the first post-secondary institution to be located in Sado, which delivers courses in Environmental Management, Care and Welfare for the Elderly, and Traditional Crafts (including architectural restoration and 'Mumyoi' pottery, which is unique to Sado).[8] Students come from Sado as well as other parts of Japan to study in one of Japan's richest natural and cultural environments. Opened in April 2008 on the site of a former girls' senior high school, and with a JPY200 million loan from the municipality, NSG now teaches six courses in related subjects and accepts up to 200 students per year group. For graduating students there are opportunities to remain in Sado working to care for the elderly population, as well as work in the restoration of temples and shrines, and in redeveloping the island's arts and crafts heritage. In an era when more than 75% of each youth cohort now experiences post-secondary education this is a significant step for socio-cultural sustainability in Sado because, for the first time, younger people do not have to leave the island if they wish to continue their studies beyond upper secondary school.

Further examples of the municipal government and citizens of Sado reaching out beyond traditional networks to develop local social, environmental, and cultural resources, as well as contribute to those elsewhere, are:

- The Small Island Study Association held its Fifth International Conference on Small Island Cultures in Sado in 2009. Sado municipal government's intention in inviting the conference to the island was to bolster efforts to redevelop the island's cultural and environmental resources, as well as to share Sado's experiences and knowledge with people living in small islands across the world.[9]
- Sado is the base for the world famous Kodo *taiko* drumming group, who tour internationally and host a summer percussion festival in Ogi Town, which draws thousands of visitors to Sado.[10] Year-round the group contributes to music education and performance in Sado through its purpose-built centre in Ogi, southwestern Sado.
- Sado hosts an international triathlon in September each year. Celebrating its 29th running in 2017, it attracts more than 1,200 athletes and sponsors from Japan and internationally.[11] It is one of only two long-distance triathlons in Japan, comparable in distance and difficulty to the Iron Man event in Hawaii. In 2018 it will be the representative event for Japan in the International Triathlon Union's global schedule for elite athletes. As the centrepiece event of the municipal Sado City Sports Association, it is part of an island-wide effort to promote health and well-being among citizens, to attract visitors and contribute positively to the island's image.[12] This includes everything from long distance cycling events and open water swimming, to exercise programmes for local people.
- With the largest concentration of micro-breweries of any prefecture, Niigata's rural areas are famous internationally for saké production. Due to declining domestic markets for traditional saké, two of Sado's remaining six producers are responding to rising international demand, with one winning prizes in international competitions,

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such as the International Wine Challenge in London and the US National Sake Appraisal, as well as supplying the First Class cabin of Air France, and another supplying the worldwide 'Nobu' chain of restaurants part-owned by the actor Robert de Niro. [13] A third brewer is producing organic sake by purchasing rice directly from employees, by-passing conventional distribution systems, thereby providing a second income for them and strengthening local economic and environmental resilience simultaneously. [14]

- Due to its history as a haven for political, religious, and intellectual exiles, Sado has the highest concentration of traditional Noh theatres outside of Kyoto. Approximately one third of all Japan's Noh stages are located there, many as parts of village Shrine buildings. Restoration of shrines as Noh sites is ongoing and developing a following among aficionados of Noh theatre in Japan, and intended as a part of the island's gradual restoration of its place as a centre for Japan's arts and crafts heritage.

The next section examines rural development in the context of demographic change in New Zealand's South Island, before concluding with a summary analysis that compares both Japan and New Zealand as post-growth Asia-Pacific societies.

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Photos 19-23. (19) The coal mine at Ohai, Southland; (20) Collapsed rugby posts in Ohai – a sign of community decline in rugby mad South Island; (21) An empty property in Macraes; (22) The abandoned gold mine in St Bathans, now a secluded freshwater lake and beach; (23) Abandoned and boarded shopping street in Mataura, Southland. Click on highlighted text for Google Maps tools for these locations.

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Growth and Shrinkage in New Zealand's Regions

Compared to Japan, and among Asia-Pacific countries with a higher level of human development, New Zealand has a small and steadily growing population of approximately 4.76 million.[15] With a relatively high rate of fertility at around 1.9 children per woman and significant immigration, New Zealand will continue to grow for the foreseeable future (Figure 3). However, similar to Tokyo's geographical influence within Japan, in New Zealand there is a strong unipolar concentration around Auckland, which accounted for 33.4% of the country's population and 35.3% of its GDP in 2013 (Nel 2015). Wellington, Christchurch and Hamilton are also growing.[16] Taken together these four cities make up 66.3% of New Zealand's population and 70.5% of its economic output (Nel 2015).

