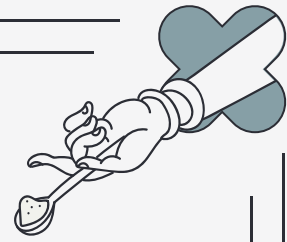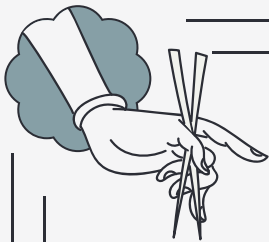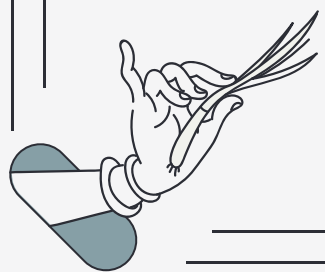An exploration of healthy diets and
sustainable food systems in China.

仙 丹
PANACEA
自 造
FOOD LAB

A service and systemic design diploma project by **Zijun Lin**
The Oslo School of Architecture and Design | Spring, 2020

Title:
Panacea Food Lab

Theme:
**An exploration of healthy diets and
sustainable food systems in China**

A service and system oriented design
diploma project by:
Zijun Lin

**The Oslo School of Architecture and
Design (AHO)**
Spring, 2020
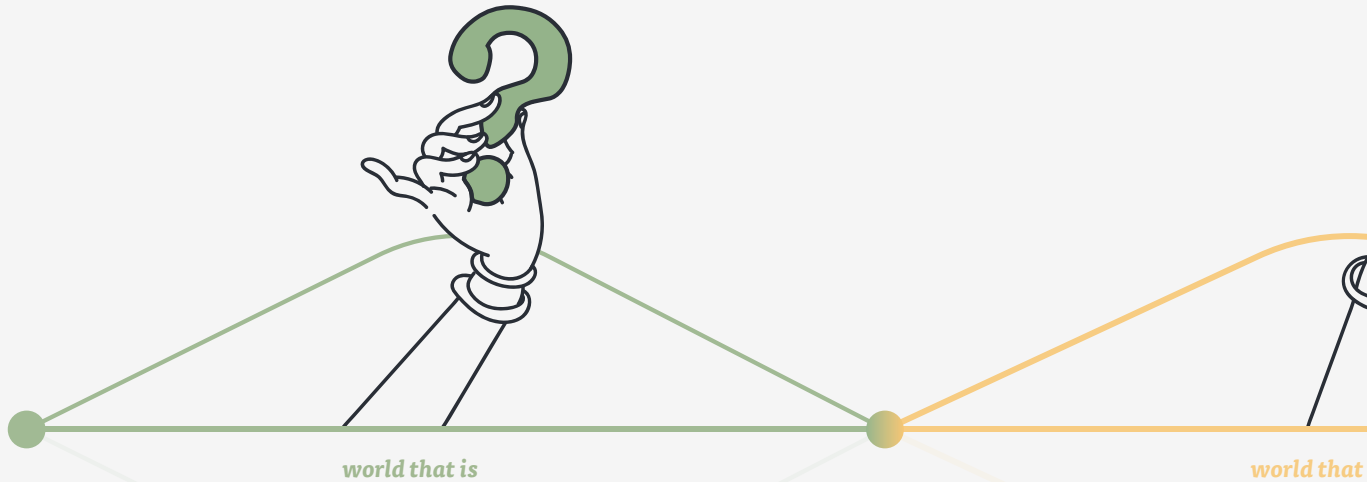
Supervisors:
Birger Sevaldson

Abstract

Nowadays, China's food system faces significant challenges in the context of rapid urbanization, population growth, dietary transition, and climate change. Current dietary patterns are threatening both human health and environmental sustainability.

Panacea Food Lab is a service and systems oriented design diploma that explores healthy diets and food system sustainability in China. It aims to design interventions to facilitate the transition of young Chinese consumers from unhealthy eating to healthy and sustainable diets, which promotes the sustainable development of food systems in China.

The project takes a systemic look at the current food system in China. Based on the understanding, Panacea Food Lab suggests a hands-on food education experience which combines Chinese food culture with science-based dietary knowledge. This is with the aim to engage young Chinese to know more about their dietary patterns, help to build a proper perception of healthy diets, and take the first step of behavior change. Also, make a connection between humans, food, and the environment, to convey the concept of a sustainable lifestyle.

Index

world that is

world that

Introduction | 10

Context | 16

Design approach | 28

world that is

INTRODUCTION

Overview of the project

Nowadays, China's food system faces significant challenges that threaten both human health and environmental sustainability.

China's young consumer group values health issues, but in fact, their dietary behaviors are unhealthy. This is mainly due to the various pressures they are facing from work and life, as well as an inadequate understanding of healthy diets, which lead to unhealthy dietary choices.

This project explores China's food system in a systemic way, and understands the young Chinese consumers in their context. Based on the insights, a service design solution is suggested to facilitate Chinese youth transition into healthy and sustainable diets.

The project was developed by combining service and systems oriented design approaches, as well as co-creation approaches that involved users and stakeholders during the development.

The design proposal aims to build a healthy dietary perception for young Chinese consumers to help drive behavioral change to healthy diets and introduce the concept of a sustainable lifestyle.

The project's approach aims to empower young Chinese with dietary knowledge for them to be aware of their unhealthy eating issues. This is done by offering personalized and hands-on food education experiences that combine offerings from various stakeholders, such as food-related social organization, knowledge providers, and local organic farming. The joint service guides participants towards building a scientific and healthy dietary perception with Chinese cultural Identity in mind. This serves as a means for facilitating and taking the first step of behavioral change towards sustainable dietary patterns and consumer behaviors.

On the individual level, the value proposition of this project is to help people achieve a healthier and more sustainable lifestyle. Moreover, as they will be the future leading consumer group for food markets, the current youth population can also have a positive bottom-up impact on the market and society. The project's focus on environmental impact is to develop awareness around responsible food consumption and it's implications on the environment.

The transition from the current situation to a more sustainable food system is a complex and long-term process. Panacea Food Lab is not a solution that can directly solve all the problems it entails. Rather, it is a design exploration from a bottom-up perspective that shows the potential for food education intervention. It aims to inspire people who are also working in the related field, and bring a new perspective from service and systemic design thinking in solving the existing problems.

Motivation

Designing for better experiences and life has been one of my greatest motivations. So in my diploma project, I wanted to work on a topic that is close to people's daily lives and also fun.

During spring 2019, I participated in a collaborative workshop, which is about exploring the design possibility of seaweed, held by Professor Julia Lohmann (Aalto University) in Sweden. In this project, I learned that Nordic countries pay attention to the development of sustainable food like seaweed.

This experience made me reflect that plant-based foods like seaweed are prevalent in China, but it is rarely associated with sustainability. Even the majority of Chinese people have never heard of the concept of sustainable eating. Therefore, I began to explore this topic, out of my passion for food and my curiosity about food system sustainability.

As a designer, I wanted to introduce a healthy and sustainable eating mindset into young people's lives through designerly approaches. I also looked forward to using the power of design to make a difference through valuable contributions.

figure 01: *Seaweed exhibition in marine research institute, Sweden*

仙丹
panacea
自造
food lab

world that is

CONTEXT

Challenges of the unsustainable food system

The food system is a complex web of activities involving the production, processing, transport, marketing, consumption, and disposal of food and food-related items. A food system operates within and is influenced by social, political, economic, and environmental contexts.

Nowadays, the global food system faces significant challenges in the context of rapid urbanization, population growth, dietary transition, and climate change (Pahlen, 2017). Unsustainable food systems are threatening both human health and environmental sustainability (Willett et al., 2019).

The first issue is that unhealthy diets have become a leading risk factor for disease world-wide, and the global levels of both hunger and obesity are growing. A significant proportion of people in the developing and developed worlds are undernourished because their food lacks essential nutrients. Unhealthy diets are putting an enormous and rapidly increasing burden on healthcare systems.

The second problem is that the world's food systems are unsustainable. Food production is one of the most significant drivers of local and global environmental damage. It contributes to climate change, biodiversity loss, and so on. Research shows that the global food system, from fertilizer manufacture to food storage and packaging, is responsible for up to one-third of all anthropogenic greenhouse gas emissions.

The EAT-Lancet report notes that there is an absolute need for facilitating the transition to a more healthy and sustainable food system. It will require extensive efforts to encourage healthier eating, reduce food waste, and reform food production (EAT-Lancet Commission, 2019).

"Food is the single strongest lever to optimize human health and environmental sustainability on Earth.

Two 'end-points' of the global food system: **final consumption (healthy diets) and production (sustainable food production) have significant impact human health and environmental sustainability***."*

- Summary Report of the EAT-Lancet Commission on Food, Planet, Health. 2019

figure 02 - Food forms an inextricable link between human health and environmental sustainability

Framework of the food system

The awareness and need to shift to more sustainable food systems is increasing globally. However, healthy and sustainable diets go beyond nutrition and environment; and they include economic, socio-cultural, and political dimensions, which showcase the inherent complexities (FAO, n.d.).

To better understand this complex system from a holistic perspective, I re-illustrated a framework of the food system (figure 3, for further explanation, see appendix p.130 - glossary). This map shows the interconnections and impact between different sectors.

Biophysical and environmental drivers

Natural resource capital
Ecosystem services
Climate change

Innovation, technology and infrastructure drivers

Innovation
Technology
Infrastructure

Food supply chains

Production systems

Farmers, indigenous peoples, agribusiness, land and plantation owners, fisheries, financial entities

Storage and distribution

Transporters, agribusiness, distributors

Processing and packaging

Packing plants, food and beverage industry, small and medium enterprises

Retail and markets

Retailers, vendors, food outlet owners, traders, restaurateurs, wholesealers

Poli

1 NO POVERTY   2 ZERO HUNGER   3 GOOD HEALTH AND WELL-BEING   4 QUALITY EDUCATION   5 GENDER EQUALITY   6 CLEAN WATER AND SANITATION

figure 03 - Framework of food systems for diets and nutrition, HLPE, 2017

Political and economic drivers

Leadership
Globalization and trade
Conflicts and humanitarian crises
Food prices and volatility
Land tenure

Socio-cultural drivers

Culture
Religions & rituals
Social traditions
Women's empowerment

Demographic drivers

Population growth
Changing age distribution
Urbanization
Migration& forced displacement

Food environments

Food availability and physical access (proximity)

Economic access (affordability)

Promotion, advertising and information

Food quality and safety

Consumer behavior

Choosing where and what food to acquire, prepare, cook, store and eat

Diets

Quantity

Quality

Diversity

Safety

Nutrition and health outcomes

Impacts

Social
Economic
Environmental

tical, programme and institutional actions

Sustainable Development Goals

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

Healthy and sustainable diets

Healthy Sustainable Diets promote all dimensions of individuals' health and well-being, have low environmental pressure and impact, and are accessible, affordable, equitable, and culturally acceptable (HLPE, 2017).

According to the guiding principles, healthy sustainable diets:

- *are adequate in energy and nutrients to meet the needs of active and healthy life;*
- *prefer to choose more plant-based foods;*
- *Eat locally, when in season;*
- *limited levels of fats, sugars, and sodium intake;*
- *include a varied range of foods, especially fruits and vegetables;*
- *can consist of moderate amounts of animal protein but should reduce intake of red and processed meat;*
- *choose sustainable food sources which preserve biodiversity and environment;*
- *are built on and respect local culture;*
- *reduce food loss and waste, etc.*

"Each of us contributes to the impact that our food system has on the planet. We can all commit to making the world a healthier place to live, through small but achievable changes to our diets."

- The European Food Information Council

Eat more plant-based foods

Eat locally, when in season

Limited levels of fats, sugars & sodium intake

Swap animal protein for plant-based ones

Eat a varied range of foods

choose sustainable food sources

figure 04 - Guiding principles for a healthy and sustainable diet, EUFIC, FAO & WHO, 2019

Chinese context

*"**China has one of the unhealthiest diets** due to high intake of sodium, and low intake of whole grains and fruit."*

- Health effects of dietary risks in 195 countries, 1990–2017. The Lancet. 2019

Challenges in the Chinese context

Over the past few decades, China's food system and diet patterns have changed dramatically in the context of rapid urbanization, population growth, dietary transition, and climate change.

Traditional Chinese food culture has emphasized health, but nowadays, China has one of the unhealthiest diets in the world. It is mostly due to a shift in eating from a plant-based intake towards a more meat-based intake;in addition to having more processed and ultra-processed foods with high levels of sugar, salt, and unhealthy fats (see figure 05). But at its heart, the Chinese attitude to food is still driven by the underlying principle of health and eating well.

In addition, with rising urbanization, cities are home to over half of the population and are, therefore, key in driving the adoption of healthy and sustainable diets. Food is a crosscutting issue that implies consumers, and multiple private/public sectors. To improve the existing urban food systems, a holistic approach is required.

	China	India	USA	Indonesia	Brazil
High sodium	1	6	3	1	2
Low whole grains	2	1	1	3	1
Low fruit	3	2	4	2	5
Low nuts and seeds	4	3	2	5	3
Low omega-3	5	4	6	6	6
Low vegetables	6	5	5	4	4
Low fiber	7	8	8	7	7
Low PUFA*	8	7	14	8	9
Low legumes	9	12	10	9	15
Low calcium	10	10	12	10	10
Low milk	11	11	13	11	11
High trans fat	12	9	9	12	12
High sweetened beverages	13	13	11	13	8
High red meat	14	15	15	15	13
High processed meat	15	14	7	14	14

source: Institute for Health Metrics and Evaluation
credit: Joyce Tseng, CNN
figure 05 - Dietary conditions linked to death in most populous countries, 2019.

Target user group

The target user group of Panacea Food Lab comprises young Chinese consumers (mostly Generation Z) who live in urban areas and gradually become the leading consumer group in the food market.

More and more young people get into unhealthy food choices due to their busy and stressful work or study lives. Nevertheless, from the bottom of their heart, they keep expressing a keen interest in healthier diets and want to know about a sustainable lifestyles. However, they don't know how to get started.

Furthermore, the younger generation has been deeply influenced by technology and the Internet. In terms of the need for food, there has been a transition from "eating enough" to "eating better". Novelty, trend, and diversity have become new keywords. Food is no longer "food", instead it is emerging as an increasingly personalized experience.

Therefore, in order to successfully transition the food system to a more sustainable one, it's necessary to have a better understanding of the target generation. This way, better design interventions can be developed.

Initial brief

Systemically understand the dietary patterns of young people in the context of food systems in China.

Design the interventions for young Chinese consumers to facilitate the transition to healthy diets and sustainable food systems.

figure 06 - Picture of a popular restaurant in China

*world that could be*

DESIGN APPROACH

A combined approach

Combining Service Design & Systems Oriented Design

In order to understand the existing food system, food culture, and users in China in a more holistic way, this diploma project is developed combining Service Design, and System Oriented Design approaches. By using these design approaches, it was possible to have a more vibrant picture of the politics, economics, social and cultural aspects around dietary patterns of Chinese youth.
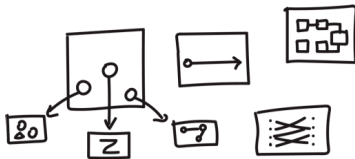
Understand the system   *Define where to intervene in the system*   *Design the intervention*
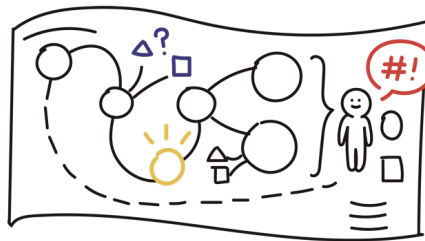
figure 07 - Service and system oriented design approach

Service Design approach

Service design has become an essential strategic approach to social innovation. It puts the human at the center, utilizes a holistic approach to understand the system, helps co-create with different actors in the system, connects their needs, emphasizes experiences, supports value creation for organizations and reduces delivery gaps (Allen et al., 2005; Mager & Sung, 2011; Yang & Sung, 2016).

Diet is a fundamental behavior in people's lives, and it is influenced by different factors. Consumer behavior varies according to personal preferences, cultural and social trends, and the channels and information provided by different actors.

Because of these factors, I used the service design approach to understand the user's dietary perception, consumer behavior, eating experience, and other relevant factors.

System Oriented Design approach

The SOD approach emphasizes that the complexity doesn't derive from one actor or object in the system, instead it derives from the interconnectedness. In this way, it is possible to combine ethical issues with sustainability, economy, technology, social, cultural, and commercial aspects to discover how to intervene in social issues systemically (Sevaldson, 2013).

Therefore, this project incorporated the SOD approach to better understand the Chinese food system's context. By using different mapping, evaluating, and validating techniques, it was possible to analyze the interconnectedness between the various stakeholders, sectors, and areas linked to the food system.

After having a systemic understanding of the existing food system, I continued to explore and design for potential intervention points. The systemic impact of the design proposal was kept in consideration during the design process, aiming to create interventions with systemic and positive systemic impacts on the food system.

Methods

Gigamapping and ZIP analysis

To better understand the food environment around the target user group, I used Gigamapping (Sevaldson, 2011) to explore the food system and different factors that might affect the dietary choice and food consumption behaviors of young Chinese.

Further, I used the ZIP analysis (Sevaldson, 2016b) for developing Gigamaps and finding potential areas for interventions, innovations, and ideas.

For example, in this map (figure 08), I mapped the factors from public and personal sides, including cross-cutting factors such as culture.

For ZIP analysis:

The Zoom-points (red) indicate that these areas need more research and knowledge for further mapping.

The Innovation-points (yellow) indicate that there are possible interventions or some ideas for innovation among these factors.

The Potential-points (blue) indicate the problems or pain points in these areas.

