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Centre for Resilience and  
Sustainable Development

# Wet Market Reform in Nanjing, China

A case study

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### ■ The challenge

Wet markets in Asia, broadly comparable to European 'farmers markets', are so called because the vendors need to hose down their produce to keep it cool and fresh. They typically sell fruits and vegetables, meat, poultry, dairy, grain and oil and soybean products.

Special attention is being paid to Asian wet markets due to the role Chinese wet markets reportedly played in the outbreak of the Covid-19 pandemic. More attention should be paid to solving the root causes which make the outbreak of zoonotic diseases more frequent, including increasing demand for animal protein and unsustainable agricultural intensification. In addition, the pandemic and continuing lockdown in Chinese cities has raised public awareness of health and nutrition and encouraged a re-assessment of food security. There is an urgent need for action to incentivize dietary shifts, and the wet market, as a major source of food for many urban populations, is an ideal place to intervene.

The dietary profile of residents of Nanjing shows that the consumption of cereals, vegetables, aquatic products and eggs is barely meeting the recommended requirements, while the intake of whole grains and beans, potatoes, fruits, soybeans and nuts, and milk and dairy products is insufficient. In contrast, the consumption of meat, oil and salt is higher than recommended amounts. Promoting a dietary shift in Nanjing will therefore have practical health as well as environmental benefits.

Currently middle-aged and elderly people account for 80% of Nanjing's wet market consumers. As the younger people are living a fast-paced life under great pressure, they tend to

favour dining outside the home or using food delivery service instead of going to the wet market for fresh food shopping. This contributes to an important cause of the decreased consumer base in the wet market.

In recent years, with the popularity of mobile payment and online shopping APPs developments, the improvement of cold chain transportation and delivery efficiency, and the convenience of all-day contactless service, the New Retailing of fresh produce is sweeping young and middle-aged people, posing a huge threat to the traditional wet markets, especially during the Covid lockdown.

To keep up with transformations in demographics, technology and shopping habits, Nanjing wet markets are actively exploring options to transform their mode of operations and expand their role in everyday life. Key examples include swapping to electronic payment systems, hosting social events and shared kitchens, integrating food markets (which sell cooked foods) with fresh produce markets, and potentially partnering with large property management companies to deliver the supply of the wet market to the residents in the communities they manage. These efforts to secure the future of Nanjing's wet markets have seen limited success (many are at a very early stage) - and opportunities exist to creatively reimagine the future of these vital food hubs.

The wet markets in Nanjing, with support from the Nanjing Association of Market of Agriculture Product (NAMAP), have been trying different ways to upgrade its retailing system to adapt to the lifestyle and shopping habits of younger people and to expand its consumer base. Initiatives have included cooperation with MissFresh (a large innovative digital platform),

participating in group purchasing, and developing an electronic app for wet market vendors. Despite these creative attempts to improve financial returns for wet markets, none was successful due to the difficulties in communications with smallholder vendors, quality control, large investment and gaming with big companies etc.

Government policies such as the “Fourteenth Five-Year Plan (2021–2025)”, and the “Fourteenth Five-Year Plan for National Agricultural Green Development” (NAGD) aim to create a shift towards “a well off society in an all round way”. This includes greater food security and accessibility, and a more efficient, green, inclusive and sustainable agriculture and food system. The latter plan calls for a sustainable logistics system, with prioritised actions including developing low-carbon transportation of agricultural products, accelerating the upgrade of agricultural wholesale markets and promoting green e-commerce of agricultural products. The plan also makes increasing farmers’ income a priority for the Ministry of Agriculture, reflected in the NAGD Plan. This calls for promoting e-commerce which would allow farmers to sell their produce directly to consumers through e-commerce platforms like Taobao, the most widely used online shopping platform in China.

In 2019, the central government initiated the Healthy China 2030 campaign, which promotes balanced diets as a key element of addressing nutrition issues including the over-consumption of energy-dense, nutrient-poor foods to curb the rise in overweight and obesity rates. More recently, the Chinese Nutrition Society published Chinese Dietary Guidelines 2022 with practical suggestions on food choices for nutritionally sound individual diets. Currently, the pre-packaged food in supermarkets is regulated by the National Health Commission and the State Administration for Market Regulation, while the produce in wet markets remains unregulated.