Despite all except one of New Zealand's 16 sub-national regions experiencing economic and demographic expansion, it is at the sub-regional, or district, level where demographic imbalances and economic inequalities are becoming discernible (Jackson 2014; Nel 2015; SNZ 2017). Among 983 statistical area units, 343 (34.9%) experienced depopulation between 2006 and 2013 – meaning that approximately one third of New Zealand is shrinking (Nel 2015). With rapid population growth in the North Island's urban centres, the outcome is decline and shrinkage among communities in the rural periphery (Photos 19-23), prompting some demographers to herald the 'end of population growth' for New Zealand (Jackson 2011: 2). In the light of the evidence and analysis above on Japan, how are rural New Zealanders responding in their locales?

The Japanese experience shows that ageing and depopulation are intimately bound with broader disruptions occurring among and within communities, and this conclusion is mirrored in New Zealand. In recent decades provincial communities in New Zealand have been buffeted by the winds of globalization; not least because, since 1984, the government has embraced neo-liberal economic and administrative reform (Boston and Eichbaum 2014; Nel and Stevenson 2014). Among the signature policies have been deregulation of economic functions, the ending of industrial and agricultural subsidies, and the implementation of a free trade regime. Like Japan, in New Zealand we can observe human-environmental values being expressed through activities that do not prioritize growth. At the same time, New Zealand's demographic situation is as yet less severe than Japan's. The country as a whole is still growing, and government policy has compelled regional and local actors to be more economically competitive and self-reliant than is perhaps the case in Japan, where centrally controlled spatial redistribution of taxation continues. Consequently, opportunities for growth are more numerous and realistic than for most Japanese communities.

One of the most pernicious outcomes of the confluence of ageing and depopulation on the one hand and globalization and deregulation on the other is that New Zealand's urban-rural inequalities have widened (Rashbrooke (ed.) 2013). As in Japan (Matanle and Rausch *et al* 2011), a recursive downward spiralling of socio-economic decline and demographic shrinkage has resulted in some areas. Thus, while Auckland, Wellington, Hamilton and Christchurch are able to maintain steady long-term growth in domestic and international investment and by attracting domestic and international migrants, there is a divergence development experiences among New Zealand's provincial towns and rural settlements. This is particularly so in South Island, where some towns and regions have reaped considerable economic gains and expanded, while others have declined to the point where, in a small number of cases, local authorities have reduced or shut down essential services, such as schools and road maintenance, and are contemplating the 'closure' of the community itself. Kearns *et al* (2010) refer to these changes as 'breaches in the fabric of social welfare' which can themselves tip a community into a precipitous and irreversible decline.

Both Japan and New Zealand are seeing the decline, and in some cases disappearance, of towns associated with traditional extractive industries. Well known in Japan are Hashima (Photo 5), an island in Nagasaki Bay based entirely on coal mining, which declined in the 1960s, was abandoned in 1974, and is now celebrated as an industrial heritage site and ruin (Takazane 2015); and Yūbari in Hokkaido, another coal mining town which lost around 90% of its population in the wake of a disastrous attempt to develop film tourism (Culter 1999; Seaton 2010). New Zealand's South Island has also seen declines. For example, St Bathans and Macraes, both gold mining settlements in Otago, have all but disappeared, though the latter's gold mine still produces. Ohai and Nightcaps, coal mining towns in Southland, are both shrinking due to uncertainty over the future of the mine at Ohai (Photos 19-23), declining by 24.1% and 9.6% respectively since 2001 (SNZ 2013).

Agricultural restructuring has particularly affected sheep farming, which was the mainstay of the South Island economy. The elimination of subsidies has encouraged the revival of a productivist agricultural economy and the replacement of sheep with higher value dairy. This is epitomized by the establishment of the giant Fonterra national cooperative in 2001, which accounts for 25% of New Zealand's total exports, mostly to markets in Asia and Latin America (Fonterra 2016). Through the application of advanced technologies and rationalization of dairy processing, Fonterra has (re)developed New Zealand's dairy industry into a global competitor. However, the outcome has meant considerable changes to the structure of the rural family, communities, land ownership, and the rural landscape in formerly sheep rearing regions.

