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**SYSTEMIC DESIGN
APPROACH APPLY TO
CHINESE RESTAURANT IN
TURIN:
Integrating Chinese food
culture into the system**

**Supervisor: BARBERO SILVIA
Co-Supervisor: BATTISTONI CHIARA**

**Candidates: SHE JIARONG
XU ANQI**



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INTRODUCTION

INTRODUCTION

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We are international students from China who are now studying systemic design at Polytechnic University of Turin. Far from home often through cook some Chinese food to relieve homesickness. As we all know, China also has a lot of traditional festivals. Whenever there is a special festival, we will gather together to make some festival food specialties but often to cook an authentic festival food that a lot of ingredients are needed to prepared. The places that can provide us with these ingredients are mainly at Chinese supermarkets near the city center known as Porta Palazzo, in fact we we are not as good at cooking as our mothers, so the most common way for us is to go to a local(Turin) Chinese restaurant for a meal together. However,We found some strange phenomena that in most local Chinese restaurants, some popular dishes with non-Chinese customers are actually improved.In other words,some dishes do not exist in China. Chinese food knows that nutritionally and medically valuable ingredients are wasted because they are not familiar with the therapeutic value of foreign customers, or because they do not understand the connotation of Chinese food, and think that Chinese food is just fried noodles, dumplings and spicy food. This situation make our feel that this is not really authentic Chinese food, which will mislead other foreigners'

perception of China.How to change this incorrect way has always puzzled us, but after studying the course of systemic design, we found that we can solve this problem in a systematic approach. For us international students in other countries, food has its value, its feelings, and its special significance, we hope to serve as a carrier of cultural communication through correctness, not just commercial value.This is the unshirkable responsibility of every Chinese who stay abroad.

Therefore, when choosing the topic for graduation design, we chose to design based on the Chinese restaurant system in Turin to integrate the restaurant with Chinese cultural elements to tell people in different countries what is Chinese cuisine, what is value and meaning. We think this is a good opportunity to change the impression of Chinese cuisine in the eyes of foreigners.

Systemic Design is an approach to design process. It models production and energy systems after nature's principles, to reach zero emissions in air, water and soil, since natural systems are efficient par excellence. The central principles in systemic design course are: "the outputs of a system become the inputs for another productive chain"preventing waste being released into the environment.Bistagnino (2012).Systemic Design,designing the productive and

economic sustainability. Following these 5 guidelines:

1. Outputs (waste) of a system become inputs (resources) for another.
2. Relationships create the same open system.
3. Autopoietic systems are supported and reproduced autonomously by co-evolving together.
4. The context in which it operates is fundamental and priority over the outside.
5. The man related to his environmental, social, cultural and ethical context is the center of the project. [1]

we focus on the entire process of food, first of all the production of crops: the state of agriculture, food security, the use of pesticides and chemicals and the use of genetically modified organisms; the second is the transformation: long-lasting meals, complexity and food deception, loss of food culture and sanitation; followed by distribution: vertical distribution system, cold chain, seasonal food loss due to global scale; and then consumer behavior: the gradual disappearance of traditional cooking to the demand for cheap food, unconscious behavior will lead to excessive the extremes of obesity or malnutrition; the last is disposal: how to deal with food waste caused by overproduction due to large demand or people's waste habits. Every link requires design thinking to be

considered from a sustainable perspective.

After we have conducted many investigations, we have compiled as much as possible the quantity of all input and output of the restaurant and the cost of the part according to the data. After the analysis, we have prioritized all the problems faced by the restaurant according to their quantity. Handle the larger portion of the output and consider the impact of these issues. The results of the design of the restaurant system are also solved to the maximum degree of control, to help the restaurant to improve its operating system as much as possible, to make it more sustainable and environmentally friendly, and to increase the cost of restaurant revenue control. It is better to convey the essence of Chinese food culture through diet, and to better integrate and develop with local aspects.[1]

1.1

METHODOLOGY

In the methodology, we follow a series of scientific steps in the system design methodology to organize the project and determine the target restaurant:

1. If there is a need for the project, it is necessary to understand different culture through desk research as a background.

2. First of all, a holistic diagnosis of the territories is performed. Generally speaking, data are mainly obtained through a large number of desk research and summarized by means of charts. The overall diagnosis focuses on the type of agricultural planting in the territory and the territory's geography, culture, population, transportation, economy, and urban waste disposal. All the data in this section provides a good reference value for the analysis of the entire process of the target project.

3. Analysis of the current situation of a single production model, desk research and field visits will be performed at the same time. During the desk research phase, we use social networking tools to understand the basic information of the target company, such as geographic location, convenient transportation, market scale of the company, and surroundings. After obtaining basic information, set out to prepare a field research. Before conducting a field visit to the target company, a series of questions about substances and quantities will be listed to help more logically gather the required information, and all field production processes of the company will be recorded. After collected all the information, we will analyze the data and check the information we have (desk research section or interview). Next, the entire process is graphical, and the raw materials, inputs and outputs in the company's production chain are visualized, and the whereabouts of all output parts and how to deal with the outside.

4. Identification of problems with desk research and field research. In general, we define the priority of a problem based on its quantity. First focus on environmental related issues, such as water and energy, some non-renewable resources, and how much they are consumed, so how to reasonably solve these outputs while dealing with and avoiding secondary pollution that affects the environment.

5. In this section, try to find various solutions for all problems, choose the best solution, combine the principles of environmental friendliness, reducing the use of non-renewable resources and sustainable development, and choose a better solution to replace the existing methods.[2]

6. After selecting the most feasible method, the systemic project needs to be readjusted to define a new mode of production. After each part is optimized and improved, a new system will be formed to better operate and ensure the original production. Under the premise of work, the follow-up treatment of each link is more sustainable and green, and better connected with the local area.

7. Definition of the relationships within the whole territory. Turn the output into another input, realize the transformation of resource reuse, make better use of materials to reduce the consumption of raw materials, and form a positive relationship chain or network between each other.

8. Analysis of the outcomes on the whole territory. The new system model strengthens the links between enterprises and other aspects of the territory. The rational design of inputs and outputs can improve their own benefits in economic, environmental, logistical, social and cultural aspects and can better achieve the nature of sustainable development, to connect other industries in the territory to achieve better operation.

CHINESE FOOD CULTURE

Introduction

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2.1

EIGHT STAGES OF THE DEVELOPMENT OF CHINESE FOOD CULTURE

Chinese food culture is a Chinese culture with a long history and knowledge. In the traditional Chinese culture education, under the influence of yin and yang philosophy, Confucian ethics, TCM nutrition and fertility theory and cultural and artistic achievements, dietary aesthetics and national characteristics, the history of Chinese cooking technology was created and the Chinese food culture was enriched.(figure 2.1)

YOUCHAOSHI(4664 B.C-4464 B.C):

At that period, people did not able to understand artificial fire and cooked food. The eating condition is to eat raw meat and drink blood, not a food culture.

SUIRENSHI(4464 B.C-4354 B.C):

Drilling wood for fire, from this cooked food, into the stone cooking era. The main cooking method:

1. "PAO", that is, the fire makes the flesh and smash;
2. "BAO": wrapped in mud and burned;
3. Simmered with stone, water, and cooked with red stone;
4. "KAO": stone sizzling Heat, then put the plant seeds on top.

SHENNONGSHI(3216 B.C-3077 B.C):

It is the pioneer of Chinese agriculture, tastes the grass, creates ancient medicine , invents and teaches the people. Pottery tools have made it possible for people to have cookware and containers for the first time, making it possible to make fermented foods such as wine, vinegar, cheese, and so on. Ding was one of the earliest cookware. There were claws because there was no stove at the time, and there were cockroaches. The claws were hollow and used to cook wine.

HUANGDI(2717 B.C-2599 B.C):

The diet of the Chinese nation has improved. The emperor made a stove. It concentrated on firepower to save fuel and made food fast-cooked. It was widely used in the Qin and HanDynasties. At that time, it was a pot, and the high-footed stove gradually withdrew from the historical stage. For the sake of drinking, the porridge is the first time.

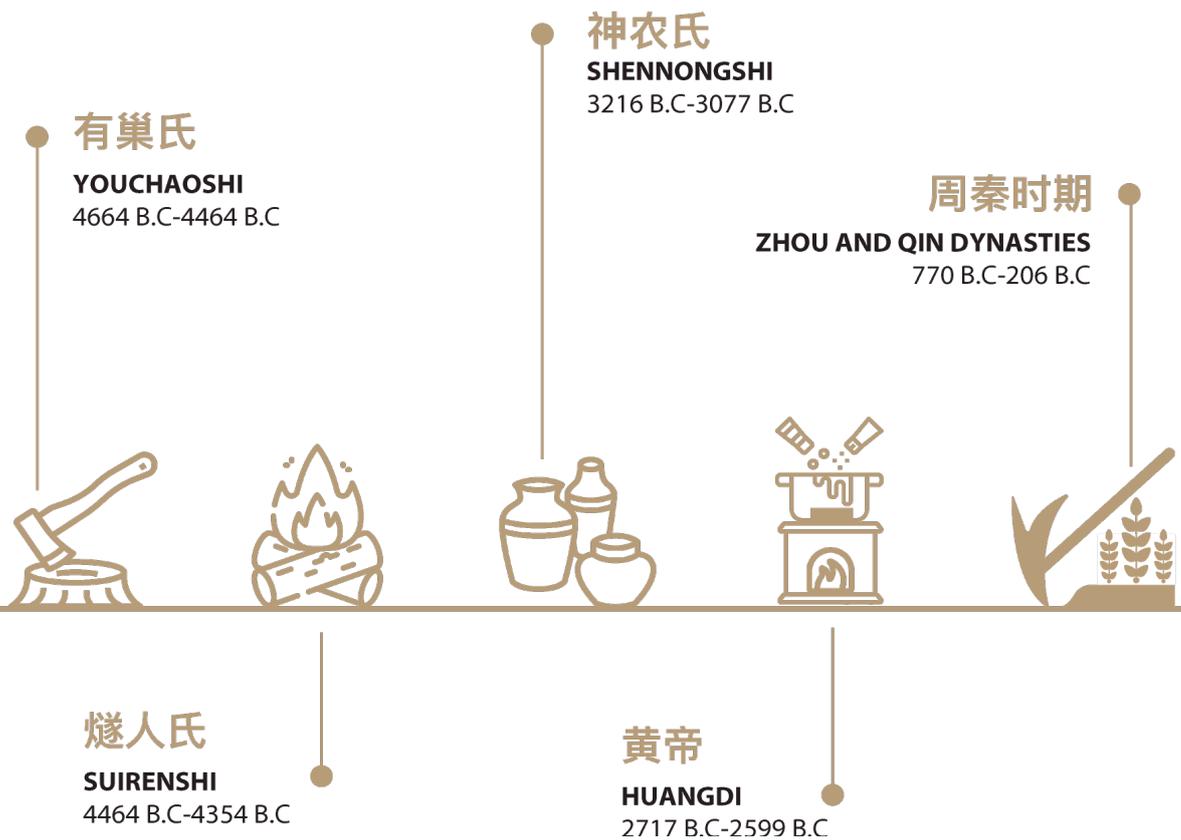


figure 2.1 history of chinese cuisine

Because of the cooking method, the steamer was invented. The steamed salt industry was invented by the Yellow Emperor's son, Susha. From then on, he not only learned how to cook and know how to adjust, but also beneficial to people's health.

ZHOU AND QIN DYNASTIES(770 B.C-206 B.C):

During the formation of Chinese food culture, cereals and vegetables were the main food. During this period, the self-produced grain vegetables were basically the same, but the structure was different from the present. At that time, the early field operation was mainly: (most importantly) Xiaomi, also known as millet, which dominated for a long time and was the length of the grain. In addition, there are barley, beans (yellow beans, black beans) and hemp are eaten by the poor. There is rice in the south,

the ancient rice is glutinous rice, and the common rice is called cricket. After the ZHOU, the Central Plains began to introduce rice, which is a fine grain and is more precious.

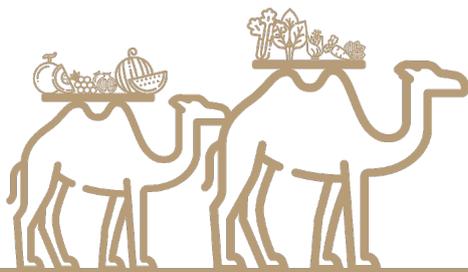
HAN DYNASTIES(202 B.C-220 A.D):

In the Han Dynasty ,the rich time of Chinese food culture is attributed to the exchange between Chinese with Western (Western of China) food culture, introducing pomegranates, sesame seeds, grapes, walnuts , watermelons, melons, cucumbers, spinach, carrots, fennel, celery, peas, lentils, MUXU (mainly used for horse food), lettuce, green onions, garlic, also introduced some different cooking methods like the one type of fried cakes, that is, sesame seeds. Tofu was invented by Liu An, so that the multinutrition of beans is digested, and it is cheap and can make many kinds of dishes. The Eastern Han Dynasty

唐宋

TANG AND SONG DYNASTIES

618 A.D-1271 A.D



汉代

HAN DYNASTIES

202 B.C.-220 A.D

also invented vegetable oil. Previously, animal oil was used. The vegetable oils were almond oil, nai oil, and sesame oil, but they were rare. After the Northern and Southern Dynasties, the variety of vegetable oils increased, and the price was also cheap.

TANG AND SONG DYNASTIES(618 A.D-1271 A.D):

The peak of food culture is overly stressful, the most representative is the cooking tail feast.

MING AND QING DYNASTIES(1368 A.D-1912 A.D):

Chinese food culture in the period is arrived another peak. It is the continuation and development of the food custom in the Tang Dynasties and Song Dynasties. At the same tempo, it is mixed with the characteristics of

明清

MING AND QING DYNASTIES

of changed a lot about the staple food: glutinous rice has been completely fall into disuse, and the sesame seeds have been removed from the staple foods. The bean material is no longer used as a staple food and becomes a meal. The proportion of edible wheat in the northern part of the Yellow River Basin has increased significantly. Then the flour became the staple food of the North in the Song Dynasty. It was introduced again in the Ming Dynasty. The cultivation of potatoes, sweet potatoes and vegetables has reached a high level and become the main meal. Meat: Livestock and poultry raised by artificial animals become the main source of meat. Man Hanquan banquet represented the highest level of the Chinese food culture in the Qing Dynasty. [1]

2.2

REGIONAL DIFFERENTIATION AND DEVELOPMENT TREND OF CHINESE FOOD CULTURE

2.2.1

Regional differentiation of food culture

Regional differences and geographical types affect the diet and the habits and tastes of people through the products. For example, the seaside is famous for its seafood dishes, and the

rivers are famous for its fresh vegetables. The river freshwater in the canyon is in need of rapid current to survive, while the meat has elasticity and toughness. It is not only delicious, but also has a special taste. It is said that the beef and mutton in the arid area are less savory, and the quality of melons and fruits is better than that of the south. The cold and hot weather of the climate also affects people's eating habits. Sichuan, Guizhou and Hunan are hot and humid in the year, Sichuan and Guizhou are used for hot and spicy green peppers. There is a difference between the wet and the wet in the whole year, and there is still a certain drought in Hunan. From the perspective of seasonal changes, Guangdong, Guangxi, Guizhou, Taiwan, and Qiong in the south of Nanling, in the spring of the year to be hot in the winter to supplement the cold, so the people have the habit of wintering and replenishing the heat, so that the medicinal diet is here. More popular has already entered the ordinary people's home, and become high mid-range dishes. The northern climate has four distinct seasons, the winter is warm indoors, the soil is slightly alkaline soil, and the soil, water and food contain more calcium, which is more suitable for people's health needs. The medicated diet is only needed by patients, so the diet is not as popular as the south.

Shanxi's Loess Plateau contains too much calcium, which makes residents vinegar, which is good for eliminating calcium deposits in the body and can overcome various stone diseases. Nantianbei is related to the production and climate. The sugar is produced in the south, the humidity is high, and the human body is transpiration. Therefore, it is sugar-loving. It does not need to eat too much salt. The north body has a large amount of transpiration and needs to consume more salt. [2]

People's eating habits are also related to national culture and religious beliefs. Different ethnic groups have different origins and different religious beliefs. Their current living environment is also different, thus forming different living and eating habits. The development of history also has a great influence. The replacement of the dynasty, the migration of the population and the nation, promote the spread and exchange of local dishes. The geographical type of eating habits is very popular. At the same time, a region often has multiple types, which form a difference in the dietary culture of the district. It is customary to have "the south likes the sweet northern like salty, the eastern likes spicy. The west like the acidity of the azimuthal division. The actual partition is even more complicated than this.

The Han area has four major cuisines divided into;

1. North China, including the northeast belongs to the northern cuisine. This cuisine originated in Shandong, so it is also known as Lu cuisine.

2. The lower reaches of the Yangtze River belong to Jiangnan cuisine. In history, this area belongs to "Huaihai Weiyang Prefecture". Yangzhou cuisine is the most typical, so it is also called Weiyang cuisine, Huaiyang cuisine, Yangzhou cuisine, because its distribution includes Huaihe River Basin and the Yangtze River. Also known as Jianghuai.

3. It is admirable that people in the middle and upper reaches of the Yangtze River and Guiyang are very fond of eating peppers. Sichuan cuisine is typical, and it is called Sichuan cuisine.

4. South China south of Nanling, with Cantonese cuisine as a typical example, it is also known as Cantonese cuisine.

Each big cuisine can be subdivided. Shandong cuisine can be divided into authentic Shandong cuisine, Jin cuisine and Henan cuisine. Weiyang cuisine can be divided into Yangzhou, Suxi, Huaihai, Nanjing, Huizhou and other Sichuan cuisine. There are Sichuan, Hunan, Hubei, Guizhou and Guizhou. Yue, Chaozhou, Hakka, and amaranth can also be included in this cuisine. In fact, it can also be subdivided, like the authentic Shandong cuisine is

divided into two groups of Jinan and Qingdao. As a political or economic center, Beijing and Shanghai are full of various restaurants. Beijing inherits the essence of Ming and Qing Dynasties' court dishes, and absorbs the cooking experience of Han, Manchu, Mongolian, Hui and other ethnic groups. [3] Shanghai has integrated the flavors of Weiyang cuisine and accepted it. Western food has a certain influence. Beijing and Shanghai each form a comprehensive flavor, but the characteristics are not prominent enough. Beijing cuisine only popular court dishes, flavored dish roast

duck, and some local snacks such as fried liver, stewed squid, marinated meatballs, marinated beef, etc. Shanghai has a similar phenomenon, so there is no Beijing and Shanghai cuisine.

The differentiation of the big cuisine has formed some local cuisines, so the Chinese cuisine also has eight major cuisines, nine major cuisines, ten major cuisines, and twelve cuisines. This more detailed classification of the cuisine confuses the differences between the big cuisines and their internal differentiation, and thus the divisions vary and there is no uniform opinion.

2.2.2 The formation and development of the cuisine

There are different farmhouse dishes and home-cooked dishes in different places. These local flavors have been refined to form local recipes for restaurants and banquets. It is these local recipes that are higher in the population-focused water and dry docks, economic centers, and especially political centers. Development, the formation of the corresponding urban dishes, official dishes, temple dishes, and even palace dishes, which constitute a fairly complete local cuisine system.

Local cuisines are opened in other place, and may be developed to form recipes processed in the field.

For example, Jingwei Lucai is a Shandong cuisine after entering Beijing, because there are many noble people here, and the Lu cuisine has been developed after careful processing of fine materials. Hong Kong-style Cantonese cuisine, Thai-style Chaozhou cuisine, etc. are also such processed vegetables in the field. Field processed vegetables can often be passed back to the original place and become an important part of the cuisine. For example, Hong Kong-style Cantonese cuisine and Chaozhou cuisine focus on seafood and maintain their vitality. Originally, Guangdong only pays attention to the freshness of seafood. There are very few live seafood. Now it is reversed from Hong Kong and becomes the main feature of Cantonese cuisine.

In the process of development, famous chefs can also open up innovative recipes, especially some official and court chefs have developed. Like Tanjia cuisine in Beijing, it is based on Luwei, with a comprehensive north-south flavor. The new cuisine developed with the famous chef is mainly operated in the "Beijing Hotel". Tanjiacai is characterized by sweet and salty taste. In cooking, it is often sugar and salt. It is sweet and fresh, and it is salty and fragrant. The dishes made are moderately tasteful, delicious and delicious.

Traditional farmhouse dishes and home-cooked dishes, especially some street flavors, some with special production or flavor, have also become popular in recent years, and have entered local cuisines from local dishes. For example, the Chaozhou cuisine of the Chaozhou, the sand tea beef, the Beijing boiled meatballs and the fire are also served, but often improve the use of materials and production. Chaozhou cuisine's sand tea beef is made from Australian fat beef, and Beijing's boiled meatballs are refined, so it is also very attractive.

In short, a cuisine is refined from the corresponding dishes of farm-house vegetables, home-cooked vegetables, official dishes, temple dishes, palace dishes, etc., or directly cited to include traditional dishes foreign dishes new

dishes, palace dishes. A recipe that reflects the eating habits and flavors of the place.

In the process of its formation, the cuisine gradually developed from the cultural environment of private food to different cultural environments such as street snacks, food stalls, restaurants, feasts, etc., and equipped with corresponding reception facilities in different food culture atmospheres, including restaurant environment and reception. The quality of the service staff.

2.2.3 Cuisine features and comparison

Cuisine flavor is the basis of food culture. The four major Chinese cuisines have their own regional distribution, which can be basically divided into seasoning and local dishes. The characteristics of the restaurant are related to its corresponding regional background characteristics and historical development. Some of the cuisines have a relatively stable historical development, with less impact on population migration and war, and the formation of a relatively stable tradition of adhering to tradition. Some of the cuisines have changed in history, and the fusion of the cuisines has been formed in many aspects, with the characteristics of constant innovation. As a result, the degree of closure and openness of the cuisine varies.

1. Lu cuisine

Lu cuisine is one of the earliest cuisines in Chinese history. Peng Zushan, the ancestor of Chinese cooking, ridiculed the emperor, praised him, and sealed it in Pengcheng. The Yiyi of Shangyi and the Yiyao of Chunqiu are considered to be ancient famous chefs because they are good at seasoning cooking. They all flow in the northern region, and Confucius's famous sayings on diet also make the upper layer of Qilu go to the top. During the Northern and Southern Dynasties, the Northern Wei Jiasi Dance wrote "Qi Min Yao Shu", which systematically summarized the cooking techniques of the Yellow River Basin including Shandong. In the Northern Song Dynasty, Kyoto's "Northern Food" was the name for the Lu cuisine. During the Ming and Qing Dynasties, as a self-contained dish, Lu Cuisine is known as "Northern Cuisine" throughout the Yellow River Basin and the Northeast.

Lu cuisine is mainly distributed in Shandong. The abundant products on the coast of Shandong Peninsula and the lower reaches of the Yellow River provide a wide range of raw materials for the development of Shandong cuisine, making it widely available and finely selected. Among them, Jinan cuisine is unique in its cooking methods, including blasting, frying, burning, frying, simmering, hitting,

etc. It is known for its soups and is famous for cooking seafood, focusing on fresh and original flavors. Lu cuisine was introduced to Beijing, developed Beijing-style Lu cuisine, and entered the official government and the court. It constitutes the main body of Beijing official cuisine and is also an important part of the palace cuisine. Among them, the most famous and widely used concentrates are famous for their swallow-winged wings. For example, Tanjiacai, which is famous for its northern cuisine, has developed Confucian cuisine in Shandong. [4]

As a seasoning dish, Lu cuisine is rich in flavor and savoury. It is good to use sauce, onion and garlic seasoning. The concentration is mainly expressed in the ingredients soup. The main ingredient is only the outer layer, and the inner layer still retains the original taste. The best of the Lu cuisine is that the soup is much more than the hanging soup. The famous chef uses the whole chicken, whole duck, pig elbow, scallop, Jinhua ham and other raw materials to make the broth. The soup is clear and delicious, extremely delicious, and the soup is good. The cooked dishes are more delicious. Therefore, although the Lu cuisine is a seasoning dish, the soup is simmered, and the main ingredient still requires the original flavor. The cold dishes of Lu cuisine are made from

heavy sauce, including pork, beef, sheep, chicken sauce, and dog meat.

In history, Shandong is an immigrant migration center. There has not been a large migration of foreign populations to Shandong, which has kept the Lu cuisine in a relatively closed environment. It has formed a strong local color of "home grown" and has unique cooking techniques and dishes. Confucian cuisine, which is a typical official dish of Lu cuisine, is also authentic in Shandong. The chef is from Shandong. The raw materials used are from Shandong. The basic customs and psychological nature are also "Shandong style". According to the text of the book "Qi Min Yao Shu", the dishes at the time can still be seen in the current Shandong recipes. This of course is related to the relative conservativeness of Confucian culture.

In the history of the development of Shandong cuisine, there are also some local influences. For example, many soups of Shandong cuisine are freshly picked up by milk, which is influenced by the food of Hu, but only a few influences. Lu cuisine was introduced to the capital, and Jingwei Lucai was also developed into high-grade concentrates, use shark's fin, bird's nest, abalone and other delicacies as ingredients, and developing noble seats. Since the beginning of the decade, the social atmosphere has changed. This kind of fame has only

appeared in state banquets and foreign guests' restaurants, and foreigners are not accustomed to such famous dishes. Generally, restaurants and restaurants are less cooked, which also affects the development of Lu cuisine. [5]

2. Weiyang cuisine

Lu cuisine is a part of the northern food, and the history of the southern food is divided into three, with the difference between Sichuan food, Fujian cuisine, and southern cuisine. Nan Dynasty develops with the lower achievement of the Yangtze River and becomes a southern food. Peng Zu was sealed in Peng, today's Xuzhou, under the jurisdiction of the ancient Yangzhou, so Yangzhou is also considered to be the birthplace of the earliest chef. In ancient Yangzhou, the world of the Tang Dynasty, "Yang Yi Yi Er", the prosperity level ranked first in the country to the Ming and Qing Dynasties, and also the center of "Yan Yuan" and "Slot Transportation", and the corresponding culture is also very developed. As a regional economic and cultural center, it has both a water and land transportation hub and an internal and external trade center, making Yangzhou a hub for cultural exchanges between ancient China and North and South China. In this way, the taste of the Quartet is not here. Yangzhou kitchens cater to the tastes of the Quartet, and each party competes to

promote the development of Yangzhou cuisine. Historically, in the division of the Northern and Southern Dynasties, every large number of immigrants migrated southward, bringing the noodles of the north and the explosive and frying cooking techniques of the north, and also made the south pay more attention to the seasoning of onion and garlic. Kangxi and Qianlong repeatedly visited the south and promoted the cooking of Yangzhou.[6] Ming Taizu appreciated the Yangzhou cuisine, and later became the ancestral home of Beijing, and Yangzhou cuisine entered Beijing. Yangzhou is a place where salt merchants gather. The salt merchants "have a hundred thousand waists and ride the cranes to Yangzhou", and promote the development of salt merchants with the characteristics of official cuisine. Therefore, Yangzhou cuisine is a relatively open cuisine that combines local dishes, official dishes and palace dishes.

At the same time, the lower attain of the Yangtze River and the Jianghuai area are the land of fish and rice. The aquatic products of the rivers and rivers are listed on the market all year round, and the sea-flavored mountains and cherries are also here, so they are extremely rich in raw materials. The history of human development and the selection of materials make Weiyang cuisine known as "the authentic taste of the southern

cuisine", "the first taste of the southeast" and "the beauty of the world". In the history, some old police foodies have made a biography for them, and compiled recipes. Like Yuan Mei's "Suiyuan Food List", Tong Yue's "Tingding Collection" was mainly summarized in the Jianghuai environment, which greatly promoted the development of Weiyang cuisine.[7]

Weiyang cuisine is a local dish, and it is cooked and its flavor is light and savory, light but not thin, thick but not greasy, clear soup to the bottom, thick soup like milk, original flavor, add sugar for seasoning, especially branch Wuxi cuisine, so the savory dishes also contain sweet. The taste is characterized by the taste of "sweet and boneless without losing its shape, smooth and crisp without forfeiting its own taste". The cuisine of Weiyang is also famous for its good at Jiang Xian. The seasonal steamed seasonal dish "Steamed Fish" was once a must for Weiyang cuisine. But now the fat beauty of the river has been very difficult to obtain, but on the coast can eat the "sea premium" after the eggs, no longer the "taste". However, it is still possible to eat authentic Weiyangjiang fresh vegetables such as "double skin knife fish" and "squirrel fish," but its taste is far worse than "steamed fish".

Weiyang food and tea, including morning tea snacks and dinner-style tea spots,

is also very popular, and there are four different snacks.

Weiyang cuisine meat and poultry aquatic products processing is excellent, but the characteristics of Shanzhen seafood processing are not obvious. Due to the influence of recent years, Weiyang cuisine is also the same as Lu cuisine. It ignores the cooking of Shanzhen wild game and also affects its high-grade development.[8]

3. Sichuan cuisine

Sichuan cuisine focuses on the use of pepper to taste, and the "sweet taste, good spice" formed when inherited from Bashu has gradually formed a cuisine with a strong local flavor. Since ancient times, Sichuan has been a land of abundance. Therefore, there are many varieties of ingredients to be cooked. It is good at making poultry. There are many mountainous areas in Sichuan. Therefore, there is more food in the mountains and wilderness. Sichuan is only fresh, but lacks seafood.

Sichuan cuisine consists of sautéed pork, fish-flavored pork, boiled meat, grotesque chicken nuggets, konjac roast duck, dried fish, Mapo tofu and other seasonings, as well as garlic white meat, husband and wife lung slices, light shadow beef, Sichuan kimchi and other flavored cold dishes. There are also street foods such as

Tang Yuan, Dandan Noodles, and Hand-cuffs, and there are even more surprisingly hot Chongqing hot pots. People taste Sichuan food, appreciate its spicy taste, and rarely pay attention to its non-spicy flavored seasonings. The mountain and sea flavor, especially some valuable ingredients, such as fresh shrimp, sea cucumber, shark's fin, bird's nest, etc are not suitable for spicy spices. The cooking method has no special characteristics. It is difficult to enter Sichuan cuisine as the main dish. Senior food lovers, Sichuan cuisine, rarely have this dish, making these expensive dishes become something that is optional in Sichuan cuisine. In the past, Sichuan cuisine was close to the place of origin. Wild game dishes are very famous. The braised bear's paw is very easy to eat in Sichuan. The price is fair. However, due to limited production, the emphasis is on protecting animals. The price has soared. Actually, this dish has also been with drawn from Sichuan. The dishes are gone. Therefore, among the four major cuisines, the Sichuan cuisine is used relatively least, which makes it difficult to develop at a high level. Beijing Tianfu Douhua village uses expensive seafood as a raw material, and uses Sichuan cuisine and cooking methods to innovate and introduce high-end Sichuan cuisine. The diners will order this dish, which may be mistaken for Lu

4. Cantonese cuisine

Cantonese cuisine refers to the Lingnan flavor. Lingnan has both coastal seafood, poultry and river fresh in the delta and valley plains, and mountains and mountains. It is originally a land of Nanban, and it maintains the characteristics of "sturdy". The war in history has caused the northerners to move southward many times. The Han Chinese in the vernacular, Chaozhou, and Hakka tribes of Guangdong are not descendants of the northern part of the country from the land to the south, but the descendants of the Han descending directly from the sea and land. Kyoto flavor, Gusu famous dish, Yangzhou stir-fry, modern and Western style. Hong Kong has become increasingly prosperous, forming the style of Hong Kong mixed Cantonese cuisine and Hong Kong-style add the Chaozhou cuisine. The economic development of Hong Kong and Macao, high-end consumption has promoted the development of Cantonese cuisine to high-precision, especially the seafood breeding in Hong Kong and Macao is very popular, so that the raw food of the food is "new", the wild game, including the animals that are protected by nature. A large number of Hong Kong and Macao.[10]

The economic prosperity of Guangdong also promoted the development of Cantonese cuisine and Chaozhou cuisine, and HongKong type of Cantosese cuisine

were also introduced to Guangdong. Lingnan climate needs medicated diet, and the spring and winter hot winter tonic, also makes the medicinal diet widely enter Cantonese cuisine and Chaozhou cuisine. In recent years, it has taken the lead in importing all aspects of imported materials, making Cantonese cuisine unique in the country, and its face is brand new, becoming a new school of southern cuisine. Guangzhou cuisine is the main body of Cantonese cuisine. The dishes are clear but not light, fresh and uncommon. The selection of materials is diversified and diverse, and there is a reputation of "food in Guangzhou". After the middle of the Qing Dynasty, the so-called "Chinese cuisine" overseas refers to Guangzhou cuisine, making Guangdong cuisine famous overseas.[11] Chaozhou belongs to the Minnan language family. It is a self-contained school. It is famous for cooking seafood, vegetarian dishes and sweets. The soup is the most distinctive. Although Guangzhou cuisine and Chaozhou cuisine are both flavored, they focus on fresh, smooth, crisp and tender flavors. However, Guangzhou cuisine should be flavored with soup, re-burned, roasted Chaozhou cuisine with lighter and lighter flavor, and the ingredients are also light, each The dishes are served with different seasonings, and the diners are self-cultivating and light, and the halogen sauce is used, so the difference

is not small. Lu cuisine's sauce is too tasty, cold dishes are not added to the soup, dry pine is a special feature, different sauces, including pigs, cattle, sheep, chickens and ducks, etc., there is no difference in taste, can only be based on fiber thickness and taste habits distinguish them. Chaozhou has a taste of salty taste. When you eat it, you need to simmer the braised soup. It has more water content and is soft and smooth. Therefore, the meat can be distinguished from the original taste of different poultry by the difference of the taste of the stewed soup, so it is a flavored original dish. Cantonese and Chaozhou cuisine are heavy sweets, but the salty beets are made separately, and the savory dishes are not sugared. This is the difference between the "South Sweet" characteristics of Weiyang cuisine. Another system of Cantonese cuisine is Dongjiang Hakka cuisine. The Hakka is a Central Plains Han Chinese who migrated southward. It is late from the south of the land. There is still an intrinsic eating style of the Central Plains. The dishes are mostly meat, the main ingredients are prominent, the taste is salty and cooked, see the casserole. The famous Hakka dishes include salted chicken, Dongjiang stuffed tofu, and mushroom stewed mustard. They have become famous dishes of Cantonese cuisine. Snake dishes are a feature of Cantonese cuisine, and there are even special snake

restaurants.

