POPULATION DECLINE IN JAPAN AND SUSTAINABILITY

SESSION: SOCIAL SUSTAINABILITY ASSESSMENT IN SOCIETIES WITH DECREASING POPULATIONS

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SCHEDULE

- 1. Introduction
- 2. Methodology
- 3. Results and discussion
- 4. Conclusion
- 5. References

1. INTRODUCTION

- BACKGROUND

People-centered concept has been key in understanding sustainable development (UNDP 2011).

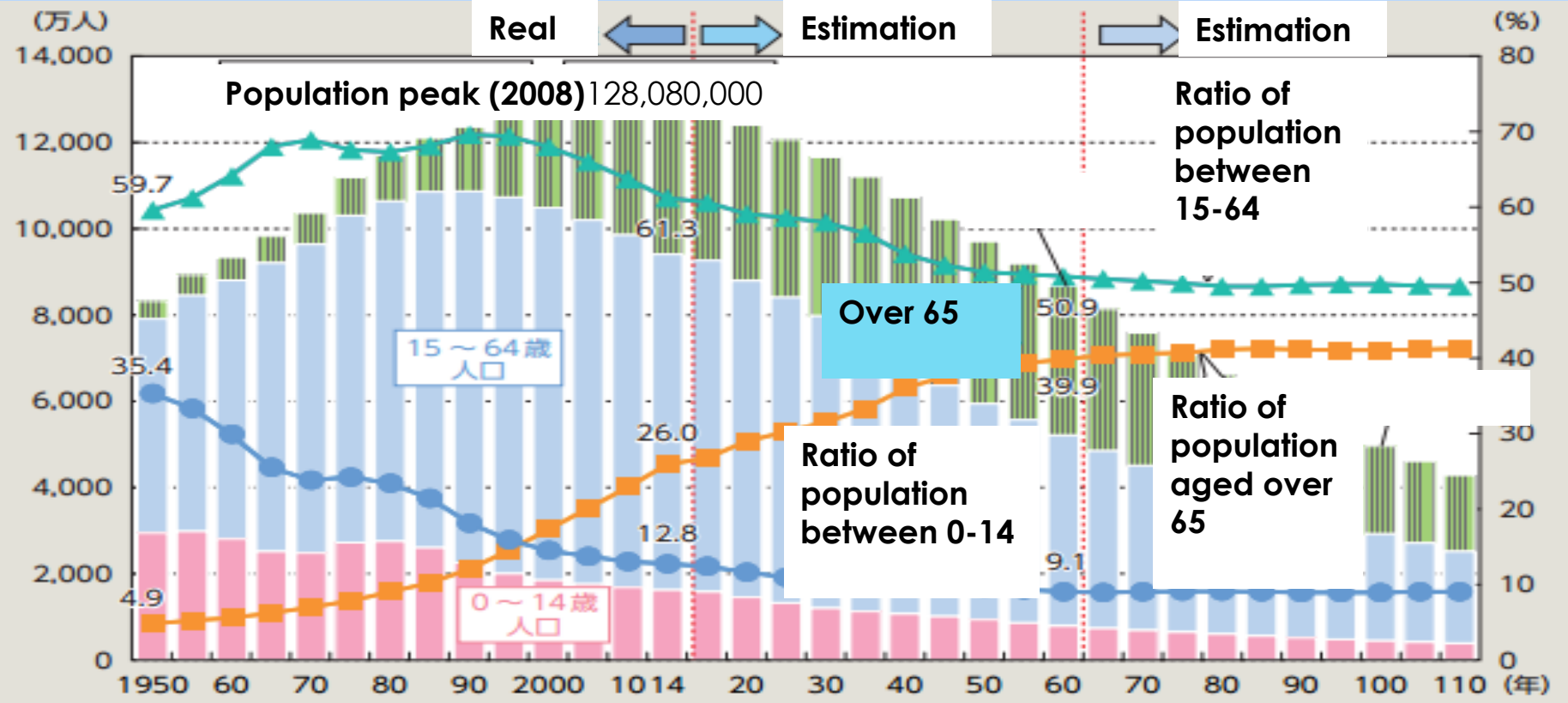
- **People** is the basic block in our society.
- **Sustainable development** is often supported by people.
- We are living in a population decreasing society.

Sustainability is What we care about!

1. INTRODUCTION - BACKGROUND *CONTINUE*

- Population Decline
- - is becoming a problem in many countries such as Canada, Italy, Ukraine, Greece, Croatia, Serbia, Romania, etc. (UN, World Population Prospects: The 2011 Revision)
- - total population in Japan reached its peak (128,080,000) in 2008 and started to decline since then.
- - Estimation
  - - total population in Japan will drop to around 100,000,000 in 2050 (Ministry of Health, Labour and Welfare 2015).

1. INTRODUCTION
- BACKGROUND *CONTINUE*



- **Figure 1. Population projection in Japan** (Ministry of Health, Labour and Welfare 2015)

1. INTRODUCTION
- BACKGROUND *CONTINUE*

Problems we have to face

- - decreasing working-age population,
- - diminishing local communities,
- - abandonment of farming and planted forests due to labor shortage, etc.

