

Symposium: Sustainability of Rural Societies in Asia: Possibility of Coexistence and Co-prosperity between Urban and Rural?

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Chair: Dr. Kazuo Ando (Kyoto Univ.)

Presentation

- 1) Population aging and Rural in Thailand, Dr. Keiichiro Oizumi (Asia Univ.)
- 2) Returning to Farms and Urban-to-Farm Migration of Young Eeneration, Dr. Changhoo Chun (Seoul National University, Korea)
- 3) Depopulation and Abandoning Farming Issue in Bhutan Reality of Rural area and GNH in Practice, Dr. Yoshiro Akamatsu (Kyoto Univ.)
- 4) Labour Migration and Sustainable Rural Development in Myanmar, Dr. Shinya Takeda (Kyoto Univ.)
- 5) Common Points of the Issue of Depopulation and Aging in Mountain Villages of Sarawak, Malaysia and Kochi, Dr. Masahito Ichikawa (Kochi Univ.)

Panel Discussion

Record of the Symposium

Dr. Ando Kazuo

Good afternoon ladies and gentlemen. Thank you very much for coming at such an early hour. It is two o'clock now, and we would like to start our symposium entitled "The Sustainability of Asian Villages: Can Cities and Surrounding Areas Co-Exist?"

I am the moderator of today's symposium as well as a presenter. My name is Kazuo Ando and I am from Center for Southeast Asian Area Studies at Kyoto University. Last year, Dr. Takagaki, a member of the Japanese Society for Tropical Agriculture (JSTA), asked me to think about holding a symposium on the population and the rate of people leaving agriculture. I agreed, and thus today we are holding this symposium on this topic.



Our topic is not directly related to the key focus of the JSTA, and so I want to explain why we have chosen this theme. Please take a look at this slide. This chart, by World Bank, shows the number of the people living in agrarian villages around the world. As you can see—or this may be difficult to see—this is Japan and Korea; we have case studies from Korea today and Malaysia, Thailand, Bhutan, and Myanmar.

The World Bank estimates that, while in 1960, 66% of the population lived in agrarian villages, in 2017 this proportion dropped to 45% (after first dropping below 50% in 2007).

In other words, the depopulation of agrarian villages around the world, as you can see, occurred in step with the modernization of life and economic growth, especially in Asian countries, a trend we will be discussing in more depth later today. Here, it is helpful to note that this trend has accelerated since 2000. Moreover, this trend notably includes youth, who have been leaving agrarian villages in increasing numbers. Those of you who are here today are studying tropical agriculture or practicing agriculture in your field. When you go to villages in Asia, you may witness firsthand this phenomenon of peoples leaving their lands, that is, the depopulation of agrarian villages.

I have been working with the topics of depopulation and withdrawal from farming for over 10 years. These issues are, I think, global phenomena and thus they deeply inform and impact global agendas. Accordingly, I think they should be understood in these ways and this seminar situates them as such.

I am making a presentation at JSTA because I have been conducting my studies on this topic in Bhutan. Since the 1960s, Japan has been struggling to tackle depopulation and withdrawal from farming. To be sure, these issues are not easy issues to solve. For one, they are very complex and their nuances vary by region. While this trend does emerge in similar ways across different areas, a deeper look at the phenomenon of people leaving villages—especially those young emigrants who fail to successfully perform agricultural practices—reveals that the formative backdrops and factors that give rise to depopulation in these areas differ depending on the particularities of the region.

I think the best approach tackling such depopulation is one that involves international comparison, collaboration, and co-working. While we must perform analyses instead of sticking to or being confined by our results, we want to use our insight to approach this issue in ways that enable us to enlighten each other.

I have been a member of JSTA for approximately 20 years, and I have given a presentation every year except for a year or two when I was unable to participate. I feel that the issue of depopulation and withdrawal from farming is one that we must tackle at JSTA.

I want to show you the next slide. To be sure, we are not the Japanese Society for Tropical Agricultural Villages but the Tropical Agriculture Society. Nevertheless, I must say that I am unhappy with the fact that the 2030 Agenda for Sustainable Development was adopted at the 2015 UN Summit.

This is the outline of the agenda. Please look at each and every one of them. If I move toward the next page you may note that, while these goals do make some references to agriculture and therefore to food production, they do not refer to farming villages. Of course, agriculture can be detached from agricultural villages because factories can be used to make agricultural produce and so, for our purposes, it might be helpful to simply focus on agriculture. However, if we are to think about depopulation and withdrawal from farming, then we must also take up multi-functionality in agriculture and agricultural villages. We should certainly not avoid taking up these issues because they were not incorporated into Agenda 2030.

While the UN's social development goals (SDGs) do not refer to agricultural and farming villages, they do mention city sustainability—and yet, I do not think cities are as sustainable or continuous as agricultural villages, which have been around far longer. It thus might be beneficial to evaluate the sustainability of agricultural villages and I think that SDGs would do well to do so.

This slide presents some of my thoughts about this relation between the sustainability of agricultural villages and SDGs. I constantly feel that the world is not paying due attention to the natural, civilizational, and historical sustainable harmony created by agrarian villages.

Can we sustainably develop agriculture without the agricultural village? You may think “yes,” but, frankly, I think “no.” I believe that agricultural villages are necessary for sustainable development.

We must rediscover the charm of living in agriculture villages. In order to do this, you have to imagine the world without agricultural villages. What might such a landscape look like? What scenery might define it? These questions activate my inquiry.

In terms of civilization, city civilization, and SDGs, I do not believe that SDGs, in their current configuration, can be detangled from the concept of urban civilization...and yet, we must parse them to create cohabitational relationships between cities and agricultural villages. We need to think about agricultural civilization in terms of history. While this may sound “big picture,” it is necessary to think at this grand scale because the problems are so real and we have not yet been able to find any solutions. The deeper point here is that I believe that if we could take a bird's eye view of the context, then we may be able to find a transformative approach.

I may be speaking too long, and I want to close by recalling that this symposium zooms in on this topic in an Asian context. I would like the presentation to begin with Dr. Oizumi; the other speakers will follow with discussions of their own work. So: Dr. Oizumi, the floor is yours.

Dr. Keiichiro Oizumi

Thank you for your kind introduction. I am very honored to be able to speak on this occasion. I majored in Tropical Agriculture during my graduate school days and thereafter for some 30 years I have been working with a private think tank, the Japan Research Institute Limited.

Over these 30 years, I have studied macroeconomic trends in Asia; however, 15 years ago I also began looking at demographics and economic development as well as the relationship between aging and social security. My research has been set in Japan, China, South Korea, and Thailand.



My research findings were assembled in “Aging in Asia,” which was published in 2007. I have also edited a publication on social research comparing Asian population censuses. Currently, I am interested in South Korea, a model for aging in Asia. Along these lines, I have also published two books: *Demographic Transition and Social Change in Asia* and *Aging and Social Security in Asia*.

However, today, we are going to talk about Thailand. In the past 30 years, Thailand has changed dramatically. One of the major changes is, I believe, the declining birth rate and the low rate of childbirth. We are also looking at the total fertility rate (TFR), that is, the number of children that a woman bears in her lifetime. Since the 1960s, as you see here, the number has remained at 6.

Against the TFRs of all developing countries, Thailand's TFR has historically been very high, but today it is only 1.5—quite similar to Japan's. TFR usually declines as income levels increase. For example, Bangkok's TFR is 0.8—very low and barely different from Tokyo's.

On other hand, we also find that in Thailand the birth rate is declining in low-income agricultural areas. Here, I have color-coded the birthrate for each province in the 1980s, 1990s, and the year 2000.

Back in 1980, when I first made my way to Thailand, the fertility rate was above 3 in most provinces. However, by the year 2000, TFR had dropped below 2 in most provinces. We also see this phenomenon in South Korea and China, and it is well on its way to emerging in Vietnam. Even though the income levels are low, the birth rates are also quite low. Something is causing the birth rate to decline, however, we are unsure of what it may be.

One hypothesis is that it may be due, at least in part, to the country's education-conscious society. Here, it is helpful to note that Thailand's higher education enrollment rate was around 20% in 1997; today, it has risen to approximately 50%. Meanwhile, South Korea's enrollment rate is noticeably high, topping out at 90%.

I talked to a specialist in South Korea a little while ago. They advised that without a university degree, it is difficult to land even a part-time job at a convenience store. Korea's high attachment to education caused its TFR to Korea plummet to under 1 last year. This trend distorts the population pyramid.

Declining birthrates and increasing longevity indicate aging progress. We can measure the speed of aging progress by determining how many years it takes for the aging rate to exceed 7% to 14%. This is called "the doubling period." Japan's doubling period was 24 of 25 years. In contrast, France's was 115 years, Sweden's 85, the United Kingdom's 47 and Germany's 40. Therefore, Japan's aging rate outpaces those of many other countries. Meanwhile, in Asia, most countries' aging ratios are the same as Japan's. For example, South Korea's is 18 years while Thailand's is 20.

It is likely that Thailand's aging ratio will surge by mid-2025. Today, Thailand's baby boomers are in their mid-40s and 50s and in the not-so-distant future, baby boomers will be elderly. So, Thailand will also need to be well-prepared to respond to an aging population.

To touch on Ando-san's site of interest, I would like to note that the degree to which agriculture constitutes Thailand's GDP has been declining substantially (and, as Ando-san's work suggests, this has also been occurring in Japan). Meanwhile, the agricultural sector's labor rate has been declining—however, it remains higher in Thailand than in Japan.

The deeper point here is that if we are to think about the future of the village, then we must pay attention not only to the birthrate and trends in aging but also to the migration happening in the country.

For example, the populations of Tokyo, Osaka, and Nagoya have increased even though Japan's population has declined. This phenomenon is evident beyond Japan in countries such as Thailand.