The light Chaozhou cuisine also caters to the requirements of modern Western cuisine, which emphasizes nutrition and nutrition. Modern cooking ideas emphasize health and weight loss, pursuing light and low oil, emphasizing the use of fresh and even lively raw materials, emphasizing the maintenance of original nutrients during cooking. The taste, different dishes and different seasonings are scented by the diners, that is, the seasoning rights are placed on the hands of the gourmets. Different guests have different requirements for shading, but different guests can also have different shading requirements in different periods. After long-distance travel and sports, they will be more energetic. Moreover, the tasting can only taste and taste, and the inner layer still retains the original taste. Therefore, Chaozhou cuisine can meet the requirements of Western cooking, and can also meet the requirements of the four-party diners in the country. The northerners are thick, the outside is salty and the inside is light, and the lower river is light, it is for the Weiyang flavor, the Shangjiang people disperse the meat deep, or add the chili sauce to the deep Sichuan, the Lingnan people according to the inherent way, it can be Chaozhou or Cantonese. Therefore, Chaozhou cuisine has the reputation of "Southern cuisine tide". [12]

2.2.4 Cuisine exchange and development trend

The major genres of various majors often dominated the party in the early days, but as people moved, various cuisines were also exchanged and spread throughout the country. In the water and land terminals, lively towns, especially the provincial capitals and the capitalists, various restaurants competed in the competition, and the courts competed against each other. After the defeat, a recognized gold medal will be introduced.

In the Ming and Qing Dynasties, Lu cuisine was introduced to the capital. In order to meet the requirements of the upper level, the Beijing-style Lu cuisine appeared, and it was once brilliantly developed. Kangxi and Qianlong repeatedly promoted the Weiyang cuisine, which is dominated by salt merchants, in the south, and formed a situation of "Northern Lunanyang". Since modern times, Cantonese cuisine has begun to rise. After the victory of the Northern Expedition, it will be located in Nanjing, promoting the development of Xiajiang Weiyang cuisine. After the age, the mainland style made high-end dishes difficult to develop, and both Lu and Weiyang dishes declined.

Since the reform and opening up of the mainland, Sichuan cuisine, which is good at compound flavor, has been a low-end restaurant in the north and south. Then the Cantonese cuisine went north, and it was popular all over the country, occupying the high-end market. No one expected that the prestigious Chaozhou cuisine quietly rose in Hong Kong, and then replaced Guangzhou cuisine as the mainstream restaurant in Hong Kong and overseas Chinese street. When the Chaozhou cuisine was just popular in Shenzhen, Chaozhou cuisine sprang up and occupied Beijing and Shanghai. The high-end market has become the most popular high-end dish. Lu cuisine was defeated, and it was reduced to medium and low-grade dishes. Weiyang cuisine did not move, and it failed to rush out of Su Hu.

There are many reasons for the decline of Lu cuisine, but it is related to closed-style cuisines that are self-styled. Jiaodong cuisine that is good at seafood is hard to rival Hong Kong-style Cantonese cuisine and Chaozhou cuisine with live seafood as raw materials. The high-end dishes of Beijing-style Lu cuisine are only in the imitation of royal dishes.[13] Some have been restored, people mistakenly believe that it is a court dish, and the following soups of simmering soups have not been valued by restaurants, and naturally they are

easily reduced to medium and low-grade dishes. Lu cuisine also uses seafood as a raw material to produce high-grade soup cans for sale to various restaurants. On this basis, restoring the delicious taste of Shanzhen seafood is the key to the innovation of Lu cuisine.

Weiyang cuisine did not move, and failed to rush out of Su Hutun. In recent years, salt merchants have not received much attention, and high-end vegetables have declined. The sugar in the savory dishes does not conform to the flavors, making the Weiyang cuisine taste simple. Diluted its original flavor. Yangzhou cuisine is easier to extrapolate than Wuxi cuisine, because its savory dishes are less sugary, only slightly sweet. Wuxi cuisine is too sweet, it has become a local hobby, it is difficult for outsiders to adapt. In fact, Weiyang cuisine has a strong taste and is familiar. It has a morning tea snack similar to Cantonese cuisine. It can get rid of the habit of sugary savory dishes, and then increase the medicinal diet and the taste of the mountains and seas. It is characterized by high-grade development, cooked and light, and can also be like Chaozhou cuisine occupy the market at home and abroad.[14]

The spread of the cuisine to the periphery must overcome its own weaknesses, and appropriately eliminate a eating habit that favors hobbies in order to better occupy the foreign market. For example,

Chaozhou cuisine is very simple, Chaozhou porridge is not as delicious as Guangzhou porridge. Therefore, Chaozhou cuisine is on the north, in the form of Guangzhou morning tea, which is very attractive. Beijingers even mistakenly believe that Guangzhou morning tea is a characteristic of Chaozhou cuisine. In recent years, Chaozhou cuisine emphasizes self-sufficiency, and even the lo-mei taste is diminished. Therefore, the original local-style deep-boiled brine is transformed into light halogen in the city. This is a kind of eating habit of Chaozhou people. The northern part of the country is full of various sauces. The deep-boiled flavor is more acceptable to the northerners. The braised meat is similar to the sauce and is better than the sauce. Therefore, it is driven into the north by the traditional deep-flavored taste of Chaozhou. It is more easily accepted and popular by the northerners.

The flavors of the major cuisines vary greatly, each has its own characteristics. As it moves outwards, it is easy to squeeze some small-sized cuisines that are not very different. In recent years, Sichuan cuisine has occupied the north and south markets, and almost all of them belong to Hunan cuisine, leeks and vegetables. The branch of Sichuan cuisine is shoved. Small cuisines must develop their own uniqueness and

develop their own characteristics, so that they can stand out from the crowd. The development of Chaozhou cuisine as a branch of Guangdong cuisine is worth learning from some small cuisines.

As a flavored dish, Beijing Peking Duck is the most famous. Beijing Roast Duck is famous for its crispy skin and fluffy meat. It is also a famous dish that uses Beijing and its sweet sauce with green onions. It is not even a famous dish in Beijing. The saying in Beijing has become a flavor dish that people must taste in Beijing. Kunming's gas-cooked chicken and Kaifeng's squid roast are also local flavors, but their reputation is not as good as Beijing roast duck.

Famous as a snack, there are Kunming's bridge rice noodles, Hangzhou's shrimp glutinous rice noodles, Chaoshan oysters, Tianjin's dog boring buns, Changzhou's Xiaolong steamed buns, Wuxi's meat bones, Chengdu's Lai Tangyuan, north-western The mutton is soaked and so on, and it has become a flavor that must be tasted by foreigners.[15]

As a flavor seat, Xi'an's dumpling feast and Luoyang water mat are the most famous. The spread of noodles and beef and mutton has been developed in the west. The noodles of Shanxi and the ramen noodles in Lanzhou are different from the commonly made noodles. They have a certain pressure on the lips and have a good taste. The climax of pasta is

the dumpling feast in Xi'an, the climax of beef and mutton flavor, It is a mutton bubble.[16] Luoyang water sea is known as "the first seat in the world". It is the most popular dish. Most of it has soup, the flavor is unique, and it is eaten together. It is like a flowing water. The name of the water mat comes from the combination of these two characteristics. The dishes are carefully selected, finely cut, and used in local native products. They have a strong local flavor. One of the most special and unforgettable is the first large-sized peony-yellow dish, which has a smooth and refreshing taste and is uniquely created. It is easily mistaken for bird's nest. In fact, it is the legendary "Fake Birds" that was created from the radish of Tang Wu. In recent years, it was added with an peony flower carved by an egg, which is called "Peony Yancai". The Luoyang water table has four special flavors of sour, spicy, fresh and fragrant. It has no greasy and heavy feeling, and it is worthy of overseas tourists to make a special trip.

In fact, the famous dishes of some local towns, such as the tofu mat of Jianmenguan in Sichuan, the tofu of Jiangmen Town in Xuyong County, and the famous mutton hot pot in Hainan, often give people a "never forget" after eating. Memories, don't go to taste in person, it's hard to believe that these small places have such a wonderful flavor. Hainan is famous for its Chicken of Wenchang, Duck from Jiaying and Sheep

on the East Hill and crabs in the river, Dongxiao Coconut Forest Seafood and other flavored dishes. Three mutton hot pots such as Qionghshan County in Shishan, Wanning County in Dongshanling and Sanya Street are famous throughout the island.[17] Shishan is a volcanic crater for the basalt, and the east is a granite weathered bedrock. The two are dry in winter, the grass is dry, like the northwest pasture, the lamb is not good, and the Sanya is also used by the east goat. The winter lamb hot pot is very famous. When you taste the mutton hot pot at Dongshanling Hotel, you can taste Dongshan pancakes with the flavor of the northern oily clams. The crispy, soft and delicious taste is not less than the most famous place of the northern oil-fired fire---Anhui Shuiye Town, Henan Province, which is better than Jiangsu Huangqiao Fire.

In addition, as the locals try their own foods, they gradually form local pure flavors as representatives, occupying a wider market, or shrinking market, It has also been merged during the communication process to form a comprehensive flavor. Like the Manchurian feast in history, the Manchus entered Kangxi and Qianlong several times in the south, in order to meet the high-level requirements of the emperor and the nobles, the high-class banquet dishes of Manchu, Jingwei, Luwei and Weiyang dishes were combined.

2.3

CHINESE FOOD PROPERTIES

2.3.1

Eight principles of diagnosis

The process of determining which actual mode a person belongs to is called "mode diagnosis." Usually, the first step in the diagnosis of the human body is to assess the current signs and symptoms according to the "eight principles", and this is the most important step. The above eight principles actually refer to the corresponding diseases. Four pairs of basic features: outside and inside, heat and cold, emptiness and filling, Yin and Yang. Among the four basic characteristics, the most important for clinical medical diagnosis is heat and cold and emptiness and filling have a strong local flavor.

In general, these eight diagnostic principles involve the following:

Yin and Yang refers to the universal aspect that everything in the world can be classified, including the external and internal, cold and hot, emptiness and filling of all diseases and eight principles. In the folk definition, cold is the attribute of the shade, and heat is the attribute of the sun. However, since the pattern of the Yin and Yang descriptions is too simple and lacks clinical utility, the pattern is now generally no longer marked in this manner. The exceptions are the modes of emptiness and coldness and filling and heat, as they are sometimes referred to as “Yin mode” and “Yang mode” respectively.



(figure 2.2)



figure 2.2 yin and yang¹

¹ Picture is downloaded from the Internet



External: refers to the disease that manifests itself in the superficial layers of the body, such as on people's skin, or on the meridian of the scalp, body and acupuncture points. The external features are characterized by cold gout, headache, muscle aches, mild fever, rapid pulse but normal tongue appearance and color.



Internal: refers to the disease manifestation of internal organs in all human bodies except for external diseases. The state of the internal organs is not defined by the general characteristic symptoms, because the internal organs are determined by their respective functional attributes.



From the perspective of model diagnosis, the **cold** is characterized by nausea, no appetite, mild and floating pulse, and whitening of the tongue. More detailed characterization depends on whether the patient is fasting or full when the flu is cold.



The characteristic of **fever** is that the body is not afraid of cold, the throat is red and painful, the tongue is dry, and the pulse is fast and floating (if it falls with the external form). In all other cases, the symptoms depend on whether the heat is accompanied by a vacuum or a filling.



Deficiency: The performance of physical deprivation can be further divided into qi deficiency, blood deficiency, yin deficiency and yang deficiency, and have their own characteristic symptoms. The "virtual heat" we often say is caused by yin deficiency, which refers to the working state of the internal organs.



Excess: Physical over-nutrition usually refers to any disease that cannot be identified as a defective type, usually indicating the presence of the first six symptoms of excessive or stagnant (mainly refers to human qi, blood, etc.). The characteristic manifestation in the external mode is that people are not prone to sweating.



figure 2.3 chicken²

Chicken: The property is luke-warm. Can warm the spleen, nourish blood, kidney and essence, suitable for all ages. (figure 2.3)

2.3.2 Therapeutic value of main food materials



figure 2.4 duck³

Duck: The characteristics of duck meat are cold, nourishing the stomach, tonifying the kidney, removing heat, eliminating edema, relieving cough and removing phlegm. suitable for majority of the people. Especially for people with heavy liver fires in the body, people who are prone to low-grade fever, weak constitution, loss of appetite, dry stools and edema, duck meat is one of the most recommended meats.

Tips: For people with cold body and cold patients, it is not advisable to eat more. (figure 2.4)

figure 2.5 pork⁴

Pork: The properties of pork are relatively calm. It has the function of nourishing the internal organs, mainly the kidney organs, and improving the heat.

Tip: For those who are hot, the humidity in the body is too strong, the tongue is thick and greasy, and it is necessary to avoid eating pork. (figure 2.5)

figure 2.6 beef⁵

Beef: Eating beef in the cold winter has the effect of warming the stomach and helping to keep the body warm in cold weather. In Chinese medicine, it is believed that beef can supplement body energy, nourish the spleen and stomach, and strengthen the function of bones to relieve phlegm and quench thirst. It is therefore suitable for people with moderate drooping, shortness of breath, bone and muscle weakness, and long-term illness. (figure 2.6)

figure 2.7 fish⁶

Fish: It has the function of lowering blood sugar, protecting the heart and preventing cancer, and can effectively prevent osteoporosis. It is very effective in preventing cardiovascular and cerebrovascular diseases, enhancing brain memory, protecting normal vision and eliminating body inflammation. From the perspective of Chinese medicine, most fish belong Yin, and excessive consumption can easily lead to cold inside the body.

Tips: People with partial heat and Yin deficiency should not eat a lot of fish. (figure 2.7)



figure 2.8 shallot⁷

Shallot: The shallot has a dampness, promoting blood circulation to the meridians, detoxification and swelling. The property is warm and delicious. Indications of cold, headache and other symptoms. (figure 2.8)

2.3.3 Therapeutic value of main ingredients



figure 2.9 garlic⁸

Garlic: It's suitable for eating in summer; people who smoke and drink should eat garlic; garlic has a significant antibacterial effect, so infectious diseases should be eaten with raw garlic as a preventive.

Tips: People with yin deficiency and fire, often appear red, dry mouth constipation, irritability, fever and other symptoms of eating garlic; stomach and duodenal ulcer, eye disease, mouth and mouth disease should not eat garlic. In addition, garlic should not be eaten with honey. (figure 2.9)

figure 2.10 ginger⁹

Ginger: It is spicy and warm, and it is good for the spleen and stomach. It removes dampness and eliminates phlegm, and stops coughing.

Tips: Yin deficiency and heat syndrome are forbidden. (figure 2.10)

figure 2.11 prickly ash¹⁰

Prickly ash: It's suitable for people with cold stomach and abdomen, loss of appetite, vomiting of clear water, and bowel sputum; suitable for breastfeeding women to take food when weaning; suitable for middle-aged and elderly people, women with cold amenorrhea and cold dysmenorrhea, wind and cold arthritis edible; suitable for tsutsugamushi abdominal pain, lack of kidney yang, frequent urination. Tips: People with Yin strong; pregnant women. (figure 2.11)

figure 2.12 pepper¹¹

Pepper: Pepper can drive cold, stop phlegm, kill insects, increase appetite, promote digestion, but if the taste prefers spicy, it is easy to cause yin and yang disorders in the internal organs of the body and cause diseases of internal organs. From the perspective of traditional Chinese medicine, excessive consumption of pepper is easy to consume visceral secretions, resulting in a decrease in human immunity and a cold. The spicy heat of pepper can exacerbate the symptoms of dampness and heat in the body, usually manifested as skin acne, elevated blood pressure, increased hemorrhoids and nosebleeds.

Tips: Hyperthyroidism patients; nephritis patient; chronic gastroenterology, acne, dermatitis, tuberculosis, chronic bronchitis and hypertension; chronic liver disease. (figure 2.12)

2.4

COOKING METHODS OF CHINESE CUISINE

By analyzing and comparing the semantics of commonly used cooking vocabulary in English and Chinese, in general, Chinese is more colorful in cooking vocabulary than English, or Chinese is more vocabulary than English. This vocabulary caused by the difference in living environment, life experience and lifestyle reflects the cultural tradition of the Chinese nation that pays more attention to diet. We also found that, with a few exceptions, many of the cooking vocabulary in the two languages are strictly different. That is to say, quite a few words in English cannot find the exact corresponding words in Chinese (meaning that the semantic features are completely The same); vice versa. This is mainly due to the differences between the two ethnic groups in terms of historical traditions, natural environment, dietary values and eating habits.[18]

"煮" with boil

"煮" and boil are generally regarded as corresponding words in practical applications, but there are subtle differences in semantic features. In terms of heating method, the former is wider than the latter, the former has the meaning of "micro-fire", while the latter has no. For this, it is difficult to find out if it is not compared at the level of semantic components.

"煨" with simmer

From the perspective of semantic features, the two correspond exactly.

"炖" and stew

From the perspective of semantic features, the two are close to each other. A small difference is that the definition of stew emphasizes "covering the lid". However, common sense tells us that "stew" also needs to "close the lid", otherwise it is difficult to make meat Skillful. Therefore, in actual use, the two can be considered equivalent.

"蒸" with steam

"蒸" and steam have the same semantic features, so both is equivalent. (figure 2.13)



	Food	Inside the pot	In the water	Micro fire
煮	+	+	+	O
BOIL	+	+	+	-



	Food	Inside the pot	In the water	Micro fire	Long time
煨	+	+	+	+	+
SIMMER	+	+	+	+	+



	Meat	Inside the pot	In the water	Slow fire	Long time	Cooked	Cover tight
炖	+	+	+	+	+	+	O
STEW	+	+	+	+	+	+	+



	Food	Inside the pot	water vapor
蒸	+	+	+
STEAM	+	+	+

"+" means that the semantic feature is available;

"-" means that the semantic feature is not available, or is opposite to the semantic feature;

"O" indicates that the semantic feature is optional.

figure 2.13 boil&simmer&stew&steam

"烤" with roast

The two are comparable, but the semantic features are not completely consistent: the common feature is "close to fire or in the stove", but "baked" has a wide range of applications. In addition to being suitable for meat, it can also be used for "baked potatoes". Therefore, the two are only partially corresponding.

"炒" with saute

These two words are only approximate in semantics, not equivalent: the semantic features shared by the two are [+ food], [+pot], [+small oil],[+flipping

at anytime], and the different features are mainly the latter Emphasis is placed on "unfinished", which is used as part of the food pro-cessing process to prepare for the next step. The scope of this "fried" is wider than saute. In English, use stir=fry for "speculation".

"炸" and fry

"炸" and "fry" almost exactly correspond, so they are interchangeable use.

(figure 2.14)

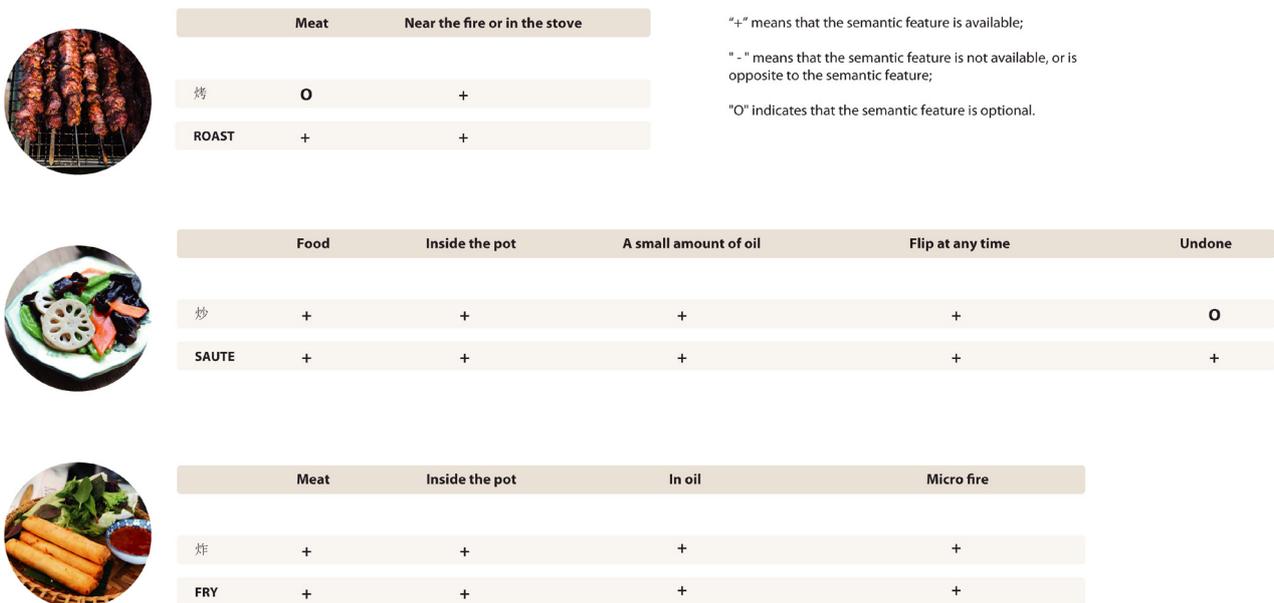


figure 2.14 roast&saute&fry

"煎" with pan-fry, sear, saute

These four words are comparable because they have the following:

Common features: [+ pot] and [+ small amount of oil]. From the table below:

It can be seen that the meaning of "fried" covers pan-fry, sear and saute.

At this point, english seems to be more subdivided.

"氽" with deep fry

The two are identical in semantic features, so they can be regarded as equal value.

(figure 2.15)



	Meat	Inside the pot	A small amount of oil	Micro fire	Undone
煎	O	+	+	O	O
PAN-FRY	O	+	+	+	-
SEAR	+	+	+	-	+
SAUTE	O	+	+	O	+



	Food	Inside the pot	A small amount of oil
氽	+	+	-
deep-fry	+	+	-

"+" means that the semantic feature is available;

"-" means that the semantic feature is not available, or is opposite to the semantic feature;

"O" indicates that the semantic feature is optional.

figure 2.15 pan-fry&deep-fry

2.5

DIETARY THERAPY

Dietary therapy is also known as food therapy. This therapy is a method of regulating the body's functions by regulating the individual characteristics of food through the guidance of traditional Chinese medicine theory, so as to maintain health or prevent disease. The theory of middle school explains that food is an edible substance that provides the body with all the nutrients needed for growth and healthy survival. In other words, the most important thing in all matter is food.

In fact, Chinese medicine has long recognized that food can not only provide energy to the body as a nutrient, but also treat and treat some diseases. Modern medical scientist Zhang Xichun pointed out in "Western Medicine" that patients who eat this kind of food can also fill the hunger and replenish their physical strength while curing the disease.

Skills that are good at using diet therapy are the traditional habits of the Chinese people. People are good at using diet to achieve the purpose of conditioning and strengthening the body. The history of Chinese food culture has a long history, and diet is a long-term behavior. In the past, people used diet to regulate their body functions and today, people choose to lose weight through diet, conditioning skin and maintaining hair. For modern people, diet therapy is the easiest and most effective way to stay healthy.

A more professional statement is that food is the best medicine for treating human diseases. First of all, diet is to choose food instead of medicine to treat various diseases of human beings, restore human body cell function and maintain good health. High-quality and balanced nutrients can increase cell nutrition and enhance metabolism, allowing cells to gain more energy. At the same time, food-rich nutrients can activate cellular immune genes, increase cellular immune activity and the number of immune cells, so that immune cells release a large number of specific immunoglobulins directly kill bacterial viruses that invade cells, and this specific immunity Globulin is a physicochemical substance that can be directly neutralized and removed before it is removed. Therefore, healthy

immune cells can directly phagocytose the metabolites of dead cells and cells, helping cells to restore physiological functions for the purpose of treating diseases. Hippocrates, the father of medicine, once said that all medical treatments are not as good as food. Food is the best medicine and means for humans to treat diseases. And he believes that the natural immunity in the human body is the true terminator of the disease.

"The homology of medicine and food" is one of the most valuable contributions to human beings in Chinese original medicine. Whole grains are beneficial to humans and harmless to the body, thus being sexually "medium." This is the most important standard for Chinese original medicine to choose food. This standard is based on the "people-oriented" basis, rather than on the objective basis of "testing" with experimental animals.

There is no clear separation between food and medicine in medical standards. When the food leaves the "middle" state slightly, it will cool (such as mung beans) or warm (such as cardamom). If it deviates from the "middle", then "cold" and "hot". If it is far away from "normal temperature", it is "medicine", which is the origin of cold medicine or hot medicine. "The cold is very hot and the cold is very cold." If you have a fever, you should use a cold medicine. If the

weather is not too hot, you don't have to take medicine. Use cold food (such as mung beans) to adjust; and vice versa. This is what we usually call the regulation of "food therapy." But there are two different concepts to distinguish between diet and medicated diet. The former uses food for body conditioning, while the latter is a delicious food that is usually classified as a "drug." For example, "Danggui Ginger and Mutton Soup" is both a medicine and a delicious dish. People with cold hands and feet can eat more, while warming up the body, can improve the body's immunity.

If the weather is extremely cold or extremely hot, it will be considered a "poison". For example, like the bean "croton", ordinary people only need to eat one tablet to cause diarrhea, because its properties are extremely hot, and Chinese medicine is often used to treat patients with extremely cold body. "The Yellow Emperor's Internal Classic" said that the treatment of diseases is "multi-drug attack", and that food, drugs and even poisons are homologous, because the purpose is the same: to restore abnormal self-organization ability to normal operation.[19]

2.5.1 About history

In the struggle against the natural world, primitive humans have gradually discovered that certain plants and animals can not only satisfy hunger, but also treat health and cure diseases, and have accumulated a lot of valuable experience. As society progressed, people recognized and began to use fire. "Liu Wen•Wenjia" records: "Wu Guoren's logs are fired, the meat is cooked, and there is no disease causing abdominal gastrointestinal tract. From then on, the eating behavior is different from the beast." The discovery of the fire is human nutrition and health care. A big step in the field of consciousness has far-reaching implications for the development of later diets.

With the advent of pottery and widespread use, food is not limited to "roasting with fire" and "roasting on stone", and with the advent of various cooking methods, the taste of food is becoming more diverse. There was also wine in this period. In Lu Shi Chun Qiu, there was a record of "Yi Di Zuo Jiu Jiu", but it was originally limited to the natural fermentation of food crops and fruits, and then there was a compound wine. And medicinal wine.

A minister of the Shang Dynasty, known as Yi Yin, first improved the cooking utensils, invented other methods of cooking such as soup, and created a diet for cooking and drinking. In the 5th century BC at Zhou Dynasty, there was a "food doctor" who specialized in diet nutrition and health care. Then, spices and foods such as vinegar, sauce, sugar, and tofu, which are seasonings have also appeared.

The "Nei Jing" in the Warring States period was China's first monograph on medical theory. Advocates of the "Su Wen·5 Long March Theory": "The food of six out of ten has weaknesses; seven out of ten foods have shortcomings; eight out of ten are normal; no nine tenths of food is beneficial. Bacon and vegetables, food and drink, don't hurt it." The book highly praises the role of diet health and has made significant progress in the theory of diet therapy.

After taking the Guizhi Decoction, Zhang Zhongjing, a famous doctor in the Eastern Han Dynasty, treated Guizhi Tang with "one liter of hot porridge to help drugs". During the medication, you should also avoid eating cold, sticky, spicy food. The importance of food and other effects.

Zhang Zhongjing, a famous doctor in the Eastern Han Dynasty, treated the Guizhi Decoction after taking the Guizhi Decoction to "help the drug with a lite

of hot porridge." During the medication, it should also be forbidden to eat cold, sticky, spicy food, etc. The importance of the role.

During the Sui and Tang Dynasties, there were many diets dedicated to the world. For example, Sun Sizhen's "The Golden Essentials" volume is devoted to food therapy. He advocates "for the medical practitioners, when they know the source of the disease, know what they are committing, treat the disease with food, and heal the healing, then "Life medicine" reflects the principle of "people-oriented". Since then, "Therapeutic Materia Medica", "Food Materia Medica" and other monographs have systematically recorded some food medicines and medicated diets. In the Song Dynasty, "The General Record of Shengji" set up a special diet to introduce the therapeutic methods of various diseases. In the Song Dynasty, Chen Zhizhi had a book on "Professional Pensions," which focused on the health care of the elderly and focused on the important role of diet and nutrition. The book "Drinking Meal", compiled by Yuan Sihui, was born in the Yuan Dynasty. It inherits the tradition of combining food, nutrition and medicine, and has made a lot of discussion on the diet of healthy people. Li Shizhen's "Compendium of Materia Medica" (figure 2.16) in the



figure 2.16 "Compendium of Materia Medica"¹²

Ming Dynasty is China's first book on food nutrition. It contains more than 300 kinds of cereals, vegetables and fruits, and more than 400 kinds of animal-made medicines. All the foods recorded in the book are can be used for the treatment of human diseases. In addition, Lu He's "Food Materia Medica", Wang Mengying's "Therapeutic Diet" and Fei Boxiong's "Fei's Food and Nutrition" have made the ancient Chinese diet health education fully developed and improved.

2.5.2 Human physique

Physical diet is based on the "nine physiques" of people and the "12 o'clock" daily diet.

The physique is formed by congenital inheritance and acquired, and the inherent and relatively stable characteristics of human individuals in terms of morphological structure and functional activities are related to psychological personality. The difference in individual constitution is manifested by some differences in response and adaptation to external stimuli under physiological conditions, as well as the susceptibility to certain virulence factors and the propensity for disease progression during the pathogenesis. Therefore, the study of physical fitness can help to analyze the occurrence and evolution of diseases, and provide a basis for the diagnosis and treatment of diseases.[19]

Nine physiques

Peace and quality (type A)

The overall characteristics: yin and yang qi and blood reconciliation, with a moderate posture, ruddy complexion, energetic and so on as the main features. Physical features: The shape is well-balanced and robust. Common manifestations: face color, skin color moisturizing, hair thick and shiny, eyes are fascinating, nose color is bright, smell is fluent, lip color is ruddy, not easy to fatigue, energetic, tolerant to cold and heat, good sleep, stomach is good, second is normal The tongue is reddish, the fur is white, and the veins are slow and powerful. Psychological characteristics: character is easygoing and cheerful. Incidence tendency: there are fewer diseases. Adaptability to the external environment: Strong adaptability to the natural environment and social environment.

Qi deficiency (type B)

The overall characteristics: its main performance characteristics are the lack of vitality, fatigue, shortness of breath, self-sweating and so on. Physical function characteristics: The muscles of the whole body are not soft. Common external manifestations: weak voice, shortness of breath, laziness, fatigue, lack of energy, easy to sweat, easy to feel thirsty, weak pulse. Psychological characteristics: Introverted personality, not adventurous. Incidence tendency: susceptible to colds, visceral droops and other diseases; slow recovery after illness. Adaptability to the external environment: intolerance to wind, cold, heat, and dampness. "The Golden Essentials" volume is devoted to food therapy.

Yang deficiency (type C)

The overall characteristics: lack of yang, the main characteristics of chills and cold, cold hands and feet and other cold performance. Physical characteristics: muscles are not soft. Common performance: The body feels cold, the hands and feet are not hot, likes a hot diet, lacks energy, five in the mouth, and the pulse is slow. Psychological characteristics: the character is more calm and introverted. Incidence tendency: susceptible to sipping, swelling, diarrhea and other diseases; adaptability to the external environment: resistance to summer is not resistant to winter; susceptible to wind, cold, and dampness.

Yin deficiency (type D)

The overall characteristics: the lack of Yin liquid, the main characteristics of dry heat, dry mouth, heart and foot heat. Physical characteristics: body shape is thin. Common manifestations: hand and foot heart heat, dry mouth and throat, dry nose, like cold drink, dry stool, red tongue and less Jin, pulse breakdown. Psychological characteristics: temperament, extroverted, lively. Incidence tendency: susceptible to fatigue, loss of sperm, innocence and other disease; adaptability to the external environment: resistance to winter is not resistant to summer; does not tolerate heat, heat, and evil.

