

WET Market Guidebook

W E L L B E I N G
E C O L O G Y
T R A N S F O R M A T I O N

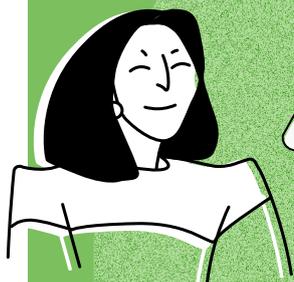
WET

M A R K E T

Innovating urban food environment
for dietary and food system transformation

A collection of insights and visions from
experts in various fields

A guide for decision-makers,
managers, and designers



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**RECOMMENDED CITATION:
Good Food Fund, Slow Food Great China. 2022. WET Market Guidebook. Beijing, China.**

During the pandemics, in partnership with Slow Food Great China, Good Food Fund established WET Market Global Expert Committee to provide support on drafting this guidebook. The guidebook aims to address long-term challenges faced by the current food system by promoting wet market transformation in China. The guidebook will be updated accordingly. All stakeholders are warmly invited to contribute ideas to support the transformation of wet markets.

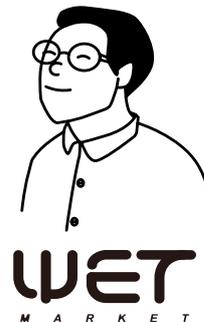
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WET
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Preface



2020 is a "special" start of a new decade. COVID Outbreak disrupted our "normal" life and spotlights challenges on the resilience of human society.

In many cities in China, traditional food markets are vital as they are the main access to fresh food. It also plays an important role in strengthening community bonds and improving the livelihood of small-scale farmers.

In the post-pandemic era, many cities have accelerated the transformation and upgrade projects targeting traditional food markets. The mission is to improve sanitation, ensure food safety and minimize the risk of zoonotic diseases.

In the international media, traditional food markets in Asia are often referred to wet markets. After the outbreak of COVID-19, many international groups urged China and other Asian countries to close the wet markets.

However, we believe the wet

markets are important urban food system hubs that link up upstream and downstream food value chains.

The landmark Eat-Lancet Commission Report in 2019 suggested three strategies to transform the food system: shifting to a plant-rich Planetary Health Diet, reducing food loss and waste, and improving production practices.

The COVID-19 crisis demonstrates how urgent our food system transformation is and its goal is to promote well-being and ecological sustainability.

Therefore, we proposed the concept of WET Market while WET stands for the initials of Well-being, Ecological Sustainability, and Transformation.

Good Food Fund and Slow Food invited domestic and international experts, policymakers, chefs, NGOs, city planners, and architects to share their visions of the future of food markets,



and contribute to this WET Market Guidebook.

At the beginning of the Decade of Action for the SDGs, the first UN Food Systems Summit scheduled in September 2021 will launch "game-changing solutions" to transform the way the world produces and consumes food.

As a core leadership member of UN Food Systems Summit Action Track 2 "Shifting to Sustainable Consumption Patterns", I lead the workstream of Food Environment and represent Action Track 2 to participate in the action area of Governance and Planning. WET Market Revolution project initiated by the Good Food Fund is an important practice under the two themes, and it has been integrated into the Summit's Summary Table of Game-Changing Propositions. The Summit will unite change-makers with the same mission to make real changes happen together.

We look forward to working with policymakers, communities, and other stakeholders at all levels to promote the transformation of the wet market towards a healthier, more sustainable, and more equitable urban food system hub. UN Food System Summit is about to take place and we need to seize this historic opportunity to demonstrate China's wisdom and leadership to the world.



中国绿发会良食基金
主任

Preface



The accelerated decline of agrobiodiversity has been observed since the rapid growth of large-scale industrialized farming in the last century. Three-quarters of plant genetic diversity has been lost. A conservative estimate of the current rate of species loss was 27,000 per year, or about 72 species per day, or about 3 species per hour. Large-scale industrialized farming has threatened our environment and impacted human health. It's worth noting that it also contributes to the reduced size of small farms, which has negatively affected the livelihood of small-scale farmers.

The Slow Food movement originated in Italy in 1986 advocates good, clean, and fair food for all. To achieve this goal, we believe food producers deserve respect and consumers should have the right to decide who produces the food, how to produce the food,

and what kind of food they want to buy.

Slow Food's projects such as The Earth Market, Ark of Taste, and Presidia are all dedicated to promoting positive interactions between producers and consumers, which are vital in ensuring the livelihood of small-scale farmers and advancing responsible consumption.

In the cities in China, traditional food markets are the main access to fresh food.

However, the emerging chain supermarkets, group purchasing, and food delivery services challenged traditional food markets. Thus, traditional food markets have to be upgraded and transformed. In addition to the infrastructure, the food market also needs to evolve with the changing and complex connection between food



supply, modern dietary habits, new lifestyle, and even the whole food chain and global food system.

The mission of Slow Food is highly compatible with the Good Food Pledge. As COVID-19 cases were traced back to traditional food markets, Slow Food Greater China and Good Food Fund launched the WET Market Revolution project. This handbook aiming to provide a practical guide for decision-makers, managers, and designers is the initial product of the project.

In 2020, the vision of the WET Market was presented and discussed at Beijing Design Week and Suzhou Design Week. We would like to collaborate closely with all relevant stakeholders to implement a pilot project soon under the visions of the WET Market.

Everyone should be aware that individual food choices do have an impact on the future of our planet. We hope that the WET Market transformation would promote everyone's right to good, clean, and fair food and a sustainable and fair food value chain.



孙群

国际慢食协会大中华区分会
秘书长

Acknowledgments

Good Food Fund would like to thank the WET Market Global Expert Committee for contributing their expertise to this guidebook.



In January 2021, Good Food Fund's initiative "From Mama's Kitchen to Good Food Hub" was selected from thousands of candidates as one of the ten top visionaries of the "2050 Food System Vision Prize" launched by the Rockefeller Foundation, SecondMuse and OpenID. Good Food Fund also participated in a three-month accelerator with other winning teams. We are grateful to all the organizations mentioned above that helped us think about how "Mama's kitchen" can fall to the ground in communities and food markets.

Good Food Fund is grateful to Mao Yun Yun, planner for Beijing's College Road Street, the Beijing Design Week team, and the Suzhou International Design Week team for their invaluable support on the implementation of the WET Market Revolution project. Good Food Fund would like to thank the managers and vendors of the Shuangta Market in Suzhou who supported a unique flash mob event where the guidebook was pre-launched. In addition, Good Food Fund is also grateful to Shan Tu who invited us to facilitate the discussion on WET Market in Hack 4 “The Interaction of Humans and Nature: Food – Future Design of Eating” during the 2nd SDG Open Hack at Tsinghua University. Students and mentors exchanged ideas and proposed innovative solutions for WET Market transformation.



Thanks to colleagues from Good Food Fund Huiyu Ouyang, Qing Zhu, Ruonan Li, Yu Liu, Luyue Zheng, and Meina Zhang for their dedication and efforts, and our designer Wanyu Li for her talent work on Good Food Pledge and this guidebook.

COVID-19 Outbreak exacerbated worldwide food insecurity and posed a great health threat to workers in the food system. Therefore, Good Food Fund would like to convey our sincere gratitude and respect for their essential work on ensuring our food supply.



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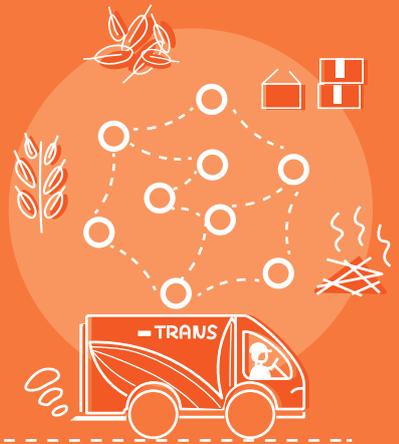
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Glossary



Food system

According to The Food and Agriculture Organization of the United Nations (FAO) report, it encompasses the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and waste disposal generated from activities in agriculture, forestry or fisheries. It is composed of subsystems (e.g. farming system, waste management system, etc.) and interacts with other key systems (e.g. energy system, trade system, health system, etc.).



Ultra-processed food

Made mostly from substances extracted from foods, such as fats, starches, added sugars, and hydrogenated fats and contain additives like artificial colors and flavors or stabilizers.



Planetary boundaries

Proposed in 2009 by 28 international scientists led by Johan Rockström from the Stockholm Resilience Centre. Planetary boundaries are a conceptual framework that assesses 9 processes fundamental to the stability of the Earth system and suggests a series of thresholds for these processes that, if exceeded, may endanger the habitability of the planet.



#Whole food

Refers to food that has been processed or refined as little as possible and is free from additives or other artificial substances. Whole foods include fruits, vegetables, legumes, nuts, seeds, whole grains, meat, fish, and eggs.



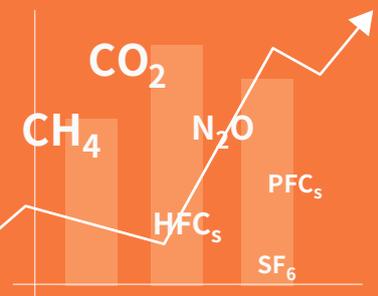
#Water footprint

Refers to the total volume of fresh water used to produce the goods and services consumed by the individual or community or country.



#Global warming potential

Refers to the heat absorbed by any greenhouse gas in the atmosphere, as a multiple of the heat that would be absorbed by the same mass of carbon dioxide (CO₂). It assesses the contribution of each greenhouse gas to the greenhouse effect.



#Agricultural nonpoint source pollution

Land runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrologic modification can move nutrients in fertilizer, livestock manure, pesticides, and other substances into local streams, rivers, and groundwater. It leads to water pollution primarily but also soil pollution and air pollution. It is difficult to manage because of its complexity and uncertainty.



#Dead zone

Excess nutrients that run off land or are piped as wastewater into rivers and coasts can stimulate an overgrowth of algae, which then sinks and decomposes in the water. The decomposition process consumes oxygen. It depletes the supply available to healthy marine life and thus leads to a dead zone.

#Agricultural biodiversity

Known as agrobiodiversity or the genetic resources for food and agriculture, including harvested crop species and non-harvested species. It is the result of natural selection processes and the careful selection and inventive developments of farmers, herders, and fishers over millennia. Agricultural biodiversity ensures the food and livelihood security of communities in different social and environmental settings.



#Ecological literacy

Refers to the ability to understand the natural systems that make life on earth possible and the interactions within natural systems with the skills of systematic thinking.



#Micro-enterprise

In China, micro-enterprise is a type of Small and Medium-sized Enterprise (SME). Enterprises in agriculture, forestry, animal husbandry, and fishery with operating revenue of less than 500,000 yuan are defined as micro-enterprises. Enterprises in manufacture with less than 20 employees or with operating revenue of less than 3 million yuan are defined as micro-enterprises. Enterprises in software and information technology with less than 10 employees or operating revenue of less than 500,000 yuan are defined as micro-enterprises. Enterprises in the real estate industry with operating revenue of less than 1 million yuan or total assets of less than 20 million yuan are defined as micro-enterprises. Micro enterprises have informal organization, few formal financing channels, and little fixed capital.

Executive Summary

There is an urgent need to develop sustainable food production because food production has the greatest effect on the Earth system.

There is a series of environmental challenges faced by the food system, including climate change, disrupted global nitrogen and phosphorus cycles, decreased biodiversity, and land-use change. These challenges have posed a great threat to the Earth system which food production and human well-being closely depend on.

Changes in food consumption, such as having a sustainable dietary pattern, is a great start because it can not only decrease the risk of certain diseases but have a positive effect on building ecological resilience and a justified society.

“Eat a variety of foods” is one of the six dietary recommendations presented by Chinese Dietary Guidelines (2016). It advocates eating a variety of food and local food, which can challenge monoculture farming and thus promote agrobiodiversity conservation. In 2019, Good Food Fund, China Biodiversity Conservation and Green Development Foundation launched the Good Food Pledge which proposed behavior changes that help each citizen to commit to building a sustainable food system. The behavior changes are healthy eating, reduce waste, local seasonal, circular economy, preserve biodiversity, and food education.

In addition to changes in eating behavior at the individual level, involving government and different stakeholders is crucial to building a sustainable food system.

Consensus on the vision of a sustainable food system serves as the foundation. Furthermore, actions on building an equitable, sustainable and healthy food system are essential to advance progress in almost all of the United Nations Sustainable Development Goals (SDGs).

In 2021, UN Food Systems Summit offers five action tracks to explore key cross-cutting levers of change to advance food system transformation.

The five action tracks are: ensure access to safe nutritious food for all, shift to sustainable consumption patterns, boost nature-positive production, advance equitable livelihood, build resilience to vulnerabilities, shocks, and stress.

As a main food retail spot, wet markets are essential in the food supply chain in China.

As the economy grows and residents' consumption levels increase, consumers have higher requirements for food quality and safety. This makes the wet market face new challenges, such as Threats from supermarkets and e-commerce, impact of Covid-19 pandemics, and policy pressure.

However, guided by UNFSS' s 5 Actions Tracks, wet market transformation can bring different stakeholders together to create a game-changing solution that has great potential to promote food system transformation in China.

Wet markets can help Ensure access to nutritious food, Promote healthy eating, preserve traditional food culture by providing local and seasonal food, Promote food education, Build an eco-friendly food retail terminal, secure livelihoods of small-scale farmers, and increase resilience of the food system in urban areas. It is worth noting that Chinese governments at all levels have realized challenges faced by the wet market and are actively involved in revitalizing the wet market. The initial upgrade is mainly on the improvement of infrastructure in wet markets, while the decision-makers realize that the wet markets have great potential in delivering food education, traditional cultural inheritance, strengthening community, and contributing green economic development.

Compared to "standardized" and "smart" food markets, WET Market put more emphasis on its potential for food system transformation.



WET as an acronym stands for

Well-being, Ecological sustainability, Transformation

Knowledge, experiences, visions, and efforts from different stakeholders are fundamental for the sustainable development of the WET Market.