Here, I would like to (pause for a moment and), point out two issues. First, many people in their mid-40s and above have remained in northeast Thailand, a region with many agricultural villages. While rapid economic growth is happening in Bangkok, such villagers may not find job opportunities in Bangkok. Second, those members of the younger generations in northeast Thailand who are still in school are likely to leave for Bangkok upon reaching a certain level of education.

Next I would talk about labor shortages in Thailand. In 2001, the country's unemployment rate was at 6%; today, it is around 1%.

If you go to Thailand, you will see many Myanmar people working in restaurants and many Cambodians working in factories. But let's talk about agriculture. Many Myanmar people also work in certain rubber forests in Southern Thailand and thus foreign workers are not only needed in Thailand's cities but also in its agricultural villages.

With my remaining time, I would like to talk about digitization.

Those of us in this particular science field are witnessing some big changes with digitization. In order to respond to such changes, Thailand is aiming at what it calls "Thailand 4.0," a construct similar to Japan's "Smart Society 5.0," which seeks to change society with digital technology.

The World Bank issued the new concept of the "digital dividend", a benefit of digitalization." Looking back five years, we have long been talking about the gaps between those who have access to the Internet and those who do not and discussing how we might shrink the gap that we have called the "digital divide."

However, the situation has changed rapidly—today, 70% of people in the world have smartphones in their hands. These devices can help us solve many issues.

For example, digital companies, such as Malaysia's Grab, Indonesia's Go-Jek, and China's Alibaba, are changing many things. For one, they have intensified convenience, solving issues with communication or physical distribution in developing countries.

Such a phenomenon can probably happen with agriculture as well. FAO has a website, "e-agriculture," that presents new ideas for digital technology use. Such work makes clear that digital technology may be the trigger for a new era of agriculture in developing countries, with the smartphone a key tool. For our purposes it is helpful to note that smartphones have become more pervasive in the rest of Asia than in Japan. In sum, twenty-first century digital technology may enable new developments in agricultural villages in developing countries.

Thank you very much for your attention.

Dr. Ando Kazuo

Thank you very much, Dr. Oizumi, for detailing these new developments. We would now like to move on to Dr. Changhoo Chun from Seoul National University.

Dr. Changhoo Chun

"Returning to the farms" refers to "*kinou*" and "urban-to-farm migration" or "*Kison*" refers to migration from urban areas to farms or rural areas; "*Kison*" is not a term commonly used in Japan.

South Korea's land area is roughly 25% of Japan's and its population approximately 40% of Japan's. Meanwhile, South Korea's forest coverage is about the same or somewhat lower than Japan's at 63.45%.



Korea has a unique system of administrative districts. Its capital, Seoul, is a "*tukbyeol si*" (*tokubetsu shi* in Japanese) or "special city" and the entire jurisdiction is a concentrated city area. It is comprised of "*gu*," a "district," which is referred to as "ward" in Japan, and the "*dong*" or "neighborhood."

"*Busan-shi*" is one of six "*gwangyeok si*" ("*kouiki shi*" in Japanese) or "metropolitan cities"—the city area is referred to as *gu* and comprises "*gun*." *Gun* is where the rural county remains, comprised of "*eup*" and "*myeon*" and smaller sub-districts "*ri*." There is also a special self-governing city, "*Sejong tukbyeol jachi si*" ("*tokubetsu jichi shi*" in Japanese). The rural characterizes *eup* and *myeon* as strong and hence the sub-district will be the *ri*. Some regional city areas are comprised of a *dong*.

Comparable to Japan's prefecture is a "*do*" and there are eight *do* including *Gyeonggi-do* which is comprised of "*si*," or cities. As I've already noted, urban areas are referred to as *gu* and subdivided into *dong*. To qualify as a *gu*, a city's population must be over 50,000. Here, it is important to note that some cities still maintain their agricultural functions; these cities are referred to as "composite cities." Composite cities are subdivided into an urban region—that is, a *dong*—and a rural region—that is, a *eup* or a *myeon*.

Jeju-do is recognized as a special self-governing province. Two cities comprise *Jeju-do*, namely, *Jeju-shi* and *Seogwipo-shi*. The law constitutes the population of rural areas or farmland as the sum of all inhabitants of the *eups* and *myeons*.

In South Korea a population census is conducted once every five years; the latest was completed in 2015. In 2015, the nation's rural 5 totaled 9.4 million—an increase of 634,000 from that of 5 years ago. This uptick was the first that Korea had experienced since the 1960s, when industrialization caused the rural population to decline.

This uptick was not due to natural growth—we found that more deaths had occurred than new births. Consequently, it may best be attributed to a social trend, namely, that immigration exceeded emigration.

We also observed an increase in foreigners in the rural population from 2010 to 2015: approximately 255,000 people of foreign ancestry joined the rural population, which tells us that rural economies cannot sustain themselves without foreign immigration. Along these same lines, it may also be useful for our discussion today to note that

approximately 430,000 individuals moved domestically from urban centers to rural centers.

Kinou has contributed to the reactivation of the rural areas. This chart, detailing household demographics between 1990 and 2016, details this urban to rural migration trend. In the early 1990s, few people moved from urban centers to rural centers.

Thereafter, two large surges occurred, the first in 1997 with the Asian currency crisis and the second 10 years later, in 2007, with the global financial crisis. This suggests that the movement of people in the rural and urban areas of South Korea is driven by changes in the economic situation. In 2010, the increase began to level off.

We broke down some of the factors driving these changes. The first trend appears with the first boom that occurred, as I just mentioned, around 1997 with the Asian financial currency crisis. In the urban centers, generations of residents were overcome by a sense of anxiety and a desire for a temporary escape. At that time both the national and local governments were not equipped with support mechanisms and thus migrants to rural areas could not settle in well. Once the economy in the urban regions recovered, these migrants returned once again to city centers.

The second surge occurred in 2007 around the global financial crisis and was led by the so-called baby boomers born between 1955 and 1963. Quite unlike earlier generations, baby boomers wanted to escape from an intensely competitive urban life; they had a desire to enjoy life at a leisurely pace and they had the income to make it happen. While they moved en masse to rural centers, many did not engage in agriculture, unlike the Silent Generation. Even those who did engage in agriculture only began to do so after maybe 5 years of living in a rural center, constructing plans before entering agriculture.

Moreover, many of the baby boomers who moved to rural areas had a wealth of work experience in city centers that they applied to their agricultural plans. We found that many were not full-time but part-time farmers. We also found that 46% of those who took up farming went into vegetable production and 27% into pomology, indicating that a high proportion were dedicated to horticulture. This was a period of time in which the governments were equipped with measures to support those who either took up farming or made their way to rural centers.

In the 2010s, many people began to find ecological value in rural life. We also found that one of the characteristics of *kison* was that a younger generation was more conspicuous within the rural centers. These youths were trendy and innovative. They were able to pursue businesses that really matched the needs of consumers. They were also able to apply a diverse range of experience and knowhow that intensified agribusiness. They were interested not just in their own businesses, but also in very actively participating in joint activities in the rural region. By this time, local governments were well-equipped with an institutional framework to provide assistance and support, which was conducive to new migrants settling down in rural regions.

[Table 1] details the number of *kison* and *kinou* households between 2013 and 2017. In 2017, 346,759 households—or 516,817 people—moved from urban to rural centers and from urban centers to farms. This was the first time more than 500,000 people migrated from urban centers in one year.

The second and third rows list the numbers of people who have moved from urban to rural areas and urban areas to farms, respectively. Here, we might note that the only 3.6% of all urban emigrants made their way into agriculture. However, this 3.6% of *kinou* households comprised 53.1% of those who began agricultural businesses that year. This tells us that those who picked up farming or who returned to rural areas from urban centers really helped to activate rural economies.

Table 1. Urban-to-rural and urban-to-farm household migration

	2013	2014	2015	2016	2017
Total (people)	291,040 (422,770)	310,115 (457,511)	329,368 (486,638)	335,383 (496,048)	346,759 (516,817)
Urban-to-rural migrants (people)	280,838 (405,452)	299,357 (439,535)	317,409 (466,778)	322,508 (475,489)	334,129 (497,187)
Returning to farms (people)	10,202 (17,318)	10,758 (17,976)	11,959 (19,860)	12,875 (20,559)	12,630 (19,630)

In Korea, measures to assist relocation to areas of farming are provided by law; the government promotes and assists with returns to farming and fisheries. Such policy support is designed with three stages in mind that are rooted in the level of return to the farm and to rural areas. Along these lines, the first stage is that in which interest is expressed and information and education offered. The next stage is the execution stage. In this stage, various opportunities to experience rural life are provided. Meanwhile, several policies exist to help people settle in; the third stage is rooted in this settlement phase and is characterized by financial support and technical assistance. Notably, in the first stage, the interest stage, the Agricultural Ministry plays an important role. The Center for the return to farming and relocation, located in Seoul, was established in 2014. A consultation service is available both offline and online, and information is also provided on various policies as well as measures. Aligning the level and the products, it also provides various educational courses on farming technology, processing, distribution, and life on the farm.

An annual exhibition on relocation and farming is held in Seoul. Now, from the interest phase to the execution phase those who are interested before they actually fiscally make their way to rural areas are given an opportunity to experience life on the farm. There are 170 locations of “the house for urban-rural migrants” nationwide where potential migrants can stay for 6 to 12 months at rent so low that it might as well be free. This gives them the opportunity to experience life on farmland.

Another policy allows people to stay at one of eight “support centers for settlement and agriculture start-up” before actually going back to rural areas. Fifty to one hundred people are grouped to live in the center as individuals or households and they stay there for 10 months to experience life in an agricultural village. Here, they study and learn (in part by participating in hands-on activities) how to practice agriculture.