After several sessions of gigamapping and ZIP analysis, I paid more attention to the following parts: **Chinese tradition, culture, social impact, trends, information source, education**, etc. These parts have more interconnections and effects in the ZIP points, and there are many possibilities for exploring and innovating from the perspective of service design.
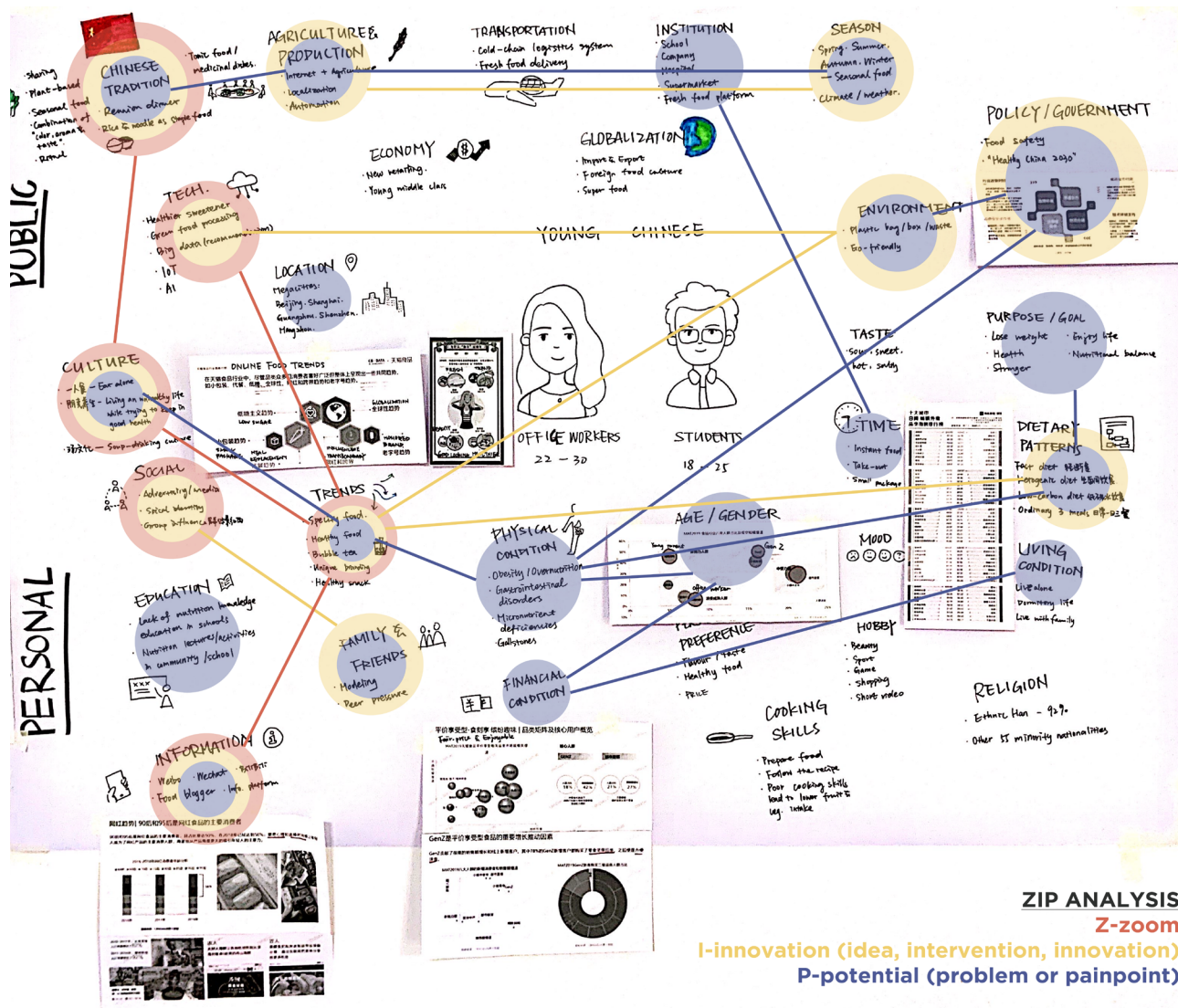
PUBLIC

PERSONAL

CHINESE TRADITION
- sharing
- Plant-based
- Seasonal food
- Combination of color, aroma & taste
- Retual
- Tonic food / medicinal dishes
- Reunion dinner
- Rice & noodle as staple food

AGRICULTURE & PRODUCTION
- Internet + Agriculture
- Localization
- Automation

TRANSPORTATION
- Cold-chain logistics system
- Fresh food delivery

INSTITUTION
- School
- Company
- Hospital
- Supermarket
- Fresh food platform

SEASON
- Spring, Summer, Autumn, Winter
  - Seasonal food
- Climate / weather

POLICY / GOVERNMENT
- Food safety
- "Healthy China 2030"

ECONOMY
- New economy
- Young middle class

GLOBALIZATION
- Import & Export
- Foreign food culture
- Super food

TECH.
- Healthier sweetener
- Green food processing
- Big data (recommendation)
- IoT
- AI

ENVIRONMENT
- Plastic bag / box / waste
- Eco-friendly

YOUNG CHINESE

LOCATION
Megacities:
Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou

CULTURE
- 一人食 - Eat alone
- 朋克养生 - Living an unhealthy life while trying to keep in good health
- 深夜食堂 - Soup-drinking culture

ONLINE FOOD TRENDS

OFFICE WORKERS
22 - 30

STUDENTS
18 - 25

TASTE
- Sour, sweet, hot, salty

PURPOSE / GOAL
- Lose weight   · Enjoy life
- Health   · Nutritional balance
- Stronger

SOCIAL
- Advertising / media
- Social identity
- Group influence 群体影响

TRENDS
- Spicy food
- Healthy food
- Bubble tea
- Unique branding
- Healthy snack

TIME
- Instant food
- Take-out
- Small package

DIETARY PATTERNS
- Fast diet 轻断食
- Vegetate diet 生酮饮食
- Low-carbon diet 低碳水比重
- Ordinary 3 meals, 日常一日三餐

EDUCATION
- Lack of nutrition knowledge education in schools
- Nutrition lectures/activities in community /school

PHYSICAL CONDITION
- Obesity / Overnutrition
- Gastrointestinal disorders
- Micronutrient deficiencies
- Gallstones

AGE / GENDER

MOOD

LIVING CONDITION
- Live alone
- Dormitory life
- Live with family

FAMILY & FRIENDS
- Modeling
- Peer pressure

PREFERENCE
- Flavour / taste
- Healthy food
- Price

HOBBY
- Beauty
- Sport
- Game
- Shopping
- Short video

FINANCIAL CONDITION

RELIGION
- Ethnic Han - 92%
- Other 55 minority nationalities

INFORMATION
- Weibo   · Wechat   · 大众点评
- Food Blogger · Info. platform

COOKING SKILLS
- Prepare food
- Follow the recipe
- Poor cooking skills lead to lower fruit & veg. intake

平价享受型·食刻季 模拟搜珠 | 品类矩阵及核心用户概览
Fair, price & Enjoyable

GenZ是平台享受型变食品的质要增长动能点

ZIP ANALYSIS
Z-zoom
I-innovation (idea, intervention, innovation)
P-potential (problem or painpoint)

figure 08 - Different factors affect the dietary choices and food consumption behaviors of young Chinese

Shadowing and observation

I spent two weeks in China on a field trip. Although I only visited several places due to the COVID-19 situation, I still got some insights from the field research.

Firstly, I visited some famous restaurants and beverage stores, such as HEYTEA*, for understanding the feeling and atmosphere and why they are attractive to my focus group.

I followed two interviewees for shadowing observation at HEYTEA, to gain a better understanding of their food consumption mindset and behavior, as well as other social actions, such as sharing food experience on social media.

*HEYTEA is a Chinese chain that owns tea and baking brands. The primary consumers of HEYTEA are young generation, and most of the stores are located in shopping centers in the mega cities.

In addition, I visited Fresh Hema*, a new retail Fresh store that combines online and offline experiences, I learned about the food supply chain, food consumption environments, and young consumers' behaviors.

*Fresh Hema is a new data and technology-driven retail platform owned by Alibaba group. Fresh Hema aims to create a community-based one-stop retail experience center for consumers.

figure 09 - Shadowing observation at HEYTEA (up) & Fresh HEMA (bottom)

Focus group and participant observation

To better understand the dietary patterns of young consumers in China, I invited interviewees aged between 23 and 26 to participate in a focus group, and I did participant observation. The participants included young white-collar workers, local students, and students studying abroad. Through the observation of the focus group, I learned about the following information in general: eating habits, dietary perception, and their consumption behaviors.

figure 10 - Participant observation(up) and focus group with young Chinese (bottom)

In-depth interviews with experts

To holistically understand the Chinese food system, it was essential to not only address it from the consumer's perspective but also to include conversations with experts on the various fields of food systems such as agriculture, policy, and marketing to get professional views of the issue. To do this, I connected with different experts in different sectors to enrich my knowledge base and bring in more professional insights into my systems understanding.

The main gain of these interviews was targeted insights brought up by experts with extensive experience and knowledge. They mentioned different trends in their field that can affect the future food system, and I found that most of the experts mentioned a shared insight that consumer's food consumption behaviors have a significant impact on the food system.

figure 11 - In-depth interview with a nutritionist

Workshops and co-creation sessions

Different types of workshops and co-creation sessions were conducted throughout the project.

For example, to better understand the target users' perception and behavior from a personal level, a 'persona' workshop (figure 12) was developed at the beginning of the process.

I asked participants to create personas based on their real situation, draw their dietary journey maps, and discuss their challenges. Then they proposed solutions to each other's problems. I got several insights from the workshop and their reactions.

Furthermore, I conducted online co-creation workshops with users, experts, and different stakeholders to generate multiple perspective ideas.

What's more, several food workshops were run for validating the proposal, including physical cooking workshops, remote food workshops, and online food-related sketching workshops.

Evaluation & validation

In addition to the workshops, methods like IMP analysis (Sevaldson, 2016a), quick user testing, and feedback sessions were conducted from the research period to the delivery phase of the project, to validate the feasibility, potential, and positive impact it can bring to users and stakeholders.

figure 12 - Pictures of the 'persona' workshop and food workshops

Challenges & limitations

Working with the Chinese context while being in Oslo, I had expected a certain amount of difficulty for research and user testing. Not surprisingly, it turned out to be more challenging than anticipated. To further complicate the process, the COVID-19 situation brought an additional set of difficulties when conducting my research in China.

I was unable to meet people and do user testing in person. Most of the co-creation workshops and validation were only able to be done remotely, mostly with my network.

Fortunately, one of my friends in China helped me with some touchpoint prototyping (figure 13) and contacted some users for testing. The final delivery and validation are not as complete as I expected, but I've tried to adapt my process to the current situation as much as possible.

figure 13 - Picture of remote prototyping in China

world that could be

DESIGN
EXPLORATION

Findings & opportunities

Throughout my research, I have been analyzing the target user group, China's current food system, and the group's social environment from different perspectives.

This led me to define four findings and corresponding opportunity areas. The first three were analyzed from the **individual level, food system level, and social context level**. The fourth finding is the impact and opportunity that emerged from the **current COVID-19 situation**.

1. individual level

| Finding

Although young Chinese value health and diet and show a willingness to improve their dietary behaviors, they lack the proper dietary perceptions and knowledge to guide the appropriate eating behaviors.

| Opportunity area

How to help young Chinese to build a right perception about healthy diets?

*"Young people still **have some 'traditional' but incorrect ideas about healthy eating**...*

There is poor public awareness of nutrition issues. Although some possess good attitudes toward nutrition and show a willingness to improve their dietary behaviors, ordinary Chinese residents lack basic nutrition knowledge."

- Dr. Tian, nutritionist

| Young Chinese dietary perceptions & willingness to change their behaviors

According to the report of 2020 China's Health Insights (see figure 14), people highly value the significance of a balanced diet for health. Still, many people are not satisfied with their current diet and health status and have tried different ways to improve dietary behavior. However, many young people lack basic nutrition knowledge and have misconceptions about healthy diets, healthy weight, and weight loss.

For example, some people think that a no-carbohydrate diet is the healthiest diet; some people are losing weight even though they are underweight; many people use meal replacement to lose weight; many people think that eating salad is the only way to lose weight, or believe that sweets are evil.

It's not only that these improper perceptions and behaviors don't solve their current health issues, but they may also actually lead to a greater amount of negative outcomes.

Score of importance of diets   *average/9.0*

0-6	7	8	9	10
3%	7%	23%	19%	48%
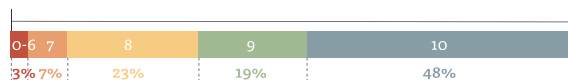
Self score of dietary satisfaction   *average/6.4*

0-4	5	6	7	8	9-10
12%	19%	15%	23%	23%	8%
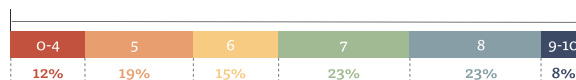
figure 14 - Healthy diet score, 2020 China's Health Insights. Dr. Dingxiang.

| PUNK HEALTH

Maintaining a healthy lifestyle is always a popular topic in China, where it is known as "Yangsheng". The poor health conditions have led young people to consider using traditional "Yangsheng" methods to stay in health. However, the busy schedule of young people today keeps many of them from doing all they could do.

Therefore, by balancing the indulgences of modern life with traditional health tips, a new concept called "Punk Yangsheng", which is also known as "PUNK-

HEALTH", has been gradually catching on among young Chinese. It is about squeezing "healthy tricks" into the day to make up for other unhealthy habits.

According to e-commerce giant Alibaba's health consumption report, more than half of "Yangsheng" buyers are under 30. The report found that young buyers tended to search for "instant healthy foods," which is also a PUNK HEALTH trick, reflecting their desire to stay healthy without making too much effort (Danni, 2018).

figure 15 - Young people with old body — Gen Z's PUNK HEALTH lifestyle

"**By buying these 'healthy foods', I got psychological comfort.** Even just after placing the order, I already felt as if I had become healthier."

-Yang, 26, female.

"Yangsheng is not about chasing trends. It's a scientific way of life and a positive attitude towards life. **Methods such as PUNK HEALTH are like saying 'first kill me and then try to heal me,' which will do absolutely no good.**"

- Dr. Su from the China Association of Chinese Medicine.

2. food system level

Consumers can influence the food system through their demand for food.

How to facilitate consumers' behavior change towards healthy and sustainable?

| Consumer behavior and its impact

Consumer behavior indicates all the choices and decisions made by people on what food to acquire, store, prepare, cook, and eat. Personal preferences influence consumer behavior, determined by a variety of interpersonal and individual factors including, but not limited to, taste, convenience, values, traditions, culture, and beliefs (Glanz et al., 1998; Sobal & Bisogni, 2009).

What's more, the behavior is mostly shaped by the existing food environment, which includes personal and collective determinants of consumer food choices, including prices, income, knowledge and skills, time, and social and cultural norms.

In addition to this, consumer behavior also has a bottom-up impact on the whole food system. Facilitating collective change to healthier and more sustainable consumer behavior can open a pathway towards more sustainable food systems.

Consumer behavior can be changed through interventions aimed at the food environment or through "agentic" interventions, such as education programs, to provide more information and increase food consumption autonomy(HLPE, 2017).

*"Consumers can shape the food supply through their behavior and demand for specific foods. **Demand-side interventions focus on awareness, behavioral change, willingness to pay, knowledge transfer and empowerment to increase demand for nutritious foods and thereby improve dietary patterns.**"*

- Food and Agriculture Organization, HLPE, 2017

| Key points of interventions to orient consumer behavior

Improvement in production practices, extension, biofortification, improved storage and distribution, food fortification, product reformulation, etc.

Examples of policies and programmes aimed at increasing nutrition entering the supply chain

Behaviour change communication, social marketing, food labelling, pricing policies (taxes and subsidies), nutrition guidelines, zoning policies, etc.

Examples of policies and programmes aimed at improving the quality of the food environment

Food supply chains

Improvements in

Production systems (availability)
Post-harvest practices
Market/store access
Nutrient content of foods
Food quality and safety
Income generation
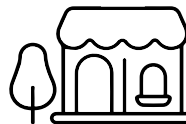
Food environments

Improvements in

Availability, physical access (proximity)
Economic access (affordability)
Promotion, advertising and information
Food quality and safety

Examples of policies and programmes that can lead to nutrition exiting the supply chain

Subsidies for production of less nutritious foods (e.g. sugar), trade arrangements that limit 'policy space' for policies aimed at improving nutrition, etc.

Examples of policies and programmes that can lead to an unhealthy food environment

Nutrition guidelines incongruent with evidence, misleading labelling, unrestricted marketing of food and beverages to children, etc.

Improved nutrition and health outcomes

Improvements in

**Food purchasing
Food acceptability
Knowledge and skills
Feeding practices
Hygiene and food
preparation practices
Diets**

Consumer behavior

Socio-economic status
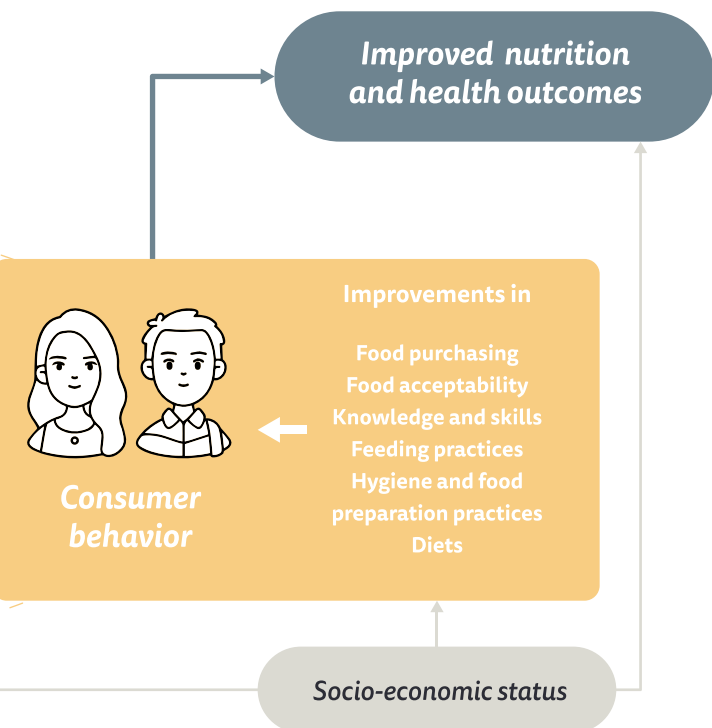
figure 16 - Improved food systems for better and healthier diets

"**Consumers play a crucial role in making food systems sustainable.**
Without a change in consumer awareness and behavior, the problem of the food system sustainability cannot be fundamentally addressed."

- Dr. Si, researcher in food system sustainability in rural development in China

Figure 16 illustrates how food supply chains interface with food environments and the potential impact pathways that orient consumers towards improved diets and nutrition.

The main pathway that can improve diet patterns and nutrition outcomes is enabling consumers to purchase more nutritious foods and decreasing the consumption of less nutritious foods. Entry points to raise awareness among the different actors in the value chain also stimulate demand for nutritious foods.

It is worth noting that lack of knowledge and information is a critical factor that limits consumer access to nutritious foods. This point meets the opportunity area at the individual level, and is also related to the third opportunity, food education, which will be explained later.

(For more positive directions for food systems and diets, and further explanation, see appendix p.131)

| Transtheoretical Model of Behavior Change

In order to drive a shift in consumer behavior towards healthier and more sustainable practices, the project is theoretically based on the Transtheoretical Model of Health Behavior Change. This model is used to assesses a person's readiness to act on a new healthy behavior(Prochaska & Velicer, 1997).

The model contains five stages (figure 17) that an individual will progress (or regress) through. The model also includes intervention strategies, which inspired me for the later design proposal, including:

- *Education;*
- *Increase the importance of cognitive dissonance;*
- *Gamification and extrinsic rewards;*
- *Persistent visual feedback to increase user's awareness of their current behavioral patterns;*
- *Persistent visual feedback to keep track of progress and to increase user's awareness of achieved results;*
- *Overcome problems arising;*
- *Elements of social influence.*
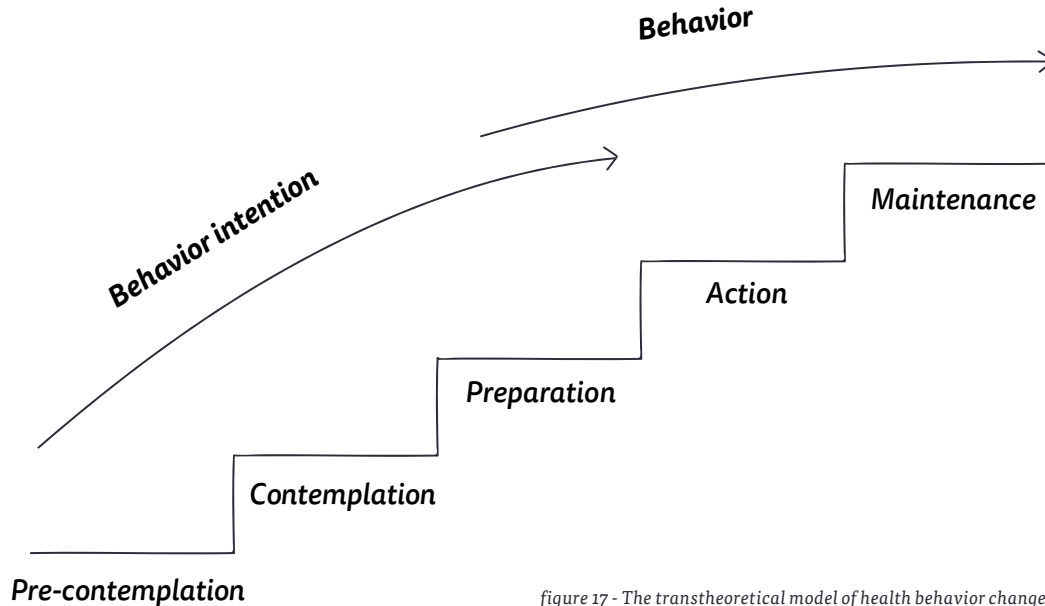
figure 17 - The transtheoretical model of health behavior change

3. social context level

This generation of young people in China has barely received food education during their school days.

