10YFP Consumer Information PROGRAMME

中国连锁经营协会
China Chain Store & Franchise Association

China Sustainable Consumption Research Program

Report on Consumer Awareness and Behaviour Change in Sustainable Consumption

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Executive Summary

The current global population of 7 billion is depleting the Earth's resources at a rate that exceeds its capacity. With rapid economic growth and urbanization in the Asia-Pacific region, lifestyles have undergone unprecedented changes, and growing consumption brings more and more severe environmental stress and impact.* Meanwhile, the global Sustainable Development Goals (SDGs) provide a clear path for human development. Responsible production and consumption is one of the 17 sustainable development goals intended to change the current production and consumption patterns and is closely related to other sustainable development goals.

As the world's second largest economy, China's production and consumption pattern make an important contribution to sustainable development. The Chinese government has also raised sustainable production and consumption to the level of a key national strategy, and promoted a revolution in energy consumption. In 2015, it released *Guiding Opinion on Promoting Green Consumption* and many other relevant policies, and the establishment of a green supply chain system has been included into The 2016 - 2020 National Five-Year Plan.

However, for promoting sustainable production and consumption, there are still challenges in many aspects, including a lack of transparency, incomplete information, and the gap between consumers' awareness and their actions. Therefore, this report aims to provide an understanding of the current status of sustainable consumption in China, with a focus on consumer awareness and behaviour in relation to sustainable consumption. Based on Life Cycle Analysis (LCA), the report surveyed 9,370 consumers across ten cities in China, inquiring about their awareness, purchasing behaviour, usage and recycling habits. With the recommendations from relevant parties, the report also seeks to identify the opportunities, challenges and existing good practices in China in order to provide policy advice to decision makers.

This report provides a comprehensive analysis of the current status of sustainable consumption in China, by conducting the 2016 sustainable consumption survey questionnaire in 10 major consumer cities, with reference to the China Chain Store & Franchise Association's consumer surveys in the last 5 years and online questionnaires to better understand policy, consumer awareness and willingness, as well as market conditions.

From the consumer demand side, the report explores the importance of purchasing channels, store operation models and sustainable certification systems in promoting sustainable consumption.

From the retail industry perspective, the report explores how the improvement and management of the supply chain sustainability affects the production enterprises to promote sustainable consumption. The report also proposes to improve the waste classification and recycling, and to engage the participation of stakeholders, especially at community level, in promoting sustainable consumption.

The survey found that

- **Chinese consumers have a basic recognition of sustainable consumption.** In particular, young people (20-29 years old) display strong intention and willingness, while 30-49 years olds have greater purchasing power for sustainable consumption. **The main driving forces for sustainable consumption in China are food safety and health, environmental protection and reducing overall costs.**

- **Half of Chinese consumers are willing to pay a premium of up to 10% for sustainable products.** The actual level of premium, on average, exceeds this level. On the other hand, 10% of consumers have a strong willingness to pay for sustainable products, providing a core group of support for sustainable consumption.

- **China's market for green products is currently not competitive, and is limited to niche consumers.** The market potential for organics and certified products can be expanded through increasing knowledge and trust. Sustainable standards and labelling are one of the effective measures, but they currently suffer from a lack of consumer awareness and recognition. The government has an important role to play in improving this situation.

This report suggests that the government should support guiding and promoting sustainable consumption through promoting and achieving sustainable consumption at the strategic and political level, promoting the implementation of relevant laws and regulations, using and improving existing pricing systems, tax systems and fiscal incentives, promoting the development of sustainable product and service market; while enhancing the community's awareness and concern about sustainable consumption.

* Global Environment Outlook VI . http://www.unep.org/geo/sites/unep.org.geo/files/documents/geo-6_ap_final_en_complete.pdf

Chapter I: Introduction

1. Background

"Everyone thinks of changing the world, but nobody thinks of changing himself".

This quote reflects the gap between intention and behaviour. Sustainable consumption is a process of changing consumer behaviour, and consumer information is the basis for this.

According to the *UN Environment Global Environment Outlook-5* [1] report, the drivers of environmental impacts and resource use are population growth and economic development. By 2050, the global population is estimated to grow to 10 billion. And *according to Human Development Report 2013*, China, Indonesia, Thailand and many other East Asian and Pacific countries have made rapid progress in human development, hundreds of millions of people have been brought out of poverty. By 2030 there will be 3.2 billion people living in the middle class, leading to greater resource demands.

In China, due to the more than 30 years of reform since 1978, the economy and society have sustained rapid development. In the past 20 years, China's GDP grew by an average of more than 10%, becoming one of the fastest growing economies in the world. 2016 was the first time that national GDP exceeded 70 trillion RMB (USD 11 trillion), ranking second in the world. By 2016, the total population of mainland China reached 1.38 billion, and GDP per capita reached USD 8,866. Total Retail Sales of Consumer Goods (TRSCG) have increased rapidly. In 2016, TRSCG reached 33.23 trillion RMB, an increase of 9.2% on the previous year. The contribution of consumption to national economic growth was 64.6%, giving consumption an increasingly important role in China's economy.

Consumption based on large-scale exploitation of natural resources has become the standard mode of growth. Approximately one third of food is wasted every year, producing up to 3.3 billion tons of carbon dioxide. Wasted water due to food waste is about 250,000 cubic metres globally, which is three times the size of Lake Geneva. If this trend continues, in

2050, we will use 60% more food than in 2006; 400% more water in industry than in 2000; and the world will use as much as 150 billion tons of resources. The rate of human consumption of natural resources is already 1.6 times the natural rate of renewal[2]. If the ecological deficit continues to expand, by 2030, we will need two earths; and by 2050, we will need three earths, in order for the natural carrying capacity to meet the demands of human consumption [3].

UN Environment's *Indicators for a Resource Efficient and Green Asia and the Pacific,* [4] showed that the world's annual consumption is about 70 billion tons of materials, of which the Asia-Pacific region accounted for about 53%. The Asia-Pacific region has significant potential to improve the efficiency of materials use. China accounts for 20% of the world's population, but has only about 7% of the world's arable land and fresh water resources. The country's increasing consumption has brought about both environmental and resource challenges.