Hygroscopic (E type)

The overall characteristics: phlegm dampness, The main feature of human obesity is abdominal fat, which is sticky and greasy in the mouth. The physical characteristics are as follows: body fat is more, and belly fat is soft. Common appearances are: facial skin oil, sweaty thick, chest tightness, phlegm, oral thick or sweet mouth, like fat, sticky sweet, greasy moss, pulse slip. Psychological characteristics: The character is gentle, steady, and more patience. Incidence tendency: susceptible to diabetes, stroke, chest disease and other diseases. Adaptability to the external environment: Poor adaptability to the rainy season and wet weight environment.

Wet heat (F type)

The overall characteristics: damp heat intrinsic, with the characteristics of damp heat such as surface oil, mouth bitter, yellow greasy moss and so on. Physical characteristics: medium or thin body. Common manifestations: scalp shine, easy to produce hemorrhoids, mouth bitter and dry mouth, heavy and drowsiness, poor stool or dry knot, short yellow urine, male easy scrotum moist, female easy to bring more, red tongue, yellow greasy moss, the number of slips. Psychological characteristics: easy to upset and impatient. Incidence tendency: susceptible to sores, jaundice, hot shower and other diseases. Adaptability to the external environment: In the late summer and early autumn, the air humidity is high or the environment is difficult to adapt to the season's climate.

Bloody sputum (G type)

The overall characteristics: poor blood flow, with blood stasis, such as skin color, tongue purpura and other characteristics as the main features. Physical characteristics: fat and thin are all seen. Common manifestations: dark complexion, pigmentation, prone to ecchymosis, dull lips, tongue or sputum, sublingual collaterals or thickening, pulse. Psychological characteristics: easy to trouble, forgetfulness. Incidence tendency: susceptibility syndrome, pain syndrome, blood syndrome, ect. Adaptability to the external environment: intolerance to cold evil.

Qi Yu (H type)

The overall characteristics: gas stagnation, with depression, anxiety and fragility as the main features. Physical characteristics: the body is thinner. Common manifestations: Depressed, emotionally fragile, unhappy, pale red tongue, thin white fur, pulse string. Psychological characteristics: Intrinsic instability, sensitivity and concern. Incidence tendency: susceptible to viscera, plum nuclear gas, lily disease and stagnation syndrome. Adaptability to the external environment: poor adaptability to mental stimulation; not suitable for rainy weather.

Special quality (type I)

General characteristics: congenital disorders, with physiological defects, allergic reactions, etc. as the main features. Physical characteristics: Allergic constitutions are generally no special; those with abnormal congenital endowments may have deformities or have physiological defects. Common manifestations: allergies are common asthma, wheal, itchy, stuffy nose, sneezing, etc.; patients with hereditary diseases have vertical inheritance, congenital, familial characteristics; those with fetal transmission have maternal influence on fetal growth and development related disease characteristics. Psychological characteristics: Different conditions vary with enamel. Incidence tendency: allergic persons are susceptible to asthma, urticaria, hay fever and drug allergies; hereditary diseases such as hemophilia, congenital stupidity, etc.; fetal diseases such as five late, five soft (soft head, soft items, soft hands and feet, soft muscles, soft mouth), solution to the skull, fetal shock and so on. Adaptability to the external environment: poor adaptability, such as allergies, poor adaptability to the allergic season, easy to cause sickness.

so on. Adaptability to the external environment: poor adaptability, such as allergies, poor adaptability to the allergic season, easy to cause sickness.

The distinction between the nine constitutions is conducive to more people to better distinguish their physical form, and to make meaningful therapeutic treatment for the disease. Nine physiques have been developed from the dialectical basis of Chinese medicine, but it is still not perfect. Man is a complex whole, not just a kind of physique can describe, for example, people with Yang deficiency will also have symptoms such as qi deficiency and Yin deficiency. Compliance with the dialectical treatment of Chinese medicine can better achieve healthy health goals. This also reminds everyone that diet is a culture of Chinese essence, not something that ordinary people can master. Please be cautious, not to listen to the wind. Rain is followed by so-called "experts" run. It is imperative to create a Chinese therapeutic system or cultural institution and service system.



figure 2.17 oysters¹³

2.5.3 Diet therapy classification

Oysters: Also known as soup, it is a thick soup made from meat, eggs, milk, sea-food, etc. It can be used as a meal or as an accompanying meal. Such as lily fungus soup, first prepare 50 grams of lily, 25 grams of white fungus, 50 grams of rock sugar, first put the lily, lotus seeds, white fungus three ingredients together into the water cooked, simmer on low heat until the soup is slightly thick, then Adding rock sugar, if you have a cold, you can cure the disease. It has the power to calm the mind and brain, take clothes every night before going to bed, cure insomnia, dream, anxiety and forgetfulness. (figure 2.17)

figure 2.18 tea¹⁴

Tea: Also known as “daily tea drink”, it refers to a crude product containing smashed or mixed medicines containing tea leaves or tea leaves (some drugs can be pulverized). Generally do not need harsh or bitter herbs. After the herbal tea is brewed with boiling water, it can be drunk like daily tea. For example, ginger sugar tea, which is used to treat cold and cold, is composed of ginger and brown sugar. Another example is chrysanthemum tea, that is, the after brewing with chrysanthemum water in Chinese herbal medicines, drinking more than once can cure dizziness, dizziness, and refreshing eyes. (figure 2.18)

figure 2.19 alcohol¹⁵

Alcohol: Also called as "medicine wine", a liquid dosage form that combines traditional Chinese medicine with wine, it is usually made by soaking or brewing. Chinese medicine believes that wine can pass the blood, go to the cold, and take the drug. Commonly used medicinal wines include alcohol, ginseng, antler, and body wine. However, the disadvantage of this medicinal liquor is that people who cannot drink alcohol or those with poor liver and kidney function should not use it. (figure 2.19)

figure 2.20 paste¹⁶

Paste: The paste is physically processed to break the food into a paste and matured for direct consumption. (figure 2.20)

figure 2.21 porridge¹⁷

Porridge: Porridge is cooked with rice and water. If you add the medicine, it is called medicinal porridge. You can also add the right amount of medicine to the porridge for the patient to take. It involves the dual effects of diet and medication. For example, dried ginger as a medicine is often used by Chinese medicine for warming and dispelling cold, but it has no nourishing effect. It is only suitable for the syndrome with cold; glutinous rice or other types of rice can strengthen the spleen and replenish Qi, however there is no dispelling cold power. If you use dried ginger and rice porridge to take food, it will become a recipe for warming the spleen and stomach, treating spleen and stomach deficiency. Another example is to use glutinous rice to boil porridge, add appropriate amount of onion and ginger during boiling, and cook it into a small cup of vinegar, which can treat colds and prevent colds. Adding medicine, especially tonic porridge, can be used as a breakfast or snack. It can be used for both hunger and food. Porridge is the easiest to eat, and has been the most common type of diet since ancient times. (figure 2.21)

2.5.4 Advantage of diet therapy

Traditional Chinese medicine has always emphasized that "medication is not as good as diet". Taking food as a medicine has the following outstanding advantages:

1. If people choose to use drugs to treat diseases for a long time, the body will produce various side effects and dependence on drugs after a long time and will affect the body's original health balance. In contrast, diet therapy is relatively safer and more effective for patients. The body has almost no side effects.

2. Dietary therapy is very popular in today's daily life because it is inexpensive and easy to achieve conditioning in the daily diet, which is not possible with expensive medical expenses.

3. The advantage of using food instead of medicine is that the patient is not suffering, so that people can get rid of the pain caused by the disease during the process of eating, and also avoid the injection of drugs, and even the pain caused by surgery. This is why it is not recommended to treat food with food. After all, diet is the best recipe. Verified diet therapy does have a lot of benefits for the prevention and cure of the disease. But objectively speaking, even if it has different advantages than drug treatment, it does not mean that diet can cure all diseases, and can not completely replace drug treatment.[20]



figure 2.22 black tea¹⁸

2.5.5 Method of diet therapy

BLACK TEA: Black tea can effectively prevent influenza. In Japan, experiments have shown that even if a black tea solution with a lower concentration than ordinary black tea is soaked in the virus-infected area for 5 seconds, the bacterial virus will be lost. To this end, Japanese scientists also suggest that it is a simple and effective method to prevent the occurrence of flu if people often drink black tea or insist on using black tea to gargle during the high season of influenza. (figure 2.22)

figure 2.23 grains¹⁹

VITAMIN B6: Often used to prevent and treat diabetes, there are reports that in France, Italy and Japan, the level of vitamin B6 in patients with diabetes is lower than the normal body level, if the patient provides 100 mg of vitamin B6 per day, after six weeks The symptoms of the test patient will be alleviated or disappeared, for example, the symptoms of numbness and pain in the limbs will also slow down. Eat more coarse grains and grains such as brown rice, eggs, cabbage, dry yeast, cabbage and other foods rich in vitamin B6, can also effectively prevent and treat diabetes. (figure 2.22)

figure 2.24 royal jelly²⁰

ROYAL JELLY: Royal jelly has a good anti-arthritis effect, 200 arthritis patients participated in the arthritis research test, and finally came to a conclusion: the arthritis patients who took royal jelly on time every day reduced their body pain by about 50%, the test showed patients The joint flexibility was improved by about 17% before the test. (figure 2.23)

figure 2.25 black garlic²¹

BLACK GARLIC: Black garlic is a healthy food. In the study of American scientists and Japanese scientists, black garlic is rich in amino acids, including 18 kinds of amino acids needed by the human body, and provides good anti-cancer and diabetes prevention for humans. Medical assistant function. (figure 2.24)

figure 2.26 milk²²

MILK: Milk has the effect of preventing and treating bronchitis. A survey found that 31.7% of smokers with chronic bronchitis never drink milk, while only 20% of people who smoke every day suffer from bronchitis. Thanks to the high amount of vitamin A in the milk, it can effectively protect the human bronchial and bronchial walls, reducing the risk of inflammation and disease. (figure 2.26)

figure 2.27 orange juice²³

ORANGE JUICE: Freshly squeezed orange juice can prevent urinary tract infections. The gynecological medical researcher has found that people who are prone to urinary tract infections can drink about 300 ml of orange juice for a long time, which can effectively prevent and treat urinary tract infections. The effect is more obvious than drinking pure drinking water. (figure 2.27)

figure 2.28 spinach²⁴

Spinach: It can be prevent retinal degeneration of the eye. Research by Harvard University in the United States shows that normal people eat 2 to 4 spines per week, which can effectively reduce the risk of retinal degeneration of the eye. The key to the protection of vision by spinach is that spinach contains carotenoids, which can prevent the damage of the sun on the human retina. (figure 2.28)

figure 2.29 punkin seeds²⁵

PUMPKIN SEEDS: Pumpkin seeds can prevent men from suffering from prostate disease. Research papers published by researchers have shown that eating 50 grams of unflavored pumpkin seeds per day can treat prostatic hypertrophy and significantly improve patients in the third stage of the disease. This is because the active ingredients in the pumpkin seeds can eliminate the swelling caused by the early stage of the prostate and prevent prostate cancer. (figure 2.29)

figure 2.30 potatoes²⁶

STARCHY FOODS: It can control bowel cancer. Studies have shown that the incidence of colon cancer in Australia is four times higher than that of Chinese people, mainly because Australians consume less starch. For example, butyrate in starchy foods such as bananas, potatoes and peas can directly inhibit the growth of colonic bacteria in the body, and foods with high starch content are effective inhibitors for controlling the growth of colon cancer cells. (figure 2.30)

figure 2.31 bitter gourd²⁷

BITTER GOURD: This is a special kind of Chinese food. It tastes bitter and uses this kind of medicine with cold and detoxification as the main prescription to treat various heat-toxin syndromes. Bitter melon has a very effective therapeutic effect on fever, thirst, heatstroke, dysentery, red eyes and erysipelas. In addition, it also has the effect of lowering blood sugar, enhancing human immunity and making the skin soft and smooth. (figure 2.30)

Introduction
Chinese food culture

HOLISTIC DIAGNOSIS OF TURIN CITY

Holistic diagnosis of WangJiao restaurant

Analysis of problems

Analysis of opportunities

Systemic project

Outcomes

Conclusion

HOLISTIC DIAGNOSIS OF TURIN CITY



3.1

GEOGRAPHY

As the capital of Piedmont, Turin is also a major town in the province. It is located at the confluence of the Dora Riparia and Po rivers, at an altitude of 239 meters and an area of about 130,2 square kilometers. Its population is about 900,990.[1]

The entire city of Turin is located on the western border of Pianura Padana (45°04' north latitude), the Alps on the west and the hills on the east. Turin has a great location, close to the highway exits of the Alpine Tunnel and the mountain pass, and in the past it was also an important trading and strategic center of the city. (figure 3.1)

The city keeps the road network inherited by the Romans and it was enlarged and modernized again by the Savoy dynasty, and from the 16th century, they gave to their city a rational and precise urbanistic organization, perfected and completed in the following centuries.

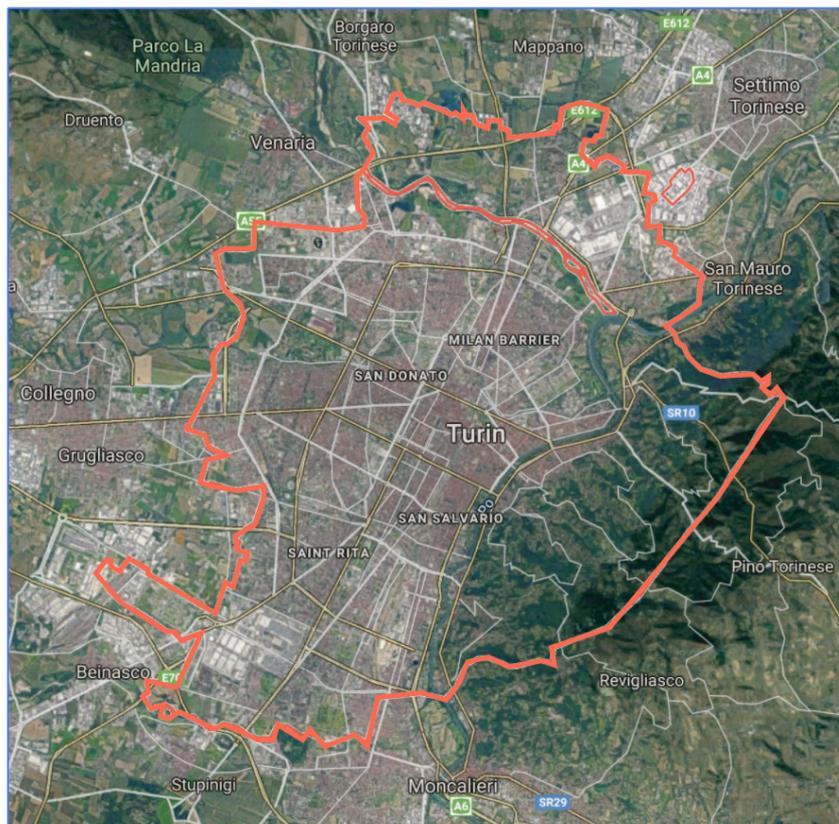


figure 3.1 Turin topographic map¹

¹ Picture from: <https://www.google.com/maps/place/%E9%83%BD%E7%81%B5%E7%9C%81%E9%83%BD%E7%81%B5/@45.0672987,7.5996451,11.74z/data=!4m1!3m1!7!3m6!1s0x47886d0cc3ed5cdf:0x405e67d473c94e01z26Y0954G113b18m2!3d45.0703393!4d7.686864!3m4!1s0x47886d126418be25:0x8903f803d69c77bf!8m2!3d45.0703686!4d7.6868248>

The centre of the city is Piazza Castello, and the main historical monuments of Turin revolve around the city centre. The residential area is distributed along the Po River (Po) and the hills on the right side of the river, and there is a bridge connecting the two sides of the river. Turin is also an industrial city. Its industrial areas are located in the northern, western and southern suburbs. Stay away from the construction of residential areas.[2]

Turin is a humid subtropical climate whose urban climate is different from the Mediterranean climate of the Italian coast.[3]

The climate in Turin is moderately cold in winter, but the air is dry, the area in the hills feels milder in the summer, and the human body in the plains feels hotter. Rainfall is mainly concentrated in spring and autumn each year, and is often accompanied by thunderstorms, with the hottest summers but low frequency of rain. Since the urban plain is at the end of the Susa Valley, there is sometimes a thick smog on the plain, but it is rare in the city. (figure 3.2)[4]

Influenced by the direction of the monsoon, the location on the eastern side of the Alps makes the climate drier than the west.

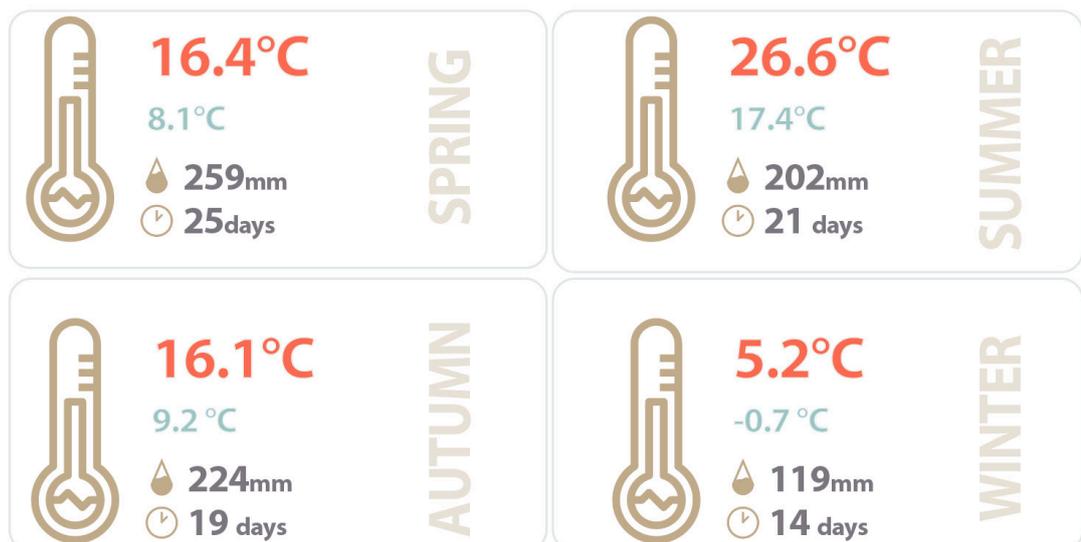


figure 3.2 climate change

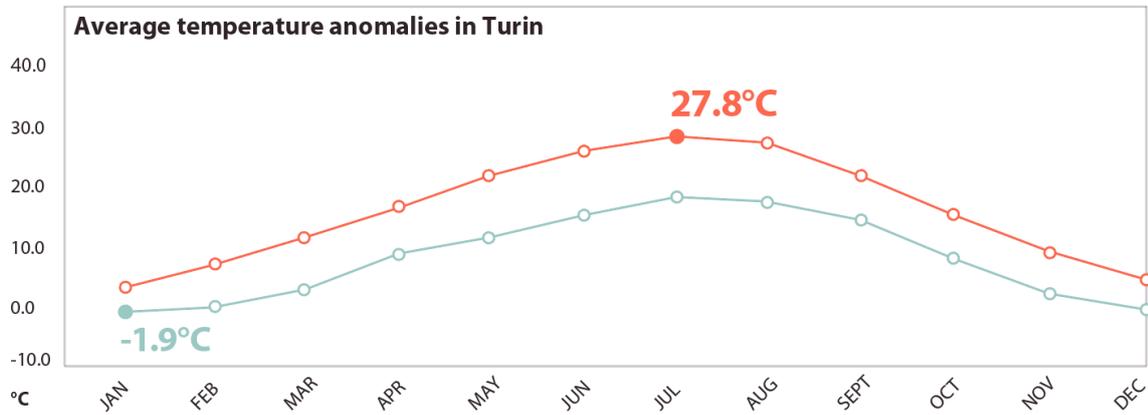


figure 3.3 average temperature anomalies in Turin

According to the climate of Turin 1961-1990, the highest temperature in spring is 16.4 degrees, the lowest temperature is 8.1 degrees, rainfall is 259 mm, rainfall days are 25 days, summer maximum temperature is 26.6 degrees, and the lowest temperature is 17.4 degrees. It is 202 mm, the number of rain days is 21 days, the highest temperature in autumn is 16.1 degrees, the lowest temperature is

9.2 degrees, rainfall is 224 mm, rainfall days are 19 days, winter maximum temperature is 5.2 degrees, and the lowest temperature is -0.7 degrees. The amount is 119 mm and the number of rain days is 14 days. The annual average temperature is 27.8 degrees and the minimum temperature is -1.9 degrees. [5](figure 3.3)

3.2

AGRICULTURE

The land area of Turin is 299,464.28ha, 95% is agricultural area, and 5% is other use area.

86% of the agricultural area is agricultural acreage, 1% is the forest connected to the farm, 8% is the wood planting area,

2% is the unused agricultural area, and 3% is the other area.

48% of the cultivated area (108,018.73 ha): cereal accounted for 76.6% (82,725.04ha), forage alternate accounted for 15.5% (16,732.42ha), industrial plant accounted for 15.5% (3741.42ha), land At rest accounted for 2%, vegetables accounted for 1.7% (1862.67ha), the remaining dried vegetables 190.4ha, flower and plant 201.28ha, seeding 109.97ha, potato 220.7ha; 1.9% woody agricultural crops (4936.18ha): fruit tree 60% (2953.12ha), vine accounted for 27% (1339.81ha), the remaining nursery 370.12ha, olive 183.45ha, other woody crops 82.33ha. 50% permanent meadows and pastures; 0.1% family gardens.

TOTAL AREA

299,464.28 ha.

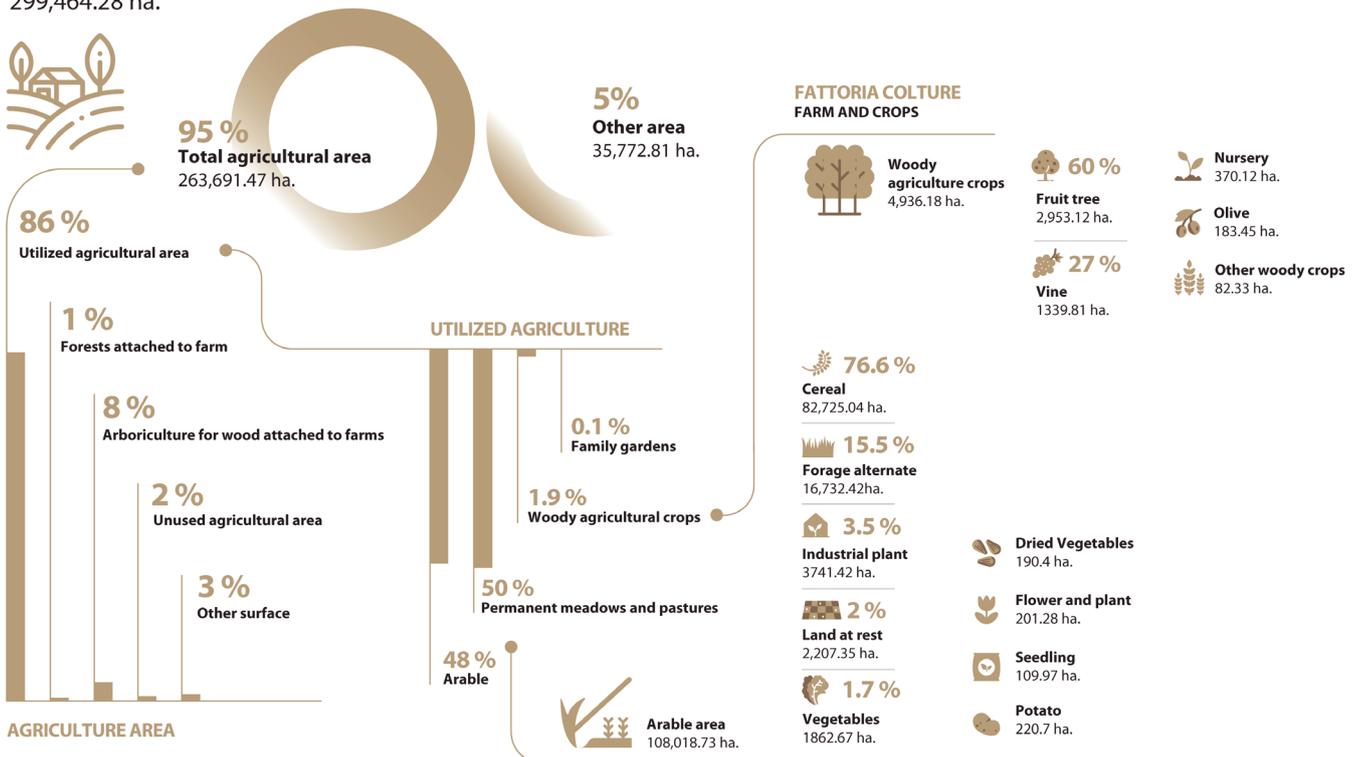


figure 3.4 agriculture

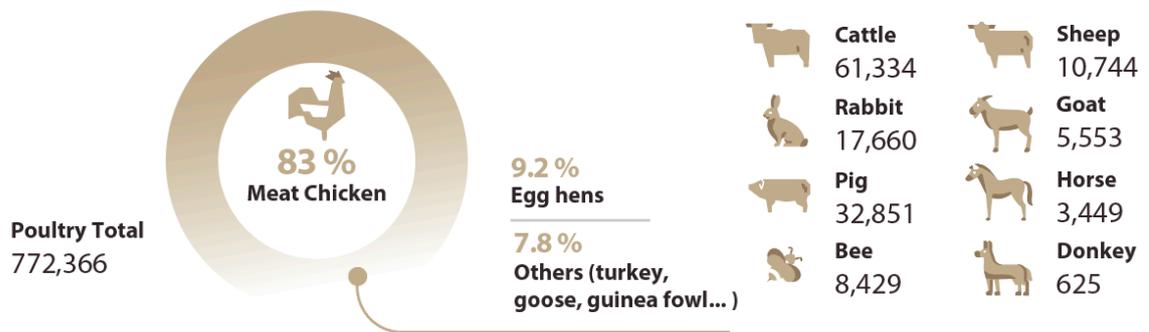


figure 3.5 breeding

The total number of poultry is 772,366, and the main poultry is about 631,721, of which 83% are meat chicken, 9.2% are laying hens, 7.8% are other breeds, cattle is about 61334, rabbit is about 17,660,

pig is about 32,851, bee is about 8429, and sheep is about 10,744. , goat about 5553, horse about 3449, donkey about 625. [6](figure 3.5)

3.3

CULTURE

The earliest inhabitants of Turin date back to the 3rd century BC, when it was a small village occupied by the Celtic-Ligurian tribe belonging to the Sarasians. They call themselves the Taurines and named their settlements "Taurasia." [7] In the first 218 years, some residents and the Roman Union jointly opposed the Carthage army led by Hannibal. Because the location of Turin is very important, it is the first city to face the Italian peninsula after crossing the Alps.[8]

The true origin of the city dates back to the ancient Roman barracks (the first 58 years) built by the Caesars during the Gaul War, known as the "Castrum Taurinorum". For the first 29 years, it became a colony of the Roman Empire, the city name is "Augusta Taurinorum" (Augustus of the Tolini, Tau is the meaning of "mountain"). Gradually the name of the city is abbreviated as Taurinum, and Taurinos, which evolved into the current Torino, which are derived from the word Taurini. At that time, Turin had nearly 5,000 people and lived in the city walls. During this period, a well-planned city gradually developed and built a street like a chessboard. This urban layout has remained so far.

The current city of Turin - Italy's third largest city, the capital of the Piedmont region, Europe's largest car producing area, or a historic old city, preserves a large number of classical architecture and Baroque architecture, its culture and history is very rich. There are numerous art galleries, church palace opera houses, square parks, courtyards, theatres, libraries, museums and other places of interest. Turin is world famous for its Baroque, Rococo and neoclassical French architecture.

Representatives of ancient Roman architecture preserved in the city are: Avamposto taurino del Bric San Vito, Parco archeologico della Porta Palatina e delle mura romane, Resti del Teatro romano, Complesso archeologico del Duomo, Medieval Renaissance buildings are: Palazzo Madama e Casaforte degli Acaja, La chiesa di San Domenico, Li Duomo, Santuario della Consolata, Representative Baroque and neoclassical buildings have Il Museo nazionale del cinema, la rinascimentale Cattedrale di San Giovanni Battista, La Galleria Sabauda and Il Museo Egizio.(figure 3.6)
 The ten main festivals in Turin are: Luci d'artista(during the Christmas period); Artissima (November);Salone internazionale del libro (May); Cioccolato (annual); Share festival (November); Biennale democrazia (aprile); Festival delle colline torinesi (July-aug); Torino comics (in spring); View conference (in autumn). [9](figure 3.7)

ANCIENT AND ROMAN TURIN



- Avamposto taurino del Bric San Vito
- Parco archeologico della Porta Palatina e delle mura romane
- Resti del Teatro romano
- Complesso archeologico del Duomo

MEDIEVAL AND RENAISSANCE TURIN



- Palazzo Madama e Casaforte degli Acaja
- La chiesa di San Domenico
- Li Duomo
- Santuario della Consolata

BAROQUE AND NEOCLASSICAL ERA



- Il Museo nazionale del cinema
- la rinascimentale Cattedrale di San Giovanni Battista
- Il Museo Egizio
- La Galleria Sabauda

MARKETS



- 49**
- Via Onorato Vigliani
 - Piazza Benfica
 - Corso Svizzera
 - Corso Racconigi
 - Piazza Barcellona

THE MOST FAMOUS MARKET



Porta Palazzo

figure 3.6 monuments and places of interest

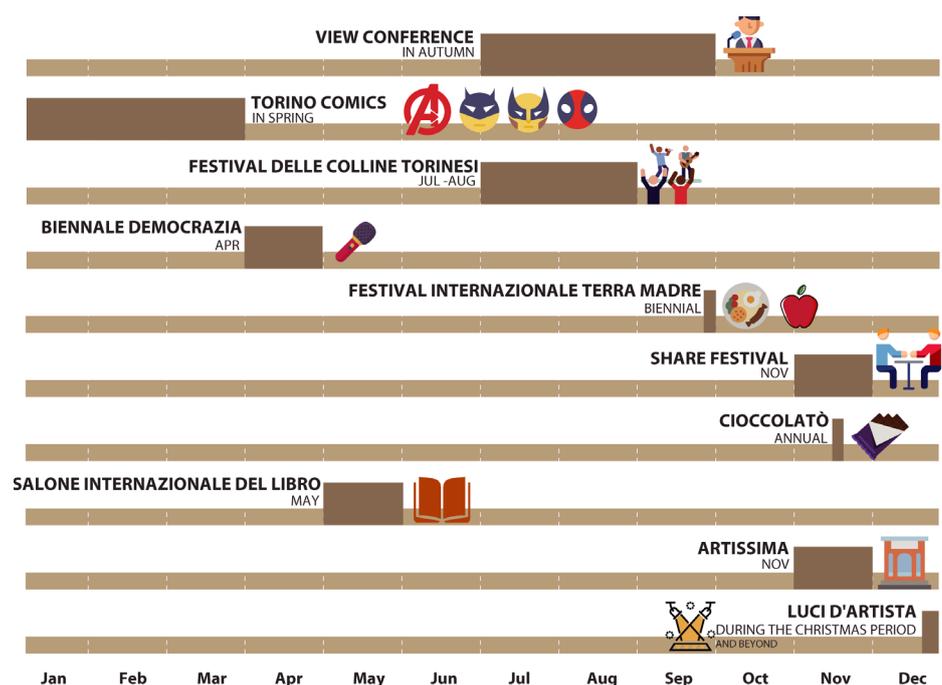


figure 3.7 main culture events

3.4

ECONOMIC &TRAFFIC DISTRIBUTION

Turin is one of the important industrial cities in Italy and even Europe. It is also one of the four largest automobile cities in the world. A number of automotive brands, including the Fiat Group, are headquartered in the city, and Airbus' engine manufacturing base is also located in Turin. The headquarters of many of the world's top 500 companies are also located in Turin, and the electronics processing industry accounts for the vast majority. In addition, Turin is one of the central cities for electricity steelmaking in Europe.