How to provide opportunities and channels for young Chinese consumers to have food (re-) education?

| The importance of food education

Food Education is any set of conditions and/or learning experiences designed to facilitate people eating food that contributes to their health and well-being. In a conventional sense, food education is taking place in schools, targeting school-age children and teenagers. It is defined as the "acquisition of knowledge about food and nutrition, as well as the ability to make appropriate decisions through practical experience with food, with the aim of developing people's ability to live on a healthy diet" (MAFF, 2016).

Many countries (mainly developed ones) have recognized the importance of food education and making it mandatory within school curricula. Education should generate autonomy, capacity for reflection, and empowerment. In this perspective, food education should promote these same capacities about eating practices and address food system issues (HLPE, 2017).

*"Governments and NGOs can **influence consumers' perceptions of the nutrition value** (as well as aspects of sustainability, heritage and culture, etc.) of foods by implementing regulation, mass media campaigns, adopting nutrition guidelines and **food education** (Wilkins, 2005). "*

- Food and Agriculture Organization

| Inspiration: Food education in Japan and South Korea

"Food education consists of three main pillars: cultivating an ability to make choices about food, fostering an understanding of traditional food culture, encouraging an attitude of respect for life and nature through food."

- Miki Miyoshi, expert of health and nutrition

Japan:

Shokuiku (Japanese term of food education) program doesn't just involve knowledge about filling up with nutritionally healthy and balanced meals, but it also teaches young students to understand and respect food, to turn them into adults who are able to make informed choices regarding food sustainability.

As well as promoting a healthy lifestyle, Shokuiku promotes a greater appreciation for the various aspects involved in food production and a greater emphasis on traditional Japanese food culture. It is facilitating a cultural shift in people's perceptions about food through large-scale collaboration between the involved stakeholders (Meagher, 2017).

South Korea:

The government is also actively promoting food education and the retention of traditional food culture. On one hand, the government develops a "food garden experience" program for students to learn the local vegetables and understand the relationship between the food and the environment.

On the other hand, a campaign was initiated to protect and develop the traditional Korean diet. The government publicized local foods and developed dishes using local ingredients to stimulate local economic growth and protect local farming. The result was a rise in vegetable and fruit consumption and a decline in obesity rates (Lee et al., 2002).

Both cases have achieved positive impacts on human health and the environment by promoting food education in a way that empowers knowledge to users, develops local/traditional food culture, and encourages sustainability. These cases also highlight the importance and potential of food education.

figure 18- Shokuiku lunch lesson in Japanese elementary school, source: School lunch in Japan

"The main task of my school days was to study hard, and I never cooked for myself when I was a student."

-Li, 24, female

figure 19- Chinese high school students, studying while waiting in line at the canteen, source: Tencent news

| Food education in China

This generation of young people in China has barely received food education at school. And many of them don't have enough opportunities to choose their preferred food when they are in school (for example, they can only choose some food provided by the school canteen). As a result, when they are relatively economically independent and able to decide on their own food choices, many will choose and consume food based on their "self-satisfaction" as the first priority.

What's more, the lack of food education leads to a lack of understanding of the relationship between humans, food, and nature. Many people simply see food as a commodity, not knowing how their choices affect their health and environmental sustainability.

Chinese traditional food culture is extensive and profound, but many young people only scratch the surface. The essence of positive and healthy traditional food culture has not been well inherited.

In summary, the lack of food education in China's current education system has a systemic impact on nutrition/human health, environmental sustainability, cultural inheritance, and development.

In the future, China's education system needs to increasingly integrate food education as a core element of their national curricula and their school food and health policies. However, the target user group in this project missed out on getting food education in school. Therefore, educating them about healthy and sustainable diets in a way that relates to them is a new challenge.

"Food education... I don't think I learned anything about food or cooking in school."

-He, 23, female.

"My priority in choosing food is my taste preference. I just want to eat what I like."

- Wen, 24, male.

"The traditional Chinese food culture... I think I might know something about it?

...Well, I don't think I can give you particular details."

- Wang, 24, female.

4. impact of current situation

| *Finding*

Due to the COVID-19 situation, almost everyone has to stay at home, and cook for themselves.

| Opportunity area

How to turn the impact of this situation into a new opportunity?

| Consumption concept and
  consumer behavior change

In 2020, the COVID-19 outbreak had a massive impact on people's lives. This situation not only brought many problems, but it also has created some new opportunities.

Firstly, people have had some changes in their ideas and behaviors of food consumption. They are becoming more rational about consumption and thinking more inward about its value.

From the perspective of food consumption, the situation facilitated Chinese consumers to value their health on a new level. It not only makes people realize the importance of healthy diets and promotes the consumption of healthy food, but it also develops a trend and habit of cooking at home.

"After the outbreak of COVID-19, more than 52% of consumers said they would pay more attention to healthy food, especially immune-related products."

- Report of consumer behavior and attitude change under COVID-19 situation, DATA100, 2020.

"The COVID-19 situation has led to a shift in the awareness of keeping health. Generation Z has become the largest consumer group of health services, up to 40%."

- Alibaba Health, 2020.

| Stay at home!

Due to the social distancing policy, almost everyone was required to stay at home. As an effect the catering industry and take-out food have taken a huge hit. However, the situation also gives people a chance to start cooking at home.

In a short time, an online campaign named "stay-at-home food challenge" made a hit from short video platforms and recipe applications to social media platforms like WeChat and Weibo (figure 20).

With social influence, more and more people start studying cooking during the period of home quarantine.

"Due to busy work and limited time, young Chinese consumers rather choose convenient take-out services instead of cooking at home.

*However, during this epidemic, **they have more free time to do it, and many people find it is not that difficult to learn how to cook. Sharing cooking experience also meets their social and expressive needs.**"*

- Feng Zhong, COO of Douguo (a food community in China)
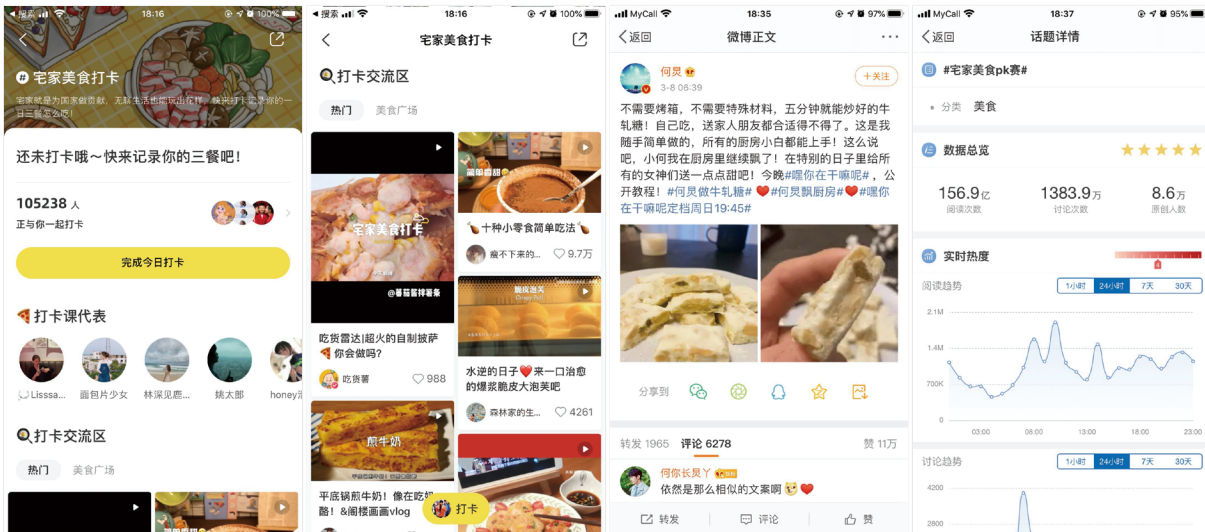
figure 20 - The "stay-at-home food challenge" make a hit in different social media platforms

Reframed brief

Based on the findings and opportunity areas, I redefined the design brief:

In health:

Get young Chinese to know more about their eating habits, help them to build the right perception about healthy diets, and take the first step of behavior change.

In sustainability:

Also, build the connection between humans, food, and the environment, to convey the concept of a sustainable lifestyle.

Framework of changing steps

By combining food education with the behavior change model, I divided the dietary perception and behavior changing into three steps: **Knowing, thinking** and **taking action**(figure 21).

This is the framework of my proposed service solution.

| Taking action

| Thinking

Practical experience with food

Dietary pattern & appropriate consumption decisions

| Knowing

Knowledge about food and nutrition
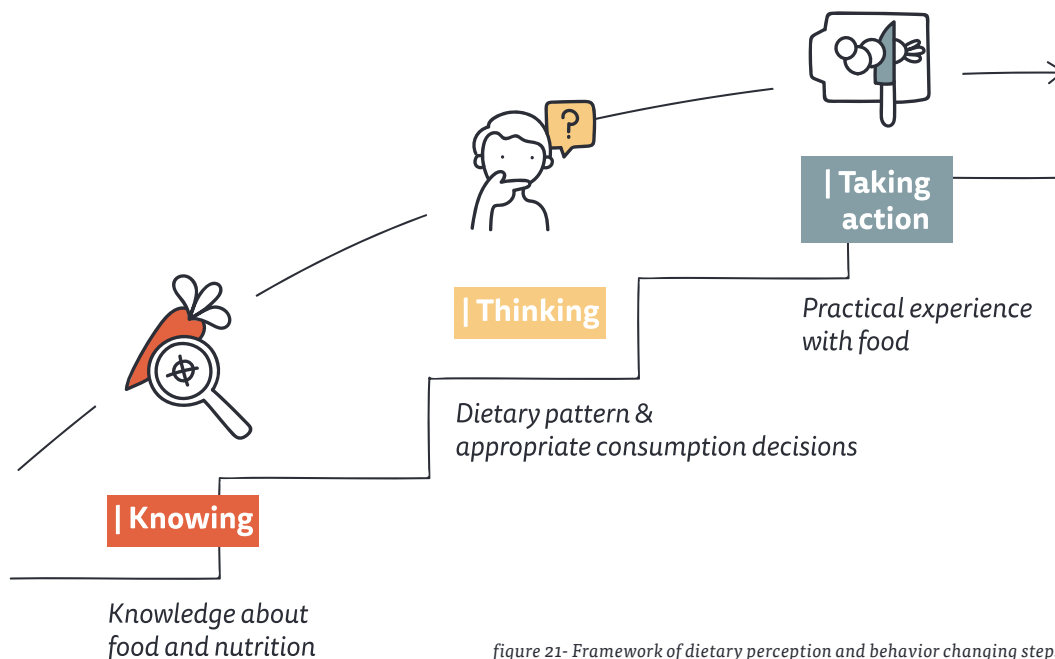
figure 21- Framework of dietary perception and behavior changing steps

Further design process

Co-creation

After reframing the brief and defining the specific design direction, I invited users and stakeholders to conduct online co-creation sessions again. We further explored ideas on young Chinese consumers' behavior, food education, and opportunities under the pandemic situation. Then we generated several concepts, from individual intervention to changes in the food consumption environment.
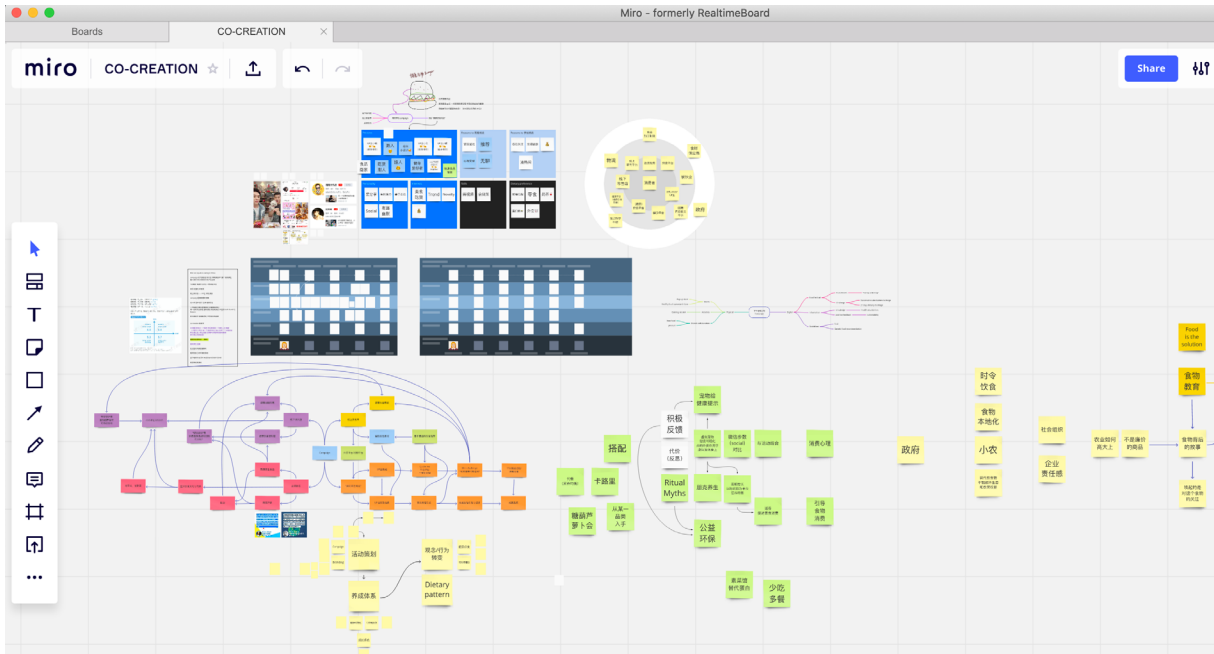
figure 22- A co-creation board on MIRO

Evaluation

I used Impact and Threshold Analysis(Sevaldson, 2016a) to evaluate the potential, feasibility, and systemic impact of different ideas. By analyzing the system Interventions/innovations of Systemic impact, Thresholds, Synergies, Counter the effects (unwanted and counter-intuitive effects) and Resilience, I selected three potential directions to develop further: **Food innovation workshop, Dietary management tools/services and Eco-food platform**.

Ideas	*Systemic impact*	*Thresholds*	*Synergies*	*Counter effects*	*Resilience*
Dietary management tools/services	○ ● ○ ●	● ● ○ ○ ○	● ● ○ ○	⊘ ○ ⊘ ○	● ● ● ○
Food innovation workshop	○ ● ● ●	● ● ● ○ ●	● ● ● ●	⊘ ○ ○ ○	● ○ ○ ○
Eco-food platform	● ○ ● ●	● ● ○ ○ ●	● ● ○ ●	○ ○ ⊘ ○	● ● ○ ○
Takeaway platform's virtual pet	○ ● ○ ○	○ ○ ● ○ ○	● ○ ○ ○	○ ○ ⊘ ⊘	● ● ● ○
Healthy food festival	● ● ○ ○	○ ● ○ ○ ○	○ ● ○ ○	○ ○ ⊘ ○	● ○ ○ ○
Online/social media healthy diet campaign/ challenge	○ ● ○ ●	○ ● ● ○ ●	● ● ○ ●	○ ○ ○ ○	● ● ● ●
Intervention in supermarket	○ ○ ● ○	○ ○ ○ ● ○	● ○ ○ ●	○ ⊘ ⊘ ○	● ● ○ ○

figure 23- Impact and Threshold Analysis matrix

Rapid prototyping and user testing

With the first round evaluation, I selected three potential directions. To figure out which idea has a more positive impact on both users and stakeholders, I quickly prototyped three landing pages and showed them to people to get some first impressions and feedback.

| Food innovation workshop

It is a creative food community that is open to all. It provides an activity experience space for sharing in urban settings. People can make new dishes with traditional ingredients or make traditional dishes healthier with innovative cooking methods, etc.

"This is the only one with the social element, and I look forward to participating in this activity with my friends in my leisure time."

- Huang, 22, female.

"I really want to learn how to cook healthy and also delicious food from the professionals. I tried to follow some online recipes, but I can't make it on my own..."

- Cen, 25, male.

"The topic 'ugly food' attracts me. I think it's good that the workshop can share these contents. I heard of this topic when I studied abroad. But in China, I haven't heard many conversations about it."

- Chen, 24, male.

"I'm interested in that there will be professional guidance and practice sharing from chefs and food designers. It makes me feel this service is trustworthy and reliable."

- He, 24, female.

figure 24- Probe 1: food innovation workshop landing page, related pictures sources: ChiTofu, Studio MK27, Intermarche

|Personalized plan (digital tool)

This concept is an easy and fun digital tool. It determines the user's dietary type through a simple quiz, then provides personalized recommendations to help them develop new eating habits in a gamified way.

"I was attracted by this brand image. It has a vivid metaphor and a sense of storytelling. And it's more interesting and trendy than others on the market!"

- Fan, 25, female.

"I want to take the quiz! I'm really curious about what my dietary type is. Ha-ha, I even clicked the "get started" button."

- Chen, 24, male.

ELIXIR LAB   Guideline   Download   Shop   About   Start now

Immortal Collaboration

How to keep health in a trendy way?

Personalized 'health elixir making' plan: *from entry to the master*

Get started

TAISHANG LAOJUN × THE KITCHEN GOD

It's you!

Dan of office takeout food

Eating takeout food with high sodium/oil
Sedentary in the office
Stressful overeating

Start refining

中午的菜单一般是...

Customized Practice Guideline

Find out your dietary type with a quiz!
ELIXIR LAB will customize the personalized
healthy nutrition practice guideline for you
according to your dietary type, helping you
transfer into healthy diets step by step.

Start testing

Interactive Process

You are what you eat, and your elixir as well. With a snapshot, your food will transform into different levels of material. Let's learn how to eat to make a healthy elixir.

Have a try

Personalized Recommendations

Don't know what to eat or how to buy healthy food? ELIXIR LAB provides personalized recommendations for helping you easily have healthy daily diets.

Try to draw

"What's Your Elixir?"

After the complete the plan, you can harvest a physical "elixir" souvenir according to your practice, and more healthy food or gifts!

Customize your plan

"I don't think I will follow what it recommends. I prefer to eat what I like."

- Cen, 25, male.

"I'm interested in personal recommendations. It seems quite useful and convenient."

- Li, 24, female

"I feel this kind of product already exists. I've tried some digital management tools, but I haven't kept using them. I don't think I can change my behavior just with this tool."

