Comparative Study of a Sustainable and Resilient Towns/Farm Parks in the UK and Japan

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Abstract

As we are living in a world where global warming is a matter of urgency, social inequality is urged to be eliminated, and revitalization of life in regional communities are necessary, it is natural that many of us search for the perfect sustainable life and towns/cities that can achieve them. To investigate its reality and possible future, this thesis compares two different cases of sustainable communities from the United Kingdom (UK) and Japan respectively. Totnes and District is a case in the UK, and KURKKU FIELDS (a sustainable farm park) and Kisarazu in Chiba prefecture are the other in Japan. These two cases are to be assessed using the 17 goals and 169 targets of the Sustainable Development Goals. In addition to it, an interview with KURKKU FIELDS, and an online survey is conducted to analyse the extent of awareness of terms related to sustainability and environmental awareness of both countries. The analysis made it clear that the main difference between the two communities lies in their focal points: one focuses more on ‘sustainability’, whilst the other focuses more on ‘resilience’. Although they share the same goal of achieving a sustainable community, their policies to achieve it are opposite. One would tend to work deeper and narrower with specific targets, whilst the other would tend to be shallower but wider in target areas. The result suggests a clear difference in two significant terms of ‘sustainability’ and ‘resilience’. On this basis, it is important to have both ideologies to achieve a holistic level of coverage for a perfect sustainable life.

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List of Abbreviations

CSA	Community Supported Agriculture
FFD	Food, Feed, and Drink
GMO	Genetically modified organism
JAS	Japan Agricultural Standard
KF&K	KURKKU FIELDS and Kisarazu
LEF	Local Entrepreneur Forum
MDGs	Millennium Development Goals
OECD	Organization for Economic Co-operation and Development
PV	Photovoltaics
SDGs	Sustainable Development Goals
TRESOC	Totnes Renewable Energy Society
TTT	Transition Town Totnes
T&D	Totnes and District
UAA	Utilised agricultural area
UK	United Kingdom

INTRODUCTION

It may be possible to say, money has the utmost power these days sustained by capitalism, which then arguably leads to the belief in materialism. Consequently, the highest goals of modern times are the acquisition of wealth and the development of production. However, due to extensive exploitation for production and the unsustainable use of resources for the development of production, the global balance in resources that was maintained in the past is slowly but surely crumbling now. There is currently enough evidence to prove the warming of the climate system, and some studies even indicate that the failure to reverse the warming will lead to a mass extinction of our species, which is also known as the Holocene extinction (Cockburn, 2020). The awareness of global warming has been increasing over years to the point that it has reached to become more or less common sense, and yet many people still fail to take action or have awareness of the crisis.

Some studies show that the crucial reason for the lack of support and engagement to global issues from individuals is considered to be the psychological distance based on the Construal Level Theory. This theory summarises that the greater the psychological distance people have, the more they find it unaccountable of the significance and the risks of an issue or an event. The psychological distance is commonly composed of three domains: ‘distance across time’, ‘social distance’, and ‘hypothetical distance’. ‘Distance across time’ is

theorized that the closer the events are to the present moment, the more details it carries than the events that are far away. 'Social distance' is related to the physical and mental distance between oneself and other people. The greater the 'social distance', the fewer people can empathise and support. 'Hypothetical distance' measures the certainty of an event. The greater the guarantee of an event happening raises awareness among people (Gardner, 2018).

According to Gardner, 'the worst of it lies decades in the future, to be suffered in far-off lands by foreigners very different from us, and the worst scenarios are highly uncertain' (Gardner, 2018). Climate change is thus psychologically distant in all three domains mentioned above. Due to this, it is difficult for many people to act upon the climate crisis, even if it is widely alerted on media.

The main challenge in this thesis is to find ways to increase the level of support of individuals for climate adaptation policy and global warming, on the basis of psychological distance. From my theory, the level of support from individuals is hugely affected by the social environment that the person is in. Gathering people who are passionate about something around a person will most likely increase his/her interest in that field of passion. For example, a person who reads or hears about climate change only occasionally is less likely to develop the belief and awareness than a person who is involved in discussions with other people about climate change more often and with depth. In other words, the effectivity of environmental awareness and measures is maximised in a community sharing the same awareness and passion.

Furthermore, Hopkins (2009a) believes that there are four different ideas of how people tell the future regarding global warming and the unsustainable use of resources. The first idea is that the present will continue in the future, perhaps not necessarily sustaining but rather just enduring. However, there are more recent studies that have been revealing that this idea may be impossible. The second idea is based on the so-called 'hitting the wall' theory, which is that the present world collapses all of a sudden due to the lack of the needed action against global warming and the unsustainable use of resources in the past. The third idea is believing groundlessly that there will be a technological invention that would solve everything one day. The final idea is embracing the fact that we are progressing towards the fatal wall and acting upon it. The crucial difference between this last idea and the second idea is that the second idea means giving up after accepting the fact. Acting upon the fact in the latter means that it looks at the problem of climate change square in the face, and not only imagining free ideas of solutions but also creating a response of adaptability. These solutions are diverse and may be imperfect, but this drives people with imminent hope and proactivity, making people aware of their responsibility by taking part in living on this one living planet.

This thesis will compare two different communities sharing the attitude of the fourth idea respectively from the United Kingdom (UK) and Japan. The selection is made through various conditions such as the size of the community, ideology, structure, and the willingness to change. Totnes and District (T&D) in the UK and KURKKU FIELDS and Kisarazu (KF&K), in Japan, are both one of the most innovative towns (and facility) in the country,

being widely reported on media, attracting attention, and even introduced on the Government White Paper as representative cases. These two subjects are compared using the framework of the Sustainable Development Goals (SDGs), a global goal that was agreed on by world leaders at a summit meeting at the United Nation Headquarters in September 2015.

Totnes is a market town in the UK, with a population of about 8,000 people. It is well known for its success with the Transition Movement as it progresses towards the alternative green modern life and demonstrates sustainability in food, energy, building materials, community, local economy, etc. Kisarazu is a city in Japan, about an hour away from Tokyo, and it is known for its eccentric 'Organic City Project', where the city council promotes an organic and sustainable life in the community. KURKKU FIELDS is a sustainable farm park within Kisarazu that demonstrates the circulation of organisms, water, energy, food, and essential others. As this thesis aims at verifying the implementation of the SDGs within the community, both intentionally and unintentionally, it will look at ideologies and goals behind projects that are created for the progression towards the alternative green modern life.

CHAPTER 1

CASE STUDY SELECTION AND BACKGROUND DATA

1.1. Case Study Selection

Knowledge of the environmental implication has always been a key factor in the depth of awareness. However, the topic of the 'environment' is highly likely to be associated with the category of 'science', which leads to disassociation from oneself. White's (2001) study of the process of sustainable urban development advocates as the following:

> First, environmental education must occur at every level, formal and informal. Many people still regard the environment as something 'technical' or 'scientific' that they cannot, or need not, understand. This assumption immediately closes the individual off from any personal engagement with the challenge of sustainability. As quickly as possible people need to understand that the 'environment' is what keeps us alive, through breathing, eating, drinking, and so on. It is not separate or extraneous; it permeates every aspect of our lives and is something for which we not only have a responsibility but a vital need. It should be made clear through this type of education that the environment is as important for our well-being as shelter from the elements and money in the bank. As a society, we need to take 'the environment' out of the realm of science and re-install it as common knowledge, just as it was for our pre-industrial forbears. (p. 55)

This thesis compares one site each from Japan and the UK that implements environmental education informally and subtly, where personal engagement is natural rather than forced. The selected conditions for these sites were:

- That it hosts a society or a community that re-installs 'the environment' as a common conviction
- That it is in the experimental phase of continuous shapeshifting with relatively flexible policies
- That the core governance of the community is committed to change

Initially, the comparison was going to be between KURKKU FIELDS, a leading sustainable farm park facility in Kisarazu, and Totnes, as the centre town of Totnes. However, the scale of the subject has been expanded to towns/cities rather than facilities, therefore I shift my focus to Kisarazu, where the main subject of analysis stays as KURKKU FIELDS. And to match that, Totnes is expanded to the whole district which included Dartington Hall Estate. This was also due to the fact that the border of the Totnes area is relatively vague, for example, the vagueness of inclusion of Schumacher College and the rest. Therefore, the subject of analysis should be selected as T&D and KF&K.

1.2. UK and Japan Comparison

Here we compare the basic statistics and background information relevant to our discussion of the two countries. We will focus on the following four domains which are

related essentially to the purpose of this research: food self-sufficiency, organic farming, food waste, and the energy, electricity and fuel sector.

Firstly, on food self-sufficiency. According to the UK Department for Environment, Food & Rural Affairs (2020), the UK imports about 45% of the total food consumption from foreign countries, and the value of food, feed and drink (FFD) imports (47.9 billion GBP = 6.5 trillion JPY[1]) is about twice as much value of FFD exports (23.6 billion GBP = 3.2 trillion JPY[1]). The Japanese government calculates the food self-sufficiency rate on calorie-base, which looks at the relation of the average amount of calorie intake per day to the total amount of calories in the production of domestic agriculture and imports (Suzuki, 2009). According to the Japan Ministry of Agriculture, Forestry and Fisheries (2020c), the calorie-based food self-sufficiency in Japan was about 37% in 2018 (p. 4). The Ministry believes that the food self-sufficiency rate would have a similar outcome whether it's calculated based on calories or the quantity if the domestic product and the imported product are assumed to have the same wastage rate (n.d., Q4). Thus, it can be evaluated that Japan relies on food imports to cover about 60% of the nation's total food consumption. Also, the import value of all products of agricultural, forestry and fisheries (9.5 trillion JPY = 69.8 billion GBP[1]) is about 10 times more than the value of exports (including alcohol beverages, tobacco and pearls) (912.1 billion JPY = 6.7 billion GBP[1]) (Japan Ministry of Agriculture, Forestry and Fisheries, 2020a, p. 1). Comparing with the UK's food self-sufficiency rate which remains below 50%,

[1] Exchange rate of 26th October 2020

Japan relies slightly heavier on food imports than the UK to cover the nation's total food consumption. Japan's FFD imports are about 30% higher than the UK's FFD imports, whilst the UK FFD exports exceed about 450% higher than Japan's FFD exports.

Secondly, on the organic farming scenery. Organic farming is a specific model of agriculture that is both beneficial to the quality of food and the environment. Although organic vegetables tend to be more expensive than non-organic vegetables, the quality is significantly higher due to its cultivation without requiring artificial synthetics such as fertilizers, pesticides, herbicides, or any genetically modified organism (GMO) technologies (Japan Ministry of Agriculture, Forestry and Fisheries, 2020d). Fertilizers and pesticides are known to be toxic to the environment, contaminating the surface/groundwater, soil, air, non-target vegetation, other organisms, and even on human bodies (Aktar et al., 2009; Khiatah, 2019). To sum up, organic agriculture is defined as a cultivation method that reduces environmental loads from agricultural production as much as possible.

According to the UK Department for Environment, Food & Rural Affairs' annual report (2020), the total area of organic farmland in the UK is 485 thousand hectares, which is about 2.8% of the total utilised agricultural area (UAA)[2] of 17.5 million hectares (p. 10, 122). On the other hand, Japan Ministry of Agriculture, Forestry and Fisheries (2020d) reports that the total area of JAS certified [3]organic farmland in Japan is 13,471 hectares,

[2] Utilised agricultural area is the total area of arable land (for growing crops), permanent grassland (meadow), permanent crops (for growing tree crops) and kitchen gardens (for growing vegetables) (Eurostat).
[3] Abided by 'The Act of Japan Agricultural Standard (JAS)', the 'Organic JAS Mark' is certified to businesses with appropriate cultivation and farmland production.

which is about 0.2% of the total UAA of 4.4 million hectares (p. 2). To compare, the global aggregate area of organic farmland has increased by 6.5 times since 1999 to 2018 of 71.5 million hectares, which is about 1.5% of the global aggregate area of UAA (p. 5). In conclusion, the UK has more areas of organic farmlands than Japan, where organic farmland seems less advanced.

In the matter of food waste, however, the UK faces a greater severity than Japan. According to the UK Department for Environment, Food & Rural Affairs (2018), about 10 million tonnes of food and drinks were wasted with about 73% of the food waste coming from a household in 2015[4]. It has been said that the total food waste had a value of over £17 billion, associated with about 20 million tonnes of greenhouse gas and about 60% of these wastes were avoidable[5] (p. 55). On the other hand, in the same year, Japan Ministry of Agriculture, Forestry and Fisheries (2020b) has reported that about 6.46 million tonnes of food were wasted with about 44.8% of the food waste coming from a household in Japan. To sum up, in 2015, households in the UK produced about 7.3 million tonnes of food waste, and households in Japan produced about 2.9 million tonnes of food waste.

Fourthly, on the energy, electricity and fuel sector. We will first focus on fuels used to generate energy, and their usage. According to the UK Department for Business, Energy

[4] The latest data updated by UK Department for Environment, Food & Rural Affairs in 2018 is about 2015, and the latest data updated by Japan Ministry of Agriculture, Forestry and Fisheries this year is about 2017. Therefore, this comparison will be based on the year 2015.

[5] 'Food and drink that is thrown away untouched or opened/started but not finished (for example, whole apples, yoghurts, half loaves of bread, unused slices of bacon etc.) or food and drink we cook or serve too much of' (UK Department for Environment, Food & Rural Affairs, 2018, p. 102).

& Industrial Strategy (2020), the final energy consumption of the UK in 2019 was 149,646 thousand tonnes of oil equivalent (about 6265.38 PJ; 1,740,382.98 GWh). According to the Japan Ministry of Economy, Trade and Industry (2020), the final energy consumption of Japan in 2019 was 12,959 PJ (about 309,520 thousand tonnes of oil equivalent; 3,599,717.6 GWh). In other words, Japan has twice as much energy consumption than the UK.

As shown in Table 1, about three-quarters of the UK's energy generation relies on fossil fuels with a surprising limitation of the use of coal. This may be because coal is the least density of energy within the other types of fossil fuels. On the other hand, Japan has been relying heavily on fossil fuel since the 2011 Tohoku earthquake and tsunami, due to the unutilized nuclear power plants. The reliance on fossil fuel in Japan peaks after the 2011 Tohoku earthquake and tsunami when all the nuclear power plant shuts down temporarily in 2014. Moreover, the UK's usage of fossil fuel dropped by about 60% since 1995, whilst the usage of fossil fuel in Japan has increased by about 2.7% since 1990 (UK Department for Business, Energy & Industrial Strategy, 2020a; Japan Ministry of Economy, Trade and Industry, 2020). This can be concluded that Japan relies heavier on fossil fuel than the UK. Furthermore, as mentioned above, Japan has twice as much energy consumption than of the UK. This means that the energy consumption used for industrial purposes in Japan is roughly equivalent to four times of the total energy consumption used for industrial purposes in the UK. Also, the total energy consumption for domestic usage is about the same in the UK and Japan.

Table 1. Fuels Used to Generate Energy and their Usage for the UK and Japan in 2019[6]

Fuels Used to Generate Electricity		UK		Japan	
Fossil Fuels	Coal	1.1%	(Fossil Fuels:) 73.7%	25.4%	(Fossil Fuels:) 85.0%
	Oil	43.6%		37.2%	
	Natural Gas (and Coal Gas)	29.0%		22.4%	
Renewable Energy Sources	Solar	5.5%	(Renewable Energy Sources:) 16.1%	5.8%	(Renewable Energy Sources:) 12.2%
	Wind				
	Hydro			3.5%	
	Bioenergy (and other Unused Energy Sources)	10.6%		2.9%	
	Others	N/A		N/A	
Others	Nuclear Fuel[7]	10.2%	(Non-Fossil Fuels:) 26.3%	2.8%	(Non-Fossil Fuels:) 15.0%
Final Composition of Energy Consumption					
Industrial	Manufacturing (including Non-Energy Use[8])	20.0%	(Industrial:) 34.5%	43.9%	(Industrial:) 62.7%
	Services and Other Industries[9]	14.5%		18.8%	
Transport	Tourism	37.9%		13.7%	(Transport:) 23.3%
	Freight Transport			9.5%	
Domestic		27.6%		14.0%	

Note. Data for UK Department for Business, Energy & Industrial Strategy (2020a), and for Japan Ministry of Economy, Trade and Industry (2020).

[6] The latest data updated by Japan Ministry of Economy, Trade and Industry (2020) is about 2019. To achieve an accurate comparison, the data will be based on the year 2019.

[7] Although it is debatable, nuclear fuel is excluded from the list of renewable energy for this thesis because the fuel used for energy generation is not renewable.

[8] The category for 'Non-Energy Use' does not directly provide energy, and it includes use for chemical feedstock, solvents, lubricants, and road making material (UK Department for Business, Energy & Industrial Strategy, 2016, p. 4).

[9] The category for 'Services and Other Industries' includes schools, shops, workplaces, agriculture, forestry, fishery, and others.

Now we will focus on fuels used to generate electricity and their usage. The final electricity consumption of the UK was 295,260 GWh, which is equivalent to about 17.0% of the final energy consumption, and the final electricity consumption of Japan was 927,700 GWh, which is equivalent to about 25.8% of the final energy consumption (UK Department for Business, Energy & Industrial Strategy, 2020a; Japan Ministry of Economy, Trade and Industry, 2020). Japan has more than three times as much electricity generated in the UK.

Table 2. Fuels Used to Generate Electricity and their Usage for the UK and Japan in 2019

Fuels Used to Generate Electricity		UK		Japan	
Fossil Fuels	Coal	2.1%	(Fossil Fuels:) 43.1%	31.9%	(Fossil Fuels:) 75.8%
	Oil	0.4%		6.8%	
	Natural Gas (and Coal Gas)	40.6%		37.1%	
Renewable Energy Sources	Solar	4.0%	(Renewable Energy Sources:) 37.1%	6.7%	(Renewable Energy Sources:) 18.0%
	Wind	19.8%		0.7%	
	Hydro	1.8%		7.8%	
	Bioenergy	11.5%		2.6%	
	Others	N/A		0.3%	
Others	Nuclear Fuel	17.3%	(Non-Fossil Fuels:) 56.9%	6.2%	(Non-Fossil Fuels:) 24.2%
	Others (Pumped Storage, etc.)	2.5%		N/A	
Final Composition of Electricity Consumption					
Industrial	Manufacturing	31.0%	(Industrial:) 63.0%	36.2%	(Industrial:) 71.2%
	Services and Other Industries	32.0%		35.0%	
Transport		1.9%		1.9%	
Domestic		35.1%		26.9%	

Note. Data for UK Department for Business, Energy & Industrial Strategy (2020a), and for Japan Ministry of Economy, Trade and Industry (2020).

Table 2 shows that the UK generates a significant amount of electricity using renewable energy sources, but also generates the majority of its electricity using natural gas. Natural gas requires stringent measures for transportation, and its global peak of consumption is presumed to happen about 10 years later than the peak oil (Hodgson & Hopkins, 2010, p. 120). Although the UK has a higher rate of demand of electricity for industrial usage and domestic usage than energy, the final electricity consumption is equivalent to about 17.0% of the final energy consumption. Therefore, it does not necessarily mean it consumes more electricity for industrial usage and domestic usage than energy. Japan, on the other hand, still heavily relies on fossil fuels. The rate of nuclear power generation is at a rise since after all power plants temporarily shut down in 2014. Now the total energy and electricity generated from nuclear fuel is equivalent to a fifth of the total energy and electricity generated from nuclear fuel from before 2011.

Overall, Japan relies more on fossil fuel to generate both energy and electricity than the UK. It is arguably concluded that the UK invests and supports more in renewable energy sources than Japan, where renewable energy infrastructure seems underdeveloped. In 2008, the UK introduced the feed-in tariff system where electricity that is generated through renewable energies, such as solar photovoltaics (PV) and wind turbines, can be exchanged for money. Feed-in Tariff is currently closed for new applications since 31st of March 2019 (‘Feed-in tariffs,’ n.d.), and this presumably brought a very positive effect to the promotion of renewable energy in the UK which then led to a decrease in dependency on fossil fuels.

On the other hand, in Japan, the feed-in tariff system was launched in 2012 July. Since the implementation, total energy generated through solar PV experienced explosive growth from 6.6 GW to 28.4 GW in 3 years (Komiyama & Fujii, 2016). However, it seems that it hasn't reached the desired effect yet. The presumed reason for the underdevelopment is a preconception that Japan is unsuitable for renewable energy. The energy supply in renewable energies, such as solar PV and wind power, is not stable since it is heavily dependent on the weather. Also, the energy density in renewable energy resources is much lower compared to fossil fuels and nuclear power. According to Yamaka's column article (2020), for many years the Japanese energy policy has been based on energy security and economic production, which both excluded renewable energy sources. Although the Japanese government has agreed to cut greenhouse gas emissions by 2050, it is pointed out that the conventional power market in Japan may still lack appropriate policies to enhance renewable energy development (Xie, 2020; Yamaka, 2020).