Turin, together with its city circle, is second only to Rome and Milan in economics and third in Italy. In 2004, Turin's GDP was 25.439 billion euros (2.2% of the country), while the entire city circle totaled 44.146 billion euros (3.8% of the country). [10] Urban per capita income reached 29,400 euros, and per capita income in urban circles was 27,300 euros. According to the Ministry of Economy and Finance, Turin's taxable income was 12.455 billion euros, ranking third in Italy. [11] Turin and Turin are also on the top of the Italian export list, the second largest province in Italy, accounting for 5.2% of the country. [12]

FOREIGN TRADE

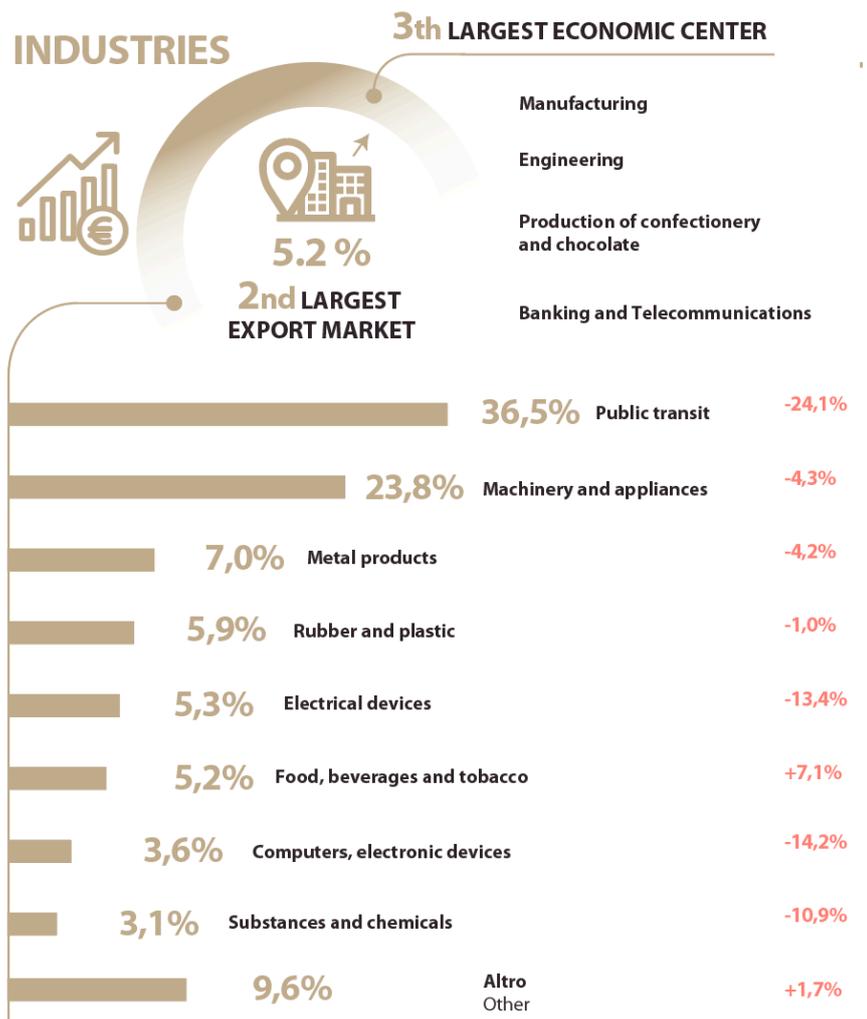
In 2018, Turin sales abroad (equal to 19.5 billion) fell by 12.5% compared to the previous year, a lower performance compared to Piedmont (+ 0.4%) and Italian (+ 3%); imports, on the other hand, remained almost stable at € 18.1 billion.

The import-export analysis shows that the trade balance, although positive, worsened significantly, going from +4 billion euros in 2017 to +1.4 billion in 2018.

The means of transport stand as the first item of the Turin export (36.5% of the total), confirming however the decrease found for the whole 2018 of the foreign sales (-24.1%). Analyzing the main sectors, it can be seen that both vehicles (45.4% of the transport equipment sector), and parts and accessories for motor vehicles (39.8%) recorded a decrease, compared to 2017, respectively, of -33, 2% and -18.1%.

Exports of machinery and appliances are also reduced.(-4.3%; 23.8% of total sales), metal products (-4.2%, 7.0%) and electrical appliances (-13.4%, 5.3%). On the other hand, the food, beverage and tobacco sales sector showed an increase of 7.1%.(figure 3.8)

As far as the commercial partners are concerned, what is confirmed in 2017 is confirmed: the main recipient countries of the Turin products are, in order of importance, Germany, France and the United States. If for Germany (-4.4%) and for the United States (-6.1%) there has been a decrease in exports, on the contrary, France shows a slight increase (+ 0.4%). [13]



Exports in the province of Turin by sector of activity(2018)

figure 3.8 industries

Turin public transport statistics

People spend an average of 65 minutes on weekdays commuting in Turin, with an average of 65 minutes commuting time. Every day 14% of public transport rides take more than 2 hours. The average time for people to wait for public transportation at a station or station is 14 minutes, while 19% of riders wait an average of more than 20 minutes a day. The average distance traveled by people on a single trip by public transport is usually 5.9 km, while the one-way travel distance of 9% is 12 km. There are six highways in Turin, which are A4, A55, E612, E70, E717, SR10.

The A4 motorway, also known as the "most prestigious" highway (Serenissima, taken from the official name of the former Venetian Republic), is a highway connecting Trieste, the second largest city in northern Italy, to the eastern border city of Trieste. The total length is 517 kilometers. In the middle of the country through the economic center of Milan, Bergamo, Brescia, Verona, Vicenza, Venice and other important cities. (figure 3.9)



figure 3.9 transportation

3.5

POPULATION

The earliest inhabitants of Turin date In 2015, the total population of Turin was approximately 878,735[14], a significant increase from the number of oral censuses six years ago. This is because the immigrant population from southern Italy and abroad is increasing. According to research, foreigners account for about 13.5% (118.683) of the total population, the largest of which is Moroccan (28,146), followed by Chinese (12,947), followed by Albanians (10,167) and The Peruvians (9,248) occupy the top five in the foreign population. [15] Like many northern cities in Italy, Turin has a high proportion of pensioners. About 18% of the population is under 20 years of age, while 22% are over 65 years of age. The total population of the city of Turin ranks fourth in Italy. [16](figure 3.10)

TOTAL POPULATION 878,735

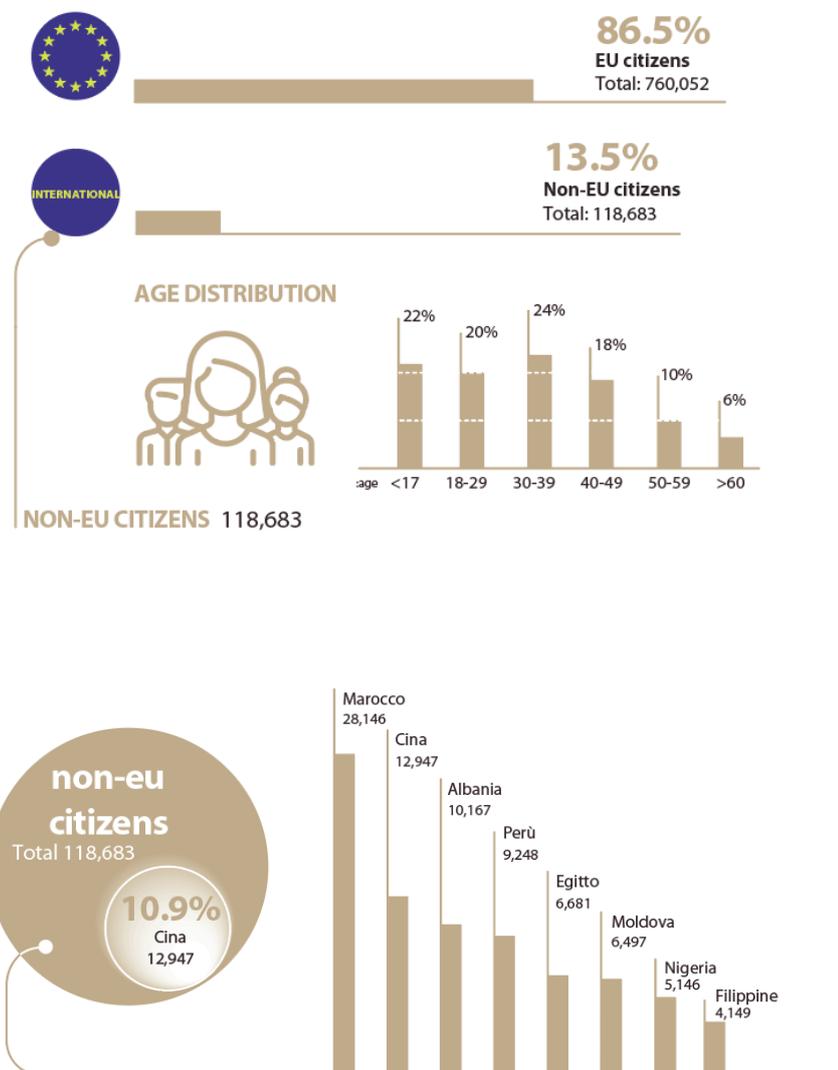
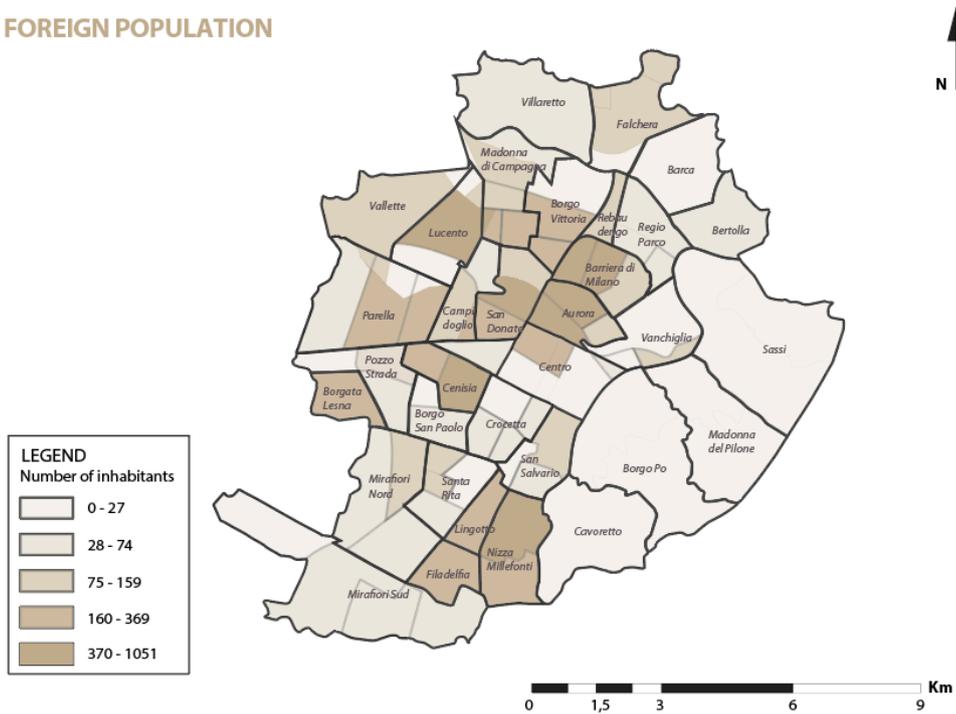


figure 3.10 population

Foreigners mainly live in the city center AURORA, BARRIERA DI MILANO, SAN DONATO, CENTRO, CENISIA, LUCENTO and in some areas in the south like LINGOTTO, FILADEFIA and NIZZA MILLEFONTI. The Chinese mainly live near the PORTA PALAZZO in the city centre.(figure 3.11)

FOREIGN POPULATION



CHINESE POPULATION

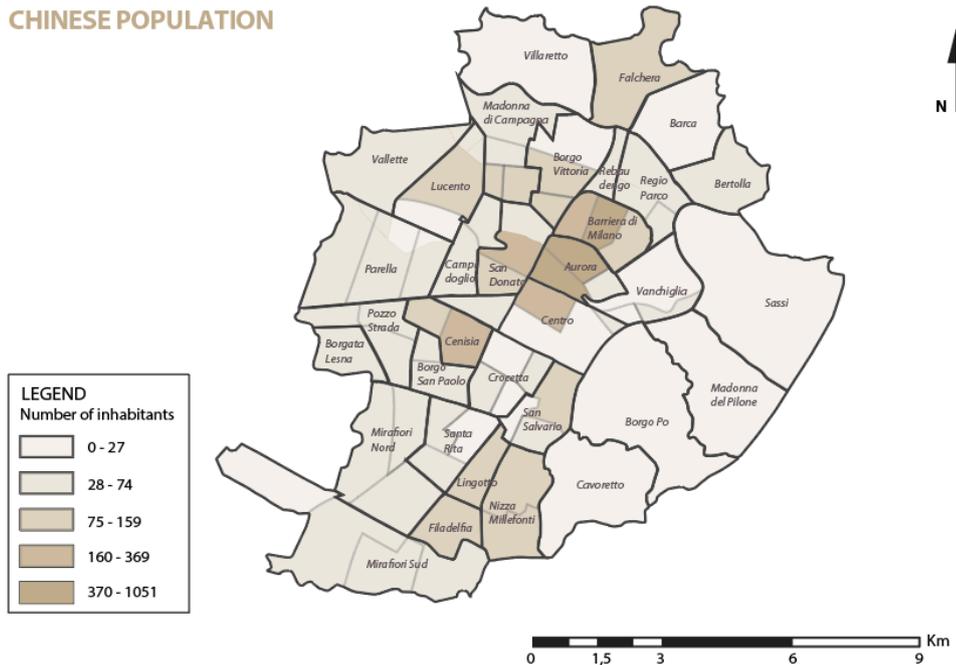


figure 3.11 Population Distribution²

2 Picture from Popolazione straniera serie storica, 2011, Atlas Torino&Geografia delle principali nazionalità di provenienza (2015) - valori assoluti, Atlas Torino

3.6

GARBAGE CLASSIFICATION

The total amount of garbage in Turin is 439,496.715 tons, the garbage recovery rate is 44.67%, and the amount spent on garbage disposal costs is 193.40 euros. For unsorted garbage: Cost of collection and transportation is 16.75Euro /inhabitant * year, Cost of disposal is 31.81 Euro / inhabitant * year, Cost of management is 48.57Euro / inhabitant * year ; for sorting garbage: Cost of colle-

ction and transportation is 37.36 Euro / inhabitant * year, Cost of disposal is 15.71Euro / inhabitant * year, Cost of management is 53.07Euro / inhabitant * year.[17]

According to the 2017 ISPRA, the total amount of municipal waste in Turin City was 439.496,715, which was 44.67%, which was 2.62 percentage points higher than that of the previous year. The classified garbage was 196.305, 6 tons, up 16,420.9 tons from the previous year. . The top five categories are: paper and paperboard account for 31%, organic waste accounts for 25.6%, glass products account for 13.3%, wood products account for 12.3%, and plastics account for 8.3%.Bulky mixed for 2.37%,Street cleaning to recuper for 2.25%,waste form C&D for 1.57%,WEEE for 1.31%,textiles for 0.86%,metal for 0.71%. [18] (figure 3.12)

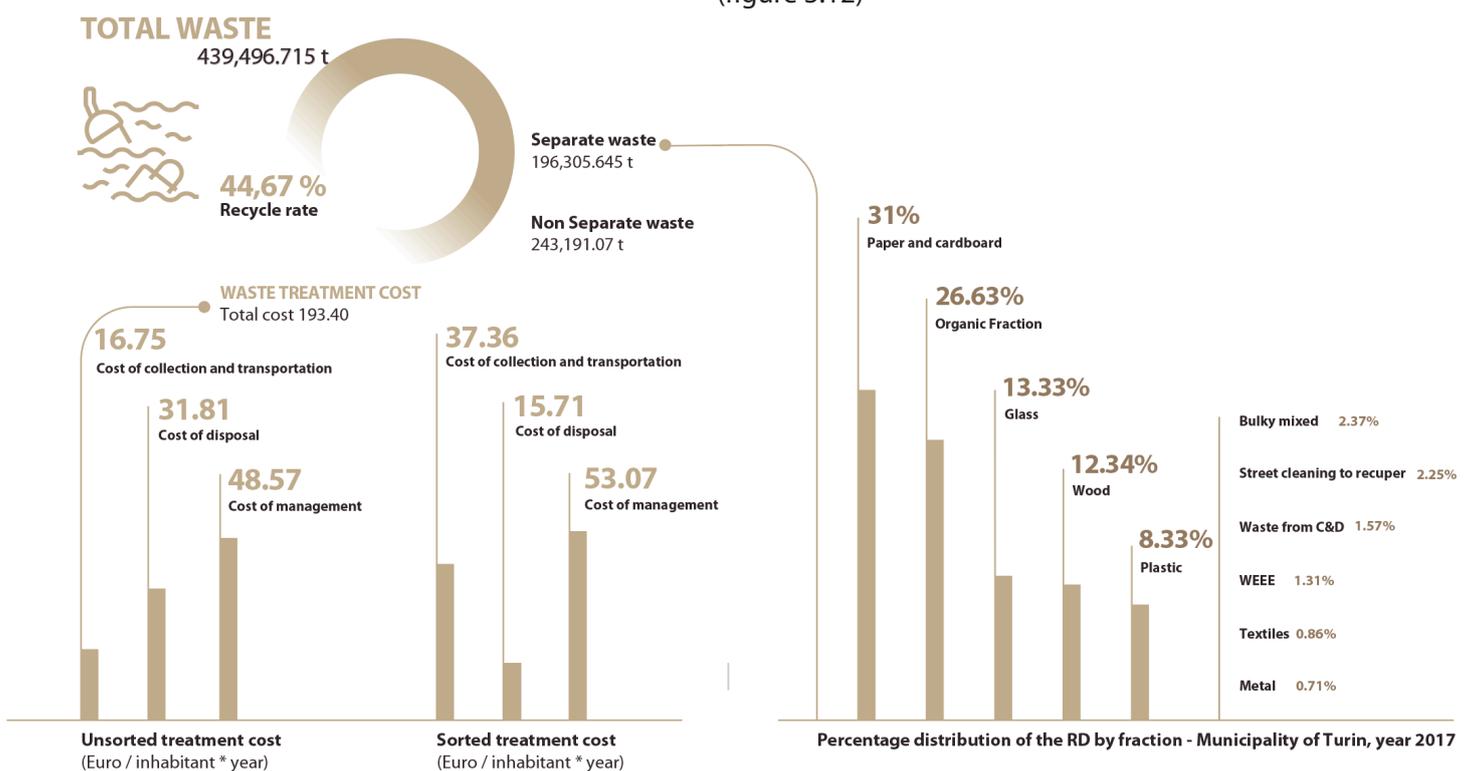


figure 3.12 waste

HOLISTIC DIAGNOSIS OF WANGJIAO RESTAURANT



- Introduction
- Chinese food culture
- Holistic diagnosis of Turin city
- HOLISTIC DIAGNOSIS OF WANGJIAO RESTAURANT**
- Analysis of problems
- Analysis of opportunities
- Systemic project
- Outcomes
- Conclusion

4.1

WANGJIAO CHINESE RESTAURANT

Our research restaurant is WANGJIAO milan restaurant located in CORSO SAN MARTINO, 4 .TORINO, a chain of Chinese restaurants with five stores in Milan and Turin. The WANGJIAO milan restaurant started in VIA PADOVA in Milan in 2009. 3. MILANO, after ten years of development to the current chain of

brands, the restaurant's dishes and decoration and dining environment are very elegant, the chef is also a senior chef from China, trying to restore the taste of China to each customer in a foreign country, the restaurant's recipes Every six months, we will adjust according to the customer's order and recommendation index to ensure the best customer experience.

In addition to the dine-in, the restaurant is also offers take-out and packing services. The menu of the restaurant is based on the traditional classification of Chinese food. There are cold dishes, hot dishes and staple foods, snacks and desserts. The menu is divided into head meals according to the diet of foreign customers. A first dish, a second dish, a dessert, to correspondence. (figure 4.1)

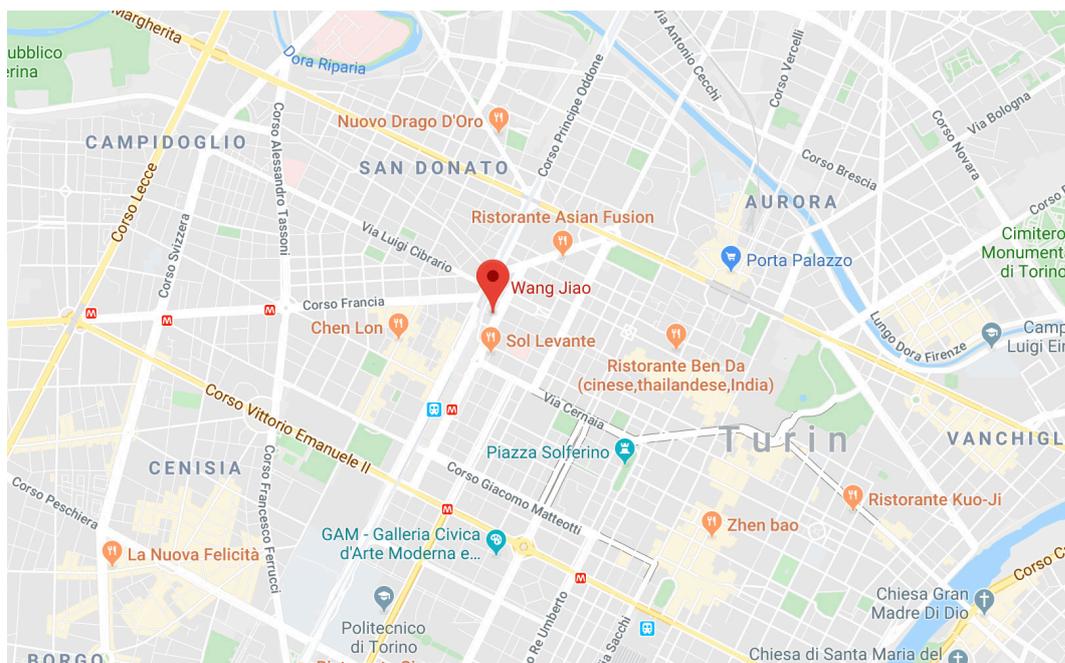


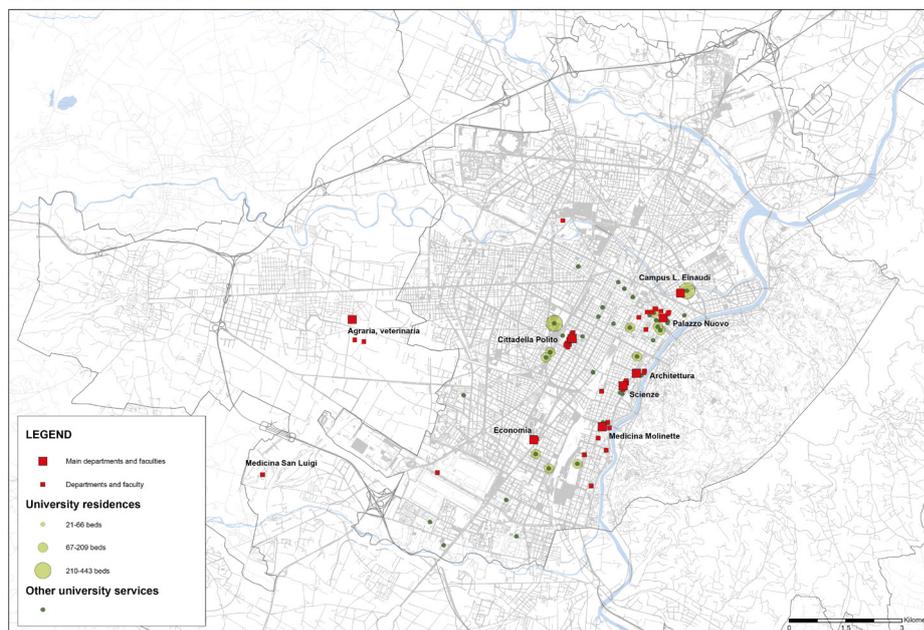
figure 4.1 map of WangJiao¹

¹ Picture from: <https://www.google.com/maps/place/Wang+Jiao/@45.0756585,7.6668292,17z/data=!3m1!4m5!3m4!1s0x47886d08d8fac1c5:0xdf14a9332b1fd29818m2!3d45.0756585!4d7.6690179>

The geographical environment of the restaurant is very convenient. It is located near the city center. It can be directly connected by bus, tram and subway. There is a railway station nearby so there is a lot of traffic. There are also many schools (kindergartens,

elementary schools, junior high schools, high schools, and universities) as well as shops and companies in the area near the restaurant, with a considerable number of potential customers.

MAP: UNIVERSITARY SYSTEM



MAP: SCHOOL SYSTEM

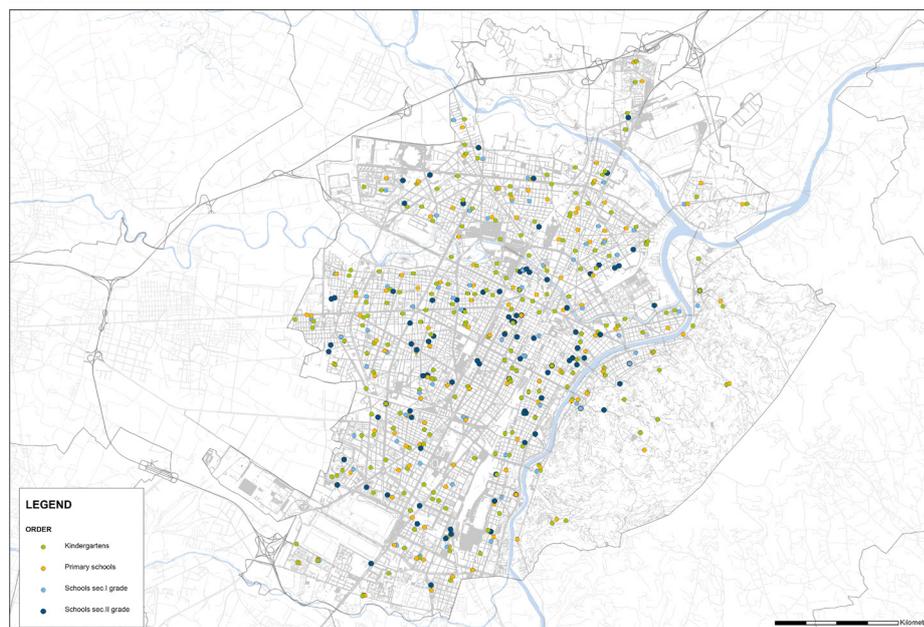


figure 4.2 map of school system²

² Picture from <https://www.google.com/maps/search/university/@45.0544262,7.6212851,12.66z>; <https://www.google.com/maps/search/high+school/@45.0562895,7.6467232,13.56z>; <https://www.google.com/maps/search/primary+school/@45.0682928,7.6511732,14.04z>; <https://www.google.com/maps/search/kindergarten/@45.0563667,7.6466069,13z>; <https://www.google.com/maps/search/university+residences/@45.0624435,7.6324745,13z>; <https://www.google.com/maps/search/main+department+and+faculies/@45.0625541,7.6323028,13z/>

4.2

INTERVIEW

In the research section, desk research and field research are the most effective and convenient way to get information about the restaurants we study. First, we first get the basic geographic information of the restaurant through desk research, as well as on the major social networks. Secondly, we went to the local interview research and questionnaire survey methods to help us understand the actual situation of the restaurant operation, and obtained a lot of first-hand information through our observations. These two types of research are carried out almost simultaneously, in order to complement each other and verify that the existing data is authentic.

Desk research

First, we look for information about the WANGJIAO restaurant on social networks (such as Facebook, Google, etc.). After dining at the restaurant that more and more young customers will be assessed through social networks. This information appears on the web without being processed by the restaurant. Its information is more realistic and will help us obtain a more objective and customer-oriented user experience. According to Google's records, we can see that the busy hours of the restaurant are from 12 o'clock to 3 o'clock in the afternoon, from 6 o'clock to 10 o'clock in the evening, the number of dining customers in the evening is far more than that of the noon meal, and the meal time is longer. We selected some customer's comment from the Google Network as a reference.

Customer's comment on Google³:

Dario : *"Cercavo un posto dove mangiare roba tipica della città ma erano praticamente tutti chiusi. Avevo orari limitati e non potevo allontanarmi dalla stazione così abbiamo deciso di pranzare qui. Niente male sul serio. Buono il cibo, posto molto carino, personale gentile. Unica pecca forse è l'olio, un po' troppo per i miei gusti (in tutte le pietanze che ho avuto modo di assaggiare). Un filo in meno e sarebbe perfetto (per il mio palato, sottolineo).*

Bravi." (3 months ago)

"I was looking for a place to eat stuff typical of the city but they were practically all closed. I had limited hours and could not get away from the station so we decided to have lunch here. Not bad at all. Good food, very nice place, nice staff. The only flaw is perhaps the oil, a little too much for my taste (in all the dishes I have had the opportunity to taste). One less thread and it would be perfect (for my palate, I stress). Well done." (3 months ago)

Marco: *"Ristorante cinese molto buono. Ci sono diversi piatti sul menù e molti sono da provare. Ho trovato buonissima la "padella calda con manzo", veramente buonissima, da provare. Per quello che si mangia il prezzo non è alto. Gli ingredienti usati sono ottimi. Personale cortese ed educato. Ristorante davvero buonissimo!"* (3 months ago)

"Very good Chinese restaurant. There are several dishes on the menu and many are worth trying. I found the "hot pan with beef" to be very good, to try. For what you eat the price is not high. The ingredients used are excellent. Courteous and polite staff. Really yummy restaurant!" (3 months ago)

Alberto: *"Ristorante cinese che oltre ai soliti offre una scelta di piatti particolari*

³ <https://www.google.com/maps/place/Wang+Jiao/@45.0756585,7.6668292,17z/data=!3m1!4m3!3m4!1s0x47886d08d8fac1c5:0xdf14a9332b1fd298!8m2!3d45.0756585!4d7.6690179>

veramente sfiziosi, in particolare la "pentola di fuoco" che mi sento di consigliare. I prezzi sono superiori a quelli che normalmente vengono praticati in questo tipo di ristoranti ma ne vale la pena. Unica cosa migliorabile è il servizio ma forse non è così importante!" (5 months ago)

"Chinese restaurant that in addition practiced in this type of restaurants but it's worth it. The only thing that can be improved is the service but maybe it's not that important!" (5 months ago)

Anouk Borelli: *"Non il solito cinese. Piatti originali come la "pentola di fuoco" carne o pesce serviti in un wok posizionato su un fornello tipico della cucina dello Sichuan. Cibi piccanti e non. Ottima alternativa ai soliti cinesi."* (11 months ago)

"Not the usual Chinese. Original dishes like the" pot of fire "meat or fish served in a wok placed on a stove typical of Sichuan cuisine. Spicy and non-spicy foods. Excellent alternative to the usual Chinese." (11 months ago)

Field research

Before preparing for the part of field research, we listed the following questions so that we can better understand the actual state of the restaurant:

1. What are the raw materials for the restaurant, how do you choose it, and where are you transported from it? Are there any special ingredients imported from China?
2. What are the inputs to the restaurant, and what is the number of them?
3. What are the output of the restaurant, what is their output and how is the restaurant handled?
4. What is the consumption of energy in the restaurant (such as water, electricity, gas)?
5. How to deal with organic food waste? Is the fried oil treated separately? What is the quantity? How to deal with it?
6. What are the daily business processes of the restaurant?
7. Is the main population a student or a working person? What is the age? What is the ratio of Chinese to the foreigners?
8. What are the questions customers often ask when ordering food?
9. What is the most popular dish in the restaurant?
10. Is the menu in the restaurant completely made according to the taste of the Chinese, or is there some improved dish to suit the taste of foreigners?

11. Will the restaurant change menus regularly? How often?
12. Will the restaurant be in an equal position? In general, how long is the equivalence time?
13. What is the difference between Chinese customers and foreign customers when ordering food?
14. What is the acceptance of Chinese food by foreign customers? What special needs do they have? For example, the chopsticks will be used? Can they accept spicy food? Can they accept dishes with bones?
15. What is the amount of organic food waste after Chinese customers and foreign customers dine?
16. What is the number of takeaways in the restaurant?

During the research, we found that most of the customers who ate at the restaurant were foreigners, and the amount of food left at the table after the customer ate was huge. The waiter served according to the eating habits of the customers. For example, when the foreigner dining, there is no special requirement. According to the eating habits of the West, the serving will be served in the order of the first meal, the first course, the second dish, and the dessert coffee. For the Chinese, the food will be served at the same time. When the customers leave, they will clean up the

table together. After collecting the dishes, the cleaning agent will be used to wipe the table in time to maintain a good restaurant hygiene and provide a clean dining environment.

Through observation the customers we found that after eating, there are many types of organic foods left on the table, except for bones of animal, fish bones, decorative materials, peels and other inedible food residues, and also are dipping sauce, vegetables or meat or staple food. There are surpluses of varying degrees, these diners are both Chinese and foreigners.

The number of people dining in the restaurant is more than two persons per table, and each table will average 3-4 dishes. When foreigners order food, they spend more time watching menus and can't read the dishes.

(With the permission of the restaurant, we took some photos of the organic food after the customer finished eating.) We went to the restaurant on weekdays and at noon on weekends to go to the restaurant for random research. We talked with the restaurant waiter and randomly communicated with the restaurant's customers to get timely information and sorted as follows (figure 4.3):



figure 4.3 photo of WangJiao restaurant

Interview with Restaurant staff:

There are six halls in the restaurant, five of which have nine tables, each table can accommodate two people, and one hall has three large round tables, each of which can accommodate more than 8-10 people. The entire restaurant can accommodate 117 people at the same time.