- Huang, 22, female.

figure 25- Probe 2: personalized plan landing page

|Eco-food online shopping platform

A platform for CSA's (community support agriculture), eco-farms and consumers to communicate better. At the same time, it provides visualized food education by telling the food stories. This platform also provides sustainable food sourcing, narrows the gap between people and food, and makes people understand the impact of their food consumption.

"This concept sounds eco-friendly. But now I probably don't care if it's ecological, what I want to eat is more important."

- Chen, 24, male.
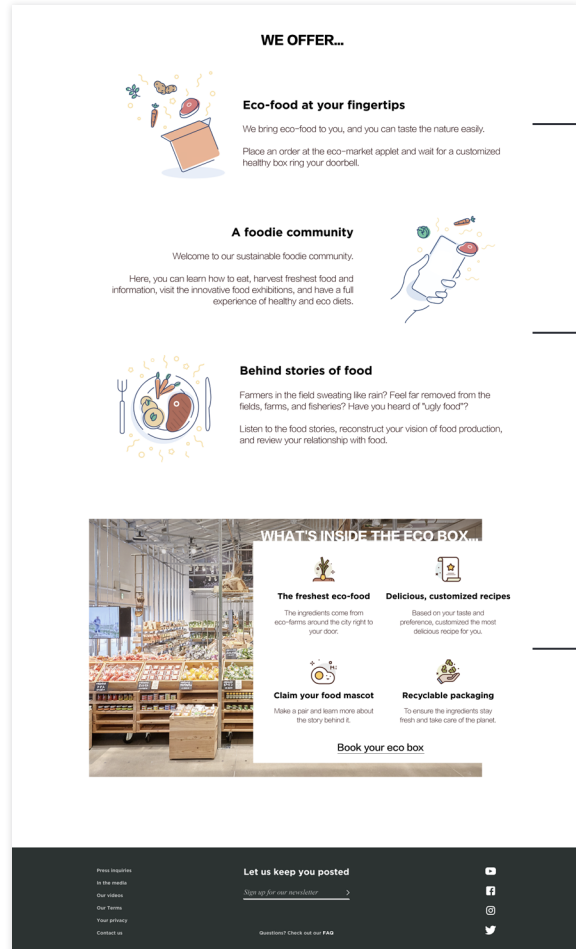
"A big part of what attracted me to the service was the good ingredients it sold, and it would deliver directly to my door."

- Cen, 25, male.

"I'm using Taobao (an e-commerce platform) to buy food, so I have to choose a reliable store. Wouldn't it be more convenient to have a trusted platform?"

- Zhu, 23, female.

"In this case, I care more about where it is produced or whether it's sprayed pesticide or something? In more detail than that, I'm not that concerned about it."

- He, 24, female.

figure 26- Probe 3: eco-food online store landing page, related pictures sources: Design Harvest, Blue apron, MUJI.

|Integration

*"There are elements in all three directions that attract me. If it could **combine the convenient online services with fun, creative, and participatory hands-on activities**, that would be really great."*

- Chen, 24, male.

Most respondents mentioned that it would be nice to combine two or all of these directions to have a comprehensive service.

Based on the mentioned opportunity areas, feedback, and the framework of changing behavior, I decided to focus on the food innovation workshop. I extracted some of the compelling parts from the other two directions, integrated into the workshop concept, and developed the final proposal.

design delivery

DESIGN PROPOSAL

仙丹

自造
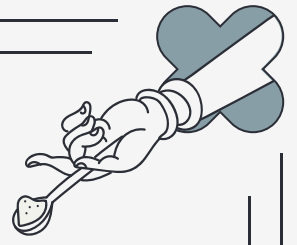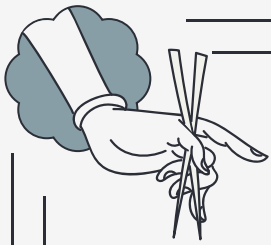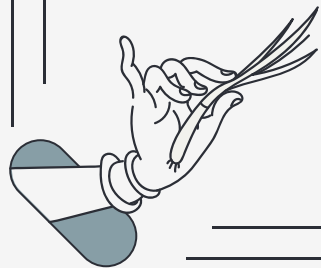
PANACEA

FOOD LAB

仙 丹 自 造

PANACEA FOOD LAB

Panacea Food Lab is a platform targeted at young Chinese consumers that provides a hands-on educational food experience.

By combining the offerings from various stakeholders, like food-related social organization, knowledge providers, and local organic farming, the platform provides a comprehensive service to consumers. The service includes food innovation workshop experiences and online services.

The food innovation workshop is the central part. With knowledge empowerment and hands-on experience, it aims to guide consumers toward building a scientific and healthy dietary perception with Chinese cultural identity for taking the first step of behavioral change.

The online services are the supplement to the workshop. They include an online eco-food market for sustainable food source, a food library for knowledge review and sharing, and a one-stop workshop booking and management tool.

Design principles
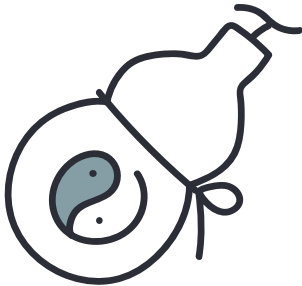
| Cultural identity & belonging

The young generation has a growing sense of cultural identity with the native Chinese culture. The combination of Chinese traditional culture and modern trend culture is now a noticeable tendency.

Therefore, based on this phenomenon and trend, the proposal utilizes design to create an experience with a sense of cultural identity and belonging, to engage young Chinese with the topic of healthy and sustainable diets.

| Knowledge sharing & empowerment

Although the target user group has left the general education environment, the core of education is about knowledge transfer, cultivating the capacity for reflection and knowledge empowerment.

Therefore, this proposal's core principle is to provide young Chinese with an opportunity to re-empower themselves with relevant knowledge and help them build the proper perception of healthy and sustainable diets.

| Personalized & creative guidance

The younger generation shows a desire for personality and creativity. They focus on themselves as well as their unique personal identity. They also look for change and innovation, and are willing to try new and creative things.

Therefore, this proposal creates personalized and creative guidance for users. It not only provides scientific and customized suggestions, but it also gives users the space to express their creativity.
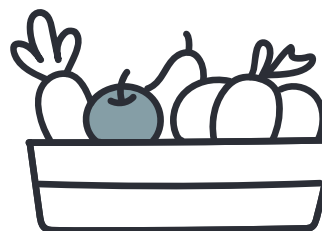
| Seasonal & local food sources

Consuming seasonal local foods is both healthy and environmentally sustainable. But young Chinese still don't have the relevant awareness as well as an easily accessible consumption channel.

Therefore, this proposal utilizes local seasonal foods during the educational experience, and provides the consumer with a channel of smallholder, localized food sources, to encourage them to consume healthy and sustainable ingredients.

Stakeholder map

The main service provider here is the food-related social organization. The internal stakeholders include knowledge providers such as chefs, nutritionists and food designers, and local food suppliers such as eco-farms.

The service provider plays as a coordinator role, organizing and supporting knowledge providers to integrate their knowledge with local ingredients and plan contents for the platform.

These stakeholders are already working on sharing dietary information and delivering sustainable food to consumers. The food-elated social organization is currently conducting some talks and publicity events, which are also some implementations of food education. However, the stakeholder's target audiences are mostly primary school students (activities are organized by schools) or young middle-class housewives (who are more concerned about food safety and health). Which means the Generation Z consumers, who missed food education at school, are being left out again.

In response to this, the Panacea Food Lab platform combines service providers' existing resources, services, and stakeholders' offerings and implement service solution through the food-related social organization's network. Not only can it provide comprehensive and targeted experiences to the new leading consumer group and expand healthy and sustainable impact, but it can also act as an opportunity to explore the practice of food education in the future.

government

education

food
education

society

food science
research

knowledge
providers

Food related
social
organization

仙 丹
自 造
PANACEA
FOOD LAB

support

coordinate

organize

social
impact

knowledge

support

participate

knowledge
empowerment

young
Chinese

community

food suppliers:
local eco-
farms

delivery
service

social
impact

source of
new consumer
food sources

food
sources

community
support
agriculture

packaging

figure 27 - Stakeholder map

Proposed service system map

Direct channel

Packaging

Policy support

Government

**Food suppliers
local eco-farms**

Food/Ingredients

panacea food lab
create your food
innovation challenge

Campaign

User & data

*service
frontstage*

Content update

**Food science
research**

**Knowledge
providers**

Package

*service
backstage*

Policy support

*systemic
social level*
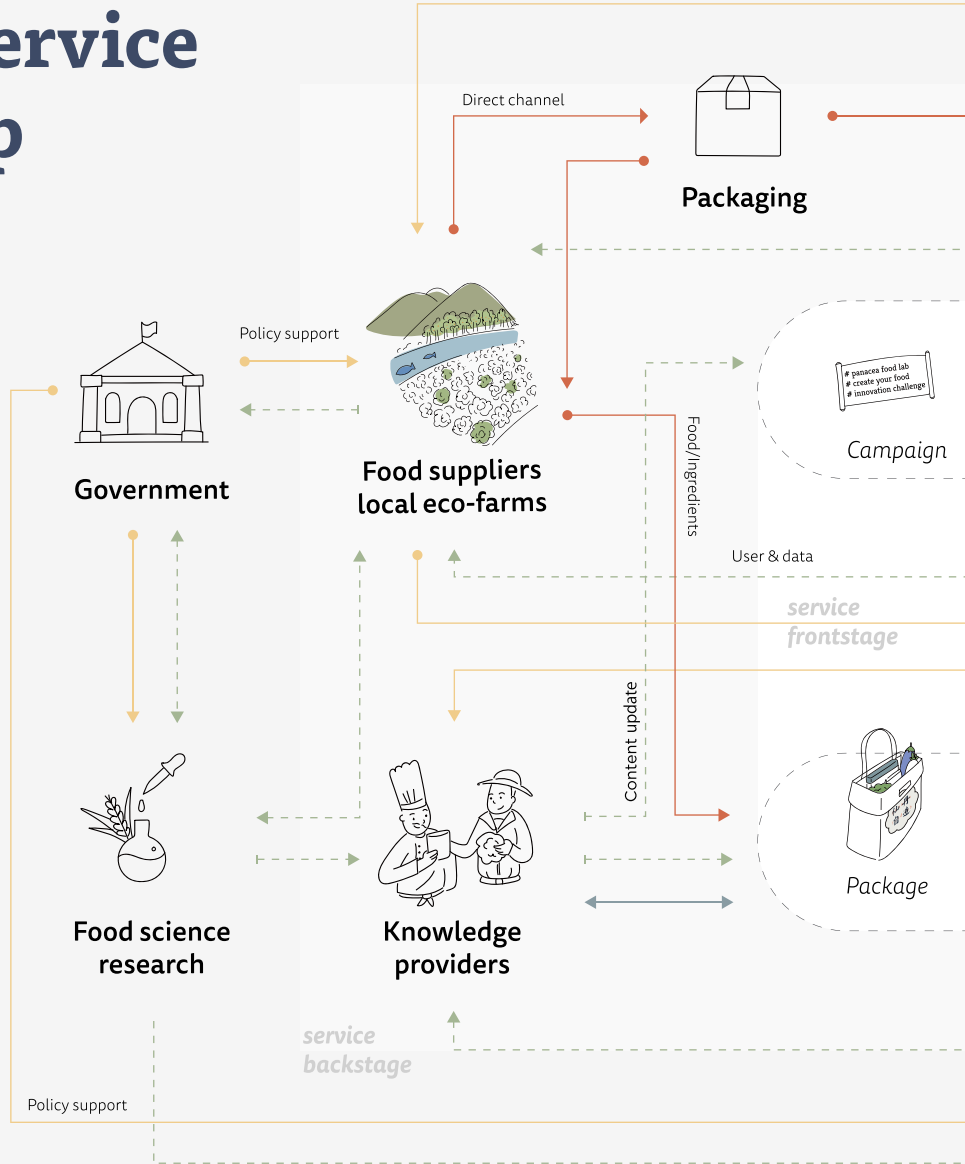
figure 28 - Service system map

●━━━▶   *material flow*
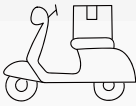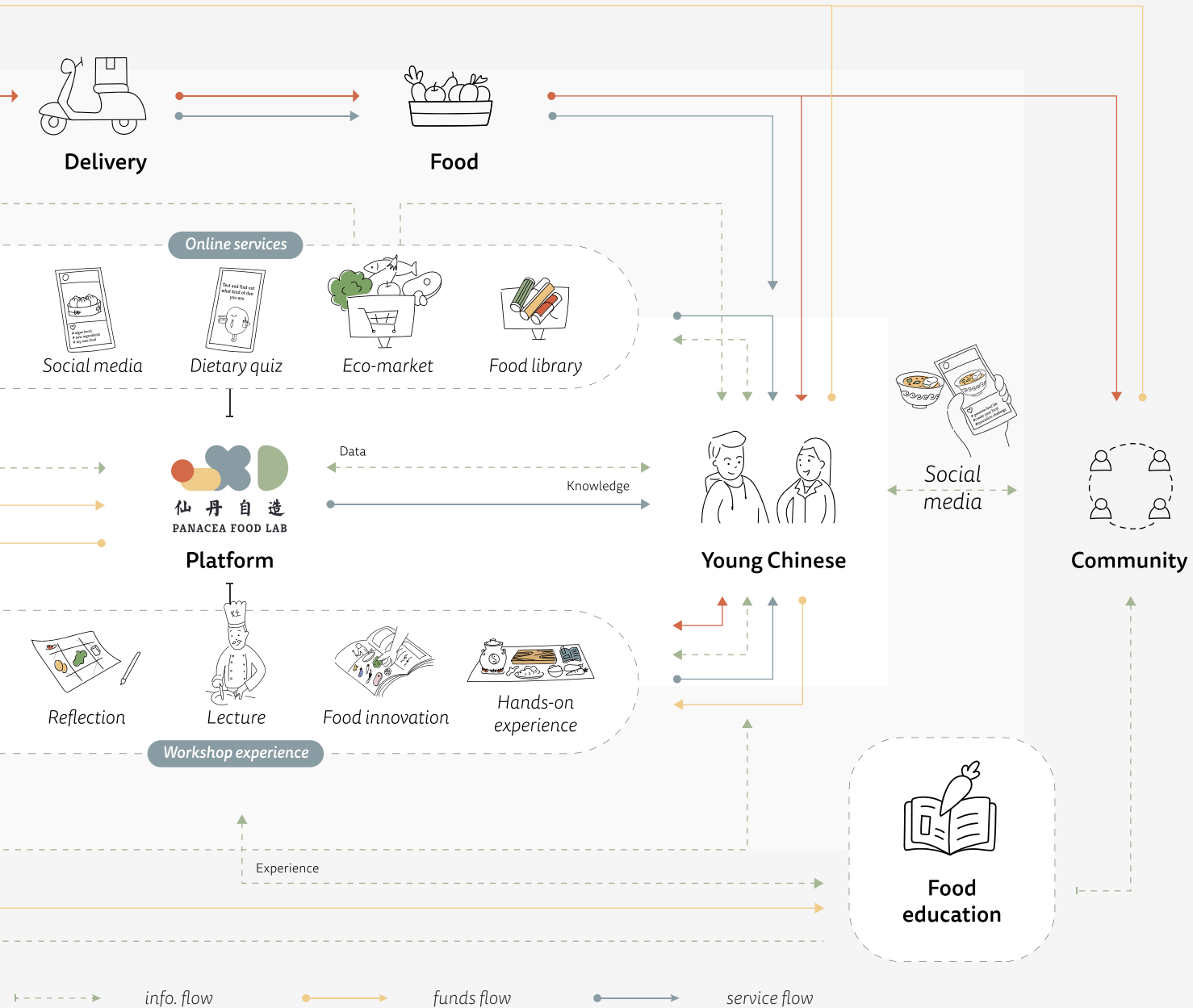
Delivery

Food

Social media

Dietary quiz

Eco-market

Food library

仙丹自造
PANACEA FOOD LAB

Platform

Data

Knowledge
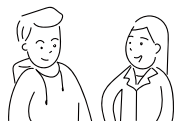
Young Chinese

Social media

Community

Reflection

Lecture

Food innovation

Hands-on experience

Workshop experience

Experience

Food education

info. flow   funds flow   service flow

Branding

Rebrand the image of "healthy eating" in a Chinese cultural way.

figure 29 - Brand image of Panacea Food Lab

Traditional culture & lab brand image

| Cultural identity & belonging

What?

Combine the symbols of "Chinese traditional culture" (the myth of panacea, kitchen god and Buddha's hands) with "a science-based diet" (laboratory), to convey the right perception of healthy and sustainable diets.

Why?

| The trend of "Guochao"

Guochao, the Chinese term used to describe the current fashion for local brands and culture, is a prominent trend that's impacting the Chinese marketplace. The younger generation gets a sense of cultural identity from consuming the local brand and Chinese traditional cultural offerings.

| The current image of "healthy eating"

As mentioned in the Findings and opportunities section, when it comes to healthy diets, the young Chinese generation has stereotypes like "just vegetable," "tasteless," and "monotonous and boring". It leads to their lack of interest in knowing healthy eating and even turn to so-called instant Punk Health food, which seems fast and magical like a panacea.

| Familiarity of traditional culture

Young people know and identify with traditional Chinese myths. These familiar terms engage them and quickly get the idea. Therefore, combining the traditional and modern elements, as well as conventional immortals and science, could convey a positive image and message of the topic.

(For mood board, see appendix p.138)

Graphic motif

[xiān dān]
仙丹

[fó shǒu]
佛手
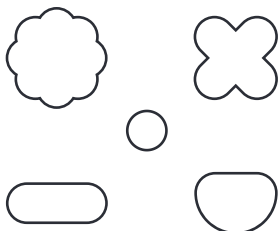
仙丹 (xiandan) is the term of panacea/cure-all, is a symbol of cure and immortals in the Chinese context. I extract the circular elements of panacea, and various forms of panacea cultivation, to represent the cultivation process and different possibilities.
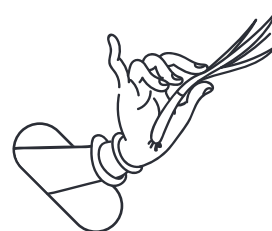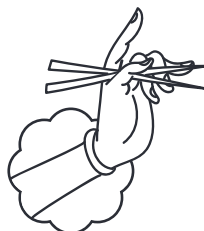
佛手 means Buddha hands. In traditional Buddhist culture, Buddha holds dharma instruments in his hands, bringing compassion and blessing for beings (figure 30). I extract the Buddha's hand elements, and turn the instruments into food, tableware or kitchenware.

Colors

#F5F5F6	#E26340	#F7CC81	#859EA5	#A0B892	#2C2D36
Cultured	Orange soda	Deep champagne	Pewter Blue	Laurel green	Gunmetal

There are five primary colors in traditional Chinese art and culture (whit,red,yellow,cyan (green and blue) and black). These are based on the theory of Yin-Yang and Five Elements. Therefore, I chose colors from traditional Chinese paintings, which are commonly used for illustrating foods.

figure 30 - Ancient Chinese painting of Buddha's hands

Early reactions

Most of the target users gave positive feedback on the branding. They said that they could quickly get the idea of combining a science-based healthy diet with traditional culture from seeing this brand image. For them, this brand image breaks the norm that a healthy diet needs to be "green" or "staid", and it looks "Guochao" enough, which makes them interested in learning more about it.