The removal of subsidies in the 1980s also coincided with demographic decline in sheep farming regions through the 1990s with, for example, Invercargill being the only urban area in New Zealand to shrink, by 5% between 1991 and 1996. Much of this was due to the

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downward economic pressures being felt by sheep farming families who were slow to adapt to the new national agricultural regime. However, outsiders have been attracted into regions where the conversion to dairy has been ongoing, and there have been economic benefits flowing into the new dairy industry; though land transfers and the wide variations in agricultural productivity have also contributed to wealth inequalities within some agricultural communities (Forney and Stock 2013).

New Zealand has also seen dramatic growth in some rural and provincial communities. In addition to the expansion of dairy farming, in South Island both tourism and viticulture have been instrumental in an emerging new cultural economy where substantial symbolic value has been created by recasting remote and marginal regions into unspoiled and unpolluted areas of natural beauty (Photos 24-28) (Conradson and Pawson 2009). In Otago, Queenstown, Arrowtown and Wanaka have developed a tourism industry that benefits from each having a complementary identity, and which simultaneously benefit from and contribute to New Zealand's growing international reputation for adventure and extreme sports (Queenstown), heritage and cultural tourism (Arrowtown), and a spectacular and clean natural environment (Wanaka). Located less than 20km from each other they form an unlikely triangle of growth in a previously shrinking and remote inland area of South Island, with the population of Queenstown-Lakes District growing 65.6%, from 17,040 to 28,224 between 2001 and 2013 (SNZ 2013). A former gold mining town, Arrowtown had declined to less than 200 people in the 1960s, before reviving itself through a carefully managed programme of preserving and renovating historic buildings and using its mining heritage in developing a significant cultural economy in the area. A big part of Arrowtown's success has been in attracting Chinese tourists to visit the Chinese settlement there, to see how the original Chinese gold prospectors had lived and worked. In 2003 the settlement's importance was acknowledged by Prime Minister Helen Clark as important in developing New Zealand's strengthening relations with China by confirming 'the unique identity, history and strength of the original Chinese New Zealanders'.[17]

Alongside the conversion to dairy farming there has been a significant growth in viticulture that, in part, also emerged from the decline in sheep farming, but is also a response to the government's free trade policy. In South Island, the areas around Cromwell and Alexandra in Otago, and further north in Marlborough and around Nelson, have received investments, including by actor Sam Neill, himself a New Zealand citizen, and each has experienced substantial growth in its population and economy. The wine industry has used the country's reputation for a cleaner and gentler environment to create wines with a distinctively softer and lighter New Zealand 'brand'. New Zealand has lately emerged as a world leading producer of Sauvignon Blanc and Pinot Noir; and the result has been 21 consecutive years of increasing exports through to 2016, with a 10% increase to NZD1.6 billion in 2015-16, mainly to Anglophone countries. An effective strategy has been to sell high quality wines domestically to international tourists to make wine an important part of their overall New Zealand experience, in the hope of creating lifelong wine ambassadors, particularly in new markets such as China (NZW 2016).

Another interesting development has been the conversion in 2000 of parts of the former Otago Central Railway into an off-road cycling path, linking small and declining settlements that had been threatened with collapse after the railway shut down in 1990. The path provides a physical heritage link back to South Island's early development as a series of small and isolated agricultural communities, as well as attracting domestic and international tourists who come to enjoy the clean environment, spectacular scenery, and uncluttered traffic free routes. At 150km it usually requires a few days to complete, providing opportunities for cyclists to stop and enjoy life along the route. Contrary to original expectations, local impressions suggest that the largest groups of visitors appear to be middle-aged and older international visitors visiting New Zealand on longer trips and who are prepared to take more time, spend more on meals, accommodation, and equipment, thereby encouraging the development of a slow(er) economy that places importance on enhancing personal well-being and the quality of the human-environmental interface.