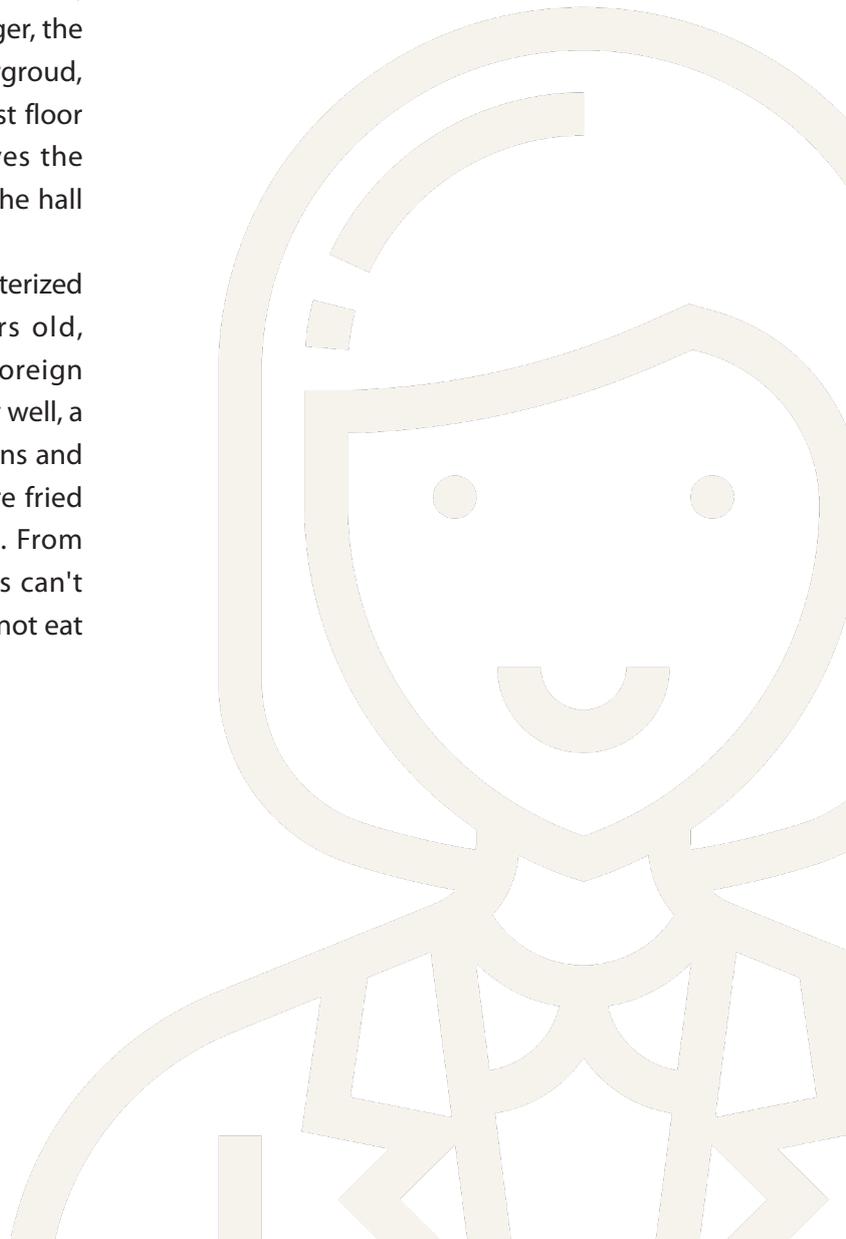
The average meal time for WANG JIAO restaurant's customers is one and a half hours. On Fridays or weekends, the restaurant will be in an all-round manner, with an average time of 15-30 minutes.

The restaurant has four waiters, a chef, three chefs, a dishwasher, a manager, the kitchen is on the first floor underground, the dishes are delivered to the first floor by elevator, and the waiter serves the dishes. Working separately from the hall does not affect each other.

70% are foreign customers, characterized by a basic age of over 20 years old, mostly students or staff, most foreign customers can use chopsticks very well, a small number of people use spoons and forks, the most popular dishes are fried rice, fried noodles, and desserts. From the taste habits, some customers can't accept too spicy because they do not eat chili often.

From the habits, most foreign customers wanted the dishes without bones. From the dietary taboos, foreign customers are common. (Several types: vegetarian; do not eat pork; do not eat egg dairy; lactose intolerance; have allergens.)

For 30% of Chinese customers, the main group is students with heavy taste, the emphasis is on, some are packaged or ordered through the APP platform.



Interview with customer:

Anita: In fact, I don't understand all the names on the menu. I have to ask the waiter a lot of questions every time. Some dishes don't even know what they are, so in order to avoid swearing, I just order some dishes that we know familiarly. So I often eat dumplings and fried noodles.

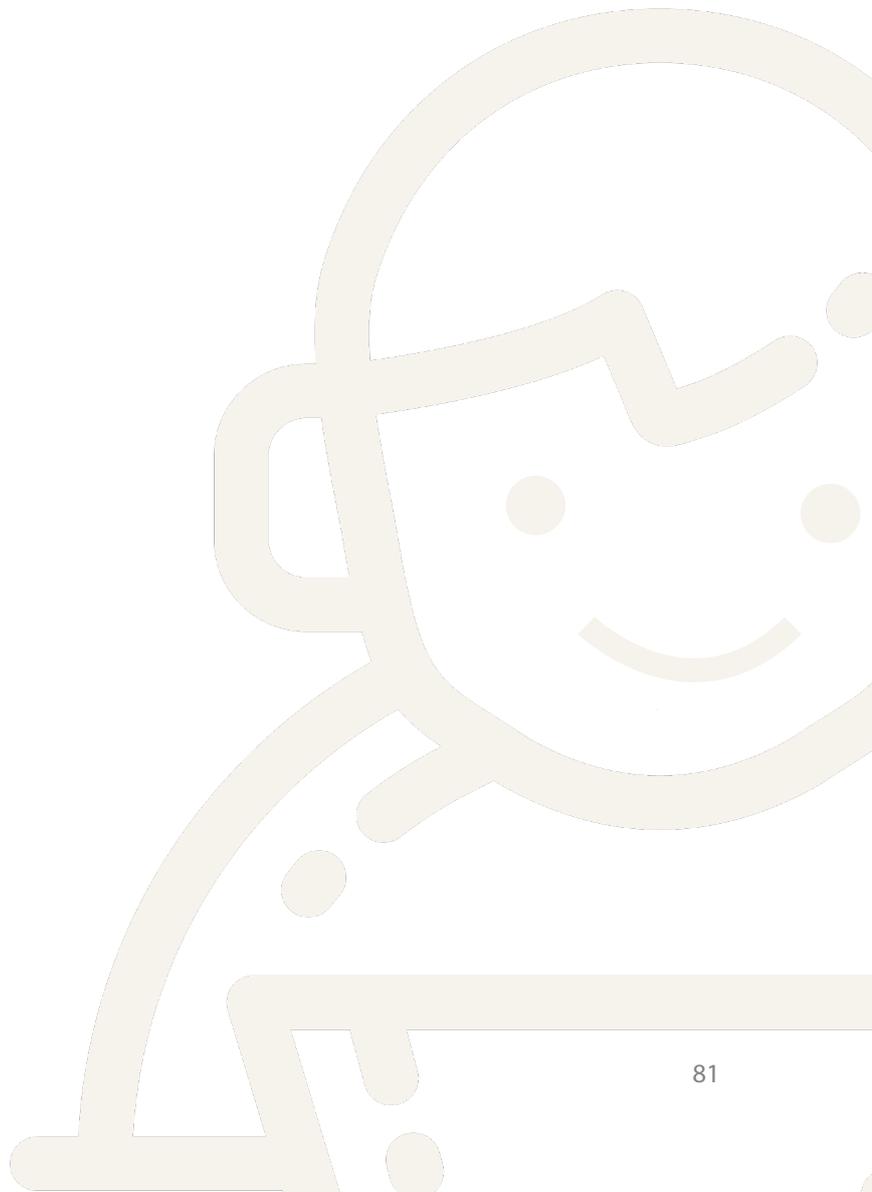
Gina: Because the price of Chinese restaurant is more than six euros per dish, even if the taste and taste are good, it is not cheap, so the order will be carefully selected to avoid waste, and you can't just try dishes that you don't know or don't understand. Or look at the other table customers before ordering something, see the real thing as a reference will be insured.

Olivia: I don't really eat spicy dishes, so I often ask the waiter whether the dishes are spicy. I once ordered a dish. It doesn't look like peppers, but the so up is sour. Later, I will be careful when ordering. The restaurant has a The dish is the same as a small hot pot. The ingredients are very rich and the shape is very cool. I really like the feeling of this meal. The dish won't get cold when I dine.

We randomly interviewed five foreign customers who have finished dining in the restaurant. The dishes and the overall view of the restaurant can be seen in different areas. People have different eating habits and tastes less. In order not

to waste more expensive bills, we generally choose Refer to other dishes that have been ordered as a reference, or just order a few dishes that you know well, such as steamed dumplings, udon noodles, fried rice, and small fire pots.

This part of the interview quickly led us to discover the problems that existed in the restaurant and led us to think about what is behind the series of actions. How foreign catering culture can be better integrated into local territories requires systematic analysis and improvement.



4.3

MATERIAL FLOW

INPUT (figure 4.5):

Since the restaurant is a chain brand, the selection of raw materials is distributed through a unified distribution company to ensure the quality of the dishes in each restaurant. Therefore, almost all raw materials come from Milan, some raw materials are purchased locally according to the needs of the restaurant (Turin), and very few raw materials are imported from China by Milan's Chinese supermarkets.

Delivery from China (in weeks):

Chinese supermarket:

1 kg of star anise, 0.5 kg of cinnamon, 0.5 kg of fragrant leaves.

Delivery from Milan (in weeks): Seafood store: 40 striped bass, 5 kg shrimp, 4 kg squid;

Butcher shop:

15 kg of beef, 10 kg of chicken, 10 kg of pork and 4.5 kg of duck;

Chinese supermarket:

0.5 kg sesame, 10 kg dry chili, 24 kg sugar, 24 bottles of white vinegar (1 liter), 12 bottles of oyster sauce (907 g), 12 bottles of pepper, 18 bottles of pepper powder, 24 kg of salt 4 bottles of thin soy sauce (4.9 liters), 15 bottles of soy sauce (500 ml), 25 liters of sunflower oil, 10 liters of olive oil, 7.5 kg of rice noodles, 10 kg of udon noodles, 3 kg of noodles, 5 kg of starch, 24 kg of flour, 20 kg of rice.

Vegetable shop:

5 kg of green onions, 2 kg of tomatoes, 5 kg of onions, 5 kg of ginger, 5 kg of garlic, 4 kg of pepper, 5 kg of zucchini, 4 kg of cucumber, 8 kg of potatoes, 5 kg of carrots, 1 kg of Coriander.

Beverage shop:

463 bottles of beverages, 15 cartons, 30 plastic bottles, 20 boxes of glass bottles, 12 bottles per box, 14 boxes in glass bottles, 12 bottles per box.

Coffee shop: 2 kg of coffee beans.

Grocery store:

600 plastic packaging bags, 1000 tin boxes, 1000 plastic boxes, 50 plastic forks, 50 plastic spoons, 50 plastic straws, half roll of plastic wrap (50 m), 1500 napkins, once 1500 pairs of chopsticks, 30 garbage bags, 15 kg of detergent, 2 dishcloths.

Delivery from Turin (in weeks): Grocery store: 10 barrels of detergent and 4 barrels of disinfectant.

Chinese supermarket (seasonal season): Chinese eggplant 4.5 kg, towel gourd 3 kg, white gourd 1 kg, bottle gourd 1 kg, tofu 10 kg, Chinese chive 2 kg, bean sprouts 10 kg, flammulina velutipes 2 kg. Water :9-12 m³.

OUTPUT(figure 4.6):

There are many types of garbage in the catering industry, mainly food residues and waste oil, plastic products and disposable chopsticks. We calculated that the waste of food waste is 78,000 liters per year, the amount of waste oil is 520 liters per year, the annual consumption of plastic products is about 144,560, and the consumption of disposable chopsticks is 78,000 pairs per year. The water consumption is annual. It is 468-624 m³.

After the fried, the restaurant will pay the waste oil recycling company for subsequent processing. Carton and wooden boxes are recycled by the company. The restaurant separates plastic garbage, paper garbage, organic garbage and non-sorted garbage into garbage bins, which are recycled and reused by the municipal government to discharge waste water into the sewer.

(All data are calculated based on the restaurant delivery frequency.)

4.4

LINEA PROCESS

The daily process of the restaurant can be divided into 12 steps:(figure 4.7)

1. Preparation: The restaurant staff performs cleaning every day before going to work to prepare for business and replenish goods in a timely manner.
2. Cleaning: After the goods are ready, there is a special staff to carry out the cleaning work for the ingredients needed for the day.
3. Cut vegetables: Cut the cleaned ingredients according to the recipe needs.

4. Pretreatment: Mainly for some meat and vegetables to be marinated and seasoned for the next cooking.

5. Ordering: The restaurant is open for business and receives a customer menu.

6. First treatment: Cook the ingredients and prepare for the dishes.

7. Seasoning: The cooked dishes are seasoned.

8. Cooking: The cold dish is directly taken out after being kept in the refrigerator for simple processing; the hot dish is cooked by the chef according to the dishes reci.

9. Loading: After the dishes are ready, they are placed in a clean dish and finished before the serving.

10. Check: The chef checks the dishes according to the menu and confirms that the dishes are served.

11. Serving: The waiter delivers the dishes to the customer and places the dishes. (Customers who order through the APP will have the exclusive delivery staff of the APP platform to deliver the meal)

12. Cleaning: The used dish that has been disposed of after the meal is finished by the waiter, the disher is cleaned and dried to prepare for the next use.

The flow chart of the restaurant that we combined with all the material flows and steps is as follows: (figure 4.4)

LINEAR PROCESS | general analysis

(Data/week)

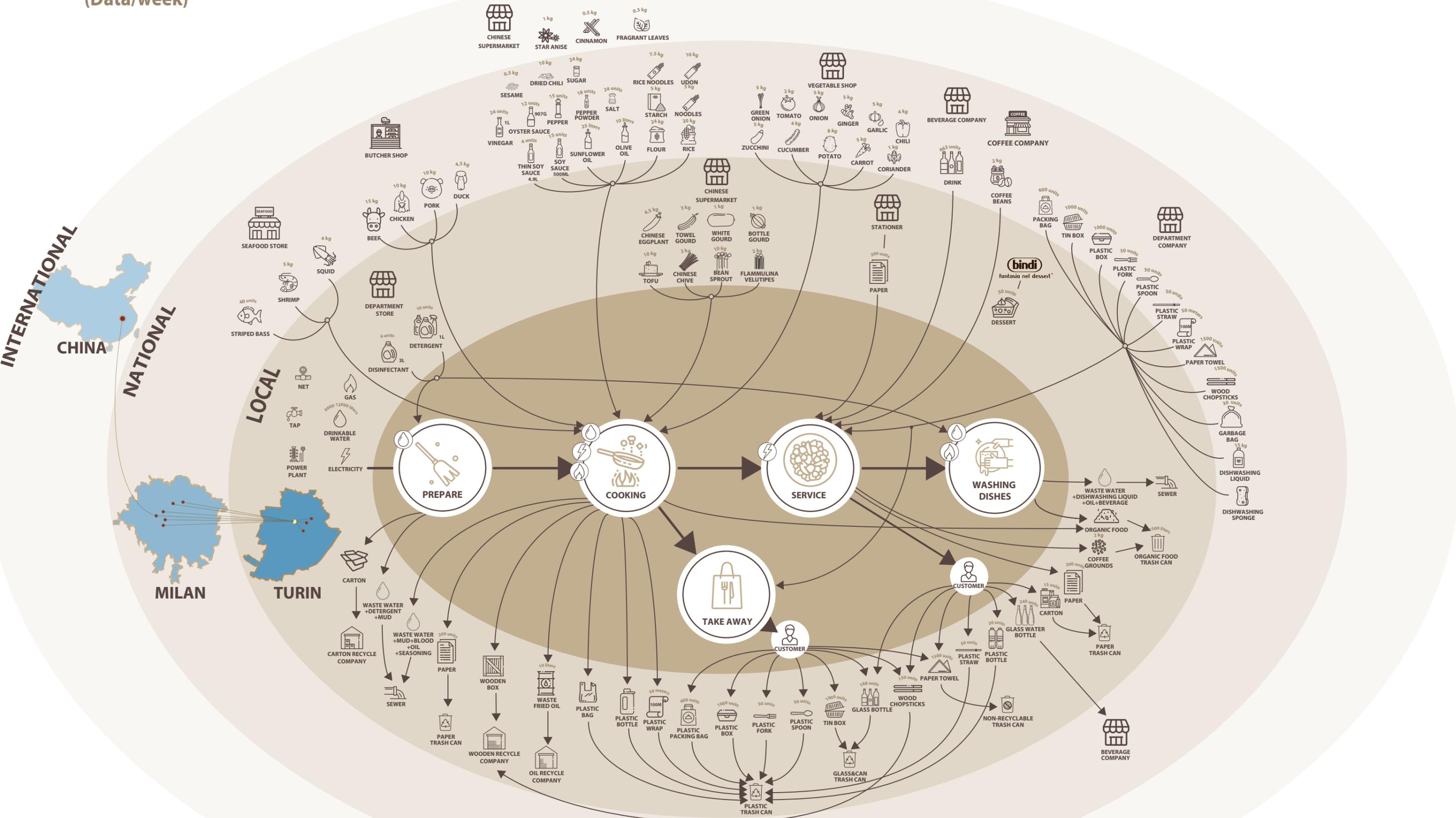


figure 4.4 linear process-general analysis

GENERAL ANALYSIS I input

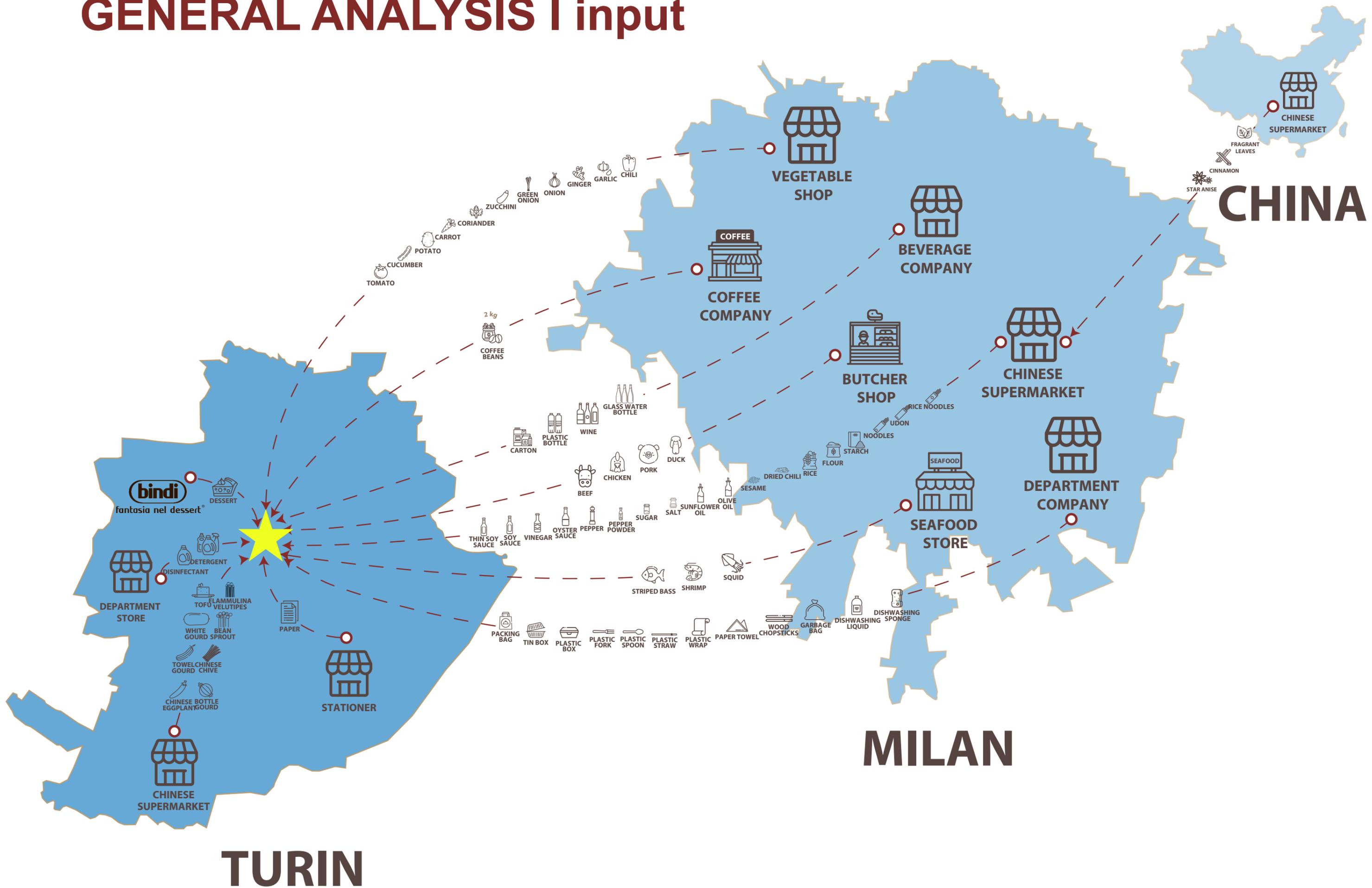


figure 4.5 linear process-general analysis-input

GENERAL ANALYSIS I output

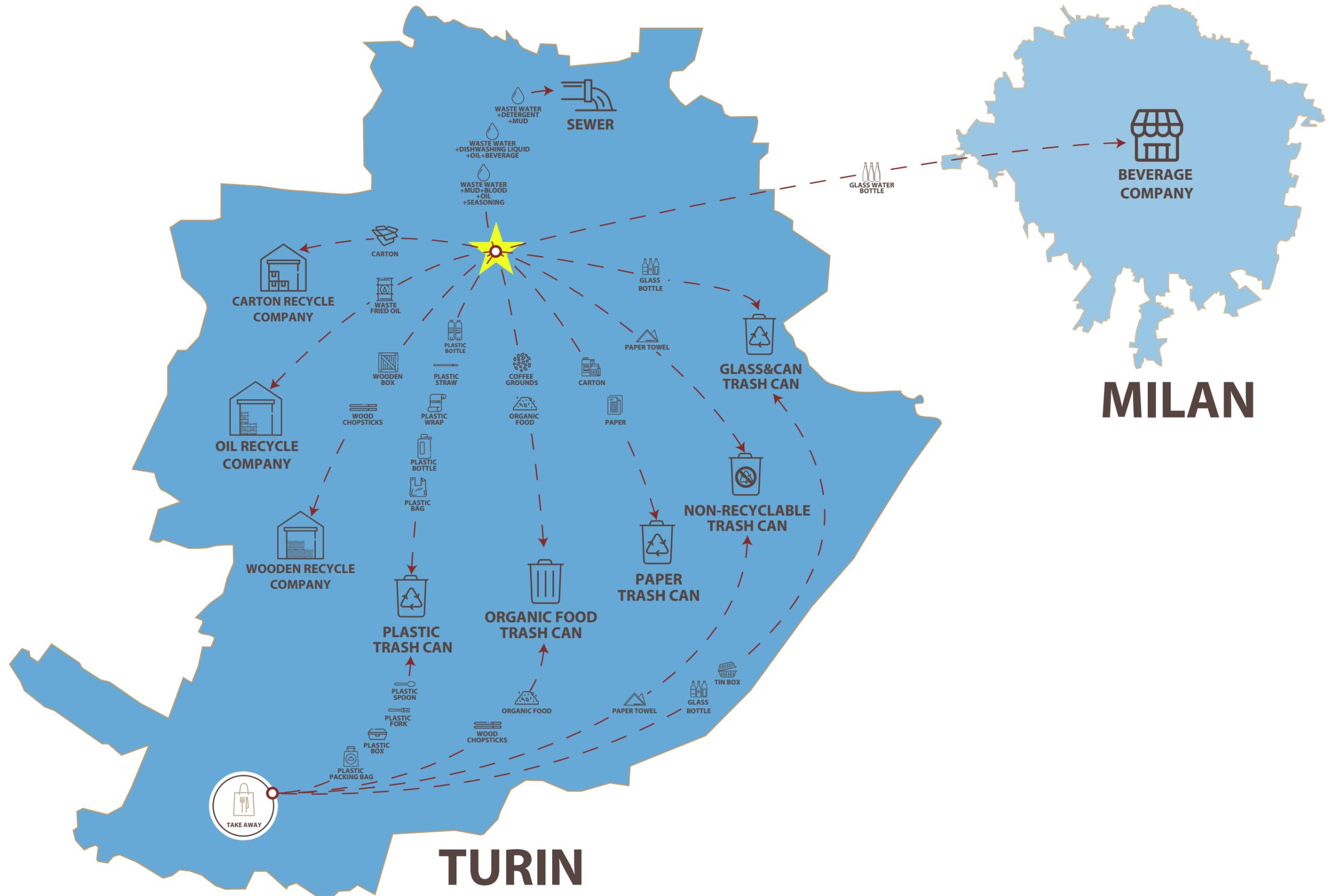


figure 4.6 linear process-general analysis-output

LINEAR PROCESS I particular analysis

(Data/week)

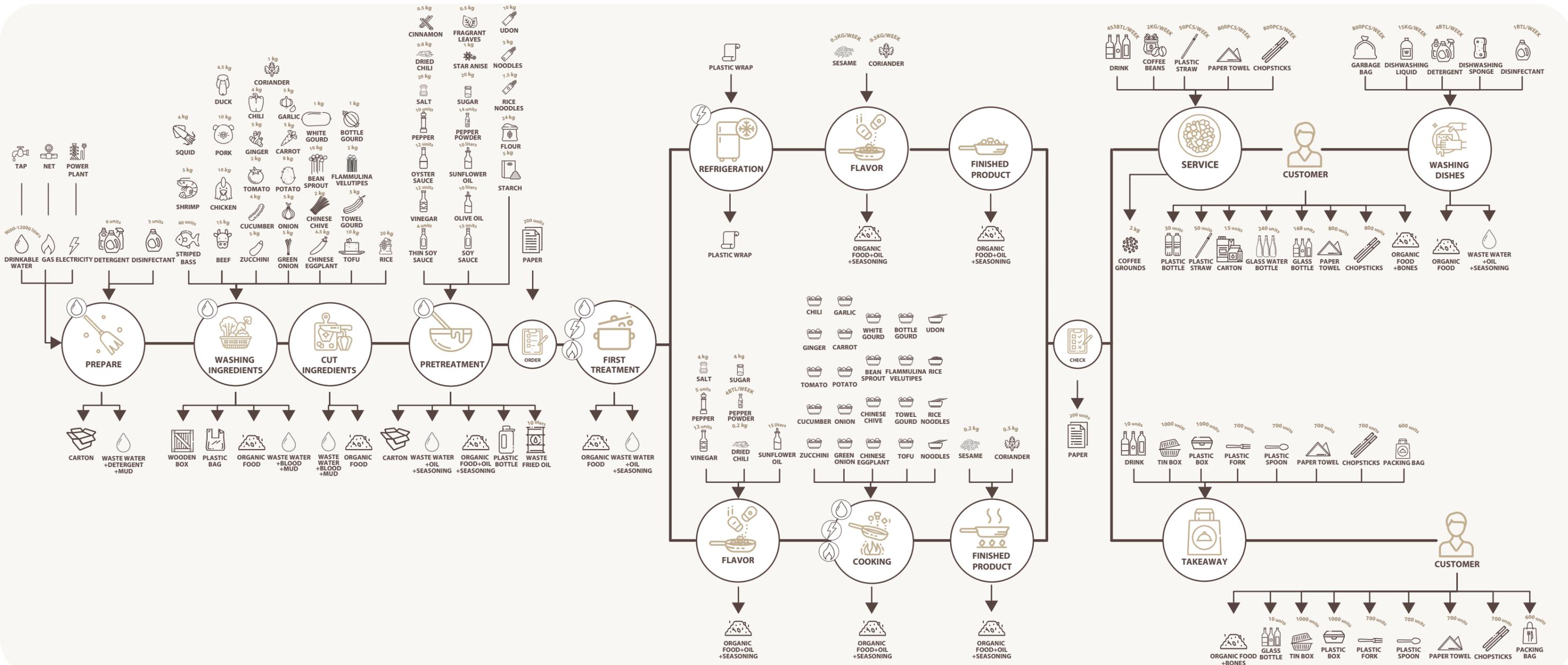


figure 4.7 linear process-particular analysis

LINEAR PROCESS I total analysis

(Data/week)

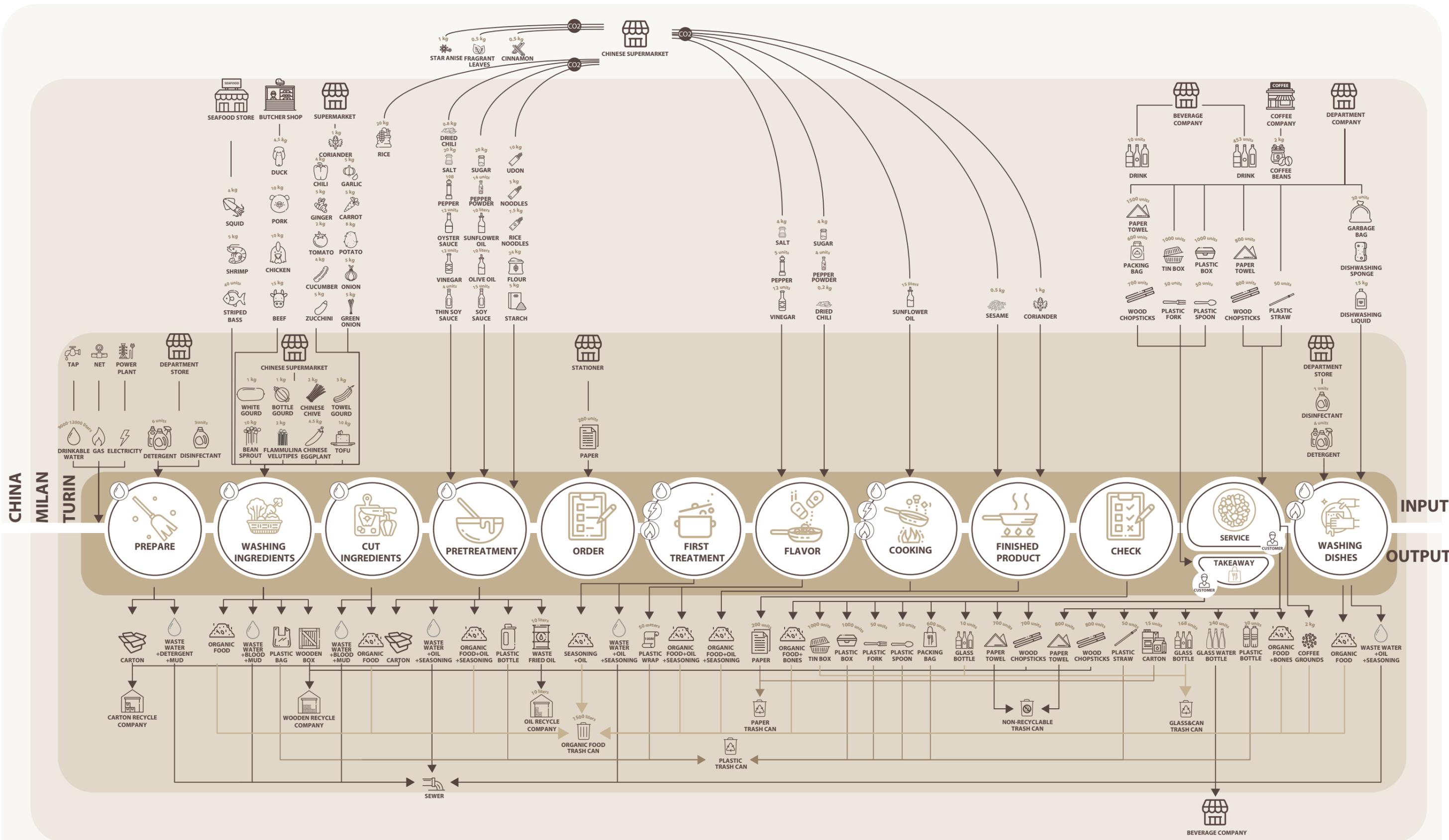


figure 4.8 linear process-total analysis

- Introduction
- Chinese food culture
- Holistic diagnosis of Turin city
- Holistic diagnosis of WangJiao restaurant
- ANALYSIS OF PROBLEMS**
- Analysis of opportunities
- Systemic project
- Outcomes

ANALYSIS OF PROBLEMS



5.1

PROBLEM OVERVIEW

After analyzing the systematic drawing of the restaurant's linear processes, we found that the restaurant operates on six aspects of input and output:

Water(9-12m³/week):

The drinking water in the restaurant is very large. Most of the water is mainly used to clean raw materials as well as clean the floor and tables and walls in the halls and kitchens to ensure the quality of the food is clean. The annual water consumption is 146-624 cubic meters. Catering wastewater is mainly a mixture of various wastewaters produced during the operation of the catering industry, including this sets of washing raw materials, washing rice, cooking, washing dirty plate and cleaning. If these wastewaters are directly discharged into the vegetation water body, it will not only cause pollution, but also cause eutrophication of the water body and pose a threat to human health. How to deal with catering wastewater has become a growing concern.

