

## ANNEX: Analysis of the impact of aging to the economy

How will ICCS work in a broader perspective in order to realize a sustainable society? One of the ultimate solutions for issues relating to social security in a super aging society is to increase GDP through an increase in productivity of the workforce, because Japan's UHC is dependent on public funds (taxation) for approximately 40% of its financing.<sup>15</sup> Solow, a US Macroeconomist, proposed an economic growth model, called the *Solow-Swan neo-classical growth model*.<sup>16</sup> The model attributes economic growth to increases of inputs (labor and capital) and technical progress. If extension of healthy life expectancy increases the labor supply, it might contribute to economic growth, which means that the government can harvest the benefits through investments, i.e. social security, especially in UHC for this context.

To analyze this effect, first we explore trends in employment rates of the elderly compared with the aging rate. (**figure 8**) After enacting the Act on Securing, etc. of Equal Opportunity and Treatment between Men and Women in Employment in 1972, the employment rate of the elderly female population had increased. However, over the last two decades, the increase of the employment rates of the elderly has been basically lower than the aging rate. As a result, the employment rate of the overall population has been decreasing, which may cause low GDP growth rates.

To analyze the relationship between an extension of healthy life expectancy and employment in more detail, we conducted the following statistical analysis through a multiple regression model. The regression formula is below. The subjects were all 47 prefectures in Japan. We used the data of employment rates and job-seeking, aging ratio, average income per capita of each prefecture, and healthy life expectancy from the Employment Status Survey in 2012 (conducted every five years) based on the Statistics Act (Act No.53, 2007), the Population Estimates complementing the Population Census in 2012, the Prefectural Accounts in 2012 by the Cabinet Office, and "The result of estimation of healthy life expenditure (in 2010)" conducted by Hashimoto et al. supported by a Health and Labour Sciences Research Grant of MHLW, respectively. We used the Stata 10.1 of Stata Corp US.

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \varepsilon$$

- Y: Employment rate among those who are over 65 years old
- X<sub>1</sub>: Ratio of elderly people at least 65 years old
- X<sub>2</sub>: Average income per capita by prefecture
- X<sub>3</sub>: Year of deference (healthy life expectancy minus 65)

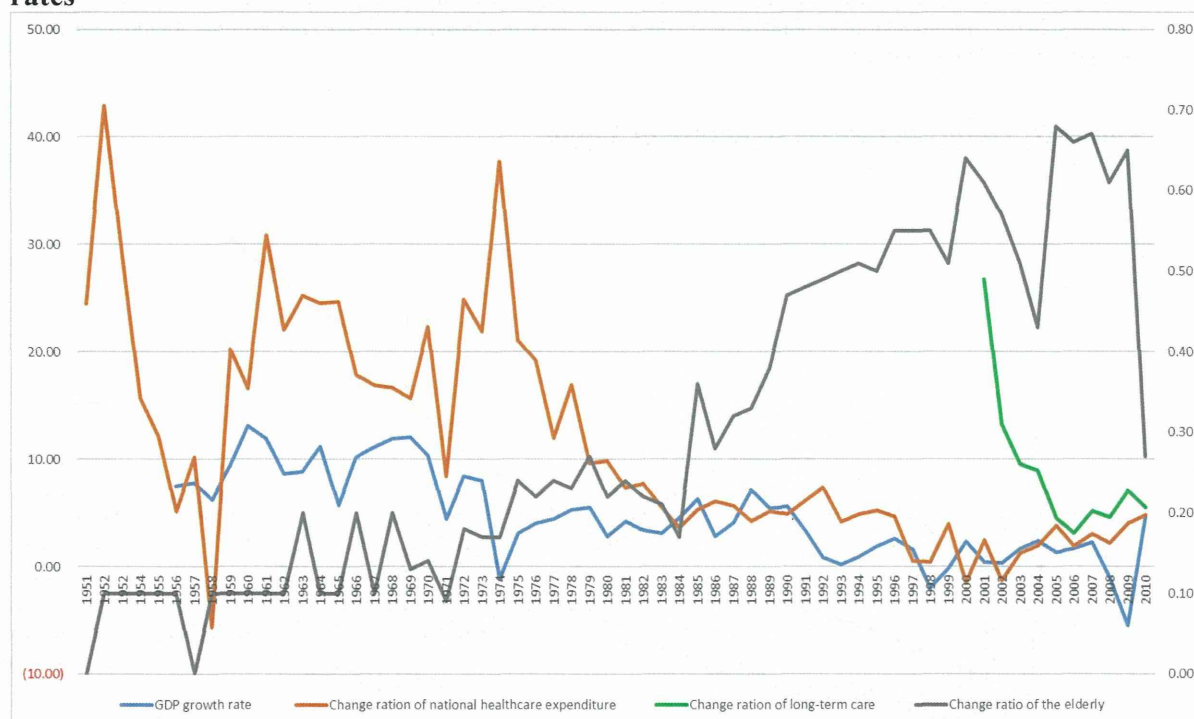
As the results shown in **table 1**, while the extension of healthy life expenditure is correlated with the increase of employment rates among male populations, there is no statistically significant relationship among female populations. Not surprisingly, there are positive correlations between population aging rates and employment rates for both genders. On the other hand, there are negative correlations between population aging rates and job-seeking behavior. Besides this, there are positive correlations between average income per capita and both employment rates and job-seeking behavior, although reverse causality should be noticed. There is no severe multicollinearity (All VIFs are below 1.22).