The environmental impacts of economic activities, especially in production processes, have become increasingly significant. The Chinese government has strongly committed to pollution control and promoting the transition to a green economy. Especially in the past 15 years, China has included environmental protection within the national development strategy, establishing a concept of scientific development, and promoting an 'ecological civilization'.

However, China still faces severe environmental and resource problems, the legal system still needs to be improved, and the current approach of remedial treatment of pollution is no longer sufficient to meet the needs of social development. In the past 20 years, the Chinese government has been actively promoting cleaner production and pollution prevention at source, which has greatly reduced environmental impacts and the intensity of resource use.

On the consumption side, transforming the standard model of consumption not only reduces the flow of materials in the consumption chain, but can also track the whole product life cycle, improving the production process in order to reduce environmental impacts, and increase the efficiency of resource and energy use for more in-depth sustainable supply chain planning, from the source of production to product design, to changing the production model. Regarding energy efficiency, society also needs to transition toward sustainable lifestyles, reducing the consumption of resources from the demand side.

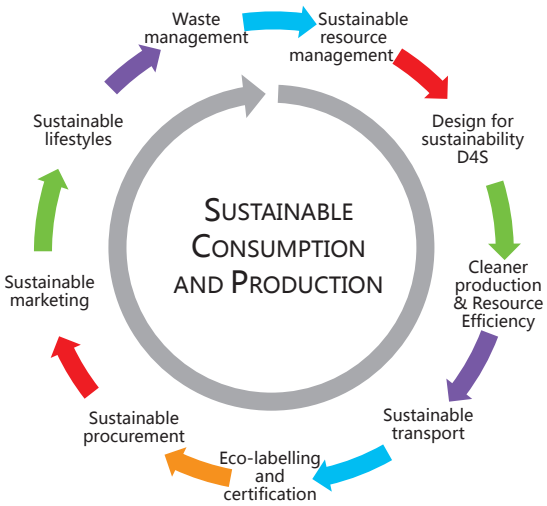
Traditional consumption patterns only focus on the performance of the product, while the environmental impact of the production, transportation, use and disposal is not adequately considered. Typically, no preventive measures are taken in relation to the external and non-economic effects on the environment, resulting in more consumption, more production, and more serious environmental damage.

Sustainable consumption is is an effective comprehensive solution in order to help resolve these challenges - each of us can have a positive effect through the daily choices that we make in relation to clothing, food, lifestyle, transportation, and leisure. Sustainable consumption is different from traditional consumption patterns. It aims to continuously improve the quality of life, while at the same time reducing the negative impacts of production and consumption. That is, it aims to provide services and products to meet the basic needs of society, improve living quality, while minimizing the use of natural resources and toxic materials, and minimizing the waste and contaminants generated in the service or product life cycle, without compromising the needs of future generations. [5]

Sustainable consumption is not just a change in consumption patterns, but also a change in lifestyle. Consumer awareness of sustainable consumption is deepening, but the changes in action to date have not been significant, so we need to act to fill this gap and transform consciousness into action. The study of consumer information has an important role to play in this process.

Figure 1-1

Sustainable consumption and production [6]

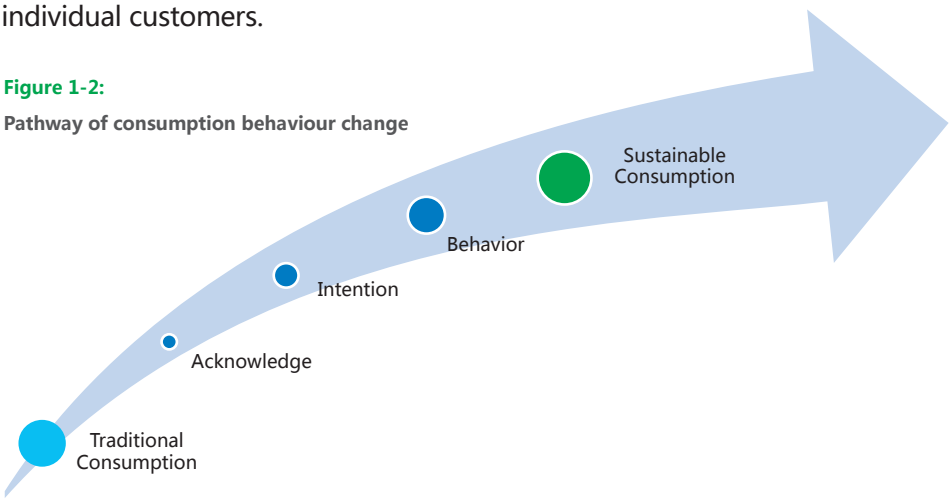


2. Consumer Information

Sustainable consumption is a certain consumption type that carries social values and social responsibilities, which is influenced by multiple factors, such as economic drives, social psychological drives and social historical technical drives.[6] The transformation from traditional consumption patterns to sustainable consumption is a continuous developing process, which requires not only the support from external policies but also the change of behaviours that develop from the intention of sustainable consumption of individual customers.

Figure 1-2:

Pathway of consumption behaviour change



Consumer information is based on the study of sustainable consumption behaviours. Sustainable consumption is an economic activity that is implanted with social values, with emphasis on personal social responsibility, which is different from the traditional consumption pattern. Besides the personalities of consumers, the external social norms and behavioural costs are also closely involved to sustainable consumption behaviours. [6] [7]

Consumption can be a process of participating in and obtaining social status. The impacts of improving personal social status and social environment by accepting sustainable products or services cannot be neglected. [8] The growing awareness of environmental and social responsibility improves the willingness of the consumers to embrace sustainable consumption. Therefore, a comprehensive understanding of consumer information can help better understand the current status of the transition to a sustainable market, and it also plays an important role in the research of development of sustainable consumption.