What are key things we have to do?

1. understand what is happening and what will happen.
2. we have to elaborate social sustainability assessment to deal with population decline.

- Impact assessment of population

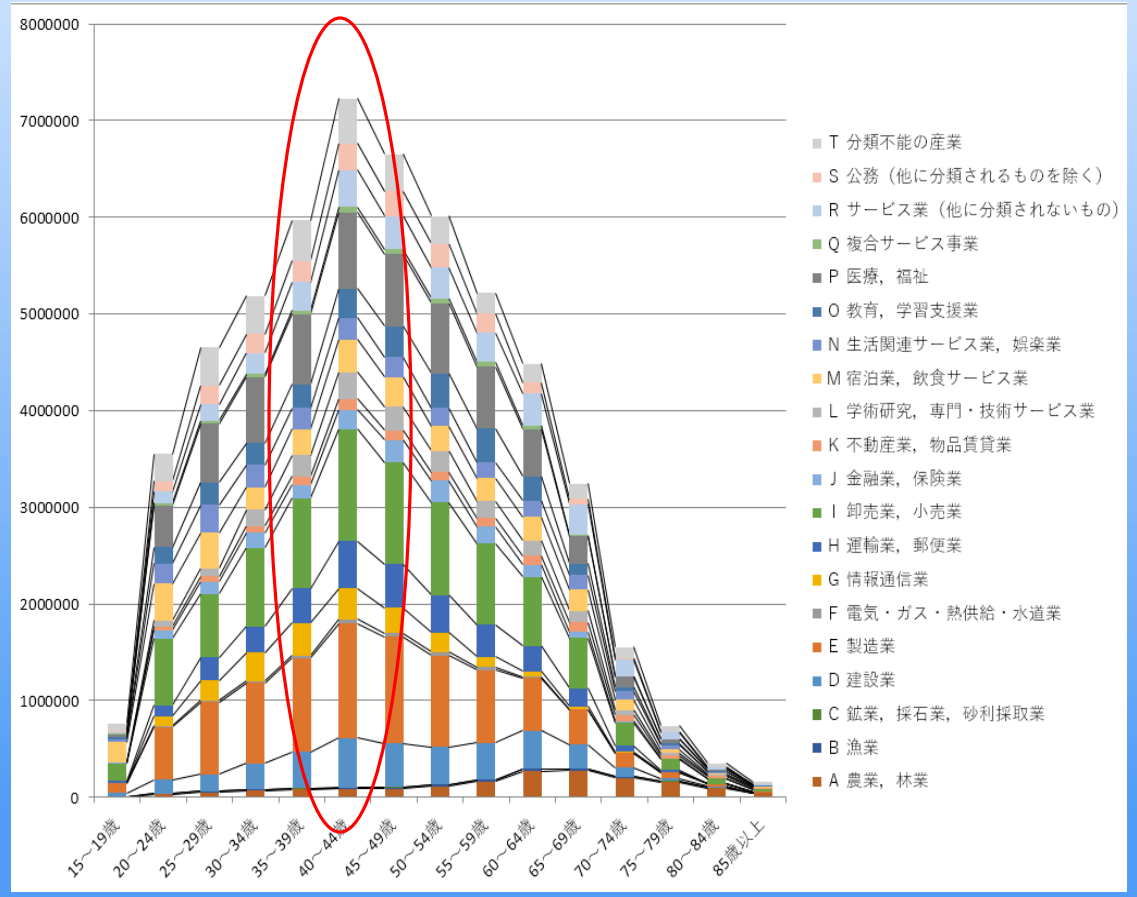
2. METHODOLOGY

- **Focus of this study**
- - people in Japan
- - Population Assessment (At different levels)
  - its potential changes across different sectors over the next 25 years (agriculture, manufacturing, construction, and the medical care).