1.3. Survey

Considering all the data from above, it may be said a transforming community needs to attract high levels of individual concerns that would help generate wider awareness which leads people to action and support. With this purpose in mind, an internet-based survey using Google Forms was conducted to analyse the awareness of terms related to sustainability and environmental awareness of both countries. This concept testing survey questioned

participants how much of the sustainability and environment-related terms they knew, and also how important the issue of climate change is for them. In total, 212 surveys were conducted: 138 Japanese participants and 74 UK residential participants. An important condition for the participant was that they have experience of living in urban areas: namely either in Tokyo or London. This was due to the idea that the average awareness levels of the capital city would most likely affect the general governmental policies that embrace environmental intentions.

The following questions were asked to both groups:

I fully understand the term 'Sustainability'.

How well do you know the 'Sustainable Development Goals (SDGs)'?

I have interest in renewable (clean) energy.

In addition, for the Japanese audience, the following question was asked:

Do you have experience studying or working abroad?

I fully understand the term 'Ethical'.

In your daily life, are you conscious about the environment and eco-friendly actions?

The experience aboard was asked to see the influence of foreign culture being influenced in the overall outcome of the survey. Also in Japan, the term 'ethical (エシカル)' is more often used to represent ethical consumerism and describes ethically-made products (Sueyoshi, 2018). These questions were not asked on the UK survey due to the difference in the usage

of the term in Japanese and in English. Instead, the additional question below was asked in the UK survey:

I take action out of concern for climate change.
How important is the issue of climate change to you personally?

These two questions were thought to be covered in the question, *'In your daily life, are you conscious about the environment and eco-friendly actions?*' in the Japanese survey.

In the UK survey, the set of answers for the statement questions were: *Strongly disagree; Disagree; Agree; Strongly Agree.* The set of answers for the Japanese survey were more specifically written: *I didn't know that existed; I have heard of the term but don't know the content; I know the content relatively well; I can explain the content to people.* The UK survey did not take this approach in order to reduce complexity, aiming to increase the number of answers (English surveys tend to be less descriptive than Japanese surveys).

The results were quite unexpecting. As shown in Appendix A, the term 'sustainability' is mostly well known in London (97.3% either agree or strongly agree on understanding the term 'sustainability') whilst the 'Sustainable Development Goals (SDGs)' were not; 47.3% of the participants knew nothing about the SDGs. On the other hand, in Tokyo, the degree of recognition of the term 'sustainability' and the 'SDGs' was about 50/50 (56.5% of the participants knew the content of both 'sustainability' and 'SDGs' relatively well or very well), with a slightly higher rate for people who know 'sustainability' rather than the 'SDGs' (the rate of participants who didn't know the existence of the term 'sustainability' was 13.8%,

whilst for ‘SDGs’ was 27.5%). This was assumed to be due to the low English proficiency in Japan (‘Japan’s English Proficiency’, 2019), and since the term ‘sustainability’ is in katakana, which is often used to transcribe words from foreign languages, it may cause a barrier for the average Japanese citizens to learn and understand the meaning. And as the ‘SDGs’ is an abbreviation of the concept word consisting ‘sustainability’, it is natural that the Japanese participants knew less of the term ‘SDGs’. However, the survey indicates that almost half of the participants have been studying or working abroad (52.5%). This might have affected the recognition level to increase. What was unexpected was that the low recognition of the term ‘ethical’ compared to ‘sustainability’ and the ‘SDGs’ (65.9% of the participants didn’t know the contents or the existence of the term). This could be drawn to the assumption that the term ‘sustainability’ is more frequently used in organization slogans and company targets, as ‘ethical’ is more often used to describe consumption, such as ‘ethical fashion’ (Sueyoshi, 2018).

Almost all of the participants from London were interested in ‘renewable (clean) energy’ (96% either agree or strongly agree), whilst in Tokyo, about 68.1% of the participants knew the contents of ‘renewable (clean) energy’ and 31.9% of the participants were not aware of the concept. Furthermore, most of the participants in London feels that the issue of climate change is important to them personally (93.2% either agree or strongly agree), and participants in London have a greater rate of taking action out of concern of climate change (86.3% either agree or strongly agree) than participants in Tokyo (45.7%) (Appendix A).

CHAPTER 2

ANALYTICAL GUIDELINE

2.1. Sustainable Development Goals

The term ‘sustainability development’ was first defined in the United Nations World Commission on Environment and Development report by Brundtland Commission as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (1987). It has now become a universal foundation to aim to set on a path towards a one-planet future, and also to fight against irreversible climate change, to end poverty, and to create sustainable economic growth. This mission is commonly assessed using the framework of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SGDs), which was agreed on by world leaders at a summit meeting at United Nation Headquarters in September 2015. The SDGs originally succeeded Millennium Development Goals (MDGs), which had been developed between 2000 and 2015. The MDGs focused on ‘reducing’ extreme poverty mainly in the developing countries with 8 goals, 18 targets and 60 indicators. According to the ICLEI - Local Governments for Sustainability, however, it has been said that the succession of MDGs is debatable. While supporters of the MDGs claims that the MDGs achieved a 50% reduction of poverty, critics suggest that the progression remained ‘both regionally and thematically unbalanced’ (Woodbridge, 2015). The reason behind this was the agencies’ dichotomic

divide of the ‘developing’ countries and the ‘developed’ countries, which has created an unbalanced distribution of effort to poverty as a whole.

The SDGs, on the other hand, focuses on the total engagement of problems from various fields, such as poverty, climate change, equality, infrastructure, education and others, and aims to tackle it hand-in-hand. In the case of poverty, the SDGs aims to ‘end’ poverty with more definite and specified targets. It has expanded its scope to have 17 goals, 169 targets and over 200 indicators that are related to all nations, developed and developing, ‘leaving no one behind’ (United Nations, 2016). One of the key differences that were made to the SDGs was the implementation of the influence of private sectors and civil society. This made it easy for the government to allocate its responsibilities of the sustainable development to local governments, cities, and urban areas, where implementation and monitoring would function respectively. The MDGs had the government have full responsibility and authority for taking actions with the sustainable development, whilst nowadays with the decentralised SDGs, there are more responsibilities for individual organizations and locals for contribution and planning. One example of this is a newly created award by the Ministry of Foreign Affairs of Japan, ‘Japan SDGs Award’ from the ‘Japan SDGs Action Platform’. This award was created in the attempt to promote the concept of the sustainable development, and also to motivate individuals to contribute to any of the SDGs. The winners of this award is widely ranged from schools to a small district in a town, NGO/NPO organizations, public companies, etc (Japan Ministry of Foreign Affairs).

Sustainable Development Goals are completed out of 17 targets:

Source: *Communication materials*. United Nations.

Goal 1. No Poverty

- End poverty in all its forms everywhere

Goal 2. Zero Hunger

- End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Good Health and Well-Being

- Ensure healthy lives and promote well-being for all at all ages

Goal 4. Quality Education

- ❖ Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Gender Equality

- ❖ Achieve gender equality and empower all women and girls

Goal 6. Clean Water and Sanitation

- ❖ Ensure availability and sustainable management of water and sanitation for all

Goal 7. Affordable and Clean Energy

- ❖ Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Decent Work and Economic Growth

- ❖ Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Industry, Innovation, and Infrastructure

- ❖ Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reducing Inequalities

- ❖ Reduce inequality within and among countries

Goal 11. Sustainable Cities and Communities

- ❖ Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Responsible Consumption and Production

- ❖ Ensure sustainable consumption and production patterns

Goal 13. Climate Action

- Take urgent action to combat climate change and its impacts

Goal 14. Life Below Water

- Converse and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Life on Land

- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16. Peace, Justice and Strong Institutions

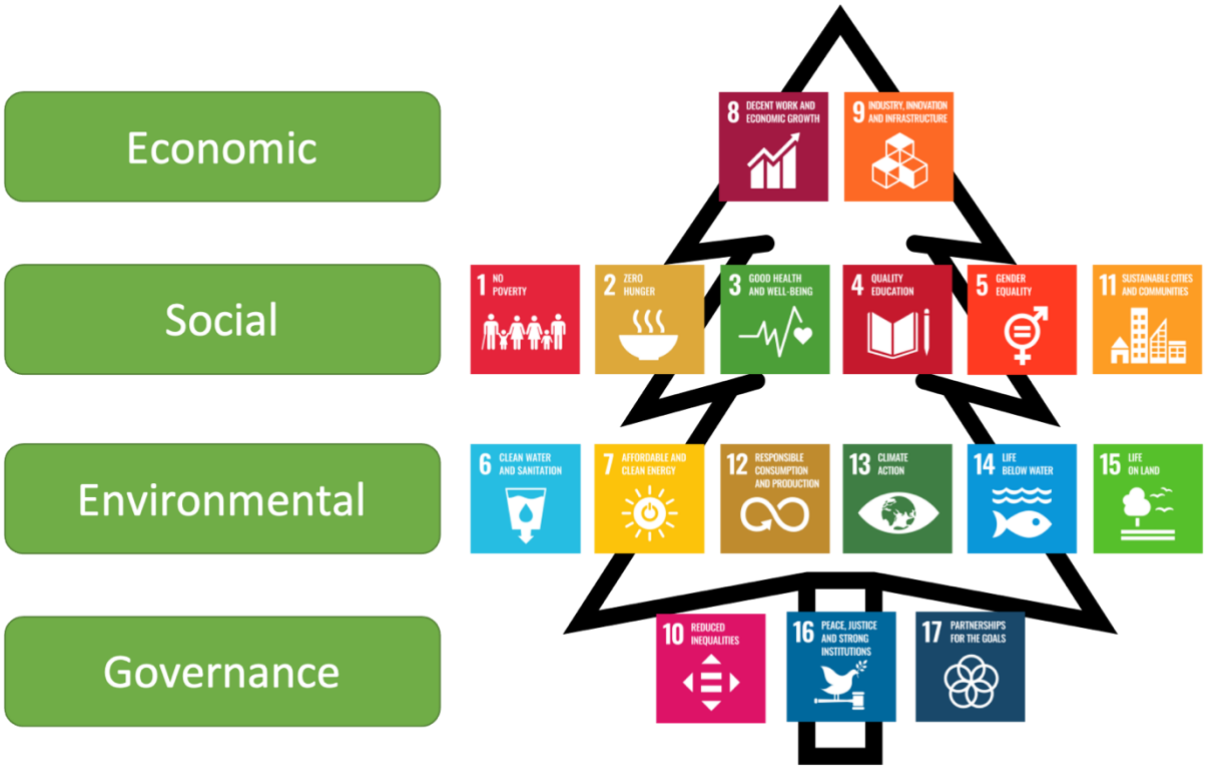
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. Partnerships for the Goals

- Strengthen the means of implementation and revitalize the global partnership for sustainable development

Sustainability is often described in the paradigm of the three-pillars-concept of economics, social, and environmental. These three aspects, with the government as a base, holistically determines and defines a system/organization's sustainable levels and supports the needs of present and future generations.

Figure 1. Illustration of the Three Pillars of the SDGs



Note. Adapted from 'Part 1, Chapter 1, Section 2, Relationship Between Goals of SDGs and Current State of the World [Dai 1 bu・dai 1 shou・dai 2 setsu SDGs no kaku goal no kankei to sekai n genjyou],' by Japan Ministry of the Environment, 2017, *Annual Report on the Environment in Japan: White Paper 2017* [Heisei 29nen ban kankyou・jyunkangata shakai・seibutsu tayousei hakusho], (https://www.env.go.jp/policy/hakusyo/h29/html/hj17010102.html).

A report suggests that by dividing the 17 goals into the three pillars of sustainable development, it leads to an understanding of what seems like a common sense, but is often forgotten: 'The global economy services society, which lies within Earth's life-support system' (Griggs et al., 2013). By acknowledging this reality, the destruction of the ecosystem,

the over usage of fossil fuel, global injustice, and other universally unbalanced problems seems counterintuitive. Griggs and his colleagues argue that the definition of sustainable development should be redefined to 'development that meets the needs of the present while safeguarding Earth's life-support system, on which the welfare of current and future generations depends' (Griggs et al., 2013). Furthermore, Pinter stresses that the measurement and identification of the sustainability 'should not be data driven, but grounded in common values, relevant science, and a conceptual framework that represents key domains of sustainable development and interlinkages between the domains' (2013).

2.2. Research Methodology

This thesis will assess T&D, and KF&K in a conceptual framework using the 17 goals of the SDGs, and 169 targets following the method stated by Pinter (2013). We aim at verifying the implementation of the SDGs within the community, both intentionally and unintentionally, it will look at ideologies and aims behind projects that are created for the progression towards the alternative modern green life. 169 targets of the SDGs will be reviewed and analysed to see if it fits in any of the measures that the two subjects are establishing. The scale of the target will differ, as some will concern the governmental operation, and therefore the analysis will take place not only within the subject but occasionally with the whole country.

A scoring grid was developed to monitor the current state of the two subjects. For each target, the subjects will score **'performing well'**, **'working in progress'**, or nothing:

- **'Performing well'**: The implementation of the target is clearly shown with (potential) progress.
- **'Working in progress'**: Although there are signs of effort of progress for the certain target, it is inadequate and has rooms for improvement.
- No score: There was no available information about the subject's action to support the target/goal.

CHAPTER 3

TOTNES AND DISTRICT

3.1. Background Information

Totnes is a market town in South of Devon, England, 3 hours away on train from London, with an estimated population of about 8,000. It is known for its eccentric ambition and progress towards the alternative green modern life and its demonstration of sustainability. 'Transition Town Totnes (TTT)' is a community-led organisation that supports this movement, and the two founders of TTT, Rob Hopkins and Naresh Giangrande came together in 2005 to talk and show films about the concerns of peak oil and awareness of global warming, which then kicked off as a 'process' in September 2006 as a form of action. TTT works as a catalyst to the people in town by inspiring and supporting projects with networking and occasional fundraising. According to Hodgson and Hopkins (2010), TTT's initiative comes from the following four assumptions:

- That life with dramatically lower energy consumption is inevitable, and that it's better to plan for it than be taken by surprise
- That our communities presently lack the resilience to enable them to weather the severe energy shocks that will accompany peak oil
- That we have to act collectively, and we have to act now

- That by unleashing the collective genius of those around us to creatively and proactively design our energy future, we can build ways of living that are more connected, more enriching and that recognize the biological limits of our planet (Hodgson and Hopkins, 2010, p. 36)

The process of transforming mere knowledge into awareness and then to influential action is demonstrated in the community of Totnes, which then created TTT. As Hopkins stated, 'we want to model lasting behaviour change, which sees low carbon living not as a chore, or as some hair-shirt austerity measure, but as offering the potential for an economic and cultural renaissance for the community' (2009b). The town aims to 'design all our everyday activities so they work more like plants or, even better, a woodland ecosystem. There are no waste bins in natural woodland – anything that is produced by one plant or creature is used by another, especially CO2' (Transition Town Totnes, n.d.e). The town has achieved about 60% of self-efficiency in food and energy in 2011 (Hodgson & Hopkins, 2011, p. 50), and it has most likely progressed and increased since then.

The town thrives on three main maxims as follows:

- Resilience: The ability of a system (an individual, an economy, a town or a city) to withstand shock from the outside. In Transition, we go beyond this definition, instead of seeing it as a desired state; the rebuilding of which could be hugely economically advantageous to our local communities.

- Relocalisation: Actively promotes the idea of going beyond the concept of ‘localism’ - the devolving of political power to the local level - towards 'localisation’; meeting of our core needs locally (food, building materials, energy...), which has huge potential for our local economies, while also reducing oil dependency and carbon emissions.
- Regenerative Development: Development of T&D for the public benefit of its citizens by reducing reliance on scarce resources including oil, thus meeting the needs of the present without compromising the ability of future generations to satisfy their own needs. (Transition Town Totnes, n.d.e)

Hopkins, the pioneer who invented the concept of the Transition movement, believes that ‘resilience’ is far more ‘useful’ than the idea of sustainability. Before coming to Totnes, Hopkins was involved in the education of teaching permaculture and other skills for sustainability in Ireland. Throughout his career, he has developed the understanding that the idea of sustainability is ‘looking at the globalised economic growth model, and moderating what comes in at one end, and moderating the outputs at the other end’ (0:45 – 0:55). This idea was emphasised in one of his TED talk (2009a):

> The idea of resilience comes from the study of ecology. And it's really about how systems, settlements, withstand shock from the outside. When they encounter shock from the outside that they don’t just unravel and fall to pieces. And I think it’s a more useful concept than sustainability, as I said. When our supermarkets have only two or

> three days' worth of food in them at any one time, often sustainability tends to focus on the energy efficiency of the freezers and on the packaging that the lettuces are wrapped up in. Looking through the lens of resilience, we really question how we've let ourselves get into a situation that's so vulnerable. Resilience runs much deeper: it's about building modularity into what we do, building surge breakers into how we organize the basic things that support us (09:24 – 10:14).

Resilience means being flexible, mobile and being able to adjust to survive. This ability to adapt oneself to shock was tested this year due to COVID-19. It can be said that organizations that didn't have the strong ability of resilience collapsed, whilst the more resilient ones survived. By heeding the three maxims, Totnes creates a cycle of strengthening the local economy, creation of more jobs, and greater responsibility for individual actions and consumption, which brings the community closer. Totnes proves the efficacy of investigating how our existing ecosystems and biodiversity can support us in our sustainability. To gain stronger resilience, the town embraces the common recognition that strong local infrastructure is crucial, and the town has to be sustainable in its entire inflows and outflows.

From this, a local food programme, 'Grown in Totnes', exercises the mapping of Totnes' local food web[10] in the attempt to increase the range of local food[11] made within 30

[10] 'A local food web is the network of links between people who buy, sell, produce and supply food in an area. The people, businesses, towns, villages and countryside in the web depend on each other' (Willis, 2012).
[11] Local food is defined as 'raw food, or lightly processed food (such as cheese, sausages, pies and baked goods) and its main ingredients, grown or produced within 30 miles of where it was bought' (Willis, 2012).

miles (≒ 50 km) radius from the town. In addition to the meat and dairy products from the local farmers, Totnes focused on producing staple crops such as grains and pulses, adding more variety to the local crops to achieve a healthy diet for the residents and visitors of the town. Growing local food has many social, economic and environmental benefits. The social benefits are that it can create new jobs and opportunities for small businesses, provides a viable living for farmers and growers, and also expands the options of where to shop fresh, healthy and affordable food. The economic benefit is that it can ensure that more money stays in the local economy (Campaign to Protect Rural England, 2017). A report suggests that every £1 spent locally is worth about £1.70 to the local economy and if that same £1 is then spent for the local businesses, it will then be worth about £2.20. However, for every £1 spent on multi-national companies, the value falls to about £0.22 to the local economy (Ball & Ottey, 2016). Although there are many environmental benefits, one of the main benefits of local food market is energy usage. Local food markets consumes less energy to produce and sell than the same amount of food sold at supermarket chains because local markets mostly sell fresh seasonal crops, and it does not require the energy to preserve nonseasonal food.

A study (Coley, Howard & Winter, 2009) was made to compare the overall greenhouse gas emission of the storage-distribution-retail chain of a supermarket and the food supply chain of the local farmers market. It found that if a customer drives a petrol car for more than 6.7 km of a round trip to the local farmers market, it will exceed the greenhouse gas emission of the storage-distribution-retail chain of a supermarket per customer. However,

according to the 1998-2000 National Travel Survey, it is revealed that the average trip distance to buy food is 4.8 km in the UK (Coley, Howard & Winter, 2009). In addition, the average number of trips and distance travelled for shopping has been decreasing since 2002 (UK Department for Transport, 2020). Also, from the fact that electric vehicles are increasing in its popularity, it can be concluded that the average trip distance for a customer to buy food is unlikely to exceed 6.7 km. Therefore, meaning that the food distribution channel through local markets is likelier to exceeds fossil fuel-related carbon emissions than the food distribution channel through supermarket chains.

On the other hand, the benefit of the global food market retails is the varieties of food available at any season. This means that the global food market has higher nutritional offerings, and also less effort to preserve food during winter when seasonal food is limited. However, a study made by Macdiarmid (2013) shows that it is possible to cover all the essential nutritional levels by only intaking seasonal food even during winter but still suspects that the diet would be unacceptable in the modern society due to its limited range of food. The author concludes that it is hard to say which is better of either consuming only seasonal or nonseasonal because both brackets have no clear advantages and disadvantages to be solely consumed. In other words, it is important to have both options of a retail chain to find the perfect balance for health, environmental, social, and economic benefits.

Supermarkets are usually obstacles for local food markets. For example, a market town in the northeast of England called Hexham has a hypermarket on the edge of the town

centre. The hypermarket takes up 45% of all shopping in the district, but it only stocks seven local food products. Totnes, on the other hand, has a very good balance of supermarket and local food markets according to Willis (2012). It only has several small to medium-sized supermarkets near the high street, which enables the town to maintain a well-balanced distribution of the customers to buy both seasonal and nonseasonal food.