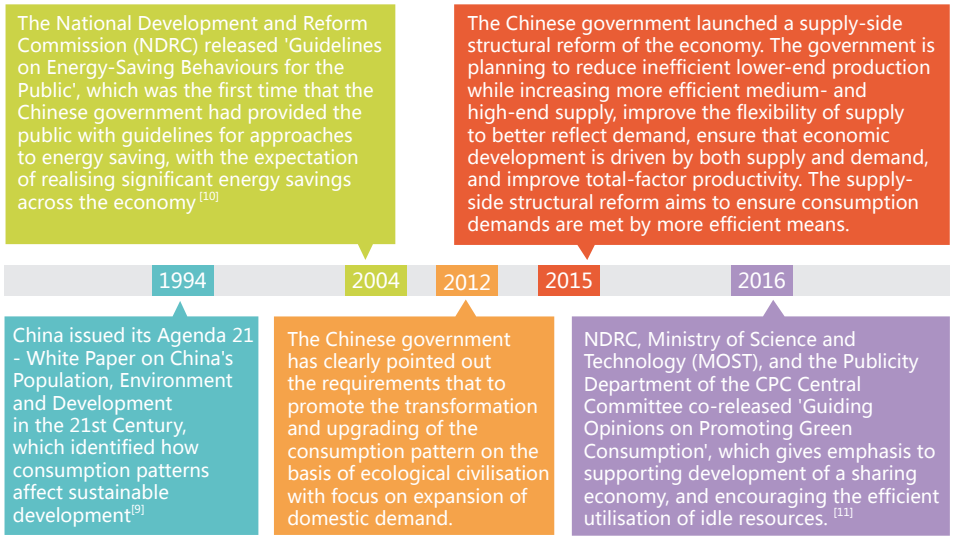
Although there have been various studies and reports published internationally, the systematic study of consumer information is limited by difficulties of collection of information and different methodologies etc.

There have rarely been investigations on sustainable consumption in China, and there are no comprehensive investigations about consumers' mentality and factors affecting sustainable consumption. The lack of consumer behaviour studies makes it difficult to overview the current status of sustainable consumption, and no suggestions have been made for improvement.

Chapter II: Status of Sustainable Consumption in China

1. Policy drives the development of sustainable consumption

China has released a series of policies in order to promote sustainable consumption:



Case Study 1

Trends in electric mobility

The new energy vehicles can reduce vehicle fuel consumption, ease fuel supply and demand contradictions, reduce emissions, and improve the atmospheric environment.

Chinese government has been promoting new automotive energy technology. From 2015 to 2016, China has ranked the first in the new energy automotive production and sales for two consecutive years, with the cumulative sales amount of new energy cars of more than 1 million.

In this survey, more than 63% of consumers showed a desire to buy electric cars. The primary intention for consumers to choose electric cars was in order to reduce environmental pollution.

In 2012, the State Council published the *Energy Conservation and New Energy Automotive Industry Development Plan (2012-2020)*, which aims to "create a favourable environment conducive to development of the industry". Central and local governments improve the market competitiveness of new energy vehicles by subsidizing car companies and buying electric car consumers, and also gradually improve the new energy vehicle market supporting facilities and economic mechanisms. Undeniably, the economic cost and the adequacy of charging infrastructure affects consumer decisions to

a large extent. The purchasing rate of new energy vehicles in 2015 was only 0.6%, while the satisfaction rate for new energy vehicles was 64.3% [14].

With the development of new energy vehicle technology, charging stations and other supporting facilities are being improved. Beijing and some other cities have introduced a policy limiting private cars, but favouring the purchase of new energy vehicles, which has helped to reduce the huge gap between the intention and the actual purchase of electric vehicles. It will also strongly promote new energy vehicles to become a new bright spot for sustainable consumption.

2. Consumer behaviour survey and analysis

From September to October 2016, the China Chain Store and Franchise Association (CCFA) together with Department of Environment of Renmin University of China, conducted a large survey among individual consumers on sustainable consumption, which collected 9370 valid questionnaires in 10 cities of China. This survey enabled us to obtain the first-hand information of consumer behaviours studies regarding sustainable consumption, and to explore the status, influencing factors, and possibilities for policy change in China.

The ten cities selected to conduct this survey include Beijing, Dalian, Qingdao, Xi'an, Chengdu, Nanjing, Shanghai, Hangzhou, Shenzhen, and Wuhan, which covers the majority of geographic regions of China. The average economic development levels are higher than the national average. In 2015, the average GDP per capita of the 10 cities was 96,533 RMB, 1.96 times the national GDP per capita in China.

Figure 2-1: Map of the 10 cities in the survey [1]

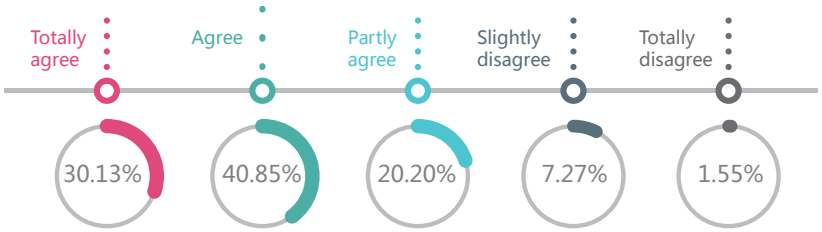
1. *China Economic Statistics,* China Statistics Bureau : 2015 GDP Per capita is RMB49229

(1) Consumer Awareness

The survey shows that more than 70% of Chinese consumers are aware of sustainable consumption. They are potential practitioners of sustainable consumption in China.

In the survey, 30.13% of the interviewed consumers fully agreed that personal consumption behaviours are directly related to the environment; 40.9% of the consumers basically agreed; and 20.20% agreed to some degree. Only 8.82% of the consumers slightly or completely disagreed.