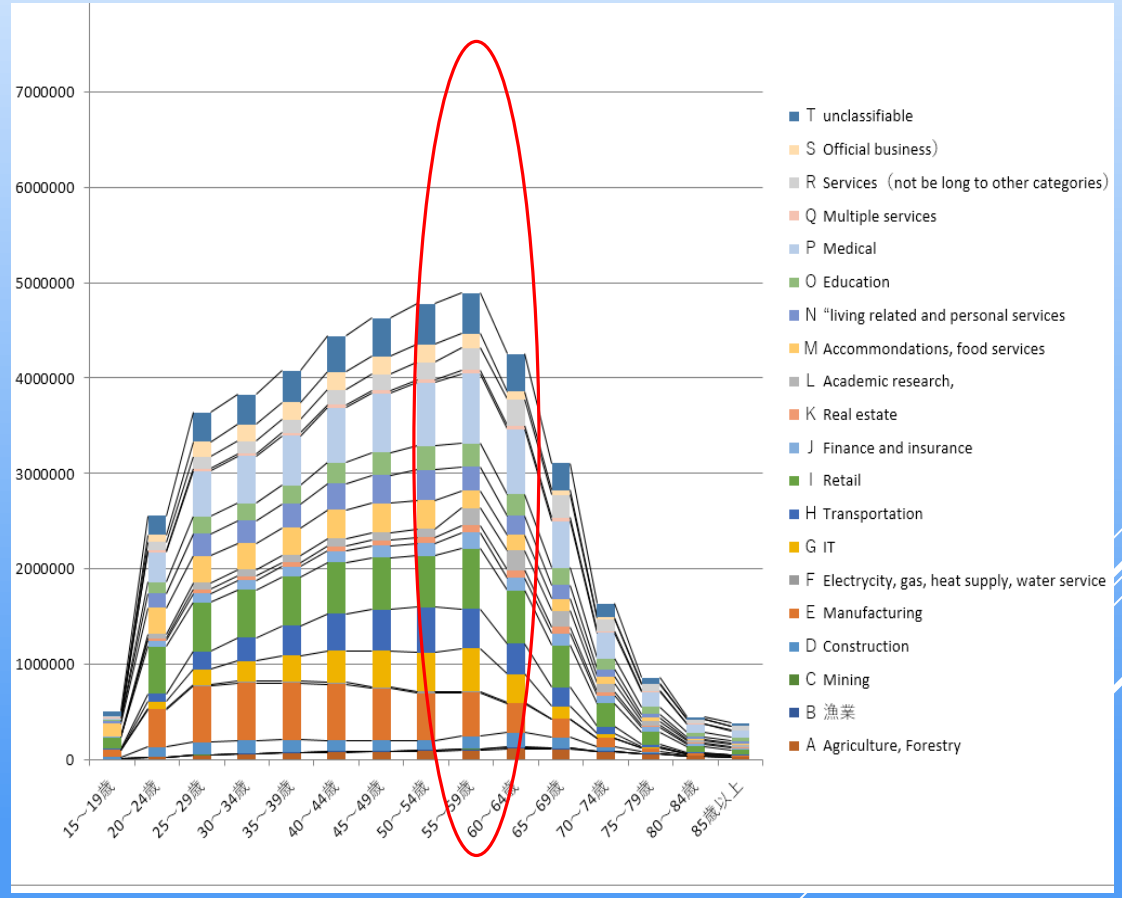
2. METHODOLOGY ***CONTINUE***

- **Analysis model**
  - – a cohort model is used to estimate future population changes across different sectors over the next 25 years in Japan.
  - Working-age population in different sectors at each 5-year cohort at the base year t and the next-up cohort at year t + 5 is used to predict future population.
  - Assumption in the model : net migration rate is unchanged over our analysis period.

3. RESULTS AND DISCUSSION



2015



2040

Figure 2. National population in different sectors in 2015 and 2040

3. RESULTS AND DISCUSSION *CONTINUE*

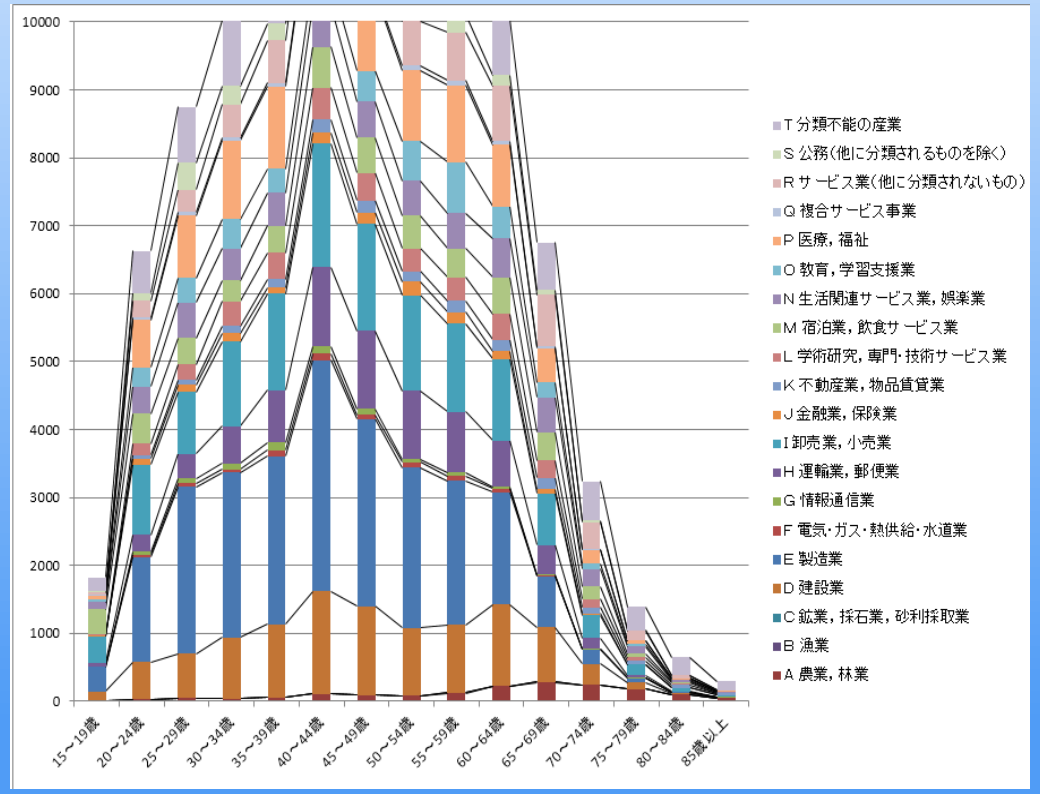
- Estimated results
- - (Analysis target - **National level**)
- - Population decline can be observed in many sectors (Figure 2).
  - Total Population in 2040 will decrease **by 15%↓** (in comparison with 2015 population) (2040 population- 107,275,850)
  - Employed population in 2040 will decrease **by >20% ↓** (in comparison with 2015 population) (2040 population- 44,897,751)
- - Population structure also changes (2015 and 2040)
  - -aging
    - Average age of working-age population in 2015 :40-44
    - Average age of working-age population in 2040 :55-59