The settlement stage is facilitated by financial and technical supports. While the government and agricultural agencies may play a big role in the previous stages, in the

settlement stage, the municipality's role becomes more important. Many local support centers for urban to farm migration and returning to the farm also provide consultation services and opportunities for migrants to mingle with residents.

[Table 2] shows the *kison* and *kinou* of the younger generation from 2013 to 2017. If the primary members of the household are under 39 years of age, then the household is situated as “young.”

In 2017, young households comprise 43.9% of the total urban to farm migrant population but only 10.5% of the population that returns to the farm.

Out of the total urban to farm migrant population, young households account for 51%. The average size of young households is 3.6 people. In other words, when young people make their way to villages, they do so most frequently not as individuals but as households. Meanwhile, those urban-to-rural migrants in their 50s and 60s are often individuals—for example, a father now on his own, his children still in the city—or small families—for example, a couple without children.

Accordingly, the average size of households who return to the farm is only 1.55 people. With 42.9% of the average village population comprised of people under 39 years of age, it is clear that rural immigrants play a huge role in rural communities.

Table 2. Young household urban-to-rural and return to farm migration (the numbers in parentheses refer to the percentage of younger generation households).

	2013	2014	2015	2016	2017
Urban-to-rural migrants (%)	129,879 (46.2%)	129,913 (43.4%)	140,029 (44.1%)	143,594 (44.5%)	146,927 (43.9%)
Returning to farms (%)	1,164 (11.4%)	1,110 (10.3%)	1,150 (9.6%)	1,340 (10.4%)	1,325 (10.5%)

As mentioned before, the young generation is very attached to ecological value. Notably, living standards in agricultural areas have improved in the last 10 years, especially in *eup* or the core regions of agricultural villages, which now boast better medical and educational infrastructure.

Young generations also anticipate a bright future for agriculture characterized by good profits, co-operative organizations, and social enterprises and moreover, youth are starting to situate agriculture as “cool” industry. Also, there are increased numbers of cooperative associations or social enterprises in the area, which actually creates involve those who are not directly involved in agriculture but who are in living in an agricultural area. However, the income factor is certainly the biggest: in 2015, the average income of young agricultural households was ₩95.4 million, while the average income of young households working in cities was ₩53.2 million. However, as age increases this urban-rural income trend reverses—older people living in cities have often acquired high titles

in successful companies that allow them to earn more than agricultural households of the same age.

Agricultural agencies use their homepages for public relations. For example, one notable agency profiles one hundred young farmers. By clicking on their profiles you can learn more about who they are—their experience and stories—in a 90 second on YouTube video. Meanwhile, governments also perform PR in various ways such as the “I am a farmer” series—a very straightforward example—as well as webtoons and e-comics. There are also many popular TV programs featuring people living self-sufficient and organic lives in village such as “*Samshiseki*,” one of five popular Korean series on life in an agricultural or fishery village. Another TV program is “Coffee Friends,” a show with very popular actors and actresses about taking care of a citrus farm and running a café in Jeju Island.

Currently, many young people in cities are having a hard time finding a job; this might compel them to move to a village and begin their own business. To be sure, this trend is now on the rise. Currently, education and loan programs exist that encourage youth to migrate to villages. For example, young households qualify for a maximum general loan of ₩300 million and a housing loan of ₩75 million won at very attractive rates. Land Bank prioritizes the allocation of land to young urban-to-farm migrants and support also exists for the R&D expenses of these migrants.

We need to treat youth returning to farms as successors of agriculture by implementing various measures, especially during the 2 to 3 year post-migration period we call “Death Valley,” a period during which they are likely to have a hard time, which might be lessened by support programs tailored to individual needs. If they can survive Death Valley then they should be able to survive after all and thus policy needs to develop to focus on getting them through this rough period of transition: briefly, we need an integrated strategy that combines returning to the farm/ farm returning migration and enriched infrastructure for living in agrarian villages.

Dr. Ando Kazuo

Thank you very much for the very lively and also encouraging presentation. I would like to hand over the stage to Dr. Akamatsu who will speak about the circumstances in Bhutan.

Dr. Yoshio Akamatsu

I have come from Kyoto University's Center for Southeast Asian Studies. My name is Yoshio Akamatsu. Dr. Chun has given us a very lively and also very encouraging presentation. Now it is my turn, and I would like to speak about Bhutan.

I am sure that not many of you know Bhutan. I'm sure you have heard the name. When you think of Bhutan, you may think about the country of happiness. I would certainly talk about something that is encouraging. I would also like to, however, mention that depopulation is becoming an acute problem in Bhutan, that is, in “the country of happiness.”



I have conducted a survey and I would like to share my findings with you. As for the content, I would like to talk about modernization. I would like to provide an overview and also discuss the issues of modernization that have become acute. First, it is important to note that we found an outflow of people from rural areas and, moreover, that we are now uncovering the issue of abandoned farmland. I would like to associate these wagers with data to indicate how Bhutan is changing dramatically.

In 2016, I conducted a survey of fieldwork in Eastern Bhutan that I would like to talk about. More recently, last month I went to Bhutan and witnessed some changes that I would also like to share with you.

During the 1950s and 1960s, triggered by an uprising in Tibet and issues regarding Indo-Pakistani borderline, Bhutan had an isolation policy, however, it opened it up and pursued modernization in 1961. The first 5-year plan was then put together, based on which the nation began building infrastructure.

First of all, Bhutan built arterial roads that connected the East and West and that also ran from the South to the North through India. Moreover, the nation also acquired property and land. Of course, it has also worked on dam construction and from this construction was able to generate electricity, which was then sold to India to earn cash. The nation ruled out tourism activities in the 1990s, especially in 1999.

Bhutan launched its first television broadcast and began to place more emphasis on the Internet and communications technology. Over the past 50 years, Bhutan's GDP has also grown. In 1961, the nation's nominal GDP was \$51 per capita; 40 years later, it increased ten-fold. Today, it has increased to fifty times its 1961 level. The deeper point here is that these GDP figures reveal that Bhutan has been enjoying substantial growth. Although GDP remains at a relatively low level today, it is still growing.

What are the achievements of this trend? Notably, today electrification rate in Bhutan is 95%, and this electricity provides lighting and cooking energy. While residents continue to use wood, 95% of homes now use electric cooking utensils. While residents can enjoy purified water, 98% of the nation's tap water is drinkable.

Moreover, many roads are now paved—although not all—with over 90% of roads within a thirty-minute walk of each resident are now paved, enabling more car travel. The nation is now also home to Basic Health Units (BHUs) or clinics as well as flushing toilets, which tells us that public health has been elevated.

So, on a national level, infrastructure has been laid, but on the other hand when you look at the rural areas there are still substantial problems, which Dr. Chopel from Bhutan National University spoke about in the morning session in his discussion of the outflow of people from rural areas to urban centers and fallow land.

During the last 10 years, these have become serious problems. In 2016, on the country's National Day, the current and fifth king delivered a speech in which he talked about the large proportions of fallow land and the increasing numbers of people flowing out from rural centers, which have led to vacant homes and growing and massive amounts of abandoned fallow land nationwide.

Of course, the situation is very similar in Japan, except that when youth in Bhutan make their way to city centers, they are at risk of unemployment. So, even though youth

have made their ways to towns and cities, as he has mentioned, they are likely to encounter unemployment and fall into despair.

I would now like to look at the census. To give you some rough idea of what has been happening, 2005 was the first year that Bhutan conducted a census. As part of the survey, residents were asked if they moved after their birth. Thirty-four percent of residents responded that they had migrated from their birthplace.

In 2017, 40% of respondents reported that they had moved from their birthplace. In 2017, 12.7% of respondents cited employment as the primary reason for their migration; in 2005, only 8.4% of residents gave this response. Majority of them, 17.8% in 2017 responded as “family move,” meaning that parents have relocated to an urban center and their children have come along.

This is represented in this map. This is the net migration rate. Blue indicates inflows and orange indicates population loss or outflows. The darker the color the most intense the outflow. Major trends are evident in Thimphu, the capitol, and Paro, home to the only international airport in Bhutan. In these regions in the West, we find high population concentration. However, in the East, which is mostly orange, most provinces are experiencing population outflows. People are moving westward, and this trend is especially acute in the province of Trashigang: 31% of the province’s population has made its way to Thimphu, Paro, and Samdrup Jongkhar—the latter a core city on the boundary with India, where industry yield is very, very active.

With outflow populations nationwide, the amount of abandoned farmland is increasing. In 2017, approximately 16.7% of fallow land was left uncultivated or abandoned. In Bhutan, a leasing system exists, although this accounts for only 3.5% of all cultivated land. This tells us that in agricultural regions leasing has now deteriorated and, moreover, that population outflows have led to idle or abandoned land, especially in eastern areas—across these two or three provinces, the abandoned fallow rate has stopped at 30%.

Turning now to eastern Bhutan, I would like to provide some detailed information about a certain village, Phongmey from a study conducted in December 2016. During this period, Phongmey had 660 households and 126 homes were left vacant. Of course, some people still remaining in the village, however, 43.4% the family members of those who remain have left the village, especially, as this graph indicates, youth. More specifically, this graph details migration rates by age, with the blue indicating the Asian region. We can note that large numbers of youth between 20 and 29 years of age have departed from villages.

Abandoned fallow land accounts for 38% of the nation’s total land, comprised of 30% forest, 12.8% wetland, and almost 60% dry land. Of the dry land, farmland has been left abandoned. Down below, we looked at the rates of abandoned wetland and dry land—one of the most acute issues in this context is the labor shortage, which is substantiated by the earlier observation that youths have left their homes and are therefore unable to work the harvesting season.

Another factor has become apparent over the last 3 to 4 years. The large outflows of youth are aging the populations in these regions; aging-related health problems have thus become inhibitors, leaving many with little choice but to abandon any farmland to which they are unable to tend.