"I really like this brand concept. The concept and story of XianDan and Buddha's hands are very interesting, and suitable for the Chinese context."

- Yang, 26, female.

Food innovation workshop

An experiential food educational workshop.

An experiential food educational workshop

| Knowledge sharing & empowerment
| Personalized & creative guidance
| Seasonal & local food sources

What?

A workshop providing users with dietary knowledge sharing, hands-on, and innovation experience while also offering long-term access to local, seasonal and sustainable ingredients.

Why?

Young people in China are increasingly concerned about their health. Under the influence of the COVID pandemic, this phenomenon has become more prominent. As a result, more people are starting to pay attention to healthy eating and cooking at home.

However, due to a lack of dietary knowledge, cooking experience, as well as proper guidance on healthy diets, their eating and consumption behavior was not fundamentally improved. Young Chinese consumers still lack food education and need to be empowered with knowledge of healthy and sustainable diets.

In addition, it is also a trend to take online quizzes to get a customized profile with personalized characters or a unique description. It shows that they are looking for personalized offerings.

At the moment, many quizzes are still used as marketing tools. To make good use of them, this kind of quiz can engage users, gather useful information, and provide them with essential information and personalized feedback about their eating habits.

Lastly, it is about food system sustainability. Encouraging the consumption of the products from local ecological smallholders is seen as a valid measure for improving environmental sustainability, as these foods tend to be safer, healthier, and more sustainable (with a low carbon footprint).
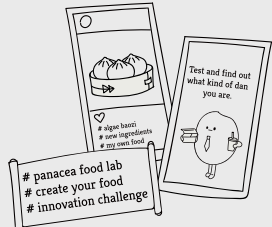
But young Chinese consumers barely know the idea and the positive impact of consuming such foods. Therefore, the service needs to give them access to these foods, and convey the healthy and sustainable ideas, and lead them to more sustainable consumption behaviors.
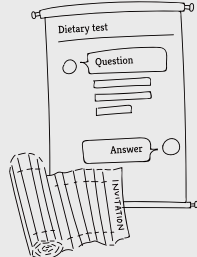
How it works

The service structure of the workshop experience. The details will be explained step by step in the later section.

(For a detailed version see appendix p.136 - Panacea Food Lab journey map)

workshop experience

1.
social media campaign/challenge •

2.
dietary quiz & invitation •

| *Social engagement*

online services

9.
eat, share & reflect •▬

Eco food online shopping •

| *Lecture and experiential session*

8.
hands-on experience / cooking •▬▬

7.
*create personalized
food innovation notebook* •▬▬

Changing steps

KNOWING

THINKING

TAKING
ACTION

figure 31- Workshop journey map
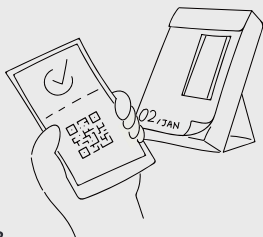
3.
sign up for workshop •

| Get the customized package

4.
customized package •

ont

age

Online food library ▬

| Sketching session

5.
sketching session ▬

6.
learn from knowledge providers ▬

Local organic farms:
sustainable food sourcing

backstage

Workshop planning
& library info. update
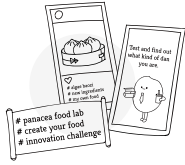
1. Social engagement
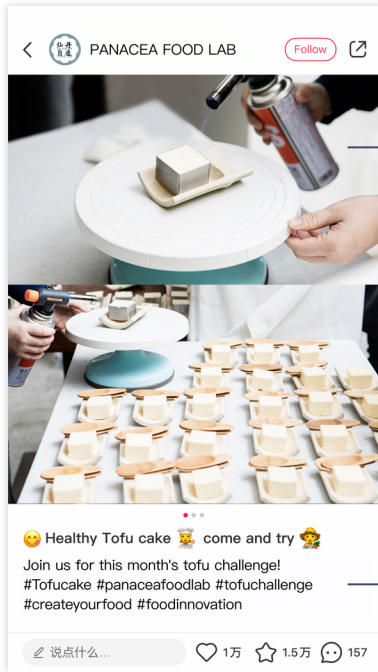
Food innovation workshop

Short video platform

Creative campaign/food challenge

Social media, e-commerce and lifestyle platform

Social media marketing

Invite bloggers and influencers to promote Panacea Food Lab by participating in the workshop and sharing their experience on social media with young customers.

figure 32 - Social media demo pages, related pictures source: ChiTofu

Campaign / food challenge

Promote the food innovation workshop in the way of a campaign or a food challenge.

2. Online dietary quiz

Classify to different dietary types/ characters

Workshop introduction

Personalized data analysis

Link to the workshop booking

Dietary type quiz

Firstly, engage users on social media and gather their dietary information through online quizzes.

figure 33 - Dietary quiz demo pages

Personal dietary profile & workshop invitation

Based on the results of the quiz, users will get a dietary profile with personalized data analysis, so that they can better understand their eating habits.

4. Get the customized package

Users can choose to sign up online for different workshops based on the topic and content they are interested in.

After that, users who sign up for the workshop will receive a customized theme package. The package includes themed foods* (seasonal**, local eco-food), innovative notebooks, a food perception map, themed food stickers, food vouchers, reminder cards, etc.

* Themed foods are provided by CSA's (community support agriculture) local organic farms.

** According to the lunar-solar terms, the workshop will be held twice a month, 24 times a year, to make users learn about seasonal food. Seasonal foods are provided according to the lunar-solar terms.

figure 34 - Contents of the customized package
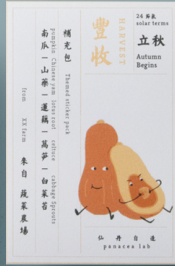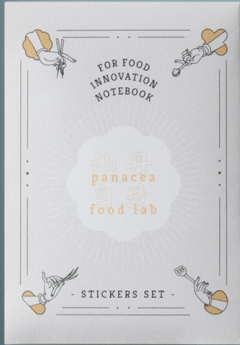

Food perception map

Seasonal & local foods

Reminder cards

Vouchers

Food innovation n...

otebook

FOR FOOD INNOVATION NOTEBOOK

panacea food lab

- STICKERS SET -

豐收
HARVEST

傾光包
Thead sticker pack

南瓜一山藥一蓮藕一萵苣一包菜苔

立秋
Autumn Begins

26 solar terms

Item XX hem

來自 農家農場

仙丹自造
panacea lab

*Themed food
stickers set*

Pins

*Woven bag
packaging*

20%

49 LBS.
GROSS WEIGHT
WHEN PACKED

MOON

月

月噎為記

上麥麵粉

FLOUR

MILLED EX

FO

A.B.MOU

行 洋

HONG

CHIN

仙丹
自造

Packaging

Woven bags are the most common form of grain packaging in China. However, the used woven bags tend to be discarded carelessly and become a severe burden on the environment.

The heftiness of the food-level woven bag makes it suitable for recycling as shopping bags. So, I recycled the flour woven bag (figure 35), made it into a tote bag, and redesigned it with the Panacea Food Lab's brand image to become a customized package so that users are encouraged to re-utilize it when shopping. This packaging aims to convey the concept of healthy and sustainable living.

figure 35 - Flour woven bag (left) and prototype of packaging bag (right)
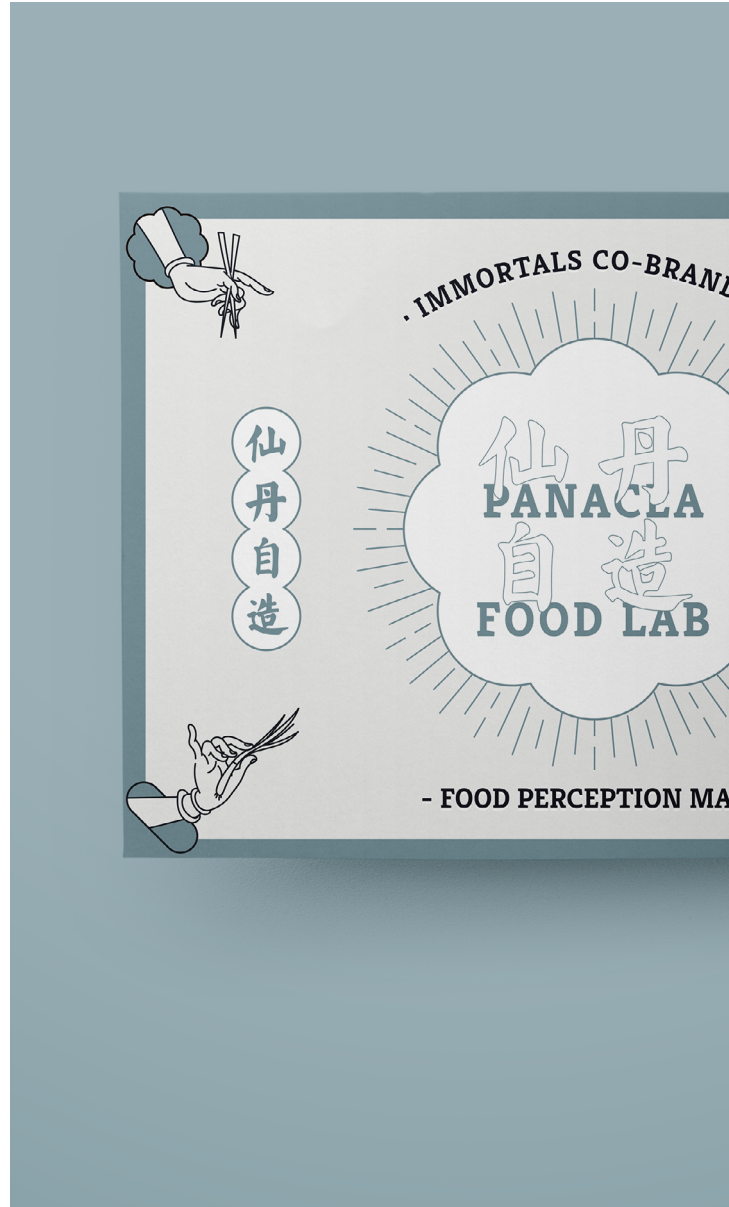
figure 36 - Prototypes of packaging bag and food innovation notebook

5. Sketching session

This is a sketching and discussion session where participants could think and have a reflection on their perception of food. This is also a process of self-evaluation and sharing initial understanding.

Food perception map

The Food perception map is a template that participants will be asked to draw their impressions or experience of different kinds of food, such as joy food, healthy/unhealthy food, sustainable food, trendy food, etc. Then they can create their own "perfect" food, which is healthy, can make them feel happy, and suit them best.

After drawing, they will share and discuss impressive eating experiences with each other.
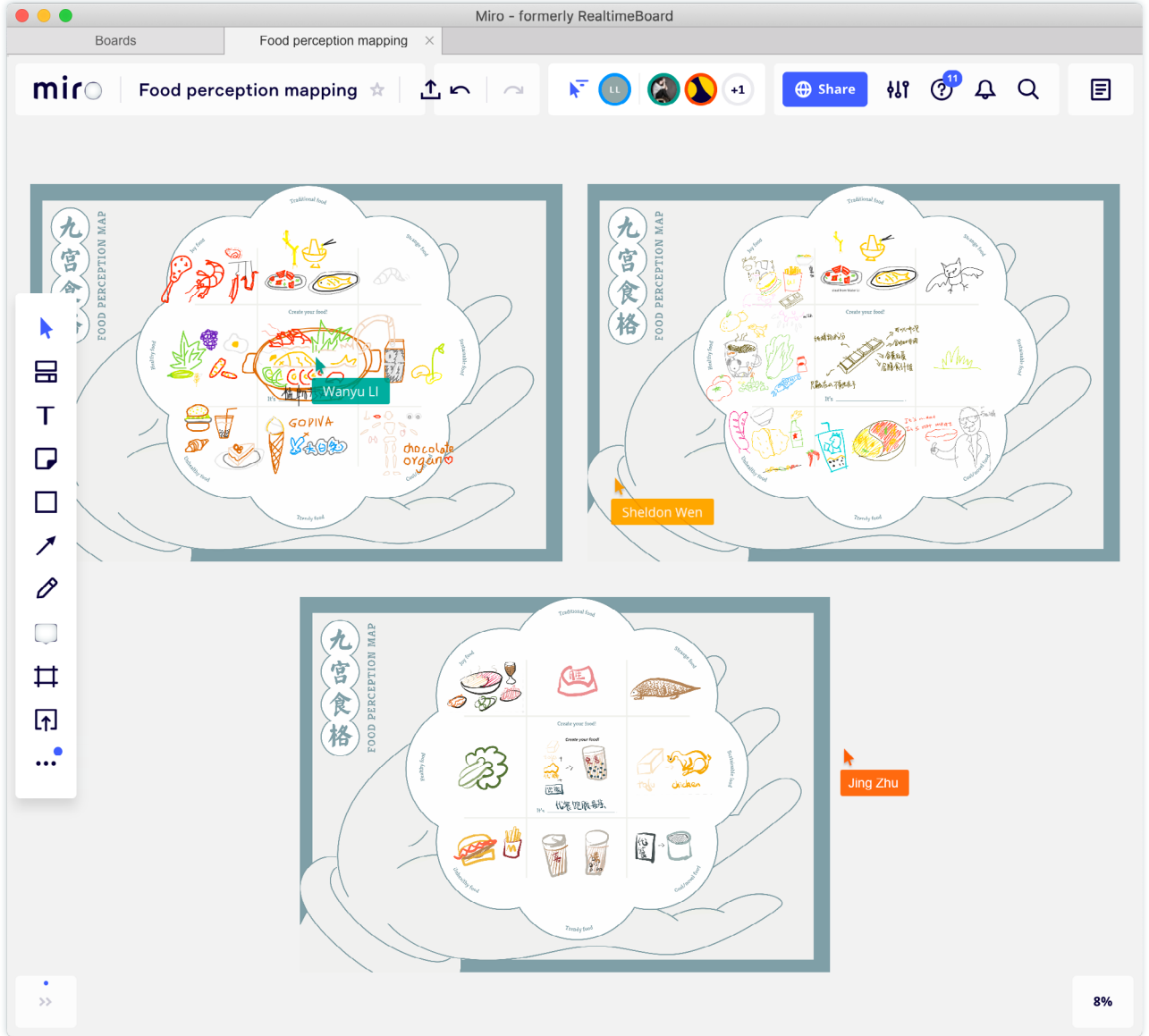
figure 37 - Food perception map

figure 38 - Online sketching workshop on MIRO

figure 39 - Food perception map sketching

"I think it's fun to draw this while we were sharing our thoughts. I found some interesting facts that I didn't notice before. And I just realized that everyone's perception of diet is so different!"

- Li, 24, female.

"After drawing and chatting together, I got that the eating patterns of young Chinese people are generally not that healthy, and I'm also one of them."

- Wen, 24, male.

6&7. Lecture and experiential session

Physical experience makes a real change. Therefore, providing an experiential session for participants to learn and practice can be a key component for sparking transformations. Knowledge providers share knowledge and experience about healthy diets in the lecture and experiential session.

For example, the providers can share new healthy ways of cooking traditional ingredients, or how to cook sustainable alternative ingredients in a Chinese style.

Food innovation notebook set

This notebook is for noting ideas at workshops. With different templates, participants can note their thoughts and create their personal guidebook by visualized noting (such as hand-drawing, stickers, etc.) what they have learned (knowledge about food, recipe, etc.)
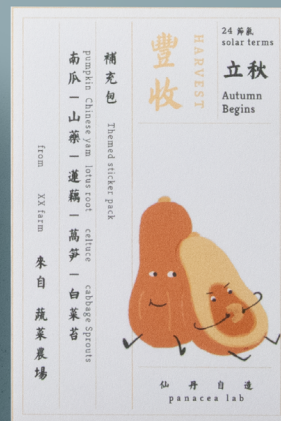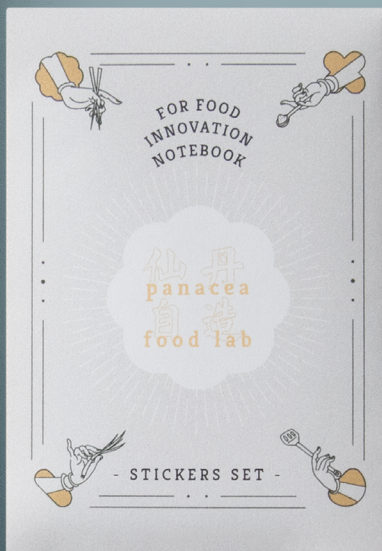
使用說明
Introduction

This is an exploration journey into the healthy and sustainable diets in fooducation lab. From ingredients to cooking, learn, and discover your own panacea diet.

繪 Sketch

10 minutes quick sketch on the food perception map and share your impressive eating experiences with others.

識 Learn

Learn exciting food stories from different knowledge providers (chefs, nutritionists, food designers, etc.) in food lecture.

記 Note

Create personalized food innovation notebooks by visualized noting what you have learned.

厨 Cook

It's time to create your own food. Based on what you learned at the workshop and use themed ingredients to practice with the help of knowledge providers.

Step 1.
繪 hui/sketch

Step 2.
識 shí/learn

記 jì/note

Step 3.
chú/cook 厨

Step 4.

目 錄
CONTENT

仙丹自造
Lydia's
panacea food innovation notebook

| Introduction page about how to use this notebook.

繪 *Sketch*

10 minutes quick sketch on the food perception map and share your impressive eating experiences with others.

識 *Learn*

Learn some exciting food stories from different knowledge providers in food lectures.

記 *Note*

Create personalized food innovation notebooks by visually noting what you have learned.

厨 *Cook*

It's time to create your own food! Use themed ingredients to practice with the help of knowledge providers.

| Content page, the content follows the sequence of 24 lunar-solar terms. One notebook for each season with six lunar-solar terms.

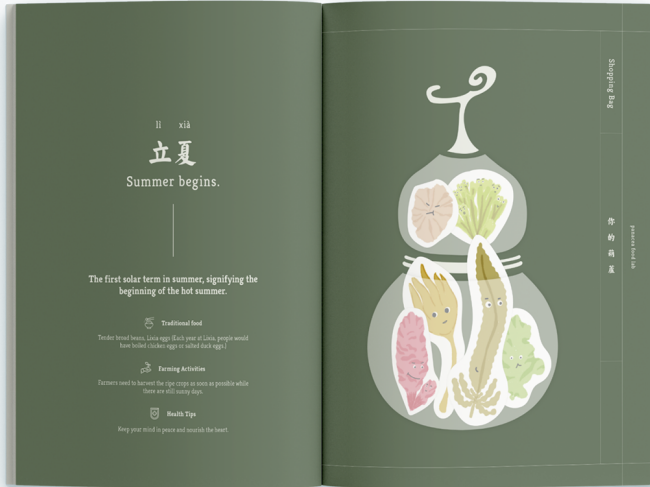*figure 41 - Introduction page and content pages*

Notebook templates

These pages are templates for lecture notes, tasting notes, and reflection. Participants can take notes on the corresponding templates according to the content of the workshop.

figure 42 - Note pages

Themed food stickers

When validating the food innovation notebook, some participants expressed concern that they did not want to draw on it because of poor drawing skills.
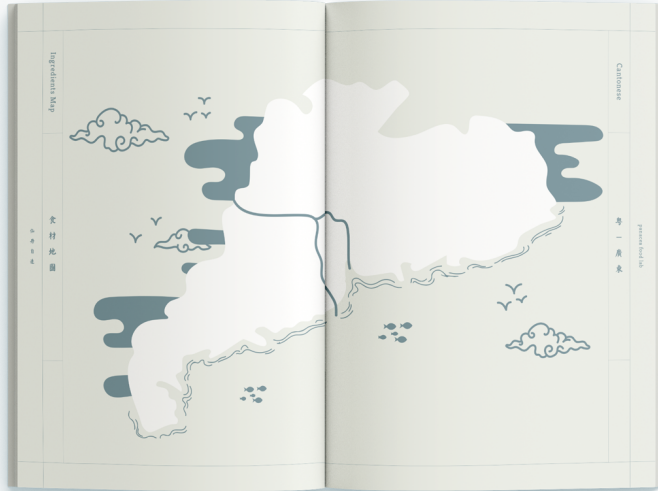
So, instead of forcing them to draw, I developed a set of themed food stickers. These stickers will be updated according to the theme of each workshop, they aim to reduce the threshold of taking visual notes and creation.

figure 43 - Notebook template and recipe pages

figure 44 - Stickers and recipe page

Collection & achievement

The last two pages of the notebook are collection and achievement pages.