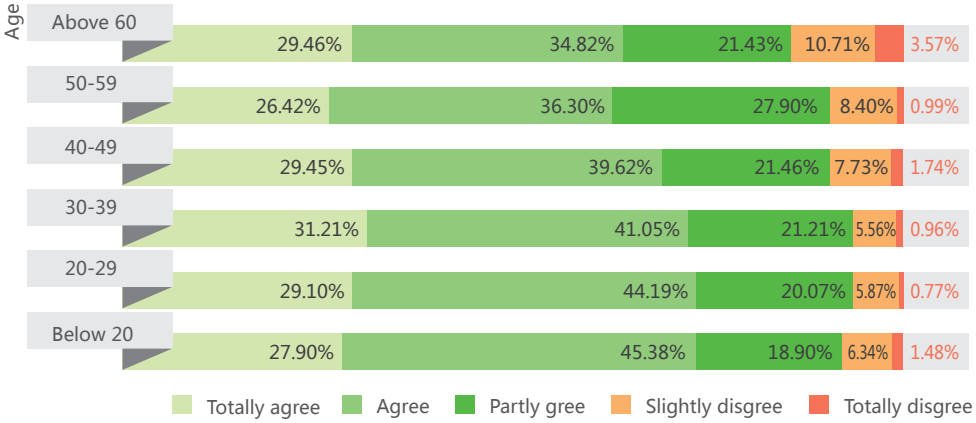
Figure 2-2: Consumers agree that consumption has impact on the environment



The cities' level of economic development and awareness of sustainable consumption are related. From the survey, consumer awareness varies in the 10 representative cities. Shenzhen, as the most economically developed city, has the highest awareness of sustainable consumption, while Shanghai and Hangzhou have higher awareness than national average (T-Test, P=0.05). And the GDP per capital of Shenzhen, Shanghai and Hangzhou are 1.62 times, 1.13times and 1.04 times the national average.

The consumer awareness and age also have a correlation. The younger consumers have stronger awareness of sustainable consumption than the older consumers. Currently, in China, the consumer group of 30-49 year-olds is most prepared to conduct sustainable consumption in practice; from 2011-2015, the rate of green purchasing of this age group has increased by 15%, which is higher than average rate[12]. In the survey, it shows that the age group of 20-29 year-olds also has stronger awareness of sustainable consumption, but is limited by income and purchasing abilities. They will become the main group of sustainable consumers in 5- 10 years, therefore the conception and knowledge of sustainable consumption will be further strengthened in the coming years.

Figure 2-3: Age difference and consumer awareness



The result of sustainable consumption awareness is not affected by gender. But in actual behaviours, the data of online-shopping from Alibaba [12] shows that the trend in women of all ages of purchasing green products is greater than men, among which the young mums between 29-35 years old are the group that most increased their purchasing of green products. It is an interesting result between intention and actual behaviour, due to the fact that in China female consumers are more responsible for purchasing daily supplies for the family. The green products they purchased are more related to health and food safety, therefore Chinese women consumers are increasing more their purchasing of green products.

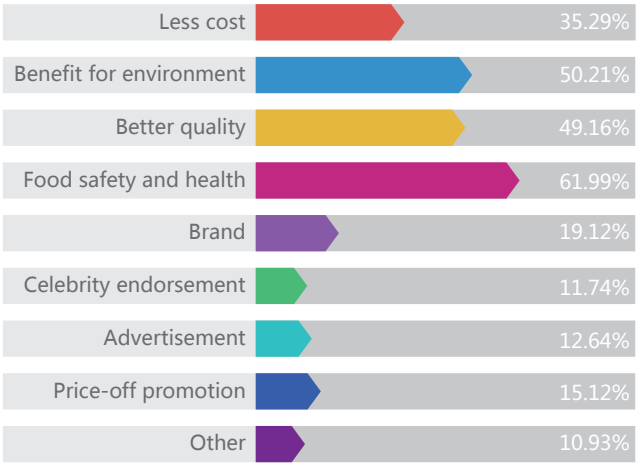
(2) Health and Safety are main driving forces for consumers to choose sustainable products

The sustainability information of products allows consumers to choose to buy environmentally friendly products by disclosing information about the impact of the product on the environment during the production, use and disposal phases, which is one of the core elements of sustainable consumption. So that consumers access to sustainability information of products, not only can improve environmental awareness, but also can generate healthiness, cost-saving and other benefits.[2]

This survey shows that consumers in China are motivated by different reasons, food safety and health takes the highest percentage of 61.99%, seconded by benefit for environment of 50.21%. There are also 49.16% of interviewed consumers who consider green products have better quality, and also 35% consider green products can reduce costs.

2. Guidelines for Providing Product Sustainability Information: Draft for Global Stakeholder Consultation. 10YFP Consumer Information Programme for Sustainable Consumption and Production (CI-SCP). 19 August 2016 Product Sustainability Information: State of Play and Way Forward. United Nations Environment Programme, 2015

Figure 2-4: Reasons of purchasing sustainable products



The driving forces of sustainable consumption in China are mainly: environment conservation, safety and health, and saving costs. So far, the consumers in China consider safety and health as the most important factor for purchasing sustainable products.

Figure 2-5: Driving forces of sustainable consumption

According to the data of Alibaba in 2015 of online purchasing [12], household appliance products takes the biggest share of the total green products sales, followed by Mother and Child Care products, and Food. Considering the young consumers, especially young people born in the 80s and the 90s make up most of the online-shopping customers, house supplies and mother/child care products are in line with the age and life stages of consumer goods.