The government is aware of these issues. Over the past 15 years or so, they have been concerned about depopulation and abandoned farmland. In 2006, a detailed report was put together on rural-to-urban migration and the census conducted to try to uncover the drivers of abandoned farmland.

We must recognize what has been done on the government side: been infrastructure developments, the introduction of high yielding and cash crops, and mechanization—foundational approaches to optimizing agriculture.

Bhutan has been importing a substantial amount of cheap crops from India. Recently, we found that the nation's farmland is being seriously ravaged by, boars, deer, and monkeys—a phenomenon that is also happening in Japan, although to a lesser degree. Moreover, for our purposes it is also helpful to note that education and healthcare is free in Bhutan. However, the nation's use of electricity is and increasingly use of gas yield large expenditures.

With the nation's urban centers developing, the gaps between urban and rural develop are widening. As a result, many villagers are beginning to question the value of village life; its purpose has become blurred. We do not know. It is no longer clear.

I have now talked about what is happening in the nation's villages. Now I would like to just touch upon Gross National Happiness (GNH). I am sure you have heard about this. GNH is basically a development philosophy upheld by Bhutan's national government. GNH measures "the quality of a country in holistic way and believes that the beneficial development of human society takes place when material and spiritual development occurs side by side to complement and reinforce each other".

Mental and spiritual development must occur side-by-side for a society to be beneficial. In 1972, this basic conception came up in the time of the fourth king. By 1998, the four pillars of GNH emerged, namely: the balance of 1) social and 2) economic development, 3) the enhancement of culture, and 4) environmental protection. In 2006, the GNH index came into being in Bhutan with research that conducted thereafter and, in 2007, the establishment of the GNH Commission for Policy Screening, which screened each and every government policy to assess whether it would cultivate GNH.

So what are the key policies and how is the GNH reflected in them? While the answers to these questions remain major challenges, we might briefly note that Bhutan emphasizes infrastructure, although many Bhutanese question what GNH is all about. Finally, I want to note that GNH-related activities have become more visible of late, as you can see here.

For example, some social organizations conducive to GNH have emerged, with the universities launching several activities along these lines. Community-based ecotourism and organic farming or skill training are part of this picture along with activities geared to reassessing village life to reevaluate and rediscover the value of village life for GNH.

In the past, Bhutan has emphasized on the economic or materialistic side of GNH with its focus on infrastructure development, however, in recent years the emphasis has changed to cultivating culture, tradition, and natural resources local communities, a trend affirmed by many participants.

Villagers might thus do well to question what they can do for their village. Unfortunately, today we Bhutan is experiencing a brain drain, with many residents emigrating to

overseas destinations, especially Australia. Meanwhile, university institutions report that their human resources have been lost to other countries such as Australia. In response, in their work to pursue GNH, they are trying to find ways by which to maintain their human resources and, along these lines, to engage the youth in internal development. Thank you very much for your attention.

Dr. Ando Kazuo

The next speaker is Dr. Takeda, who will discuss Myanmar.

Dr. Shinya Takeda

Thank you for the introduction. I am from the Graduate School of Asian and African Area Studies at Kyoto University. Usually we conduct forest research and out of that work I have picked up some experience with Myanmar.

Back in 2011, Myanmar realized civilian government and, in 2016, democratization. The US government consequently lifted its economic sanctions on Myanmar and, as a result, they started Foreign Direct Investment (FDI). However, domestically they still have a very limited labor market, forcing people in Myanmar to find opportunities outside their domestic market.



Shown here is the amount of remittance from workers abroad to Myanmar, especially Thailand—the biggest source of remitters. Their ventures in oil are yielding economic growth and the thus too opportunities for foreign workers. Moreover, Thailand's high wage rates make it a magnet for immigration. Such inflow is also driven by the fact that mobile phones allow people to connect to the Internet and thus get information that they otherwise would not. With Myanmar and Thailand sharing long land borders, it is easy for Myanmar residents to go to Thailand to work.

Seasonal workers move from Myanmar to Thailand. I have sampled five villages to give you a sense of this phenomenon. The first village is in Chin state. This is a village of slash and burn farming, facilitated by the prevalence of *Melocanna*, a genus of bamboo, in the region—the village has a bamboo forest and the bamboo blooms and fructifies. However, the slash and burn farms are at risk of collapse due to vermin damage: after the big fruit of the *Melocanna* flowers, it is eaten by rats and mice. In addition to this agricultural damage, the village also suffers subsequent vermin infestations.

In March 2008, the villagers had to evacuate to Mizoram, a state in India, because the vermin damage caused a food shortage.

The chart here indicates the situation of slash and burn agriculture and the blooming of *Melocanna*. Here are the household figures and acreages of slash and burn agriculture in the region between 2003 and 2012. Over this period of just under 10 years, the number of households in the village dropped from sixty to thirty. Paddy fields and their products were the initial cause of decline in slash and burn, but the vermin damage to the agriculture ultimately caused it to drop all of a sudden. This sums up the experience of this village.

In 2013, 22% of villagers, especially adult males, migrated to work, mainly to Malaysia, other cities in Myanmar, the US, and India. Remittances from seasonal workers accounted for 32% of household income in this village.

The second village is in Tanintharyi and is home to Buddhist monks who developed the mangrove forest to create paddy fields, orchards, and rubber plantations on the slope of the hill. However, the circle levee in the village collapsed in 2003. After the incident, villagers are no longer able to continue cultivating paddy fields. In 2004, seasonal worker migration to Thailand surged, accounting for 44% of the village population.

Currently, 21% of the total population still remains in Thailand and works in Thailand and 70% of household revenue is the share of remittance from Thailand. While the abandoned paddy fields might make a good shrimp pond, the Buddhists do not agree.

Most of the people who went to Thailand came back after they reached 40 years of age and began different agricultural practices in this village. Also a natural gas pipeline, Yadana, was constructed just next to this village by Total, a French company and the Thai National Oil Company.

In addition, a community development project is now also up and running in this village. More specifically, the project aims to enable villagers to participate in Japan's technical internship training program. Moreover, the tapping of the rubber in Thailand is done by people who move from Myanmar to Thailand. Thus, there are many unique reasons why so many people are leaving the nation to work overseas.

The third village is Mandalay, a dry zone in a dry area in which the amount of precipitation changes from one year to another. The village used to grow sesame, cashew nuts, and peanuts but has since also become involved in making bamboo net walls, which is now their major industry.

Interestingly, when roads and bridges are constructed in Myanmar such bamboo net walls are used for framing, and thus the village is now very busy. While there are many peasant workers in Myanmar without land, they do have the option to participate, with this industry, in agricultural work—that is, to become a manufacturer of bamboo walls—and this is the uniqueness of this village.

This village is now also enjoying the introduction of modern agriculture technology, with such agricultural machines reducing the amount of labor power required. The timing of this introduction coincided with the beginning of the large demand for bamboo walls. With bamboo wall manufacturing absorbing all the peasants and the land-owning farmers no longer having enough farmland, the agricultural machines helped to solve labor shortages. Thus, today, agricultural activities are generating income for smaller farms, helping to support their livelihood.

The fourth example is a village in Shan state beside Inle Lake. Inhabitants of this village are famous for growing tomatoes in floating gardens, and this what makes it a key tourist destination.

In 1996, "Visit Myanmar Year" set by the government triggered tourism in this area. After 2011, when the country was opened, they saw a surge in tourists. Notably, the villagers use boats to guide tourists. The deeper point here is that their economy is shifting from agriculture to tourism. More specifically, only 10% revenue now emerges from

agriculture. This is quite clear in the differences between these 2004 and 2017 satellite images: in 2004, you can see very clean floating gardens next to each other, but in the same area in 2017 you can see they are too busy with tourism and therefore they abandoned floating gardening. While they can make money if they grow, they don't have enough time to take care of these floating gardens.

Next is the last village, which is in Bago Mountains and is a slash and burn village. Since the British colonial era, this village has been doing slash and burn agriculture. This village is different from the others in that, so far, they have sent only two young women to work overseas in Singapore. In other words, most villagers remain in the village and to practice agriculture. I asked the village master why they were not going overseas and he replied that they had no place to go and that the villagers could support themselves as is. So, I visited five villages and those are the cases that I presented.

The first Chin village, which practiced slash and burn agriculture, collapsed because of the bamboo flooring and the vermin damage and therefore they started sending seasonal workers overseas. The second village collapsed because almost all households relocated to Thailand and abandoned the paddy fields.

So slash and burn and paddy-based agricultural practices were no longer making the villages any money. Of course it's natural that residents might relocate to a make living. So if villagers were able to stay in the village and make a living then they stayed, but to do so they had to practice nonagricultural activities—in addition to stable agricultural activities—to supplement their income.

We also discussed bamboo wall-making in the surge village. These villagers did not have to leave their village to make money, but were able to make bamboo walls to supplement their income. The fourth village earned money from tourism and lost interest in agriculture. The last village was in the mountains, and has not yet undergone any big changes. So, while in the other three villages, becoming a seasonal worker was not really that important, some villagers opted to go abroad to pursue a better life.

SDGs seek to address major items like poverty and famine as well as growth and employment. In terms of poverty eradication, there is a reference to double the agricultural productivity and income of small-scale food producers, especially of those who are women, indigenous people, family farmers, grazing people, and fisheries, through secure and equal access to land, other productive resource and inputs, knowledge, financial services, markets, and opportunities for adding value and working in sectors other than farming. I think productivity and income enhancements for small-scale farmers will be important.

While the yield per unit of land is very low in Myanmar, we might approach this fact as a driver for doubling the yield per unit of land. So that's one opportunity for Myanmar. At the same time, however, land ownership in the nation is still lagging behind that in other nations. So, land grabbing or land development might also be on the horizon. In these conditions, it is very important that Myanmar ascertain equal access to land.