On the west edge of Totnes, there is a small village called Dartington, which is home to the Dartington Hall Estate. Totnes and Dartington Hall Estate has created a circular economy system with the School Farm at the centre, managed by Schumacher College. Students from around the world gather to learn horticulture at the gardens of the estate and to deepen the understanding of the ecosystem and biodiversity of this planet. Surrounding the School Farm is the Old Parsonage Farm that spans 480 acres (194.25 hectares), and there are other farms that all have their own purposes such as agroforestry, biomass, allotments, woodland, solar array, etc. The garden is carefully controlled to maintain the finest quality of soil by, for example, not ploughing and turning over the soil, as it releases carbon into the atmosphere, which leads to loss of quality and the need for fertilizers and other artificial inputs (Dartington Trust, 2014, 04:51 – 05:49). It aims to create an ambitious economic system that enables the community market to provide healthy and affordable food. According to the Dartington Trust (n.d.b), there are currently several different non-profit social enterprises running within the farmland of the Dartington Hall Estate boundaries such as:

- Mixed Farm with Low-Carbon Dairy Unit: The permanent pasture for grazing created a sustainable way to diversify livestock including Jersey herd and goats that produce milk for local cheeses.
- Horticulture: This promotes local circulation such as local production for local consumption. Their aim is to increase food self-sufficiency.
- Woodland Enterprises: This project creates local and sustainable woodland produce for crafting and building materials.
- Education and Schools Link Project: As well as the college courses, the farmland is used for other gardening courses and outdoor-based curricular activities for local primary schools.
- Renewable Energy: The estate has installed a 500kWp solar array and a 950kw biomass boiler in 2015.
- Agroforestry and Orchards: Managed by the Agroforestry Research Trust, agroforestry creates an integration of various species in one field. Also, it can perform carbon, nitrogen, and methane (animal digestion) sequestration.
- Community Supported Agriculture (CSA): Directed by people that represent the local community, this project creates a partnership with shared responsibilities and rewards between farmers and the local community. From this, the farmers can receive a more stable and secure income, and the local community can feel

more connected with the fresh healthy vegetables that will be sold in the local food shops.

- Campsite: It is open for tourists and locals to have the full experience of the Totnes area.
- Support for Community Growing Projects: This offers farmlands for groups that want to create new food growing projects. One example of a project that started from this is 'The Living Projects', which is a local youth group with the initiative of creating a sustainable future.

The Dartington Hall Trust aspires to adopt agroecological principles through permaculture and horticulture practices, which improves yield enhancement and stability of production in an environmentally friendly way. According to Altieri and Nicholls (2000), 'agroecology' is defined as a sustainable agricultural concept with the principles of the ecological framework and the complexity of agroecosystems. Pursuing agroecology means producing enough food that is healthy, efficient and resilient to impact. This has created a strong supply chain within the Totnes area by creating new jobs, and a learning environment.

From this, Totnes has an interesting labour statistic. According to the Nomis' Labour Market Statistics (2020abc), the numbers of workless households in South Hams (the region of Totnes) is significantly low due to its high jobs density of 1.05 (the average jobs density in the UK is 0.86), meaning there is at least one job for every resident aged 16-64. Totnes has a higher rate of families depending on part-time jobs (16.2%) and self-employment

(18.0%) than the average of England (part-time jobs 13.7%, self-employed 9.8%). This can be explained by the annual Local Entrepreneur Forum (LEF) that encourages people to become an entrepreneur.

LEF is an event where underdeveloped, new business projects blossom. People get a chance to pitch in business ideas to the community at the forum. People gather to seek projects to invest in, not just financially but also to potentially get involved in the project. The forum offers funding from local investors, business mentoring advice, potential workers, and a third perspective opinions, which can be very helpful for entrepreneurs who just started. Almost all the business ideas are for the causes of promoting local resilience, localisation, low carbon, works within natural limits, an increase of assets in the local community, and benefits for the community (TEDx Talks, 2012, 12:00 – 12:20). Local businesses that are introduced in this thesis such as Grown in Totnes, Transition Homes, and School Farm CSA also started from the LEF. Furthermore, the LEF contributes to the local circular economy, where business collaboration occurs between multiple local businesses. For example, the New Lion Brewery, a craft brewery business that started from the LEF, has been collaborating with other local food producers to create varieties of diverse brews (New Lion Brewery, n.d.).

This community interaction initially started building up from a programme called Transition Together, where many people get involved because it is ‘fun’ (Hopkins, 2011). Transition Together was established to strengthen the local community by combining forces

and knowledge by coming together as one and communicating within. The community believes in the strength of unity and the sense of 'doing this together' drives the efficiency and motivation to achieve the common goals. According to Ashden's case study report (2011), Transition Together in Totnes had about 1,100 people, 468 households involved from the community, which were divided into 56 groups, street by street. Each group would host regular meetings in the houses of the members, discussing sustainability issues and solutions. They would eventually choose a theme, such as food, energy, Inner Transition, education and so on, and create projects based on that theme. This programme has led to the heightening of environmental awareness and stronger bondage of the community by bringing people together. The community of Totnes demonstrates an upwards positive spiral, also named as 'engaged optimism' (Hopkins, 2011), and it continues to be the core of a strong thrive.

3.2. Data Collection and Analysis

Goal 1. No Poverty

Totnes has about 37% of children (under 15) living in poverty[12] with an estimated of 500 – 600 children in total, ranking second/third highest child poverty rate in South Hams (Miller & Clark, 2018; "Worrying number of children," 2018). The fuel poverty[13] rate in

[12] Poverty in the UK is measured in the amount of income. A household with income below 60% of a median would be classified as 'people in relative/absolute low income' (Francis-Devine, 2020).
[13] Fuel poverty living is where at least 10% of the household income goes to heating houses and other household appliances, such as power for cooking, lighting, providing hot water, etc. Especially in the winter, fuel poverty can exacerbate illness when failing to prevent the fall of temperature in the house due to its costs.

South Hams in 2018 was about 10.8%, which is slightly higher than the mean for all English regions of 10.2% (Local Government Association, 2018). According to Hodgson (2010), there are 50% more households in Totnes than the national average that lives with income below the median of the UK (£20,000) (Office for National Statistics, 2019) (p. 25). However, poverty does not necessarily correspond with overall life satisfaction. Especially in a town like Totnes that provides conditions necessary for wellbeing rather than materialistic appeasement, earning less income than average does not seem grievous due to its contrasting lifestyle from the urban scenery where growing food in the garden would be insufficient or impossible.

Yet Totnes have had few attempts to ameliorate fuel poverty, such as Totnes Fuel Poverty Project which was an £8,900 project funded by Devon Community Foundation from the Comic Relief, to offer support and practical help for older and vulnerable people living in fuel poverty. However, the projects presumably did not have satisfactory effects since Totnes recently applied for other funds to fight fuel poverty (Transition Streets, 2013; 'Appeal launched,' 2018). For the reasons that there was no available information that Totnes have had progress in the decrease with the number of people suffering from poverty, Totnes scores as '**working in progress**' for ***Target 1.3*** *'Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable'.* Furthermore, in terms of poverty in the global matter, there was no available information about Totnes' action to support this goal.

Goal 2. Zero Hunger

Food poverty is an unsolved issue in the UK, where the UK scores as one of the worst countries within the European Union with the rate of 19.46% of food insecurity and 10.40% of severe food insecurity of children under 15. Furthermore, healthy foods are sold three times more expensive than unhealthy foods on average in the UK ("New evidence of child food," 2017; Pereira et al., 2017). On the other hand, according to the Devon Community Foundation, Totnes has about 12.8% of children growing up in food poverty with an estimated 190 children in total (Frost, 2019), and this is significantly low compared to the rest of Devon due to its wealthy economy. Healthy foods are affordable in the Totnes area due to the established supply chain that has been created surrounding the farmland, such as the School Farm of Schumacher College and Old Parsonage Farm in Dartington Hall Estate. For this reason, ***Target 2.1*** *'By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year around'* **scores 'performing well'**.

Although there was no available information about Totnes' action to support child food poverty, as T&D is continuously expanding its agricultural fields, both in ***Target 2.3*** *'By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment'*,

and ***Target 2.4*** *'By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality'* scores **'performing well'**. The farmlands in the combined area of Totnes and Dartington Hall Estate have proven the great production of healthy food for the community, which accounts for *'resilient agricultural practices'* ***(Target 2.4).*** As it has a strong ambition to their visions and goals of wanting to produce enough food for the increasing population (Brown-O'Connell, 2020), this can also be intended that the increase in productivity and scale of the farm can be expected.

Goal 3. Good Health and Well-Being

Although there was no available information about Totnes' action to support the global health risks, Totnes endeavours to maintain good health for the people of the community. Totnes keeps a close monitoring inspection with the quality of air on monthly basis. In July 2009, poor air quality caused by Nitrogen dioxide NO_2 from vehicles were detected in the centre of the town. The town espoused the Air Quality Action Plan that planned out various strategies of reducing air pollution such as, promotion of ultra-low emission vehicles and other green travel options and also improve traffic flow by reinspecting pedestrian crossings and road maps. Although the Air Quality Management Area (AQMA) reported that Totnes' air pollution has been amended in June 2016, the level of NO_2 is still

prominent even after the changes that were made. The reason for this is yet to be determined and to investigate this, 'Clean Air Strategy for South Hams and West Devon' was commenced in 2019. From this, ***Target 3.9*** *'By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination'* scores as **'working in progress'**. In addition, as Totnes has four '*sexual and reproductive health-care' (Target 3.7)* clinic in town (Google, n.d.b), it can be said that ***Target 3.7*** *'By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes'* scores **'performing well'**.

Goal 4. Quality Education

In the UK, all children between the ages of 5 and 18 are subjected to mandatory school education, where education fees are funded by the government in state schools (UK Guardianship, 2017). Also, according to UK Department for Education (2017), all children before primary school are entitled to 15 hours of free nursery education as preparation in England. From this, the UK scores relatively high in the gender equality of abilities to read literacy, mathematics, and sciences according to the Organization for Economic Co-operation and Development (OECD) (OECD, n.d.). From this ***Target 4.1*** *'By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes',* ***Target 4.2*** *'By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary*

education so that they are ready for primary education', ***Target 4.3*** *'By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university',* ***Target 4.6*** *'By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy'* and ***Target 4.a*** *'Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all'* scores **'performing well**'. Furthermore, education in Totnes and Dartington from schools such as Schumacher College evidently matches with the philosophy behind ***Target 4.7*** *'By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development',* and also promotes ***Target 4.4*** *'By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship',* as it scores '**performing well'** for those targets.

Goal 5. Gender Equality

Although there was no specific information about Totnes' action to support this goal, judging by the introductory videos of the farm, board of staff and trustees of TTT, and videos of the Local Entrepreneur Forums, it seems that Totnes provides equal opportunities for all

gender. The School Farm CSA is currently running by four people, where two are female directors. In addition, one of the founders of the current Dartington Hall Estate, Dorothy Elmhirst, invested in the restoration of the area using her inherited wealth. This shows how female icons are strong in the Totnes area, also for the fact that Elmhirst became the face for t£21 note of Totnes Pound (Darington Trust, n.d.c). This scores ***Target 5.5*** *'Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life*' and ***Target 5.a*** *'Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws'* as **'performing well'** for the reasons of a clear display in the performance of equal participation, even in leadership roles, which links with equal opportunities for women to *'control over land and other forms of property, financial services, inheritance and natural resources'*.

Goal 6. Clean Water and Sanitation

In England, it is more common to have water supplied from water companies, especially in locations closer to the City of London. Although the water quality in England is 'very high', Drinking Water Inspectorate (2020) does admit that there are areas of improvement with water supply failures and a mixture of metal substances like lead and nickel (p. 4-6).

On the other hand, Totnes does not acquire water supply from water companies. Although there was no specific information to be found about Totnes' water supply, in Dartington, the Dartington Hall Trust supplies clean water to the household taps. According to their report of Code of Practice, the Dartington Hall Trust ensure that the water supplied meets the Government's high standard with regular monitoring inspection of the quality of the water. Water in the Totnes area is taken from the wells adjacent to the River Dart, which is then chemically filtered through pressure filters (p. 2). From this ***Target 6.1*** *'By 2030, achieve universal and equitable access to safe and affordable drinking water for all'* scores **'performing well'**.

However, studies show the pollution of River Dart, grading the quality 'moderate' (State of Environment Devon and Torbay, 2015). Although Totnes does not use chemical fertilizers in agriculture, thus not harming the water quality directly, there was no available information about Totnes' action to protect or improve water quality. Furthermore, Dartington Hall Trust was planning the Queen's Marsh restoration project to preserve the natural water habitat of the Queen's Marsh, which is seven hectares of wet grassland at the southern tip of the estate. Due to the conventional farming practices, the biodiversity has been decreasing gradually, declining of the UK wildlife, with the risk of flooding. Although the trustees were considering commencing the assisted recovery option, due to the high cost, the plan had been postponed (Dartington, 2016). From this, we can conclude that Totnes area marks as **'working in progress'** for ***Target 6.3*** *'By 2030, improve water quality by reducing*

pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally', ***Target 6.6*** *'By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes'*, and ***Target 6.b*** *'Support and strengthen the participation of local communities in improving water and sanitation management*'.

Goal 7. Affordable and Clean Energy

The investment Totnes has made to renewable energy is substantial. One of the key factors that Totnes dedicates time and effort to is green energy, and Totnes Renewable Energy Society (TRESOC) has been working on numerous projects with solar PV. As an example, TRESOC has built a hydroelectric power plant alongside the weir, which was built in the 16th century on River Dart. It can generate about 300 kWh of power with a good head of water, and 1.25 GWh of electricity per year, which is enough to generate about 300 households with an average domestic energy consumption of 4115 kWh and is equivalent to saving about 600 tonnes of carbon dioxide. It has been designed not to disrupt the ecosystem of the migrating fish too, and therefore it is environmentally friendly in all aspects. There are many other renewable energy projects that TRESOC organizes, such as The Shine Project, Hatchlands Farm, Staverton Leat, Lescaze Sollar Array, and other partnership programs. In the case of solar PVs, TRESOC currently organizes over 1000 solar PV panels, generates about 256,250 kWh of electricity per year, and saves about 140 tonnes of greenhouse gas

emissions per year. Totnes continues to thrive with more upcoming projects such as Clay Park Eco-housing development, joining forces with the Transition Homes Community Land Trust to build a whole neighbourhood of 31 eco-homes with solar PV panels on each roof. In Dartington, the infrastructure for sustainable energy services is also outstanding, and a significant amount of the total energy consumption is being generated from renewable energy sources. Other than solar PV, the community installed a biomass boiler that generates 950 kW and saves 400 tonnes of greenhouse gas emissions per year.

In other parts, Transition Together groups run regular meetings to discuss what they can do as a community to improve sustainability within Totnes, and one of the topics is energy saving and energy efficiency. These meetings have influenced the community to install cavity wall and loft insulation, learn how to use heating system and thermostat efficiently, monitor energy usage in the home, lag pipes and hot water tank, install draught-proofing and low-energy light bulbs, not leave electrical appliances on standby, and so on (Ashden, 2011). These behavioural changes can be said as '**performing well'** for ***Target 7.3*** '*By 2030, double the global rate of improvement in energy efficiency*'.

And although TRESOC is not necessarily an *'international cooperation'*, we can conclude that Totnes is **'performing well'** in ***Target 7.1*** '*By 2030, ensure universal access to affordable, reliable and modern energy services*'**,** ***Target 7.2*** '*By 2030, increase substantially the share of renewable energy in the global energy mix*', and ***Target 7.a*** '*By 2030, enhance international cooperation to facilitate access to clean energy research and*

technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology'.

Goal 8. Decent Work and Economic Growth

In March 2007, Totnes launched the first 21st-century local currency in the UK called the Totnes pound. This currency was only available to use within the local shops as a way to cycle money without leaking it out of town and strengthen the local economy. There were four types of notes: t£1, t£5, t£10 and t£21, where 't' standing for 'Totnes'. Due to the drastic growth of cashless payment, the Totnes Pound came to a closure in 2019, however, the project was still a major success, circulating over £30,000, and influencing over cities such as Brixton, Bristol and Stroud into creating their local currencies (Transition Town Totnes, 2019). Moreover, local currency promoted '*local culture and products'.* Since Totnes hasn't made a replacement yet, it scores '**working in progress'** for ***Target 8.9*** *'By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products*'.

Furthermore, since the LEF has the same objective as **Target 8.3** '*Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services*', and also ***Target 8.5*** '*By 2030, achieve full and productive employment and decent work for*

all women and men, including for young people and persons with disabilities, and equal pay for work of equal value' for its availability for anyone to have a chance to pitch in, for example, the LEF specifically having one slot of pitching reserved for a youth-led enterprise (REconomy Centre, n.d.), it scores as ***'performing well'***.

Goal 9. Industry, Innovation, and Infrastructure

As mentioned in Goal 7, TRESOC is still expanding its projects to installing more clean energy generating infrastructures. From this ***Target 9.4*** *'By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities'* scores **'performing well'.**

Goal 10. Reducing Inequalities

Although Totnes already seems to have an equal provision of opportunities for '*all age, sex, disability, race, ethnicity, origin, religion or economic or other status (Target 10.2)',* there was no available information about Totnes' action to support this goal. This could mean that the town has already achieved equality within and there is no need to build policies for something unnecessary. Having policies of reducing inequality indirectly translates that it originally had an inequality of some form or another. Furthermore, it is relatively difficult to measure the equality over race or ethnicity in Totnes since over 97% of the residents are

white, with over 92% of the residents coming from a British or Irish background (Nomis, 2020b).

Goal 11. Sustainable Cities and Communities

Totnes suffers from wages below average, which is then exacerbated by unaffordable houses in the district. However, there are local businesses that is planning for solutions. Transition Homes Community Land Trust is one of them, and they are creating a neighbourhood consisting of 31 affordable eco-homes on the site in Clay Park, in Dartington parish, launching in spring 2021 (Transition Town Totnes, n.d.a). Although Totnes does not have a slum, as Totnes is achieving to create an upgrade of lifestyle, it scores '**performing well'** in ***Target 11.1*** '*By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums'*.

For ***Target 11.2*** '*By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons'*, Totnes has been showing clear signs of plans for development with transportation both within the town for the locals and tourists coming and going out of Totnes (Hodgson & Hopkins, 2010, p. 170 – 174). All plans are aimed to save energy and the environment, however, those plans seemed to not have progressed much since the planning. Therefore, Totnes scores '**working in progress'**.

Target 11.6 '*By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management*', ***Target 11.7*** '*By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities'* and ***Target 11.a*** '*Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning'* can easily score as '**performing well'** since TTT shares the same goal of reducing environmental impact and supporting localization to begin with. Waste management in Totnes is often revised and refined to achieve zero waste by 2030. The town thrives on minimizing waste and localising consumption, which benefits with an increase of resource efficiency, employment, innovation, value towards quality goods, global equity and reducing global impact (Hodgson & Hopkins, 2010, p. 228 – 229). Furthermore, according to Ball and Ottey's report (2016), Totnes Market has a good relationship with the local businesses, impact both positively (p. 12), which means that Totnes is achieving *'positive economic, social, and environmental links (11.a)'.*

Goal 12. Responsible Consumption and Production

As explained in *1.2. UK and Japan Comparison*, the food and drinks that were wasted in the UK in 2015 were about 10 million tonnes and 60% of these were avoidable, meaning they could've been consumed. To tackle this problem alongside food poverty and social isolation in Totnes, a volunteer organization, Food in Community, stands up to collect surplus

fresh produce and gleaning produce from local farms and shops, and distribute them through 'pay what you feel' café and local community events. They also demonstrate free cooking classes for people with mental issues aged men living alone and other people who can be suffering from food poverty. They have triumphantly saved more than 50 tonnes of (mainly organic) edible produce per year and distributing them as 175,000 meals and 12,000 food boxes (Ferraz, 2019; Food in Community, n.d.). This completes the ***Target 12.3*** '*By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses*', and therefore scores '**performing well'**.

For ***Target 12.4*** '*By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment*', as introduced in Goal 3 that the air pollution caused by vehicles are not quite amended yet, it scores '**working in progress'**.

In the Totnes area, many events and shops recycle and reuses furniture and other appliances, such as Totnes Jumble Trail, and Refurnish Devon (Transition Town Totnes, 2017). Totnes Jumble Trail is an event where the community sells items to be reused. (Transition Town Totnes, n.d.c). Refurnish Devon is an organization that holds 9 shops across Devon, one in Totnes and one in Dartington, and they take in furniture, electrical

goods, and other items to be reused again in good condition (Refurnish, n.d.). From these actions and organization, Totnes scores '**performing well**' for ***Target 12.5*** **'***By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse'*.

Target 12.8 '*By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature'* easily scores as '**performing well'** for Totnes as the town shares the same target of providing a sustainable lifestyle, spreading awareness, and educating to those who are willing to learn. However, Totnes scores '**working in progress'** for ***Target 12.b*** '*Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products*' for the same reason as to *Target 8.9* of still looking for a system to replace Totnes Pound, as it was a great success to promote local culture and products, and also to create employment.