Disposable plastic products(2780 units/ week):

The restaurant uses a large number of disposable plastic products (plastic packing bags, tin packing boxes, plastic packing boxes, plastic forks, plastic spoons, plastic straws) for dining and take-out service. The annual consumption is about more than 144,560 per year. The pollution caused by these plastic garbage is also very serious.

Organic food waste(1500 liters/week):

For any restaurant industry, the amount of garbage in the restaurant's organic food waste is also very large. The garbage is mainly produced in the cooking process, the necessary pretreatment of the ingredients, and the remaining dishes, organic food waste after the customer finishes eating. The amount is about 78,000 liters per year. The accumulation of food waste can cause hidden dangers to food safety.

Disposable wooden chopsticks(1500 units):

The restaurant offers disposable wooden chopsticks for customers to dine, takeaway and packing, and the restaurant consumes approximately 78,000 disposable wooden chopsticks per year.

waste oil(10 liters/week):

Chinese restaurant dishes are mostly cooked with fire. The amount of oil used is very large. There are also rapeseed oil

and olive oil. The total annual oil consumption is 1820 liters per year, and 520 liters is olive oil for cold dishes and salads. 1,300 liters of rapeseed oil is used for frying and daily cooking in the restaurant. The oil used for the frying process consumes 520 liters per year, after which the restaurant pays for the waste oil recycling company for unified treatment.

Long-distance transportation emission:

Due to the complexity of the Chinese restaurant's ingredients, special ingredients are often used. They are usually imported from China by foreign Chinese supermarkets to ensure the authentic taste of the restaurant dishes, which also causes environmental pollution caused by long-distance transportation vehicles. The carbon dioxide produced by shipping is 58 grams per kilometer, and the carbon dioxide produced by aviation logistics is 610-1800 grams. The transportation price is also calculated in kilograms of the goods, and the cost is higher.

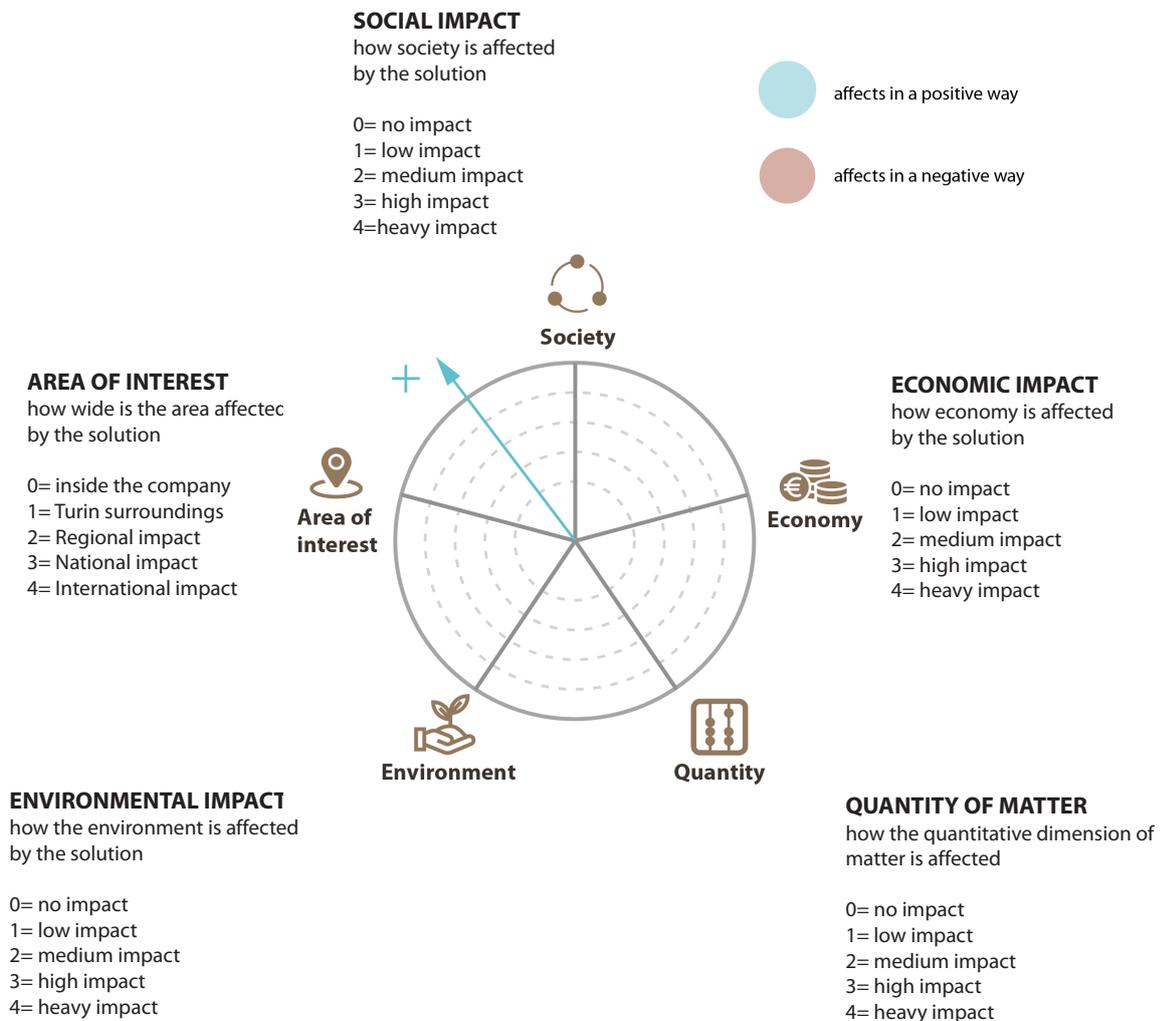
Evaluation graphics

We set 5 criteria on which we could evaluate each opportunity's outcome: area of interest, matter's quantity and social, environmental and economic impact.

We set the separated the rating system in quality rate and quantity rate. Whether the impact is positive or negative

is pointed out by colours. Impact's dimension, instead, is provided by a rating system: from 0 to 4, where 0 is equal "no impact" and 4 "heavy impact".

Using this graphic we're able to quickly visualize and compare each opportunity's impact on the territory and better motivate our choices.



5.2

ORGANIC FOOD WASTE PROBLEM

Why it is a problem?

The restaurant's organic food waste is about 1500L per week, mainly during the preparation process, the selection of vegetables and the food residue after the customer's meal. The former food waste is a necessary waste. However, organic food waste during meals is a large part of all organic food waste. Therefore, our focus is not only on how to better handle organic food waste, but also on reducing food waste generated by customers during meals.



figure 5.1 organic food waste¹

¹ Picture from the internet

In addition, since WANGJIAO Restaurant specializes in Chinese food in Turin, 70% of the customers are foreigners who are not very familiar with Chinese food. Most Chinese dishes are mainly spicy, with a wide variety of side dishes and complex production. As a result, many customers find that the taste of the dish is unacceptable after ordering, or that some customers have their own allergens or eating habits, which causes the prepared food to be consumed by the customer, resulting in the discovery of allergens or dietary contraindications. In the restaurant. If it is an inedible food, the restaurant will make another meal according to the customer's preference, but it will also cause a lot of waste. Uneaten vegetables will be dumped into the trash. This phenomenon is very common in the problems encountered by customers when dining in foreign restaurants, so we need to solve this problem in a targeted manner.

From a restaurant perspective, most of the raw materials for the restaurant are purchased from Chinese supermarkets. The price and cost of raw materials and the transportation of raw materials are more expensive than buying them from ordinary local restaurants. Food waste is also a financial loss for restaurants.

In terms of value, Chinese food is different from western cooking methods. It is very balanced and healthy. Using a

variety of foods can achieve a therapeutic effect and is beneficial to the human body. Food waste is a waste of nutritional value, making customers more. It is also necessary to learn more about the nature of food. It is also the spread of food culture in different countries.

From the environmental perspective, a large amount of food waste will cause secondary pollution, causing food safety problems in restaurants. Effective pretreatment methods are required to reduce the hidden dangers caused by food waste.

scallops and other food left after eating. (figure 5.2)

Nearly 27% of the huge amount of rubbish in Turin comes from kitchen waste. They are not only large in content, but also costly to handle. It can be said that kitchen waste is one of the main sources of pollution in city. The public sanitation of the city also brings hidden dangers to the residents. Many organic materials rich in kitchen waste are suitable for the growth of bacteria and microorganisms.

The harm of organic food waste:

(1) There are a large number of pathogenic bacteria and serious harmful bacteria in the kitchen waste. The longer the time, the more the number of bacteria will increase. The stacking of kitchen waste will pose a threat to the environment, humans and animals.

(2) organic food waste will also affect the city's cityscape and living environment. Kitchen waste generally contains high water content and organic components,

5.2.1 Organic food waste analysis

Organic food waste refers to the garbage produced after cooking, including leftovers, peels, eggshells, tea residue, bones,



1,500 liters/week
780,000 liters/year



BACTERIA



AFFECT LIVING ENVIRONMENT



ILLEGAL OIL PRODUCTION



AFFECT BODY HEALTH



WASTE OF RESOURCE

figure 5.2 analysis of the problems of organic food waste

which will emit bad odor and its permeate precipitation will affect the surface and groundwater source.

(3) Some people will use the water produced by kitchen waste to make oil through a series of means, so that they can sell at a low price to restaurants and so on. This is what people call "ditch oil."

(4) The placement of kitchen waste will not only affect the kitchen environment, but also the growth of bacteria, which will affect the health of the living, especially the elderly and children.

(5) In addition, as a Chinese restaurant, there are many kinds of raw materials for all kinds of dishes. Many raw materials use Chinese varieties to ensure the taste, or some raw materials are shipped and

air transport from the China. Most of the waste that is wasted in organic food waste is left after the customers dine. There is also a lot of waste caused by nutritional value, costs and resources.[1] (figure 5.3)

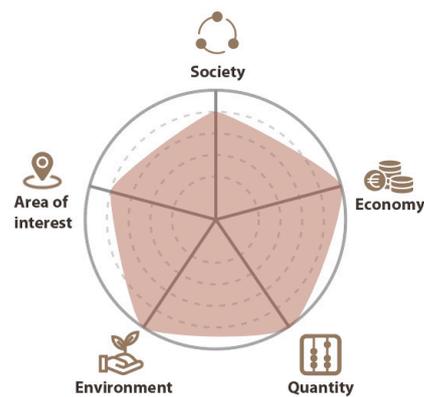


figure 5.3 impact rating criteria of organic food waste

5.3

OIL PROBLEM

Why it is a problem?

The weekly all types of the oil consumption of the restaurant is about 35L. It is divided into sunflower oil (25L)

and olive oil (10L). Among them, 10L of olive oil is mainly used for the salad series, and sunflower oil is used for cooking (15L) and oil. Deep-fried (10L), 10L of sunflower oil per week is used for frying as a food pretreatment to get the taste and production needs of the dish, which is then recycled by the waste oil recycling company. The kitchen is on the first floor underground of the restaurant. Separated from the customer's dining area, daily frying and a large amount of cooking fumes when cooking, even with the range hood, the kitchen cabinet's hygienic cleaning increases the amount of cleaning agent, and the working environment of kitchen staff also has certain health hazards. And the high temperature environment of the oil pan will also have hidden safety hazards for the operator. Solving the kitchen oil can also control the kitchen soot problem. (figure 5.4)



figure 5.4 organic food waste²

5.3.1 Waste oil analysis

Cooking: The process of frying one or several kinds of vegetables in a pot is mainly based on the oil temperature in the pot. A chopped dish is a cooking method that is heated and matured in a short period of time. Usually put a little oil, add the seasoning, then put the dish into the pot, use the medium fire to heat and mature in a short time, use the special tool "shovel" in the middle to continuously flip until the dish is cooked, the spatula flips The process is also the process of frying. The purpose of the flipping is to make the dishes heated, seasoned and the juices separated from the various dishes in the frying process evenly distributed in the whole pot. Therefore, the harm of fume in the process of frying and cooking can not be underestimated.(figure 5.4)



figure 5.4 analysis of the problems of waste oil

The harm of waste oil:

The main constituent elements of kitchen waste oil are C, H and O, which are macromolecular hydrophobic organic compounds. Due to repeated high-temperature frying, most of the small molecular nutrients in the oil have been volatilized or polymerized into macromolecular thermostable substances, which have low biochemical properties and contain a certain amount of carcinogens such as benzo-pyrene, entering the environment or being human intake will cause serious environmental pollution and health threats. Specifically in the following aspects:

(1) polluted water body

Kitchen waste oil is one of the important nutrient water pollutants. It will cause water quality deterioration and eutrophication when entering the water body, and the treatment efficiency of the biological treatment unit of the sewage treatment plant will be significantly reduced.

(2) smells bad

Kitchen waste oil, especially fried oil, has a long exposure time in the air, causing oxidative rancidity, emitting volatile fatty acid malodorous gases, seriously affecting the environment, and is one of the main causes of strong public reaction.

(3) causes food safety problems

Because the kitchen waste oil is repeatedly fried at high temperature, it is easy to produce benzopyrene, trans fatty acid and other substances harmful to the human body. The waste oil is exposed to the air for a long time, which is easy to oxidize and rancid, and produces a large amount of toxin. In the process of logistics, it is easy to mix toxic and harmful substances, breed bacteria such as *aspergillus flavus*, and produce aflatoxin with strong carcinogenic effects. Once improperly treated, re-entering the food chain will seriously affect human health and may even cause major food safety. accident.

The harm of kitchen fume to the human body:

1. The kitchen is the most serious air pollution in the family. The main source is the cooking fumes and liquefied gases: harmful gases such as carbon monoxide, carbon dioxide and nitrogen oxides.
2. The soot contains about 300 kinds of harmful substances, DNP, etc which contain the lung carcinogen "dinitrophenol, benzopyrene". The long-term inhalation of soot is a disease of human tissue, and not only the soot is attached to the skin. It will affect the normal breathing of the skin. After a long time, the skin will become slack and inelastic, wrinkled, gray and rough, long spots, making people more prone to fat, soot can damage the body's immune system, and there will be different degrees of hair loss. Long-term causes people to have hoarseness, sore throat, irritating dry cough, blood in the sputum, foreign body in the pharynx, difficulty breathing in severe cases or swelling in the neck.

3. And in the long-term operation in the kitchen it will cause cancer, breast cancer and other diseases. The fatty oxides of soot can cause cardiovascular and cerebrovascular diseases, especially in the elderly. According to the data, 80% of the 100 patients are long-term in the kitchen, and most of them are women. Long-term inhalation of this soot can also lead to asthma, which increases the chance of lung cancer.

4. The harm of oil smoke to children is even greater. Children's resistance is poor, and oil smoke will seriously endanger the healthy growth and development of children.[2] (figure 5.5)

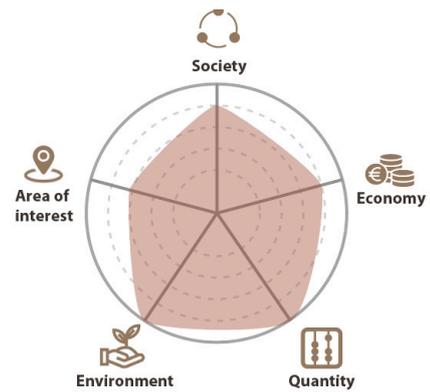


figure 5.5 impact rating criteria of waste oil

5.4

WATER PROBLEM

Why it is a problem?

INPUT: The restaurant uses about 9-12 cubic meters of water per week. It is mainly divided into operations for cleaning restaurants (such as floors, tables, chairs, kitchen consoles); for cleaning ingredients; for cooking processes; for tableware cleaning, a large amount of water is required throughout the process. All water is drinking water and all wastewater is discharged directly through the sewer without any pretreatment.

OUTPUT: The water quality and quantity of catering wastewater are greatly affected by people's living and eating habits. Sometimes, the content of various pollutants in catering wastewater in some places is more than tens of times that of ordinary catering wastewater. Coupled with the limitations of space, this type of wastewater treatment has brought more stringent difficulties. (figure 5.6)



figure 5.6 water problem³

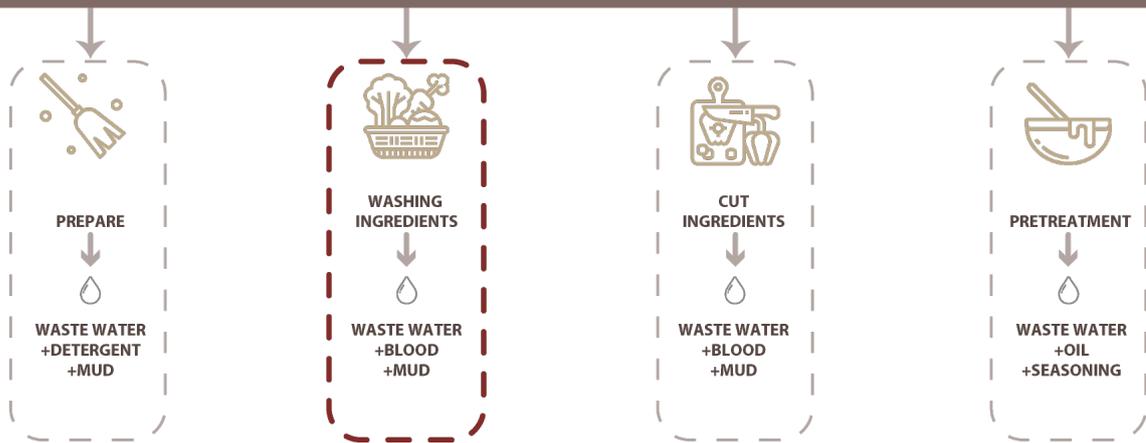
INPUT: Water is mainly used to clean the restaurant; cleaning ingredients; used in the cooking process; for tableware cleaning, the water in the whole process is immediately drained, the restaurant's weekly ingredients are huge, and the water needed for cleaning is also very large, the steps of cleaning the ingredients are divided into 5 steps: (figure 5.7)

1. Take the frozen meat and seafood out and thaw in the water;
2. Wash the vegetables thoroughly, wash away the dirt;
3. Wash the vegetables thoroughly;
4. Roughly wash the frozen meat and seafood, remove the dirt, fish scales, etc.;

5.4.1 Waste water analysis



9-12m³/week
468-624m³/year



⚠	COD	300-2633mg/L
⚠	SS	300-400mg/L
⚠	BOD	300-900mg/l
	PH	5.81-6.55
	TN	3.4-45mg/L
⚠	OIL content	6.7-20mg/L



WATER EUTROPHICATION

5. Carefully clean the meat and seafood; prepare for the next cut vegetables, the water in this link is discharged into the sewer in time, and the ingredients are washed repeatedly. The process also has a lot of water wasted.

OUTPUT:Catering wastewater has complex composition, low pH, high SS, high turbidity and high organic content, including dietary fiber, starch, fat, animal and vegetable oils, various ingredients, detergents and proteins. According to the detection of catering wastewater in some areas, the COD of the catering wastewater is 300-2633 mg/L, the SS is 300-400 mg/L, the NH₄⁺-N is 6-50 mg/L, the BOD₅ is 300-900 mg/L, and the pH is 5.81-6.55. The TN is 3.4-45 mg/L, and the oil content is 6.7-20 mg/L.[3] (figure 5.7&5.8)

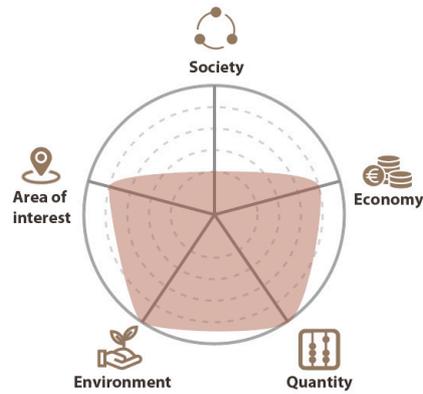


figure 5.8 impact rating criteria of waste water

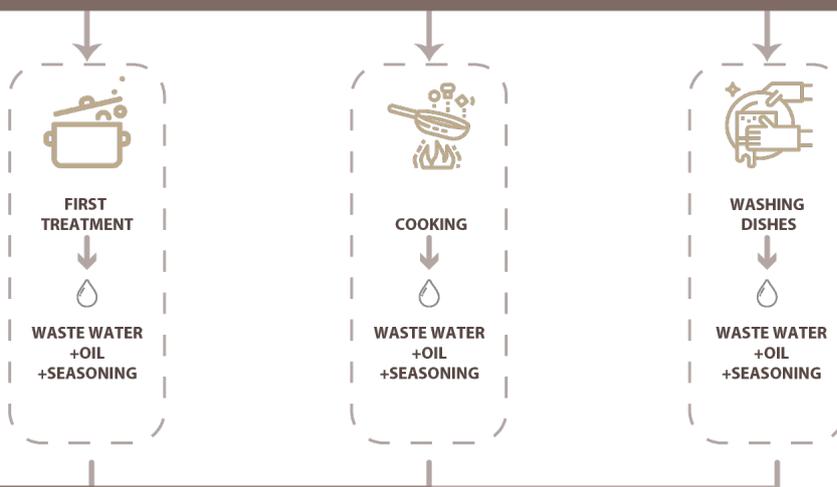


figure 5.7 analysis of the problems of waste water

ANALYSIS OF OPPORTUNITIES



Introduction
Chinese food culture
Holistic diagnosis of Turin city
Holistic diagnosis of WangJiao restaurant
Analysis of problems

ANALYSIS OF OPPORTUNITIES

Systemic project
Outcomes
Conclusion

6.1

OPPORTUNITIES OVERVIEW

After finding out the existing problems in the restaurant system, we combine the restaurant system and the social environment to try to improve or optimize these problems in a sustainable way, thus perfecting the restaurant system with the society, humanities environment.

Water:

INPUT: The water consumption of the catering industry is large, except that water is used to clean and heat food during cooking. The other part is used for cleaning to maintain the environment of the restaurant and kitchen. According to the law, the kitchen of the restaurant must comply with the hygiene regulations. The kitchen in the Chinese restaurant has a large amount of oil fumes, it is easy to accumulate oil, it needs to be cleaned frequently to

prevent the formation of bacteria, and the air fryer is used instead of the traditional frying method to reduce the cleaning part. Water consumption, increasing the reasonable reuse rate of water is also an effective way to save water. Add a bucket and use the last water to wash the vegetables to thaw the frozen food. Of course, the problem of water consumption is accompanied by each water use, and it is an effective solution to increase the reuse rate within a reasonable range.

Output: Catering wastewater due to its special water quality, the treatment of catering wastewater is usually divided into two stages: pretreatment and treatment. In practice, various techniques are often used. The main goal of the treatment is also to remove COD and suspension from the catering wastewater. Products and animal and vegetable oils have been launched. Preprocessing is the basis of processing, and processing is the deepening of the preprocessing, both of which are essential.

Catering wastewater contains a large amount of suspended matter and animal and vegetable oils, while animal and vegetable oils will block dissolved oxygen in the atmosphere and enter the water body. During the treatment, the oil will be wrapped around the microorganisms to cause its hypoxia and

death, affecting the treatment effect. A large amount of suspended matter is mostly food crumb, the particles are large, and it is difficult to be utilized by microorganisms, and it is easy to cause blockage of the treatment facility during the treatment process, which brings difficulties to the treatment. Therefore, the pretreatment of restaurant wastewater in the hotel catering wastewater treatment method has become an important link and means in the treatment process.

Disposable plastic products:

Restaurant disposable plastic products are mainly provided for customers of take-out and packaging. The restaurant can combine some commercial marketing methods to appeal to consumers to reduce the use of disposable plastic products, reduce their consumption from the source, merchants choose When using plastic materials once, try to use bio materials instead of ordinary plastics to pollute the environment. After being discarded, it can be converted into energy and reused.

Organic food waste:

For organic food waste, we focus on the customer-generated portion, which can be disposed of in the food waste disposer in the restaurant; or used to produce fertilizer . It can also be used in another efficient way to reduce

the organic waste generated at the beginning, this will change the traditional way customers order. Use a simpler and more direct way to order satisfactory products and reduce the generation of organic waste.

Disposable wooden chopsticks:

The chopsticks provided by the restaurant are disposable wooden chopsticks that can be replaced with commonly used metal chopsticks or wooden chopsticks, which can be recycled in the restaurant to reduce environmental pollution.

Waste oil:

In addition to reducing or improving the dishes which use of large oil, it can also use air fryer to replace the traditional oil consumption problem, thus reducing the oil demand, thereby reducing the harm of the smoke to the human body and the environment, more effective Maintain kitchen hygiene.

Long-distance transportation emission:

Chinese restaurants often need to import some raw materials from China. In addition to the high transportation costs, the shipping and air transportation will also cause serious pollution to the environment when transporting carbon dioxide from long-distance transportation. If some Chinese varieties can be grown locally, will reduce the transport distance; or replace with local similar ingredients.

6.2

FOCUS ON ORGANIC FOOD WASTE

The food waste disposer is more environmentally friendly. The garbage disposal device or the daily food waste disposer is connected to the kitchen drain pipe. It can dispose of food waste or leftovers into small pieces and water to discharge to the sewage system. (figure 6.1)

6.2.1 Food waste processor

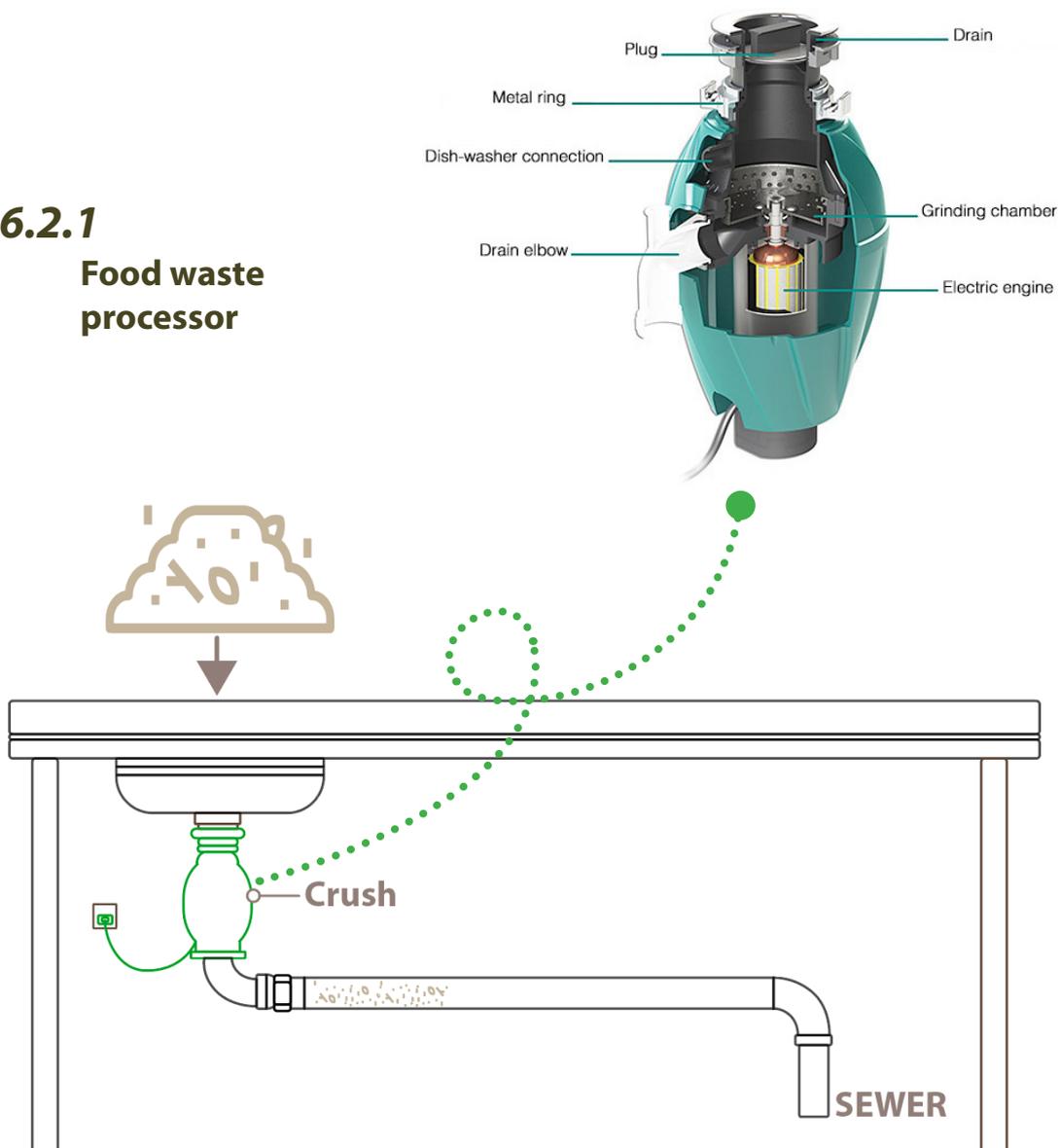


figure 6.1 food waste processor¹

¹ Picture from: <http://elleci.it/cn/blog-cn/26-ecosustainability-en/217-italy-closer-to-green-philosophy-thanks-to-food-waste-disposers-cn>

This device is safe because it can be remotely controlled and the remote control can be mounted on the operator panel on the surface of the sink. The safety of this device is also reflected in the fact that its material is not a knife or a blade. Under the action of centrifugal force, the garbage is collided with the toothed component, and the garbage is processed into small pieces by a very special small hammer. But overall, this device is very safe, you don't need to touch the electronic remote during operation. No more worry about organic waste: fruits, vegetables, fish bones, shellfish, animals bones, etc. No more worry about odors and bacteria.

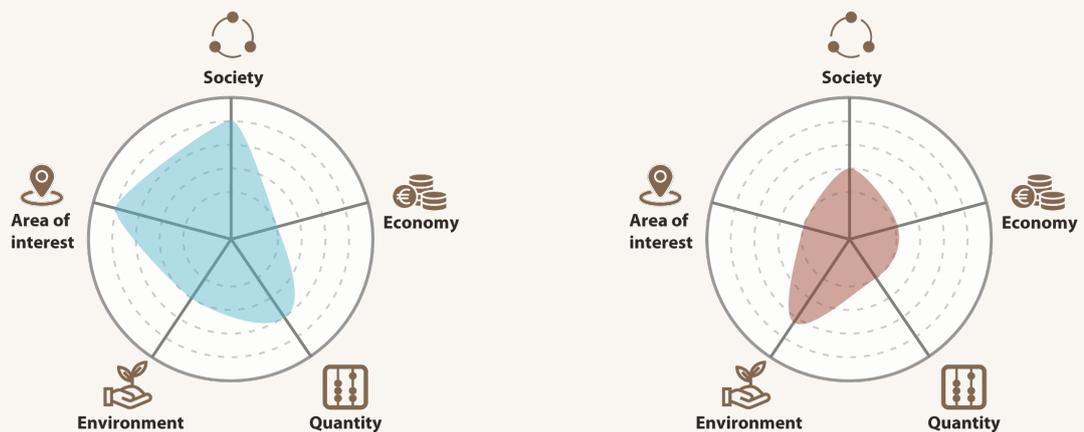


figure 6.2 impact rating criteria of food waste processor

Main advantages:

1. No odor of organic food waste
2. Cheap restaurants can afford
3. Reduce the amount of garbage that needs to be processed
4. The kitchen environment is cleaner and hygienic
5. Reduce carbon dioxide emissions

(figure 6.2)

Every day, a large amount of organic food waste is produced in the restaurant. The centralized pretreatment, processing and reuse of these kitchen wastes can effectively prevent the generation of waste oil, which is also a key link in maintaining the environment and ensuring food safety.