With the shared understanding and common effort of all of the relevant stakeholders, WET Market can contribute to food system transformation, including supporting local sustainable agriculture, promoting healthy diets, reducing food loss and waste, and strengthening community ties.

Multi-functionality is vital for the WET Market. Four themes were proposed as innovative ideas on the functional layout, which are

trade zone, education zone, green zone, and service zone.

Inspired by good practices worldwide, we emphasize the close connection of these spaces. For example, Good Food · Mama's Kitchen is an overlap of education zone and trade zone. It will not only promote the sale of plant-based products but will also provide nutrition education to the customers. Some spaces are independent. Day Care Center is an example. It aims to redress gender inequality present in rural agriculture.

In addition to the innovation on function, the innovation on management model is also needed to ensure service quality and vendors' livelihood in the WET Market.

Food Policy Councils, capacity building on WET Market management committee, and community participation in food safety monitoring are recognized as effective ways to improve the management capacity of wet markets. The core of these innovative solutions is an effective engagement of stakeholders.

Business model innovation can expand the customer base and scale up the sales of the WET Market.

It will also equip smallholder farmers and vendors with business skills, promoting livelihood equity and resilience. The new business models proposed in this guidebook are integration of wet markets into wholesale markets, cooperation with local small restaurants, vouchers for healthy food, online platforms, and micro-business.

In the end, we will provide a toolkit to facilitate the transformation of the wet markets, which includes **WET Market Self-assessment Checklist, Steps on WET Market Transformation, and Cost-effective Solutions for WET Market Transformation.**



WET MARKET GUIDEBOOK

**Food System
Transformation:
Produce and Con-
sume Food in a Sus-
tainable Way**

1.1

Healthy Diet and Food System

Researches in the field of public health have shown convincing evidence of a close relationship between dietary patterns and health outcomes. Chinese Dietary Guideline [1] is consistent with dietary recommendations from WHO [2] that emphasize a diversified, balanced and healthy diet will vary depending on individual characteristics (e.g. age, gender, lifestyle, and medical history) but the basic principle “Eat a variety of food” applies to all populations. Quality of life can be greatly improved by following a balanced and healthy diet as it can reduce the risk of noncommunicable diseases (chronic diseases) and overall mortality. Recommendations stated in Chinese Dietary Guideline for adults are as follows:

A healthy dietary pattern should not only consider nutritional adequacy but be tailored to personal preference, availability of foods in the local food system, dietary customs of different groups. A focus beyond food groups is emphasized because individual food choice has environmental effects and thus can promote sustainable food production and further facilitate food system transformation.

The healthy dietary pattern we propose is highly consistent with a healthy diet described in the Dietary Guideline. With a systematic approach, it connects widely discussed food consumption with other elements involved in our food system. The following is a brief description of how the six recommendations from Chinese Dietary Guidelines are in line with the sustainable eating pattern we propose.



Eat a variety of foods, with cereals as the staple



Balance eating and exercise to maintain a healthy body weight



Consume plenty of vegetables, milk, and soybeans



Consume an appropriate amount of fish, poultry, eggs, and lean meat



Reduce salt and oil, and limit sugar and alcohol



Eliminate food waste and develop a new ethos of diet civilization

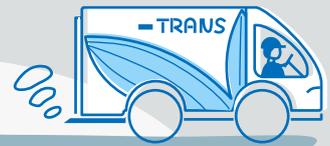
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rice wheat
barley oats
3% ~ 7%

grains
and cereals

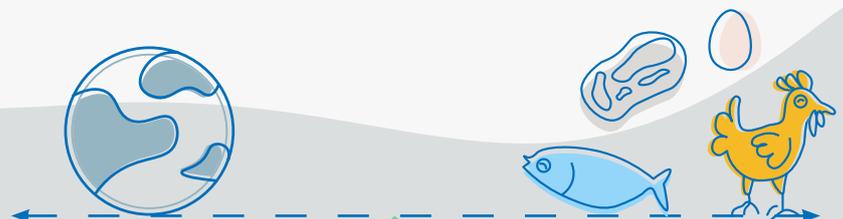
Eat a variety of food, the key message from recommendation 1, refers to eating diverse whole food instead of ultra-processed food standing in supermarket aisles. A diversified diet supports agrobiodiversity. However, for the consumption of cereal, Chinese adults mainly rely on rice and wheat flour. The consumption of whole grains such as rice, wheat, barley, and oats which are traditional staple foods in our dietary habits only accounts for 3% to 7% of grains and cereals in our current diet pattern [1]. The increase in the food diversity in our diets will undoubtedly bring about new trends in food consumption. Therefore, it is expected that the pursuit of different types of agricultural products and different crop varieties will challenge large-scale monoculture farming, thus promoting agrobiodiversity conservation and facilitating sustainable agriculture.

The consumption of whole grains



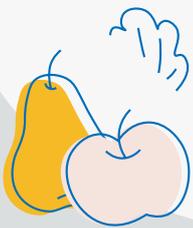
A "**healthy body weight**" in the second recommendation emphasizes body mass index (BMI) as a risk factor for chronic diseases. Balanced energy and nutrients intake require people to limit added fat (i.e., butter) and to reduce the intake of fatty cuts of meat (i.e., pork belly) and energy-dense, nutrition-poor foods. From the perspective of the food system, on a global scale, livestock production (including transport of livestock and feed) accounts for nearly 80% of the agricultural sector's emissions [3]. The human demand for animal products is increasing. It is estimated that by 2050, the global demand will double from 229 million tons between 1999 and 2001 to 465 million tons [3]. Therefore, encouraging people to have a balance on meat consumption is critical to sustainable development. This is consistent with the key messages from recommendation 4 and recommendation 5. While realizing that "fish, poultry, eggs, and lean meat" provide us with lots of nutrients, such as high-quality protein, essential fatty acids, and micronutrients, we emphasize "appropriate" intake to not exceed planetary boundaries in food production.

2



3

"Eat plenty of fruits and vegetables" and "soybeans" in the third recommendation point out that plant-based foods play an important role in human health. In the past two decades, with the development of modern food processing technology, there is a global shift to unhealthy diets in which the majority of our daily energy comes from low-priced ultra-processed food which contains high fat and high added sugar. Data from China Health and Nutrition Survey (CHNS) shows that 28.5% of the daily energy adults consume comes from processed foods, and this proportion has risen to 40.2% among children and adolescents living in urban areas[4]. Considering that the intake of ultra-processed foods is positively related with overweight and obesity [5], the recommendation on eating more whole foods such as fresh fruits and vegetables and beans will substantially benefit human health. With the continuous upgrading in the logistics industry, "fresh" food we want to promote is locally produced food, rather than "fresh" food that has been transported over long distances in space (such as cherries shipped via aircraft). From the perspective of the sustainability of the food system, such recommendations will help reduce the energy consumption on transportation while shortening our food supply chain that is becoming globalized today. This is an effective strategy to increase the resilience of our food system. In terms of economic development, a focus on local "fresh" food can revitalize the local agriculture sector, bring jobs and stimulate local economic growth.



6



The water footprint of a middle-sized tomato

45L 的水

CH₄

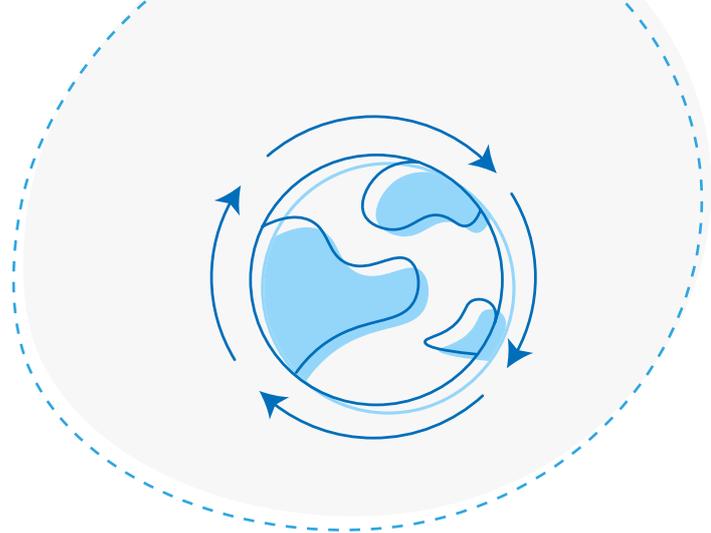


Recommendation six touches upon the "food waste" problem and it should be addressed in the sustainable eating pattern we propose. Food wasted on the plate represents not only wasted energy and nutrients but wasted fossil fuels and freshwater utilized from food production to consumption. The water footprint of a middle-sized tomato can reach 45 liters [6], which means as much as 45 liters of water will be wasted when the tomato is thrown away. Additionally, methane produced from food rotting in landfills exacerbates climate change because it has 82 to 83 times the warming potential of carbon dioxide [7]. Since per capita water resources and arable land in China are limited, reducing food waste, an inherent moral requirement of the traditional virtue of "diligence and thrift" becomes an urgent need considering the tight water and soil resources in China and the global crisis of climate change.

In conclusion, the sustainable dietary pattern we want to promote carefully considers benefits to human health and positive impacts on food system transformation. We believe changes in dietary behaviors and shifts to a sustainable dietary pattern are effective and feasible ways to alleviate the pressure on the ecological environment and strengthen the resilience of the ecosystem.



1.2 Challenges in current food system



Climate Change

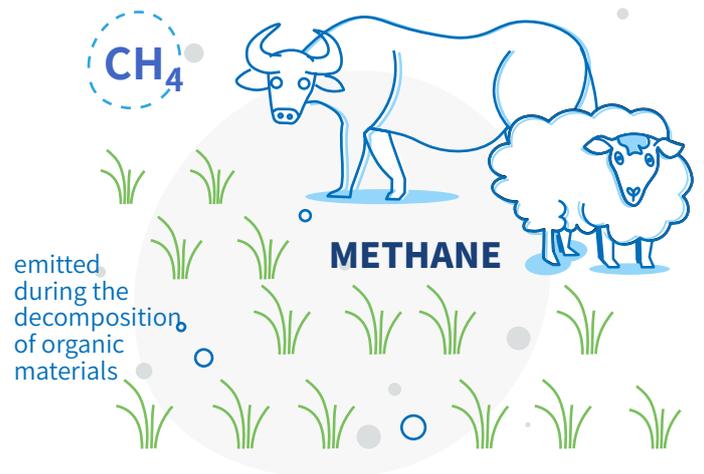
- **Food production is the largest cause resulting in environmental change:** Anthropogenic emissions of greenhouse gases (eg, carbon dioxide, methane, and nitrous oxide) increase when converting forests and wetlands to agriculture, and practicing intensive tillage. Food production is the main source of methane and nitrous oxide [8]. Notably, the global warming potential of these two greenhouse gases is much bigger than that of carbon dioxide. In China, the emissions of methane and nitrous oxide in the agricultural sector accounted for more than 40% and 50% of the national emissions respectively [9].

Methane is produced during digestion in ruminant livestock (i.e., cattle and sheep) or is emitted during the decomposition of organic materials in flooded rice paddies.

Nitrous oxide emission mainly comes from soil microbial activities in farmland and pasture, and soil fertility (such as fertilization) directly contributes to its emission.

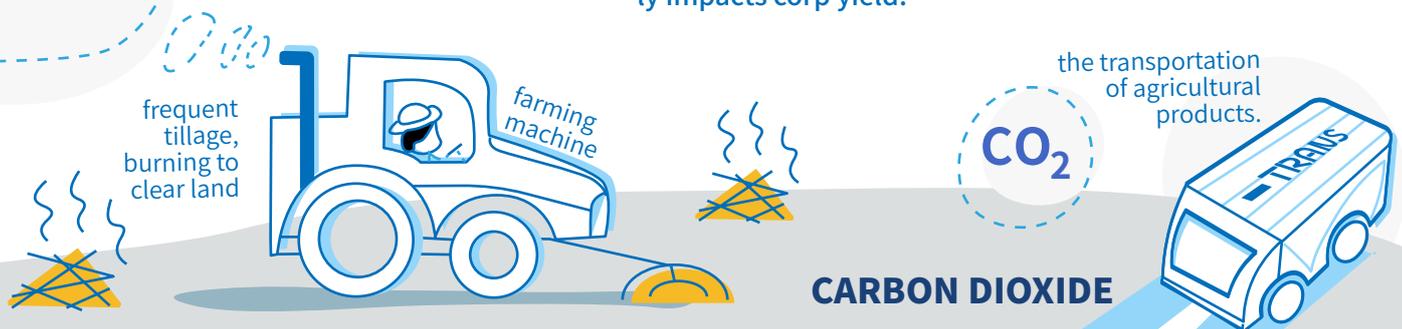
The prime sources of **carbon dioxide** include frequent tillage, burning to clear land, operation of farming machinery (which burns fossil fuels), and the transportation of agricultural products.

during digestion in ruminant livestock (i.e., cattle and sheep)



- **The impact of climate change on food production:** Climate change poses a serious threat to our food system that humans rely on for survival. As extreme weather events (e.g. heat waves, heavy rainfall, severe dry seasons) become more frequent, it will lead to rising ocean temperature and ocean acidification at an alarming rate, which has threatened the future of fishermen and the fishing industry. In addition, climate change is significantly transforming the water cycle which has intensified water scarcity and greatly impacts crop yield.