As described above, and as seen in **figure 9**, the employment rate of the elderly male population has been decreasing. By contrast, while there is a substantial difference in the employment rate between males and females, the employment rate of females who are between 25 and 60 years old has been increasing. Moreover, our analysis shows that the increase of extension of healthy life expectancy among men has positive impacts on employment, which implies that an

investment in healthcare causes GDP growth via an increase in labor supply. In our analysis, we cannot identify which effect, the cost of UHC or the benefit of labor surplus, is larger. At the same time the female employment rate is much lower than male employment rate, and the extension of healthy life expectancy among female populations does not contribute to labor supply. Thus, it is indicated that there is room for improvement in utilizing the labor surplus of the elderly, particularly of elderly females.

In Japan, according to a surveillance of the International Labour Organization, the employment rate of the elderly in Japan is higher than US and EU countries.<sup>17</sup> 56.7% of workers who are 60-64 years old are willing to work after the age of 65, which is larger than 16.6% of those who do not want to work. Among total 60-64 year-olds, the percentage of those who want to work (44.0%) is larger than those who do not want to work (31.4%), which is larger than the actual employment rate (36.3%).<sup>18</sup> There is a gap between work motivation and work opportunities. Therefore, in August 2012, the Japanese government amended the Act for Stabilization etc. of Employment of Older Persons etc. so that the elderly can play a more active role in the labor market. Thus, governments should integrate health policies and labor policies in order to take full advantage of extended life expectancy in enhancing the nation's productivity.

**Figure 1. Trends in GDP growth rates and health care costs with population aging rates**



Source:

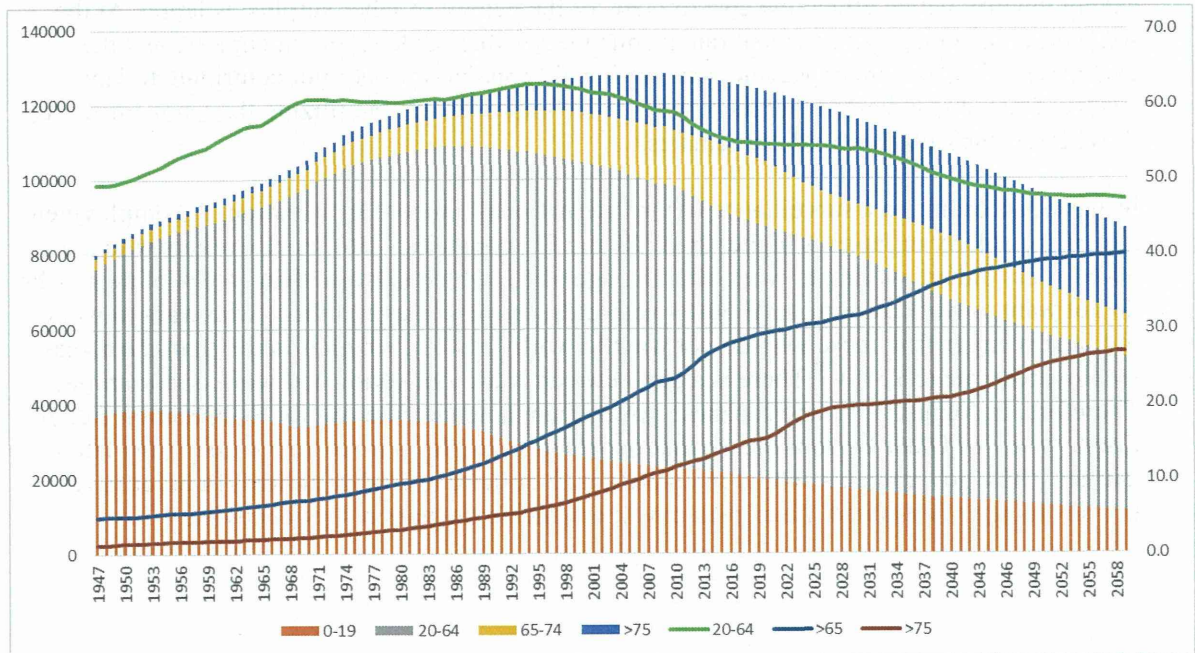
Real GDP growth rate: National Accounts of Japan, Cabinet Office Japan