Finally, public art is being used extensively throughout provincial New Zealand as a local cultural and economic marker for both residents and visitors; to strengthen local identity and pride among the former, and transmit ideas, knowledge, and feelings about a place to the latter (Photos 29-33). These can be isolated private individual contributions, groups of residents, or more ambitious projects organized by corporations and local authorities. Three examples from South Island are briefly introduced below:

- Bus stops and railway sheds along the main road and rail route between Dunedin and Port Chalmers have been decorated by a collaboration between residents and a local artist to evoke the local fauna as well as tell stories about local history. The route also benefits from a new scenic foot and cycle path that runs parallel to the railway along the bay-shore.
- The gold mining company, Oceania Gold, at Macraes has paid for a large outdoor exhibition of conceptual art in the local village, including huge paintings, sculptures, and installations.
- Dunedin, South Island's second largest city, has developed an international street art trail as part of its efforts to redevelop the run-down industrial zone near the historic railway station. Currently there are 28 giant outdoor wall paintings for visitors to explore.

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Photos 24-28. (24) A middle-aged European couple take a break from cycling the Railtrail to visit the historic Chatto Creek Tavern in Otago; (25) The Railtrail makes its way through traditional sheep country near Omakau, Otago; (26) Fonterra's milk processing facility at Edendale, Southland; (27) Vineyards line the south bank of the Kawarau River at Cromwell, Otago; (28) Chinese tourists throng the main street in Arrowtown, Otago. Click on highlighted text for Google Maps tools for these locations.

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Photos 29-33. (29) A decorated bus stop between Dunedin and Port Chalmers; (30) A café adorned with a red poppy in Port Chalmers; (31) A railway shed between Dunedin and Port Chalmers; (32) Giant paintings among cattle and sheep in Macraes; (33) Art from the Dunedin Street Art Trail (Note: Google Street Map image for this location was taken prior to the street art being painted). Click on highlighted text for Google Maps tools for these locations.

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Concluding Analysis: Towards an Asia-Pacific 'Depopulation Dividend'

Photos 34-36. Common tsunami risks in Japan and New Zealand. (34) A tsunami warning with aluminium smelting plant at sea level in the background near Bluff, Southland, New Zealand; (35 and 36) Tsunami destruction in 2011 at Rikuzentakata and Ishinomaki, Tōhoku, Japan. Click on highlighted text for Google Maps tools for these locations.

Since the 1990s Japan has been facing the end of its modern expansion and the emergence of a post-growth society and economy. China and South Korea also face ageing and depopulation, due to similar patterns of demographic and economic change. Later in the century other Asia-Pacific countries may follow. New Zealand as a whole is still growing steadily, though much of the country's growth is concentrated within a small number of urban settlements, and early signs of a post-growth regime are emerging, with rural ageing and depopulation appearing in some provincial locales.

Significantly, although both countries' rural communities are responding to decline and shrinkage through innovations that root local agency in new value orientations, there are some significant differences. In Sado Island the inevitability of future shrinkage is prompting the community to prioritize a new localism, personal health and the environment, and lifestyle aesthetics. This approach does not represent a rejection of growth. Rather it is an acceptance that growth is no longer possible, even theoretically, and whose acknowledgement has driven a search for alternatives. Similar values are emerging in New Zealand's South Island, but producing different outcomes, most probably due to the region's distinct cultural geography and demographic circumstances.

Unlike in Sado Island, for South Island New Zealanders growth remains a theoretical and practical expectation in nearly every community, even as Auckland continues to expand, because the country as a whole is still growing. Hence the re-emergence of a productivist agricultural sector with the replacement of sheep by dairy farming, and its growth into a major contributor to New Zealand's international trade balance. Notable, moreover,

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has been the recasting of remoteness and marginality as an economic advantage in response to deregulation, globalization, and rural change through the development of tourism and viticulture within a new cultural economy; a recasting that is yet to occur successfully across rural Japan. The continuation of New Zealand's overall demographic expansion with comparatively higher rates of fertility and immigration will likely see these approaches maintained. However, at the subnational and sub-regional levels New Zealand's growth is unbalanced, and some shrinking communities are unlikely to experience growth in future no matter how hard they try; a situation that is reminiscent of peripheral rural communities in Japan before the national population stopped growing and passed over the threshold into depopulation in 2008.

