New Tourism System Across Industries in Nikko, Japan

- From a Point to the Whole Area, Society 5.0 -

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I received the B.S. and M.S. degrees in Literature from Sophia University in 1979 and 1985, respectively. I have been a secretariat staff of "Study Group of School Trip" since 2006. I was an adviser for utilization of ICT in Okinawa in the subsidy project of the Ministry of Internal Affairs and Communications in Japan from 2007 to 2009. I belong to Faculty of Economics, Chuo University as a lecturer from 2009. My current research interest is Tourism.

Our Research in Nikko

- We plan to collect data about cows at the farm using sensors and LoRa technology. Through a production information cooperation policy, these data, which reflect food quality, will be shared with restaurants near the world heritage sites. This is a gateway to learning about the rural area.

- Our goals are to develop regionally branded products, cultivate markets for them, and inform tourists of their availability.

Keywords- Society 5.0; agritourism; LoRa.

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2. To agritourism

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1. Question

Post COVID-19

How we can go to travels with
safety and enjoy them?

=> UNWTO Global Guidelines to Restart Tourism
 28 May 2020

1. Question

UNWTO Global Guidelines to Restart Tourism

28 May 2020

5.TOUR OPERATORS & TRAVEL AGENTS

PRODUCT AND MARKETING

3.Develop segmented and sustainable products focused on nature, rural areas and culture

8. DESTINATION PLANNING & MANAGEMENT

6.Promote new products & experiences targeted at individual & small groups travelers, like: special interest, nature, rural tourism, gastronomy & wine, sports, etc.

2 To Agritourism

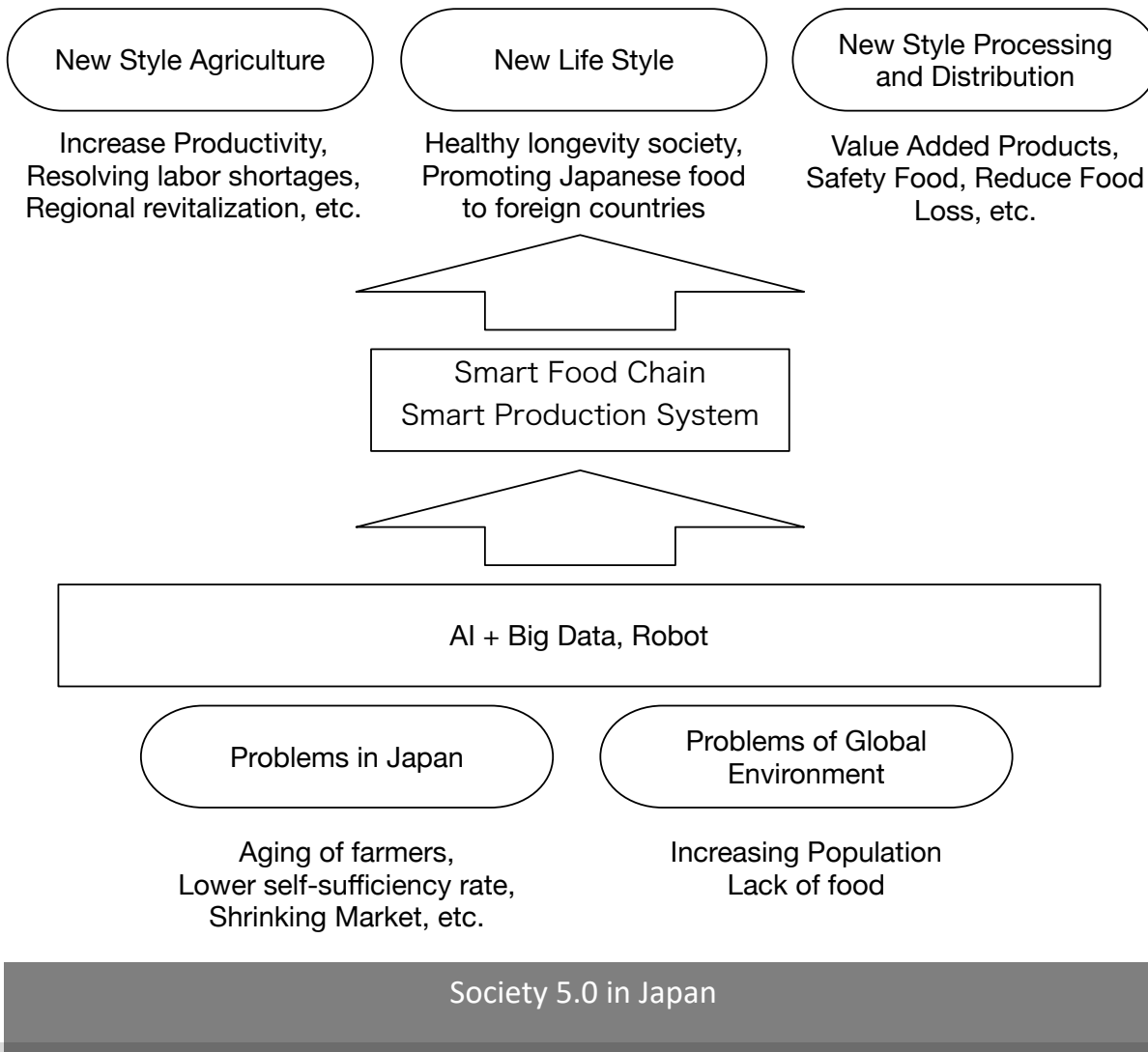- Tourism which appropriate for UNWTO Global Guidelines

We suggests tourism to nature, to farm not only visiting the place but also looking at some scenes using our online system.