National policies and practices on food and diets typically focus on sector-specific goals, meaning fragmentation (‘siloed working’), rather than coordination, is the norm in efforts to deliver healthy diets - making it harder to generate multiple benefits for both nutrition and environmental sustainability goals. Moreover,

policies to date have largely neglected the environmental impact of the overconsumption of animal products and the industrialised livestock production system. To promote a holistic food system transformation, there are policy gaps that need to be addressed.

Studies have shown that food from outside of Nanjing accounts for around 70 percent of all the food sold in the city’s markets<sup>20</sup>. Meanwhile, the Nanjing government has been promoting local food production and cultivating local brands to ensure residents’ food supply - particularly during the COVID-19 pandemic.

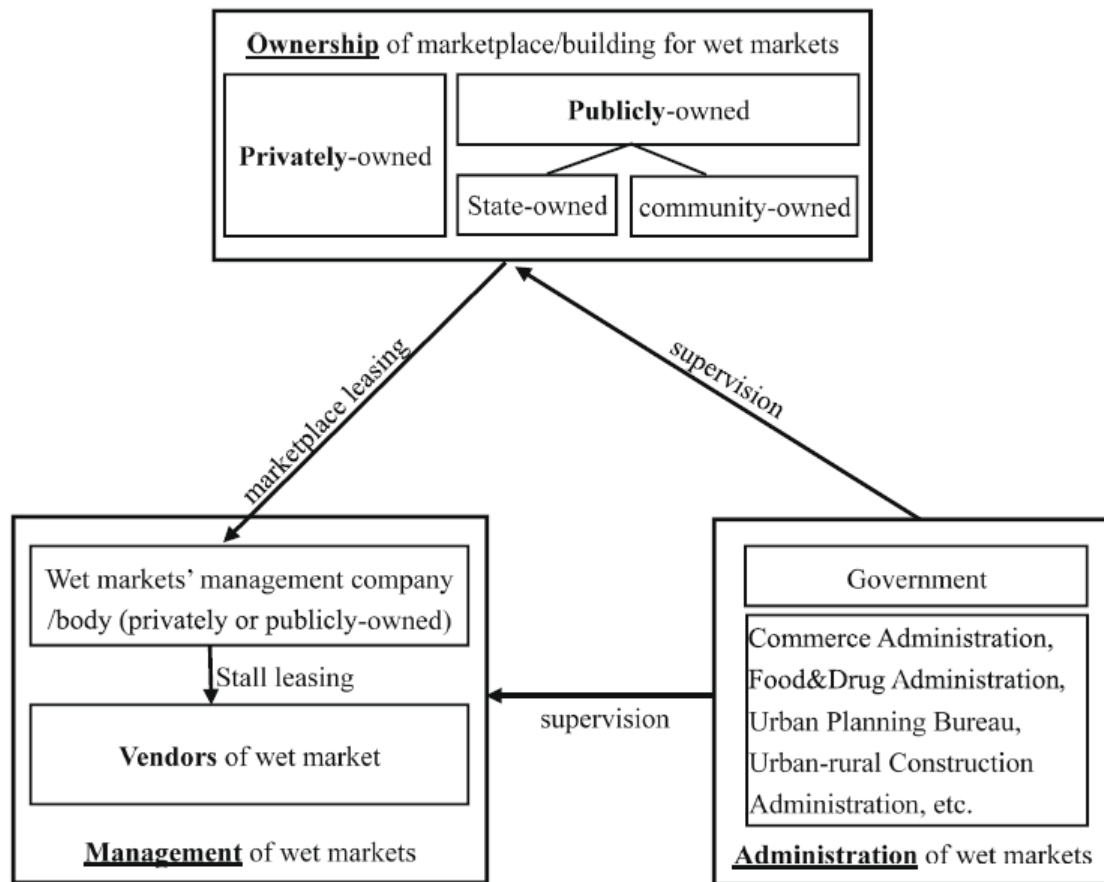
Today, the Nanjing Association of Market of Agricultural Product is pushing for a direct link between local farms and wet markets by introducing local farms to the wet market owners and encouraging the wet markets to set up self-operated areas along with other vendors. This would not only promote local short chain supply but also help control other vendors from selling at excessive prices.