3. RESULTS AND DISCUSSION *CONTINUE*

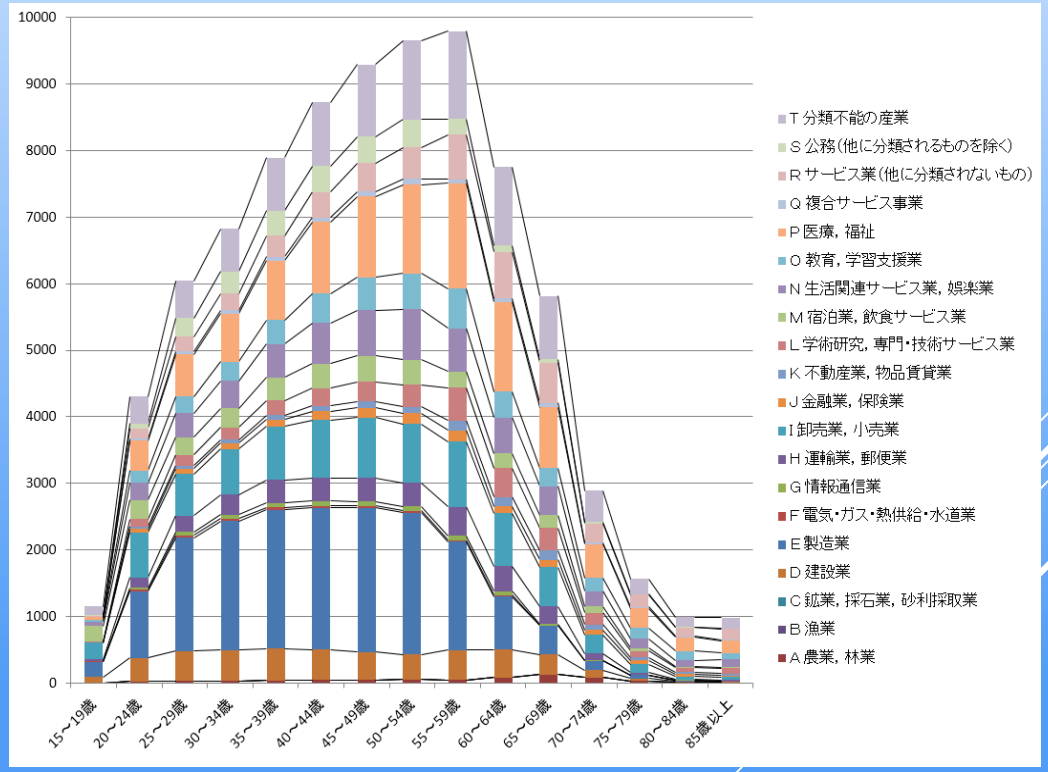
- (Analysis targets -cities, towns and villages in Japan)
- - More specific
- **Case in Ichihara city** (Chiba Prefecture, Japan)
  - - the second largest city in Japan in terms of its value of shipments of manufactured goods.
  - - analyze potential population changes across different sectors over the next 25 years in Ichihara city.

Figure 3. Geographic range of Ichihara city (map is acquired from Geospatial Information Authority of Japan) (Geospatial Information Authority of Japan 2015)