CO₂



CARBON DIOXIDE



▶▶▶ Nitrogen and phosphorus flows

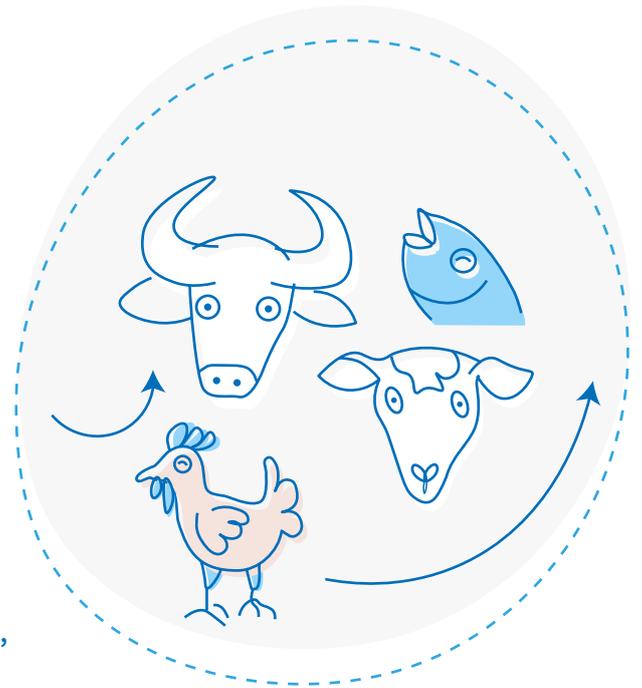
- Nitrogen and phosphorus are vital mineral nutrients for terrestrial and marine life. The growth of plants is limited by the natural availability of nitrogen and phosphorus. To feed the world's growing population, it requires us to increase crop yields. As one of the greatest inventions of the 20th century, the Haber-Bosch process successfully converts non-reactive nitrogen gas to ammonia at a large scale, and nitrogen fertilizers thus maximize food production. Conversely, phosphorus fertilizer is a non-renewable resource because the raw material phosphorus rock deposits are estimated to be depleted in 50-100 years [8].
- **Biodiversity:** Preserving biodiversity is
- The overuse of fertilizers in large-scale food production disrupts the nitrogen and phosphorus cycle. In terms of fertilizer consumption and fertilizer use efficiency in China, it shows a rising trend since 1984 and reached a peak of 60.23 million tons consumption in 2015. Although China has achieved negative growth in fertilizer use for four consecutive years, the intensity of fertilizer application still exceeds the international safety level [10]. Over-fertilization is one of the five main sources of agricultural non-point source pollution in China, and its consequences include:
 1. Lead to Dead Zone
 2. Reduce biodiversity
 3. Accelerate acidification of soils and water: soil heavy metal pollution and soil acidification change the physical and chemical properties of the soil
 4. Nitrate nitrogen in drinking water exceeds safety level: In the northern part of China where the application of fertilizer is intensive, it is estimated that more than 20% of the selected water samples in the area show a higher level of nitrate-nitrogen than the upper limit. High levels of nitrates in drinking water have health effects, including difficulty breathing and increased risk of digestive diseases (such as liver cancer).



- Notably, the Haber-Bosch industrial process is highly energy-intensive. An internal report of the nitrogen fertilizer industry in 2006 showed that the annual consumption of natural gas, anthracite, and electricity in the nitrogen fertilizer industry in China accounted for 18.7%, 22.1%, and 2.28% of the national total respectively. In other words, nitrogen fertilizer production is associated with high levels of greenhouse gas emissions.

▶▶▶ Biodiversity loss

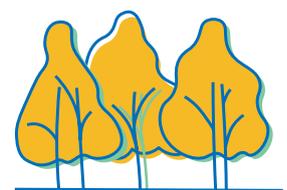
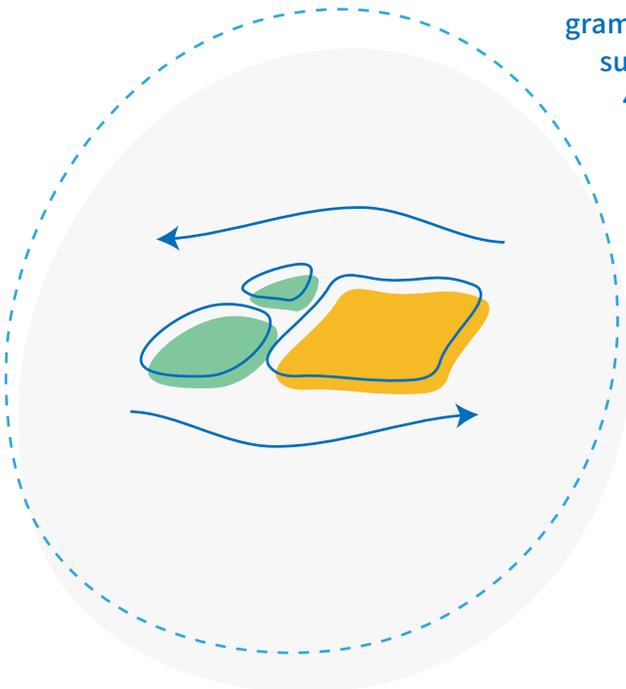
an important goal in sustainable development. The earth is facing the sixth mass extinction of species, losing species at the rate 100 to 1000 times higher than Holocene rates [8]. This poses a huge threat to food security as the diversity of all living organisms is necessary to the resilience of food production. Keeping the balance between population growth and food supply will be extremely difficult when rapid biodiversity loss compromises crop resistance to pests, pathogens, and extreme weather



- **Agricultural biodiversity** (agrobiodiversity) is of great significance to human health. It can stabilize our ecosystem, support production practices, and enhance the resilience of the food system against future crises, including global warming, shortage of freshwater resources, and global pandemics. Although there are more than 14,000 edible plant species, three major crops (corn, rice, and wheat) currently occupy human sources of dietary energy. They contribute about 60% of our daily energy intake[8], which is contrary to the dietary recommendation on "eat a variety of food". This indicates an urgent need for food system transformation.
- Considering forests' role in the carbon cycle, China initiated the "Grain for Green" pro-

▶▶▶ Land-use change

gram to advance sustainable development. However, there is a sustainable reduction in forest area worldwide. An estimated 420 million ha of forest has been lost worldwide through deforestation associated with timber harvest activity, expansion of arable land, and infrastructure construction since 1990. From 2015 to 2020, the rate of deforestation has slowed to around 10 million hectares lost per year [11]. Agriculture-driven land-use change has been considered as one of the biggest culprits of greenhouse gas emissions and it is a major factor leading to biodiversity loss and land degradation. Forest, the green lungs of Mother Earth, safeguards regulation of Earth systems, and thus agricultural expansion into forest areas shall be stopped. Sustainable use of land ensures human well-being in the long term.



1.3

The Vision of Food System

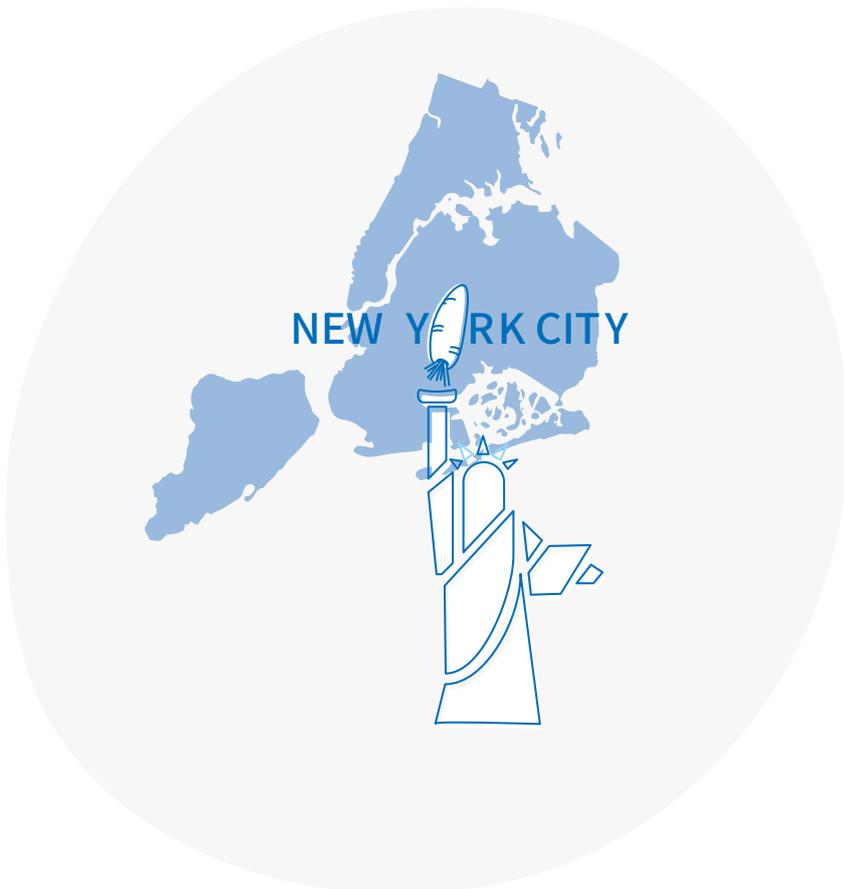
Successful transformation of the food system involves two prerequisites. One is that all individuals have increased awareness and even a deep understanding of the challenges in our food system, and the other is a consensus on the vision of the food system.



In 2019, Good Food Fund, China Biodiversity Conservation and Green Development Foundation launched Good Food Pledge which proposed behavior changes that help each citizen to commit to building a sustainable food system. The Good Food Pledge is described as followed [2]:



In addition to changes in eating behavior at the individual level, involving government and different stakeholders is crucial to building a sustainable food system. Consensus on the vision of a sustainable food system serves as the foundation. New York City has released a groundbreaking food policy document titled *Food Forward NYC: A 10 Year Policy Plan* [13]. It sheds some important light for food officers in Chinese cities to learn both goals and strategies on how to build an equitable, sustainable, and healthy food system for all residents. *Food Forward NYC* is organized around five overarching goals:



1. All New Yorkers have multiple ways to access healthy, affordable, and culturally appropriate food.
2. New York City's food economy drives economic opportunity and provides good jobs.
3. The supply chains that feed New York City are modern, efficient, and resilient.
4. New York City's food is produced, distributed, and disposed of sustainably.
5. Support the systems and knowledge to implement the 10-year food policy plan.

Globally, the 17 Sustainable Development Goals (SDGs) [14] proposed by the "2030 Agenda for Sustainable Development" guide the transformation of the food system. Creating a resilient and sustainable food system is such an important strategy to advance progress in achieving 17 SDGs that it focuses on "equality", "healthy nutrition" and "sustainability". A detailed description of the 17 SDGs are as follows:



1.4 Strategies for Transforming Our Food System

In 2021, UN Food Systems Summit (UNFSS) will be convened as part of the Decade of Action to achieve the Sustainable Development Goals (SDGs) by 2030. Background paper of the International Year of Fruits and Vegetables 2021 (IYFV) [15] included an infographic showing a close relationship between SDGs and fruit and vegetable intake. Similarly, guided by SDGs, the five action tracks proposed by UNFSS will support a more productive, environmentally sustainable, and resilient food system.

Health benefits of fruit and vegetables

Harness the goodness

Fruit and vegetables have multiple health benefits. They strengthen the immune system, combat malnutrition and help prevent non-communicable diseases.

2 3

Diversified diet and a healthy lifestyle

Live by it, a diverse diet

Adequate amounts of fruit and vegetables should be consumed daily as part of a diversified and healthy diet.

2 3



Food loss and waste

Respect food from farm to table

Fruit and vegetables are worth more than their price. Maintaining their quality and assuring their safety across the supply chain, from production to consumption, reduces losses and waste and increases their availability for consumption.

Innovate, cultivate, reduce food loss and waste

Innovation, improved technologies and infrastructure are critical to increase the efficiency and productivity within fruit and vegetable supply chains to reduce loss and waste.

1 2 12 15

Sustainable value chains

Foster sustainability

Sustainable and inclusive value chains can help increase production, and help to enhance the availability, safety, affordability and equitable access to fruit and vegetables to foster economic, social, and environmental sustainability.

1 2 3 4
5 8 11 12 15

Highlighting the role of family farmers

Growing prosperity

Cultivating fruit and vegetables contributes to a better quality of life for family farmers and their communities. It generates income, creates livelihoods, improves food security and nutrition, and enhances resilience through sustainably managed local resources and increased agrobiodiversity.



UN Food Systems Summit (UNFSS) offers five action tracks to explore key cross-cutting levers of change to deliver progress on all 17 SDGs [16]. By bringing together scientists, young consumers, international and local organizations, and different stakeholder groups, UNFSS hopes to produce systematic changes. Furthermore, it is emphasized that the Action Tracks are not separate and are designed to address possible trade-offs with other tracks to have a synergistic impact.



Action track **1**

Ensure access to safe nutritious food for all

Promote food security and reduce hunger

Improve access to nutritious food

Making food safer

Action track **2**

Slashing food loss and waste and transitioning to a circular economy

Enabling, inspiring, and motivating people to enjoy healthy and sustainable options

Shift to sustainable consumption patterns



Action track **3**

Boost nature-positive production

Protect natural ecosystems

Managing sustainably existing food production systems

Restore degraded ecosystems

Action track **4**

Localizing food systems

Eliminating worker exploitation and ensuring decent work in food systems

Rebalancing agency within food systems

Advance equitable livelihood



Action track **5**

Build resilience to vulnerabilities, shocks, and stress

Food systems resilience

Universal food access to build resilience

Climate-resilient development pathways to food system transformation

WET MARKET GUIDEBOOK

**The Role of
Wet Market on
Food System
Transformation**

What is 2.1 Wet Market?

Wet market is a marketplace selling fresh meat, fish, produce, and other perishable goods. Vendors rent a spot to sell agricultural products every day in the market. Common produce in the market includes vegetables, fruits, aquatic products, poultry eggs, meat, and their products, grains and their products, soy products, cooked food, condiments and food produced locally, etc.

Wet market is not only an essential food retail spot but also an important public space where people can find affordable and healthy food and chat with friends and neighbors.

Compared with other food retail outlets, the wet market provides access to agricultural products sourced differently, attracts couples, migrant workers, and small farmers to run and/or own the stall, and targets nearby community residents as customer groups. It also has the potential to act as a community hub, educational venue, but a lack of professional skills in management such as marketing becomes its challenge.



Large-scale farmers

Small-scale farmer

Processing

Processing

Transportation

Transportation

Wholesale market

Chain supermarket, online platform, cateen

RESTAURANT

餐厅

Wet market

Local small restaurant

Residents

The following table provides details on the characteristics of the wet market and other food retail outlets.

Supply chain

Seller



WHOLESALE MARKET

Relatively short supply chain
Fewer middleman
Bulk purchase
Price easily influenced by demand and supply market.

Three types:

1. Company model, with professional sales staff.
2. Agency model, selling big-brand products.
3. Small-scale vendors mainly operated by migrants like wet markets.