- Agritourism in Japan

Rice farming developed to a high degree in Japan. Japanese have a chance to learn about rice farming at school.

Cf.

Milk and cheese, we eat everyday, come under the heading of dairy products. However, many Japanese know little about dairy

New Style Agriculture

Increase Productivity,
Resolving labor shortages,
Regional revitalization, etc.

New Life Style

Healthy longevity society,
Promoting Japanese food
to foreign countries

New Style Processing
and Distribution

Value Added Products,
Safety Food, Reduce Food
Loss, etc.

Smart Food Chain
Smart Production System

AI + Big Data, Robot

Problems in Japan

Aging of farmers,
Lower self-sufficiency rate,
Shrinking Market, etc.

Problems of Global
Environment

Increasing Population
Lack of food

Society 5.0 in Japan

3. A New Agritourism and Society 5.0 system

3. A New Agritourism and Society 5.0 system

The sixth sector industrialization of milk

We would like to develop a relation between farmers and local residents and visitors to use and eat products in Tochigi Prefecture in Japan, using the internet and visiting the farm.

< From Milk to Regional Revitalization in Nikko Project>
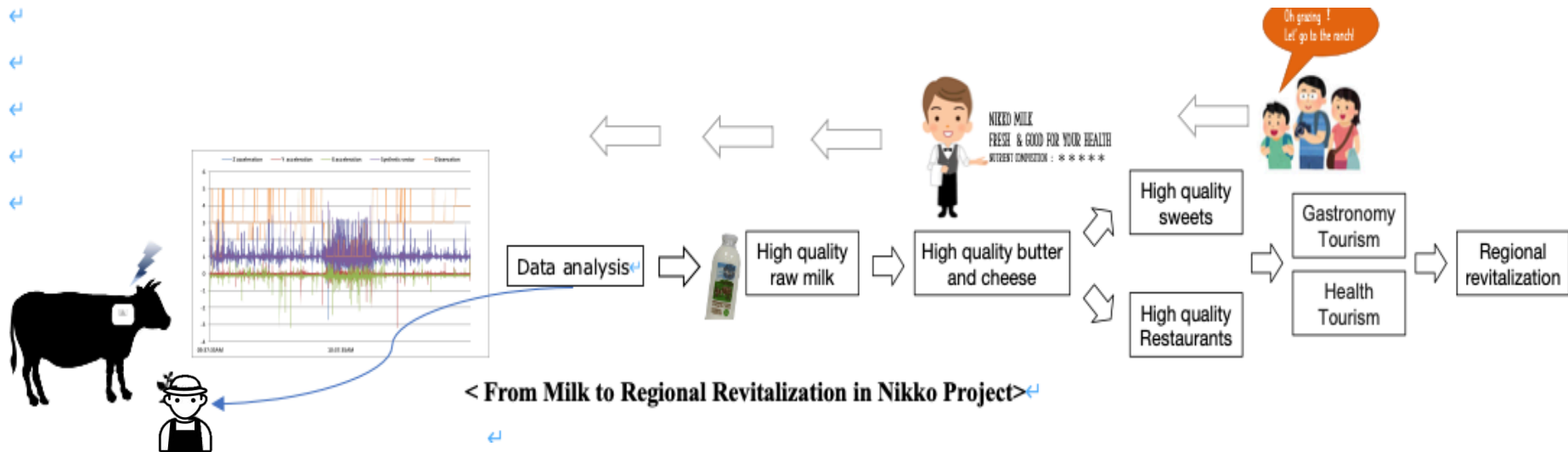
3. A New Agritourism and Society 5.0 system

Devices for experiment of LoRa

- – BW: 62.5KHz
- – SF: 12
- – Tx power: 13dbm
- – LoRa chip: ES920LR
- – gain of the antenna: 0dbi

Transmitter

The LoRa chip: ES920LR

Realtime tracking of cow's feeding behavior=>Develop machine learning model to estimate the quality of milk

Receiver

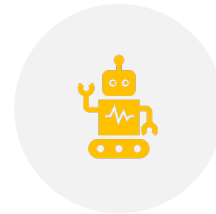# 3. A New Agritourism and Society 5.0 system

Machine Learning Model

Target: Estimate the quality of milk from the behavior and Ph of a rumen of a cow, etc.

Machine Learning:

(1) Behavior (movement, chewing, sleeping etc.)

(2) Health condition (Ph of rumen)

(3) Quality of Milk (tag for classification)

(4) Other conditions (temperature, weather, season etc.)

4. Conclusion

How will we use this system for Tourism?

- Health and safety are important elements for people living at cities

1. Quantification for the quality of milk can help the cattle farm and restaurants explain why their dishes are special. The ingredients are sourced from a cattle farm in Nikko.

2. People will know the season at the farm and about caws using the internet site of Oozasa farm.

3. People can connect to the farm from their house. They will figure out lives of caws and farmers closely. Then they would like to visit the farm.

Using the system ・・・Connect each other

Customers- Restaurants, shop owners –farm & hotels, Transportation etc.

4. Conclusion

- This project aims to connect natural, high-quality foods, mobility, and the cattle farm. By linking several industries using Information and Communication Technology (ICT), we will contribute to the whole area's activity level for after COVID-19 tourism.

- This system will vitalise the local economy and support the modernisation of the countryside with an eye towards tourism.

ACKNOWLEDGMENT

References

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- **UNWTO Global Guidelines to Restart Tourism**

 28 May 2020

https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-05/UNWTO-Global-Guidelines-to-Restart-Tourism.pdf [Accessed Oct. 2020]

Thank you for your attention!

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