Population aging rate: Population Estimates, Ministry of Internal Affairs and Communications Japan, Statistics Bureau

Healthcare expenditure: National Medical Expenditure, Ministry of Health, Labour and Welfare Japan

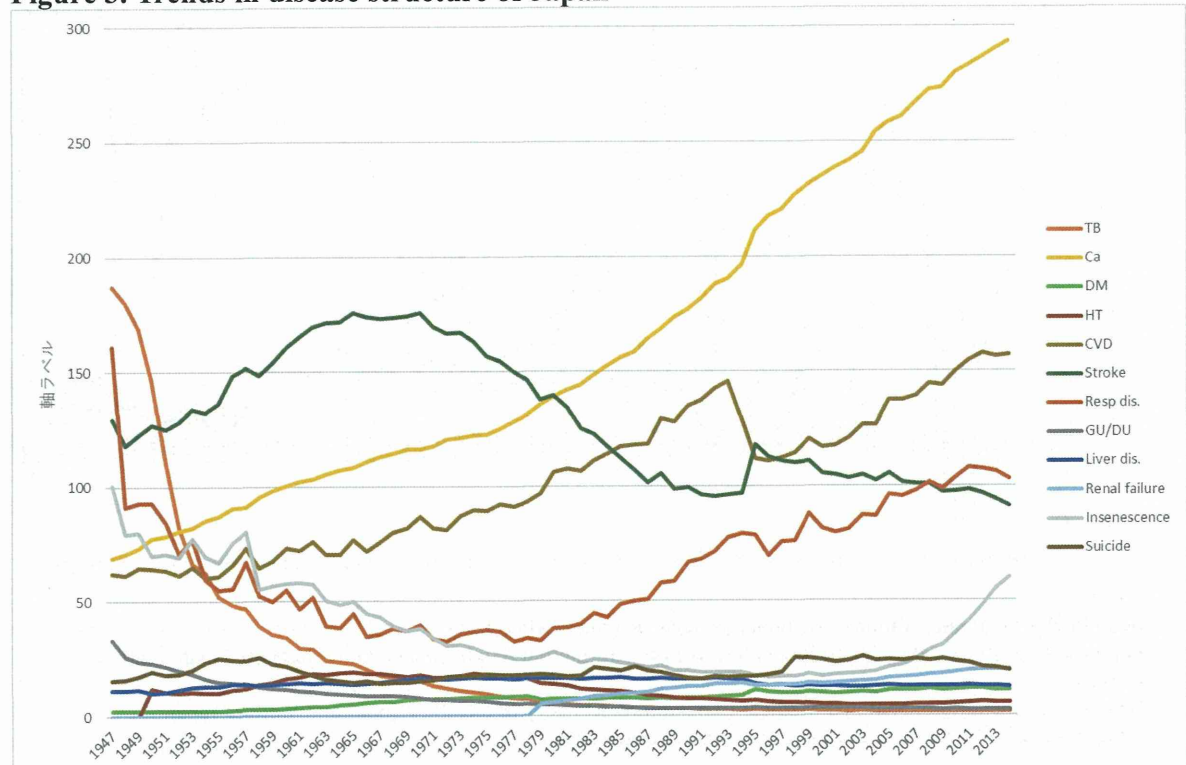
Long-term care: Ministry of Health, Labour and Welfare Japan