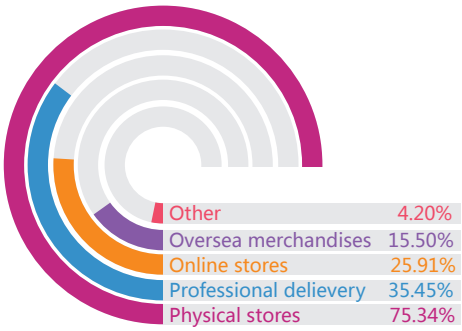
Figure 2-6: Alibaba Research Institute-Consumers' online purchasing interest of sustainable products [12]

Rank	Category	Customer interest	Keywords
1	Home improvement supplies (home, building materials, etc.)	★★★★★	Non-toxic, handmade, no formaldehyde, E0 level, acrylic etc.
2	Household goods (bedding, kitchen utensils, storage, etc.)	★★★	Environmental-friendly, non-toxic, food-grade, lead-free etc.
3	Home appliances (large appliances, living appliances, etc.)	★★★	Energy saving, water saving, energy saving, environmental protection, frequency conversion, air purification lights
4	Pregnant baby supplies (maternity wear, diapers, children's clothing, etc.)	★★★	Radiation, antibacterial, natural, a level, no fluoride etc.
5	Food (grain and oil, salt, snacks, fresh, etc.)	★★	Green, organic, the original ecology, no added, no anti-corrosion, no colour etc.
6	Clothing (men's, women's clothing, etc.)	★★	Cotton, cotton, linen, modal, hand etc.
7	Personal care (beauty, essential oils, nursing, etc.)	★★	Natural, environmentally friendly, organic, negative ions, no silicon etc.

(3) Physical stores are still the main channel for consumers shopping

The traditional consumption venues like malls and supermarkets are still the most important channel for sustainable purchasing. Sustainable purchasing mainly occurs in physical stores, malls, supermarkets, as well as professional delivery, online-stores, and overseas purchases. More than 70% of the interviewees purchase in physical stores and malls.

Figure2-7: Purchasing channels for sustainable consumption



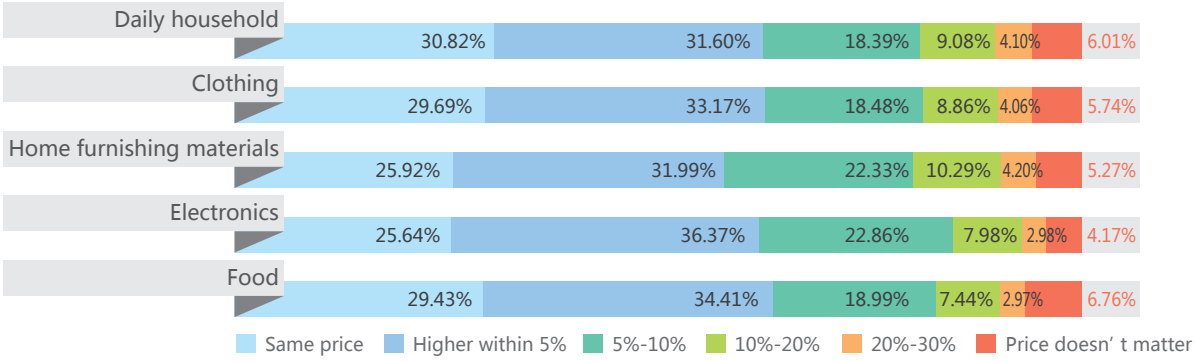
(4) Consumers' willingness to pay for sustainable products

From 2011 to 2015, each year CCFA and Department of Environment of RUC had conducted surveys on the willingness of consumers to pay a premium for green products in Beijing, Shanghai, Wuhan and Shenzhen. The 2011-2015 survey for four years showed basically the same trend, the willingness to pay for the premium of green products was between 5-10%, higher than the level of the survey results of the ten cities in 2016. But it can be also seen that there was no significant change in the percentage of people who were willing to pay extra for green products in four years, indicating that there was no significant increase in the willingness to pay [13] The result also shows that 46.1% of the consumers are willing to pay a premium of 5% for the green products; 25.1% are willing to pay a 5%-10% premium. In total, there are 73.3% of consumers who are willing to pay a premium under 10%.

The data also shows that the closer the products are related to health and safety, the more willingness to purchase green products. Considering food safety, 63.04% of the interviewees tend to purchase green sustainable food, followed by house furniture which takes 55.75%, electric supplies 38.94%, garments 35.24%, groceries 29.64%, and stationery 25.15%.

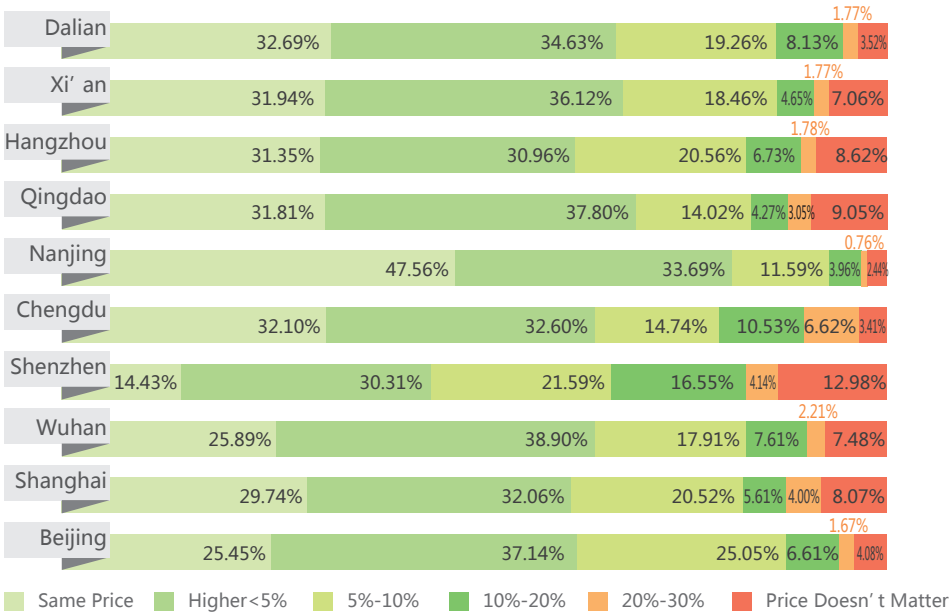
There is a willingness for paying a premium for sustainable products in five categories of consumption: food, electric supplies, furniture, garments, and groceries.

Figure 2-8: Willingness to pay premium (different categories)



These five categories do not have huge differences in willingness to pay. There are nearly 30% of consumers do not want to pay the premium, 30% consumers are willing to pay a 5%-10% premium. In total, 80% of Chinese consumers are willing to pay less than a 10% premium for sustainable products. Besides this, less than 10% consumers can accept a premium between 10% and 20%, while 10% of consumers can accept a premium that is over 20%.