3. RESULTS AND DISCUSSION *CONTINUE*



2015



2040

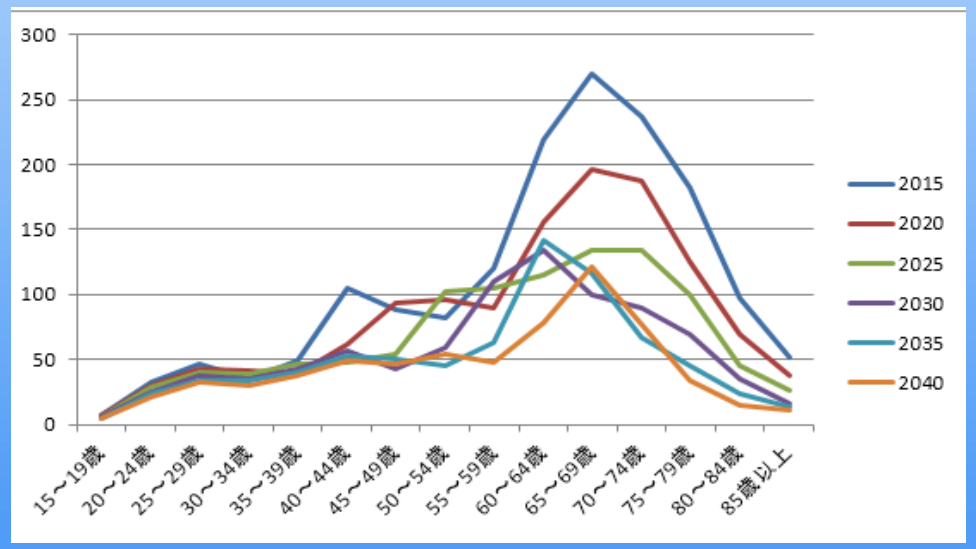
Figure 4. Ichihara Population in different sectors in 2015 and 2040 (At the city level)

3. RESULTS AND DISCUSSION *CONTINUE*

- Estimated results
- - (Analysis target – at the **city level**)
- - Population decline can be observed in many sectors (Figure 4).
  - available workers in Ichihara city will decrease in most sectors over next 25 years, corresponding to the national population change trend.
  - Elderly people aged 65 and over is estimated to increase over the next 25 years
  - **An inverted population pyramid** indicates
    - - harsh reality of population issues to the nation- pressure to different sectors.
    - - potential labor shortage problems.
    - - fiscal burden to the government.
    - - Important of policy reform.

3. RESULTS AND DISCUSSION *CONTINUE*

Case in Ichihara city- population projection (Agricultural sector)



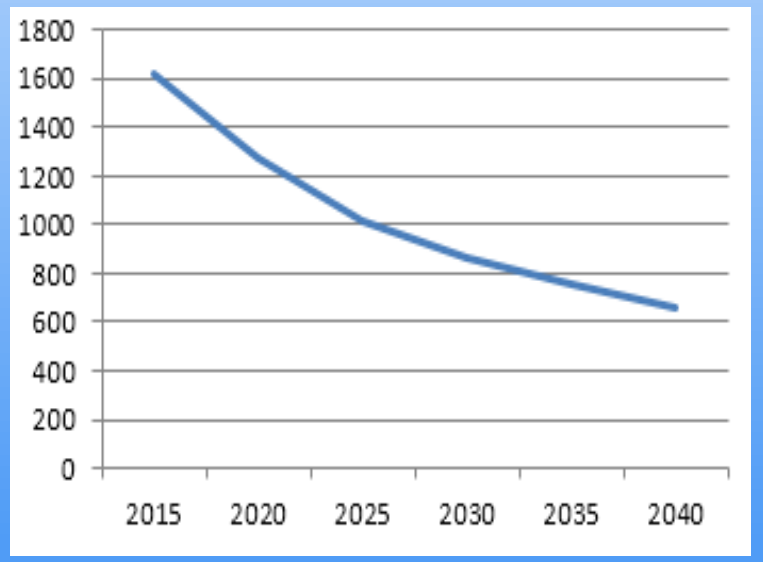


Figure 5. Agricultural Population Projection (Ichihara city)

3. RESULTS AND DISCUSSION *CONTINUE*

- **Ichihara Agriculture (Background)**
- **-** Despite the fact that Ichihara city had the largest farm household in Chiba prefecture in 2005, its agricultural production only met approximately 23% of local food demand
- - (food self - sufficiency ratio in Japan is around39%).
- **Agricultural population projection in Ichihara city**
  - - agricultural population in Ichihara city in 2040 is estimated to decline (40% of 2015) (Figure 5.)
  - **-** its average cultivated land area per person in 2040 needs to be 2.5 times more than 2015 level (to maintain land size).