**Figure 2. Demographic trends of Japan from the past to the future**



Source:  
 1947-2010: Ministry of Internal Affairs and Communications Japan, Statistics Bureau, *Population Estimates*  
 2011-2060: National Institute of Population and Social Security Research Japan, *Population Projections for Japan (January 2012), Total population, population by the major three age groups, and age composition: Medium-fertility (medium-mortality) projection*

**Figure 3. Trends in disease structure of Japan**



Source  
 Ministry of Health, Labour and Welfare, *Current Population Survey*  
<http://www.e-stat.go.jp/SG1/estat/NewList.do?tid=000001028897>

Figure 4. Health policy reform through demographic transition

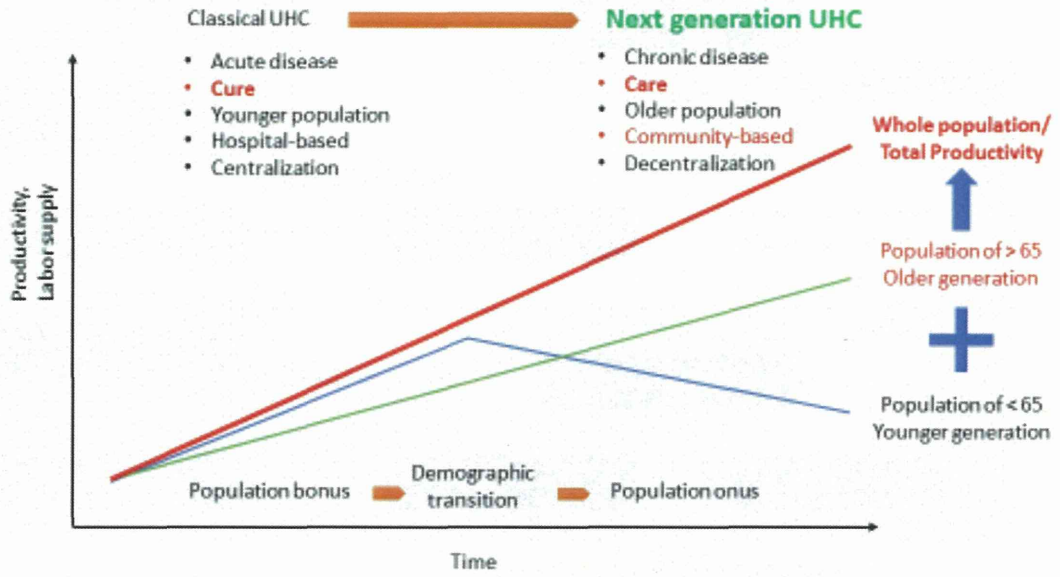


Figure 5. Overview of ICCS (simplified)