6.2.2 Commercial food waste system

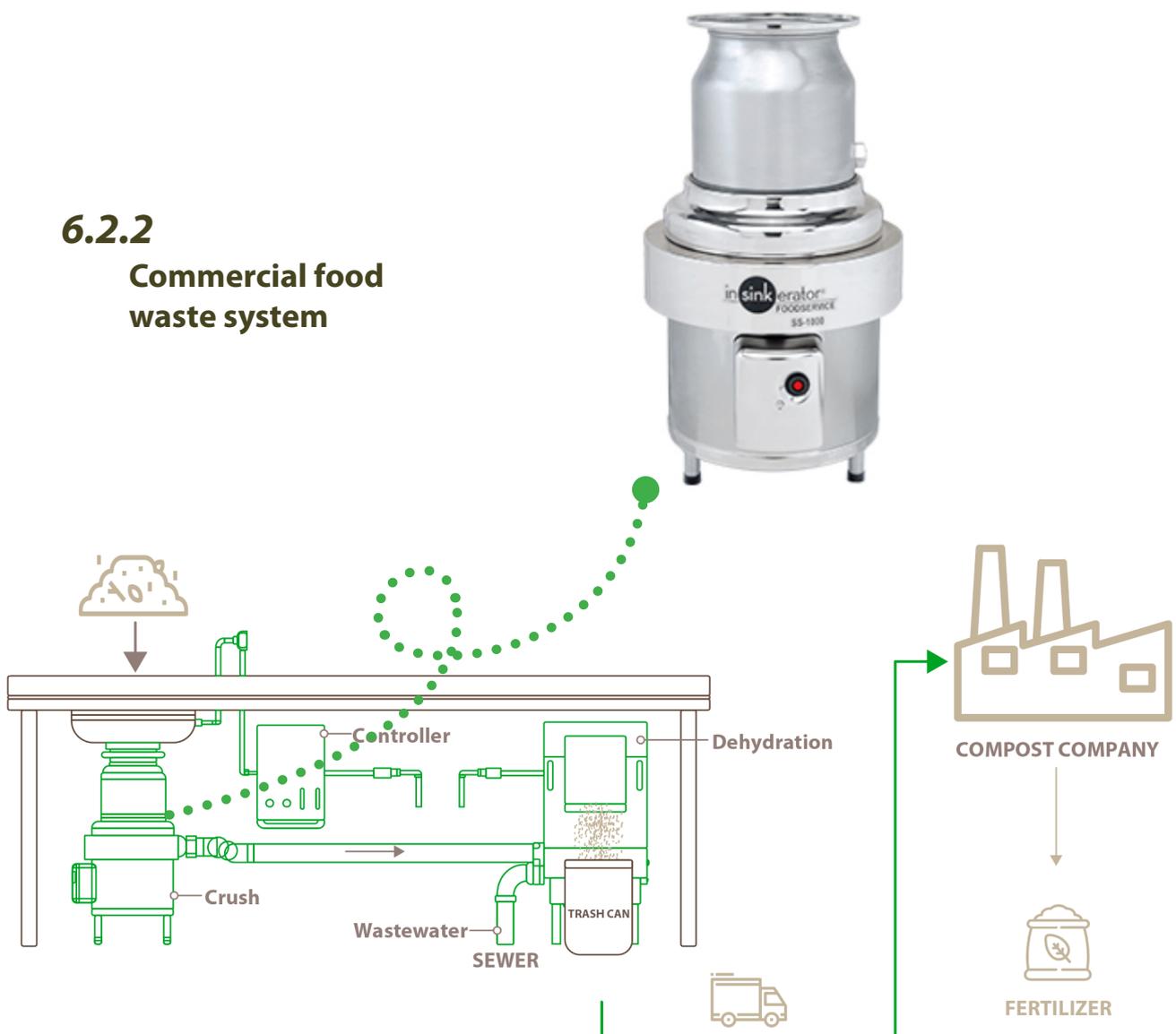


figure 6.3 commerical food waste system²

² Picture from: <https://www.emerson.cn/zh-cn/about-us/featured-stories/insinkerator>

The commercial food waste disposal system (figure 6.3) does not actually need to occupy too much space. It consists of a commercial food waste disposer and a dehydration reduction device. The organic food waste is ground into fine particles in the grinding chamber of the processor and then passed through the pipeline. It is sent to the dewatering and reducing device. After the garbage is compressed, the water flows away through the drain pipe, and the solid waste is discharged from the chute. After dehydration, the food residue can be converted into biological fertilizer and energy by anaerobic fermentation.

The organic food waste water content is as high as 80%. It has very distinct waste and resource duality. If it is not handled properly, it will easily cause environmental pollution problems such as eutrophication and odor, and the food waste disposer will be used for

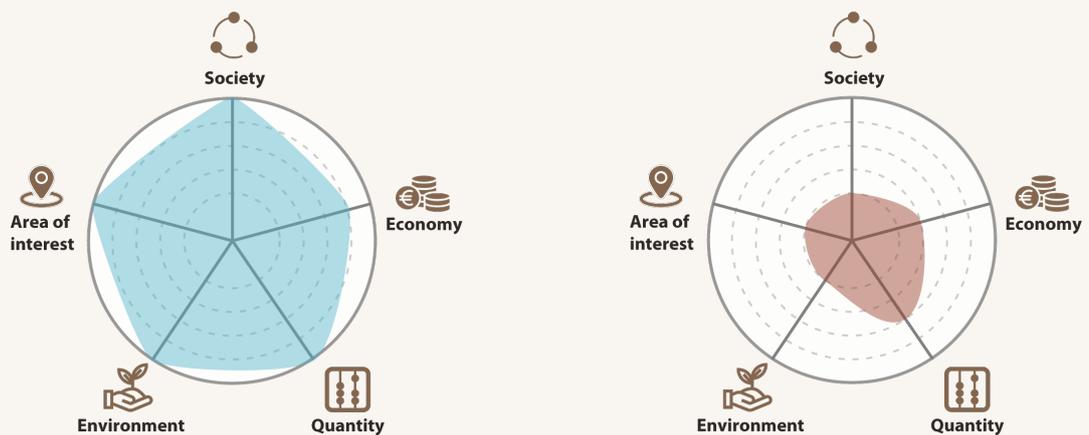


figure 6.4 impact rating criteria of commerical food waste system

organic treatment (resource utilization). That is to realize the classification and reduction of the source of the organic food waste through the physical method, and the whole process is harmless. The commercial food waste treatment system maximizes the use of resources and is the infrastructure for green health standards in public places. It can not only achieve the goal of circular economy, but also achieve win-win for environmental protection, economic and social benefits.

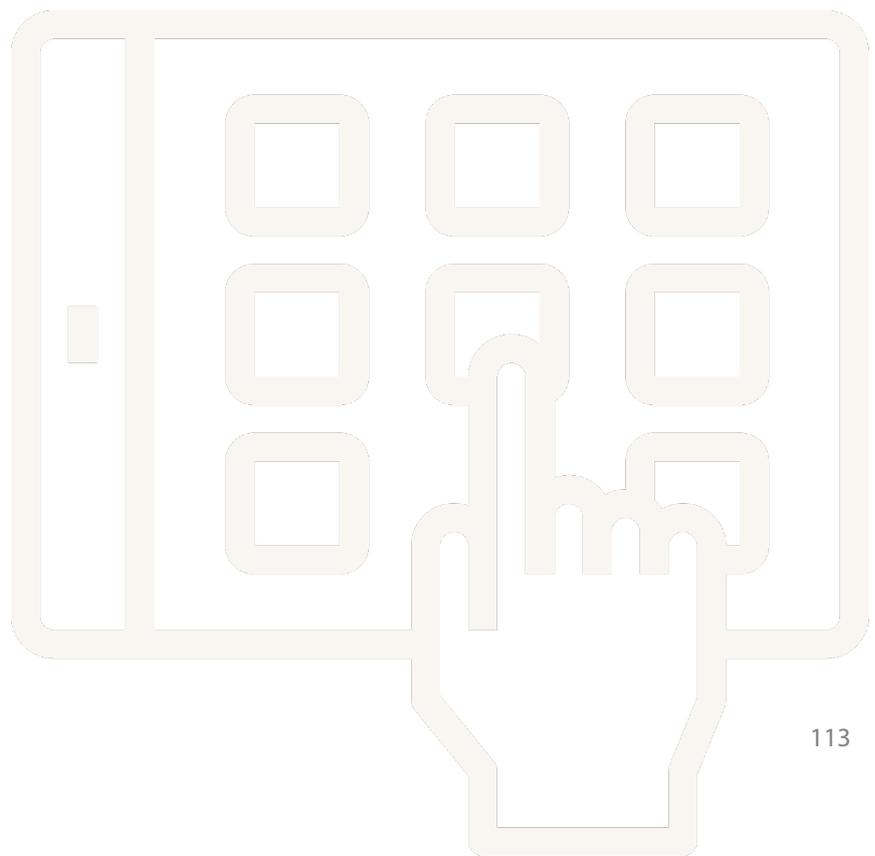
Main advantages:

- 1.Can reduce the volume of the original waste final product by 85%;
- 2.Greatly saving the labor cost, improving the overall profitability;
- 3.Facilitating the recycling of the organic food waste. (figure 6.4)

6.2.3 New electronic ordering system

The focus of the above methods is to address how food waste that has already been produced should be treated more effectively and environmentally, while ignore how to intervene from the ordering method to reduce the production of organic food waste at the beginning.

According to our very in-depth investigation in the early stage, combined with the relationship between the customer's eating behavior and the amount of food waste generated, we found that the more the customer is familiar with the food, the less waste of food waste, so we choose to use the electronic ordering system. Instead of traditional paper menus, customers can get more information when ordering.



Main advantages:

1. Massive information is more abundant

Electronic ordering systems are richer and more diverse. Traditional recipes cannot provide customers with sufficient information due to cost constraints. The electronic ordering system has a large capacity and can provide more comprehensive and detailed information. The restaurant can display pictures, prices, raw materials, practices, nutritional effects, diners reviews, etc. of all the dishes by category, and can also introduce the restaurant's special dishes or promotional dishes to consumers in detail.

2. Easy to classify dishes

The electronic ordering system has a variety of different menu browsing modes, which can be ordered according to the categories of the dishes, according to the taste, according to the name of the dish, and according to the price.

3. Ordering is more fun

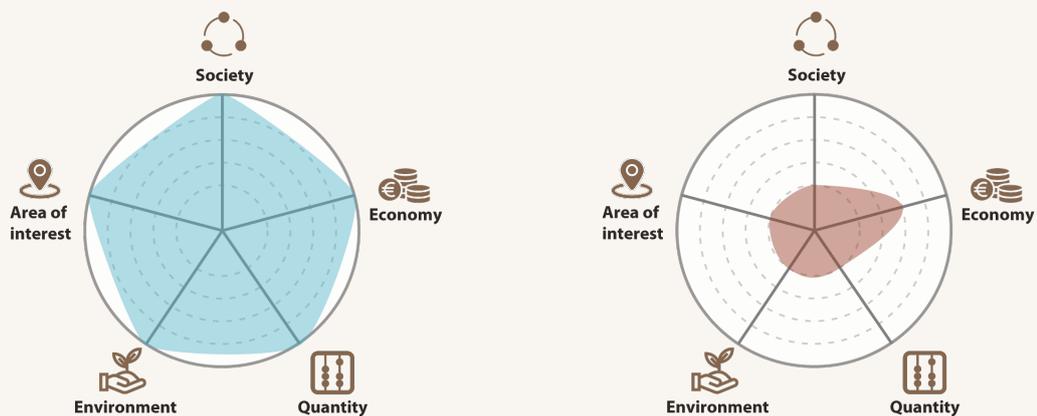


figure 6.5 impact rating criteria of new electronic ordering system

fashionable appearance, which can quickly stimulate consumers' interest and enthusiasm, making the ordering process a fashion enjoyment.

4. Dish updates anytime, anywhere

Seasons change, dishes need to be updated in time, and changes in prices must be reflected on the menu in a timely manner. The cost of traditional paper recipes varies, but the service life is only about six months, and cannot be modified or changed. The electronic ordering system, when new dishes are launched, can take pictures and upload them to the background to display, saving the restaurant a lot of recipe production costs.

5. Best endorsement of restaurant image

The electronic ordering system caters to the trend of personalized consumption, promotes the concept of modern consumption, enhances the image of the restaurant, allows consumers to feel the modern fashion trend of the restaurant, enhances the service and brand of the restaurant, and makes the restaurant take the lead in scientific and technological information.(figure 6.5)

6.3

FOCUS ON WASTE FRIED OIL

The principle of air fryer (figure 6.6):

1. The air fryer is designed to rapidly heat the air through the top baking unit. High-speed air circulation technology is currently the most advanced in the world. It uses only air to cook. It does not require oil or oil, so it does not produce a large amount of soot. At the same time, the proper temperature can ensure that the nutrients in the food are not lost. When cooking, the amount of fat produced by cooking in a traditional fryer can be reduced by up to 80%. The unique combination of fast-circulating hot air and oven parts allows you to fry a variety of delicious food snacks, seafood and quickly and easily. At the same time, because it only uses air frying, it has less odor and steam than traditional frying, and is easy to clean in daily use, which is safe and economical.
2. The rapid flow of the air fryer through the high-power fan inside the food basket is to rapidly heat the air through the top baking device.
3. The special pattern inside the air fryer food basket forms a vortex heat flow, which can contact the surface of the food material 360 degrees in an all-round way, and quickly take away the three functions of water vapor generated by heating to work



figure 6.6 air fryer³

³ Picture from: <https://detail.tmall.com/item.htm?spm=a230r.1.14.69.47ff50c25U6ZkN&id=559343309345&ns=1&abucket=10>

synergistically, thereby forming a golden crispy surface on the surface to achieve frying. The look and feel. The principle of air fryer uses exclusive high-speed air circulation technology. The heat is diverged from the top of the fryer and accelerated, forming a strong air convection in the pot, ensuring that the food outside can quickly form a golden crispy frying effect, while the water vapor It is intelligently discharged, so that the inside of the food is fresh and juicy, which can bring a crisp and delicious taste. Advantages of air fryer:

1. Less oil

The air fryer uses the principle of high-speed air circulation to turn the air into "oil", quickly heats and embrittles food, and makes delicious food similar to fried food. Like meat, seafood and vegetable foods that have been marinated, you can make a delicious taste without adding oil. Fresh vegetables and a spoonful of oil can make the taste of traditional frying.

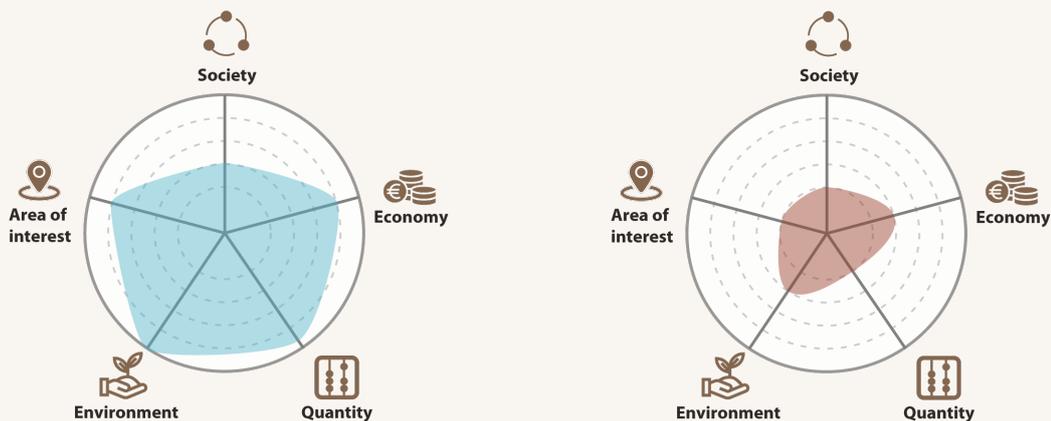


figure 6.7 impact rating criteria of air fryer

2. Easy to clean

The inner layer of the air fryer is a non-stick coating that can be easily cleaned or wiped.

3. Safe and healthy

The air fryer does not need to be fried in oil like traditional fried foods. When fried in the traditional way, the food itself will also drip into the frypot, which can reduce the oil by up to 80%, which is more beneficial to the body health.

4. Faster to use

When the air fryer is used for food, you don't need to wait for a long time. You can select the time required for the food and start the control knob. You don't need to be guarded like traditional fried.

5. Saving gas costs

The traditional method of frying requires repeated frying of the ingredients, which takes longer and consumes a lot of gas, while switching to an air fryer saves time and reduces the use of gas.[1](figure 6.7)

6.4

FOCUS ON WATER

Input: Part of the water is mainly focused on the food cleaning section. According to the cooking process steps, after the meat products are thawed, the meat products and fruits and vegetables are separately cleaned. According to the principle of first washing vegetables and then washing meat, each process should



figure 6.8 impact rating criteria of water reused

be cleaned twice. The first washing wastewater of vegetables is mainly water and soil dirt, while the impurities in the second washing wastewater are few. Therefore, this two steps of wastewaters can be reused for simple precipitation to thaw the meat and for the first time rough washing of meat products and seafood to reduce water consumption. When the restaurant uses an air fryer instead of the traditional frying method, it reduces the amount of soot produced by the frypot and reduces the amount of dirt in the kitchen, thereby reducing the amount of detergent and water required.

Advantages of reuse:

1. The cost of the water storage bucket is low and does not take up space.
2. Reduce water consumption and save costs.
3. The amount of detergent and cleaning utensils will be reduced, saving costs and reducing the content of the output water. (figure 6.8)

6.5

FOCUS ON DISPOSABLE TABLEWARE

For takeaway disposable plastic products, first of all, because of the business model of takeaway, the use of packaging boxes is a necessary step. Therefore, replace disposable plastic packaging products with degradable materials. Degradable plastic refers to a class of plastics whose products can meet the requirements of use, the performance remains unchanged during storage, and can be degraded into environmentally friendly substances under natural environmental conditions after use. Degradable plastics are developed based on practical, degradable, safe, and economical conditions.



figure 6.9 impact rating criteria of degradable plastic

Degradable plastics undergo three stages of degradation, collapse, and degradation, which are manifested as physical decline, morphological changes, thinning, and brittleness, Chipping, mildew, weight loss, molecular weight decrease, chemical structure changes, etc., not only physical properties have changed, but chemical properties have also changed. In this way, the waste can be reduced in volume and volume in the short term, which can reduce or suppress environmental pollution, and eventually return to nature and soil assimilation.

Therefore, it is also called environme- ntally degradable plastic. The main application fields of degradable plastic are: agricultural mulch film, various plastic packaging bags, garbage bags, shopping bags in shopping malls, and disposable tableware.

Advantages of degradable tableware:

1. **Practicality:** It has application performance and hygienic performance equivalent or similar to similar ordinary plastics.
2. **Degradability:** After completing the use function, it can degrade faster under natural environmental conditions, become fragments or pieces that are easily used by the environment, and finally return to nature.
3. **Safety:** Substances generated during and after degradation are not harmful to the environment or have potential harm.
4. **Economy:** The price is the same as or slightly higher than that of similar ordinary plastics.[2](figure 6.9)

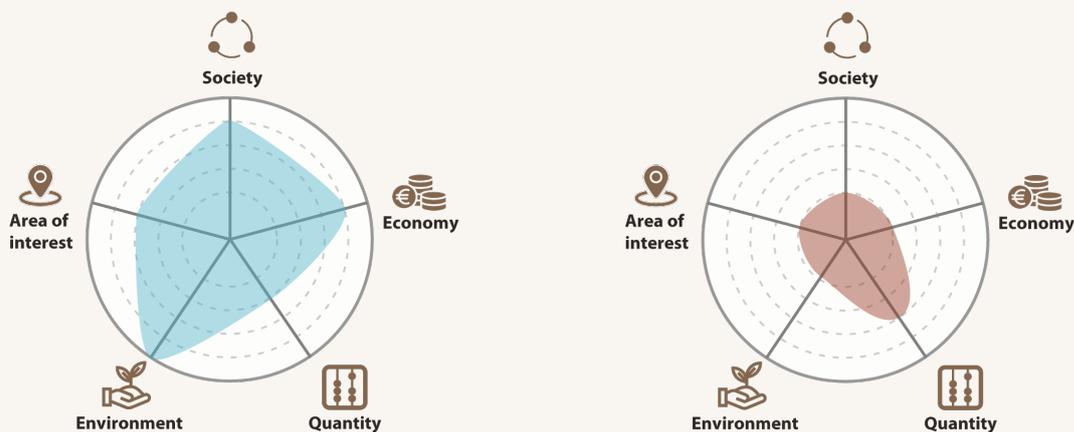


figure 6.10 impact rating criteria of business strategy

Business strategy

Although packaging boxes and bags are necessary, but for tableware (Spoons, forks and chopsticks) We can combine certain business strategies to guide consumers. When customers place orders on their own through the APP, a page prompt will appear. If customers choose not to use the disposable degradable tableware provided by the restaurant, the restaurant will give the customer a certain degree of discount for the order as a reward; on the contrary, if the customer needs to use degradable tableware, the page will prompt the customer how to put garbage after the meal, this measure will make the customer aware rejecting garbage pollution starts with itself and is more deeply rooted.

Advantages of business strategy:

1. Consumers' sense of participation is stronger and the effect is more obvious.
2. Improve the restaurant's brand image and shape better business standards.
3. No actual advertising investment is required, and the solution is more efficient and efficient with e-commerce.

(figure 6.10)

6.6

FOCUS ON DISPOSABLE WOODEN CHOPSTICKS

Chopsticks are a common dietary tool in China, usually made of bamboo, wood, bone, porcelain, ivory, metal, plastic and other materials. It is one of the most commonly used tableware in the world and one of the symbols of Chinese food culture.

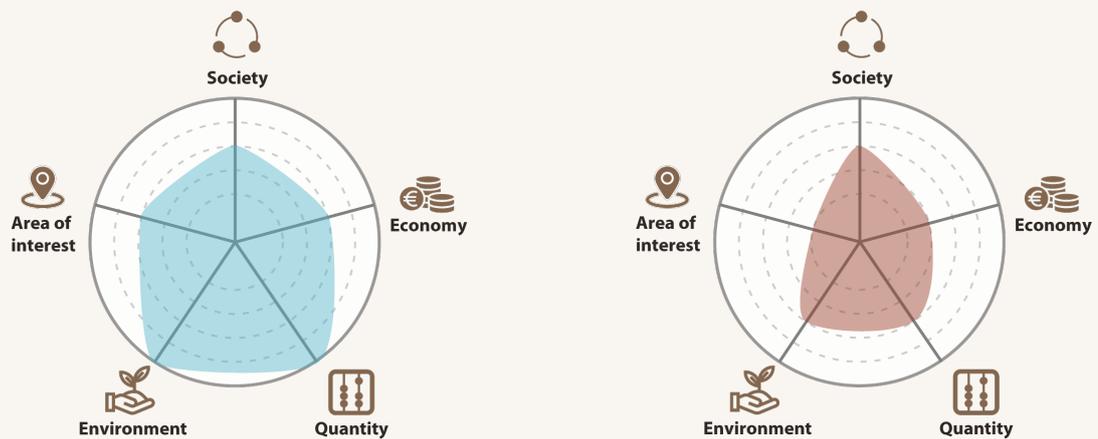


figure 6.11 impact rating criteria of wooden chopsticks

Wooden chopsticks

Wooden chopsticks Characteristics: Natural material Bamboo chopsticks are non-toxic, harmless, environmentally friendly, and cheap. Good quality bamboo chopsticks will not deform when exposed to high temperatures. Wooden chopsticks are seen more on the market. Rosewood, nanmu, jujube, and holly can all be made into chopsticks. Hardwood ebony chopsticks are the most expensive.

Advantages of wood chopsticks:

1. Simple processing technology and low cost.
2. No staining, non-toxic and harmless.
3. Comfortable and high temperature resistance.

(figure 6.11)

Stainless steel chopsticks

Stainless steel chopsticks also have many health advantages. Studies have shown that nearly half of people have *H. pylori*, which causes stomach problems, and most of these bacteria are transmitted through the family. Chopsticks are one of the important transmission media. The structure of wooden chopsticks is loose. After using for a long time, the surface will no longer be smooth, and many small grooves will appear. It is very easy for bacteria to remain. The damp storage environment will also easily cause bacteria and mold on wooden chopsticks, and enter the human body with food, endangering people Health. But metal chopsticks are different. It is very easy to clean. It can be wiped with boiling water and wiped with a napkin. It is also very easy to disinfect. Compared with other materials of chopsticks, stainless steel chopsticks are not easy to deform when heated, which is very practical.

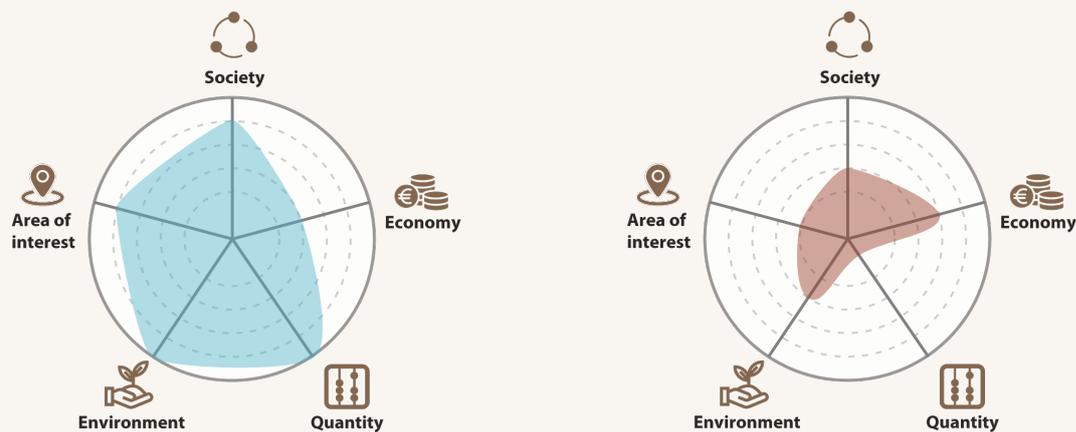


figure 6.12 impact rating criteria of stainless steel chopsticks

Advantages of stainless steel chopsticks:

1. Easy to clean and easy to disinfect.
2. It doesn't need to be changed frequently and has a longer service life.
3. Better quality and harder.[3]

(figure 6.12)

SYSTEMIC PROJECT

Introduction

Chinese food culture

Holistic diagnosis of Turin city

Holistic diagnosis of WangJiao restaurant

Analysis of problems

Analysis of opportunities

SYSTEMIC PROJECT

Outcomes

Conclusion

N

O

Overview

As shown in the follow (figure 7.1)we have down the complete systematic design of the restaurant.

In the kitchen part, the air fryer replaces the traditional frying method, which reduces the amount of rapeseed oil and saves the cost of waste oil treatment, thereby reducing the use of gas and kitchen fume, thereby ensuring kitchen food hygiene, reducing stains and reducing water and detergent consumption; adding a water storage bucket in the process of cleaning ingredients, the water used to wash vegetables is precipitated and filtered, and reused for taking out of the re-frigerator frozen meat is thawed and the first preliminary washing of meat and fish reduces water consumption.

In the restaurant section, the electronic paper ordering system is used to replace the traditional paper menus, so that customers can understand the food culture of various countries, and reduce the waste of organic food by influencing people's eating habits and behaviors, so as to better understand the characteristics of dishes, thereby make people pay more attention to their own health. For the organic food waste that has been generated, the restaurant uses a commercial food waste treatment system. The organic food waste is crushed and dehydrated in the restaurant to reduce the growth of bacteria and reduce the volume of waste. The treated garbage is then transported to a fertilizer plant to be made into fodder and used; for chopsticks provided by customers dining in the restaurant, after cleaning and recycling, stainless steel chopsticks are used instead of disposable wooden chopsticks in the restaurant to reduce environmental damage.

Takeaway and packaging boxes and cutlery are made of degradable plastic. Customers order through APP. Customers can get the coupon provided restaurant if they choose to support environmental protection, they agree to give up the use of disposable tableware (degradable plastic spoon, degradable plastic fork, wooden chopsticks). Otherwise if people choose to use it, the ordering system will

remind customers how to sort boxes and cutlery. Call on people to pay attention to environmental issues, and also help community waste sorting.

In order to provide customers and merchants with a better user experience, we have also set up an electronic ordering system to better optimize our systematic design.

SYSTEMIC PROJECT

(Data/week)

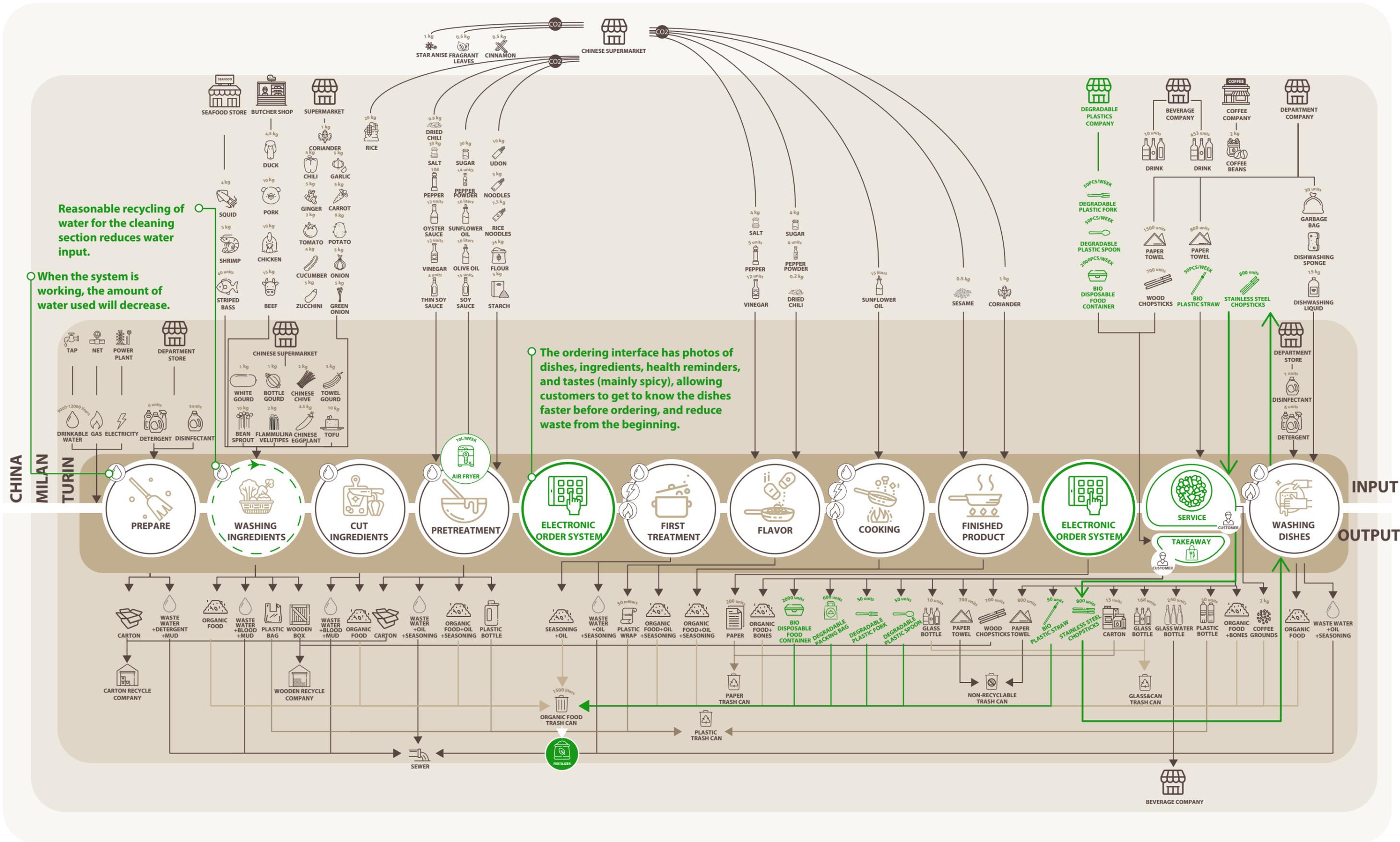


figure 7.1 systemic project

Electronic ordering system

Background

Based on a quantitative study of the surrounding environment and population, we found that the restaurant is located in the center of the city and there are many schools around it. Among them, the restaurants between Turin's two major universities (University of Turin and Polytechnic University of Turin) are not too far away. It is also close to Susamen Railway Station, with subways and buses nearby. In densely populated areas, there are many young people, tourist population is large, and potential customer groups are large.

The restaurant currently uses the paper menu with Chinese and Italian translations. The menu does not contain pictures and details of the ingredients.

For foreign customers, this is another country's food culture system. Simple paper menus make it difficult for foreign customers to understand the dishes. Often they are wasted because of their food taboos. Food, so the waste of food waste in the restaurant is relatively serious. The restaurant only updates the menu every six months according to the frequency of ordering by customers. Therefore, it is a bad cycle if the customer does not understand the Chinese food culture. Chinese dishes are not well recognized by customers, and more improved dishes appear in the public's perception.

Therefore, we want to better improve the restaurant system. We need to change the phenomenon of insufficient customer awareness. Except for the necessary food waste generated by the restaurant in the process of preparing dishes, the rest of the food waste is left by customers for various reasons. Next, if we want to effectively improve the overall environment, we must not only focus on how to deal with the organic food waste that has been generated, but also solve the problem from the beginning.

Using a smarter electronic ordering system to replace traditional paper menus and giving customers a better ordering experience is also a more efficient service.

Interview

In order to better analyze the requirement of businesses and customers, we next conducted interviews and surveys of restaurant employees and customers to obtain relevant data. Here are the main questions that were developed before the interview:

1. About the restaurant:

What do you think about the electronic ordering system? What if it is used in your restaurant?

What inconvenience do you think the current menu is?

What is the process of ordering food in your restaurant?

What features do you think are essential? Are the staff of the restaurant all Chinese?

Are there any obvious twists and turns in the customer's order?

What happens to the restaurant if the customer orders improperly?

Have you had any troubles in order to order food for customers?

What is the difference between Italian guests and Chinese guests when ordering food?

There are often guests with special requirements?