WET MARKET

Diverse suppliers
Some self-produced agriculture products.

Stalls run by couples for years
Mainly migrant sellers from villages and towns.
Booths are not subject to unified control and can better reflect market conditions.



GROCERY STORES/ SUPERMARKET

A wide range of food suppliers.
Long supply chain.

Equipped with professional management and preservation technology.
Shop assistants received uniform training.
Weak connection between consumers and shop assistants.



ONLINE GROCERY SHOPPING

Mainly supplier model and direct procurement model.
Skip some or all wholesalers, thus shortening the supply chain.

Analyze user preferences and make targeted recommendations with big data.
Limited potential for promoting healthy eating.
The technology and management of logistics and cold chain transportation are critical, which directly affect the quality of products.



GROUP PURCHASING

Relatively short supply chain
Purchased from farmers directly.
Warehouse set to store products.

The platform facilitates the purchase and distribution of fresh food
The community focal point is responsible for connecting with community members.
A "semi-acquaintance" relationship between the community focal point and community members helps understand the residents' purchase demand.



FARMERS' MARKET

Local farmers who practice sustainable agriculture sells products.
No middleman.

Equipped with knowledge on the products and farming, which can promote trust between sellers and consumers.
Promote healthy diet and food education.

Products

User Portrait

Pro and cons

Each booth sells products of a specific category.
Sellers tend to sell agricultural products from their hometown and better grasp the supply of goods.
Products with no excessive packaging or advertising information.

Most of them are 2B business.
Customers include restaurants, supermarkets, e-commerce platforms, and other stable customer sources, which usually have professional buyers who know the products well and have close relationships with the sellers.
The time for large-scale procurement is determined, and the freshness of ingredients is pursued.

Wide business scale, product categories, and service coverage
Controllable price.
Highly irreplaceable in terms of guaranteeing the supply of basic food for urban residents.
Directly affect the food safety of the entire city.
Lack of advanced sanitary conditions and management models.

Mainly fresh and healthy food with few processed food.
Lack of professional cold chain storage, shorter procurement time, and greater impact by market fluctuations.

It is dominated by residents in surrounding communities, with a high proportion of regular customers, a high repurchase rate, and close social exchanges.

Serve as a community space and educational hub.
Provide market access to small-scale farmers.
Ensures residents' healthy dietary structure and nutritional intake. Lack of professional skills such as marketing.

Semi-finished products and processed foods account for a high proportion.
More marketing advertisements, which can influence consumer's food choice.

Customer is diverse but with few social interactions.

Standardized management,
Strong purchasing power.
Capacity to assume greater social responsibility.
Lack of healthy diet guidance and food education.
More food loss and waste.

Provides special agricultural products (i.e., exotic fruits) to attract young customers.
Emphasize the freshness and uniqueness of their products with "direct sourcing".
Invest in visual publicity and marketing advertising which affects consumer judgment.

A wide range of consumers.
Mainly young and middle-aged consumers who may lack food knowledge, and rely on product promotion.

Help farmers distribute products
Recommend healthy recipes based on consumer preferences.
Convenient for the young generation, but it is not friendly to the elderly
Criticized for creating food loss, waste, and overpackaging.

Fresh products and competitive price.

Residents in the surrounding communities who will pick up their orders.

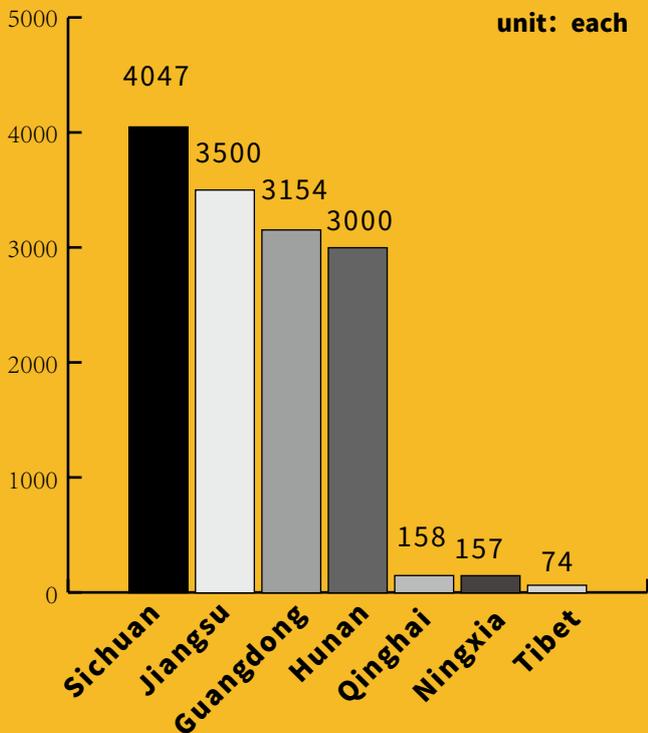
Deliver fresh, high-quality, and cheap fruits and vegetables on time and on-demand.
Convenient feedback channel.
Lack of systematic and efficient management.
Reported low-price competition and fraud cases.

Self-produced agricultural products
Guaranteed freshness and food safety, which is a common focus of sellers and buyers.

Consumers usually have good eating habits and pay attention to healthy meals.
Experience is prioritized over purchase demand.

Support sustainable agriculture.
Advocate for a specific missionServe as a hub for public education.
Have limited scale and coverage.

2.2 Wet Markets in China

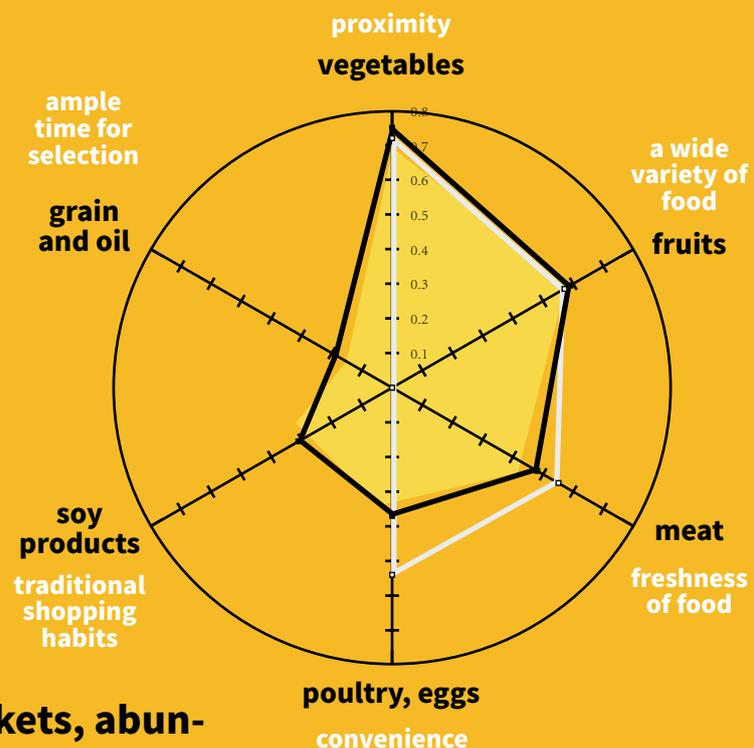


In 2019, data shows there were 39,397 wet markets in China. More specifically, Sichuan, Jiangsu, Guangdong, and Hunan have a large number of wet markets, with 4,047, 3,500, 3,154, and 3,000, respectively. Conversely, the number of wet markets in Qinghai, Ningxia, and Tibet is relatively small, which are 158, 157, and 74 respectively. The net growth of wet markets across the country is small with only 2,954 new wet markets opened from 2018 to 2019 [17].

Despite the impact of chain supermarkets and online e-commerce, more than half of consumers surveyed stated that a wet market is preferred due to the great convenience and diversity of fresh produce. It is found that products sold in wet markets are mainly fresh produce and unprocessed animal products. Highly processed foods are rarely seen there.

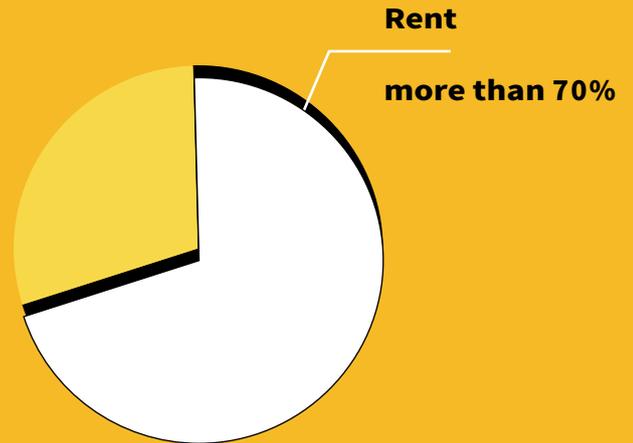
In terms of the type of food consumers buy in the wet market, the survey indicates [17] that the proportion of consumers who buy vegetables, fruits, and meat is 75.4%, 58.8%, and 48% respectively. The percentages of consumers buying poultry, eggs, soy products, and grain and oil were 37.4%, 30.9%, and 19%, respectively.

More than half of consumers participating in the survey prioritize the wet market because of a wide variety of food (57.2%), freshness of food (55.2%), and convenience (54.3%). In addition, traditional shopping habits and ample time for selection are listed as key reasons to visit wet markets.

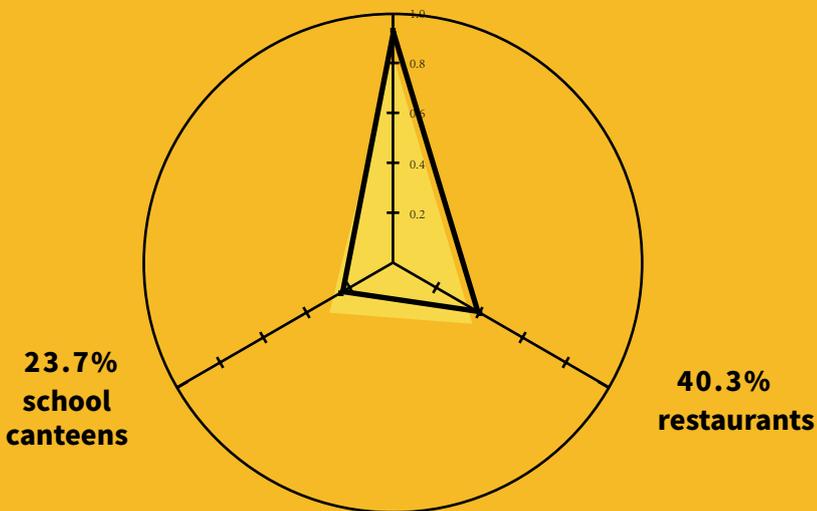


It is concluded that location of wet markets, abundance of products, and freshness of produce are three main factors influencing consumer behavior.

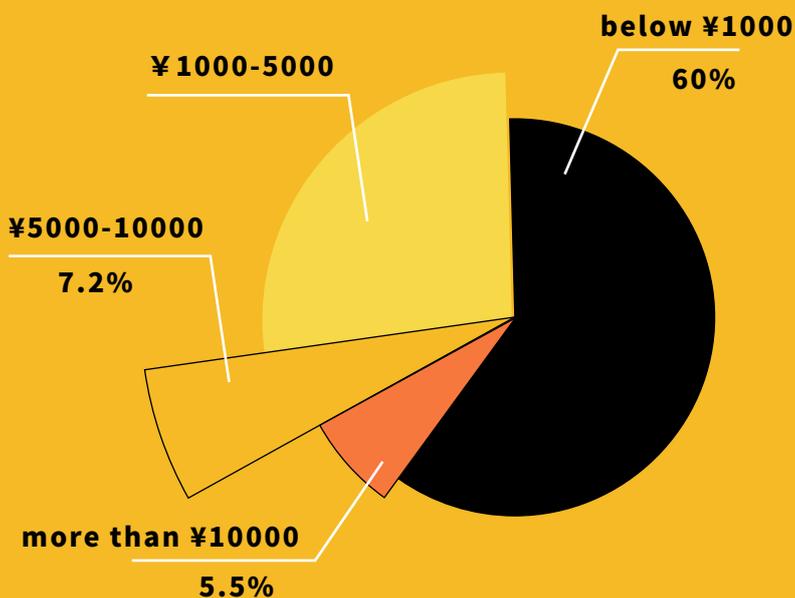
In addition to retail, some wet markets supply restaurants and canteens with agricultural products. Rent is a big barrier for wet market vendors as it accounts for more than 70% of the overall operation cost [17].



92.80%
mass consumers



In terms of business type, 92.80% of business households sell to mass consumers, and the proportions of business households that supply vegetables to restaurants and school canteens are 40.3% and 23.7%, respectively.



Categorized by average daily transaction, vendors with a volume of 5000-10000 yuan account for 7.2%, while those having a volume of 10000 yuan or more only take up 5.5%. Six out of ten business households have an average daily transaction volume below 1,000 yuan. Generally, the daily transaction level of business households in the wet market is low.

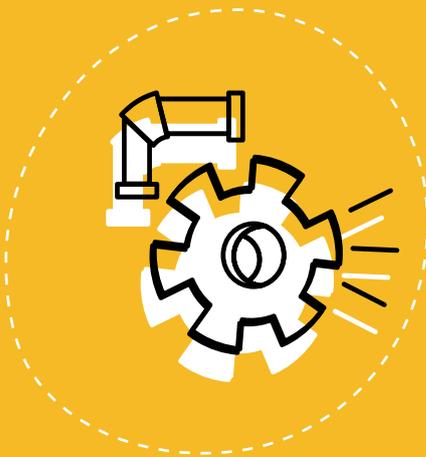
2.3 Challenges Faced by Wet Market

As the economy grows and residents' consumption levels increase, consumers have higher requirements for food quality and safety. This makes the wet market face new challenges:



Management improvement

Most wet markets face problems such as outdated management models, unreasonable allocation of funds, mode of operation found unfit with residents' consumption habits, and complicated permitting and licensing rules for street vendors [17].