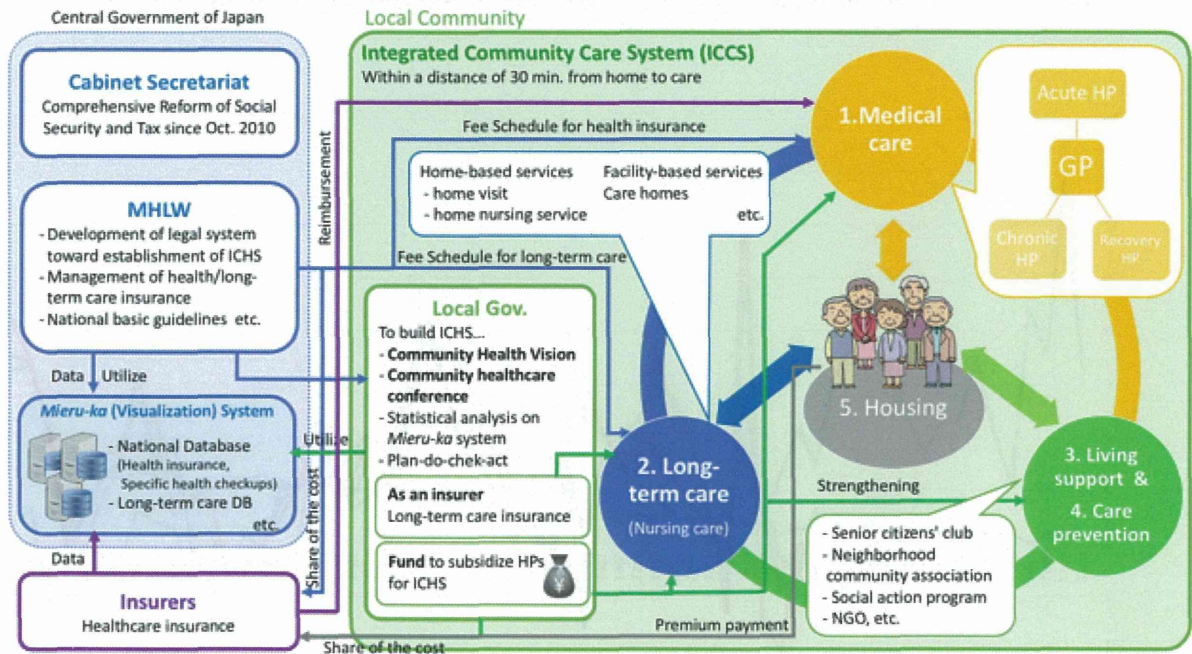


Figure 6. Policy externalities in terms of sustainable UHC