Goal 13. Climate Action

All the projects and planning that happens in Totnes have a common goal of reducing the use of fossil fuel, which directly derives from climate change awareness and the objective of strengthening resilience. Therefore, ***Target 13.1*** '*Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries'* and ***Target 13.2*** '*Integrate climate change measures into national policies, strategies and planning'* easily scores '**performing well**'.

In addition to the Schumacher College, where they specialize in educating permaculture and horticulture, TTT's initiative starts from two men showing films to the town, spreading awareness for over a year, which then becomes an organization where it gradually got more and more people involved to take action against climate change. Those film clubs still take place every 2nd or 3rd Tuesday of the month, continuing to cast light on social and environmental problems that are happening to the world (Transition Town Totnes, n.d.d). From these actions and many more, Totnes area scores '**performing well'** for ***Target 13.3*** '*Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning*'.

Goal 14. Life Below Water

Although there are sustainable seafood shops in Totnes that only serves local and seasonal fishes that are caught fishing on small day boats (Visit Totnes, n.d.), this was not enough to fulfil the requirement for the targets of Goal 14. In addition, Totnes had a sustainable fishing project planned; a teaching course on sustainable fishing, however, it was not commenced (Banks et al., 2010, p. 39). And therefore, there was no available information about Totnes' action to support this goal.

Goal 15. Life on Land

In Dartington Hall Estate, assisted recovery of the vast forestry and ecosystem takes place to maintain a sustainable and healthy biosphere. The forestry in the site hosts the Short Rotation Forestry (SRF), which requires planting more trees within the site and assisting

maintenance to achieve higher productivity of growth (Forest Research, n.d.). This covers ***Target 15.2*** '*By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally*' as '**performing well**'. Alongside the Queen's Marsh restoration project from Goal 6 and other actions taking place in Dartington Hall Estate such as agroforestry, organic gardening, sustainable beekeeping, and so on, Totnes area scores '**performing well'** for ***Target 15.4*** '*By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits that are essential for sustainable development',* whilst occasionally failing to build expenses for the conservation of the biodiversity, therefore scoring '**working in progress'** for ***Target 15.a*** '*Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems*'.

Alongside the Queen's Marsh restoration project, Totnes has built a farm park to preserve and rescue endangered species of farm animals and the diversity of British wildlife called Totnes Rare Breeds Farm. This farm park is very small, only about one acre, and it is home to 'six sheep, fifteen goats, three alpacas, two donkeys, ten owls, lots of different chickens, ducks and geese and a few smaller animals like guinea pigs in the Pets Corner' (Totnes Rare Breeds Farm, personal communication [Email], December 5, 2020). From this, Totnes area scores '**performing well'** for ***Target 15.5*** '*Take urgent and significant action to*

reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species'.

Goal 16. Peace, Justice and Strong Institutions

As Goal 16 consists of fundamental values that would be normal in a high-standard town like Totes, it is easier to imagine that the Totnes area has all, if not most of these targets completed. However, as this assessment only looks into the goals and targets that have proof of commitment, Totnes scores only for ***Target 16.7*** *'Ensure responsive, inclusive, participatory and representative decision-making at all levels'* as **'performing well'**. This is because TTT holds frequent meetings for groups that take the initiative to alter the community by creating projects and organizations. It is assumable that the TTT meetings would be a perfect role model for this target since everyone is invited to these meetings, ensuring equality at all levels when these meetings have a significant effect on the future of the town.

Goal 17. Partnerships for the Goals

As the TTT movement is happening within the citizens and not the town council as a systematic movement, this goal could not fit in with Totnes' objectives. And therefore, there was no available information about Totnes' action to support this goal.

CHAPTER 4

KURKKU FIELDS AND KISARAZU

4.1. Background Information

KURKKU FIELDS is a sustainable farm park located in the city of Kisarazu-shi[14] in Chiba Prefecture, a town also known as 'the closest place from the centre city where you can feel the abundance of nature' (Organic City Kisarazu, n.d.). The farm park was founded in 2010, which led to the establishment of the 'Agricultural Production Corporation Tagayasu'. Their first mission was to restore the land from the state it was before, a ranch for cow pasture filled with illegal dumping (Appendix C, Q5 & 6). After over 10 years of preparation, KURKKU FIELDS made its first grand opening in November 2019. The farm park spans 30ha (0.3km²), equivalent to 56 American football fields, with 2-3 hectares of organic agricultural land within the field, and 8-9 hectares outside the field (Appendix C, Q7). KURKKU FIELDS is currently free of charge for entry, which shows inclusivity for anyone wanting to enjoy and experience the life in harmony within the animals in the farm, growing food using the energy from the sun and the circulation of nature' (Appendix C, Q1).

The term 'kurkku' means 'cucumber' in Finnish, and its inspiration of the title came from the album cover of Bank Band[15]'s first album, 'Soushi Souai', which was originally a parody of Andy Warhol's Banana, another album cover of the debut album by The Velvet

[14] 'Shi' means 'city' in Japanese.
[15] A Japanese band formed by Takeshi Kobayashi and Kazutoshi Sakurai from the band Mr. Children.

Underground, ‘The Velvet Underground & Nico’ (Eco-reso web, 2009; T. Kobayashi, personal communication, December 27, 2020). KURKKU Ltd. (capitalized) was established in November 2011 as a part of the project ‘kurkku’ (uncapitalized) to promote a comfortable and environmentally friendly lifestyle for the future (「快適で環境に良い未来に向けた暮らし」)’ (kurkku, n.d.) through restaurants and shops in Yoyogi, Jingumae, and Tokyo Skytree area. KURKKU FIELDS was a step up for kurkku in order to achieve the mission of shifting the society to a more sustainable living. The whole facility expresses ‘the [sustainable] circulation of how nature provides food that eventually becomes the energy of living’ (Appendix C, Q1). Branching out from ‘Agricultural Production Corporation Tagayasu’, KURKKU FIELDS becomes its own company as KURKKU FIELDS Ltd. in June 2020 (‘Established KURKKU FIELDS Ltd.,’ 2020).

There are 7 different contents to enjoy in this farm park (KURKKU FIELDS, n.d.):

- FARM: With the foundation of the organic farm, edible garden, animals such as buffalos, goats and chickens, the ‘FARM’ contents illustrate the base of circulation involving the sun, blessing of nature, soil, water and all living organisms. The farm grows root vegetables such as carrots, and daikons (Chinese radishes), organic petit vert (a hybrid of kale and brussels sprouts), edamame, tomatoes, aubergines, lettuces, herbs, etc (Appendix C, Q33).
- EAT: The food scenery in KURKKU FIELDS offers a luxurious variety of organic delicacies that nature provides. The restaurant ‘KURKKU FIELDS

DINING' has a living room feeling of inclusivity as the kitchen and the dining hall are all connected. The restaurant serves food from the organic farm, bakery, charcuterie (sausages using wild boar and deer), caseificio (buffalo mozzarella), Chiffon cake only made in KURKKU FIELDS (Appendix C, Q9).

- ART: There are art pieces by Yayoi Kusama, David Hockney, Masuda Sebastian, Camille Henrot, Fabrice Hybert, Anish Kapoor, and many more, carefully selected to enhance imagination. KURKKU FIELDS displays these art pieces to stimulate imagination that we often forget to use in city life, unveiling the overflowing enrichment of 'circulation' and 'organic' connection that forms a one-planet world, where everything is in harmony (Appendix C, Q37).
- STAY: Deriving from the idea of tiny trailer houses in Portland, Oregon, KURKKU FIELDS provides a lush accommodation of 'TINY HOUSE VILLAGE' that amplifies the experience of sustainable living. The neighbouring 'CENTER HOUSE' equips with showers, toilets, a bar and a living space where a rare library of book collective is available for reading.
- PLAY: The spacious grassland is inviting for a game of frisbee, yoga, picnic, etc. The 'Carabina Car', a yellow school bus, takes people back to their childhood self, tricking with imagination. This content is perfect for relaxing and taking in nature.
- NATURE: The abundance of the precious diversified ecosystem is extremely rare to see near the city. The 'Mother Pond', 'Biotope' and the 'Wild Forest' opens up

to share the mysterious sustainable activities of the greenery. People are exposed to the true form of a sustainable cycle of the farm park, where everything is connected and linked to becoming ‘one’.

- ENERGY: With the use of the ‘Mega Solar Power’ and the ‘Compost House’, KURKKU FIELDS generates the energy of the future, becoming an exemplar of a sustainable lifestyle. As energy is quite essential to our modern life, KURKKU FIELDS sets forth the innovative way of energy created through borrowing power from the sun (KURKKU FIELDS, n.d.).

From these extraordinary sustainable contents, KURKKU FIELDS is printed on the Japan Ministry of the Environment White Paper (2020) under Chapter 3 ‘Organization and Projects for Social Change made by Individuals [Hitori hitori kara hajimaru shakaihenkaku ni muketa torikumi]’, Section 1 ‘Lifestyle Innovation for the Creation of a Decarbonized and Sustainable Society [Datsutansogata no jizokukanou na shakaidukuri ni muketa lifestyle innovation]’, 4 ‘Leisure [Leisure・yoka]’ (p. 119). Furthermore, Kobayashi views the following mission as the reasons for the existence of KURKKU FIELDS in this society (K. Era, personal communication [Email], December 11, 2020):

- Contribution to the creation of the sustainable society by taking the authority of self-governance, and not being dependent on the fixed
- Continue with discussions and actions using ethics, utilize the common assets (the democratically shared wealth), and aim to achieve a global symbiosis society

- Construction and contribution to a circulation system as well as utilizing renewable energy; Long term ingenuity and efforts to reduce CO_2
- Aim to transform the true value of being a part of nature into various attractions, and provide choices for the people
- Take advantage of the distance from Tokyo, one of the megacities in the world, and play a role as a platform for both the city and the local
- As well as contributing to Kisarazu-shi and Bousou peninsula with financial, disaster, and other support, play the role in becoming a 'sustainable and pioneering area for future development' and foster it with joy and pride

Kisarazu-shi is a town in Chiba prefecture with a population of 136,234 (December 2020) and a total area of 138.95 square kilometres. The population has been increasing steadily at a 0.04% every month, despite the struggle with the shrinking population in Japan. This is assumed to be due to the development of the bypass area with increasing numbers of hypermarkets such as AEON and TSUTAYA. This has led to a population increase in that limited area (Appendix C, Q30). About 2,449 foreigners are living in the town which comes to 1.8% of the population (Kisarazu City, 2020h; Chiba Prefecture, 2020c). The number of farmers has been declining from 6,375 farmers in 2000 to 2,580 farmers in 2015. Consequently, the decline of local food producers and processors makes it difficult for the local economy to be sustainable, even when there are demands for food sales (Kisarazu City, 2020c, p. 3). The number of people who can protect the farmland has been decreasing, which

led to an increase in the cases of damages caused by animals and birds such as wild boars and masked palm civets. Kisarazu-shi views that the town's mission shares similar objectives with the SDGs, in a way that the challenges such as the declining of farmers, the devastation of the woodland and seaside, and the increase of natural disasters corresponds with Goal 2 ('Zero Hunger, Goal 11 ('Sustainable Cities and Communities'), Goal 13 ('Climate Action'), Goal 14 ('Life Below Water') and Goal 15 ('Life on Land').

As introduced in the White Paper by the Japan Ministry of the Environment (2020), Kisarazu is the first town that declared to become a sustainable town in December of 2016. Since then, the town has organized projects like 'Phase 1 Organic Town Development Action Plan' that ran through 2016 to 2019. As the first plan came to a closure, the plan was renewed to the second version, 'Phase 2 Organic Town Development Action Plan' to navigate their ways towards a sustainable town. The town defines 'organic' as 'the view of taking initiative in considering the community, society, environment, and others in order to create a sustainable future' and thrives on the goal to create 'a town that leads to the future', which is performed as the 'Organic City Project' (Organic City Kisarazu, n.d.; Kisarazu City, 2020c). Kisarazu-shi embraces the following three elements to accomplish the creation of 'a town that leads to the future':

- People: the ones that take the initiative to act upon consideration of the community, society, environment and others
- Foundation: the basis of a sustainable town that evolves with nature

- System: an independent societal structure that supports diversity (Organic City Kisarazu, n.d.)

Kisarazu-shi calls the action to develop these three elements as ‘organic action’. And the three significant viewpoints to perform the ‘organic action’ are:

- Independent: learning, choosing and playing the role for yourself
- Cycle: environing wisdom, local products, energy and others
- Associate: valuing the linkage with nature and society (Organic City Kisarazu, n.d.)

Kisarazu believes that the town council is must promote each element as measures, spread the information, and listen and reflect on opinions from the citizens and other groups. On the other hand, the town believes that the citizens and other groups have their roles to improve understandings of the organic town development, initiatively take action, and cooperate with the town’s measures.

For each element, Kisarazu takes action from three dimensions of economy, social and environmental, where each sector positively impacts the other sectors both directly and indirectly. Now we will look at the three elements, ‘people’, ‘foundation’, and ‘system’ sectors in details to reveal the specific projects and plans for each one. Firstly, on the ‘people’ sector. According to the Phase 2 Organic Town Development Action Plan by Kisarazu City (2020c), the town takes the following measures for the ‘people’ sector:

- Fostering momentum for organic community development and provide opportunities to develop diverse human resources
- Supporting citizens and groups who are willing to challenge into doing new activities and building an organic linkage
- Fostering citizens who are proud and love their hometown through education, social education and others (Kisarazu City, 2020c, p. 16 – 28)

This sector focuses on the economic development of Kisarazu, and the town commenced the 'Food x Agriculture Project that Enhances Economic Circulation' to tackle these objectives. This project involves the promotion of food education, fostering organic agriculture, promoting local circulation; local production for local consumption and others. Annual events such as Kisarazu Organic City Festival, and Kisarazu Natural Bar, a monthly organic food event at the station square, takes place to promote local food. As a single day event, Kisarazu Organic City Festival has been a great success with 18 thousand visitors attending last year. The festival hosts a farmers market, live performance by musicians, talk event, and other workshop activities such as making organic homemade miso, recycling fairs, woodwork workshop using local wood materials, lessons on how to grow blueberries, cooking rice using bamboos, quiz games, blind football games with a pro athlete and the mayor, etc. As this event has no entry fee, it can be said that this event purely for the community's benefits (Organic City Kisarazu, 2020; Kisarazu City, 2020c, p. 16 – 28). Furthermore, the town also provides local food as school lunch which included organic rice

made locally and organises events where the farmer/producer and the children would cook lunch together using local ingredients. This project promotes food education for children as they learn the significance of organic local food, and also encourages farmers to grow organically without chemical fertilizers. The town supports farmers to get the 'Organic JAS Mark' for better advertising and credibility (Japan Ministry of the Environment, 2020, p.93; Kisarazu City, 2020c, p. 16 – 21, p. 23 – 24). In 2018, the town also has introduced a cashless local currency, 'Aqua Coin' that is organized through mobile apps, which has already reached 10 thousand downloads and 600 local shops available to use. They are aiming to involve 1,700 shops and circulate ¥1.7 billion by 2023 (Aqua Coin, n.d.; Kisarazu City, 2020c, p. 22).

Secondly, for the 'foundation' sector, the town takes the following measures:

- Promoting industries that create new values by utilizing diverse local resources
- Promoting local circulation such as local production for local consumption, whilst encouraging environmentally friendly business activities and lifestyles
- Forming bases according to features of each region, and conserve and utilize the rich satoyama and satoumi[16] (Kisarazu City, 2020c, p. 29 – 42)

This sector focuses on the environmental development of Kisarazu, and the town commenced the 'Decarbonisation Project by Kisarazu' to tackle these objectives. The main objective of this project is to decrease greenhouse gas emissions from the town, and to bring back a lifestyle that is connected with nature. As of 2019, the town was able to reduce about 300

[16] 'Satoyama and satoumi' are woodland and sea that has increased its bioproductivity and biodiversity due to the addition of manpower (Satoumi net, n.d.).

tonnes of CO_2 and now they are aiming to reduce about 55,000 tonnes (Kisarazu City, 2020c, p. 30). To accomplish this, the town is planning to install 51 solar PV facilities and promote the independence of energy generation by utilizing renewable energy in the town. For the community households, the town encourages to install energy-saving equipment such as window insulation, power storage system, solar PV panels, etc (Kisarazu City, 2020c, p. 32 – 33). The town also promotes the four Rs: reduce, reuse, recycle, and refuse as ways to decrease the amount of garbage. The recycling fair booth is established at the Kisarazu Organic City Festival, and the town has been promoting composting by installing compost machinery. Furthermore, Kisarazu advertises the idea that decisions made for the environment are a 'cool choice' by showing animated educational films to children and have CO_2 testing at houses, organizing green vehicles test-driving event, and other enlightening measures (Kisarazu City, 2020c, p. 34 – 38).

Thirdly, for the 'system' sector, the town takes measures as follows:

- Supporting voluntary activities in the region
- Developing an environment that contributes to diverse lifestyles and work styles
- Promoting cooperation with various subjects inside and out of the town (Kisarazu City, 2020c, p. 43 – 57)

This sector focuses on the social development of Kisarazu, and the town commenced 'Natural Disaster Prevention and Mitigation Projects Through Support' to tackle these objectives. For this project, Kisarazu-shi is organising evacuation training, the strengthening of emergency

information dissemination, and others. The town council has also made agreements on a partnership with cooperation such as Kobashi Industries Ltd. to secure cardboard boxes for an event of a crisis, and groups of schools to secure evacuation shelter, etc (Kisarazu City, 2020c, p. 43 – 57). Due to the increasing numbers of deadly typhoons in recent years, not only the town but KURKKU FIELDS has also been hugely affected by these natural disasters. Last year when Typhoon Faxai stroked Chiba prefecture, the whole town experienced a power outage that lasted for a week. As electricity is crucial for the farm for the cattle mist spraying and supplying drinking water, this incident has caused a 'huge problem' for KURKKU FIELDS, alongside the destruction it has caused, damaging the vinyl greenhouse area (Appendix C, Q25 & 28).

4.2. Data Collection and Analysis

Goal 1. No Poverty

According to a report by Chiba prefecture (2015), the rate of children (under 17) living in poverty[17] in Japan is 16.3%, and the rate of poverty of single-parent households is 54.6% in 2012 (p. 7). Even in Kisarazu-shi, the number of child poverty and child domestic abuse has been rising up until 2012. To combat this issue, the town has developed measures to support the independence of those who need it, such as subsidizing housing rents, supporting education, training for employment, etc (Tanaka, 2015, p. 15 – 16). And for this

[17] Poverty in Japan is measured in the amount of income. A household with income below half of a median would be classified as living in poverty (Chiba prefecture, 2015, p. 7).

reason, Kisarazu scores as '**performing well**' for ***Target 1.3*** *'Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable'.* In terms of poverty in global matter, there was no available information about Kisarazu-shi's action to support this goal.

Goal 2. Zero Hunger

Japan undoubtedly has the lowest food insecurity rate in the world with less than 1% of severe food insecurity for households and children under 15 (Pereira et al., 2017). As Kisarazu-shi is developing measures to promote the expansion of organic food productivity by supporting farmers to get the 'Organic JAS Mark', and KURKKU FIELDS serving organic only, ***Target 2.1*** *'By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year around'* scores **'performing well'**. Also, the town provides local vegetables for school lunches, and the average rate of the local vegetables being used is 32.9%, sometimes peaking over 50% (Kisarazu City, 2019c).

Furthermore, both in ***Target 2.3*** *'By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment'*, and ***Target 2.4*** *'By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase*

productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality' scores '**performing well**' for the same reasons of the promotion of organic food production. KURKKU FIELDS has about 2-3 hectares of agricultural land within KURKKU FIELDS, and 8-9 hectares outside KURKKU FIELDS. Due to the issue of deserted cultivated land around KURKKU FIELD, KURKKU borrows arable land from the local community who are thinking about quitting farming, and now the farmland outside is expanding (Appendix C, Q7).

Goal 3. Good Health and Well-Being

For ***Target 3.6*** *'By 2020, halve the number of global deaths and injuries from road traffic accidents*', Kisarazu-shi has built an 'Outline of Kisarazu City 10th Traffic Safety Plan' that has been taking place through 2016 till the end of 2020, which then gets renewed every 5 years. Categorically, the city organizes traffic safety classes for all generations, strengthening measures against reckless drivers, teaching first aid, and so on (Kisarazu City, 2019b). However, according to Kisarazu City (2020a), Chiba prefecture had the greatest number of death caused by road accidents of 172 in 2019. As it has not shown progress, this target scores **'working in progress'**. Furthermore, there is over 18 '*sexual and reproductive health-care'* clinic in town (Google, n.d.a), and from this, it can be said that ***Target 3.7*** *'By 2030, ensure universal access to sexual and reproductive health-care services, including for*

family planning, information and education, and the integration of reproductive health into national strategies and programmes' is **'performing well'**.