Figure 2-9: 10 cities willingness to pay premium, food category



Taking food products for example, although consumers focus on food safety and health which drives them to preferably choose environmentally beneficial products, because of consumers often have to buy food products in higher quantities, and therefore it would be too expensive when added up, the actual willingness to pay is no higher than for other

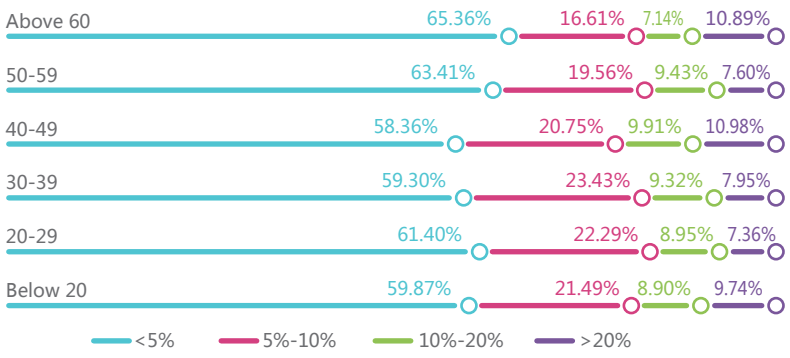
product categories. On the other hands, consumers have their habitual effects, which means they are used buying the same products and wouldn't change their consumption habits. Nanjing is the least willing to pay for the premium among the 10 cities, while Shenzhen has the most consumers that are willing to pay more than 10%. This is because Shenzhen has better economic development status, with average income higher than national average, the consumers are more able to afford the premium. On the other hand, Shenzhen is an immigrant city, the young population makes a high percentage of the age structure, and have a stronger intention toward sustainable consumption.

Table 2-1[3] 2015 age structure, Shenzhen and the national average

Age	0-14	15-64	Above 65
Shenzhen	13.40%	83.23%	3.37%
China	16.50%	73.00%	10.50%

The survey shows that the young consumers can accept higher premium, among people 50 years or older, the willingness to pay premium declined sharply. 40-49 year old people have the strongest intention of paying premium, which is related to their consumption ability.

Figure 2-10: Age and willingness to pay



3. Data Source：2015 China Demographic Yearbook

The willingness to pay is also positively related to education level and income level. With higher incomes and higher education levels, consumers are more willing to pay a higher rate of premium.

Figure 2-11: Education level and willingness to pay premium

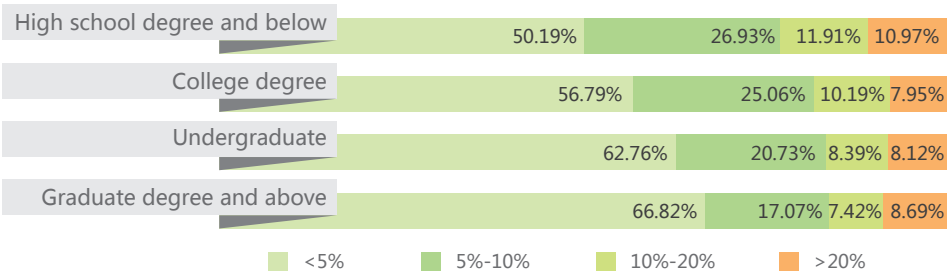
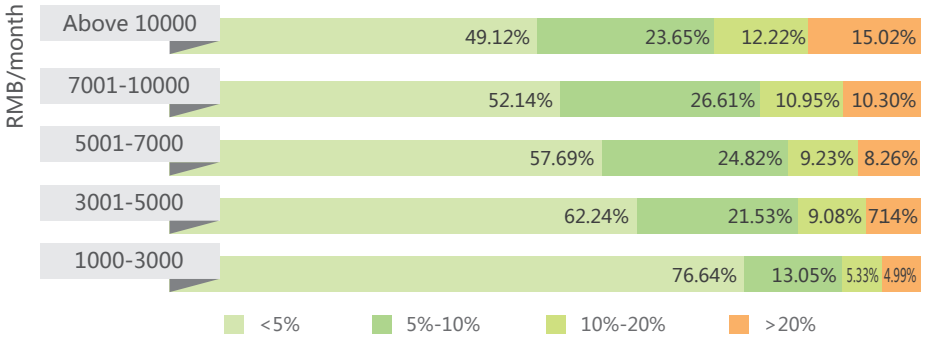


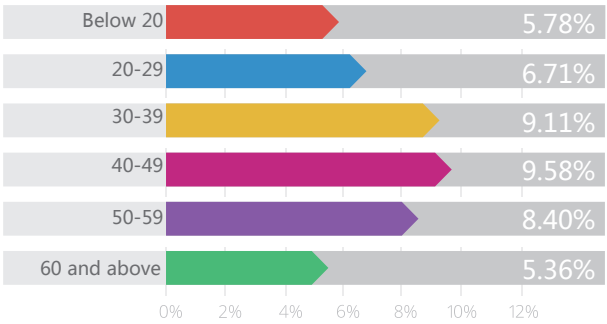
Figure 2-12: Income level and willingness to pay premium



About 10% of consumers, the willingness to pay the premium level of sustainable products is more than 20%, this crowd is the backbone and foregoers to promote China's sustainable consumption.