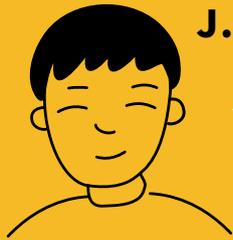
Infrastructure improvement

Most newly-built wet markets in metropolitans lack thorough consideration on competing with other food retail terminals such as supermarkets, community vegetable stores, and fresh convenience stores. Wet markets located in the old town have numerous problems such as small land area, small number of stalls, pollution caused by waste disposal, noise pollution, poor drainage, inadequate parking management, and traffic congestion. In rural areas, the quantity and quality of wet markets can hardly meet the needs of residents. Problems found are unfixed trading places, high portions of street vendors, poor infrastructure, lack of well-designed layout of the surrounding areas, and unreasonable open hours [17].



Threats from supermarkets and E-commerce

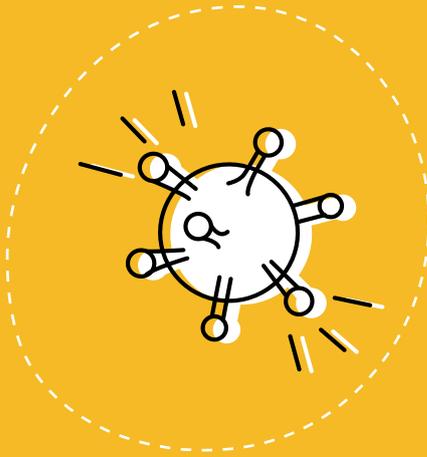
The rise of supermarkets and group purchasing has enriched the channels for people to buy fresh ingredients. It is found that young and middle-aged consumers are more likely to be attracted by the cheapness and convenience of community group buying. Therefore, it has threatened the wet markets by decreasing the diversity of customer groups and an insufficient number of customers.



J.H.

Jihu Market, Chengdu, Sichuan

Jinhu market now is not like 5 years ago when it was busy and well-known. Subways and big supermarkets around the market were constructed while online food shopping also became trendy. Jihu Market only has few customers. Stalls are for rent but only a few were taken.



Impact of Covid-19 pandemics

The outbreak of the covid-19 spotlights food safety and live poultry management in wet markets. Outdated infrastructure and inefficient management and supervision are big barriers for wet markets to strictly follow hygienic practices and thus ensure high levels of food safety. In addition, unlike other countries, it is worth mentioning that most wet markets in China allow selling live poultry. The lack of standardized management of live poultry trade can increase the risk of rapid spread of viruses and disease.



Policy pressure

The majority of decision-makers have the presumption that miniaturization, chaining, and supermarketization are modern models in the urban food supply. Therefore, most cities are taking action to clear out old wet markets and build “new” food retail terminals such as supermarkets, convenience stores, and community food stations. Taking Beijing as an example, urban industrial upgrading and population control policies contribute to wet market closure and indirectly impact migrant workers’ livelihood who are vendors in wet markets. These policies indicate challenges for wet markets.

2.4 Wet Market and Food System Transformation

The significance of wet markets is reflected in their history, support for cultural foodways, and their role in social gatherings. Guided by UNFSS' s 5 Actions Tracks, wet market transformation can bring different stakeholders together to create a game-changing solution that has great potential to promote food system transformation in China.



Action Track **1** Ensure access to safe and nutritious food for all

Ensure access to nutritious food

In many large cities, the wet market is still the top choice for most consumers to buy fresh food, such as Shanghai, Guangzhou, Nanjing, and Qingdao [18]. Thanks to diverse booth composition, transaction negotiations between consumers and merchants, and free competition between sellers, the wet market ensures the freshness, quality, variety, and fair price of food ingredients. At the same time, with a high density of communities nearby, the wet market guarantees the convenience of shopping for the vast majority of consumers. In addition, the prices of ingredients in wet markets are generally lower than in supermarkets and small stores. All these ensure that residents have access to affordable and high-quality food.

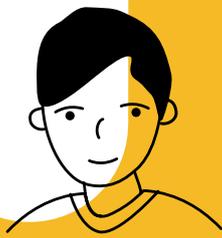


The old neighborhood

"has experienced the demolition of large wet markets around 2015 and a series of clean-up and rectification in 2017. It is no longer so convenient to buy vegetables in the community. It takes me additional effort to buy vegetables that meet my standard of quality and type. The transformation results in fewer choices."

Promote healthy eating

Wet markets usually sell nutritious and healthy ingredients, such as vegetables, fruits, fish, nuts, whole grains, etc. [19]. Therefore, compared with ultra-processed food added with chemical additives and containing a high amount of sugar and fat, food sold at the wet market becomes fundamental to a healthy diet for a growing population [20]. According to the 2012 China Health and Nutrition Survey, children who live closer to the wet market have more nutritious meals and consume less ultra-processed foods. Similarly, a 2015 study by the World Health Organization also showed that in China, South Korea, and some Southeast Asian countries, the population living in areas with a higher density of wet markets is less likely to be infected by microorganisms [19].



Kaikai Cai

Lianhua Shan Seafood Market, Guangzhou, Guangdong

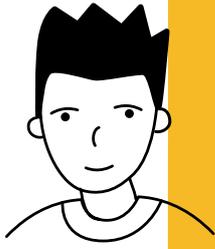
Lianhua Shan Seafood Market is in a community of Xv people, which is also the only fishing community in Guangzhou now. The specialty of the market is fresh and dry seafood as it is close to the dock. People can get fresh, cheap, and special seafood here!



Action Track **2** **Shift to sustainable consumption patterns**

Preserving traditional food culture by providing local and seasonal food

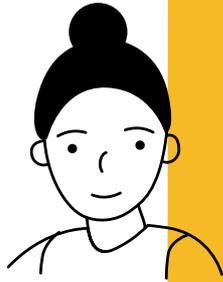
The wet market, a fresh food retail system with stable demand and balances built in the past millennium. It is not only a trading place but also supports people's livelihood, documents city development, enhances food identity and awareness of food culture. Different from modern fresh food retail outlets, in many wet markets, both official vendors and temporary vendors provide seasonal local food. This diversifies our diet and makes sure the traditional cooking can be passed on.



Wa Pian

Simao Wuyi Market, Puer, Yunan

Seasonal stalls in Simao Wuyi Market demonstrate rich local knowledge. People like seasonal food! During the Dragon Boat Festival, stalls selling wild mushrooms and zongzi are the most popular in the market. Vendors are willing to share the histories of the featured food they sell. The girl selling zongzi of Dai people explains to everyone the difference between zongzi of Dai and Han.



Lvzi

Zhuxin Market, Kunming, Yunan

The diversity of the food in Zhuxin Market is far richer than we can imagine! Every stall is arranged like an art. I feel that I am wandering around a street museum rather than a wet market.



Liu Da Zhuo

Weituotang Market, Deyang, Sichuan

In Weituotang Market, people can find everything they need for Sichuan cuisine. Weituotang Market has a long history and it is a unique landmark of the city.

Promote food education

The wet market promising human connection can have the potential to host food education activities. Each talk between vendors and customers can be guided to promote a healthy and sustainable dietary pattern.



Aunt Wang

After a meal, I usually invite my old friends to meet at the wet market and buy fresh vegetables and fruits. It is like how young people socialize by going shopping with friends. I enjoy chatting with vendors I know for a long time and share some cooking secrets, "Never will you find someone talking to you in that way when shopping in a supermarket."



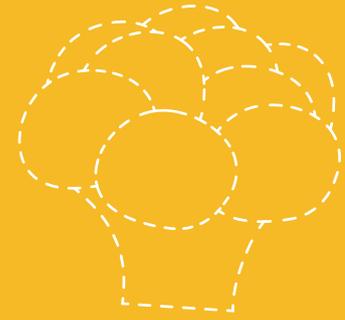
Build an eco-friendly food retail terminal



Liu Da Zhuo

Action Track

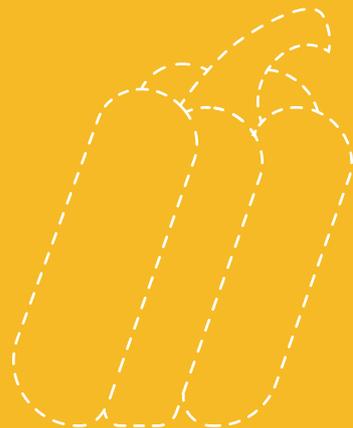
3 Boost nature - positive production



A well-designed and managed wet market can reduce the environmental impact of the food system. Compared with food sourced locally in wet markets, food experiencing long-distance transportation and transported through the international food supply chain emits far more greenhouse gases [21]. Moreover, the usage of disposable plastic packaging has been discouraged in the wet market [19]. Food waste in the wet market can be alleviated as supermarkets throw away ugly food for aesthetic consideration while vendors in wet markets prefer to turn unsold but edible ingredients into giveaways or products, such as juice, vegetable packs, and livestock feed [22].

Weituotang Market, Deyang, Sichuan

I am attracted by sincere social interaction in the market. My mom always receives praise from the vendors when she takes her bags to buy food in the market. The vendors also give my mom some green onion and garlic for free as payback for saving plastic bags.





Action
Track

4 Advance equitable livelihood

Secure livelihoods of small-scale farmers

The wet market provides a place for small-scale farmers who can't compete with large-scale entrepreneurs in supermarket supply chains. Therefore, the wet market plays an important role in ensuring the livelihood of small farmers [19]. Numerous job opportunities, such as cleaners, porters, and seafood and meat handlers, can be provided with the operation of a wet market.



Action
Track

5 Build resilience to vulnerabilities, shocks, and stress

Increase the resilience of food system in urban areas

Due to its flexible organizational form and a supply chain that relies on local products, the wet market can respond quickly in emergencies to ensure urban food supply.



In April 2020, in Dhaka, the capital of Bangladesh, shopping at wet markets became an activity of high risk after the outbreak of the Covid-19. To support the operation of the wet market, the Dhaka government moved 16 wet markets to outdoor areas, such as school playgrounds and outdoor entertainment areas. This allows vendors in the wet market to continue business while residents can safely obtain cheap and healthy food. This case proves that wet markets can maintain the original organizational structure and quickly adapt to emergencies [23].

2.5

Policy Analysis

It is worth noting that Chinese governments at all levels have realized the challenges faced by the wet market and are actively involved in revitalizing the wet market. On June 20, 2011, the Ministry of Commerce of the People's Republic of China issued the Setup and Management Practices of Standardized Agri-product Market. There are seven parts in the document. In addition to stipulating related terms (eg. standardized agri-product market), it clarifies standards for site environment, facilities and equipment, commodity management, hygiene management, and market management [24]. Creating easy access for people to obtain agricultural products is by all times the focus of national policy. On September 23, 2020, to address the conflict between selling and purchasing in cities, the Ministry of Commerce issued the "Notice of the Ministry of Commerce on promoting the mobile weekend wet markets" [25], aiming to promote Beijing's practice on vehicle-mounted wet markets to a larger scale.

Many provinces and cities have formulated their related wet market reform policies based on the "Setup and management practices of standardized agri-product market" issued by the Ministry of Commerce of the People's Republic of China.

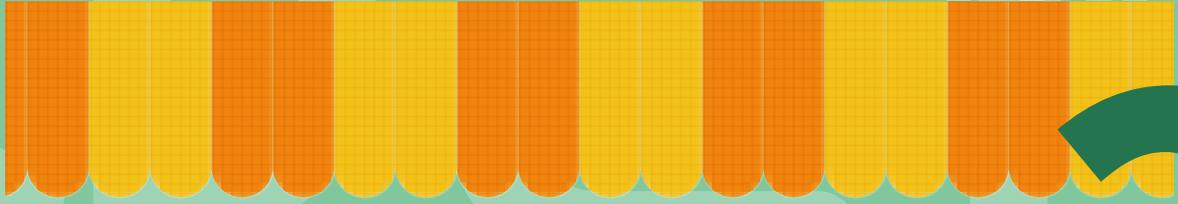
On April 27, 2017, the Chengdu Municipal Bureau of Commerce issued the "Standardization Construction Standard for the Wet Market in Chengdu". In addition to regulations on infrastructure and sanitation standards, in order to ensure the convenience of residents' food purchases, the standard has made very specific regulations on the location and scale of the wet market. The standard states that the construction site of the wet market should meet the following requirements: 1) be combined with the service center in the residential area, 2) in a relatively independent area with convenient transportation, 3) exit of the market should not be less than 70 meters from the starting point of the red line turning at the intersection of the urban arterial road [26]. At the same time, the construction scale of the urban wet market should have a minimum area of 2000 m² in the new town and 1500 m² in the old town. The document also requires choosing appropriate building form and scale according to the requirements of the planning department and the daily needs of citizens [26].



On September 11, 2015, the Hubei Provincial Department of Commerce issued the "Development Plan for the Agri-product Market System of Hubei Province (2015-2020)". The plan emphasizes the establishment of a terminal consumer market network. It aims to advance the "vegetable baskets project" to further meet the needs of urban and rural residents on food. Improving the convenience of residents' purchases has thus become the focus of the plan. The plan pointed out that the size of the wet market should be configured according to the standard of 300 square meters per thousand people [27]. It is worth noting that the plan proposes to open up at least 10% of selling areas for farmers' self-produced and self-sold products, which plays an important role in public welfare [27].



In June 2020, the Zhejiang Provincial Market Supervision and Administration Bureau issued the Action Plan for Enhancement of the "Five Modernizations" of Zhejiang Agricultural Products Markets and Professional Markets [28]. Different from the vegetable market promotion plans made by other provinces and cities, the action plan not only emphasizes "facilitation" and "standardization", but also advocates "intelligence", "humanization", and "specialization". It advocates the establishment of an integrated application information system, the promotion of mobile payment and online transactions, the improvement of convenient facilities, the introduction of voluntary services, the provision of care services for special groups, the promotion of green environmental protection, the establishment of local characteristic agricultural products display areas (points), and the introduction of "Community neighborhood" services, construction of popular science bases, etc. [28]. This gives new connotations to the wet market at the policy level. Under the guidance of this plan, the wet market will not only be an agricultural product retail terminal but also a place hosting food education, featuring traditional cultural inheritance, enhancing residents' social interactions, and promoting sustainable practices.