First is the food collection map, where participants can note where the food they use comes from. It is for facilitating them to learn more about the local specialty food.

The last page is the achievement page of the workshop. Participants can collect limited edition of food stickers of each theme after the workshop. After receiving all the labels, participants can exchange for other gifts as a reward.

figure 45 - Collection and achievement pages

食材地圖

Food Innovation Journey

食研進程

figure 46 - Collection map (up) and achievement page (bottom)

8. Practice with themed foods from local farms

Based on what they learned at the workshop and their notes from the lecture, participants can practice with themed ingredients and even innovate their own food. Participants can also get a chance to receive help from the knowledge providers or other people at the workshop.

Through this process, participants can access and use foods from local farms, and learn about the positive environmental impact of using these foods.

9. Eat, share & reflect

After the hands-on experience, participants share their dishes with each other. At the same time, they can also share their cooking experience and discuss whether their perceptions towards food or healthy eating have changed.

In the end, participants can upload their works to social media. Encouraging them to participate in the different themed challenges twice a month to form a social media promotion loop.

figure 47 - Food innovation workshop

Early reactions

For the sketching session and food perception map:

I asked some participants to sketch before they knew something new about healthy eating, and others drew after I shared some fun facts about healthy food. I found that the latter takes more healthy and sustainable foods into account when sketching and discussing than the former group.

Afterwards, I followed up two of the participants in the latter group. They told me that since I shared the knowledge that "Oat milk is very nutritious, and it is more sustainable than milk," they drew oat milk in their food perception maps. After that, they began to try to replace the milk with oat milk in their daily life and found it to be a good alternative.

The feedback shows that this food perception sketching and discussing session is a simple and effective way to help people expand their knowledge, think, and reflect on their understanding of food.

"I did have a lot of reflections after that (refers to sketching session) and get more interested in a healthy and sustainable diet. So I believe it's meaningful to learn and try to cook those sustainable foods that we usually don't know much about."

- Wen, 24, male.

For the lecture and experiential session:

One of the values of this experience is the knowledge empowerment for the participants through engaging them in thinking, reflecting, and having hands on practice.

When talking to people during the validation session, they said they were initially interested in this innovative and social activity. And after having food workshops and sketching sessions, they did have a change of mindset.

However, it is essential to clarify that this workshop has not been practiced in a real scenario with actual knowledge providers. It was only evaluated and validated with the target users, to see their reactions towards the concept. In a real-world practice scenario, the specific running content may change depending on the situation. But what doesn't change is the overall framework and the four design principles.

"I value innovation. In this kind of activity, I can have my own results, show my attitude, and let me feel my creativity and the infinite possibilities of food. I think that's what attracted me to the platform."
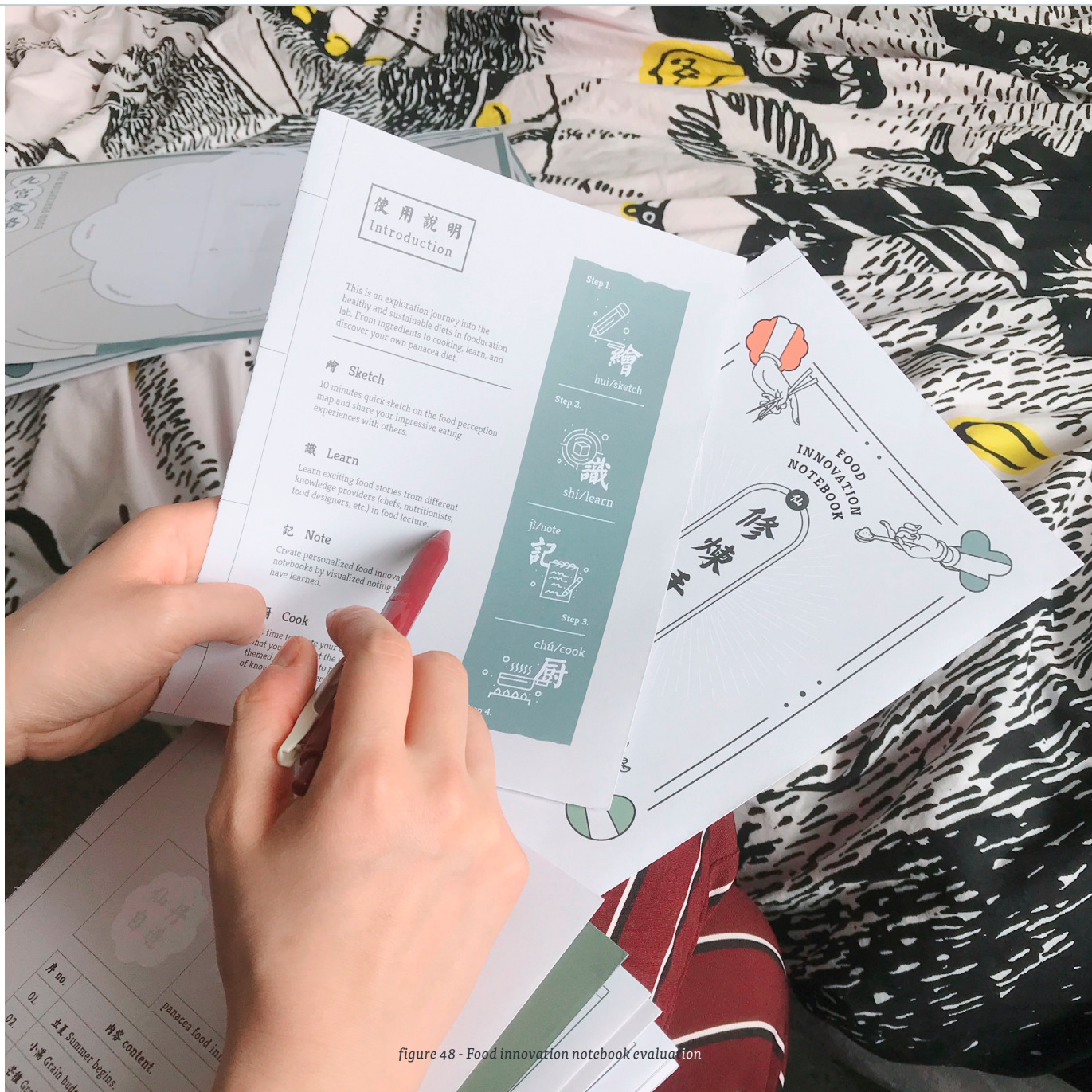
- Wang, 24, female.

使用說明
Introduction

This is an exploration journey into the healthy and sustainable diets in fooducation lab. From ingredients to cooking, learn, and discover your own panacea diet.

繪 Sketch

10 minutes quick sketch on the food perception map and share your impressive eating experiences with others.

識 Learn

Learn exciting food stories from different knowledge providers (chefs, nutritionists, food designers, etc.) in food lecture.

記 Note

Create personalized food innovation notebooks by visualized noting what you have learned.

廚 Cook

time to create your
that you
themed
of know

Step 1.

繪
hui/sketch

Step 2.

識
shí/learn

ji/note

記

Step 3.

chú/cook
厨

FOOD
INNOVATION
NOTEBOOK

figure 48 - Food innovation notebook evaluation

Online services

A trustworthy one-stop web platform.
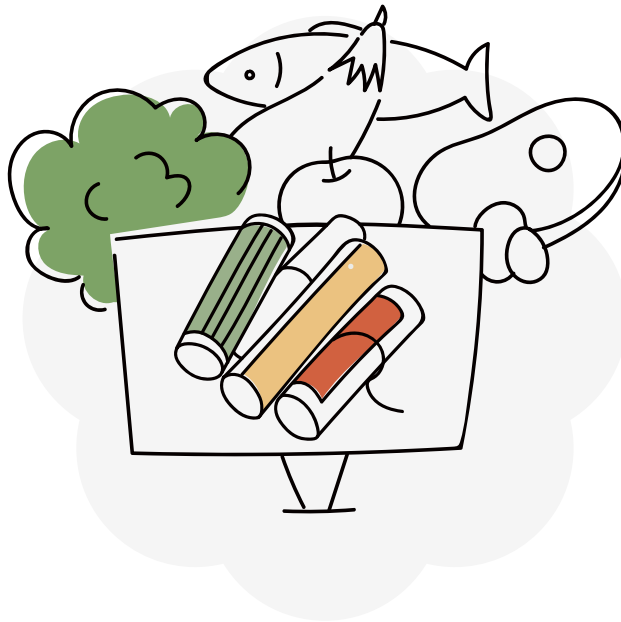
A trustworthy one-stop web platform

| Knowledge sharing & empowerment
| Seasonal & local food sources

What?

Providing other online services on a web platform as supplemental offerings to the food innovation workshop.

Online services include food library, online eco-food market, workshop booking management, etc.

Why?

Nowadays, in the Internet era, there are many information sharing and shopping channels which are dispersed. For example, many local farmers are selling foods directly on WeChat. However, young people without concern about eco-food don't have too many opportunities to access this purchasing method, and they also don't think it's a credible way; The farm also felt it is difficult to reach younger user groups.

By integrating relevant knowledge, information and purchasing channels, and also building a connection between users, knowledge providers and food suppliers, Panacea Food Lab offers a trustworthy, one-stop web platform along with other online services.

The Panacea Food Lab also achieves this by merging workshop experiences that encourage users to consume local ingredients. This also enables local farms to reach the young consumer groups.

Eco-food market

The eco-food market is an online sustainable food market. Vouchers from the workshop package can be used here. This online purchase channel offers users convenient and trustworthy access to sustainable food sources and encourages them to consume more local and seasonal ingredients.

WORKSHOP   ECO MARKET   FOOD LIBRARY   ABOUT

EAT LOCALLY, WHEN IN SEASON

Fresh, Local and Sustainable Food

芒

种

二十四节气

Filter by

Sort by

Collection   —

All
Vegetables

Price   +

Custom Filter   +

Best seller

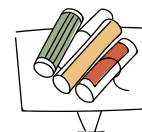增城迟菜心 | Zengcheng flowering cabbage
kr 21,00

从化荔枝 | Conghua Lychee
kr 28,00
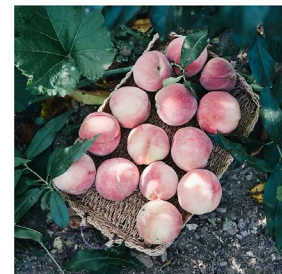
三华蜜桃 | Sanhua Peach
kr 17,00

figure 49 - Eco-food market demo page

Food library

The food library is an online library that offers content including:

1. How to choose: the origin and choosing criteria of food;
2. How to cook: innovative recipes developed at the workshop;
3. How to eat: learn how to eat healthily and sustainably.

Workshop management

An online workshop management page, where participants can check the date of the different events, and book the workshop in advance.
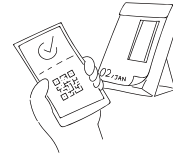
WORKSHOP   ECO MARKET   FOOD LIBRARY   ABOUT   Log In

LATEST WORKSHOP

Grain in Ear.
June 5th.

Tofu Lady: Ingredient innovation
| By Atelier Fang | food-centered design studio

Combine traditional food with trendy styles to make healthy and delicious food with everyday ingredients.

Sign up now!

六 月 | June

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1 初十	2 十一	3 十二	4 十三	5 芒種	6 十五 訂	7 十六 訂
8 十七	9 十八	10 十九	11 二十	12 廿一	13 廿二	14 廿三
15 廿四	16 廿五	17 廿六	18 廿七	19 廿八	20 廿九 訂	21 夏至 訂
22 初二	23 初三	24 初四	25 初五	26 初六	27 初七	28 初八
29 初九	30 初十	1 十一	2 十二	3 十三	4 十四	5 十五

figure 51 - Workshop management demo page, related pictures source: ChiTofu

figure 52 - Home page

Early reactions

Other online services are more like a complement to the workshop experience, providing a platform with information integration. For users in the era of information explosion, a website can no longer excite them. But such a platform is indispensable. This online platform provides follow-up support and other expandable possibilities for users, service providers, and other stakeholders.
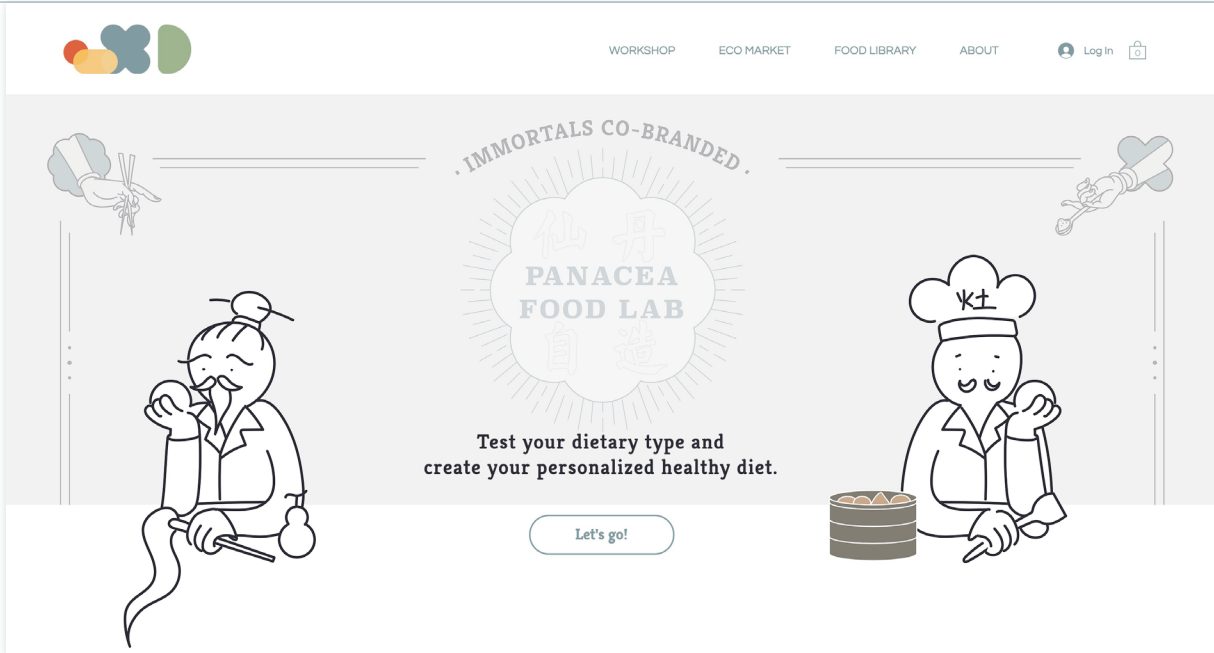
During the validation, many participants also made suggestions about these additional services. Therefore, this online platform still has areas for improvement that need to be adjusted and iterated afterwards.

"I don't think I will very often use this website, but it's important to have a platform that provides all the services when I need them."

- Chen, 24, male.

"It would be nice if the platform has more social elements. It might be interesting if users could also share their kitchen stories and experiences."

- Wang, 24, female.

Three horizons framework

Three Horizon's Framework is a futures-oriented approach, relating drivers and trends-based futures analysis to emerging issues. It enables policy or strategy implications of futures to be identified. And it links futures work to processes of change. The Three Horizons model shows three conditions of the same system, over time, against its level of viability in its changing external environment (Curry & Hodgson, 2008).

'1st Horizon': the currently prevailing system as it continues into the future, which loses "fit" over time as its external environment changes;

'3rd Horizon' ideas or arguments about the future of the system which are, at best, marginal in the present, but which over time may have the potential to displace the world of the first horizon, because they represent a more effective response to the changes in the external environment. In this project, I discuss one' 3rd horizon' in the food and education system. But when it goes into practice, there will be several, or many, 3rd horizon arguments being articulated.