The Asia-Pacific area will remain economically dynamic. However, a deep cleavage is appearing there, between large, vibrant, energetic and relatively young metropolitan centres, such as Tokyo, Shanghai, Shenzhen, Seoul, and Auckland, and an ageing and depopulating provincial periphery. Not only is the number and size of marginal regional communities rising, their vulnerability to risks is increasing. Climate change theory predicts extreme weather events of increasing frequency and intensity, and the Western zone of the Pacific Ring of Fire appears to be experiencing an increase in seismic activity (Lay 2015), with deadly earthquakes occurring near Sumatra in 2004, and in New Zealand and Japan in early 2011. The 11 March 2011 tsunami in Northeastern Japan in particular revealed how vulnerable ageing and depopulating communities can be to external shocks, and New Zealand faces similar risks along its eastern seaboard (McMillan 2013). As countries develop their economies there is an increasing risk of extreme disturbances destabilising industrial facilities such as power stations and chemical plants. Hence, large-scale techno-environmental shocks such as occurred in Tōhoku and the Fukushima Daiichi nuclear power plant may in future strike ageing and shrinking regions elsewhere in the Asia-Pacific.

More research into how socio-economic and demographic transitions interact in the Asia-Pacific region is essential to provide knowledge for responding to similar circumstances worldwide in the decades to come. In particular, how developed countries such as Japan and New Zealand, with differing national developmental pathways but some similar subnational demographic patterns, respond to the intersection between the long time horizons of their emerging circumstances and the potential for sudden shocks in the external environment, will be especially instructive for other regions of the world as they traverse their own paths through ageing, shrinkage, and post-industrial development and seek a 'depopulation dividend'.

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[1] The National Institute of Population and Social Security Research (NIPSSR) is a Japanese government funded research

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institute attached to the Ministry of Health, Labour and Welfare. Along with investigating population and household trends, the Institute carries out research concerning social security policies and systems in Japan and abroad. NIPSSR projections presented here are medium variant and based on constant rates of fertility. UN Population Division projections assume variable and rising fertility, and anticipate slower population shrinkage.

[2] Prime Minister Lee Kuan Yew of Singapore (In office: 1959-1990) and Prime Minister Mahathir Mohamad of Malaysia (In office: 1981-2003) both put in place policies to emulate Japanese developmental success and stated their admiration for Japan's achievement. Despite sometimes difficult diplomatic relations between Japan and China, paramount leader Deng Xiaoping (In power: 1978-89) used the Treaty of Peace and Friendship with Japan partly as an opportunity to help Chinese people 'overcome their negative feelings to Japan and learn from Japanese scientists, technicians and industrial leaders' (Vogel 2011). South Korea's 20th century developmental modelling of Japan is well established (See: BBC/PBS 1999).

[3] The 'demographic dividend' refers to a period in a country's development when child mortality decreases, causing women to have fewer children, and life-expectancy increases, producing a temporarily larger working age population. Accompanied by sound public health and economic policies, this set of circumstances can assist in propelling a country into an advanced stage of development. The term was first coined by Bloom, Canning and Sevilla (2003) in their book of the same title.

[4] UNPD data is used to provide clearer international comparison. UN projections for Japan are more conservative than the Japanese government's, assuming a fertility bounce-back.

[5] Estimates for the population of the Kanto region range around 30-47 million people, or approximately 30% of the population of Japan.

[6] Demographic, or population, momentum describes the tendency for a population to continue growing during and after the transition to a lower fertility society, as a result of differentials in sizes of population cohorts, increases in longevity etc. (See: Conly 2016; Preston, Heuveline and Guillot 2000).

[7] The 2011 report by MIC identifies 64,954 settlements.

[8] See the NSG Sado website at: http://www.sado-nsg.com/.

[9] See the conference website at: http://island-festa.com/sicri/index.html.

[10] See the Kodo website at: http://island-festa.com/.

[11] See the Sado Triathlon website at: http://www.scsf.jp/triathlon/.

[12] See the Sado City Sports Association website at: http://www.scsf.jp/.

[13] See the Nobu restaurant chain website at: http://www.noburestaurants.com/.

[14] See the Obata Shuzo (http://www.obata-shuzo.com/) and Hokusetsu (http://sake-hokusetsu.com/) saké brewery websites.

[15] See New Zealand's Population Clock at: http://www.stats.govt.nz/tools_and_services/population_clock.aspx.

[16] In the 2013 census Christchurch showed some population reduction as a consequence of the 2011 earthquake. However, over the long-term the city has been growing steadily, from 324,000 people in 2001 to 341,000 in 2013 (SNZ 2013).

[17] From an information plaque in the Arrowtown Chinese Settlement.

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