What detailed information do you think each dish needs to be provided to the customer?

Choose the table number process. Do

you think it is only the staff to operate or the customer can operate it also?

2. About the customer:

What inconvenience did you encounter during the ordering process?

Do you use an electronic ordering system? What do you think of it?

Have you tried some dishes before you didn't know about? what's the feel?

Is your order consistent with your imagination?

What if you ordered something you didn't like or ate something you didn't eat?

What related information of food you like to see from the menu?

Are you confused when you look at the menu?

What are the inconveniences of the current menu?

Problems

Based on the above interviews, we have listed the main eight questions according to their priorities, as follows:

1. customers can't understand the menu accurately, sometimes they need to ask the clerk;

2. for some dishes that they don't know but after the customer orders, the actual dishes are different from what they think, which affects the customer's dining experience;

3. for some customers order the same dishes every time, so they don't want to

try other dishes;

4. if customers order dishes they do not like, they usually do not finish their meals, causing food waste;

5. if customers order food that they cannot eat (usually because of allergies, or religious taboos, personal beliefs etc, the restaurant will replace a food that does not contain the same ingredients, this measure will also cause a lot of food waste);

6. for restaurants, most of the raw materials are transported from Milan, and even some ingredients are imported from China in order to ensure authentic taste. The purpose is to ensure that the restaurant has the best and freshest ingredients. Whether it is transportation or cost, the food waste is a direct economic loss.

7. the paper menu is usually fixed and cannot be adjusted in time (such as seasonal vegetables).

8. paper menus sometimes cause damage due to various accidents and need to be replaced constantly (for example, accidentally the oil is sprinkled on it;

Concept

In order to meet the needs of merchants and customers at the same time, we have divided the items that must be resolved and the items that can be selected according to the priority of the problem,

and listed the following concept for the electronic ordering system:

For customers:

1. need to know the taste of each dish; (Required)

2. need to know what ingredients to use; (Required)

3. need to be able to see how the dishes are done; (Optional)

4. can choose the taste of dishes by customers themselves; (Optional)

5. if the dish is spicy, make customers know the degree of spicy; (Required)

6. some special foods (such as Dumplings, Spring rolls) customers need to know the amount. (Required)

For restaurant:

1. can choose the language so that both Chinese waiter and Italian waiter can use it; (Required)

2. can choose the number of the table for the customers, and record the number of customers, also choose the type of customers; (Required)

3. customers can order food first when the restaurant staff is busy. (Optional)

4. added some health tips to let users know the health knowledge of each dish. (Required)

After knowing the user needs and judging the level of importance, our framework is much clearer. Since the restaurant staff knows their work well, and most of the staff are Chinese, the touchpoint we mainly solve are more inclined to the needs of consumers.

Service

Based on the above requirements, we translate it into specific functions. There are a total of nine levels in the electronic ordering system (WANGJIAO Restaurant), (figure 7.2):

The first is that the waiter performs the preliminary operation according to the customer's situation:

Homepage:

There is a choice of restaurant logo and system language on the homepage, and enter different language interfaces according to customer's or restaurant staff's choices;

Table selection:

This page only for staff, the staff can check the current location of the restaurant; the available location; the usage of each hall; easily select the appropriate location for the customer through the used table customer nationality;

Number of people selected:

Select the number of people to eat and the type of customer and automatically calculate the meal fee at the time of settlement; After the customer is seated, the customer will be ordered by themselves, or if the staff is busy, the customers can order before, after that staff choose the table;

Menu Homepage:

Confirm to start ordering;

Notice:

Remind the customer if there is any history of allergies to the ingredients, inform the waiter in advance to remind the kitchen to avoid use;

Recommendation:

The dishes are displayed on the left according to the classification, and the selection can be quickly entered. The recommended dishes of the restaurant are displayed on the main screen for customers' reference.

Dish Description:

Click on the picture to enter the page of the description of the food. You can see the name of the dish, the price and the physical map on the left, the ingredients used in the menu, the health tips and the taste selection on the right; the shopping cart in the upper right corner will show the selected quantity.

1. Health Tips: Chinese food has a deep research on the properties of the ingredients. The ingredients and cooking methods of the ingredients in each dish of Chinese food have rules and are recommended to the appropriate crowd of customers;

2. Taste: The choice of taste is mainly the choice of the spicy taste of the dish, to avoid the discomfort caused by the customer's excessive spicy food;

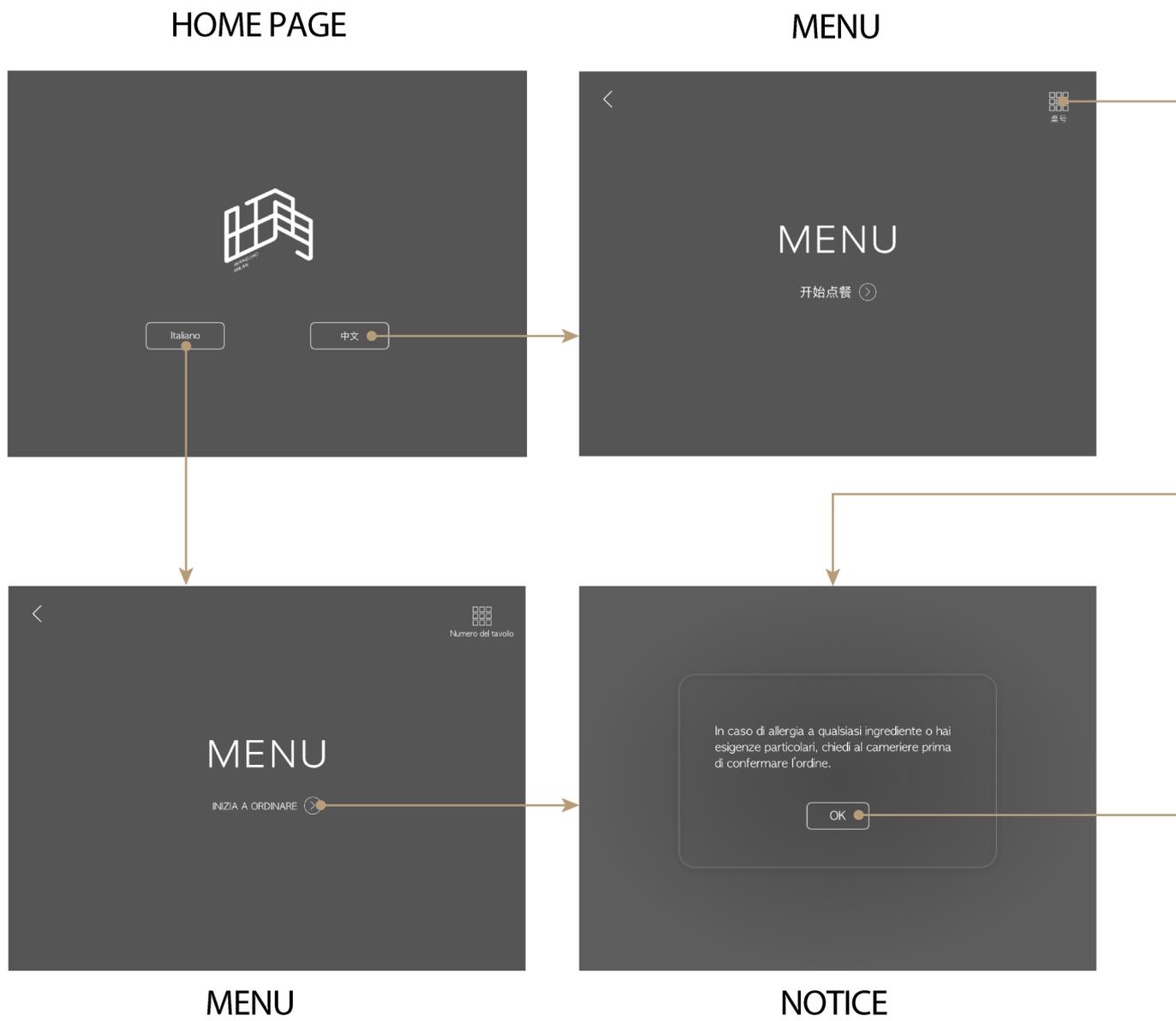
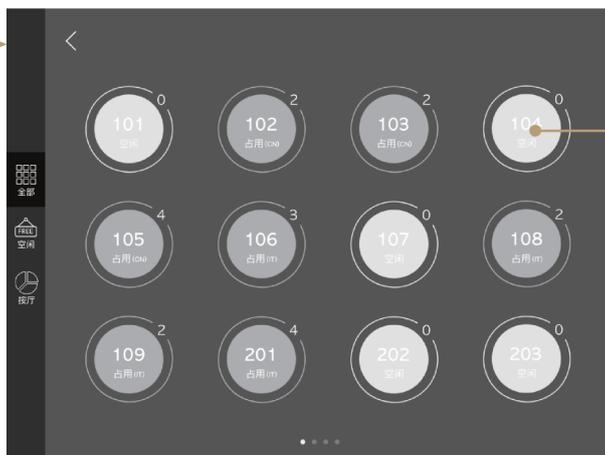
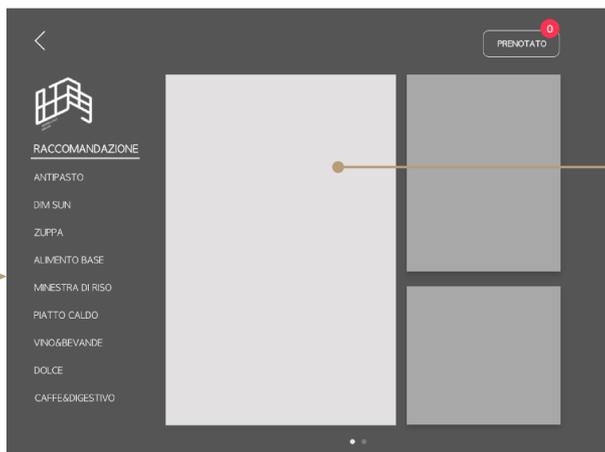


figure 7.2 wireframes of electronic ordering

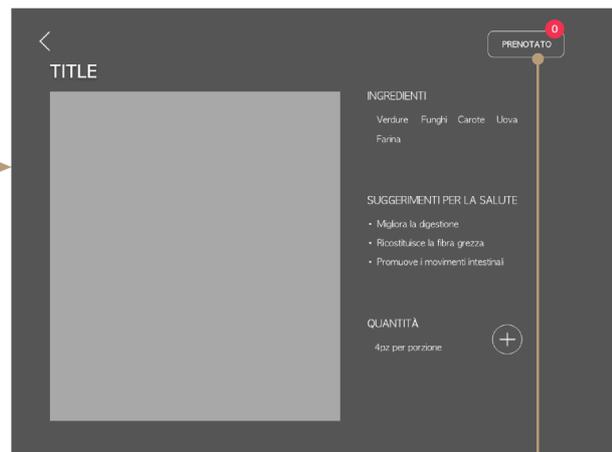
ENTER NUMBER OF PEOPLE



SELECT TABLE



RECOMMENDATION



DISH DESCRIPTION



CONFIRM



ORDERED

Color: The system uses a small number of colors, mainly because the original color changes to green after the element is selected. Green is the well-known color as the selected color, and it is more prominent in the dark background, which makes people can see at a glance. The overall visual design serves the function, allowing the customer to enjoy the vision during the optimized ordering process.

The electronic ordering system can intelligently sort, let the restaurant recommend key dishes, flexible marketing, improve management, promote customer consumption; realize seamless connection between customer-waiter-kitchen, save costs, electronic ordering system can replace ordering the paper and pen used at the time, and the

direct operation of the restaurant directly on the electronic ordering system when changing the menu or modifying the price eliminates the tedious work of printing check, and also saves costs. The electronic ordering system menu can be used to promote price changes at any time, adjust the dishes at any time according to seasonal seasonality, and add new products at any time, so that the restaurant can flexibly carry out multi-directional promotions and other activities to improve business efficiency; each dish is provided with complete pictures and detailed instructions for customers. Learn about the practices, tastes, materials, nutrition, and allusions of dishes, and avoid the problem of dish introduction due to frequent changes in sales staff or inadequate training.

3. quantity: Some special dishes will display the quantity, so that customers can choose the number of copies.

Order:

When you select all the dishes and click on the shopping cart, you will enter the selected menu list to display all the dishes, prices and quantities.

Confirmation:

Display ordering success, complete the ordering step.

Interface

In the end, we converted the wireframes into a visual effect diagram. (figure 7.3)

Style: The overall visual style is dark as the background, and the main elements are bright, giving the overall a sense of simplicity.

Image: The background image of the system is derived from the real-life shooting of the restaurant, which makes the customized features of the system more obvious and enhances the brand recognition of the system.

On the plate, the picture occupies a larger area, highlighting the focus of the system, allowing the customer to focus on the food and quickly find the right dish for them.

Fonts: Italian fonts use AppleGothic in a unified way, Chinese fonts use Apple, these two fonts are commonly used fonts in electronic systems, with high text recognition and simple style, suitable for the overall simple style.

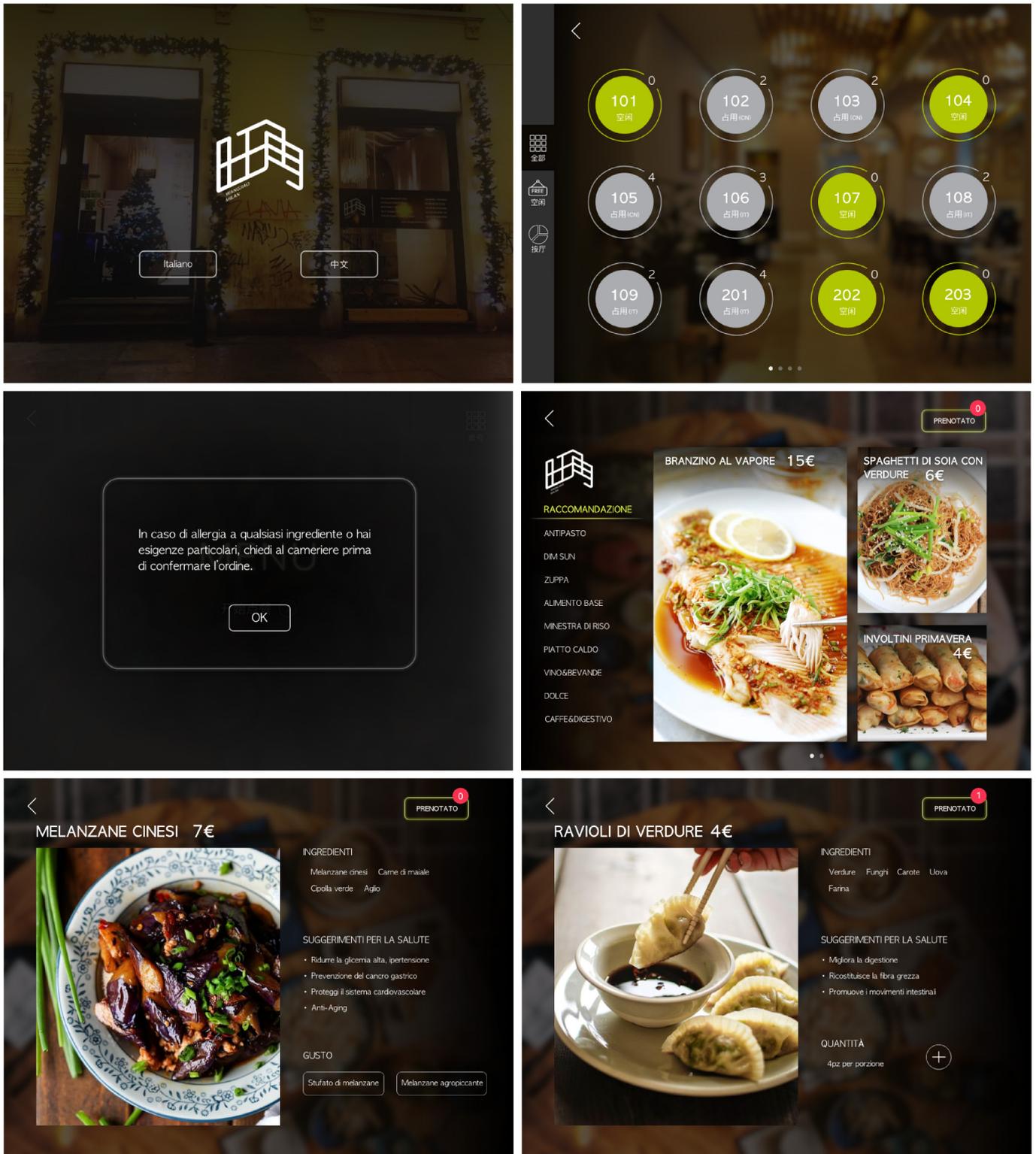
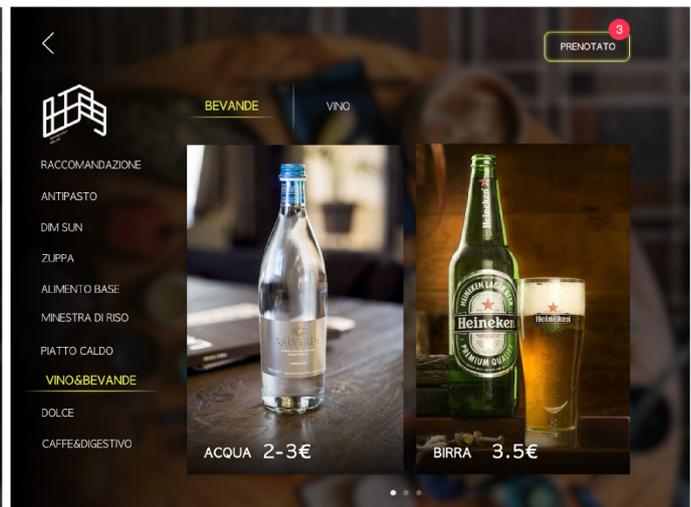
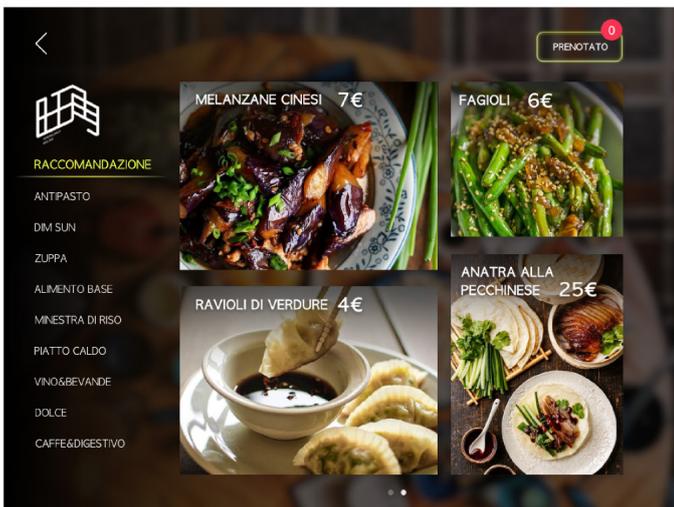
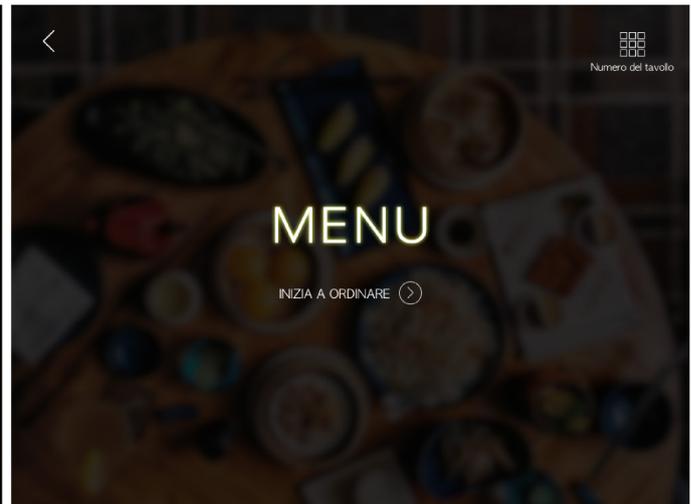
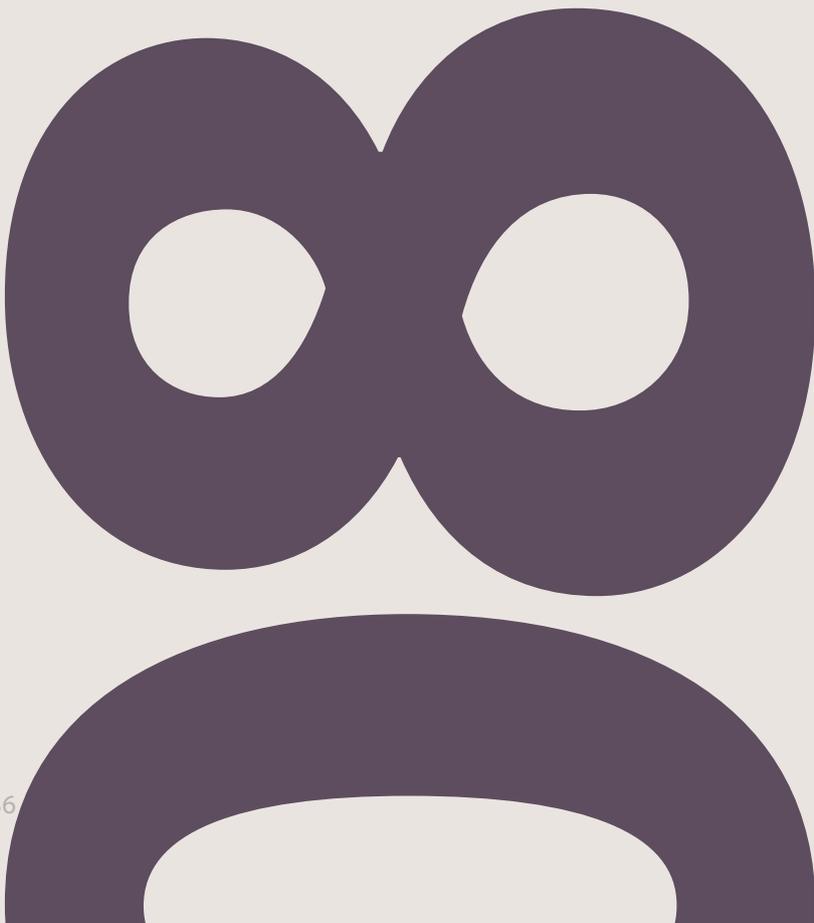


figure 7.3 visual effect diagram of electronic ordering system



- Introduction
- Chinese food culture
- Holistic diagnosis of Turin city
- Holistic diagnosis of WangJiao restaurant
- Analysis of problems
- Analysis of opportunities
- Systemic project
- OUTCOMES**
- Conclusion

OUTCOMES



Outcomes

The design of the system solution is shown below, which shows the corresponding hierarchy (first level) and problem (second level), and five aspects between the solution (third level) and benefits (fourth level) . At the same time, the solutions in these five aspects are interrelated and promote each other, forming a systematic intertwined and cyclical countermeasure, and looking forward to the vision of harmonious symbiosis.(figure 8.1)

In the system project, we study not only the restaurant but also the customer.

For restaurants, water is recycled and water used to reduce oil pollution is reduced. On the economic side: reduce the input of water consumption to reduce costs; on the environmental side: reduce the demand for water and ease the pressure on water use;

Use air fryer instead of rapeseed oil, reduce the use of raw materials while reducing secondary pollution and the need for water during cleaning, in economic terms: save a lot of energy (natural gas) and raw materials (sunflower oil, detergent, cleaning tools, etc.) purchase costs, and waste oil treatment costs; in terms of logistics: because the waste oil treatment steps are omitted, the restaurant does not need to send the waste oil for treatment. Oil production plants reduce transportation links and reduce pollution caused by transportation;

In the treatment of organic food waste, the commercial waste treatment system is used. The pretreated waste removes water and the volume is reduced by 85%. The pretreated waste can be sent to the fertilizer company to turn the feed into the farm to bring the garbage. Recycling and combining the new electronic ordering system to reduce the amount of garbage. In terms of economy: saving costs and increasing the income of

restaurants; in logistics: reducing the number of garbage transportation; in terms of culture: improving brand efficiency, promoting cultural exchanges, appealing to the public to pay attention to health issues; in terms of environment: reducing Secondary pollution caused by food waste;

When using disposable tableware, replace ordinary disposable plastic products with degradable plastic, and convert disposable wooden chopsticks needed for restaurants to stainless steel chopsticks, then recycle and clean them before using them for restaurant services. In the case of takeaway services, degradable meal boxes are a necessity, but disposable tableware is a reminder when customers order whether to use disposable degradable tableware. If not selected, the merchant will give the customer a partial discount. If the customer still chooses to use the tableware, the merchant will remind the how should customer dispose of these degradable tableware waste; On the environmental side: reduce waste of disposable products, degradable plastic can be recycled to fertilizer processing plants to make fertilizer; on the social side: better convey the concept of environmental protection and involve customers; on the cultural side: People can raise public awareness and take their own actions to express it.

OUTCOMES



- reduce restaurant costs
·increase income
- promote different cultural exchanges
·calling consumers to start from themselves
·teach young people more common sense
- reduce costs
·reduce energy consumption
·reduce pollution of transportation
- reduce the amount of pollution
·reduce secondary pollution of transportation
- enhance interpersonal communication
·improve restaurant brand efficiency
·more influential among peers



figure 8.1 outcome

- Introduction
- Chinese food culture
- Holistic diagnosis of Turin city
- Holistic diagnosis of WangJiao restaurant
- Analysis of problems
- Analysis of opportunities
- Systemic project
- Outcomes

CONCLUSION

CONCLUSION



Conclusion

Part 1. With regard to the description of the background, we mainly organize the development of Chinese food culture through the way of desk research. Its development has evolved over thousands of years of wisdom. The reason why the variety of dishes and species is large is because China has a large land area and a large geographical difference, and the adaptability of crop cultivation and food raw materials is different. In different regions, people have different dietary needs. After a long period of time, they each area formed a local representative diet system. Then we all know that the concept of Chinese traditional culture "Yin and Yang" corresponds to everything, so the definition of the properties of ingredients and condiments "Yin and Yang" is also used as the criterion for judging. The difference is also determined by the cooking method of the ingredients. The cooking methods of Chinese food can be roughly divided into 9 kinds. According to the requirements of the dishes and the cooking methods depending on there are different needs; The value of diet has a vital role in the development of Chinese medicine in China. The medicine and food are the same roots in traditional Chinese philosophy, the food is used to fill the hungry; depending on the condition of food choices and production methods are medicine, there is a function of treatment.

Part 2. First, we have an holistic diagnosis of the area of Turin, we mainly obtain data through a large number of desktop research, and summarize them by means of charting. The overall diagnosis focuses on the types of agricultural cultivation in Turin and the number of animal husbandry. In this case, the data in this part provides a good reference value for the analysis of the raw materials of the restaurant. They are related to the choice of menus in the Chinese restaurant in Turin. The local ingredients have restrictions on the choice of the restaurant; the urban cultural structure It also reflects the acceptance of urban residents' foreign culture, such as the establishment of education systems, such as museums, churches and other buildings. The economic development trend is a good measure to understand the level of urban development and consumption, and the economy promotes the development of society. The degree of convenience of traffic distribution also determines the degree of contact and communication between the local and the outside world. The structure of the urban population and the changes can be used to determine the state of the city, and the cost of the municipal waste disposal and cost can be obtained by the government. And resource costs, with these data as Our foundation is a

the very system designed restaurant.

Part 3.After the territory is more comprehensive, we try to get in touch with the restaurant. We hope that the restaurant can support our project and give us as much help as possible. After obtaining the consent, we are going to conduct a desk research and field visit in the same time,in the stage of desktop research, we use the social networking tools to understand the basic information of the restaurant, such as geographical location, convenient transportation, restaurant operation time and scale, the overall consumption level of the restaurant, the social characteristics around the restaurant, after we get the basic information, we set out to prepare for field visits. Before we did the field visit, we listed a number of questions to help us better collect the information that we needed, and after we get all the information, we analyzed the data and check information that we have.Next, we visualize how the energy, raw materials, input and output in the daily process of the restaurant are distributed through graphical visualization, and how all the elements are connected to the outside world.

Part 4.After analyzing the linear process of the restaurant, we found out the priority of the problem according to the number of questions. Finally, we selected to focus the three most important

problems: water, oil, organic food waste, and found through analysis. Through analysis, it is found that the impurities in the wastewater of the catering industry are complex, and the high content of suspended solids, oil, COD, SS and BOD is a problem faced by all catering industries; the production of a large amount of organic waste will not only pollute the environment and cause food safety. In addition, it also increases the operating cost of the restaurant; half of the cooking oil is used to fry the waste oil and the hazard generated by the frying, and the fried foods are detrimental to people's health, so how to perform these outputs In the case of handling and avoiding secondary pollution that affects the environment in which humans live, the system design can change which links to optimize the linear process of the restaurant.

Part 5.In this part, we try to find a variety of solutions for all the problems, choose the best solution, and pay attention to solving the problem of water in the input part, because all the output water goes through the sewer into the urban sewage system, so we put focus on the input of water, then carefully analyze each part of water supply in the restaurant, find out the steps that can be optimized, reduce the water consumption from the source; find the waste oil in the subdivision of the restaurant oil modern appliances can

be used instead of traditional cooking methods to reduce the amount of cooking oil and reduce the harm caused by soot. In the part of organic food waste, in addition to considering how to recycle waste, we prefer food. The controllable part of the garbage (customer dining section) goes through the change of the customer's ordering behavior to solve the problem of food waste generation in the beginning. Therefore, we have improved the paper menu and made an electronic ordering system so that customers can choose according to their own preferences, in addition we also added a section of health tips to guide the diet and reflect each the value of the diet.

Part 6.After selecting the most feasible method, we re-adjusted the system project, defined the production mode of the new system, compared the current situation, the system output will be greatly reduced after the improvement, the system will better serve the restaurant and customers, and also added some information as a support, marketing means helps the restaurant to better serve customers, and also assumes responsibility for publicizing environmental protection to the public and starts from the restaurant itself; in addition, for the part of create the new electronic ordering system we conduct background analysis on customer ordering behavior

and specialize in customers. After interviewing and discovering the problem of the ordering process, we put forward our conception of the electronic ordering system according to the user's needs, listed the contents of the new ordering system, and designed the simultaneous meeting according to the needs of the merchant. The electronic ordering system for customers and businesses, it has also improved our new design project.

Part 7. The new system project strengthens links with other parts of the territory, and waste utilization and reduced input will better achieve sustainable and better operational practices in terms of economic, environmental, logistical, social and cultural aspects. Reduce economic costs, reduce the output of food waste and disposable waste, and raise awareness of environmental protection to the society. The reduction in output also reduces the cost of logistics processing. It is better to spread China while working to solve the problems in the afterimage industry. It is desirable to make diet as a cultural communication and to make a positive impact in every aspect.

From a cultural point of view, Chinese restaurants face a shift in culture between consumers in different countries. The current Chinese cuisine has been passed down through experiments and improvements of several generations. Eating is not just about filling hunger to replenish energy, but the chef conveys the history and development of a country through the level of cooking craftsmanship. It carries the wisdom of civilization for thousands of years. We hope that more people can understand the value of food therapy conveyed by food, and use food as a carrier to introduce the spirit of Chinese food culture to the world. Everything has attributes, and it is reconciled through Yin and Yang to make it one. The body absorbs and accepts, helps the body to maintain balance, and makes the great wisdom of Chinese food culture go to the world.

From the point of view of the catering system, the biggest core issue is how to deal with the large amount of wastewater, waste oil and organic food waste generated by the hotel every day. The output of the wastewater is connected to the lower water pipe through the pipeline. We can reduce the water consumption by optimizing the reasonable arrangement of the water supply. The oil can also be used to replace the use of some oils, reducing the generation

and treatment of waste oil; food waste How to deal with the quality of people's living environment is closely related. If not handled properly, it is easy to cause environmental pollution problems such as eutrophication and malodor. First, we take the pretreatment method to grind the organic food waste into small particles in the restaurant and then dehydrate it. After pre-treatment, the waste volume is reduced by 85%, and it is easier to store. After being accumulated, it is sent to the fertilizer plant for fertilizer processing. However, we notice that all food waste treatment methods are looking for the best food waste that has already been produced. The method is to maximize the reuse of the available portion of organic waste, but in essence does not reduce the amount of organic waste, so the project is more concerned with the production of organic food waste. That is, from the source of organic food waste, the number of problems can be solved by guiding the behavior of users, because both the restaurant itself and the entire catering system can only reduce the generation of organic waste and the resource treatment of organic food waste. It is the best improvement and the most effective measure for the improvement of the overall environment. Therefore, we have established a ordering system to better enable consumers to understand their

needs and reduce waste at the beginning of ordering.

Finally, We are very grateful to WANG-JIAO MILAN Restaurant for the help and participation provided throughout the project make our project has been carried out without a hitch. After all improvements, we will verify the theoretical results of the project through the actual operation in the restaurant. We look forward to the feedback provided after the implementation of the restaurant will help the project to make subsequent corrections and adjustments.

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