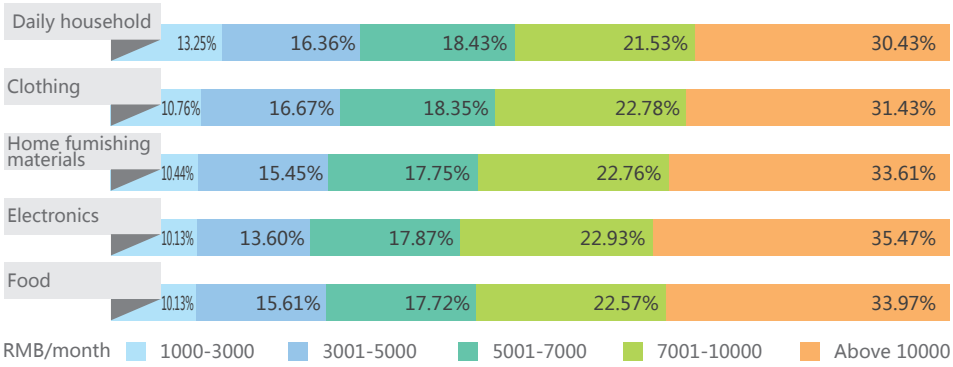
The age of consumers showed a normal distribution of the situation, take the willingness to pay for food products as an example, the 40-49 year-old consumers accounted for the highest, the rest of the consumption of other categories of goods also showed the same distribution.

Figure 2-13: Age structure of the consumers that are willing to pay a premium of more than 20%



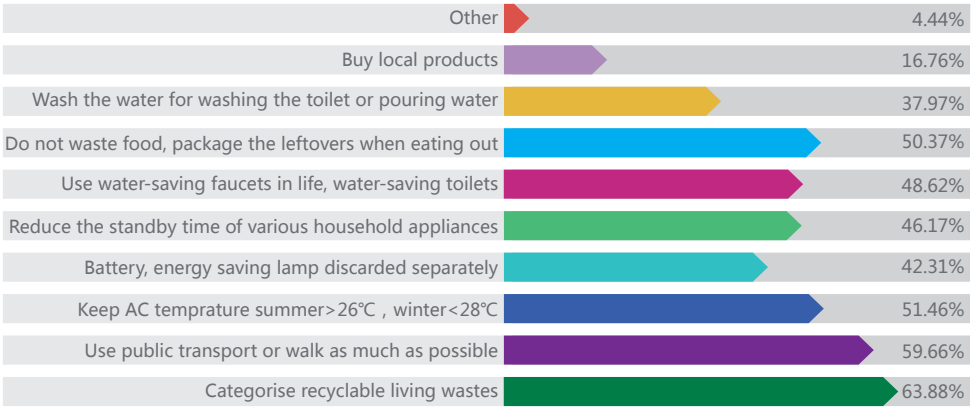
Among the consumers that the premium payment level of more than 20%, the proportion of consumers in different income levels as shown below, the higher the level of income accounted for the greater the proportion of consumers, indicating that China's sustainable consumer groups are mainly concentrated in the higher income levels consumer.

Figure2-14: Income composition of the consumers that are willing to pay a premium of more than 20%



(5) Habits of sustainable consumption of Chinese consumers

Figure 2-15: Sustainable living habits

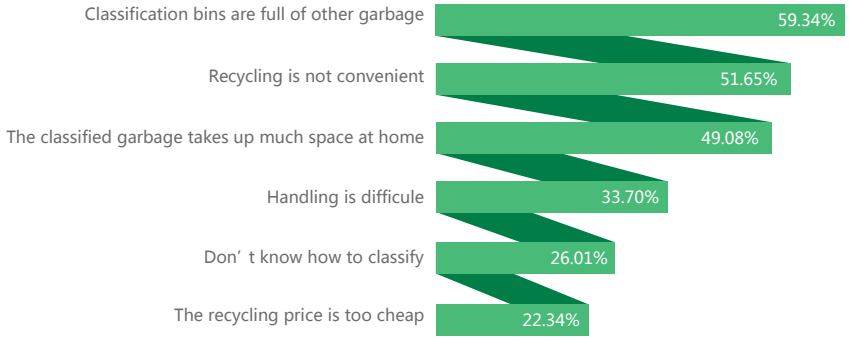


Sustainable consumption habits are gradually developing. The three most frequent habits of sustainable consumption are: recycling wastes (such as plastic bottles, wrapping papers etc.), which makes up 63.88%; public transportation and reducing car use, 59.66%; and 51.46% on controlling AC temperature, such as no lower than 26 degrees Celsius in summer, and no higher than 28 degrees Celsius in winter.

Although the majority of consumers chose waste recycling, the categorisation of current urban waste recycling is still rare, and waste processing is mainly landfilling or incineration. According to data from the Ministry of Housing and Urban-Rural Development, from 1979 to

2015, China's annual output of municipal solid waste increased from 25.8 million tons to 191 million tons, an increase of 6.6 times. Lacking effective categorising and recycling channels is one of the most important reasons. In order to reach the 2020 goal of 35% utilisation of daily waste[4], generating reverse logistics, especially realising categorisation and reduction at community level is a key issue.

Figure 2-16: What stopped people from recycling waste

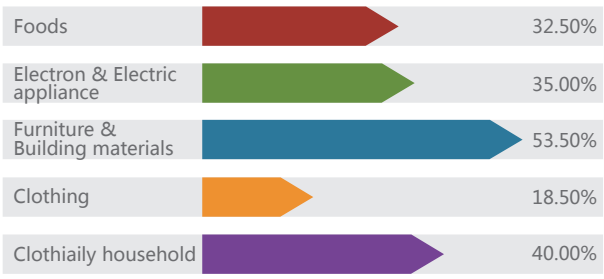


3. Market Analysis of Sustainable Consumption

(1) Premium on green products is higher than consumers' willingness to pay

As is shown in big data provided by online-shopping from Alibaba, the average premium rate of green products is 33% [12], which is much higher than consumers' willingness to pay.

Figure 2-17: The actual premium rate of different categories of sustainable products



40% of consumers will not choose sustainable products due to the high price.

Table 2-2: Reasons for not choosing green goods: percentage of higher price

Beijing	Shanghai	Wuhan	Shenzhen	Chengdu	Nanjing	Qingdao	Hangzhou	Xian	Dalian
43.82%	39.67%	47.71%	42.34%	38.21%	41.27%	42.53%	40.23%	39.32%	41.79%

4. http://www.gov.cn/zhengce/content/2017-03/30/content_5182124.htm

The high price of green products will decrease the willingness for purchasing green products, moreover, it will also prevent fostering repeat purchases of green products. Sustainable consumption is not an occasional behaviour, it is a process of acknowledging and transforming consumption habits and lifestyle.