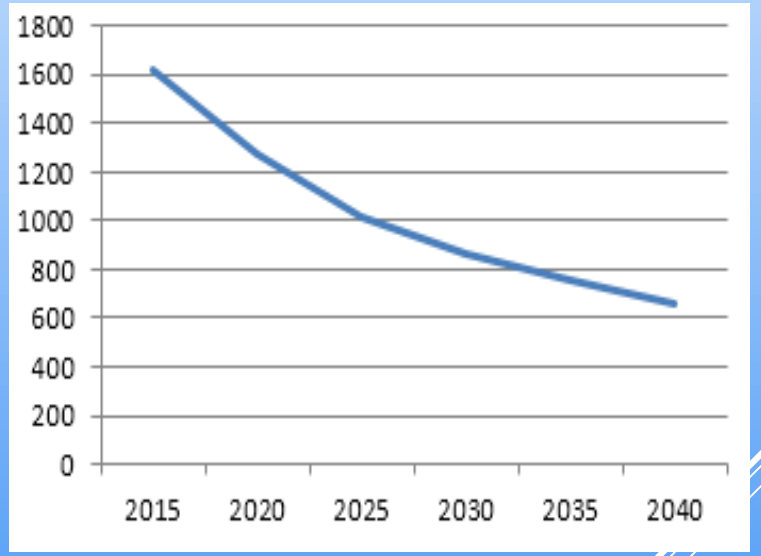
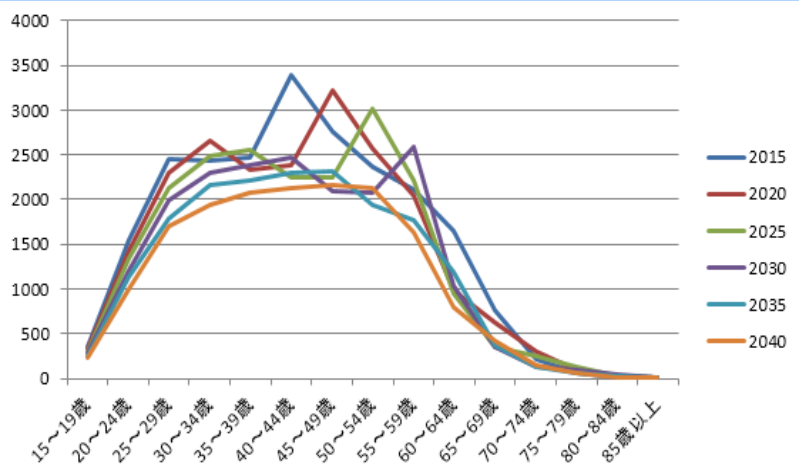


Figure 5. Agricultural Population Projection (Ichihara city)

3. RESULTS AND DISCUSSION

CONTINUE

Case in Ichihara city- population projection (Manufacturing sector)



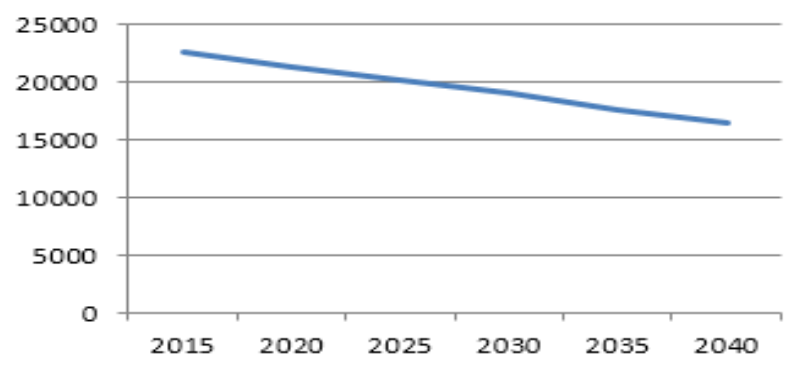
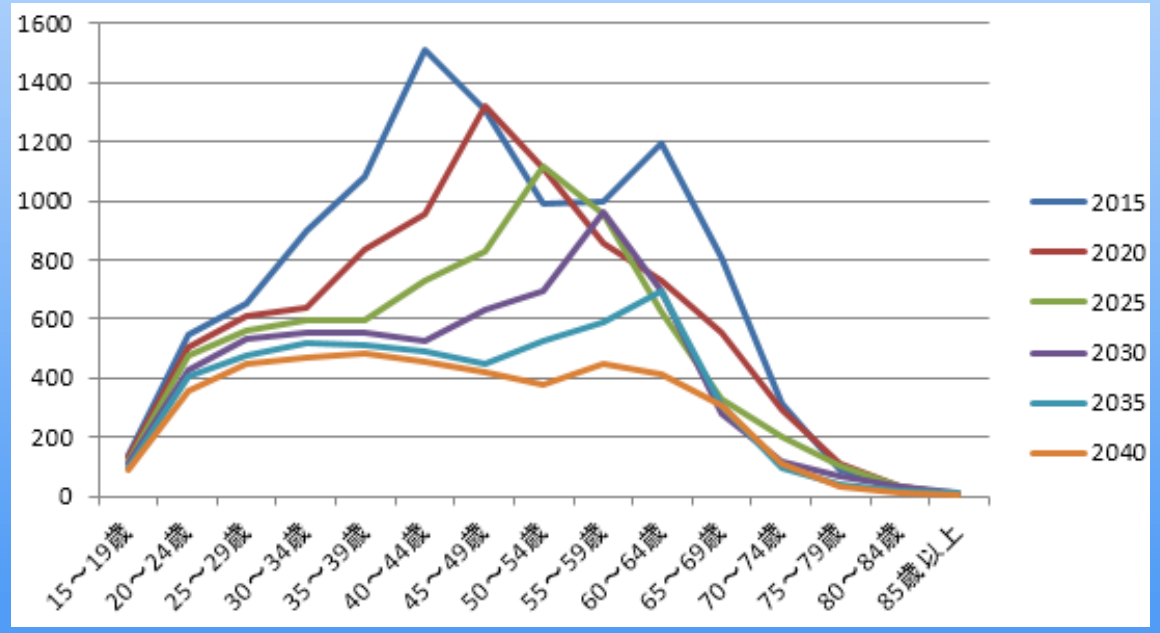


Figure 6. Population Projection in the manufacturing sector (Ichihara city)

- **Population projection in the manufacturing sector (Ichihara city)**
- - working-age population in this sector will decrease in 2040,
- -2040 becomes 72.8% (In comparison with 2015).