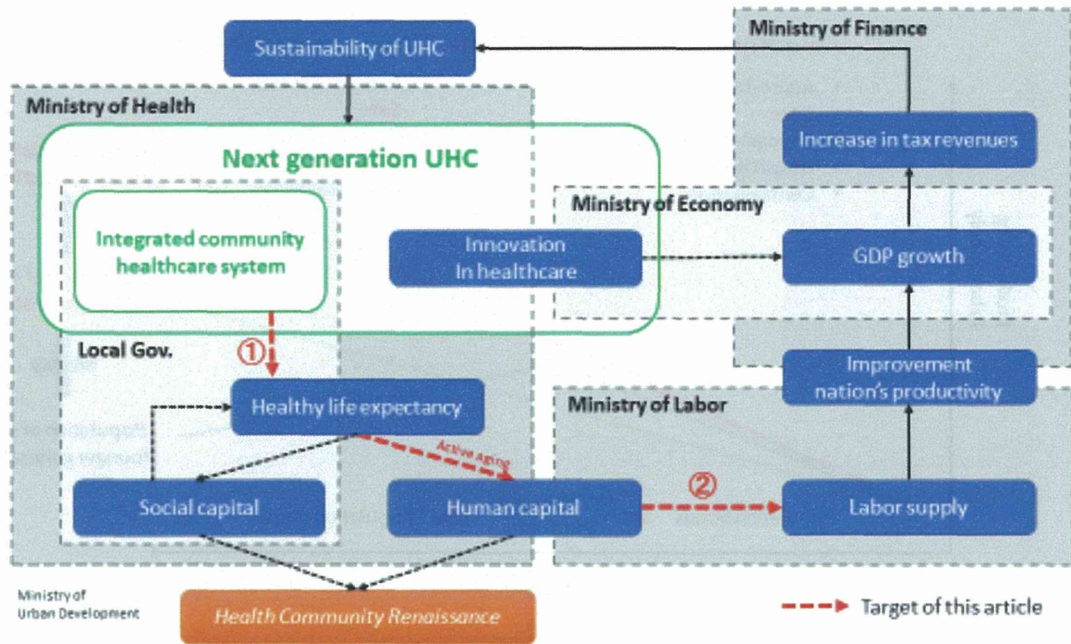
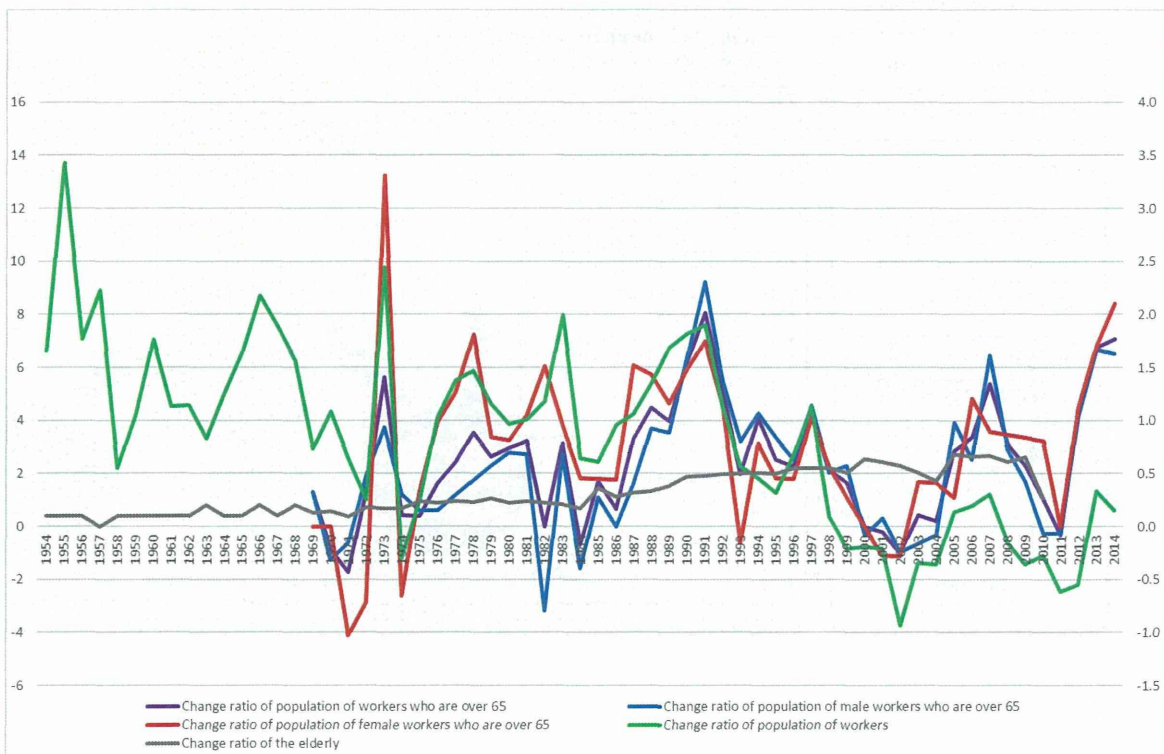