According to the Nanjing Association of Market of Agricultural Product, currently there are 360 wet markets in Nanjing, 300 of which have upgraded infrastructure and software systems by 2019, with more explicit planning on the food division within the space.

The key question for this work was:

***How can we transform wet markets in Nanjing to deliver a resilient supply of well-balanced, nutritious and sustainable diets to citizens, while protecting the livelihoods of the vendors, and contribute to the National Food and Nutrition Program (2021-2035) in the context of post-COVID recovery?***

Ownership, management and administration of wet markets. (Source: Zhong et al., 2019)



### ■ The solution

A partnership between EAT and University of Cambridge, and funded by the Rockefeller Foundation, deployed its Cambridge Policy Boot Camp (CPBC) process to address the key question. This allows participants to engage in an intensive exploration of a given challenge through a multi-layered system lens, guided and supported by a dedicated group of expert facilitators and mentors with years of substantive expertise. The ‘challenge owner’, in this case the Good Food · China Food Systems Action Hub, took part and is committed to taking forward the outcomes of the boot camp.

The CPBC built on the work of the Food Systems Game Changers Lab (FSGCL) 1.0 - which was a major part of the UN Food Summit 2021 - by providing the connections between specific food system problems that local or national governments want to tackle, and the participants in the Game Changers Lab who have chosen to specialise in that particular area of the food system<sup>2</sup>.

The ultimate beneficiary of the work would be the wet market industry in Nanjing (represented by NAMAP and Jinbao Farmer’s Market), who will develop sustainable business models to deliver a resilient supply of foods needed to support healthy and sustainable diets.

<sup>2</sup> The FSGCL collected more than 500 solutions, from 83 participating countries, during the leadup to the Summit, from 83 countries submitted, reflecting a diverse range of ideas, innovations and initiatives. Further screening of the ideas brought together 24 Solution Cohorts who co-created an Action Agenda that offers a vision for future food systems that are sustainable, equitable, healthy, and diverse, as well as a transformative pathway to realise that vision through a particular collective solution set.

The project was a collaboration between EAT Foundation, the University of Cambridge and the following Chinese organisations:

- The Good Food Fund and Slow Food Great China, who recognized the pandemic as a timely opportunity to re-invent wet markets. Slow Food Great China has helped identify and outreach local partners in Nanjing.
- NAMAP was entrusted by the Nanjing Municipal Bureau of Commerce to manage the wet market industry and act as a bridge between government and enterprise.
- Jinbao Farmer's Market Co., Ltd. (Nanjing), a key enterprise under the Nanjing Goldfoil Group which is a multi-regional, cross-industry, and cross-domain diversified industrial group company.
- Institute of Food and Nutrition Development, Ministry of Agriculture and Rural Affairs. The Institute is responsible for developing the National Food and Nutrition Program.

## ▣ The approach

The Cambridge Policy Boot Camp is a transdisciplinary 'action research' method developed by Dr Nazia M Habib, the Centre Head and the Founder of the Centre for Resilience and Sustainable Development (CRSD) at the University of Cambridge, UK. A multi-disciplinary team of experts at the Centre are also members of the Department of Engineering at the University of Cambridge.

The CPBC is an agile approach to quickly identify, document and use evidence to develop potential solutions for a complex policy problem. The aim is to integrate multiple perspectives, using mutually reinforcing frameworks, that can provide practical direction for complex decisions and promote resilient solutions within the given context and resources. Using collective design thinking CPBC supports decision makers to make better decisions without spending a lot of time, money and energy by addressing three key challenges in designing policy:

**1. Insights brought to unlock thematic challenge** - allows policy makers to quickly come to terms with the complex systems within which they operate, and the scope and scale of

potential effective policy responses (e.g. complex multi-level governance of the food system and public food)

**2. Insights brought to unlock technical challenge** - this acts to improve coordination and collaboration between knowledgeable parties and the powerful entities required through creative and critical thinking to unlock shared insights to find common ground. Doing so often reduces transaction cost and improves shared trust in the policy system.

**3. Insights brought to unlock outreach challenge** - this acts to engage with external agencies including media to secure implicit buy-in in the new policy systems, This is an important part of the CPBC design to create potential institutions that can facilitate, promote and secure long-term benefits.