3. RESULTS AND DISCUSSION *CONTINUE*

Case in Ichihara city- population projection (Construction sector)



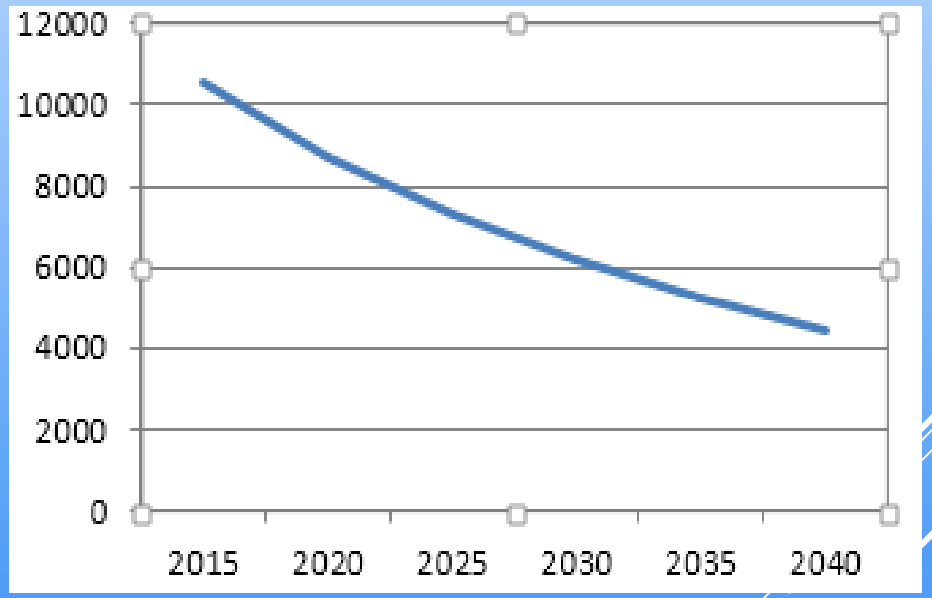


Figure 7. Population Projection in the construction sector (Ichihara city)

3. RESULTS AND DISCUSSION *CONTINUE*

- **Construction population projection in Ichihara city**
  - - working-age population in the construction sector in Ichihara city will decrease↓ by 2040 (Figure 7.).
  - - 41.8% of 2015
- **Residential demand in Ichihara city** will also decrease over the next 25 years.
- - affects city development.

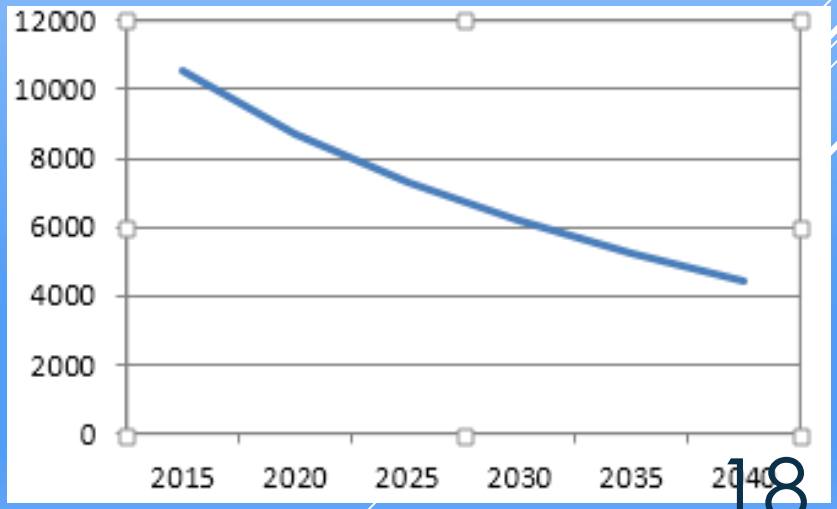
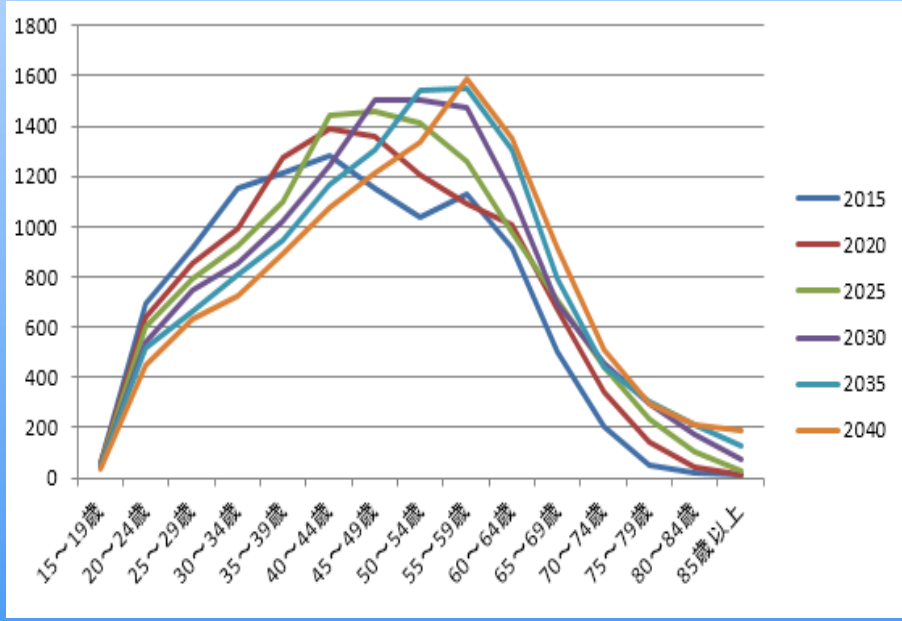