3

WET
M A R K E T

WET MARKET GUIDEBOOK

The Vision of
WET Market



3.1

What is WET Market ?

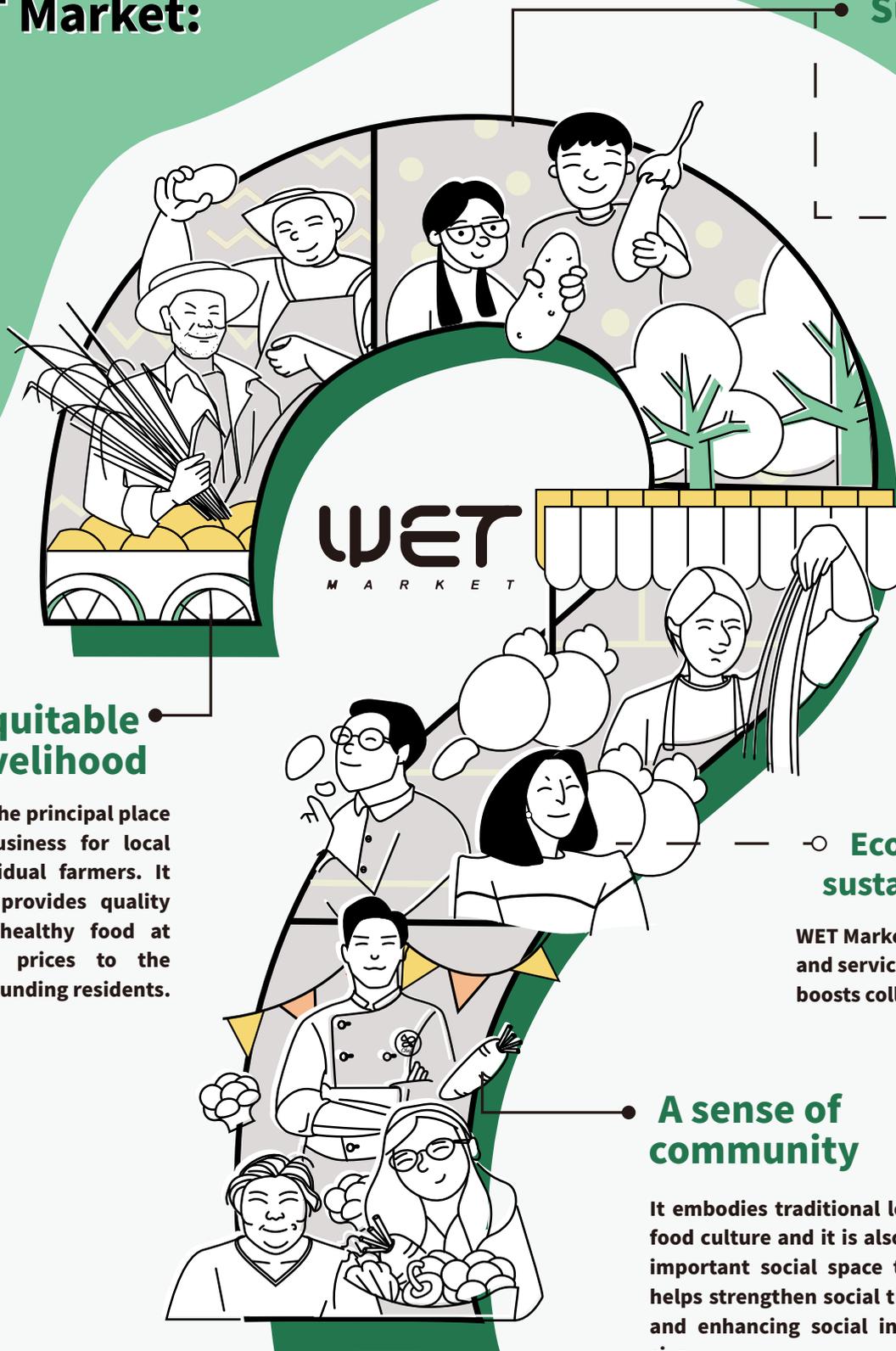
WET as an acronym stands for

Well-being **E**cological sustainability **T**ransformation

WET Market put emphasis on the potential of wet markets for food system transformation, including supporting local sustainable agriculture, promoting healthy diets, reducing food loss and waste, and strengthening community ties.

From "standardized wet market" to "smart wet market", wet markets in China confronted challenges from e-commerce and modern urban planning are actively seeking solutions to meet the needs of all stakeholders. To build a sustainable WET Market, it requires both the upgrade of facilities and the innovation on function, management model, and business model.

The key features of WET Market:



Sustainability

Ecological sustainability

It is an educational venue that promotes seasonal and local food and healthy and sustainable diets. It is also a "green lab" that employs eco-friendly practices, such as innovative energy technologies, plastic reduction, and food waste reduction.

Equitable livelihood

It is the principal place of business for local individual farmers. It also provides quality and healthy food at good prices to the surrounding residents.

Economic sustainability

WET Market provides jobs and services, and therefore boosts collective prosperity.

A sense of community

It embodies traditional local food culture and it is also an important social space that helps strengthen social trust and enhancing social inclusion.

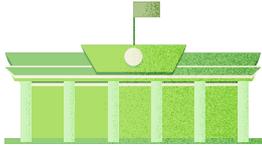


3.2 Stakeholder Analysis

Although the development of wet markets is led by the government, the cooperation of multi-level stakeholders is core to boost the vitality of wet markets. The participation of the urban planning team in the initial site selection is vital to ensure that the residents can reach wet markets within the "15-minute community-life circle". During the construction or renovation phase, the infrastructure upgrade covers stall fronts, tiling, lighting, waste management areas, LED monitors, and others. Management is the key for WET Market transformation as it is essential for smooth operation including the arrangement of temporary trade zone during renovation, innovation on function, and response to public health emergencies. The clients and counterparts of WET Market are diverse, including local communities, schools, universities, research institutions, non-profit organizations, chefs, restaurants, and others.

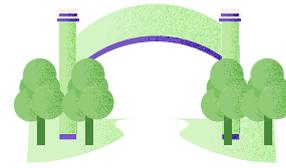


Governments at different levels



Improve the infrastructure of WET Market, provide policy and financial support, and incorporate it into the performance appraisal

Local communities



Coordinate with various stakeholders in the WET Market, provide venues and financial support, support community organizations, and mobilize the participation of the residents

All relevant stakeholders can contribute to the co-construction of the WET Market

Planner, architects, and other technical experts



Sound planning and design of space and functional layout, reserve space for more functions to be developed around the WET Market

Management committees and vendors of the markets



Conduct operation, management, and marketing strategies under the visions of the WET Market

Other food suppliers



Foster the complementarity of different food suppliers

Restaurants and chefs



Participate in the community kitchens in the WET Market to tap the potential of diverse local food, innovate recipes and educate consumers

Non-profit organizations



Lead the visions, connect resources, provide professional and voluntary services

Schools, universities, and research institutions



Provide supports for technological innovation, organize training and food education activities

Financial resources are an important factor for decision-making. Communication between managers and communities is essential to avoid conflicts of interest. The management of wet markets in Dhaka, Bangladesh is a case that we could learn from. Similar to China, the government in Dhaka owns the market property and collects revenue from them, enforcing health and safety guidelines. However, each market association is left to individually manage themselves with their resources and capacity. This arrangement benefits the integration of human resources and agricultural-related resources. However, the four governmental institutions that administer the wet markets lack efficient communication and coordination. This results in a low level of administrative oversight and little reinvestment of revenue back into markets, which has led to a gradual deterioration of infrastructure.

In summary, we hope that the relevant authorities of wet markets have consensus on the following goals:

1)reinforce communication and cooperation and build a transparent channel to collect feedback, ideas, and concerns among different stakeholders;

2) encourage close cooperation between wet markets and stakeholders that engage in the food supply chain ;

3)support initiatives that promote food system transformation. In essence, knowledge, experiences, visions, and efforts from different stakeholders are fundamental for the sustainable development of the WET Market.

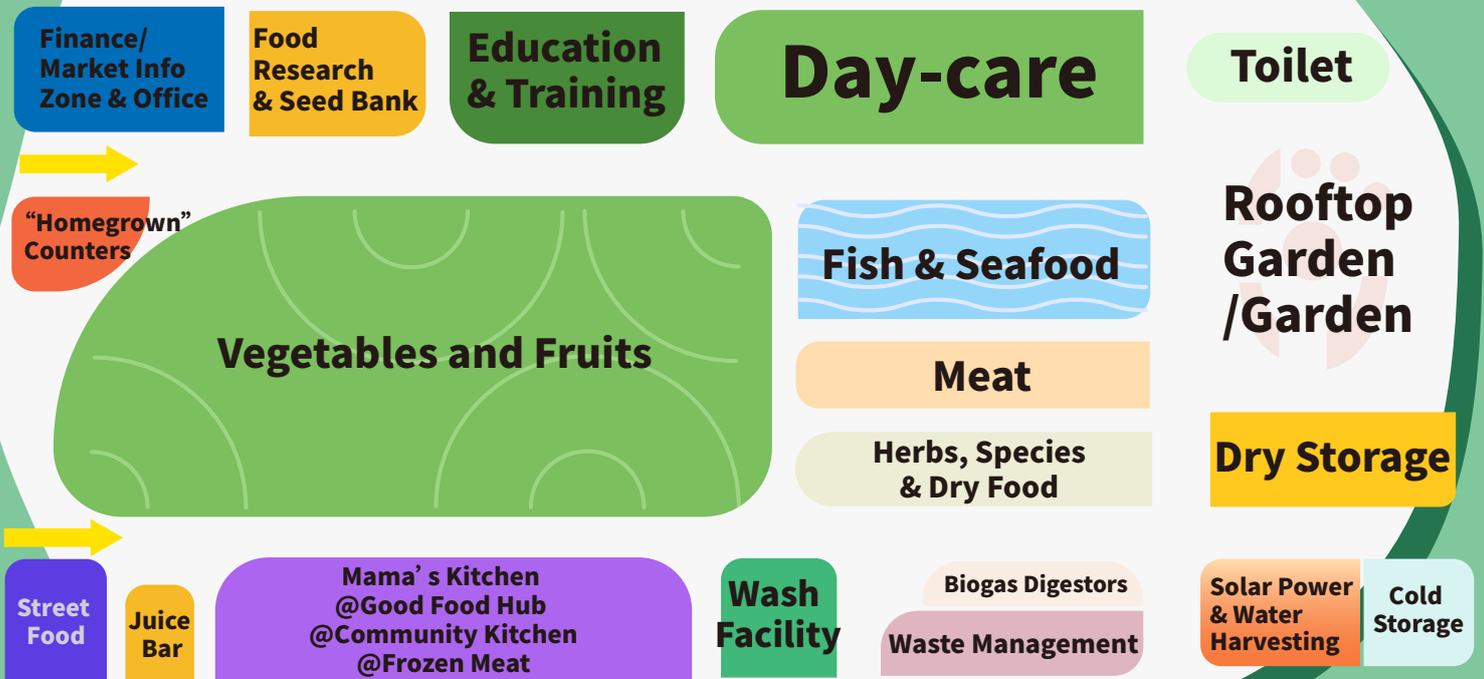
3.3 Innovation on Function

A. Trade Zone

Infrastructure Upgrade
Permanent and Temporary Vendors

B. Education Zone

“Good Food · Mama’ s Kitchen”
Culinary Talent Training
Food Research Hub & Seed Bank



C. Green Zone

Energy
Waste Management

D. Service Zone

Mama’ s Kitchen@Community Kitchen
Finance & Market Information Center
Mama’ s Kitchen@Frozen Meat
Day Care Center
Training Center

A. Trade Zone

Infrastructure Upgrade

Refrigeration facilities can reduce the risk of food-borne diseases and decrease food loss. Also, it guarantees that the products in the WET Market are fresh and “good looking” , which is an effective way to improve sales and compete with online group buying [23].

Infrastructures and facilities such as public toilets, waste management, sewage management, fire hydrant, power supply, and lighting will enhance the shopping experience of customers [23]. In addition, user-friendly facilities like barrier-free access and accessible toilets ensure access to healthy food for disabled people and the elderly in the community.

Permanent and Temporary Vendors

Permanent vendors will provide seasonal and local food. The trust built on rich communication between vendors and consumers ensures food quality and fair food price through healthy competition. Also, stalls selling vegetables, fruits, seafood, meat, spices, and other products will provide residents with a variety of food choices and thus meet the needs of different consumer groups.

Mobile shop units will be open to members of farmer markets. “Homegrown” counters where temporary vendors selling self-produced local food can help build residents’ connection with agricultural production, the land, and the sea, which is the base of the education for sustainable development. When the consumers shift their shopping preference to fresh, local, organic food, the new "demand" will promote a healthy diet while driving a food system transformation in terms of food production and supply [29].

Wash Facility

Cold Storage

Waste Management

Toilet

Biogas Digestors

“Homegrown”
Counters

Herbs, Species
& Dry Food

Meat

Fish & Seafood

Vegetables and Fruits

B. Education Zone

The Education Zone is a bold reinvention of the WET Market that distinguishes it from traditional food markets. It might overlap with the Trade Zone or operate as an independent space in WET Market.



Mama’ s Kitchen

@Good Food Hub

**@Community
Kitchen**

@Frozen Meat

“Good Food · Mama’ s Kitchen”

Good Food · Mama’ s Kitchen (Mama’ s Kitchen) was introduced in early 2020 by Good Food Fund, China Biodiversity Conservation and Green Development Foundation. Based on the Good Food Consensus and the Good Food Pledge, Mama’ s Kitchen refers to a healthy, sustainable, and food awakening laboratory/studio/kitchen/classroom, empowering chefs to help create a better future [31]. Mama’ s Kitchen can revitalize the WET Market by providing visionary ideas for the Education Zone.

Culinary Talent Training

Mama' s Kitchen highlights the role of chefs in food system transformation, which is aligned with the reform in vocational education in China. The National Vocational Education Reform Plan released by the State Council in 2019 stresses the importance of vocational education for economic and social development. Cooking is a traditional major in vocational education and most of the chefs received professional training in culinary schools. Traditional culinary programs only focus on cooking skills, while paying little attention to ecological literacy. Through Mama' s Kitchen, we are willing to develop culinary talents that contribute to plant-based diet shift and sustainable agriculture. They will play a pivotal role in the catering industry and food system.