Lastly, to conclude I would like to note that, in surveying these nuances of the nation's villages, it is not surprising that younger people move to other countries to work. However, industrialization may happen in Myanmar, and deagrarianization is not out of the realm of possibility. While populations may decline as a result of the demand for seasonal workers in neighboring countries, non-agrarian activities can also play a bigger

role in income for families and, in this way, agrarian villages may be sustained. That is all I wanted to mention. Thank you very much.

Dr. Ando Kazuo

I would like to invite our last report. At Kochi University, there is a Faculty of Regional Collaboration and several years have already passed since its inception. Dr. Ichikawa will now tap into his own experiences in Japan and Malaysia and touch upon what the Faculty of Regional Collaboration is doing. The floor is yours.

Dr. Masahiro Ichikawa

I am Dr. Ichikawa from the Faculty of Regional Collaboration at Kochi University, which was installed 4 years ago. I joined Kochi University 10 years ago. I was first with the Agriculture Department and then, 4 years ago, I relocated to the Faculty of Regional Collaboration

Before Kochi University I was at Sarawak in Malaysia where my work was dedicated to research. Today, I will talk about Malaysia and Kochi Prefecture and I would like to discuss a comparative case study.

The theme of this symposium is depopulation and aging in rural communities, which is a problem not just in Japan but throughout Southeast Asia. While the phenomena of depopulation and aging are observed in Southeast Asia, the details reveal many differences across the region.



In Sarawak and Japan, we find that these phenomena have been observed as occurring in step with string of developments. In addition to discussing this in more detail, I would also like to reflect back on my four years of activities at the Faculty of Regional Collaboration about which Dr. Ando has asked me to speak. So, on that, I will offer some comments. Kochi is here and Sarawak down below here on this map.

I will first talk about Kochi Prefecture. Kochi is in Shikoku and this is where the university is and this triangular shape is the town of Otoyō. The population is about 3600. The aging ratio is 57%, one of the highest in the nation. Population decline has occurred. There were about 20,000 people living here in the 1960s and more in the early years.

Notably, the town's aging ratio has increased. There are many classes in the elementary schools. Sports festivals are a really big deal, as are festivals at the shrine; people gather in homes and hold a great feast. This tradition continues today, but with far fewer people. Until this 1960s, they used charcoal burners and, until the 1980s, sericulture was practiced. The region has also experienced deforestation and then, later, forestation.

Oriental paper bush has been grown. This is an area where paper-making is a tradition. These were industries that were relevant back then. Otoyō, the triangular-shaped town I showed you, is constituted by 85 villages. In 1991, the aging ratio climbed to 50%. Those that are at 50% are highlighted in red.

However, in 1991, there were only a few patches of villages in which the aging ratio increased above 50%. Looking at the results from 2014, you'll find that the region is mostly red, although the center region and the areas along the national highways are

still not yet there. However, most other regions have already achieved aging ratio of about 50%.

Here is the population pyramid in 2015: as it appears, the biggest number of the female population is the group from 80 to 84 years old. The greatest proportion of the male population is from 65 to 69 years old. But there are also many male populations in the 80 to 84 range.

This is how the landscape appears in the valley. There were not that many valleys and therefore once you climb the slopes, on the hills there are settlements and also terraced farms. But they also planted Japanese cedar and cypress forests. While you can see terraces, there is quite an abundance of abandoned fallow land.

On the base, there is a 1948 aerial photo. When it is overlapped in the past you find this is a white situated area where there are settlements as well as farmland, which is quite large in terms of land mass. Then we overlapped the current residential area as well as the farmland. This is how it appears. The other regions have been transferred to artificial forest. You'll find that the farmland as well as settlements have shrunk in space.

Just looking at the landscape provides a sense of the challenges. As you saw earlier in the Bhutan case, we find that abandoned fallow land is increasing and that the forestry business is no longer profitable. So, people withdraw from the business. Moreover, religious ceremonies and community functions have declined. Some have become extinct or are on the verge of extinction. Ando-san talked about the urban culture, diverse lifestyles, and how the mountainous villages are about to disappear—this is a major challenge.

I'd like to turn your attention to Sarawak, which is located in Malaysia on the island of Borneo. To the north lies Sarawak. I will talk about the subjects of the survey conducted in the eastern part of the Sarawak. The star indicates Miri, a local rural city. From the upstream we find that Miri has undergone a substantial relation shift and that is basically what I will talk about.

In terms of Southeast Asia overall, in the continental side as well as Philippines, Japan, and Indonesia, the gray circle indicates large cities. You'll note that Borneo is sparsely populated and there are few cities. I talked about Miri, the local city. Miri's population is only 200,000 or 300,000 people. In Sarawak, there are about four cities with that size. This is how you'll be able to look at Miri compared to other areas in Southeast Asia.

This aerial photograph details Miri's development from the 1960s. In the 1980s the red area, which is the urban area, began to expand in size. In 1910, oil was discovered. Until that time Miri was a fishing village, but thereafter it grew.

Here we see the population in the cities as well as in the villages. In the 1990s, a reverse trend occurred and the population in the cities shot up, especially in the capitol. Since the 1990s, the population in the mid-upper basin has fallen and we can thus observe the social trend of population outflow from Miri.

I also need to talk about another backdrop. This is about land usage. We found that oil palm plantations have increased. The pink shaded area represents the expansion of oil palm plantations. Earlier on, oil palm plantations spread around the coastal areas before expanding to the mid-basin and upper basin. So, that is what we see here.

We also talked about the upper basin; this is the landscape in which logging occurred in the 1980s and early 1990s, with a network of logging roads and camps. We found that the industry has peaked.

We talked earlier about how indigenous people are engaged in oil palm cultivation. However, we sometimes found that they had to stop farming where the conditions are unfavorable. They are also facing the threat of having to stop logging where readily accessible roads are not available. Here, it is helpful to note that the indigenous people have created a farmland which is about 1 acre in size.

In my field work, I found many vacant homes and units. Residents of the basin reside in longhouses divided into rooms for each family unit. In midday, the houses are very quiet (as in the pictures) without anybody. You will always see that everyone is out of the home for work. If you wait until night descends, you will find that it is still quiet. If you look inside a room from a window, you will find that things are not in order. Finally, you will find that they often only return these homes once a year or every 2 to 3 years for Christmas if residents have converted to Christianity. and the homes are otherwise vacant. In Village A, 70% of the longhouses are vacant in this way.

When you listen to the locals, you will find that this village was a center of the village. However, Christian missionaries built an elementary school in the village in the 1950s, and the villagers were educated and, after receiving education, young villagers left the region; some even pursued a master's or a doctoral degree. Once these youths left they never came back. While logging roads were installed, the village remained too distant from the roads and, therefore, by the 1980s, villagers began to emigrate one-by-one, mostly to where their children were living, as the children would move their parents to where they were living. Over time, the village became increasingly vacant.

We found that vacancy was high in the upper basin. Blue indicates higher vacancies or absences from the homes. We talked about Village A where the absence rate is 70%. We also visited other areas with similarly high absence rates. Seventy percent, pretty high. However, given the circumstances, 10%–30% vacancy is normal in any longhouse. Village M also looks like this.

Town M is located in the upper basin. Its location is rather remote from the logging roads and therefore access to transport was very poor. Because road infrastructure was never installed, people left the village. So that is what has happened. I spoke to a man there who said that no young people have lived there for five years. At that time, the logging business had almost disappeared. Those with families could no longer support themselves, and thus they left Miri. This man reported that he was able to stay and cultivate rice because he was a bachelor.

Now we turn to Village S, which is close by. Here, we observe an almost 60% absence rate. This village is different from the earlier village. A road was built nearby and people gathered around the roads and built longhouses. Because the logging roads led them to Miri, people used the roads to depart from the village and therefore these homes are approximately 50% vacant. The deeper point is that Village S is a case in which roads enabled people to both stay and leave their communities.

In this region, a rumor has been circulating that a large dam may be constructed. This area where the village locates has been identified to be submerged in water, and this

has been leading to the intentional construction of longhouses that would enable the villagers to pursue an indemnification guarantee. This situation is a little bit unlike Japan in that there plans exist for plantation development or damn construction and thus there is the potential for opportunities to emerge in the area.

More than 80% of Village D is vacant. This village is in a unique situation: the villagers are not leaving for Miri but instead going to an area accessible by road with an oil palm plantation. Therefore, the villagers of Village D are emigrating to a nearby village to participate in palm tree agriculture. While style of village-to-village migration is infrequent, this example makes evident that it does occur.

So, this is a simple summary. From the middle of the river to upstream from the river, good road conditions and the creation of palm plantations can enable people to make a living.

Thus, these villagers may stay in their new village or, if they are able to cultivate palm closer to their original home, they might well be able to return. However, if the topology is not good and if there is no road exists, then the creation of palm plantation will not be possible. Moreover, in situations in which villages are not able to move to nearby villages with such plantations, they are likely to migrate to cities.

In some cases, slash-and-burn agriculture is stopped in upstream areas. If the forest then becomes unattended, a secondary forest may occur and the landscape may accordingly change. This is a village near Miri. Only about 1% of the village's farms are vacant. The villagers have cars and commute to Miri or to oil palm plantations. Along these lines, the villagers have a truck-type vehicle that enables them to work in oil plantations.

Let me summarize situation in Sarawak and in Japan. From the midstream to upstream area of Sarawak, tree logging occurred during the 1980s and 1990s, enabling indigenous people to earn revenue to purchase cars or to migrate to cities. Trees were sold and exported to Japan to support the nation's construction bubble. Japanese cars were also sold and ODA was used to create forestry and logging roads in Sarawak. On the other hand, in Japan, such village products were not sustainable and therefore people started to migrate into large cities.