'2nd Horizon': an intermediate space where the first and third horizons collide. This is a space of transition. It is characterized by clashes of values in which competing alternative paths to the future are proposed by actors.

figure 53 - Three horizons model

fit

1st Horizon

Now

2nd Horizon

3rd Horizon

time

Near future

Far future
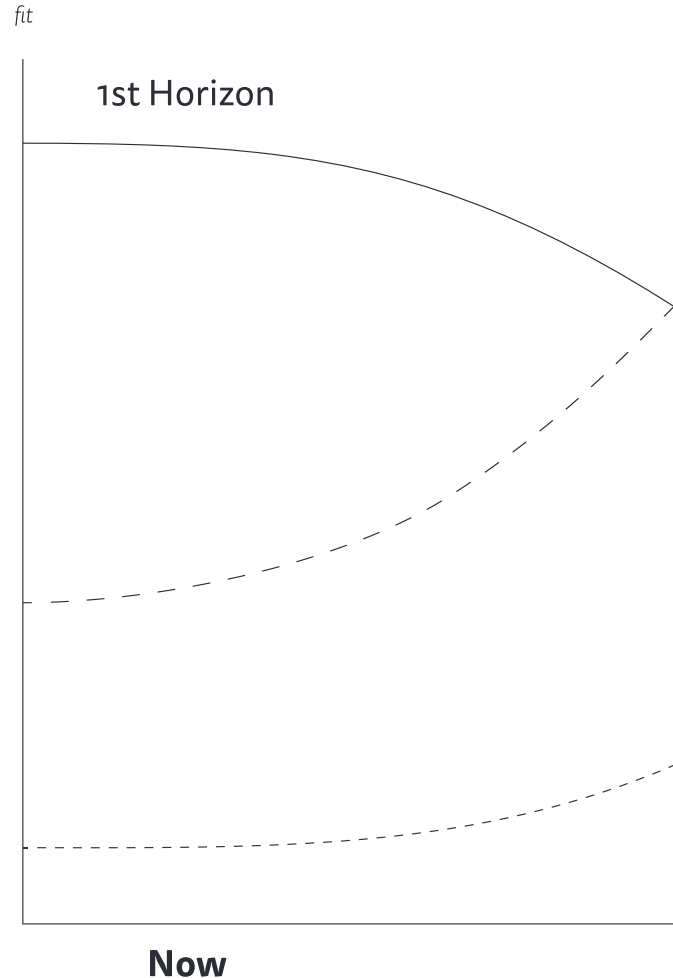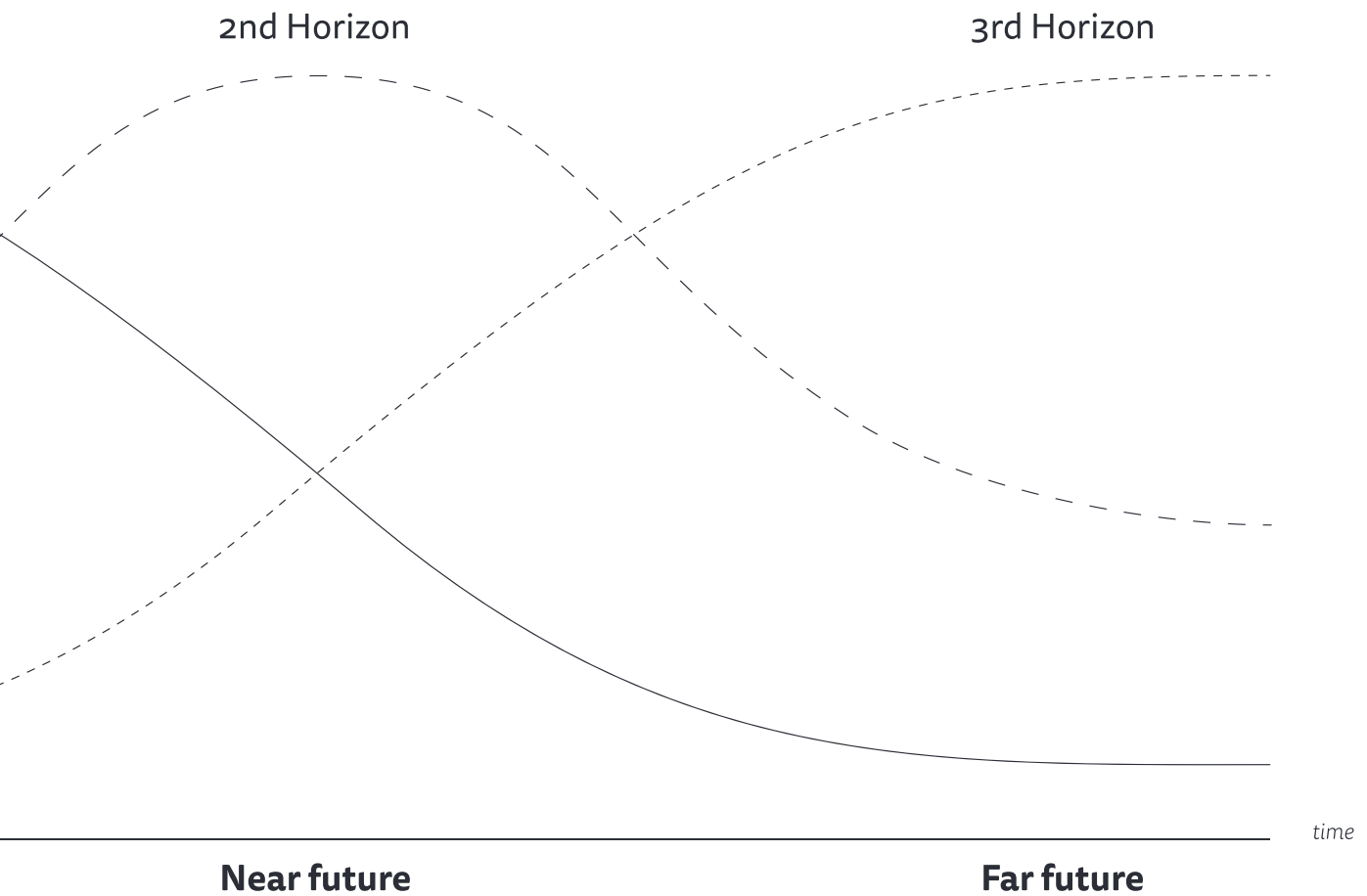
Impact & value proposition on different levels

With the Three Horizons Model, I discussed the future scenarios, impact, and value proposition about Panacea Food Lab in three levels: individual, collective/community, and system.

1st Horizon: It represents the existing solutions for the challenges of dietary patterns and food systems. Today, in China, the solutions for a healthy eating issue is mainly individual-oriented by providing products and services through technological approaches. Such as digital diet management tools, dietary replacement products, etc.

2nd Horizon: The Panacea Food Lab aims to play a role in this transition phase, help to facilitate a shift on the dietary perception and behavior at the collective level, and improve the target user group's health issues.

3rd Horizon: I place food education in this phase to discuss the systemic impact of my proposal. Except for having a healthy effect on human health and a sustainable impact on the market and food system, Panacea Food Lab and its experience on food education are expected to promote the exploration and development of food education practices in the education system.

figure 54 - Value proposition in three horizons model
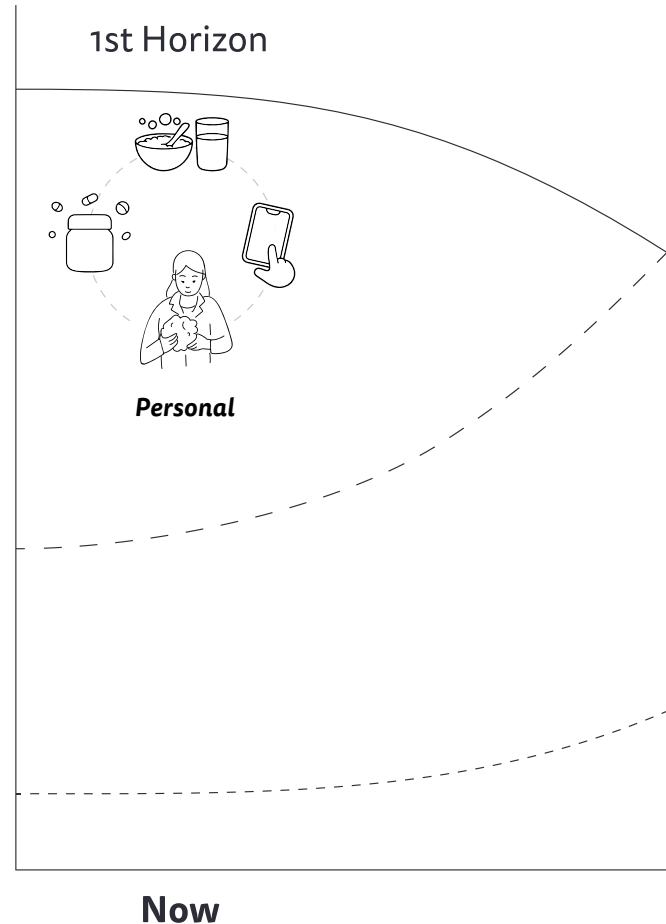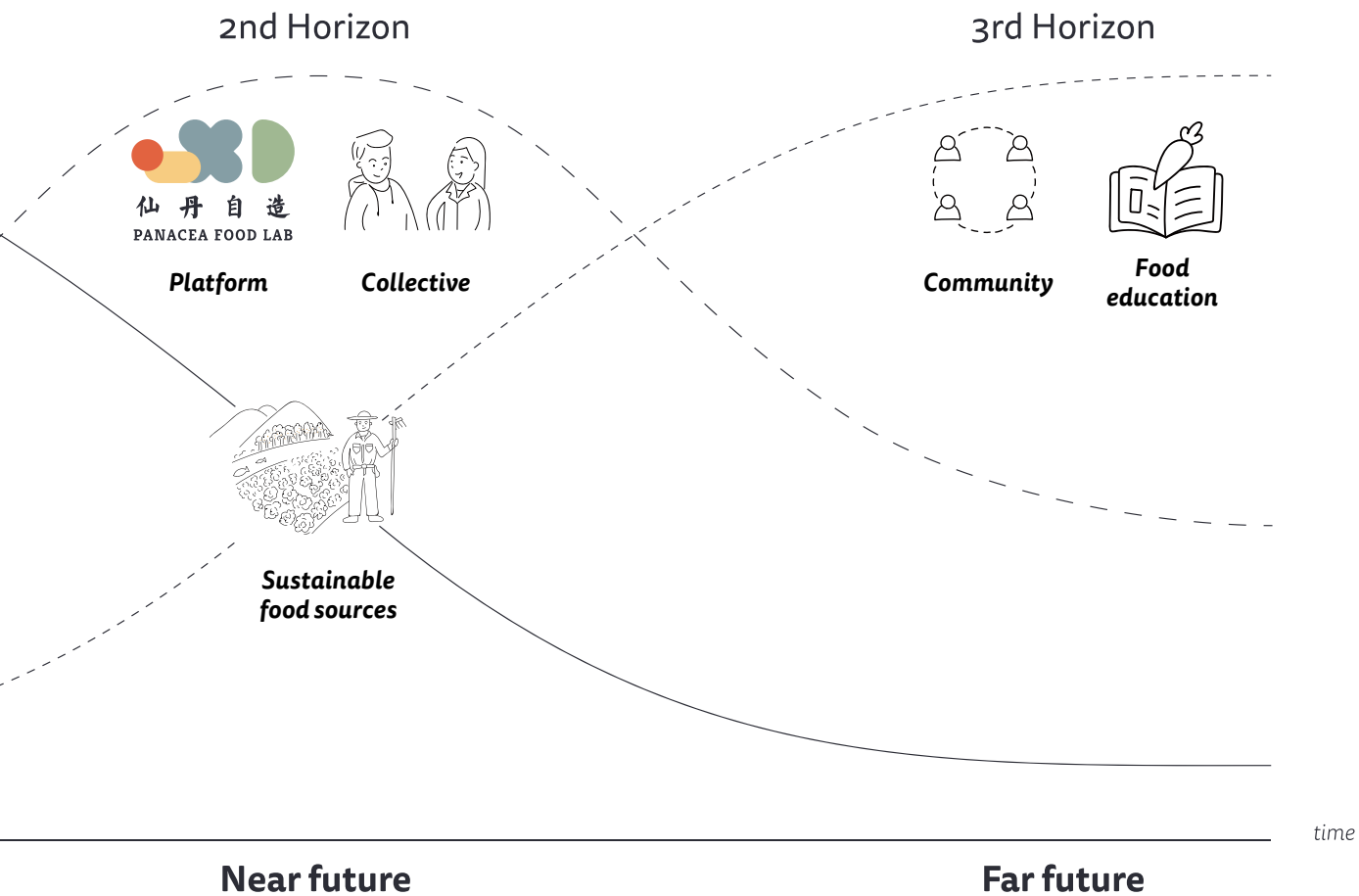

fit

1st Horizon

Personal

Now

2nd Horizon

3rd Horizon

PANACEA FOOD LAB

Platform

Collective

Community

Food education

Sustainable food sources

time

Near future

Far future

Moving forward with social innovation platforms

This project aims at implementation in Chinese communities. I contacted some social innovation organizations and food-related social communities in China and had conversations with them to see the possible implementation of this project. There is an organization, Dayu Yingzao that has been promoting a social innovation program during the epidemic.

Dayu Yingzao is a social innovation organization composed of cross-professional youth. It advocates "engaging everyone so they can participate in creating a wonderful community" and is committed to promoting multi-participation and social innovation in the context of Chinese urban areas.

During the COVID-19 situation, they launched a Community Anti-coronavirus Network (CAN)

program and are recruiting designers interested in practicing social innovation in the community and implementing community-related projects. So, I contacted them and discussed the possibility of this project being implemented in Chinese communities.

They said that during the epidemic, diet is indeed a crucial topic. Moreover, there is no similar dietary project in the program, which has a possibility and space for development.

Also, during the communication, one of the project teams related to sports expressed interest in my project. They think it is an exciting direction to combine Chinese traditional culture with a healthy and scientific lifestyle, and they believe diet and exercise complement each other. Therefore, the

future direction of the project is to facilitate the transition of young Chinese to a healthy and sustainable lifestyle, which includes diet and exercise in the post-COVID-19 era.

This proposal takes time to validate and has been limited by the time frame, geographical conditions, and COVID-19 situation, so Panacea Food Lab has not been able to be implemented before this diploma project is finished. However, it is not the end of Panacea Food Lab. Hopefully, this project can inspire some social innovation organizations and arouse people's thinking and reflection and have a chance to be further developed in the future.

figure 55 - CAN program poster

DISCUSSIONS

Reflection

At the beginning of this project, I explored the topic with my passion for food and curiosity about food system sustainability. I started with a very open and broad systemic view. And I looked forward to how to use the power of design to contribute and make a difference.

In the process of systemic exploration, I realized that as an individual designer, I was not capable of proposing a comprehensive solution and solve every problem under such a complex context. So, I focused more on how I could use service and system design approaches to explore the potential interventions as well as the possible systemic impact.

Nowadays, a lot of businesses or organizations have been trying to get quick profits from users. For example, there are many one-time events, such as pop-up stores, that stimulate people's consumption desire through a short-term stimulus. However, a short-term stimulus is not a sustainable way to retain users and achieve a long-term value.

So, I took a bottom-up perspective that focuses on consumer perceptions and behaviors in the food system as an entry point, explores the design solution, and inspires people to explore the potential of food education intervention.

Panacea Food Lab and its a range of online and physical service experiences can help service providers, stakeholders, and users to connect. This connection is not just about behavior and profit but also awareness, which is complemented by engaging in long-term activities to hook the users, empower them with knowledge, facilitate their behavior change, and convey healthy, positive, and sustainable values.

During the process, I found it's essential to utilize the cultural characteristics of the target user group, design based on the cultural context, and then bring the design back to the system. I hope this design approach and the design proposal will, in some way, inspire people who are also working in the related field, to bring a new perspective of thinking and inspire solving exciting problems.

figure 56-Design process: experience evaluation

Further discussion

In this project, I used the systems oriented design approach for the first time and combined with service design to take a design exploration. At the moment when the project was about to end, I would like to discuss some understanding, thoughts, and insights I got during the design process and my outlook on the future value of design.

Define the underlying cause, then design in the context

First of all, when designing for the challenge related to behavior change, it should take multiple perspectives, analyzing the underlying reasons and also combine them with context and cultural backgrounds.

In the beginning, the problem I found was that people had an unhealthy diet. In the process of exploration, I realized the underlying cause was that the health awareness of young Chinese consumers just stayed on the surface. So, my opportunity was to change the behavior through in-depth perception construction.

By making contextualized design interventions, and combining the cultural background and content, users can better understand and accept it, rather than only delivering them a "good looking" design.

The lack of culture & the power of design

I think there's a lot to be discussed for food, culture, and design in the future.

In the age of information explosion, people don't pay attention to things that seem difficult. Society starts to become entertainment and profit-oriented, and in many cases this causes design to have to follow suit. On top of that, Chinese society is facing an issue of lack of culture. Young Chinese consumers are looking for a sense of cultural identity, but Chinese traditional culture's deposits and richness are not well developed in the consumption environment, but somehow just display on the appearance. Solely focusing on appearances may lead people to pay less and less attention to cultural connotations and sustainability. I think that's dangerous.

Why does the rich Chinese culture start to converge into the same boring template? What exactly does cultural identity relate with? What is this young generation really missing? How can culture and design be better integrated? How does design contribute? I started to think about these questions.

I put a lot of effort into the brand image in the design process (see appendix - brand image design process, p.139). I'm also trying to satisfy people's needs for visual, entertainment, and cultural belonging. I don't think there's anything wrong with entertainment, but it needs to have value. The combination of culture and design can stimulate people's visual nerves, make the content more acceptable to the public, help people communicate better, and even lead them to become aware of the long-term but essential value. That's what I'm trying to realize in this project.

For the next steps of the project, is it possible to further combine food with cultural education in order to arouse people's broader interest and attention to food and culture, and attract more social investment? Or, could future design engage users to explore the challenges by themselves, making the design process part of the problem-solving process and leading to more effective behavioral changes? Even further, could design help people enrich their inner world, build self-identity, and build a sustainable value?

Systemic thinking & long-term goals

The challenges of our time are getting more complex, and we can't just have one solution-oriented design approach. We need to have a systemic perspective when coping with challenges.

Looking back at my design process, I find that systemic design thinking can help people to take a longer view of the problem and provide a long-term goal instead of just focus on solving the current issue. However, in such cases, the solution may not provide an immediate response. In today's business-driven society, it is a great challenge to engage different actors to achieve a long-term goal.

For example, Panacea Food Lab is not a project that can provide an immediate profit, because it takes time to build the perception and have behavioral changes. The service providers of Panacea Food Lab are still social organizations because they value social innovation at this stage, so it is more feasible for implementation. And I'm optimistic that the government will see the value in food education.

But only relying on social organizations and government as actors is not enough. The most reasonable, comprehensive, and sustainable approach is that users have positive impacts on the market, and the market returns to improve the sustainability of the consumption environment. The whole system has a virtuous loop and balance, and actors jointly attempt to achieve the long-term goals.

Panacea Food Lab is just a small step in such an extensive system, but what I have learned is that I cannot give up long-term and meaningful value because of the lack of immediate benefits. I also believe that people who work at the strategic level in relevant fields need to have this kind of systemic thinking from multiple perspectives, and believe in the importance of sustainable development.

figure 57 - The traditional way of cooking Cantonese steamed rice rolls, source: K Shu

Acknowledgment

To Wanyu Li, my friend and a talented designer, for helping me conduct prototyping and user testing in China. Thank you for your time, and all you did for me.

To Birger, my supervisor, for all your guidance during this process, and your kind feedback and suggestions.

To Xifan, my best friend in Oslo, for all your time and energy. Thank you for encouraging listening and inspiring me all the time, and all the critical conversations.

To He, Rong, Wang, Chen, Cen, Wen, Zhu, Huang, Zhao. Thank you for having several workshops, co-creation sessions, and validation with me during the process, for sharing your stories, experience, and feedback.

To Pro. Ren, Dr. Si, Dr. Tian, Herbert, and other experts. Thank you for all the time and sharing expertise with me, for your critical and targeted feedback.

To all the people that I talked with for the project. Thank you for all your feedback and for sharing your knowledge.

To Senciria, Raoul. Thank you for reading my report and give feedback.

To Angel, for proofreading the entire report.

To my family and friends back in China. Thank you for being there and always supporting and believing in me during this challenging time.

Finally, **to you,** for taking the time to read this report. I hope it has given you something to reflect on.

References

Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., Mullany, E. C., Abate, K. H., Abbafati, C., Abebe, Z., Afarideh, M., Aggarwal, A., Agrawal, S., Akinyemiju, T., Alahdab, F., Bacha, U., Bachman, V. F., Badali, H., Badawi, A., … Murray, C. J. L. (2019). Health effects of dietary risks in 195 countries, 1990–2017: a systemic analysis for the Global Burden of Disease Study 2017. *The Lancet,* 393(10184), 1958–1972. https://doi.org/10.1016/S0140-6736(19)30041-8

Allen, J., Reichheld, F. F., Hamilton, B., & Markey, R. (2005). *Closing the delivery gap.* Bain & Company. https://www.bain.com/contentassets/41326e0918834cd1a0102fdd0810535d/bb_closing_delivery_gap.pdf

Curry, A., & Hodgson, A. (2008). Seeing in Multiple Horizons: Connecting Futures to Strategy. *In Journal of Futures Studies* (Vol. 13, Issue 1).