Firstly, Mama' s Kitchen in the WET Market could improve chefs' ecological literacy and strengthen the connection between chefs, food producers, and food vendors. Joel Tomas and Peggy Chan proposed that Mama' s Kitchen can offer sites with a 6-12 month lease to the culinary schools, where students will need to apply with their intended cuisine and concept, with a minimum of 75% of their menus to be plant-based and made with local and seasonal food from the market [32]. The profits will go back into the school, community, or markets. The students would also be encouraged to deliver presentations on food system transformation to educate consumers. The talent training scheme will provide students valuable internship experience and help them gain a deep understanding of the food system. The training will help involve them in food system transformation in China in the future.



**Education
& Training**

WET Market can bring in well-known chefs nationwide to cook in Mama' s Kitchen in a bid to raise the profile of the market [19], [32]. Local and seasonal food show the richness of Chinese food culture and a WET Market with local specialties will be a live museum and the best name card of a city. Thus, chefs will be encouraged to cook local traditional dishes to attract consumers. Printed and electronic recipes, which highlight the stalls selling the ingredients in the recipes, will also be provided.

**Mama' s
Kitchen
@Good Food
Hub**

Food Research Hub & Seed Bank

In collaboration with universities or independent research institutions with aligned interests, WET Market can serve as an educational venue that promotes scientific knowledge in food and nutrients to the public [19]. Food research hub will play an important role in educating the public about the benefits of eating plant-based foods for individuals. Seed Bank could promote public awareness of agrobiodiversity and its importance for individuals and our ecosystem.

**Food
Research
& Seed
Bank**



C. Green Zone

Energy

Infrastructure upgrades and informatization may increase the energy demand of wet markets. The solar energy area will reduce the consumption of non-renewable resources and supply the energy needs of the WET Market, notably cold storage units and electronic equipment [19].

China is one of the 13 countries with the poorest water resources per capita in the world and thus a more comprehensive approach to water management and water harvesting needs to be employed in WET Markets. The rainwater harvesting system will realize the ecological value of unconventional water resources. There are three types of rainwater harvesting systems in the buildings. Systems that apply direct use of rainwater collect, store, purify and reuse rainwater as a source of non-drinking water. Systems of indirect use of rainwater facilitate the infiltration of rainwater into the soil. The third one is the comprehensive rainwater harvesting system which refers to an integrated design combining green roof, landscape water, rainwater direct use system, rainwater indirect use system, and others. Germany has many successful rainwater harvesting practices. For example, Potsdamer Platz built a green roof to stagnant rainwater. China is also actively promoting rainwater harvesting. 2008 Beijing Olympic venues applied rainwater harvesting technology. "Building and Community Rainwater Harvesting Engineering Design Standards" (GB50400-2016) released in 2016 also serves as a reference for the rainwater harvesting system construction in WET Markets in China.



“Plastic ban” indicates an overlap of Trade Zone and Green Zone. There will be no single-use plastic within WET Markets as well as encouraging biodegradable packaging only [32]. To motivate the vendors to reduce plastic use and waste production, a Monthly Least Waste Award will reward vendors who have generated the least general waste possible.

Solar Power & Water Harvesting

supply Solar energy

Cold Storage

supply rainwater harvesting

Rooftop Garden /Garden

Plastic ban

Waste Management

Joel Tomas and Peggy Chan [32] proposed that rooftop gardens or fields could be a solution to the sustainable management of organic waste in WET Markets. Food waste will be turned into compost and fertilizer and be given back to the farmers to use on the rooftop garden. Residents can also go to the rooftop garden in WET Markets to learn how to produce food and compost. This represents a perfect combination of education zone and green zone.

Black Soldier Fly (BSF) can be introduced to dispose of food waste in wet markets [19]. It was already applied for food and kitchen waste disposal in Nanjing, Guangzhou, and other big cities in China. BSF with a life cycle of 28 days can consume food waste up to 50 times its body weight. These insects eat food market by-products with a particularly strong smell such as manure, meat, and fish offal, kitchen waste. They transform food waste into compost and insects themselves can be harvested and provide a nutritious protein-rich feed for aquaculture and livestock once grown. If WET Markets establish an effective waste classification system, an on-site BSF breeding base will help the transformation of all the food waste into valuable resources without environmental costs. This also supports the rooftop garden mentioned earlier.

Biogas digesters can also be deployed to decompose large quantities of food waste in WET Markets [19]. They provide both high-quality energy and fertilizer, reducing reliance on fossil fuels and charcoal, as well as expensive chemical fertilizers.



D. Service Zone

Mama' s Kitchen@Community Kitchen

This space not only provides convenient services to the staff working in WET Market but promotes Good Food Pledge in this group. Some ideas are proposed as the following:

- Mini-fridge will solve the barrier to bring prepared meals from home to the WET market while ensuring food safety. It will indirectly reduce food loss and/or waste caused by high temperatures. And it may help reduce the frequencies of food delivery services.
- Microwave could heat the lunch boxes prepared in advance.
- Drinking water stations will provide hot water.
- Sink will allow staffs to wash hands and clean dishes

Maintenance of the community kitchen relies on community awareness of the staff in WET Markets. Inspired by Education Zone such as Good Food Hub, Food Research Hub, and Seed Bank, Community Kitchen can help engage the vendors to learn about the food system proactively by posters.

Finance & Market Information Center

It will benefit both the vendors and consumers. It will feature a televisual/social media unit that “markets the wet market” , calling attention to the market features and advertising on behalf of vendors. For the consumers, the deals will be more transparent. A system of digital payments could record market sales volumes from the market transactions and provide up-to-date inventory information. All of the information could be shown to the consumers and vendors via LEDs. Therefore, they will know what prices to expect to sell and buy at. The finance center will feature a series of ATMs and credit lenders to help sellers and farmers secure loans that they can use to upgrade their operations. Closely aligned with this function is the campaign center which will be devoted to expanding the interests and influence of wet markets as well as food health, food culture, and related sustainability causes throughout civil society.

Mama' s
Kitchen
@Community
Kitchen

Food
Research
& Seed
Bank

Mama' s Kitchen
@Good Food Hub

Finance/
Market Info
Zone & Office

Day-care

Day Care Center

It will provide childcare to empower women to participate in the market activities and therefore redress gender inequality present in the current food system while enabling social mobility [19].

Training Center

It will provide the WET Market vendors with workshops on various topics from basic financial skills to farming techniques. Farmers and vendors can improve their ecological literacy through courses in the training center such as agroecology, animal welfare, business literacy, nutrition, seasonal meal preparation for sustainability, and waste minimization [19]. The governments could also encourage experts in food, agriculture, environment, and nutrition to teach in the training center.

Street Food

It will provide cooked plant-based food dishes representing the produce sold at the wet market and it may also have the option to introduce healthy international foods [19]. Fresh juices produced by “ugly” fruits with good quality can be sold in this area. It not only provides customers with healthy juices at good prices but also reduces the food waste in the WET Market.

Street
Food

Juice
Bar

3.4 Innovation on Management Model



The management model is the key for service quality and vendors' livelihood in the WET Market. What's more, effective management is essential for maximizing the WET Markets' potential to promote food system transformation.



Food Policy Councils



Food Policy Councils (FPCs) play an active role in the food system transformation and food policy revision in the United States. It can be defined as networks that represent multiple food system stakeholders and that are either sanctioned by a government body or exist independently of the government [34]. The number of local and state food policy councils in the United State has increased dramatically from approximately 70 councils in 2008 to more than 340 in 2018 [34]. They address food-related issues and respond to needs within a city, county, state, tribal, multi-county, or other designated regions to promote food system transformation through policy.

The focus of councils varies by organizational structure, source(s) of funding, relationship to government, policy priorities, and programmatic activities. State and local councils work on a variety of legislative policy priorities, such as land use planning, healthy food access, food production, poverty and hunger, economic and community development, and food procurement.

The Johns Hopkins Center for a Livable Future's (CLF) Food Policy Networks (FPN) project supports the development of effective state and local food policy through networking, capacity building, research, and technical assistance to food policy councils. CLF conducts a census of all the councils in North America about every 18 months. The following paragraphs describe results from the 2018 report.

Organizational structure

The most popular structure for FPCs is being housed within a non-profit organization, followed by being housed within a government agency. About 20% are independent grassroots organizations, and 13% are established non-profits. Only 5% are part of a university. Most FPCs, 83% in the US and 79% in Canada, reported having some type of relationship with the government, including receiving in-kind or financial support from the government, providing advice to government, being formed by the government, or having council members composed of government staff or people appointed by the government.

Membership

FPCs seek to get representation from all sectors of the food system and across the food supply chain. Half or more of FPCs reported having members representing the community, public health, anti-hunger or emergency food, food production, colleges/universities, government, healthcare, labor, retail, social justice, and economic development.

Funding

Obtaining funding for their work remains a challenge for most groups. About one-third of the FPCs report that they have no funding for their work. Another third have annual budgets of \$10,000 or less. The final third are evenly divided among these categories \$10,000-\$50,000; \$50,000-\$100,000; over \$100,000.

Policy priorities

The most popular policy for FPCs to focus on is healthy food access (63% of FPCs), which is followed by economic development (42% of FPCs) and anti-hunger (34% of FPCs) work. Additionally, there was a noticeable increase in the number of FPCs that prioritized food waste reduction (20% of FPCs). About 30% of FPCs report focusing on food production, food procurement, and land use planning as policy priorities.

Achievements of FPCs in North America are shown as below:

Farmers Market

Caswell County Local Foods Council

North Carolina

Hosted the Caswell Farmers Market, in operation for 5 years.

Educated children with their Power of Produce program/Two Bite Club by introducing them to new healthy foods while educating them about production, purchase, and preparation of the food. At the farmers market, the Two Bite Club provides a \$5.00 token to spend on healthy choice food from their vendors.

Economic Development

Food Policy Council

Los Angeles

Passed legislation to allow for sidewalk vending; an entrepreneurial path for immigrants and women. Sidewalk vending is an economic pathway for more than 50,000 Angelenos, many of whom are women and immigrant entrepreneurs and vend food. This campaign was ongoing for eight years. Prior to this, Los Angeles was the only major city without a sidewalk vending program.

Food Production

Omaha Food Policy Council

Nebraska

Provided recommendations on local food producer regulations to create more favorable conditions for small producers.

Food Procurement

Chicago Food Policy Action Council

Chicago

Got the City of Chicago and Sister Agencies (Schools, Parks, Comm Colleges) to pass and continue to implement the Good Food Purchasing Program, even during a mayoral leadership transition. Cook County also passed the Good Food Purchasing Program. Both municipalities have ongoing multi-agency task forces and are in regular communication and supporting a shared evaluation process.

Food Security

Food System Collaborative

Massachusetts

Secured \$5 million for the Massachusetts Healthy Incentives Program, a matching program that provides fresh, healthy, local foods to SNAP households.

Considering the context and policies in China, there are some issues that FPCs in China can address:



Supply seasonal and local food to canteens in small-scale colleges and government agencies, involving them in the local food system as key stakeholders to gain support.

Lobby for financial support from local governments, which escorts the sustainable development of the WET Market. Monitor progress in transformation and ensure that relevant stakeholders reach a consensus on the visions of a WET Market.

Work actively with researchers in universities to promote evidence-based practices and practice-based research on food system transformation.

Increase transparency in the evaluation and monitoring systems of the food system.



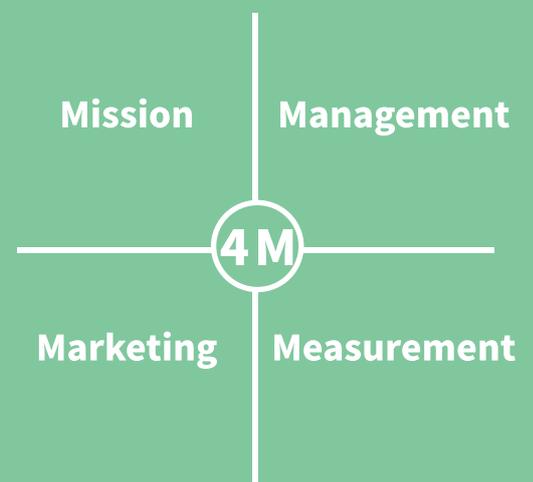
Train WET Market Management Committee to Build Organizational Capacity



To better protect the interests of vendors and customers, the management committee of WET Market requires a stronger administrative and organizational capacity [23]. Building their skills and confidence can help WET Markets address challenges beyond day-to-day problems and adopt a more expansive vision to manage the WET Market as a whole.

FAO has been piloting training modules that encourage market associations to develop their mission statement, a better understanding of customer preferences and behavior, as well as organize in a more structured manner. By creating more detailed responsibilities for the different officer positions, governance procedures, and clear operational procedures, market associations will have a stronger capacity to manage often individual-minded vendors to work more collectively. This will be the core of the market risk management of WET Markets.

There are numerous tools to help market management committees to improve their management capacity. 4Ms proposed by Richard McCarthy is one of them [35]. 4M represents Mission, Management, Marketing, and Measurement. Markets are not simple institutions to manage. Pressures are great to meet the demands of the competing chorus of interests: Shoppers who demand fair treatment, vendors who demand a chorus of shoppers, and neighbors who complain about noise, smell, and trash. When facing conflicts, staffs need to respond quickly and calmly and make decisions that are fair and consistent. 4Ms helps market management committees to make just decisions to avert conflict, meet expectations, and produce a smoothly operating marketplace for all involved.



Here is an example to illustrate how to use 4Ms. Infrastructure upgrades in wet markets require major capital outlay, for example, the sanitation in the fish or meat section. It is a very common and pertinent concern under the background of the COVID-19 pandemic. 4Ms can help the managers to make decisions:



Question 1:

How necessary is this expansion to serve the core mission of the market?

A clear mission statement has to be defined and all of the relevant stakeholders need to reach an agreement regarding the mission. An expansion with a poorly defined mission may be a risk to the long-term benefit of the wet markets.