In the case of ***Target 3.d*** *'Strengthen the capacity of all countries, in particular developing countries, for early warning, risk education and management of national and global health risks'*, Kisarazu-shi commenced 'Natural Disaster Prevention and Mitigation Projects Through Support' to minimize disastrous effects. This shows clear support for the target, therefore this can be scored as **'performing well'**.

Goal 4. Quality Education

In Japan, all children between the ages of 6 and 15 are subjected to mandatory school education, where education fees are funded by the government in state schools (Tokyo International Communication Committee, n.d.). Also, Japan scores very high in the gender equality of abilities to read literacy, mathematics, and sciences according to the OECD (OECD, n.d.). From this ***Target 4.1*** *'By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes'*, ***Target 4.3*** *'By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university'*, ***Target 4.6*** *'By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy'* and ***Target 4.a*** *'Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all'* scores **'performing well'**.

The food education in Kisarazu teaches children basic understandings of an eco-friendly lifestyle such as food waste, local food production and consumption, and others, however, it seems barely advanced in the global standard of promotion of sustainable development. Therefore, ***Target 4.7*** *'By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development'* scores **'working in progress'**.

Goal 5. Gender Equality

According to Era (Appendix C, Q14 & 15), KURKKU has a 50/50 ratio of female and male staff and leaders. The head of bakery and chiffon cake in KURKKU FIELDS are both female staff members, and the board of directors of KURKKU is made up of three members, Takeshi Kobayashi, the founder and the producer of the whole establishment, Keisuke Era, also one of the founders of KURKKU, and Azusa Iida, a former female director of the restaurant in Yoyogi. As Kobayashi is the key person who built this organization, deducting Kobayashi and it would be a 50/50 in the board of directors too ('Established KURKKU FIELDS Ltd.,' 2020).

However, the same thing cannot be said about the gender equality of Japan in general. The ratio of female members of parliament in Japan is amongst the worst in the world. There

are only 9.9% of female members in the House of Representatives and 22.9% in the House of Councillors. In 2020, Japan ranked lower in the Gender Gap Index than neighbouring countries like Korea and China, scoring 121st place, whilst the UK scores 21st place ('The Ratio of Female Members,' 2020). Following that, there are only about 10-20% of female members of parliament from Chiba prefecture, and a low rate of 18.8% of male city councillors taking parental leave (Chiba Prefecture, 2020b). From this, as there are few signs of Kisarazu-shi taking measures for this goal, it can be holistically concluded that ***Target 5.5*** *'Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life*' scores **'working in progress'**.

Goal 6. Clean Water and Sanitation

According to Era (Appendix C, Q22 – 24), the drinking water in KURKKU FIELDS comes from a well 20 meters underground, chemically purified to meet the standard of the health centre. This can be said that KURKKU FIELDS is providing clean drinkable water throughout the field. Additionally, KURKKU FIELDS has a unique way to purify wastewater before it gets drained away. The wastewater first gets purified in a septic tank, which is then filtered again through 'Bio Geo Filter' and the 'Biotope', a water filtration of the natural compound. This filtration lets willow trees, shiso leaves, watercress and other water plants to absorb organic matters as nutrition left over in the water. The water finally then leads to the 'Mother Pond', the central water tank of the field. KURKKU FIELDS has not installed

sewage, and the water circulation happens within the farm park. Therefore, 'the more people gather to KURKKU FIELDS, the more organic compounds in wastewater will be produced to enrich the plants and diversify the ecosystem' (Appendix C, Q24). This sustainable circulation of water and the use of the wastewater as a fertilizer for the natural habitat can score **'performing well'** for ***Target 6.1*** *'By 2030, achieve universal and equitable access to safe and affordable drinking water for all',* ***Target 6.2*** *'By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations'* and ***Target 6.3*** *'By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally'*.

Furthermore, Chiba prefecture regularly monitors the quality of the water of the river and the ecosystem surrounding the river by getting help from the local community. The purpose of the involvement of the local community is for the citizens to know and have awareness of the environment of the water ecosystem, and this activity has been going on since 1984. According to the monitoring investigation made in 2019, the quality of the water in the river that goes through Kisarazu-shi, Torida river (torida-gawa) was marked 'very good quality (kirei na mizu)' (Chiba Prefecture, 2019). Moreover, according to the Kazusa Suido Koiki Rengo Kigyoudan (Kazusa Waterworks Union Corporation) (2020), the water supplied through household taps in Kisarazu is monitored regularly with precision and it would only

let the water reach household taps if it has passed the high standard (p. 8). From this ***Target 6.6*** *'By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes'*, and ***Target 6.b*** *'Support and strengthen the participation of local communities in improving water and sanitation management*' scores **'performing well'.**

Goal 7. Affordable and Clean Energy

The solar PV panels in KURKKU FIELDS generates 2 MWh (2,000 kWh), and all of the electricity generated are currently sold to power companies in Tokyo. KURKKU FIELDS is currently running through thermal energy power supplied by Tokyo Electric Power Company[18], and from February 2021, KURKKU FIELDS is aiming to complete an off-grid energy system. By using 20% of the selling electricity, and additionally installing new solar PV panels and Tesla's battery storage system in the field, it will be self-generating of an estimate of 80% of the total energy consumption per year (Appendix C, Q25). This can be concluded that KURKKU FIELDS is **'performing well'** for ***Target 7.1*** '*By 2030, ensure universal access to affordable, reliable and modern energy services*', and ***Target 7.2*** '*By 2030, increase substantially the share of renewable energy in the global energy mix*'.

As Kisarazu-shi is installing renewable energy power plants and battery storage systems in 51 facilities in Kisarazu, the town advertises to the community to change their power companies to a renewable energy supplier through campaigns (Kisarazu City, 2020c,

[18] About 80% of the total electricity from Tokyo Electric Power Company are generated through thermal power plants, and assumption of about 90% of the total electricity emits CO_2 (Tokyo Electric Power Company, n.d.).

p. 32). Although the efficacy is difficult to measure, it can be said that the city is **'performing well'** for ***Target 7.a*** *'By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology'*.

Goal 8. Decent Work and Economic Growth

Due to the installation of the service 'Aqua Coin', which promotes '*local culture and products'*, ***Target 8.9*** *'By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products*' can be marked as **'performing well'**.

Furthermore, as mentioned in Goal 1, the town has developed measures to support the independence of those who need it, such as subsidizing housing rents, supporting education, employment training, and so on. Kisarazu-shi also provides caring and supportive services for people with disabilities, offering training programmes to 'fit in' with the society and teaching independence and supporting for employment (Japan Ministry of Health, Labour and Welfare, n.d.). Therefore, it scores **'performing well'** for ***Target 8.5*** '*By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value*' and ***Target 8.6*** *'By 2020, substantially reduce the proportion of youth not in employment, education or training'*.

Goal 9. Industry, Innovation, and Infrastructure

As mentioned in Goal 7, once KURKKU FIELDS completes the off-grid energy system, KURKKU is planning to make an agreement on disaster management with Kisarazu-shi. Due to the increasing numbers of deadly typhoons in recent years, this agreement is aimed to support the local community when there's another power outage during a disaster. KURKKU FIELDS is offering to provide food, shelter, water and electricity for showers and other basic living for the local community (Appendix C, Q27). In addition, the 'Natural Disaster Prevention and Mitigation Projects Through Support' contains measures of large evacuation training once every year, developing stronger resilience on infrastructure for when there is a disaster, such as securing safety shelters, helping the vulnerable group, raising awareness, etc. From this ***Target 9.1*** *'Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all'* scores **'performing well'**.

Furthermore, as both KURKKU FIELDS and Kisarazu-shi are planning to install more renewable energy power plants, ***Target 9.4*** *'By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities'* scores **'performing well'.**

Goal 10. Reducing Inequalities

The social welfare system in Kisarazu-shi offers to subsidize rents and this is targeted at people who have lost their jobs, uneasy to do jobs due to illness or injuries, and for people who genuinely need help. However, there are some conditions to get the subsidy, such as applicants has to be within two years of leaving the last workplace, a certain income and asset requirements, and has to enthusiastically look for jobs during the time of receiving subsidies, which is limited to three months (Kisarazu City, 2020e). When comparing to the Universal Credit, a social subsidy system in the UK, the subsidy appliance in Kisarazu seems uncharitable since the Housing Benefit in the UK does not have limitations on the period of receiving (GOV.UK, n.d.). Therefore, ***Target 10.4*** *'Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality'* scores **'working in progress'** for the reasons that the social security payment systems in Japan has areas of improvement.

Goal 11. Sustainable Cities and Communities

Although Kisarazu-shi might already be an '*adequate, safe and affordable (11.1)'* town, it did not have actions or measures to support *Target 11.1 ('By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums'*). And therefore, it will receive no marks for this target.

As Kisarazu-shi has reduced the congestion charge of Tokyo Bay Aqua-Line that connects Kisarazu and Tokyo (Kisarazu City, 2020d), the transport system has become more

accessible and affordable for people to visit Kisarazu. The transportation between Kisarazu and Tokyo is easier now as there are shuttle buses that leave every five minutes to go directly to the centre of Tokyo like Shinjuku and Shibuya in only an hour journey. This contributes to the population increase in Kisarazu, especially the bypass area with increasing numbers of hypermarkets such as AEON and TSUTAYA. However, the population growth is unbalanced depending on the areas as the port side of the town with the long-established fishing industry has died out, and the population near the main station of Kisarazu, such as the shopping street hardly has people coming (Appendix C, Q30). Kisarazu-shi is currently planning to place a piano in the train station as a tourist attraction with the support of KURKKU FIELDS, having Sebastian Masuda, an artist that created an art piece for KURKKU FIELDS, wrap the piano with his art (Appendix C, Q29). From this ***Target 11.2*** *'By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons'* scores **'performing well'**, whilst ***Target 11.3*** *'By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries',* and ***Target 11.a*** '*Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning'* scores **'working in progress'**.

For ***Target 11.6*** '*By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management*', Kisarazu-shi scores **'performing well'** for the promotion of the four Rs: reduce, reuse, recycle, and refuse as ways to decrease the amount of garbage. Kisarazu promotes the usage of compost machinery (details in Goal 12) and renewable energy power plants. The recycling fair booth is established at the Kisarazu Organic City Festival which links to '*waste management'* too. Kisarazu Organic City Festival, alongside KURKKU FIELDS also '*provide universal access to safe inclusive and accessible, green'* facility. Although it might not necessarily be '*public spaces'*, this can be marked as **'performing well'** for ***Target 11.7*** '*By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities'.*

Furthermore, Kisarazu is taking measures of disaster risk reduction through 'Natural Disaster Prevention and Mitigation Projects Through Support', tackling these objectives through plans such as expanding social connections and making agreements on partnerships with cooperation such as Kobashi Industries Ltd. to secure cardboard boxes for an event of a crisis, groups of schools to secure evacuation shelter, KURKKU FIELDS as an agreement in cooperation in disaster management, etc. This can be marked as '**performing well**' for ***Target 11.b*** *'By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource*

efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels'.

Goal 12. Responsible Consumption and Production

In 2015, about 6.46 million tonnes of food was wasted in Japan. In the food and environmental education programme in Kisarazu, children learn the significance of food loss, wasting food, and the ideology of 'mottainai', a Japanese term conveying the meaning 'what a waste'. They would do workshops of food recycling, experience farming, and other activities, which led to an about 46.3% average drop of food waste by children. Research shows that this has also affected those parents to have a better understanding of food waste (Kisarazu City, 2019c). Furthermore, Kisarazu-shi installed compost machines and recycler machines where all the food wastes from school lunches get turned into natural fertilizers for agriculture, which is then distributed to the local community for free. The town also promotes households to get compost machines and/or recycler machines by offering subsidies for the purchase (Kisarazu City, 2019a; Kisarazu City, 2020g). For these reasons, ***Target 12.3*** '*By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses*', ***Target 12.5*** '*By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse',* ***Target 12.7*** *'Promote public procurement practices that are sustainable, in accordance with national policies and priorities'* and ***Target 12.8*** '*By 2030, ensure that*

people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature' scores '**performing well'**. Furthermore, for the reasons that the town has created its own digital local currency, 'Aqua Coin' and also for the matching objective of KURKKU FIELDS, ***Target 12.b*** '*Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products*' also scores **'performing well'**.

Goal 13. Climate Action

This is a debatable goal to assess KF&K because the main objectives of both the town and the farm park are to express a sustainable lifestyle, and not necessarily resilience or combat against climate change. As an action to combat climate change, both KURKKU FIELDS and Kisarazu-shi are increasing the installation of renewable energy infrastructure, and KURKKU FIELDS is reducing plastic usage for only the essentials such as vacuum packing (Appendix C, Q36). However, as this thesis compares KF&K to T&D, Totnes area has a greater development in the case of actions against climate change having wider dimensions to tackle, such as localizing foods and housing materials, having voluntarily meetings specifically about peak oil and global warming with a high participation rate, waste management, etc. KURKKU FIELDS, on the other hand, imports food ingredients such as flour from Hokkaido, silage for buffalo feed from foreign countries, building materials through Sumitomo Forestry [19] which imports timber wood from foreign countries, etc

[19] According to their website, although the corporation do import building materials, they commit to sustainability management by not emitting hazardous chemical substances during construction, making efforts

(Appendix C, Q9 – 11 & Q21). Even if KF&K may be the most advanced in sustainable development in Japan, they would score **'working in progress'** for ***Target 13.1*** '*Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries'*, ***Target 13.2*** '*Integrate climate change measures into national policies, strategies and planning'* and ***Target 13.3*** '*Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning*'.

Goal 14. Life Below Water

According to Kisarazu City (2020b), the marine organisms in a seagrass ecosystem absorbs greenhouse gases in the atmosphere, which is known as a function called blue carbon. Kisarazu is planning to conserve and maintain the seagrass bed and the ecosystem by utilizing the 'Beverly®Unit' made by Nippon Steel Corporation. It has been said that one of the reasons for the decline of healthy seaweed and other marine organisms is inefficient iron. The 'Beverly®Unit' works as a 'supplement' for the marine organisms as it produces iron-humate as a source of iron for the seagrasses (Kisarazu City, 2020b, p. 48; Nippon Steel Corporation, 2020). As of this restoration process, Kisarazu scores **'performing well'** for ***Target 14.2*** *'By 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans'.*

to not using plastic materials for packaging, exert to reuse and recycle materials, and so on (Sumitomo Forestry, n.d.).

In addition, Kisarazu-shi organizes a cleaning activity of coastal wetlands (mudflat) with children and volunteers. In 2019, 222 people engaged in this activity and the town is aiming to reach 400 participants in 2023. The participants would have the chance to observe the living organisms there, and through this activity, it would connect to the rise in awareness of marine debris (Kisarazu City, 2020c, p. 40). This score **'performing well'** for ***Target 14.5*** *'By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information'.*

Moreover, KURKKU is planning to make a donation to Mauritius [20] through crowdfunding with Itochu Corporation and Ron Herman. As KURKKU does not make charitable donations often (Appendix C, Q34), it can be assumed that this is one of the few donations made to marine-related management, and therefore scores **'working in progress'** for ***Target 14.7*** *'By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism'.*

Lastly, ***Target 14.c*** *'Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"'* scores **'working in progress'** because Paragraph 158 of 'The Future We

[20] The incidence of the oil spill has hugely damaged the coral reef on July 25, 2020 (Khadka, 2020).

Want', mentioned in *Target 14.c* implies of the protection, restoration and maintenance of the marine ecosystem in a holistic perspective. As Kisarazu's measures only looks at seagrasses for the effect of blue carbon, it is inadequate to fulfil the target objective (United Nations, 2012).

Goal 15. Life on Land

As introduced in Goal 6, 'Mother Pond' is the central water tank of KURKKU FIELDS. There are many substances such as cow dungs in the bottom of the lake as sludge from the previous usage of the area as pasturage for cows (Appendix C, Q5), which makes the pond stagnant. Although KURKKU is planning to ameliorate the stagnation a little bit more, this leads to ecosystem diversity and richness. Because of the stagnant water, it's habitable for fishes and frogs, which then invites pheasants, and the muddy water becomes food for organisms. From this, ***Target 15.1*** *'By 2020, ensure the conservation, restoration and sustainable use of terrestrial ad inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements'* scores **'performing well'**. Kisarazu-shi's 'Forest Maintenance Policy and Business Plan' also contributes this target. This plan will be carried out between 2019 till 2022 to create an environment in which forest resources can be protected to be effectively utilized in the future by implementing forest maintenance and conservation. As some of the damages from typhoon destruction has not been repaired yet, Kisarazu is aiming to revise the system of ownership of the forest and promote forestry in order to create a

resilient forest (Kisarazu City, 2020f, p. 27). Although this plan may include reforestation, it does not necessarily aim for afforestation. And since this plan is working in progress, ***Target 15.2*** *'By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally'* scores **'working in progress'**.

For ***Target 15.6*** *'Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed',* Kazusa Akademia Park, neighbouring facility of KURKKU FIELDS, develops and supplies biological genetic resource preservation. It has been said that it has one of the world-leading DNA research technologies to both preserve and develop genetic resources (Chiba Prefecture, 2020a). Therefore, this target scores **'performing well'**.

Goal 16. Peace, Justice and Strong Institutions

According to the Police Net Chiba (n.d.), the police department in Kisarazu runs measures of lifeline and support for those who are experiencing any forms of violence. They also offer counselling and subsidies for the victims, which could be said that contributes to the reduction of violence. Furthermore, as introduced in Goal 1, Kisarazu organizes support for children that needs care too. However, according to Tanaka (2015), the rate of child abuse consultation has been on a rise (p. 6), meaning that these measures have not been able to prove its efficacy yet since it has not been able to decrease the rate of child abuse. From this ***Target 16.1*** *'Significantly reduce all forms of violence and related death rates everywhere'*

scores **'performing well'** and ***Target 16.2*** *'End abuse, exploitation, trafficking and all forms of violence against and torture of children'* scores **'working in progress'**.

Goal 17. Partnerships for the Goals

As shown above, Kisarazu-shi has commenced the 'Organic Town Development Action Plan' to involve the whole town in the 'Organic City Project'. Therefore ***Target 17.14*** *'Enhance policy coherence for sustainable development*' and ***Target 17.17*** *'Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships'* scores **'performing well'**.

CHAPTER 5

RESULTS AND DISCUSSION

5.1. Results and Discussion

After going through all 169 targets of the 17 goals of the SDGs, Table 3 presents the aggregated results of the targets in both research subjects.

Table 3. Targets Achieved in the Analysed Subjects

SDGs	Totnes and District	KURKKU FIELDS and Kisarazu
Goal 1	*1.3*	**1.3**
Goal 2	**2.1 2.3 2.4**	**2.1 2.3 2.4**
Goal 3	**3.7** *3.9*	*3.6* **3.7 3.d**
Goal 4	**4.1 4.2 4.3 4.4 4.6 4.7 4.a**	**4.1 4.3 4.6** *4.7* **4.a**
Goal 5	**5.5 5.a**	*5.5*
Goal 6	**6.1** *6.3 6.6 6.b*	**6.1 6.2 6.3 6.6 6.b**
Goal 7	**7.1 7.2 7.3 7.a**	*7.1 7.2* **7.a**
Goal 8	**8.3 8.5** *8.9*	**8.5 8.6 8.9**
Goal 9	**9.4**	**9.1 9.4**
Goal 10		*10.4*

(continued)

SDGs	Totnes and District	KURKKU FIELDS and Kisarazu
Goal 11	**11.1** *11.2* **11.6 11.7 11.a**	**11.2** *11.3* **11.6 11.7** *11.a* **11.b**
Goal 12	**12.3** *12.4* **12.5 12.8** *12.b*	**12.3 12.5 12.7 12.8 12.b**
Goal 13	**13.1. 13.2 13.3**	*13.1 13.2 13.3*
Goal 14		**14.2 14.5** *14.7 14.c*
Goal 15	**15.2 15.4 15.5** *15.a*	**15.1** *15.2* **15.6**
Goal 16	**16.7**	**16.1** *16.2*
Goal 17		**17.14 17.17**
Total Score	**'Performing well':** 35 **'Working in progress':** 10	**'Performing well':** 37 **'Working in progress':** 16
'Performing well' : 'Working in progress' ratio	77.8 : 22.2	69.8 : 30.2

Note. The targets that scored **'performing well'** is written in bold font, and the targets that scored **'working in progress'** is written in italic font.

As we can see from Table 1, both T&D, and KF&K has a relatively similar shape with the scoring of the targets. The top three strongest goals for both T&D, and KURKKU FIELDS, and Kisarazu are Goal 4 'Quality Education', Goal 11 'Sustainable Cities and Communities', and Goal 12 'Responsible Consumption and Production'. As this thesis aims to compare two sustainable communities, it does not come as a surprise to see Goal 11 to be one of the strong goals.