Figure 7. Population Projection in the construction sector (Ichihara city)

3. RESULTS AND DISCUSSION *CONTINUE*

Case in Ichihara city- population projection (medical sector & the elderly care sector)



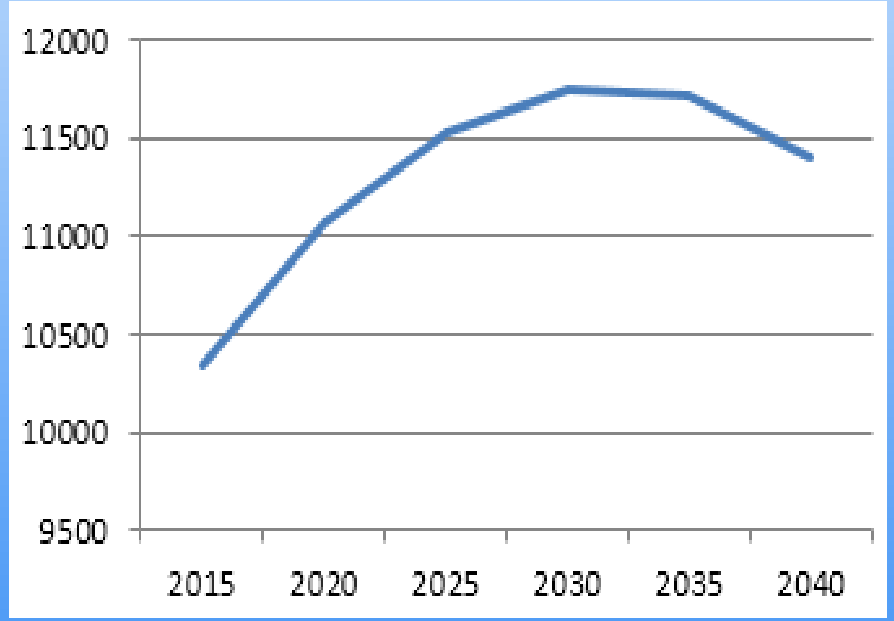


Figure 8. Population Projection in the **medical sector & the elderly care** sector (Ichihara city)

3. RESULTS AND DISCUSSION *CONTINUE*

- **Background**
- **-** aging society provides more business chances and job offers in the medical sector and the elderly care sector.
- - demand in these two sectors in Ichihara city is estimated to increase 10.3% by 2040.
- Phenomena at the national level.
  - - number of hospitalized patients has decreased gradually over time (improved technology progress)
  - - number of outpatients has increased over time
- **Population projection in the medical sector & the elderly care** sector (**Ichihara city)**
- **- aging is an issue.**
- **- Increased demand**
  - Although population decline link to decreased patients to the hospitals, increased elderly people could increase both the hospitalized rates and the outpatient medical treatment rates.
  - - Such phenomena may make hospital beds not enough in the future.
  - - Based on our estimation, it has been found that one person in four may not be hospitalized around 2030 due to bed shortage.
  - -Labor supply is an issue.

4. CONCLUSION

- **Impact assessment of population changes** is critically important.
- Working-age population in many sectors will continue to decline.
  - Has negative impacts on our society.
  - sustainable development can not be achieved without people.

- Thus, we need **strategies/solutions** to tackle labor shortage problems in Japan.

- -Our study results emphasize the importance of effective immigration policies to tackle labor shortage problems in Japan.
  - - welcoming more immigrants that meet specific qualifications such as having more than 10 years' experience in a labor shortage sector could be a possible strategy to deal with labor issues in Japan.
  - - In doing so, the minimum number of laborers required by each sector could be guaranteed.

5. REFERENCES

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