In Sarawak, tree logging served as a source of money for villagers that enabled them to sustain themselves; if this income became scarce then the villagers migrated to urban cities. Today, foreign workers are arriving in Indonesia; this is a key situation in Malaysia. Therefore, these are the backdrops in terms of the differences in depopulation and aging between the two countries. While, in Indonesia, some expectations exist for the future of oil plantations and development, such a hope does not exist in Japan and thus Japanese villagers may not have such a bright future. Moreover, the indigenous people in Sarawak villages and villages and cities are sort of managed by the Chinese and there are some tensions involved with indigenous people leaving villages for cities because the cities are dominated by the Chinese. In Sarawak, they are reducing the slash-and-burn agriculture and instead importing rice from Vietnam. However, if slash-and-burn agriculture is stopped then the land will become forest. While this in and of itself is a problem, the high vacancy rates that result is a key issue, as I mentioned earlier. Some of the vacant homes are built in order to secure membership of the village to get compensated for dam construction. So, that's the situation in Sarawak, but the situation is different in Japan.

To be sure, people in Sarawak have been moving from one village to another for the last one hundred years and these movements are evident in the construction of different longhouses. Some families have relocated ten times in this period. Thus, it is not surprising that people say that Sarawak culture is a culture on the move. Accordingly, in Sarawak, the level of attention that people pay such moves is not as high as in Japan and, moreover, the Sarawak government does not see this as a problem; along these lines, the media rarely focuses on this issue.

Now, just briefly I want to talk about the Faculty of Regional Collaboration at Kochi University. Undergraduates in their first to third years are supposed to complete six hundred hours of field work, including time in a remote village and fishery villages. They are supposed to be in the field so that they can learn about contemporary issues first-hand.

While the Humanities make up the core of this faculty, two members are from Agricultural Science and two others are from Education, to name but a few of the professors from non-humanistic fields who gather at this faculty, which is made up of 24 faculty members with 60 students per year. While the student to faculty ratio is quite favorable, the workload is quite big because, as I have already mentioned, we are committed to taking students to the field.

We bring students to about twenty places in Kochi Prefecture to perform their field work. This curriculum begins in the first year of undergraduate studies, during which students are expected to learn about particular regions to find uncover their challenges. In year two they try to find solutions for these challenges and set an agenda for the region. In year three, they implement these solutions in the region.

We call the pedagogy of year one "service learning." Students learn about the village from doing things. In year two, they theorize solutions through discussion and, of course, from conducting simple surveys in the field. In third year, students engage the actual case. In fishing villages, students often develop a new product from their material. Meanwhile, in mountainous villages, students have worked to take advantage of the region's beautiful landscape, opening it up for events—such as weddings and music concerts—and photos. After completion, we look back on their work and discuss it; this is the flow of the study.

Last week there the so-called Fukujusou Matsuri or Ice Adonis festival took place—this festival was actually suspended for 3 years or so, but our students wanted to start it back up. Our students had done these kinds of activities before and, after the villagers had experienced the festival they reported that they wanted to do more to continue it. In short, our students' activities motivated villagers to carry on their tradition.

To be sure, our course faces many challenges, in part because the Faculty of Regional Collaboration is relatively new. We also have a very tight schedule. There are so many mandatory subjects and reports, and students must grapple with a great deal of homework. The students report feeling under pressure. Sometimes, they are not concerned with their work in the field in and of itself so much as the fact that work will earn them a university credit and thus their academic achievement can be the main driver of their performance. We would like to do something about this. Maybe we can relax the course schedule a little to give students a greater degree of freedom or maybe we can have a joint training session with young company employees to get some

stimulation from outside that motivates students. These are the changes that we would like to bring to our course.

Two days ago I brought two students who wish to practice agriculture into the field and I taught them to do agricultural work. While this has nothing to do with our subject or course of study, I realized that it is important to give students such hands-on experiences to let them discover what they like and thus to let them do what they like. That is how I felt before yesterday. If students come to like this area, think about it actively and autonomously, and take the initiative to do something with it, then I would feel fulfilled as their professor. So, this is a practice that I would like to intensify in the future. Thank you.

Panel Discussion



Dr. Kazuo Ando

Now, we would like to begin the panel discussion.

Typically, a symposium such as our own would unfold with the commentator speaking, followed by the reporter who would respond and we would then enter into discussions from there. However, the heaviness of our topic—depopulation and the abandonment of fallow land— may make it difficult for our commentators to comment. Accordingly, we would like to proceed as follows. First, I would like to present some questions. Here, we must remember that we are taking up our problem as it has emerged in Asian countries, which I am sure you have come to understand from the presenters. However, it is important to note that our presenters' have addressed different backdrops and thus too that their concerns might be different. Lastly, as Ichikawa-san made clear, it is important that we handle these issues with a strong sense of what we want to do so that we will be able to enjoy life. I think that's the bottom line.

Tsuneichi Miyamoto was an expert on ethnology when this problem first emerged in Japan in the 1960s and 1970s. Around that time he has accordingly written on these topics. In his view, such problems are not attributed to the economy, but are instead rooted in the perception that living in rural areas and engaging in agriculture is not cool. Put differently, we have long been thinking about the good life from an urban perspective, thus negating the value of life in rural areas.

Having listened to the presentations, and especially having heard Dr. Ichikawa speak, my sense is that civilization cannot sustain itself without the economy. Having heard the speakers conduct their presentations, I have come to think that we have the same impression, with the exception of Dr. Changhoo Chun from South Korea whose

presentation surprised me a little. I welcomed his thoughts because they demonstrate that it can be done. But if this is the case, then why has Japan been unable to achieve this—can the country not make a dedicated effort to make this happen? Of course economic factors are at play. We call the students when they click and then you will be able to access what people say on YouTube. I mean that's cool, is it not? At least, this is what I felt.

Dr. Takeda has said that it is not just about agriculture, that we may also do well to pursue non-agricultural development. To be sure, farmers in Asia, farmers do a diverse range of things and this is what makes them farmers. In this way, I have a farmer-like perspective on life. The deeper point here is that our key ambition is to make it possible for everyone to pursue whatever they want to do and thus to enjoy life while they are at it—*this* lifestyle is cool. That is what I think. However, we do not have to be obsessed with this concept, and I welcome any comments that you have not yet been able to share and that you can voice within, say, two minutes. I would like to engage in the discussion for thirty minutes, but perhaps you can provide some initial comments.

Dr. Keiichiro Oizumi

One thing that I did forget to mention is that many baby boomers reside in villages in Thailand and China and thus the villages of Thailand and China are not really experiencing depopulation. Meanwhile, in Japan, baby boomers have moved to large cities. We need to be attentive to the different nuances of each country's situation.

Dr. Changhoo Chun

In my presentation I may have just talked about the bright side of agriculture in Korea. Issues in agriculture in South Korea have a long history behind them. The aging population in the rural areas remains a trend and the average age of farmers is something like 68 years—thus, aging persists. On the other hand, there is depopulation problem still remains in agricultural areas. However, overall, when you look at the statistics you will find that the populations of rural and agricultural areas have actually climbed. There are areas in which depopulation is occurring and still other areas—even rural regions—in which population is increasing. Moreover, to be sure, there are also differences in collecting statistical data between Japan and Korea. In the administrative units of *eup* and *myeon*, the population is calculated as a population in rural areas.

Another issue is that single men are experiencing difficulties marrying and therefore often marry migrants from overseas—the number of such couples are on the rise.

Dr. Yoshio Akamatsu

Now let me just shift over to the younger generation once again. Is agriculture cool or uncool? During my experience in Bhutan, I found that it was not about whether it was cool or uncool; for these youth, agriculture is a kind of neutral concept. In Bhutan, university students report that when they return home over their summer and winter vacations help with farming. Thus, it is not about whether it is cool or uncool, for them, it is just a natural part of life.

Moreover, university students in Bhutan have a good relationship with agriculture and many who want to return to rural villages after graduating university, however, some of them are discouraged from returning home by fears how their parents might respond. These university students are very sensitive: they have been allowed to go to university and feel they cannot return to the rural areas, that they have to find a job—a good job—

in an urban center. So, they really feel the pressure from their parents. It is not about cool or uncool but about the constraints placed on the options available to students.

Dr. Shinya Takeda

What we're discussing today is happening all over Asia. This trend is common to all Asian countries, but the graduation or the contents of what is happening is different among the countries. Today, I talked about the case of Myanmar, but the number of example cases are quite limited. However, Dr. Oizumi talked about Thailand and I have also visited Thailand before, noting that Thailand's villages are very diverse, some caught up coal, others agriculture. Last year in August I went north of Chiang Mai, where a village was growing cherries, strawberries, and other agricultural produce. The village is also witnessing university students coming back because they are facing barriers in Thai cities. Those who are coming from their studies are very highly skilled and trained people there and therefore they have the ability to start very technical agriculture. Telecommunications and road infrastructure are very much well developed in Thailand, enabling the shipping of produce right after the harvest across many topologies. So, Ando-san's sense of "cool" agriculture is happening in Thailand as well.

Dr. Masahiro Ichikawa

Well, I do not think I left anything to mention in my presentation. However, usually we do not have access to information from Korea and thus Dr. Chun's presentation was quite impactful. If we think about Japan, we might note that there so many people returning to villages and thus that conflict may arise between the people who have been living in these villages from the beginning and those who came back or who moved to these villages for the first time. Along these lines, we might consider that it might be more beneficial for one person, instead of one hundred people, to return to a village. That one person could serve as a good advocate for the village-this might be better for the village than receiving one hundred people. I just wanted to explore that idea for my own field; I was curious about Korean situation.