Figure 7. Trends of employment rate of the elderly comparing with aging rate

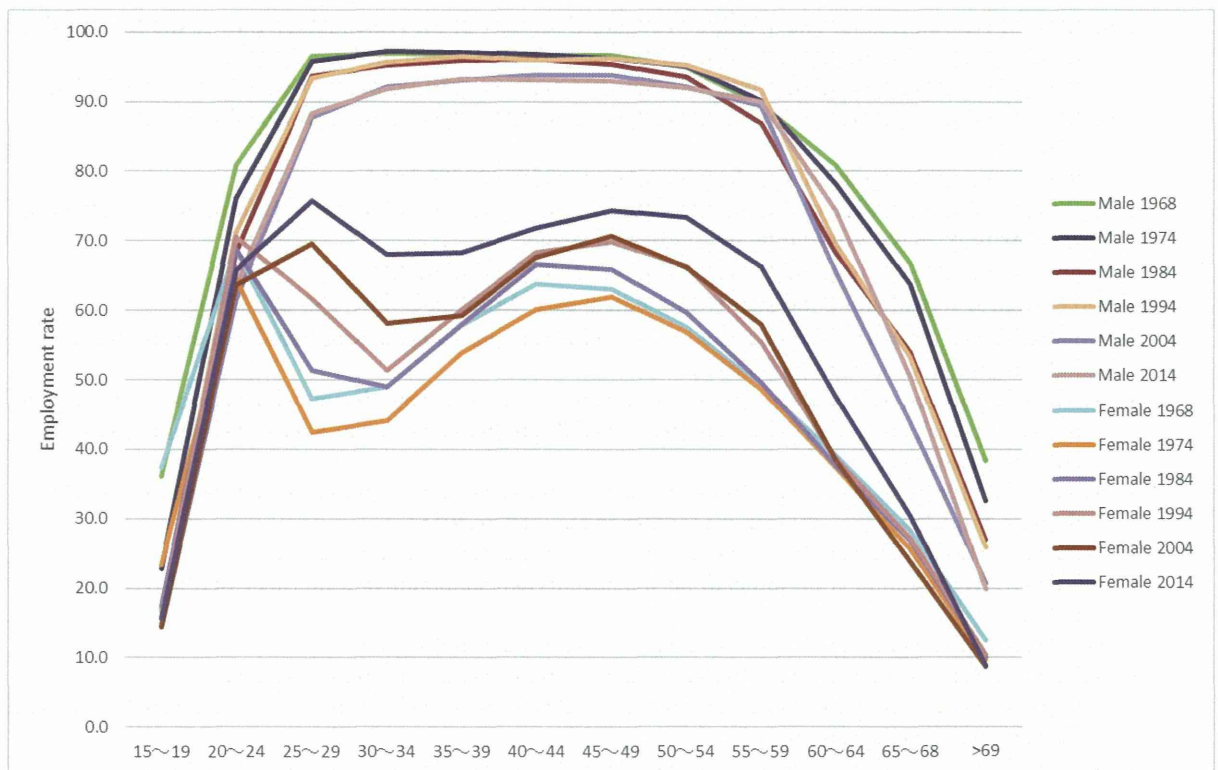


Source:  
 Population aging rate: Ministry of Internal Affairs and Communications, Statistics Bureau, *Population Estimates*  
 Employment rate: Ministry of Internal Affairs and Communications Japan, Statistics Bureau, *Labor Force Survey*

**Table 1. The relationship between an expansion of healthy life expectancy and work**

		ar65				aveincome				ha65			
			Ratio of elderly people at least 65 years old			Average income by prefecture			Year of deference (healthy life expectancy minus 65)				
			Coefficient	t	95% Conf. Interval	Coefficient	t	95% Conf. Interval	Coefficient	t	95% Conf. Interval		
Employment rate	male	0.69	3.86	<b>0.33</b>	<b>1.04</b>	0.0034	3.56	<b>0.0015</b>	<b>0.0053</b>	1.49	2.88	<b>0.45</b>	<b>2.53</b>
	female	0.34	3.66	<b>0.15</b>	<b>0.53</b>	0.0032	4.28	<b>0.0017</b>	<b>0.0047</b>	0.52	1.51	-0.17	1.21
Rate of job-seeking among the unemployment	male	-0.31	-2.51	<b>-0.55</b>	<b>-0.06</b>	0.0019	2.87	<b>0.0006</b>	<b>0.0032</b>	-0.23	-0.66	-0.95	0.48
	female	-0.24	-4.21	<b>-0.35</b>	<b>-0.12</b>	0.0009	1.89	-0.0001	0.0018	-0.16	-0.79	-0.58	0.25

**Figure 8. Trends of employment rates by age and gender**



Source  
 Ministry of Internal Affairs and Communications Japan, Statistics Bureau, *Labor Force Survey*  
[http://www.stat.go.jp/data/roudou/longtime/03roudou.htm#hyo\\_2](http://www.stat.go.jp/data/roudou/longtime/03roudou.htm#hyo_2)

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## **Japan's New Direction for Global Health Cooperation in the Era of the Sustainable Development Goals**

Holistic learning process through multi-stakeholder approach to nurture social transformation toward achieving Universal Health Coverage and Global Well-being

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#### **Abstract**

While the Sustainable Development Goals (SDGs) were ratified at the United Nations Summit for the Adoption of the Post-2015 Development Agenda in September 2015, it is high time that Japan should contribute to realizing the SDGs in practice. In the era of the SDGs, we are facing planetary boundaries, power fragmentation, systemic complexity, and much uncertainty. Thus, Japan's Official Development Assistance (ODA) must pay more attention to the aspect of "*transformation*" by strengthening learning processes and stakeholder engagement. To foster resilience and integrity in our societies, the people must be in the driving seat and ODA can play a catalytic role in social transformation by providing evidence, opportunities, and networking. This article proposes that a ***Holistic Learning Process*** should be at the center of global health cooperation and supported by a ***transformational platform*** and ***multi-stakeholder approach***. ***Active learning resources*** as to Japan's experiences with overcoming issues in health, security, and disaster response can provide lively aspirations to those proactive learners. This seamless and dynamic process articulates the frontier of our efforts in promoting institutional development, systems transformation, and smart governance towards enhancing resilient societies, global well-being, and a sustainable future of our planet.