Question 2:

How to achieve a shared understanding of the mission?

Marketing of the mission is the core, which means promoting awareness about the importance of WET Markets in food system transformation. Market expansion can only be successful when the staff and vendors in the markets and the neighbors recognize the core values of the WET Markets. On the other hand, if the vendors do not understand the mission, they will lose their trust in WET Market as most of their business will be affected during the construction.

Question 3:

Who will manage these communications?

If the market manages to communicate its mission and the relevance of the expansion with regards to the institution's core mission, then management will play the key role. For example, who will post the signs? Who will schedule meetings with vendors to prepare them for anticipated changes? Who will be in charge of the arrangement of the stalls during the construction?

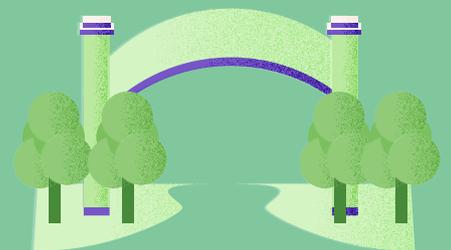
Questions 4:

How effective is the work?

Timely measurement is essential to monitor the work and decisions, for example, marketing to internal and external audiences, the transition to the expanded space, the allocation of new stalls, and new procedures. When functioning properly, there should be a clear alignment between the mission of the market and the measurement of how such decisions are executed.



Invite Communities to Participate in Food Safety Monitoring and Market Management



The neighborhoods of WET Market are not only consumers but can also be viewed as partners with the WET Market management committee to make a joint effort on monitoring food safety [25]. FAO is working with a few markets in Dhaka to create 'neighborhood-level food safety committees', which are voluntary organizations made up of community leaders, with the participation of government officials and market associations, to regularly review food safety standards in the WET Market. This approach does not rely upon official 'top-down' enforcement of safety regulations. It is instead a collective effort to build trust and dialogue between vendors and the communities that they serve. By providing information to the public about the origins of their food, the level of use of chemicals and pesticides in their foods by their suppliers, even how meat has been slaughtered, the vendors can demonstrate their food is safe and instill confidence in customers. Such a committee therefore bridges a divide of public trust and supports and further enhances safety and transparency in terms of the food consumed in the city.

3.5 Innovation on Business Model

Business model innovation can expand the customer base and scale up the sales of the WET Market. It will also equip small-holder farmers and vendors with business skills, promoting livelihood equity and resilience.



▶▶▶ Integrate WET Markets into Wholesale Markets

Building a relationship with wholesale markets will scale up sales of the WET Market and help to support and aggregate agricultural producers into a sophisticated business-smart force of entrepreneurs.

The integration of WET Markets into wholesales markets will provide small vendors with a digital platform with 5G connectivity, online ordering, and other high-tech options [19]. This requires new waste and energy strategies as well as new solutions for transport and logistics. What' s more, it will bring opportunities to access supermarkets, restaurants, and many other institutions as new customers and thus expand the customer base of wet markets. This expansion can be driven by wet market finance information and education. Training organized by governments or markets for these vendors can provide business market strategy, standard form contracts, and access to citizens/business legal advice.



In London, wholesale and fresh market functionality has existed side-by-side with major markets at Billingsgate, Smithfields, and Spitalfields. These markets, which specialize individually in fish, meat, or produce, are planning to come together on one site to act as the major wholesaler and retailer for these products in the city of London. The facilities in the market will be upgraded. New business models will also be implemented, for example, the cooperation with the tourism and culture industry [36].

▶▶▶ Cooperate with Local Small Restaurants



Wet markets are facing the challenges of limited customer groups and an insufficient number of customers while local small restaurants are struggling with high labor costs and food loss because of the lack of pre-processed food. The WET Market could provide services of food processing to local small restaurants, which will benefit the WET Market, the local small restaurants, and also the consumers. This will diversify the consumer groups of the WET Market, while boosting the interaction among local small farmers, vendors, restaurants, and communities. Food waste can be recycled or reused in the WET Market through juice shops, Black Soldier Fly, or biogas digesters. Local small restaurants will receive pre-processed food, realizing zero waste of the food and reducing labor costs for processing food. Consumers will have access to good quality food at lower prices and have the opportunity to learn how to produce and process food in the WET Market.

▶▶▶ Vouchers for Healthy Food

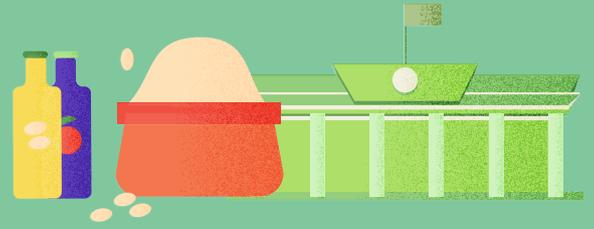
To promote a healthy diet, policies should support healthy food consumption and increase public awareness on eating healthy food [19]. Vouchers of healthy food can not only achieve this goal but also help increase sales of the WET Market.



In Mozambique, a nutritious foods vouchers scheme is being introduced, supplied by local small enterprises and supported by NGOs. The vouchers are distributed through health centers by municipalities or through direct sales involving the wet market smallholder.



A Public-Private Governance Initiative



A public-private hybrid model of governance has the potential to increase the resilience of the local food supply chain, whilst introducing food safety policies.

In Nanjing, China, a public-private hybrid model of governance has been found to ensure food security. It allows for wet markets that sell produce from local supply chains, whilst introducing food safety policies. This model provided rent reductions to informal vendors and investment in storage infrastructure. The result is a relatively easy and equitable provision in a healthy, local food system [37].



Online Platforms for WET Markets



An online platform will satisfy the purchasing needs of consumers in their totality. It would also serve to inform and signal to both producers and buyers in a variety of ways. It will serve as a central hub for individual customers, as well as a wholesale outlet that can then supply the larger volumes required of restaurants, schools, hospitals – both regionally and internationally. The platform would show stock of the available inventory, which then would allow all types of consumers to view, purchase and arrange delivery of their chosen goods in a timely, safe, and cost-effective manner.

The platform will record market sales volumes and market prices for products based on the market transaction history. This would enable producers and consumers to make more informed transactions. Over the years, such a platform would be able to provide annual estimates of product demand, and so in the case of a local drought or disease, it helps to coordinate with other regional platforms to better balance supply and demand.



Micro-business in WET Markets

Inspired by successful cases in Brazil (as elsewhere) that micro-business formation has pulled many people out of poverty, small businesses in WET markets can join taxation initiatives set out by the government voluntarily. In return, they receive access to social protection and business development services [19].



WET MARKET GUIDEBOOK

Toolkit

WET MARKET SELF-ASSESSMENT CHECKLIST

WET Market aims to promote the Good Food Pledge and create game-changing solutions guided by the five action tracks of the UN Food Systems Summit. We proposed the following criteria of a WET Market. Market managers and decision-makers are invited to conduct the self-assessment to understand the sustainability of their market and it could also be a basis for market renovation.





Work Closely with All Relevant Stakeholders and Establish a Food Policy Council



GOOD FOOD PLEDGE



ACTION TRACK



Promote Healthy and Sustainable Diets



ACTION TRACK 1



ACTION TRACK 2



HEALTHY EATING

- Ensure an adequate supply of diversified healthy foods including vegetables and fruits, legumes and nuts, and whole grains
- Apply marketing strategies to promote the consumption of above-mentioned healthy foods
- No more than 2% of the products in the WET Market are ultra-processed food



Achieve Zero Waste and Low Energy Consumption



ACTION TRACK 2



ACTION TRACK 3



REDUCE WASTE



CIRCULAR ECONOMY

- Apply innovative methods to use “ugly” and unsellable food (e.g. juices, pre-cut vegetables, and fruits packets, composting)
- Maintain the balance between food supply and market demand
- Prohibit the use of non-biodegradable plastics
- Apply innovative technologies to reduce energy consumption



ACTION TRACK 2 ACTION TRACK 3 ACTION TRACK 4 ACTION TRACK 5



LOCAL SEASONAL PRESERVE BIODIVERSITY CIRCULAR ECONOMY



Promote Food Diversity and Traditional Food Culture

- Over 60% of the products in the WET Market are local and seasonal food
- Promote organic food produced from local eco-farmers that practice regenerative agriculture



Practice Food Education



ACTION TRACK 1 ACTION TRACK 2 ACTION TRACK 3 FOOD EDUCATION

- Create space dedicated to food education in the WET Market
- Organize food education events at least once a month



Promote Equity



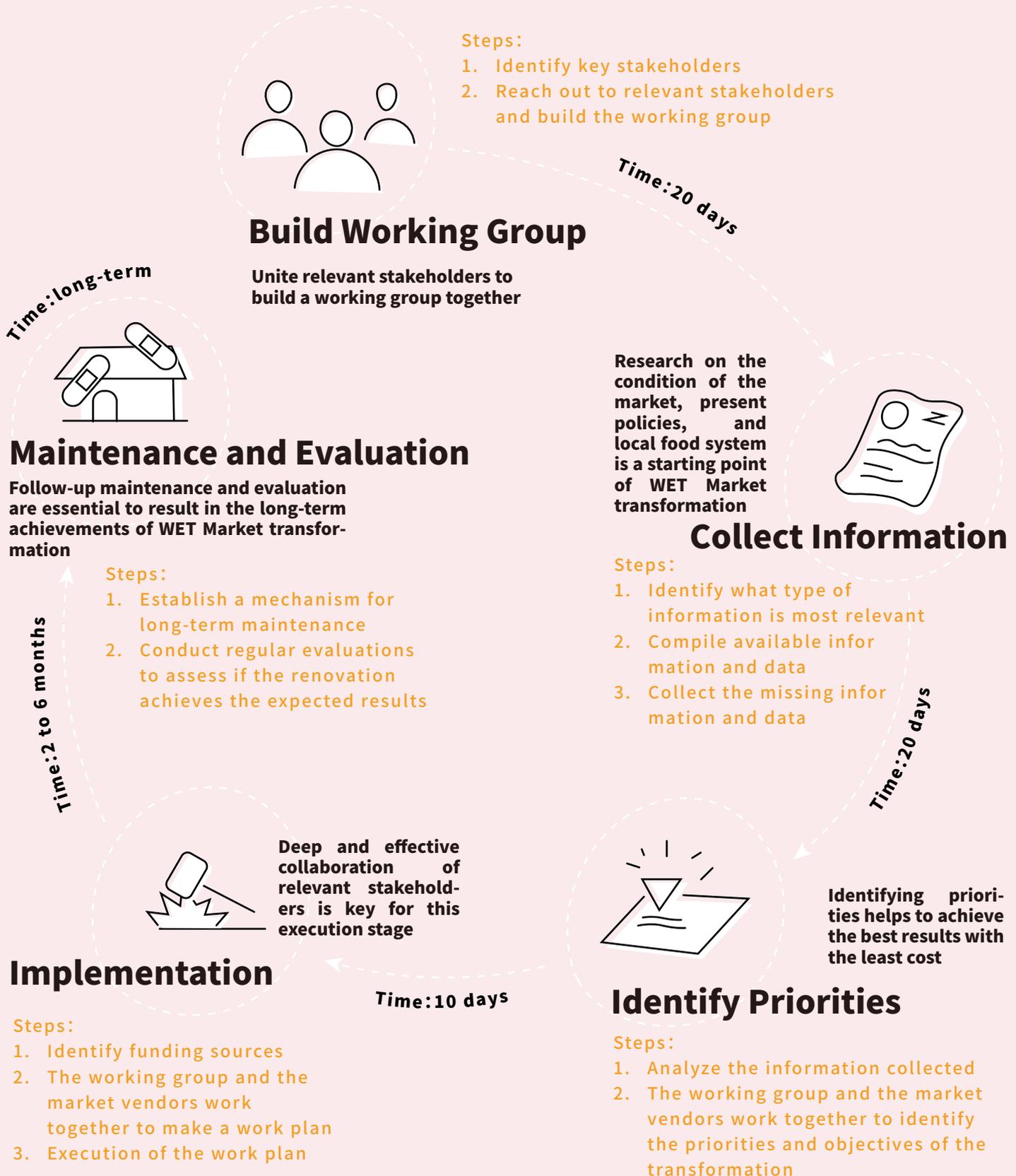
ACTION TRACK 1 ACTION TRACK 4



- Enhance livelihoods of fixed and mobile vendors in the WET Market
- Protect consumer rights
- Build handicapped facilities

Steps on WET Market Transformation

The transformation of the WET Market is a long-term project calling for a systematic approach and cooperation of different stakeholders. We encourage each wet market to implement customized transformation that fits each site. Here we present an overview of key steps to initiate WET Market transformation.



Cost-effective Solutions for WET Market Transformation

Most of the wet markets in China face challenges on a lack of **funding, human resources, and technology**. Thus, we provided the following cost-effective solutions to initiate the transformation.



Organize awareness campaign and/o training about food knowledge for the vendors, including healthy and sustainable diets, traditional food recipe, and others, and at the same time encourage the vendors to share these ideas with their customers.



Invite food brands and/or restaurants to organize events at the markets to promote healthy and sustainable diets.



Collaborate with local communities and/o schools to implement food education projects.



Support the mobile vendors and encourage them to sell local and seasonal food.



Encourage the customers to bring their shopping bags to reduce the use of plastic.



Use unsellable vegetables and fruits to make fresh juice to sell in the markets.



Invite local communities to participate in food safety monitoring and market management.



Provide washed and chopped vegetables and fruits to small restaurants.



Join the existing online shopping platform to expand the customer base.

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M A R K E T

China Biodiversity Conservation and Green Development Foundation (CBCGDF) is one of the first public foundations approved by the Ministry of Civil Affairs. It is dedicated to promoting biodiversity conservation and green growth in China. Good Food Fund, China Biodiversity Conservation and Green Development Foundation was established in 2007 to promote healthy and sustainable food system transformation.

Slow Food is one of the most impactful NGOs dedicated to food system transformation around the world. Slow Food Great China was founded in 2015. It aims to promote Slow Food's concept of food that is defined by three interconnected principles: good, clean and fair.

Partner Organizations