Dr. Kazuo Ando

Dr. Chun, do you have any response?

Dr. Changhoo Chun

The municipality's centers are focusing on conflict resolution or mixing new village entrants with old village residents. Well, because newcomers may be wealthier and may disregard tradition, older residents may resent their attitudes. So, we need to come up with some resolution for this potential conflict, otherwise, returnees or newcomers will not be able to settle in. The municipality center is responsible for solving this very big issue and very important issue.

In Korean villages, there are two reasons why villagers are drawing attention. First, the first returnees from the early 60s, had great financial success practicing facility-based farming and creating transplant production businesses. These farming businesses employ one hundred to two hundred people, enabling the children of these first-generation returnees to return home after graduating from university and working for large companies in cities-while these youth can earn 4 million won a year in the city, their parents earn much more. These young generation come back home with new idea, so that a sort of metabolism is working very well. Beginning in 2007, civil environment movements have also been bringing people back to villages. Youth who are highly sensitive to societal agendas have also been coming back to villages to help nurture them.

Lastly, I would like to mention Ms. Kim Guiyoung, the head of the center, who is my age. For the past 20 years she has been supporting the return of young city residents to villages and has been helping the villagers to be more accepting of these young people. She was recommended as head of the center by the Ministry of Agriculture. People like Ms. Guiyoung are leaders with vision and the power to actually take action. If such leaders continue to change the environmental settings, then we will see more returnees or people coming to live in villages.

Dr. Kazuo Ando

Dr. Oizumi mentioned depopulation. In Japanese villages, the first son of the family remains in the village. This is a kind of tradition we have in Japan. So, in Japan, the elder member of the family remains in the village, and thus the village populations are often older. Along these lines, I wonder if there is a population cluster in Thailand that is of a similarly higher age, and I also wonder how such a group is making a living. In Japan we have pensions and so on and so forth. I just wonder what their income source is.

I also want to mention natural disaster. I guess disaster within villages can be a reason for depopulation. Dr. Akamatsu, you did not mention something along these lines, or maybe you did mention it lightly, but my deeper point is that this phenomenon is happening in Thailand, Bhutan, and Japan

Meanwhile, when a landslide occurs in Bhutan, people evacuate their villages. The difference between Japan and countries along the continent is that when there is a disaster on the continent, everyone goes to Thailand. What stuck in my mind from Dr. Oizumi's presentation was the statement that the adjustment for population doesn't work when people from Myanmar flow in. This made me wonder whether they will go to the rural areas and if this might then help to adjust population against labor. Moreover, if that does not work, then what might happen? In the case of Bhutan, educated youth, as Akamatsu-san said, preferred to go to Australia, and thus the nation is experiencing a kind of a brain drain. In the past, the issue was contained within the nation's borders however, now you have to think across borders to think about these problems. Perhaps I have not communicated my question well, so I'll say it again: why might baby boomers in Southeast Asia—born before a policy was introduced to suppress childbirth in the last 1960s—remain in rural areas when economic development occurred in the 1990s?

Dr. Keiichiro Oizumi

Baby boomers emerged in Japan with the nation's own economic development. While a baby booming and economic development emerged in parallel in Japan, in Thailand, a large chunk of the rural population remained in rural areas as economic growth occurred later. Residents in their 40s-50s can still work. Today, they are working with modern technology. What might happen in 10 to 20 years? Today the aged can work with payment from outside, then what would happen in the future?

While people talk about investing in the young, we must also keep in mind that it is crucial to invest in those in the middle-class, that is, those who constitute the middle segment of the population's age range. This is important when we think about this issue of rural populations. I am sure there will be more people who will migrate to Thailand from overseas. Here, it is helpful to note that the GDP per person is about \$8000 in this

region of approximately 3 million people. I have no idea how the foreigners' flow will change their lives.

Dr. Kazuo Ando

We only have 40 minutes left on our hands. Perhaps we can entertain some questions. Any question is fine and a comment is fine too.

Audience Question 1

Dr. Chun, I have a question. I think you may have answered it earlier when we talked about the increase in the rural population. The proportion attributed to foreigners is quite large and perhaps the impression has kind of been lost. However, 300,000 people is a lot. You talked about the lack of eligible women for male bachelors to marry and noted that overseas female migrant workers are filling this gap. Would that explain the situation? The lack of labor shortage has been compensated by people from outside and they either remain or rotate. So, my first question is that what is happening?

Second, you talked about ecological value on two occasions. While I can imagine what that means, it would be helpful if you could elaborate.

Dr. Changhoo Chun

First, I want to talk about the foreign population in the rural areas. When I explained the slide, I was looking across the room and I found that people were surprised. I suddenly thought that maybe there was an error in my statistics and so I was checking on the internet. The population of Korea is approximately 50 million, with 2 million foreigners included in this number. An increasing trend is evident and is very acute. In 2021, the total number of foreigners living in Korea is expected to reach about 3 million. The statistical estimate of migrants who marry into rural households and become permanent migrants is thus approximately 300,000 people. However, while 10 years ago approximately 20,000 migrants married in rural areas per year, recently this number has dropped to less than 10,000.

10 years ago, marriages with foreigners accounted for approximately 50% of marriages in rural communities. Today, it has declined to about 30% of all marriages in rural areas. So that proportion is still outstanding, that is, it remains quite large. On the other hand, there are people who entered the village not to marry but as laborers on a visa—when their visa expires they return to their home country, their labor replace with that of new migrants. In the rural sector there are approximately 25,000 foreign employees; they work mostly in the livestock industry, horticulture, and grafting.

We also find that Korea's migrant workers are predominately, in order of intensity, Korean-Chinese, non-Korean Chinese, and American. However, when in rural areas, this order changes to Korean-Chinese, Vietnamese, and Thai.

Foreigners from the West tend to work in Korea's urban areas while those from the Southeast tend to work in rural communities. We talked about urbanization of rural communities. The pace of infrastructure in rural regions has been picking up and improving. Therefore, people who work in urban centers can now commute to their jobs from rural areas, which has contributed to population increases in rural areas. To be sure, Korea is a small country compared to Japan and therefore the physical distance between the rural districts and the urban districts is quite a bit closer.

I also talked about ecological value. Recently, a sense of environmental crisis has emerged around questions of food security and overpopulation, especially among those residing in cities. Along these lines, perspectives of the value of rural life have changed in some ways. Agriculture can also be combined with ecotourism and festivals to activate rural regions, and such developments have helped to nurture a more positive image of rural life.

Dr. Kazuo Ando

Thank you. Any other questions?

Audience Question 2

Thank you very much for your presentation. We are university faculty members. We would like to know how we connect our student with agricultural villages; this is our focus.

Based on my experience and as Dr. Ando mentioned, it all depends upon the favor or the taste of students. If students like agricultural villages, they would actually live in villages. Some female students even get their hunting licenses and go to agriculture villages and eradicate any harmful animals. Those who came back from overseas actually have no issue going into the villages and creating some new initiatives like getting information out from the village to the rest of the Japan.

I was in Nepal and if I look for information on Nepal, I will discover that foreigners can find information about the lifestyles of the nation's agricultural villages and, moreover, that such villages offer green and agricultural tourism.

So, we should have some mechanisms in place instead of just focusing on traditional culture, traditional images. We need to make use of devices connected to the Internet devices to actually create something new. So, we see agricultural villages becoming depopulated and the life there becoming inconvenient. Instead of seeing the villages through that looking-glass, we have to do something new like creating a new services. If these can be enabled, then agricultural villages may look totally different. That is how I feel about visiting agricultural villages in Japan. So, what sort of image do you have about the future of agricultural villages?

Dr. Keiichiro Oizumi

Well, I think what you have just mentioned is happening around the world. Information distributed by SNS or Instagram can attract foreign visitors, that is for sure. Moreover, young people may also become involved in agriculture because they feel it is cool. This is true. However, I doubt business is not the only value that agricultural villages can offer. While coolness may be important, the ease of life and the degree of comfort that exists in villages is another aspect that we would like young people to know about rural life because young people may be interested not just in pursuing money but also in pursuing a particular lifestyle such as that offered by agricultural villages. However, if a newcomer wants to live comfortably, then they have to connect with people who are already living in the village to optimize welfare. The question of how are we going to do that is quite complicated and very difficult. However, there is a tool for young people have diverse views. So, how we connect these is something we need to think about. While I cannot predict the future, the signs of those things that you have mentioned should be cherished.

Dr. Changhoo Chun

Yes, I agree with you, the question of how to send young people to villages is very important. Unfortunately, in Korea, most of those youth who graduate from agricultural high schools go to universities in urban cities. It is thus difficult to keep young generations in agriculture villages. Those who graduated from the Department of Agricultural Education may have become teachers at the agricultural high school in the past, but we no longer produce schoolteachers at my university. In fact, there are only a few universities in the local area that produce agricultural high school teachers.

However, I think there are two signs of bright future. One is that the Ministry of Agriculture has a Korean University for Agriculture and Fishery and this university admits students from farming and fishery families. Plans related to money and land will be submitted to the university as in place of admission examinations and tuition is free of charge. For the first 2 years these students learn by lecture and then in their third year they go to the village to complete practical training. This university has created vital cycle for producing farmers and who they then refer to new students.

The second sign is that experiences in foreign countries are also useful for encouraging young students to become attracted to agriculture. Such experiences are facilitated by organizations such as KOICA, the Korean version of JICA. We also have KOPIA network, which stretches across 16 different countries and maybe five to 10 agriculture college student are sent to complete an internship program over a year or so before returning to Korea where they most likely become farmers. Students can have this experience overseas and then bring that information back to Korea, where it will serve as the basis for these young students' future plans. I think these elements are quite interesting and promising.