The boot camp participants were organised into groups, and started to consider the creativity step of the process. They listed tangible and intangible assets that are present in abundance. They then considered how these assets could be used to solve the problem (the key question above).

The next step was to identify unintended consequences, i.e.

- Could something make it impossible for this idea to succeed (deal breaker)?
- What do you wish you had more of to keep the idea going (bottleneck)?
- What might come along and surprise you (blind spot)?

After a break, the final step was for the groups to develop an Elevator Pitch for one of their ideas. They then used the 'NABC' framework to present this back to the plenary group:

The Need / Our Approach / The Benefits / The Competition.

## ▣ The conclusions

Twelve categories of untapped assets were identified:

Communities	Cultural	Entrepreneurship	Business networks and expertise
Education	Financial	Government policy	Non-government organisations
Social media	Technology assets	Society	Others

The broad conclusion was that wet markets need to transform from simply being a place to buy food to a place where citizens can purchase food and use the space as:

- A community hub
- A service centre
- A logistics centre
- A healthy diet campaign icon

Summary output from five groups was as follows:

Group 1: A wet market Good Food Hub system to deliver healthy group meal ingredients for safe, nutritious and customised school meals and community canteens for the elderly. These group meal consumers have higher nutritional requirements.

Group 2: Create an 'Intelligent Wet Market' policy and a consumer-centred 'Intelligent Wet Market Committee' (as a governance mechanism) to enable stakeholders to improve digitisation of healthy diet information. This would support the Healthy China 2030 policy.

Group 3: 'Mama's Kitchen' – a healthier, more sustainable food supply through a transparent and interactive space within the wet market where customers can cook and order. Events would invite professional chefs and culinary experts to share their recipes and cooking skills.

Group 4: Creation of a community hub 'Link Corner', a virtual and physical community hub to host food and culture events, sell organic products and allow consumers to meet farmers.

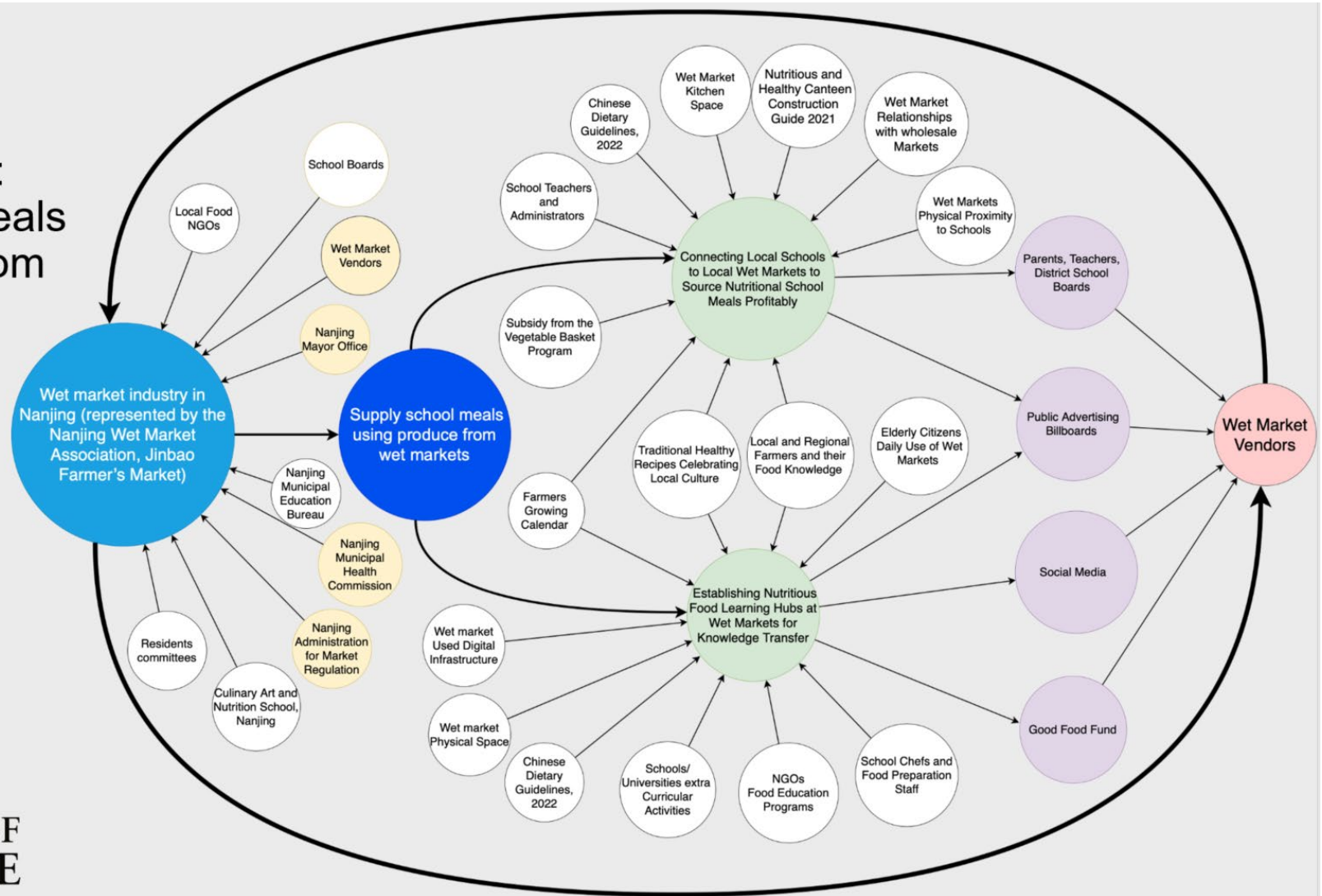
Group 5: Transform traditional wet markets into the core of a sustainable community food system. Elements are: public services, offline experiences, e-wet market and emergency cold storage.