Overall in this research, KF&K scored more than T&D. There are three main assumptions for the reasoning of this. The first assumed reason is the inequality of information sources. A 2 hours interview with KURKKU FIELDS was taken place for this thesis, and on the other hand, Totnes did not respond to the interview request. The research for T&D lacks primary sources, and therefore, this research might've missed out on some of the latest information and updates of the town.

The second assumed reason as to why T&D might've scored lower on the SDGs analysis is the level of familiarity of the SDGs. As presented in the survey (1.3. Survey; Appendix A), the concept of the SDGs is not well known amongst the UK citizens. Whilst Kisarazu had multiple references about the SDGs in their plan reports (Kisarazu City, 2020b, p. 37 – 48), there was no information or mention about the SDGs in any of Totnes' frameworks and methods. This is most likely because the TTT has been ongoing since long before the establishment of the SDGs, and rather than implementing the new system of the SDGs, Totnes continued with what they were doing and achieving a resilient community.

The third assumed reason is the difference of the focal points. The focal point for KF&K is arguably 'sustainability' (Appendix C, Q38), whilst Totnes focuses more on 'resilience'. The two terms may share the same goals of achieving a well-balanced world, but as Hopkins stated (3.1. Background Information, p. 33), they are not entirely the same.

5.2. 'Sustainability' VS 'Resilience'

Hopkins defines 'sustainability' as making better from the current state, whilst 'resilience' would 'question how we've let ourselves get into a situation that's so vulnerable' (2009a, 09.24 – 10.14). In other words, 'resilience' would tackle problems by looking for the cause of the problem, therefore searching the 'past', whilst 'sustainability' would look for the 'future' solutions to amend the situation. Both terms are aiming to ameliorate the situation, but the process is completely different. As Johnstrone says, 'stories of resilience have a downslope of the difficulty, but what makes it a "story of resilience" is there is a response designed to lead to a better-than-expected outcome' (TEDx Talks, 2016, 3:33 – 3:46). On the contrary, 'sustainability' does not necessarily have a conscious mind about the 'downslope'.

Here is another example of the difference of 'sustainability' and 'resilience' in the metaphorical terms of human biology. In human biology, 'sustainability' would be our biological functions. It's safe to say that humans live when the sustainable cycles of respiration, nutrition, excretion, reproduction, and other functions that are constantly happening successfully within our bodies. When food, water, oxygen and other ingestion are paused, our bodies start to break, in a similar way to how plants would die without water and sunlight. The virtue of ingesting these inputs form a sustained cycle of biological function that help humans live. 'Resilience', on the other hand, would be our natural healing responses for when the human body adapts to changes. For example, when we get a cold and we heal,

or the regeneration of a broken bone, etc. If ‘sustainability’ and ‘resilience’ is so different, what would be the main difference between the two research subjects?

During the research, I was noticing the difference in depth of engagements of the two subjects. T&D would work deeper with certain targets, whilst KF&K would cover the targets in a shallower way but in wider areas. To elaborate on this point, as shown in Table 3, T&D have 3 goals that are not covered at all, and yet, it is only 2 scores of **‘performing well’** behind from KF&K. KF&K, on the other hand, covers all the goals. Furthermore, the ratio of **‘performing well’** to **‘working in progress’** also shows that T&D had a higher rate of scoring **‘performing well’** than KF&K. Although this does not apply to all targets, Totnes would’ve most likely tackled targets with greater effects and accomplishments than Kisarazu. This was also explained in Goal 13 ‘Climate Action’ of KF&K (4.2. Data Collection and Analysis).

As we cast our minds back to the human biology metaphor, ‘sustainability’ would refer to our biological functions and ‘resilience’ would refer to the natural healing responses. ‘Sustainability’ focuses on the whole package, as ‘resilience’ focuses on the system of repairment. And although it is disputable, perhaps ‘resilience’ takes on a subject more narrowly to achieve a greater depth of coverage. This brings us to the conclusion that the two ideologies are different, but enormously and equally important to have in order to achieve a holistic level of coverage.

5.3. Challenges and Limitations

There were a few challenges during the composition of this thesis. As mentioned above, T&D's research may not have been thorough due to the limitations of sources. Some of the information has not been updated in the last 10 years and having to compare possible outdated information to the latest updates of Kisarazu might've brought inequality to the comparison. Ideally, there should've been an interview commenced with Totnes' side too. Furthermore, the border of Totnes was very vague, to begin with, as it did not have any publishment of the area size of Totnes. This thesis merged all the areas with the sharing postcode of TQ9 and named it 'Totnes and District', deriving from the name of the Energy Descent Action Plan, 'Transition in Action: Totnes & District 2030' (Hodgson & Hopkins, 2010). Again, this challenge could've been solved if an interview had taken place.

Moreover, some of the scores for the goals and targets may have been debatable. Although this thesis aimed to assess both subjects with 'common values, relevant science, and a conceptual framework that represents key domains of sustainable development and interlinkages between the domains' (Pinter, 2013), it can be imagined that some readers might find a different view to some of the scores due to the difference in 'common values'. However, I can strongly say that there was no bias intended whatsoever, and the assessment was done from a thoroughly objective perspective.

CONCLUSION

Johnstone says, ‘life is a series of things you are not quite ready for’ (Hopkins, 2010). And from this, perhaps it is almost impossible to eradicate the slightest possibilities of human extinction in the future. But when there is a clear warning sign, taking action means investing in hope that our species won’t end here.

As this thesis has investigated the two pioneering communities, this allowed me to understand at least a fraction of what is needed to achieve both ‘sustainable’ and ‘resilient’ locality. The two ideology is equally important, and both T&D, and KF&K has proved the significance by performing each term. The two subjects showed their similar but different and unique ways of guiding the community towards a potential lifestyle of the future.

I have mentioned in the introduction that money has the utmost power in the modern days, sustained by capitalism. Through this investigation, I have learned that we need to change our lifestyle in order to adapt to the changing of the environment, like the two towns/farm parks from the UK and Japan. And I have also learned that the time to redefine our highest goal is approaching. Schumacher observes (2000):

> The languages have differed, the symbols have varied, yet the message has always been the same: “Seek ye *first* the kingdom of God, and all these things [the material things which you also need] shall be *added* unto you.” . . . Today, however, this

> message reaches us not solely from the sages and saints but the actual course of physical events. It speaks to us in the language of terrorism, genocide, breakdown, pollution, exhaustion. . . . Needless to say, wealth, education, research, and many other things are needed for any civilization, but what is most needed today is a revision of the ends which these means are meant to serve. And this implies, about all else, the development of a life-style that accords to material things their proper, legitimate place, which is secondary and not primary (p. 248-249).

Perhaps we need to fully realise the importance of the gift that we've received long before materialism: our home, our planet. Materialism will most likely fail to get us through the crisis of climate change, and therefore, should we not change?

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APPENDIX A

Tokyo Survey: 138 participants

Question	Answer	Rate (stats)
Do you have experience studying or working abroad? *海外での留学・就職（インターン含む）経験はありますか？*	**None**	**47.4% (65)**
	For less than a year	39.4% (54)
	For 1-3 years	7.3% (10)
	For more than 3 years	5.8% (8)
I fully understand the term 'Sustainability'. *「サステナビリティ」という言葉を知っていますか？*	I didn't know that existed	13.8% (19)
	I have heard of the term but don't know the content	**29.7% (41)**
	I know the content relatively well	**29.7% (41)**
	I can explain the content to people	26.8% (37)
I fully understand the term 'Ethical'. *「エシカル」という言葉を知っていますか？*	**I didn't know that existed**	**39.1% (54)**
	I have heard of the term but don't know the content	26.8% (37)
	I know the content relatively well	23.9% (33)
	I can explain the content to people	10.1% (14)
How well do you know the 'Sustainable Development Goals (SDGs)'? *「SDGs（エスディージーズ）」という言葉を知っていますか？*	I didn't know that existed	27.5% (38)
	I have heard of the term but don't know the content	15.9% (22)
	I know the content relatively well	**32.6% (45)**
	I can explain the content to people	23.9% (33)
I have interest in renewable (clean) energy. *再生可能エネルギーについて関心はありますか？*	I didn't know that existed	3.6% (5)
	I have heard of the term but don't know the content	28.3% (39)
	I know the content relatively well	**60.1% (83)**
	I can explain the content to people	8% (11)
In your daily life, are you conscious about the environment and eco-friendly actions? *日常生活で、環境やエコを意識していますか？*	I am not at all conscious	12.3% (17)
	I am conscious but have not acted upon it	42% (58)
	I am making action	**45.7% (63)**
Gender *性別*	Male	24.8% (34)
	Female	75.2% (103)

London Survey: 74 participants

Question	Answer	Rate (stats)
I fully understand the term 'Sustainability'.	Strongly disagree	0% (0)
	Disagree	2.7% (2)
	Agree	**60.8% (45)**
	Strongly Agree	36.5% (27)
How well do you know the 'Sustainable Development Goals (SDGs)'?	**Not at all**	**47.3% (35)**
	Only a little	39.2% (29)
	Fairly well	12.2% (9)
	Very well	1.4% (1)
I have interests in renewable (clean) energy.	Strongly disagree	1.4% (1)
	Disagree	2.7% (2)
	Agree	39.2% (29)
	Strongly Agree	**56.8% (43)**
I take action out of concern for climate change.	Strongly disagree	1.4% (1)
	Disagree	12.3% (9)
	Agree	**65.8% (48)**
	Strongly Agree	20.5% (15)
How important is the issue of climate change to you personally?	Not at all important	0% (0)
	Not very important	6.8% (5)
	Quite important	**46.6% (34)**
	Very important	**46.6% (34)**
Gender	Male	51.4% (38)
	Female	44.6% (33)
	Prefer not to say	4.1% (3)

APPENDIX B

Interview with KURKKU FIELDS Keisuke Era (Original)

Q1:　KURKKU FIELDS ができた経緯を教えてください。

A1:　（小林武史さんがなぜ一般社団法人 ap bank を作ったかは）だいぶ端折りますが、（小林さんが）ap bank を作って株式会社 KURKKU は２００５年にできました。最初は神宮前でレストランが 5 店舗あったというところから始まったのだけれども、その時から循環とかサステナブルっていうことをテーマにやっていました。都市の中で農家さんと契約した野菜が毎朝届いてきて、それをみてメニュー決めて、電気使わず薪と炭で調理するみたいなのは、当時もある程度評判にはなったけれども、元々KURKKU のやろうとしているモチベーションは消費のあり方とか、サステナブルな方向へ社会をシフトさせていきたいという社会実験的に小林さんの始められたプロジェクトなので、やっぱり東京のレストランで一皿食べていただくことでお客さんのライフスタイルがシフトしていくきっかけみたいなところまでは、なかなか作りきれなかったということですよね。木更津市は都市に隣接しているけれども、「都市」じゃなくて「地方」の中で太陽からの循環、

自然の力を使って自分たちで野菜とかを作ったり、牛や鳥とか生き物と一緒に共生していく中で、食材を作って、そこで体験しながら食べていただく。食べていただくこと自体が自然の循環で、食がどう循環して食べてもらえるのかっていうことを全部場内で「繋がり」として見えて食べられる、そういう体験なんだと思う。それを都市、特にいろんな自然と切り離されて成り立っている社会から、非日常的な農場の因習的な空間に入ってもらって、実際普段行われている自然の中の食が繋がり、食べて僕たちのエネルギーになっているという一連の繋がりを体験してもらう場所を作らないと、なかなかそういうシフトするきっかけだったり、実際世の中でこう食べ物ができているんだくらいな実感が、都会でレストランやってるだけだと実現が難しかったんです。KURKKU FIELDS みたいな場所を作って、食べ物以外ででもエネルギーだったり水だったり、そういった自然との繋がりの中で僕たちが生きていて循環していることだったり、サステナブルな方向に向かっていかなきゃいけないということを、より感じてもらいやすくなるために作られたということだと思います。

Q2:　これは個人的な見解ですが、普通の人が環境問題とかに関して、まず知識を蓄える「KNOWLEDGE」、その後関心を持つ「AWARENESS」、そして最後に行動「ACTION」に繋がっていくという三段階があると思いますが、KURKKU FIELDS のやっている一連のライフスタイルへのシフトを促すということは、最初の「KNOWLEDGE」の段階であるという認識で合っていますか？

A2:　そうですね。やっぱり僕もそうだし、小林さんももちろんそうだと思いますけれど、やっぱり知ってもらわないと何も始まらないから。そういう意味で言うと、例えば明日「ヒルナンデス！（日本テレビ）」の取材を受けるのだけれども、チーズが美味しいとか、畑の採れたての野菜を紹介したり、冬でもお出かけができますみたいな、サステナブルみたいなことを前に出さないでちょっとポップな取材になるから、エントリーモデルみたいなものはあると思います。でも今後、今も TINY HOUSE VILLAGE で宿泊はできるけど、もう一つ COCOON（繭）という宿泊所のプロジェクトをやろうとしていて。「ミナ　ペルホネン」というアパレルブランドの皆川明さんと小林さんが一緒に相談してやっているプロジェ

クトです。ある程度宿泊代はかかる宿だけれど、ここで提供したいのはラグジュアリーでリラックシングな、でもリゾートみたいな感覚ではなくて、農場で行われているサステナブルなライフスタイルの営みに参加できるという宿泊体験を提供しようとしていて。それはどちらかというともうある程度「AWARENESS」があって、日々の「ACTION」に興味がある人がそれだけのお金を払って、こういう場所でサステナブルな自然の中の循環を体験しにくるみたいな、そういうものも用意しようとしています。だから僕たち自身はちゃんと「ACTION」してないと伝わらないし。多分これから KURKKU FIELDS のような複合施設はいろいろ出てくるとか思うんですよね。コロナみたいなこともあるし、アウトドアで自然を感じながらとか。グランピングとかもそうだけども、明確な社会的な潮流はあるから。ただそういうものじゃなくて本質的な活動であるためには自分たちはやっぱちゃんと「ACTION」していかなきゃいけない。環境問題に興味がない、関心がない、知らなかった人たちに対してもアプローチしていきたいし、ただ関心を持ってき

た人たちに対して、地域で農業を中心にして、ちゃんと生きていけるための学校みたいなこともやっていきたいと思っています。

Q3:　KURKKU FIELDS の存在をまだ知らない人へのアプローチはどのように行っていますか？

A3:　それはいろいろあって。サステナブルとかに関してトークショー・イベントとか、小林さんと対談していくなどそういうことも一つあるんだけれども。結構いまパブリッシティー、つまりメディアの取材が入ってくるんですよね。テレビとかだといろんな質の人が見にくるけどね。でもサステナブルとか SDGs という枠組みで実際にやっている人とかやっている場所ってなかなかないみたいなのね。あんまり KURKKU に「Hanako（マガジンハウス）」みたいなお洒落な所にいくための２０・３０代の女性向けの情報誌が取材にくるとか今までなかったし。小林さん宛に取材がくるとかは今までなかったのだけれど、SDGs っていう切り口でちゃんとやっているところは今のところ限られているから、今はそういう切り口で情報がコンスタントにメディアを通じて出てっているということだと思います。

ただ地元でもっと知られていかなきゃいけないし、そういうのは結構地道な営業、ポスター貼るとか、いろんな学校の遠足を受け入れて行くとか、千葉を回る日帰りバスツアーに組み込んでもらうとか、そういう地道なやつもやっています。

Q4:　KURKKU FIELDS は普段から SDGs の１７項目を意識されていますか？

A4:　もちろん意識しないことはないけども、僕たちとしては１７項目を基準にやっていこうという感じは持ってはないですね。１７項目には関連するっていうのはあるし、それがみんなの共通の言語というか、SDGs の枠に嵌めて考えたほうがコミュニケーションしやすい場合とかももちろんあるので、そういう場合に使っている感じです。

Q5:　もともと KURKKU FIELDS が出来上がる前はどういった土地だったのですか？

A5:　KURKKU は ap bank でゴミの処理・分別のアドバイスをしてくれる人にあの土地を紹介してもらったんだよね。それが２００９～２０１０年か。それでうちらがそれを取得して、２０１０～２０１１年から農業を始めているんだけど。そ

の前はもともとの持ち主が４０～５０年くらい前にあの場所に来て牛の放牧場やっていたんですね。それが途中で上手くいかなくなってやめられて、それで途中で当時不法投棄問題とかがあって。あの土地にガラとか、工事で出た産業廃棄物が埋められていたんです。ちょっとそういう「黒い」こともあったりして、あの場所が活かせない状態、生きた場所じゃなくなっちゃった状態で、彼らも迷っていた時に小林さんがあの場所を紹介していただいて、購入に至ったということですかね。

Q6:　不法投棄物の処理にはどれくらい時間がかかりましたか？

A6:　処理している部分としていない部分があります。つまり（土地を）掘ると車のバンパーとかがどんどんでてきて、そこは畑にはならなかったんだよね。だからそこの上には今「農業生産法人耕す」の農業用の倉庫が建っていたりとか、原っぱにしたりとか。みんな経験者で始めたわけじゃないから僕たちは知らなかったんだけど、実際そこで農業をやってみたら「あれこんなの埋まってた、どうする？」みたいな感じになって、ここ農地にならないからここには倉庫建ててい

こうねみたいな。一部畑になっている部分は土を入れ替えて畑になっていますが、始めてから１０年、徐々に整備しながら、とにかくいい形で場所が、土地が生きるような形を考えてやってきたということだと思います。

Q7:　KURKKU FIELDS 場内のうち畑として使われている部分と使われていない部分の割合を教えてください。

A7:　農地は場内だと２～３ha（ヘクタール）あると思う。場外は８～９ha くらい。KURKKU FIELDS の中だけじゃなくて、周りに耕作放棄地とかも問題なんで、地域の人たちに畑をお借りしていて。でも実はあんまり畑がなくて田んぼが多いけど、地元の方でもし農業をやらなくなっちゃうような場所があれば、ぜひうちでやらせてほしいというコミュニケーションをしていて、今だから場外の方が農場としては広くなっています。

Q8:　場外と場内で収穫率的はどれくらいの割合ですか？

A8:　場内が３で、場外が９だとしたら、場外が３倍くらいの収穫量はあるっていう感じだと思う。

Q9:　KURKKU FIELDS 内の食料自給率はどれくらいですか？

A9:　パン屋とかだとすると、自分たちで小麦を今育てて、その小麦からパンを作っていたりはするんだけど、すごい一部なんで、多分９５％とかの小麦は外から買ってきているんですよね。だからそこは自給できていないし、シフォンケーキもそうだね。小麦は外から買ってきているので。牛乳と卵は自分たちのところだけれど、小麦とお砂糖とか、調味料系は基本的には外から買ってきています。シャルキュトリー（食肉加工品）も、猪はほぼほぼ自分たちで獲って捌いているけども、豚肉は千葉の契約している農家さんから買ってきています。あと鳥の餌とかも基本的には地域の未利用資源、ダシガラとかを使っています。レストランの食材は、うちのパンとかソーセージとか卵とかも含めて基本的には、醤油とかの調味料を除いて、大体９０％くらいは場内のお店、畑から買ってきたもので作っています。全部の構成要素を分解していくとやっぱり小麦、調味料、餌系は場外から購入しています。

Q10:　場外の購入先は国内ですか？

A10:　基本的には国産なのだけれども、水牛の食べるトウモロコシのサイレージは国外です。他は全部国内です。牛のサイレージは国内の物だとどうしても値段がすごくなって、ちょっと現実的じゃないんです。本当は放牧とかできるくらいのすごい広い牧草地だけを作ってとか、色々やり方を考えなきゃいけないんですけど。

Q11:　国内での購入先は千葉県ですか？

A11:　小麦とかの一番の問題は、千葉で育つ小麦って限られているんだよね。できるだけもちろんローカルな物がいいけど、こういうパンを焼きたい、こういう小麦を使いたいって時には、北海道の小麦から選んだ方のパンが美味しいとかがあって。そういう意味でまだそこらへんは研究中というか。でもそれも１００％（千葉県産の小麦）にはならないと思うんだよね。こういう小麦の品種だと、こういうパンが美味しくなるけれど、こういうパンはやっぱ北海道の小麦が美味しいから、それは北海道から入れてこようみたいな、そういうのは残っていくと思います。

Q12:　現在のオーガニックファームになるまでの経緯を教えてください。

A12:　最初にやっぱ人がいました。豊増洋右が最初 ap bank にいて、もともと農家の息子で、彼が中心になっていて。彼は今はもう（チームに）いないけど、そこに今農場長をやっている伊藤雅史っていうのがいて。彼はもともと kurkku kitchen（レストラン）で料理のサービスのアルバイトを大学生の時にやっていて。農業をやるなら僕もやりたいって入ってきてくれて。その二人が中心となって始まっていきました。元々小林さんがそういう農業をやっていこうっていうビジョンがあって、人を集めてから一緒に場所を探していったっていう感じですかね。