Danni, F. (2018). *The Half-Hearted Health Fad of 'Punk Yangsheng.'* Sixth Tone. https://www.sixthtone.com/news/1003320/the-half-hearted-health-fad-of-punk-yangsheng

Dingxiang Doctor, Keep, Know Yourself, & Penguin Guide. (2020). *2020 China's Health Insights.*

EAT-Lancet Commission. (2019). Food Planet Health. Healthy Diets From Sustainable Food Systems. Summary Report. *EAT-Lancet.*

FAO. (n.d.). *Dietary guidelines and sustainability | Food-based dietary guidelines.* Food and Agriculture Organization of the United Nations. Retrieved May 10, 2020, from http://www.fao.org/nutrition/education/food-dietary-guidelines/background/sustainable-dietary-guidelines/en/

Glanz, K., Basil, M., Maibach, E., Goldberg, J., & Snyder, D. (1998). Why Americans eat what they do: Taste, nutrition, cost, convenience, and weight control concerns as influences on food consumption. *Journal of the American Dietetic Association,* 98(10), 1118–1126. https://doi.org/10.1016/S0002-8223(98)00260-0

HLPE. (2017). High Level Panel of Experts. 2017. Nutrition and food systems. *Committee On World Food Security* (CFS), 44(September), 150. http://www.fao.org/3/a-i7846e.pdf

MAFF. (2016). *What is "Shokuiku (Food Education)"?*

Mager, B., & Sung, T. J. (2011). Special issue editorial: Designing for services. *In International Journal of Design* (Vol. 5, Issue 2, pp. 1–3). http://www.ijdesign.org/index.php/IJDesign/article/view/994/341

Meagher, M. (2017). *"Shokuiku": Japan's Cultural Shift in Nutritional Perception and Education - Future Directions International.* Future Directions. http://www.futuredirections.org.au/publication/shokuiku-japans-cultural-shift-nutritional-perception-education/

Miyoshi, M., Tsuboyama-Kasaoka, N., & Nishi, N. (2012). School-based "Shokuiku" program in Japan: Application to nutrition education in Asian countries. *Asia Pacific Journal of Clinical Nutrition*, 21(1), 159–162. https://doi.org/10.6133/apjcn.2012.21.1.23

Pahlen, C. T. der. (2017). Sustainable Diets for Healthy People and a Healthy Planet. *In United Nations System Standing Committee on Nutrition (Issue August).* https://www.unscn.org/uploads/web/news/document/Climate-Nutrition-Paper-EN-WEB.pdf

Prochaska, J. O., & Velicer, W. F. (1997). The transtheoretical model of health behavior change. *American Journal of Health Promotion*, 12(1), 38–48. https://doi.org/10.4278/0890-1171-12.1.38

Sevaldson, B. (2011). Giga-mapping: Visualisation for complexity and systems thinking in design. *Nordes '11: The 4th Nordic Design Research Conference*, 0(4), 137–156.

Sevaldson, B. (2013). *Systems Oriented Design: The emergence and development of a designerly approach to address complexity Systemic Design View project Special Issue of FormAkademisk: Relating systems thinking and design (VI) within social and environmental systems View project.* https://www.researchgate.net/publication/319931083

Sevaldson, B. (2016a). *Evaluation Tools: Impact and Threshold Analyses (IMP-analyses).* Systems Oriented Design. https://www.systemsorienteddesign.net/index.php/tools/evaluation-tool

Sevaldson, B. (2016b). *ZIP-Analysis.* Systems Oriented Design. https://systemsorienteddesign.net/index.php/tools/zip-analysis

Sobal, J., & Bisogni, C. A. (2009). Constructing Food Choice Decisions. *Annals of Behavioral Medicine*, 38(S1), 37–46. https://doi.org/10.1007/s12160-009-9124-5

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A., Jonell, M., Clark, M., Gordon, L. J., Fanzo, J., Hawkes, C., Zurayk, R., Rivera, J. A., De Vries, W., Majele Sibanda, L., … Murray, C. J. L. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), 447–492. https://doi.org/10.1016/S0140-6736(18)31788-4

Yang, C. F., & Sung, T. J. (2016). Service design for social innovation through participatory action research. *International Journal of Design*, 10(1), 21–36. www.ijdesign.org

APPENDIX

Glossary

A ***food system*** gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes. This report pays specific attention to nutrition and health outcomes of food systems. It identifies three constituent elements of food systems, as entry and exit points for nutrition: food supply chains; food environments; and consumer behavior.

The ***food supply chain*** encompasses all activities that move food from production to consumption, including production, storage, distribution, processing, packaging, retailing and marketing. The decisions made by the many actors at any stage of this chain have implications for other stages. They influence the types of food available and accessible, as well as the way they are produced and consumed.

The ***food environment*** refers to the physical, economic, political and socio-cultural context in which consumers engage with the food system to acquire, prepare and consume food. The food environment consists of: "food entry points", i.e. the physical spaces where food is obtained; the built environment that allows consumers to access these spaces; personal determinants of food choices (including income, education, values, skills, etc.); and the political, social and cultural norms that underlie these interactions. The key elements of the food environment that influence food choices, food acceptability and diets are: physical and economic access to food (proximity and affordability); food promotion, advertising and information; and food quality and safety.

Consumer behavior reflects the choices made by consumers, at household or individual levels, on what food to acquire, store, prepare and eat, and on the allocation of food within the household (including gender repartition, feeding of children). Consumer behavior is influenced by personal preferences determined by taste, convenience, culture and other factors. However, consumer behavior is also shaped by the existing food environment. Collective changes in consumer behavior can open pathways to more sustainable food systems that enhance food security and nutrition (FSN) and health.

These three components of food systems impact consumers' capacity to adopt ***sustainable diets*** that are: protective and respectful of biodiversity and ecosystems; culturally acceptable; accessible; economically fair and affordable; and nutritionally adequate, safe and healthy, while optimizing natural and human resources.

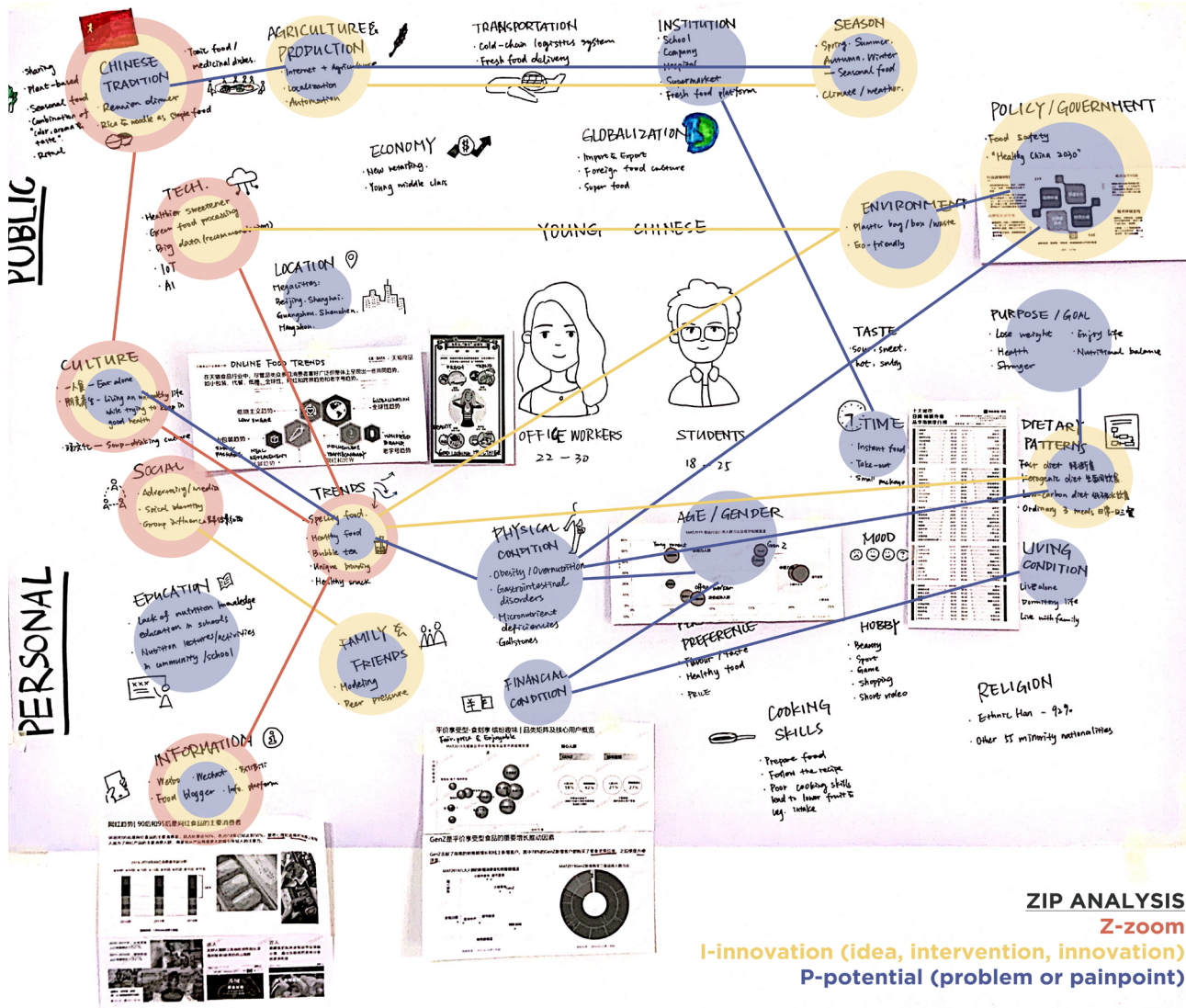# Positive directions for food systems, diets and nutrition

Food systems allow many points for intervention –across the supply chain, within food environments and related to consumer behavior. Intervention is also possible throughout the various drivers that affect food systems, directly or indirectly.

The food supply chain impacts diets and nutrition positively and negatively by creating entry and exit points for nutrition, affecting the nutritional value of the food produced. Supply chains are a point of leverage for agriculture to improve nutrition, particularly through traditional production systems focused on micronutrient-rich foods. Supply chains impact how foods are processed, distributed and marketed – activities that can all affect the nutritional quality of foods accessible in a given food environment. Nutrition awareness among actors along the supply chain can also motivate them to maximize nutrition entering the chain.

Improved food environments allow consumers to purchase and consume more nutritious and healthy foods. Although a substantial body of research describes food environments in HICs –particularly in urban settings – less is available on LMICs. Factors that limit access to nutritious and healthy foods include economic constraints, lack of knowledge and resulting low demand. Nevertheless, policies and programs focused on the food environment have been implemented worldwide, including approaches aimed to: improve access to nutritious and healthy foods in food deserts; provide healthy options in public establishments; and promote healthier diets through regulations and standards, taxes, subsidies, trade policies, labeling and advertising.

Regulation, information and education can **_orient consumers_** towards healthier and more sustainable food choices. Mass media campaigns, social and behavior change communication, social protection programs and food-based dietary guidelines all serve to increase awareness and influence consumer behavior. Evidence suggests that information and education alone may not trigger significant changes and that communication programs must incorporate insight on actionable steps to change habits to be more effective. Promoting traditional foods, cooking and empowering consumers, especially women, to be nutrition champions of healthy diets all serve to shape diet choices.

Gigamaps

Timeline of Chinese dietary transition (1970-2020) and Young Chinese consumers' dietary journey

CHINESE TRADITION
- Tonic food / medicinal dishes
- sharing
- Plant-based
- Seasonal food
- Combination of color, aroma & taste
- Ritual
- Reunion dinner
- Rice & noodle as staple food

AGRICULTURE & PRODUCTION
- Internet + Agriculture
- Localization
- Automation

TRANSPORTATION
- Cold-chain logistics system
- Fresh food delivery

INSTITUTION
- School
- Company
- Hospital
- Supermarket
- Fresh food platform

SEASON
- Spring, Summer, Autumn, Winter
- Seasonal food
- Climate / weather.

POLICY / GOVERNMENT
- Food safety
- "Healthy China 2030"

ECONOMY
- New catering.
- Young middle class

GLOBALIZATION
- Import & Export
- Foreign food culture
- Super food

ENVIRONMENT
- Plastic bag / box / waste
- Eco-friendly

TECH.
- Healthier sweetener
- Green food processing
- Big data (recommendation)
- IoT
- AI

LOCATION
Megacities:
Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou

YOUNG CHINESE

PURPOSE / GOAL
- Lose weight
- Health
- Stronger
- Enjoy life
- Nutritional balance

TASTE
- Sour, sweet, hot, salty

CULTURE
- 一人食 — Eat alone
- 朋克养生 — Living an unhealthy life while trying to keep in good health
- 熬夜文化 — Soup-drinking culture

ONLINE FOOD TRENDS

OFFICE WORKERS
22-30

STUDENTS
18-25

TIME
- Instant food
- Take-out
- Small package

DIETARY PATTERNS
- Four diet 四时养生
- Inorganic diet 无机饮食
- Low-Carbon diet 低碳饮食
- Ordinary 3 meals, 一日三餐

SOCIAL
- Advocating / Media
- Social Identity
- Group Influence 群体影响

TRENDS
- Spicy food
- Healthy food
- Bubble tea
- Unique branding
- Healthy snack

PHYSICAL CONDITION
- Obesity / Overnutrition
- Gastrointestinal disorders
- Micronutrient deficiencies
- Gallstones

AGE / GENDER

MOOD

LIVING CONDITION
- Live alone
- Dormitory life
- Live with family

EDUCATION
- Lack of nutrition knowledge education in schools
- Nutrition lectures/activities in community /school

FAMILY & FRIENDS
- Modeling
- Peer pressure

FINANCIAL CONDITION

PREFERENCE
- Flavour / taste
- Healthy food
- Price

HOBBY
- Beauty
- Sport
- Game
- Shopping
- Short video

RELIGION
- Ethnic Han — 92%
- Other 55 minority nationalities

COOKING SKILLS
- Prepare food
- Follow the recipe
- Poor cooking skills lead to lower fruit & veg intake

INFORMATION
- Weibo · Wechat · 小红书
- Food Blogger · Info. platform

GenZ

ZIP ANALYSIS
Z-zoom
I-innovation (idea, intervention, innovation)
P-potential (problem or painpoint)

Different factors affect the dietary choices and food consumption behaviors of young Chinese

Panacea Food Lab journey map

仙 丹 自 造
PANACEA FOOD LAB

Panacea food lab is a platform, targeting at young Chinese, providing them with *experiential food education.*

The aim is to get young people to *know and reflect* on their eating habits and learn about science-based healthy dietary knowledge to *build the right perception of healthy eating and to take the first step.*
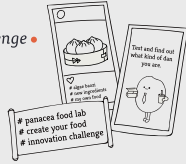
workshop experience

online services

| *Social engagement*

1.
social media campaign/challenge

Engage users to know this platform and its concept on social media, and promote the workshop in the way of a campaign or a food challenge.

panacea food lab
create your food
innovation challenge

9.
eat, share & reflect

After the hands-on experience, participants share their food and have a reflection session. They can share experiences and discuss whether their perceptions towards themed foods or healthy eating have changed since the workshop. In the end, participants can upload their works to social media. Also, by encouraging them to participate in a different themed challenge twice a month to form a social media promotion loop.
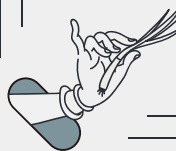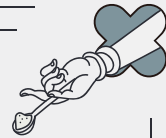
/ *Exper*

8.
hands-on experience

Based on what they learned at the workshop and the note from the lecture, participants can practice with themed ingredients and even innovate their own food. It is also a chance that participants can get help from knowledge providers or other people at the workshop.

## *Intervention strategies*

KNOWING
Education

Increase the improtance of the cognitive dissonance

Gamification and extrinsic rewards

THINKING
Education

Persistent visual feedback to increas users' awareness of their current behavioral patterns

TAKING ACTION
Persistent visual feedback to keep track of progress and to increas awareness of achieved results

Overcome problems arising

Elements of social influence

2.
*dietary quiz
& invitation* •

Based on the information that gathers from the online quiz, users will get a personalized data analysis result so that they can better understand their eating habits. Users will also receive an invitation to the workshop.

Dietary test
Question
Answer

| Get the customized package
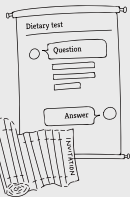
3.
*sign up for
workshop* •

Users can choose to sign up online for different workshops based on the topic and content they are interested in and get a personale QR code.
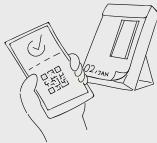
4.
customized package •

Upon arrival, by scanning personal QR code, participants can pick up a personalized package. The package includes themed foods (seasonal, local eco-food), innovative notebooks, a food perception map, themed food stickers, food vouchers, reminder cards, etc.

service

Local organic farms:
sustainable food sourcing

Local organic farms provide workshops with local/seasonal ingredients. And through the online platform to provide food for customers who subscribe to the service.

*Eco food
online shopping* •

An online platform that provides consumers with a smooth access channel to buy local/seasonal eco food from the local eco-farms.
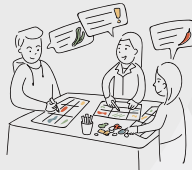
&

Online food library ▬

In the online library, users can find:
1. Choose: the origin and choosing criteria of food
2. Cook: innovative recipes developed at the workshop
3. Eat: learn how to eat healthily and sustainably.

backstage

frontstage

| Sketching session

Workshop planning
& library info. update

The platform organizes and coordinates knowledge providers to integrate their knowledge with local ecological ingredients and plan contents for each workshop. Besides, the platform will timely update the materials of the workshop (including choose, cook, and eat) to the food library for users to the easy inquiry.

5.
sketching session •

Participants draw on the food perception map and share impressive eating experiences with others. Break the ice in a simple way and interest the participants. It is also a process of self-evaluation and sharing initial understanding.

...iential workshop

7.
*create personalized
food innovation notebook* •••

Create personalized food innovation notebooks by visualized noting (such as hand-drawing, stickers, stamping, etc.) what participants have learned (knowledge about food, recipe, etc.)

6.
learn from knowledge providers ••

Knowledge providers (chefs, nutritionists, food designers, etc.) share knowledge and experience. For example, teach new healthy practices of traditional ingredients or cook sustainable alternative ingredients in a Chinese style. This session provides food education for young Chinese, giving them a new understanding of a healthy diet.

Mood board
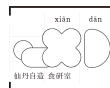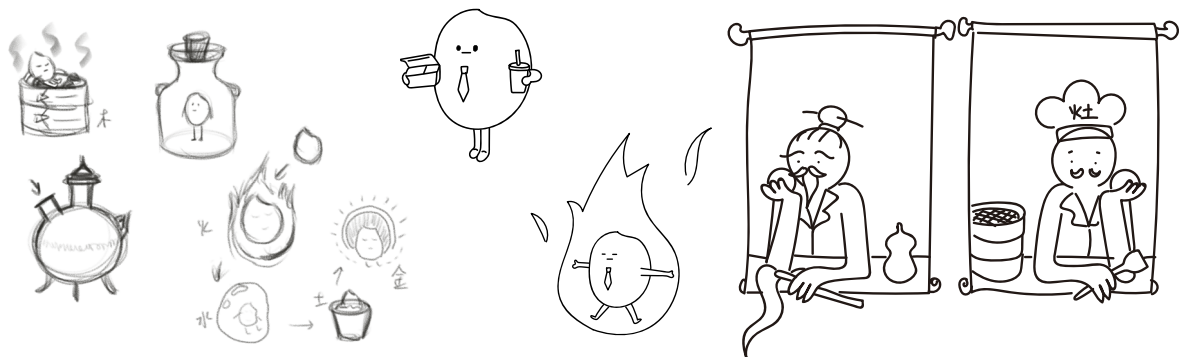
Pantone®
#869fa6

Pantone®
#f8cd82

Pantone®
#a1b993

Brand image design process

AHO

Arkitektur- og designhøgskolen i Oslo
The Oslo School of Architecture and Design