As an example of the visualisation process, the Group 1 output was diagrammatically represented as below:

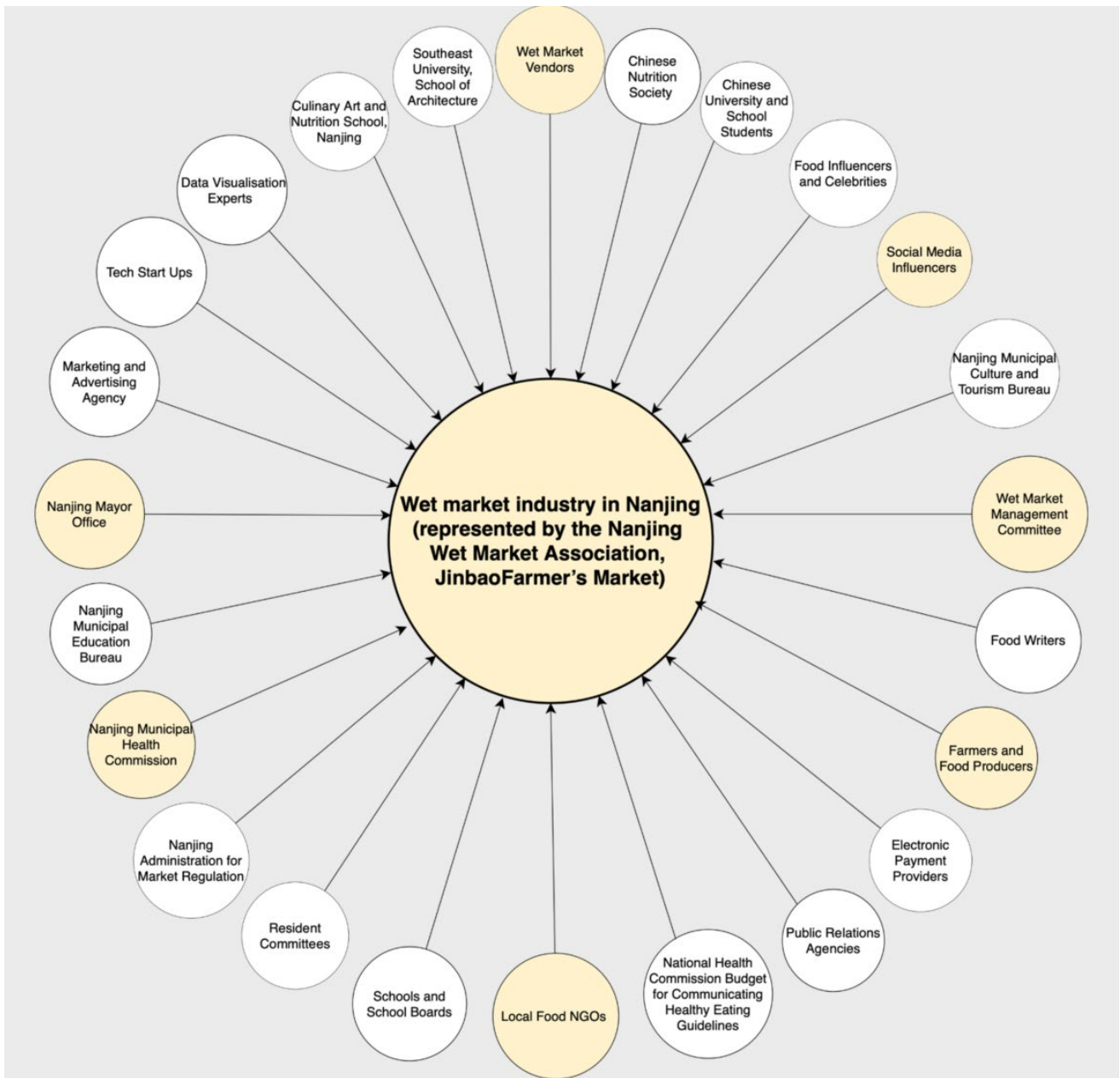


# CPBC™ Group 1: Supply School Meals Using Produce from Wet Markets

- Policy System Articulation
- System Level Entities
- System Level Actions/Strategies
- Untapped System Assets
- Ultimate Beneficiary
- Intermediate Beneficiary
- System Levers
- ➔ Interconnected entities
- Feedback



In another example of insight from the process, potential partners for the Nanjing Association of Market of Agricultural Product are shown below; the majority of these are not currently working together on the key issue.





## ▣ The impacts

A presentation of the Boot Camp outputs was given to a large group of senior Chinese participants and guests, including Dr Zhu Dazhou, Deputy Director, Division of Science and Technology of the Institute of Food and Nutrition Development, Ministry of Agriculture and Rural Affairs, and a team from the Good Food Fund (China), as well as EAT and the University of Cambridge. It was generally agreed that the Boot Camp had been a very fruitful way to uncover the possibilities for improving the contribution of the wet markets to answering the key question.

Many questions were asked about implementation and the positive steps that need to be taken to move forward on the findings.

### Key facts

Nanjing has a population of more than 9 million people

The administrative area of Nanjing stretches 6600 square kilometres

Per capita GDP of Nanjing was more than \$24,000 in 2020

Middle-aged and elderly people account for 80% of Nanjing's wet market consumers