Q13:　その後、農業に限らず、どういう人材を求めてチームを形成していったのですか？

A13:　僕たちが特殊な場所というか、明確にサステナブルな社会にシフトしていく、ざっくり言うとそれを伝えていくために作った場所なので、そこに共感できる人というか、そういうのに興味がある人をチームに入れています。私パン焼きたいだとか、野菜作りたいとか、ネイチャーガイドみたいに自然の鳥の声を伝え

たいとか、個人のそういう興味みたいなものはそれぞれありました。でも根っこで、小林さんを始め、（みんなの）持っているビジョンやミッションとちゃんとハモれる人。その人の人生のプラスにもなるし、KURKKU FIELDS という場所のプラスにもなるっていう重なりを持つ人。それは人の紹介伝てとか、エージェントみたいのを使ったりとか、人材募集サイトを使ったりとか、手段は色々で。そこで会って話して、この人はうちに合ってそうだみたいに、どんどん人を団体的に入れてきたみたいな感じですかね。

Q14:　kurkku で働いているスタッフの男女比率を教えてください。

A14:　男女比は多分５分５分くらいだと思いますね。でもうちはやっぱ女性が多いですよね。農業は男性の方が多いかもしれなくて、でもパン屋は全員女性だし。

Q15:　女性が上級職についている例はありますか？

A15:　取締役が小林さんと僕と飯田っていう女性で構成されています。小林さんを除けば５０/５０（フィフティーフィフティー）だし、例えばパン屋、シフォンケーキの部門長は女性だし。ほぼほぼ５０/５０だと思います。

Q16:　（SDGs 目標４「質の高い教育をみんなに」について）スタッフへの育成ではどういうことを心掛けていますか？

A16:　これに関してはちょうど今改新しようとしています。聞こえ方悪いかもしれないけど、今までは基本的「放任」していました。放任っていうのは、バンドに例えると小林さんのプロデューススタイルとして、みんならしい音を出してみなよ、ということに近いです。そういうプロデューススタイルを１年とっていたけど、バンドじゃないし。いろんな農業から加工からレストランまで、KURKKU FIELDS を分けると１１くらいの部門に分かれるのね。それぞれが音を出していても、横の連携が難しかったりいろいろあって。それでちょうど今教育をやっていこうということになっています。でもまず一番は、小林さんの中で、なんで KURKKU FIELDS を作ったのかというのがすごい明確にあるから、それは僕たちのミッションみたいなことなんだけれど。そこをサステナブルとは何かみたいなことを含めて、共有するというか教えていくというのが一番大事だと思っています。あとは各部門によって、例えばチーズ部門だとしたら美味しいチーズを作れ

るようになるとか、パン屋さんだとしたらパンを焼けるようになるとか、農業だとしたら有機でちゃんと（野菜が）採れて生活していけるようになるとか。どちらかというと職人的なそのラインがあって。そこは今のところ徒弟制度みたいな昔ながらのやり方になっていますね。パンをどう焼くかみたいなことは会社として研修していくことはやっていないですね。そこに職人がいて、職人が自分のチームをちゃんと作っていけるかみたいな形ですね。

Q17:　これからサステナブルとは何かという教育を入れていこうとしている段階という認識であっていますか？

A17:　そうですね。ちゃんとみんながサステナブルとは何かという同じイメージにもう少し近づけたらいいねと思っています。

Q18:　KURKKU FIELDS 内の全雇用人数、また住み込みで働かれているスタッフの人数を教えてください。

A18:　スタッフは全員で３０人くらいです。宿舎には 7 部屋あります。それともう一つ、竹島英俊（チーズ職人）の家族と、8 人くらいです。

Q19:　宿舎にお住まいのスタッフの１日のルーティンはどんな感じですか？

A19:　部門によって違いますね。例えば水牛の面倒を見ている竹島さんだと、３時に搾乳、その後１０時くらいまでチーズ作って、あとは営業をしていって、１９時には必ず寝るっていう人もいるし。他で１１時オープンだから、９時に行ってピザ板などいろんな準備をして、１７時クローズしてから後片付けして、１８時か１９時に終わるスタッフもいます。パンをやるんだとしたら５～６時とかに始まると思うので、職種によってバラバラです。

Q20:　スタッフの毎日の食事はどのように提供されていますか？ファームの耕作物をそれぞれが調理して食事をとっている形ですか？それともレストランのシェフが食事を作ってくれる形ですか？

A20:　それぞれが調理しています。でもせっかく農場なのに自炊できない人がコンビニ（徒歩５分くらい）でお弁当買ってきて食べていることもあるみたいです。そういうのは良くないから、宿舎の運用を検討しようとしています。宿舎の人た

ち用に家庭菜園みたいに、ここの育った分は自由に食べて良いよ、みたいなことを自主的にみんなし始めたりとかはしているらしいですけど。

Q21:　KURKKU FIELDS 内の建物などの建築材料はどこから仕入れていますか？

A21:　わからないけど、基本的には住友林業[21]っていうハウスメーカーが入っています。

Q22:　KURKKU FIELDS の飲水はどこから調達していますか？

A22:　井戸ですね。井戸を２０メートル掘って電気で汲み上げて飲み水にしています。

Q23:　飲水の衛生管理はどのようにされていますか？

A23:　衛生管理は保健所で決まっています。井戸で掘った水を検査してらって、菌の量に合わせて滅菌の薬の入れる量を指導され、それを入れて浄水として使っています。

[21] 企業サイトによると、木材の海外輸入は行っているが、施工時の有害物質の発生を禁じることや、梱包材にプラスチックを使わない努力や資源のリユース・リサイクルの努力は務めるなど、環境と SDGs への配慮は意識されている（Sumitomo Forestry, n.d.）。

Q24:　KURKKU FIELDS の「豊かな生態系」及び「マザー・ポンド」の仕組みを教えてください。

A24:　まず井戸水を浄水で使って、レストランで料理作ったり、お皿洗ったり、トイレもそうだけど排水がでてきます。これを浄化槽っていうのに入れて水をきれいにして、法律上これで流して良いよっていう排水基準になって水が浄化槽から出てきます。ただその水にまだ洗い残しなどの有機物がまだ含まれていて、それを今度さらにバイオジオフィルターって僕たちは呼んでいる水路に入れて、バイオジオフィルターからビオオーブに入っているんだけど、その排水の中に含まれている有機物が柳、紫蘇、クレソンとか水辺の植物の栄養分にどんどんなっていくんです。水の中の有機物を、植物を育てるための栄養素にして、水をよりきれいにしています。KURKKU FIELDS 内に下水っていうのもないので、全部マザー・ポンドに水が入っていくことになっています。ただマザー・ポンドは池なので。流れがないと水って淀んでいくんだよね。さっきもともと牧場だったって言っていたけど、牧場だった時の牛のフンとかいろんな物がヘドロになって池の下

に今溜まっているんだよね。それを今どうにかしようとしていて。生態系の豊かさでいうといろいろあるんだけれども、池がちょっと淀んでいる分、お魚住みやすくて、蛙がいっぱいいて、そこからキジとか鳥もいっぱい来るし。ちょっと汚れているからこそ、それが動物のエサになっていうことはありつつ、ただもうちょっとヘドロとかを含めて処理できる余地はあると思っています。ちょうど昨日小林さんがどうしようっていうので打ち合わせしていましたけど（笑）まとめると、バイオジオフィルター通して、人がこの場所に集まれば集まるほど排水も含めて有機物の含まれた水が出てくるから、それを経て植物も豊かになっていって、生態系が豊かになるっていう循環はもうできていますが、最終的に排水を受けるマザー・ポンドに関してはもう少しヘドロの処理みたいなことはもうちょっとやっていこうと思っています。

Q25:　KURKKU FIELDS 内のソーラーパネルはどれくらい電気を賄えていますか？

A25:　今約２MWh（２,０００kWh）発電していて、全部東京に売電しています。ただ去年台風１５号があって、場内が約１週間停電しちゃったのね。牛とかのミストで電気は絶対不可欠なので、生き物の問題に付け加えて、さっき言った井戸は電気で水を汲み上げてくるから、水がなくなるとか結構大問題になって。今はソーラーパネルで発電しているのを全部売電しているけども、中でちゃんとエネルギーを循環させていこうという話になっています。ちょうど今工事をしていて、来年の２月から売電している分の２０％と新しく太陽パネルを新設して、テスラの蓄電池を入れて、2 月からオフグリッド自営電力網を形成します[22]。晴れる日は１００％自家発電で場内電力を賄ってネット・ゼロになります。ただ曇りや雨が続いていく時、蓄電池に蓄えた電力を使い切った場合、東京電力[23]から電気を買電します。トータルで計算上だと年間大体８０％くらい自給されているという設備になります。

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[22] 現在は東京電力から場内エネルギー利用分の１００％を買電している（K. Era, personal communication, December 11, 2020）。

[23] 東京電力の電源構成の約８０％が火力発電、約９０％近くが CO_2 排出量を持った電気と予想される（Tokyo Electric Power Company, n.d.）。

Q26:　ちなみに売電されている会社はどこですか？

A26:　みんな電力っていうところがエージェントで入っていて、そこに売ったり東京電力とかにも個別で売ったりしています。

Q27:　他に利用されている、または興味のある再生可能エネルギーはありますか？

A27:　バイオマスはちょっともしかしたらあるかもしれないです。一応付け足しておくと、今木更津市と防災協定を結ぼうとしています。災害時に停電してしまった時に対応していくもので。地域全体が停電していくので、地域の人たちに来ていただいて、水と電気が提供できるのでシャワーとかも提供できます。そもそも農場だから食料はあるので、災害時に住民の人たちに来ていただいて、そこで急を凌げるような場所にしていこうとしています。

Q28:　昨年の台風で 1 週間停電されたとのことで、その対処はどのようにされたのですか？

A28:　電気がないのがクリティカルで、水もなかったので、レンタルの発電機をできるだけ集めてきて。特に牛とかがミストで冷やさないと死んじゃうとか、ソーセージなどの冷凍庫に保存してある在庫がダメになっちゃうから。とにかく発電機集めろとか、水も汲みにいけとか、ガソリンをまとめて取ってこようとか、そんな感じでしたね。電気さえ通っちゃえばなんてことはない話なんだけど。とにかく電気がないということで、シャワーが浴びられないから、特に女性とかは一旦実家に帰して、その時男性はできるだけ残って、シャワーは外で水浴びみたいな感じで済ませて、なんとか凌ぎました。あとは台風で農業用のビニールハウスが何千万分も吹っ飛んじゃったね。その片付け（をしたり）とか、吹っ飛んだ分、国が（修理費の）7割を補助金として出してくれていましたけど。

Q29:　先ほど木更津市と防災協定を結ばれるとおっしゃっていましたが、それ以外で木更津市内の施設、プロジェクトと繋がっていますか？

A29:　もちろん。例えばオーガニックドリンクなどの物の売買もあるし、木更津だけに限りませんが、有機農業を増やしていこうとしている団体があって、そこ

と連携して、そこでできた野菜を僕たちが加工して販路を作っていくとか、ブランディングを手伝ったり、そういうのもあります。あと木更津市は海側の開発もやっていきたいけれども、僕たちがヘルプしたりとか。市役所と結構（仲が）近いので。そういえば最近駅にピアノを置くのが流行っているんだよね。街中でピアノを弾く番組とかもテレビでよくやっているけれど。来週木更津駅にも（ピアノを）置くんだけれど、それはうちの KURKKU FIELDS 内にもアート作品を置いてくれている増田セバスチャンっていうアーティストにピアノをラッピングしてもらってもらうことになっているんだよね。とにかく地元の人に僕たちも愛されていかないと。サステナブルに興味がある人が世界中から来てくれる、もちろんそれは来て欲しいけど、今特にインバウンドもないから、地域の人たちにもっと親しみやすい面も欲しくて。木更津市はオーガニックシティ宣言をしているけれど、積極的に地域のイベントに協力したりとか、市民の皆さんの生活によりサステナビリティとかオーガニックとかの分野で貢献していけないかなというのは常に探しています。

Q30:　木更津市の海側の開発について関わり方を詳しく聞かせてください。

A30:　僕たちの農場は木更津の里山側にあります。木更津って実は人口がすごい増えている自治体で、それは東京に近くて、５分に１回くらいバスターミナルから東京の中心部、新宿駅とか渋谷駅行きのバスが出ていて、１時間くらいで着くから住みやすい住宅地になっているけれども、バイパスがあってそこにイオンとか TSUTAYA とか大型スーパーがあるんだけど。バイパスの周りに人が増えていくのね。もともと木更津って港町なんだけど、漁業とかが廃れていっちゃっていて。駅も海の近くなんだけど、そこら辺の商店街は全然人が入らなくなっちゃって。でも駅とかは綺麗だから市がそういうところを再開発しようとしているんだよね。そういうところに出店してくれとか言われるけど、今はまだそこまでの余裕はないんで、イベントを一緒にやったり、緩く連携して、お互いに送客したりとかをしていている感じです。市の再開発に関してはできることで応援していきたいなと思っている感じです。

Q31:　ちなみに KURKKU FIELDS 内で魚料理は出されますか？

A31:　魚は鮭を出しています。ちょうど近くの三井物産がやっているかずさアカデミアパークで養殖サーモンっていうのをやっていて。そこは養殖の仕組みを整えていて、サステナブルシーフードなんですよね。後は一緒に地引網みたいのをやるとか、海苔とか、アサリやホンビノス貝とかの名産はあるので、いろいろ使っていきたいなと思っています。でも全部を KURKKU FIELDS の中で体験せずとも、もともとの江戸前の漁業とかも体験してもらえるといいなとは思います。まだガッツリやっていくのはこれからです。

Q32:　近年記録的な残暑が続いたり温暖化と見られる気温の変化などが見られますが、農作物への影響などはありますか？

A32:　農作物で何を植えるかとかなどの影響はありますね。暑すぎるってことでいうと、あんまり（KURKKU FIELDS 内に）屋根がなかったりするから、単純にお客さんが居づらい空間になっちゃうなってこともありましたね。

Q33:　ちなみに農作物にはどんな種類がありますか？

A33: うちの「農業生産法人耕す」の主力はニンジン、大根などの根菜類ですね。あとはプチヴェールっていうケールと芽キャベツの間の野菜とかは関東エリアの有機農業で一番（多く）作っています。これらに加えて枝豆とかは外で売られるように作っています。一方でトマト、ナス、レタスとかレストラン向けにやっているところはあります。ハーブとかも細かくやっているけども、外に出荷するほど量はないですね。もともと農業が先行してから KURKKU FIELDS ができているから、ビジョンがズレている。農業（のプロジェクト）はもともと働く人たちがオーガニックな野菜で生計を立てていく、少ない品種でどんどん作って生産性あげて、そこで利益をちゃんと取っていこうと、そういう農業をやっていたので。KURKKU FIELDS ができて、こういう風に集客施設ができて、そこにいろんな人が買いに来るっていう状況が後からできたから、その農業の在り方をちょっと変えなきゃいけないんですよね。今そういうステージ、状況にいます。

Q34:　チャリティー支援などは行われていますか？

A34: この前はハーブティー売って、売り上げを九州の豪雨[24]のため寄付しました。あとはまだアナウンスしていないけど、コロナで貧富の差が激しくなってしまったから、今度 ap bank で一人親家庭とかへレトルトの食品を寄付していくことになっています。そこに一部、この前僕がやったアパレルのプロジェクトの売り上げの何パーかをそこに寄付するとか。基本的にはビジネスを通じて何か良くなっていくっていうのが基本的な kurkku の考え方ではありますけれども、一周一周でたまにプロジェクトベースで寄付をしていくことはちょいちょいしています。基本的国内が多いけど、来月 kurkku が伊藤忠商事、ロンハーマンと一緒にモーリシャス[25]への寄付金をクラファンで集うことをします。

Q35:　SDGs の１７の目標の中で KURKKU FIELDS が一番注力していると言える目標はどれですか？

[24] 令和２年７月豪雨は熊本県を中心に九州、中部地方などで約１ヶ月に亘って発生した記録的な集中豪雨。

[25] 重油流出事故でモーリシャスのサンゴに多大なる被害がでてしまった。

A35:　どれなんだろう。ゴール１２（：「つくる責任　つかう責任」）はもともと kurkku のできた理由の一つであるのと、ゴール５（：「ジェンダー平等を実現しよう」）とかは今実際そうなっているからっていうものあるし、エネルギー（ゴール７：「エネルギーをみんなにそしてクリーンに」）もちゃんとやっているし。ゴール８（：「働きがいも経済成長も」）も会社やっている以上もちろん考えるし。あと街づくりみたいなことになってきているから、三井不動産とかも含めて、地域側での都市じゃないライフスタイルっていうことでいうとゴール１１（：「住み続けられるまちづくりを」）もあるし。気候変動（ゴール１３：「気候変動に具体的な対策を」）みたいなのはもちろん。

Q36:　気候変動に関してはどんなアクションは取っていますか？

A36:　再生可能エネルギーのことはそうだし、真空パックとか必要不可欠面以外でのプラスチックはできるだけ使わないようにしているし。ある程度この問題に関しては興味がある人は敏感ですよね。だからお客さんにプラスチックを使っているところとかは見せられないと思いますね。テイクアウトの容器もモールド・

紙素材のものを使っています。パンの袋も紙に油脂加工してあるものを使い、ソースとかがついても染みないようなものを使っています。できるだけ紙を使っているということですね。

Q37:　KURKKU FIELDS 内にアートコーナーを設けた理由は何ですか？

A37:　農業では、太陽、タネ、土があって、そこで水、微生物がある。人間ってきゅうりでもトマトでも食べられるけど、それは自然の恵みをいただくっていう行為なんだよね。食べられる物が出てくるけど、人間がそこの循環を全部わかるわけでもないし。そういう意味で、なんでアートを置いているかというと、普段の凝り固まった都市の中での生活からアウトして、ちょっと外に出て非日常的な自然の中でいろいろ想像して欲しいんですよね。普段考えないようなこととかを。循環、オーガニックっていろんな物がちゃんと繋がってこの世界が一つになるけど、人間もあくまで自然の一部であって、それがすごい豊かなことなんです。それが都市にいて感じられるわけもないから、それを自然の中で想像力を使って感じてもらう。想像してもらうしかないんだよね。だから草間彌生さんでも誰でも、

想像力を強制的に使わせるじゃないですか。普段使わない想像力を促したいということがあるので、アートを置いていると思います。

Q38:　最後に、Totnesではどんな衝撃(SHOCK)にも臨機応変に対応できる力、すなわち反発力(RESILIENCE)をモットーに掲げていますが、KURKKU FIELDSのモットーを一言で表すと何になりますか？

A38:　小林さんが一つの言葉とかスローガンとかを作らない方でもあるので、一つこれっていうのは作っていないのね。でもテーマはやっぱり「サステナビリティ」「循環」みたいなことだと思うけどね。「サステナビリティ」に関しては２００１年くらいから小林さんはずっとやってきているから。サステナブルにやっていくための手段、アティチュードというか、「レジリエンス」の必要な対応力、何が起きてもちゃんと対応できないとサステナブルじゃないっていうものわかるけれども、基本的には「サステナビリティ」と言っちゃっていいと思います。

Appendix C

Interview with KURKKU FIELDS Keisuke Era (Translated)

Q1: Could you tell me the background story of how KURKKU FIELDS came to be?

A1: I will omit the details of why Takeshi Kobayashi built 'ap bank', but KURKKU was built in the year 2005, following ap bank. We started off with 5 restaurants in Jingumae, and since then, we had the concept of circulation and sustainability. We did have a reputation back then when we would have fresh food delivered directly from farms every morning, then choosing the menu for the day and cooking it without using electricity – only firewood and charcoal, but the initiative of KURKKU came from Mr. Kobayashi's motivation of wanting to shift the society to a more sustainable living. But having a customer consumes a dish in a restaurant in Tokyo couldn't necessarily achieve the goal of shifting a lifestyle. And that's why it's not the 'city', but in the 'rural area,' we can provide an experience of life in harmony with the animals on the farm, growing food using the energy from the sun and the circulation of nature. Having to consume that food and understanding the connection of nature is the kind of experience we want to provide. It was difficult for us to let our customers understand how in reality food is made – the circulation of how nature provides us with food that eventually becomes the energy of living – in a restaurant in the city very disconnected from nature unless we provide the experience of having people to enter the realm of the extraordinary conventional farm. I feel that places like KURKKU FIELDS speaks to people manifestly that we need to progress towards sustainability, and makes people realise how we

humans are living in circulation within nature's interconnection with not only just food but with energy and water too.

Q2: In my point of view, there are three phases of acknowledgment in climate change. There is the first phase of 'KNOWLEDGE', where people learn about the problem, then comes 'AWARENESS', and finally there's 'ACTION'. Is it correct to understand that the whole concept of what KURKKU FIELDS is doing is prompting the first phase of 'KNOWLEDGE'?