Dr. Yoshio Akamatsu

Concerning the image of the future of agriculture in Bhutan, from what I know from the university students around me, they do not like cities very much. When they come to Japan, they prefer to stay in rural agricultural districts rather than going to the cities, even though they do go to Kyoto. They don't like cluttered spaces, they want to be in farm villages, and, moreover, probably since they are Buddhist, they prefer to be in a space where they can meditate. Thus, when we think about the future of Bhutan, it is clearly not really about the very animated, vigorous, pumped-up image of cool youth. When I think of the students in Bhutan, I think about how they will lead an economic life outside agriculture.

Dr. Shinya Takeda

An image for the future of agriculture. We have spoken about *Kison* and *kinou*, urban-to-rural migration, and the return to farming. What other things may happen to youth who grow up in rural areas. Will they be willing to pursue farming in their hometowns?

It is not about doing something outside of the village or outside of farming; in fact, there is a great probability that they will remain in farming.

I talked about the mangrove wetland village that was attacked by disaster. There was a major company that provided LNG gas pipe and they invited villagers to participate in a new course program for human resources in Japan. There was a young man who was diligent and who had been in Japan for 5 years and studied agriculture. He had returned to his coastal village-which has now finally been made less remote by a road-ready to partake in agriculture. I want to make two things clear here. First, we must think about

how to sustainably support agriculture into the future. We have to think about how people in local communities will pursue agriculture. Second, foreign labor policy here in Japan really needs to be seriously considered.

Dr. Masahiro Ichikawa

Kochi has a close proximity to remote villages and is surrounded by students. So, what is its future? It is very difficult to imagine what the future holds for us. When I talked about the village earlier in my presentation, I mentioned that Kochi University facilitates hands-on training for its students in rural villages and that some students migrate to these villages after graduation because they developed an affection for a particular village, because they were moved by their experience. While these students have the opportunity to make their way to the city centers, their pioneering spirit and because they know what they wanted to do enabled them to move to rural villages. So, this is what I have seen happening.

These are people who, during their school years, were working with a local community and who have sweated and toiled and had exchanges with people in these communities that have moved them. You do not necessarily have to migrate as residents, you could work as an NPO member with a graduate school, join a company that operates in the region, or work with the local government. It is about how we can provide a moving experience to such students because I think that such an investment can be recouped directly or indirectly after graduation. That's about it.

Dr. Kazuo Ando

I would like to speak about the image for the future of agriculture. As I mentioned in my introductory remark, I was a specialist with the JICA. While I worked for 6 or 7 years in rural development projects I also worked with people in Bangladesh 15 years ago; because of that the JICA program was able to invite trainees to Japan as an extension of my work 5 or 6 years ago with Sherubtse University in Eastern Bhutan, with which we had developed connections. We wanted to show these trainees what the future might hold for them.

During my time with the governor of and some health ministry officials from Trashigang, I was astounded to find out that I was instructed to show them a Japanese rural community such as Miyama. As I had been to Bhutan before, I jokingly said that we were going to enter East Bhutan because the winding road we were on through the forest was very hilly and narrow and there was a delay in road construction development. The governor from Bhutan replied that such roads were a major problem in Bhutan. Though I had been in Bhutan, I had not realized how great a problem this was.

As I wrote on Bhutan, I read a publication by a person in Bhutan, and of course on the title said something about happiness. However, the publication never touched on any issues pertaining to population or abandoned fallow land. I felt that this gap was a problem thus conducted a discussion with my counterparts, after which we went into the field to conduct a survey and announced our findings at an international conference at Sherubtse University. Back then it was not recognized as an issue among people in Bhutan and the younger researchers pointed out that our investigation method was wrong. I was really shocked to hear that their consciousness was low. We invited about ten students from Sherubtse University in their first 4 years of schooling along with two instructors to Japan for a few weeks and took them to areas such as Miyama in Kyoto; right now a few are in Miyazu. The reason being, as mentioned, that I wanted to show what would happen in the future from case study in Japan.

I did not just show the good side of Japan. The future is quite difficult to anticipate, but my image of the future is that Japanese agricultural villages are in a really hopeless situation. However, my sense is that Bhutan, Bangladesh, Myanmar, and Laos are not doomed to become like Japan. That is the expectation I have maintained in my research for past the past 10 to 15 years.

However, our society is based on market economy, and if these countries do not do anything at all regarding their economic situations, then there is a high likelihood that the future of these regions will be very similar to Japan's current situation. This is my message.

A few years ago, I brought one person from Bhutan to Etajima and Kure, citrus-growing regions, where the roads were paved all the way up to the summit. My guest noted that government of Bhutan has been trying to pave its road and wondered if this may be the result if it succeeds, that is, he wondered if Bhutan may become more like Japan. If Bhutan becomes like Japan in the future, he worried, then its investment in road construction will be wasted. As Chung-san mentioned and as I said at the very outset, this issue emphasizes the importance of going beyond our own borders to look at the situations in other countries with our own eyes.

My time as a JICA member also informs this point. While some say that this is nothing, that it makes no difference, I believe that sending a person overseas matters because gives them something to compare their own situations. Accordingly, I have been sending people to Bhutanese villages and they report feeling that they better understand their situations, with some students from the Department of Agriculture reporting that they feel that they changed—or that they more specifically changed the way they study—after returning from Bhutan.

Dr. Changhoo Chun

The population of foreign workers in Korean agricultural villages is currently 23,000 people. Every year, 7,000 new people immigrate to Korea while the same number will also go back.

Audience Question 3

Thank you very much. Ando-san said that Southeast Asia's villages have a high likelihood of becoming like Japanese villages. In reality, in terms of percentage, village populations are declining. However, agricultural production is on the rise. So, the Japanese and Korean agricultural situations are different from those in other Asian countries. However, many Asian countries are trying to catch up to Japan's situation, as Dr. Ando made clear. However, I think the situation is different in continental Asian countries. So, Dr. Oizumi and Dr. Takeda, what are your opinions of Dr. Ando's predictions of the future?

Dr. Keiichiro Oizumi

I do not think they will become exactly the same as Japan. The problem may be more severe.

Solutions for these countries will be different as well and Thailand will make efforts to solve its issues in its own way. While similar situations are happening in other countries, the problems are different in nature and thus the solutions that are required are also different.

Dr. Shinya Takeda

It is hard to say. In Laos and Myanmar, I have done more than 10 years of work on slash-and-burn agriculture. Linear development theory makes clear what Japan has experienced over the last 10 years and what Thailand is experiencing now. I do think that this kind of linear theory may work. Everyone may become like Singapore, and I do not think we can preach to people. As Dr. Oizumi mentioned, we may have issues, but these issues will be different.

My area of concern has high potential. Agricultural farmers are small in size and the system of agriculture is different. So, family-based agriculture will remain my area of attention. Issues may be similar to Japan, but how family-based agriculture may support the village. This is probably my primary research concern.

Dr. Kazuo Ando

Dr. Akamatsu or Dr. Ichikawa, any response to my remarks?

Dr. Masahiro Ichikawa

In the case of Sarawak, the backgrounds and backdrops differ case-by-case because the inhabitants have a fairly nomadic culture and their uses of land and political relations change as they move. Therefore, I do not think that Sarawak will follow the trends we see in Japan. However, if you look at cities and villages in Sarawak, you will notice that they suffer some issues related to education, infrastructure, and convenience, and these issues emerge similarly in both Japan and Sarawak. I want to classify the information that I have at hand and also believe that we should bring our students to these places to wake them up. So that's something that I want to do.

Dr. Yoshio Akamatsu

Regarding Bhutan, frankly speaking, while it may seem as if the nation is trying to catch up with Japan, it may indeed exceed Japan and exhibit even worse conditions. In Japan, depopulation is happening in hilly and mountainous areas. Bhutan is filled with mountains- if rural residents want to emigrate, where will they go? We found that urbanization in Bhutan is accelerating at a pace far beyond that of the rest of Asia. If things are left unattended, then the situation will become extremely serious; we must recognize that this is, in a sense, a crisis that we need to overcome.

Dr. Kazuo Ando

I would like to add a response. I do not think it is that simple. It is not as if all these countries will try to catch up with Japan—this is never going to happen. However, this is a global issue. The trend will remain.

You may develop cancer, but the causes of your cancer might be different than those of someone else who develops cancer- diseases are diverse. I think this metaphor really expresses the situation with which we are wrestling here. There is not a single, say, diagnosis and therefore the cure will have to be devised by people across all Asian countries. However, stakeholders must be motivated, otherwise they will not be able to come up with a solution. I think this is the key issue. So, frankly speaking, I am very dissatisfied with the responses that have just been given by these two gentlemen, indeed, very much so, because the perspective taken is that of a bystander. Of course, this problem has been left in Japan and also elsewhere because there is a lack of ownership.

I initially said that I wanted to close by thinking about what we can do to really enjoy our lives—beyond being cool, of course. I think that fleshing out what we mean by

“enjoy”—and, for that matter, “cool”—requires a great deal of self-recognition and ownership. However, good sustainability is not just about this. We also have to think at a global level because today everything is connected and relatively borderless. Along these lines, Japanese Society for Tropical Agriculture (JSTA) must be well-aware that our focus is not a technical issue but instead an intentionally geared to get us to take ownership of an issue relevant to JSTA.

People may point out that we are in a different era. The people of my generation are in their 60s, and I will be retiring next year. For me, doing research on tropical agriculture was really cool because it was uncharted territory. If you are going to pursue agriculture, it has to appear as a cool lifestyle. Those of us in tropical agriculture are in a position to disseminate this information; by doing so we may be able to change the way people look at agriculture.

Tropical agriculture has a global presence and we must bear the responsibility that comes with this fact. In Japan, at least, we bear the heaviest responsibility. So, let us work on this together—that is what I really wanted to say. Thank you very much and I would also like to thank today's presenters too.