According to a research project in 2015 in Nanjing, 70% of interviewed households reported visiting wet markets at least five days a week

Food systems in China account for 23% of gross domestic product (GDP) and employs 30% of its population

70 percent of all the food sold in the markets in Nanjing come from outside of the city

Mandatory to build a wet market of at least 500m square metres for every 10,000-15,000 Population

Wet markets must be considered in every new residential area

New wet markets must be within a 10-15 min commute

## ▣ Delegate comments

*“We learned quite a lot and were impressed that people of all ages have different perspectives on wet markets. The Boot Camp has provided more support for us to do a good job.”*

Ms Zhang Jiao of Jinbao Farmer’s Market

Yan Qing, Secretary General of NAMAP

*“We have learned quite a lot <from the process> and we look for more insights and inspirations. We can implement the proposals only when we have articulated them properly.”*

*““The outputs are very rich with many possibilities.”*

Yi Jian, Founder and President of the Good Food Fund

## References

1. K Zhong, T., Si, Z., Crush, J. et al. Achieving urban food security through a hybrid public-private food provisioning system: the case of Nanjing, China. Food Sec. 11, 1071–1086 (2019). <https://doi.org/10.1007/s12571-019-00961-8>

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#### Disclaimer

The authors of this report have made every attempt to ensure that the information contained in this case study is accurate at the time of completion. This has included working in close collaboration with stakeholders. However, any errors that remain are with the authors.

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