Column (1) UHC profiling and spectrum matrix

Column (2) Synergies with other global partners



## 1. Introduction

On September 25, 2015, the 193 countries of the United Nations Sustainable Development Summit adopted the Sustainable Development Goals, also known as the Global Goals for Sustainable Development, with 17 Goals and 169 targets. The Agenda 2030 entitled “*transforming our world*” declared that “[t]his Agenda is a plan of action for people, planet and prosperity. We are determined to take the bold and transformative steps which are urgently needed to shift the world onto a sustainable and resilient path. As we embark on this collective journey, we pledge that no one will be left behind.”<sup>4</sup>

The MDGs have contributed an enormous impact on improving essential health service provision, reducing child and maternal mortality, and combating HIV, malaria, tuberculosis, and other diseases. However, they failed to articulate the root causes of inequities in health; interactions between health, poverty, and other social determinants; and the holistic nature of social, economic, and environmental development. Moreover, interrelated predicaments today cannot be addressed by a single set of government or other decision-makers but require cooperation between many different actors and stakeholders. It is plausible that the SDGs will be incapable of successful resolution unless all parties are fully involved from the very outset.

In the health sector, at least 400 million people do not have access to one or more essential health services and 6% of people in low- and middle-income countries are tipped into or pushed further into extreme poverty because of increasing out-of-pocket health spending<sup>5</sup>. This is striking evidence that efforts on improving health status themselves can boost poverty and socioeconomic disparities due to incremental costs of medicines and services. Moreover, the most recent Ebola outbreak caused catastrophe in West Africa and even far away in the United States and Europe. The global community comprehends that local risks have international repercussions and the outbreak was not just a matter of contagious diseases, but of financial crisis, climate change, and human security, as well.

In the era of the SDGs, conspicuous concerns on equity, solidarity, and resilience emerged as learning aspects of social systems. In facing planetary boundaries, all life on earth depends on our proactive and creative mindsets. This is why that the word “*transformation*” becomes significant, in which our transitional efforts determine the state of the planet for generations to come. Each of us plays a crucial role in changing lifestyles in the pursuit of health and well-being. In terms of social transformation, Japan has enormous experience in facing demographic and economic challenges over past few decades. Notably, the achievement of Universal Health Coverage in 1961 followed by rapid population aging, and the rebuilding of society after the Great Hanshin earthquake (1995) and the Great East Japan earthquake (2011) are vivid examples how the people have overcome unexpected calamity and rebuilt society through full stakeholder engagement.

At this juncture, this article urges that it is high time for the Government of Japan to contribute to turning the SDGs into a reality. In the era of the SDGs, the role of the Japan’s Official Development Assistance (ODA) must be to pay more attention on the aspect of “*transformation*” in development cooperation by strengthening learning processes and stakeholder engagement. This paper will examine and articulate Japan’s new direction for global Health cooperation in the era of the SDGs, in which a holistic learning process for institutional development, systems transformation, and smart governance is proposed to nurture resilient societies, global well-being, and a sustainable future for our planet.

## **2. Japan's Experience as Active Learning Resource**

In the era of the SGDs, institutional development and systems transformation needs to be enhanced by new perspectives inspired through interactive processes. As there is much knowledge accumulated in Japanese society, actual visiting programs to Japan can enhance creative thinking that can be obtained in no other way. In this sense, Japan is one of few countries that can contribute to providing full-content learning packages from a vast range of active resources. While many countries strive for transformative processes of designing and formulating health systems, they demand more specific and practical learning modules from Japan's experiences with policy innovations.

For an example of an active learning resource, the impact of population ageing in many countries demands crucial preparation to elaborate strategies that can transform social systems according to the resulting economic, demographic, and epidemiological transitions. The expansion of comprehensive long-term care should consider entitlements to all those who need them, including income transfers from the well-off to lower income, coming from a shrinking share of the economically productive population, to protect against impoverishing costs. While Japan has shown the most dramatic increase of its elderly population ratio among OECD countries and at the highest speed (Figure 3), long-term care programs in Japan are grounded in health expenditure profiles throughout the life cycle. Since the attainment of three dimensions of insurance coverage (population coverage: informal sector involvement by the National Health Insurance Act in 1961, financial coverage: financial protection by the Catastrophic Medical Expense Coverage Policy in 1973, service coverage: the introduction of the Specified Mixed Medical Care Coverage System in 1984), universal health insurance coverage in Japan has continued successive policy innovations to cover medical and non-medical costs for the elderly in an effective and efficient manner (Figure 4).