A2: Yes. I believe, and I'm sure Mr. Kobayashi thinks this way too but everything starts with a realisation. For example, tomorrow we have an interview from Nippon TV for a program 'Hirunandesu!', and it will mainly cover things like how tasty our cheese is, freshly harvested vegetables, a good outdoor place to go to during the winter sort of publicity; something rather pop than emphasizing sustainability. And in that way, I think we are like an 'entry model'. But in the near future, although we do already have accommodation facilities called the TINY HOUSE VILLAGE, we are planning to do another project of accommodation called COCOON. This project is a collaboration between Akira Minagawa from the fashion brand 'mina perhonen' and Mr. Kobayashi. Although this accommodation will cost a little, we want to provide a luxurious and relaxing, not like a spa resort but a facility that provides the experience of activities in a sustainable lifestyle in farmlands. This is generally for people who relatively has 'AWARENESS' and are interested in the daily 'ACTION', and we invite them to come to experience total coverage of the sustainable

circulation within nature. Therefore, the message won't spread unless all of us (the staff members) are taking 'ACTION'. And I'm assuming there will be more facilities like KURKKU FIELDS in the future. Following COVID-19, there has been a clear trend with outdoor activities of interaction with nature, such as glamping. But because we are promoting the essential activities of life, we (staff members) have to keep taking 'ACTION'. We want to approach those people who aren't interested or ignorant about climate change too, but we want to facilitate something like a school for the people who comes with interests, teaching proper living in the rural area centring agriculture.

Q3: How do you approach those people who do not know the existence of KURKKU FIELDS?

A3: There are many ways for that. For one we do talk shows and events about sustainability, and dialogues with Mr. Kobayashi. We have a lot of publicity, media coverage recently. Although there are various people with a different quality that comes to watch TV. But apparently, people and facilities that tackle sustainability and SDGs are still very rare. We didn't use to have interviews from 20-30s female magazines like 'hanako (Magazine House)' that introduces classy places to travel. We didn't use to have interviews for Mr. Kobayashi, but since facilities that tackle sections of SDGs are limiting, our information constantly gets out to the media like that. But we do need the local people to know more about us, so for that, we take the hard steady ways too such as putting up posters, accepting school trips, including our facility in a bus tour around Chiba prefecture.

Q4: Is KURKKU FIELDS regularly conscious about the 17 SDGs?

A4: We are conscious, but we don't necessarily act according to the 17 SDGs. We do have principles and projects that match with the SDGs, and since SDGs have become a universal language, we do use the SDGs as a basis for when it is easier to communicate that way.

Q5: How was the land used before KURKKU FIELDS?

A5: KURKKU got introduced to that land in 2009/2010 from a person who helped at ap bank with garbage disposal and waste segregation. We bought the land and started farming from 2010/2011. The former landowner came to the land 40-50 years prior and started a ranch for the cow pasture. That business gradually became inactive, and along the way, there were problems of illegal dumping. There would be industrial wastes being dumped and buried in the land. The land wasn't utilized and living and the former landowner didn't know what to do. Then Mr. Kobayashi got introduced to the land and bought it off their hands.

Q6: How long did it take for the disposal of illegal dumping?

A6: There are areas where the disposals are complete and areas that couldn't be managed. Because those areas would have endless bumpers of cars buried, it couldn't become a vegetable field. So now on those areas we have storehouses of 'Agricultural Production Corporation Tagayasu', and plain field. We didn't know to start with because we were all not necessarily experienced, but when we tried farming on the land, we found buried dumping so we decided to build storehouses in those areas. We replaced the soils of areas that we use

for farming. It's been 10 years since we started, and we are still gradually preparing and planning for the land to become even more nourishing and living.

Q7: How much of the land in KURKKU FIELDS is used for farming?

A7: I think there is about 2-3 hectares within KURKKU FIELDS, and 8-9 hectares outside KURKKU FIELDS. There's a problem of deserted cultivated land around KURKKU FIELD, so we borrow arable land from the local community. Although in reality, most of it is a paddy field, we do communicate with the local community that we are offering to take over the field if anyone is quitting farming. So now the farmland outside KURKKU FIELDS is expanding.

Q8: What is the harvest rate between inside and outside KURKKU FIELDS?

A8: If the inside is 3, the outside would be 9, so we produce about 3 times more with the farms outside KURKKU FIELDS.

Q9: What is the food self-sufficiency rate in KURKKU FIELDS?

A9: In terms of the bakery, we grow wheat and use that for bread but only a fraction of it, so roughly about 95% of the flour we use is bought from elsewhere. So, we aren't self-sufficient there, and the same goes with chiffon cake. Although milk and eggs come from within the farm, we buy flour, sugar and other condiments from the outside. In charcuterie, we catch and handle the wild boar by ourselves, but we buy pork meat from a farmer that we have exchanged contract within Chiba. We generally use local unused recourses such as grounds for poultry feed. The ingredients for the restaurant, excluding the condiments, is about 90% from our farm and field, such as bread, sausages and eggs. But if you break down

all the components, we buy flour, condiments, and feeds for the animals from outside the field.

Q10: When you buy from the outside, do you buy it from within the country?

A10: We generally buy from within the country, except for corn silage for buffalo feed. Corn silage made in Japan is very expensive and it gets a little unrealistic. But in reality, we do need to think about getting a bigger field for pasturage.

Q11: When you purchase domestically, do you purchase from within Chiba prefecture?

A11: The problem with wheat is that the wheat grown in Chiba is very limiting. Buying local is of course ideal, but when you want to bake a certain bread, and want to use a certain flour, it is better to use the flour from Hokkaido. In that terms, buying locally is still under research. But even so, I don't think it will ever be 100% made from local wheat. For the local wheat, a certain type of bread suits better, but for other types of bread, the Hokkaido wheat would be more suitable, and I think this kind of selection will continue on.

Q12: Can you tell me how the organic farm was established?

A12: At first there were people. Yosuke Tomoyasu was originally in ap bank, and he is a son of a farmer. He has already left the team, but he and Masafumi Ito, the current farm chief, became the two central figures of this project. Ito was originally working at the restaurant, kurkku kitchen, for service as a part-time job during his university, and he joined the team when we decided to do farming. Mr. Kobayashi initially had his vision of agriculture, so we gathered the people and then went looking for the land.

Q13: What is kurkku looking for in a team member, and how was the team formed?

A13: Since we are a unique place, and to say broadly, we have a clear message of wanting to shift the society to a more sustainable life, we invited people who can commune with us or who had an interest in it. They had individual interests like wanting to bake bread, grow vegetables, guide through nature and so on. But at the core, we wanted someone who can harmonize with the vision and the mission of what the team including Mr. Kobayashi had. Someone who had both layers of benefits for their own lives, and benefits for KURKKU FIELDS. We find those people through introducing, recruitment agency, and many more. We would meet the candidates and if we think they are suitable, we will collectively recruit people.

Q14: Can you tell me the ratio of male to female staff members in kurkku?

A14: I think it's about 50/50. But we do have a lot of female workers. There may be more male staff in the agriculture sector, but the bakery is all female staff.

Q15: Are there any cases of female staff members working in a senior position?

A15: The board of directors includes me, Mr. Kobayashi and a female staff called Iida. If you exclude Mr. Kobayashi, it would be 50/50. Also, the head of the bakery and chiffon cake are both female staff members too. I think it's relatively 50/50.

Q16: (As for goal 4 of the SDGs, 'Quality Education') what do you keep in mind when educating the staff members?

A16: We are just about to reform this. It might sound horrible, but we have always generally left the staff members with minimal interference, and let them take their own courses. Metaphorically speaking, if it were a band with Mr. Kobayashi's producing style, it is like asking the members to play their part like themselves. We took this producing style for about a year, but it didn't go the same as bands. KURKKU FIELDS has about 11 branches in total, from agriculture, charcuterie, restaurant and so on. When they all play their parts individually, sometimes it doesn't go hand-in-hand. And that's why we are planning to add education to the staff members from now on. But most importantly, because Mr. Kobayashi has a clear reason within himself as to why he built KURKKU FIELDS to begin with, that is our mission too. I believe the most important mission for us is to spread the words and vision that he has alongside what we believe to be the meaning of sustainability. Moreover, for each branch, there are technical skills that needs to be passed on. For example, in the cheese branch, they focus on how to make delicious cheese, for bread branch they focus on how to bake tasty bread, for agriculture, they focus on how to grow vegetables organically. It is almost like craftsmanship. We take this in an old-fashioned apprenticeship system. As an organization, we don't necessarily do training for individual staff members to teach them how to bake bread. A master would be there, and it all comes down to the master to build his own team.

Q17: Is it correct to understand that kurkku is at a stage of implementing education to share the meaning of sustainability?

A17: Yes. We believe it is best for all of us to share a closer vision of what sustainability is.

Q18: Could you tell me the total number of staffs in KURKKU FIELDS, and the number of staffs that lives in the field?

A18: The total number of staffs are about 30. There are 7 dormitories for the workers. And also, there's the Takeshima family (cheesemaker), so there are 8 staffs living in the field.

Q19: What is the daily routine for the staff that lives there?

A19: It depends on the branches. Takeshima who looks after the buffalos, for example, wakes up at 3 A.M., then makes cheese till about 10 A.M., does sales business, and goes to bed around 7 P.M. The field opens for business at 11 A.M. so others come in around 9 A.M. to prepare for things like pizza boards, closes the field and starts cleaning up at around 5 P.M. and finishes around 6-7 P.M. I think the bakers starts their day from around 5-6 A.M. so it really depends on the branches.

Q20: How are the food for staffs provided? Do they cook their own meals using farm produce? Or does the chef from the restaurant do the cooking?

A20: They cook their own meals. But I've heard that some staff members that can't cook gets bento boxes from convenience stores (5 minutes walking distance). We are planning to change the operation of the dormitory since convenience store food aren't good for you. Like having a kitchen garden for the staff workers and telling them they can freely take any produces from there, although they do seem to have been doing that voluntarily.

Q21: Where do you purchase the building materials for KURKKU FIELDS?

A21: I am not sure, but we have Sumitomo Forestry[26] as our housing manufacturer.

Q22: Where does the drinking water in KURKKU FIELDS come from?

A22: It comes from the well dug 20 meters underground and we use electricity to pump it up.

Q23: How do you purify water?

A23: The purification is decided by the health centre. They perform a monitoring inspection of the water, and we get instructed on the amount of water purifying chemicals to put in. We use that purified water as drinking water.

Q24: Can you tell me about the 'rich and diverse ecosystem' in KURKKU FIELDS and the function of the 'Mother Pond'?

A24: So, we use the purified water from the well for cooking, washing dishes, toilets, and others, and wastewater comes out. We put these wastewaters into a septic tank and it comes out clean enough to meet the effluent standard. But there are still organic compounds in the water from the dishwashing and things, so then we drain it through a waterflow of what we call 'Bio Geo Filter', and from there it goes into the biotope, where the organic matters in the water becomes nutrition for the plants that lives near water like the willow tree, shiso leaves, watercress, and so on. We purify the water naturally by making the organic matters in water

[26] According to their website, although the corporation do import building materials, they commit to sustainability management by not emitting hazardous chemical substances during construction, making efforts to not using plastic materials for packaging, exert to reuse and recycle materials, and so on (Sumitomo Forestry, n.d.).

into nutrition for plants. Because we don't have a sewage in the field, everything goes to the 'Mother Pond'. But it's a pond, and water starts to stagnate when there's no flow. As I mentioned earlier that this place used to be a pasturage, there are many substances like cow dungs from that time in the bottom of the lake as sludge. We are trying to do something about that right now. There are many ways our ecosystem is diverse and rich, and one is that, because of the stagnant water, it's habitable for fishes and frogs, which then invites pheasants. From the muddy water, it becomes food for organisms, but I do believe that we should do a little bit more with the muddiness. Just about yesterday, Mr. Kobayashi was in a meeting discussing about this matter. In summary, we already have the circulation of the 'Bio Geo Filter' where the more people gather to this place, the more organic compounds in wastewater will be produced to enrich the plants and diversify the ecosystem, but in the end, we will tackle into the problems of the sludge in the 'Mother Pond'.

Q25: How much electricity can the solar PV panels generate?

A25: It generates 2 MWh (2,000 kWh). Right now, we are selling all the generated electricity to Tokyo. Last year Typhoon Faxai stroked and the field experienced a power outage for a week. The cattle mist spraying requires electricity, so in additional to the livestock problem, the drinking water, as I mentioned earlier, gets pumped up with electricity, so we didn't have water and it was a huge problem. Although we sell all the generated electricity, we are now planning to generate energy for the inside. Right now, it is under construction, and we are aiming to complete the off-grid energy system around February next

year[27] by using 20% of the sold electricity, installing new solar PV panels and Tesla's battery storage system in the field. When the sun is out, we will be able to generate 100% of our own electricity, achieving net-zero. But on consecutive cloudy and rainy days, if we run out of battery in the storage system, we will be buying electricity from Tokyo Electric Power Company[28]. Calculated in total, it will be about 80% self-generating yearly.

Q26: Which company do you sell electricity to?

A26: A company called 'Minna-denryoku' comes in between as an agent, and we sell it to them and other places individually, like Tokyo Electric Power Company.

Q27: Do you use or have an interest in using other renewable energy?

A27: We are a little interested in biomass energy. If I add something, we are trying to make an agreement on disaster management with Kisarazu-shi. It's to support the locals when there's another power outage during a disaster. Because the whole town shuts down, we can provide water and electricity for showers for the local community. We will have food since we are a farm, so we are planning to make this place into a safety zone for the local community during a crisis.

Q28: How did handle the power outage last year when Typhoon Faxai hit?

A28: Not having electricity was critical, and we also had no water so we rented as many electric generators as we possibly could. Especially the cattle would die without cooling them

[27] KURKKU FIELDS is currently running under the electricity 100% bought from Tokyo Electric Power Company (K. Era, personal communication, December 11, 2020).

[28] About 80% of the total electricity from Tokyo Electric Power Company are generated through thermal power plants, and assumption of about 90% of the total electricity emits CO_2 (Tokyo Electric Power Company, n.d.).

down with mists, and the preserved stocks in the freezer like sausages would go bad. We were gathering electric generators, fetching water, collecting gasoline, and so on. It wouldn't be a big deal if only we had electricity. Because there was no shower to use, we let the female staffs go home and asked the male staff to stay, and they would substitute showers by pour water over them outside. Also, 10 million worth of vinyl greenhouse blew away. We cleaned up the wreckage, and the government-funded subsidy for the 70% of the repair cost.

Q29: You have mentioned earlier that you are going to make an agreement on disaster management with Kisarazu-shi, but do you have any other projects collaboration and agreements arranged within Kisarazu-shi?

A29: Of course. For example, we buy and sell organic drinks and others, and this one is not limiting to Kisarazu but there is a group that wants to increase organic farming and we have collaborated with them in ways that we process the produced vegetables from them, create markets, help them with branding, and so on. We also help Kisarazu-shi with the regional redevelopment of the seaside. We are close (in relationship) with the town hall. Now that you mention it, there's been a trend of placing a piano in train stations. It has been shown on TV where people play the piano in the streets. Next week, there's going to be a piano placed in Kisarazu station as well, and Sebastian Masuda, an artist that created an art piece for KURKKU FIELDS, is going to wrap the piano with his art. We need to be loved by the local community too. We would of course want people from all around the world who have the interest in sustainability to come too, but there's no inbound tourism right now, so we want

to be more approachable to the local community. Kisarazu-shi is declaring to become an organic town, and we are constantly looking for ways of contributing to the local community's lifestyle through sectors of sustainability and organic by proactively getting involved in local events and so on.

Q30: Can you tell me more about the involvement of the regional development of the seaside in Kisarazu-shi?

A30: Our farm is on the mountainside of Kisarazu. The population is in fact increasing in Kisarazu, and because of how close it's from Tokyo; there are buses leaving the terminal every five minutes to go to the centre of Tokyo like Shinjuku and Shibuya, and it's only an hour journey. There's a lot of hypermarkets near the bypass like AEON and TSUTAYA, and the population tends to increase near bypasses. Kisarazu was originally a port town but the fishing industry there has almost died out. The station is near the ocean too but there's hardly any people going to the shopping street. But the station is still beautiful and so the town wants to redevelop it. We do get asked to open branching stores but we can't afford it at the moment so we loosely cooperate and do events together, and so on. In terms of the regional redevelopment, we are willing to support with what we can do.

Q31: Do you serve fish in KURKKU FIELDS?

A31: We serve salmon. There's an aquaculture centre of salmonids nearby that is run by Mitsui & Co. called Kazusa Akademia Park. They have enhanced the aquafarming structure, and the salmon's you get there are considered as sustainable seafood. Otherwise, doing seine

fishing together, and seaweed, and there are many local specialties like asari clams and hard clams which we want to use in the future. But even if the visitors don't get to experience everything about Kisarazu at the farm, I think it would be great if they could experience the traditional fishery as well. It will be later for us to get fully involved.

Q32: There has lately been a record-breaking late summer heat and temperature change that can be seen as the cause of global warming, but has that affected the farm crops?

A32: It has affected in ways we choose what to grow. Speaking about heat, since we don't have many roofs within the field, we were concerned about the visitors not being comfortable.

Q33: What kind of crops do you grow on the farm?

A33: The main crops for our 'Agricultural Production Corporation Tagayasu' are root vegetables such as carrots, and daikons (Chinese radishes). We also grow the largest amount of organic petit vert, a hybrid of kale and brussels sprouts, in the Kanto region. These crops and others such as edamame, are made to be sold in markets. On the other hand, we also grow crops that are made only for the restaurant such as tomatoes, aubergines, and lettuces. We also grow herbs too but we don't make enough to be sold outside. To begin with, the agricultural farming project started before KURKKU FIELDS, and the vision for both was different. The agricultural farming project was initially aimed to make a living out of organic vegetables for the workers, having fewer types of crops to increase productivity and getting profit out of it. After establishing KURKKU FIELDS, we made a farm park facility where

many people would come to visit, and so we need to change the state to agriculture. And we are currently at that stage (of changing).

Q34: Has KURKKU ever made charity donations?

A34: We recently made a charitable donation for the Kyushu floods[29] with the sales from selling herb teas. We haven't yet announced this officially, but COVID-19 pandemic has widened the gap of poverty, and the ap bank is going to donate pre-packaged foods to single-parent households. There we will also donate a certain percentage of the sales from the clothing project I was recently involved in. On the basis, KURKKU's vision is to make for a better through business, but from time to time, we do charitable donations as a project base. It is generally for charities in Japan, but next month we will be donating to Mauritius[30] through crowdfunding alongside Itochu Corporation and Ron Herman.

Q35: Which of the 17 Sustainable Development Goals would you say KURKKU FIELDS is especially making an effort to achieve?

A35: I wonder. Goal 12 ('Responsible Consumption and Production') is one of the initiatives of kurkku, Goal 5 ('Gender Equality') is something that's actually happening, and we take action about energy (Goal 7: 'Affordable and Clean Energy'). We definitely consider Goal 8 ('Decent Work and Economic Growth') since we run an organization. Also, we're more or less promoting a lifestyle outside the cities with Mitsui Fudosan, like suburb

[29] The 2020 Kyushu floods was series of record-breaking heavy rain that lasted for about a month in the Kumamoto prefectures and other parts in Kyushu and Chubu region.

[30] The incidence of the oil spill has hugely damaged the coral reef on July 25, 2020 (Khadka, 2020).

development, so we might be involved with Goal 11 (‘Sustainable Cities and Communities’). And definitely Goal 13 (‘Climate Action’).

Q36: What kind of climate action, in particular, does KURKKU take?

A36: Renewable energy is one, and we also try not to use plastics unless it’s absolutely essential like in vacuum packing. People who are relatively interested in climate change are well attuned. So, I feel we shouldn't let customers see us using plastic. We use moulded pulp and paper for takeout containers, and the takeout bags for the bread are paper that are a little bit oiled so that the sauce won’t soak in. Basically, we use paper as much as possible.

Q37: What was the reason for KURKKU FIELDS providing an art sector?

A37: In agriculture, there’s the sun, seeds, soil, water and microorganisms. Humans eat cucumbers and tomatoes, but they are all a gift from nature. We get food provided, so it’s difficult for us humans to understand that circulation. In that terms, we place art in the field because we want our visitors to imagine a lot of things when they enter this extraordinary realm of nature, temporarily leaving their stiffened city life. Things they wouldn’t imagine usually. ‘Circulation’ and ‘organic’ connect everything together to form a one-planet world where humans are definitely a part of the harmony, and that's the overflowing enrichment. You can hardly feel that in the cities, so we want them to imagine it in nature. Imagining is the only way. And Yayoi Kusama’s or any other artists’ art pieces makes people imagine automatically. We place art in the field because we want people to use their imagination that they usually forget to use.

Q38: Lastly, as Totnes has a motto of ‘resilience’, what is the motto for KURKKU FIELDS?

A38: We actually don't have one since Mr. Kobayashi is someone who doesn’t make one-word slogans. But I think the theme of what we are doing is ‘sustainability’ and ‘circulation’. Mr. Kobayashi’s been doing ‘sustainability’ actions and projects since about 2001. I understand why ‘resilience’ is important too from its ways of making sustainability and its attitude, but in general, I think our word would be ‘sustainability’.