In 2015, more than 80% of consumers purchased energy efficient household appliances, pollution-free or organic food; more than 60% of consumers purchased green furniture materials. [14] The satisfaction of energy-efficient household appliances is 59.7%, pollution-free and organic food is 54.6%, green furniture materials is 51.4%. The main reasons for dissatisfaction are: high price, low quality, and false publicity. And the high price is the most important factor that consumers are dissatisfied about.

(2) Lack of green brands

Meanwhile, there are 20% of urban consumers willing to pay a 20% premium. This group of consumers are more well-off, with high environmental awareness, and prioritise quality of life. They are crucial in promoting sustainable consumption.

Furthermore, 22.84% of consumers were dissatisfied with the quality of the green products that they have purchased. 46.58% of consumers also question the credibility of the publicity of the producers. These consumers do not believe that the products are sustainable.

While choosing green products, consumers wish to obtain specific information of benefits to environment (50.58%), the advantages of green products compared with ordinary products (52.28%), as well as social impacts of the products (31.84%). Consumers hope that this information can be open, fair, transparent, and accessible.

Green brands are the most direct expression of product quality. Branding can strengthen the confidence in sustainable consumption. However, only 19.12% of consumers will purchase green-branded products. The lack of green products is one of the critical obstacles in developing sustainable consumption in China.

Even for sustainable food, which is the most acceptable product for consumers, its market share is less than 10% of the total goods on shelves. And successful green brands are rare in China.

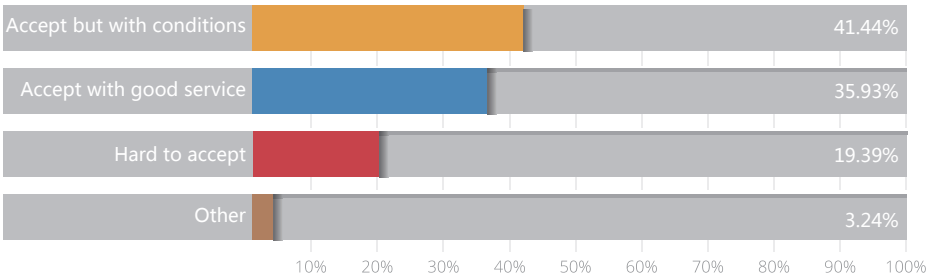
(3) Emergence of the sharing economy

Sharing economy has various forms in terms of time and places, and it aims to improve utilisation rate of resources, at the same time improving service qualities. In China, the sharing economy is emerging in consumers' life, led by sharing transportation like public bicycles and carpooling. As one of the most important parts of sustainable consumption, the idea of "renting instead of buying" is one of the representative forms of the sharing economy in China, which can be applied to more durable consumer goods. "Renting instead of buying" can minimise the time costs, then further promote the transformation of the consumption market.

As is shown in the survey, 41.44% of the consumers can accept the sharing economy; 35.93% of the consumers can accept but with certain conditions; only 19.39% of the consumers do not accept the sharing economy. To sum up, there are more than 70% of consumers willing to accept the idea of the sharing economy, to participate in and change to a more sustainable lifestyle.

However, 35.93% of the consumers consider the current supporting

Figure 2-18: Acceptance of sharing economy



services are not well-developed, which requires the government to take incentive measures to decrease trading costs of services, to regulate market operating, and to provide supporting facilities.

Chapter III: Power of the Market—Creating the environment for promoting sustainable consumption

1. Create more diversified channels of sustainable products for consumers

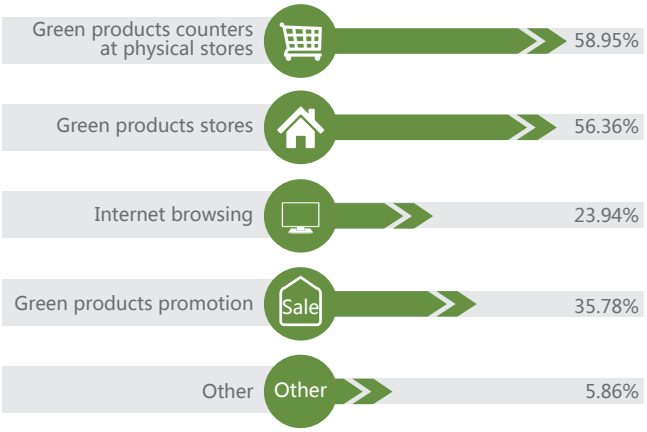
Consumption requires a complicated decision-making process, in which the procurability of the desired product has an important part to play. Convenient passage is not just cost-efficient but the competitive advantages of different products could also be better highlighted.

Apart from physical stores, delivery services, online stores and overseas purchasing are among the most popular ways for consumers to access products. Distribution service and online shopping is clearly more pro-green consumption, when compared with traditional malls and shopping centre. Organic and Beyond is a company that hails the idea of 'environment protection, fair trade and animal welfare' and it provides second-day delivery service in Beijing, Tianjin, Shanghai, Hangzhou and Shenzhen. Statistics from the largest online shopping service provider, Taobao, reveals a rather interesting fact: there's no profound divergence between first/second tier cities such as Beijing and third/fourth tiers cities in terms of both scale and purchasing power. [13]

2. Facilitate shopping arrangements for green products

Our research shows that over 50% of the interviewed consumers hope that shopping for green products could be set up in department stores.

Figure 3-1: Preferred channels for buying sustainable products



3. Certification provides clear information for consumers

Environmental labelling of products certified by third-party institution proves to be an effective way of reducing misinformation, which helps consumers to make rational decisions when buying green products. Since it put forward its first environmental labelling, China Environmental Labelling (CEL), China has been progressively promoting different types of environmental certifications and labelling.

The survey found that consumers have a lower awareness of sustainable product identification. About 52% of consumers want to be able to obtain the price comparison of the product with the general product through the

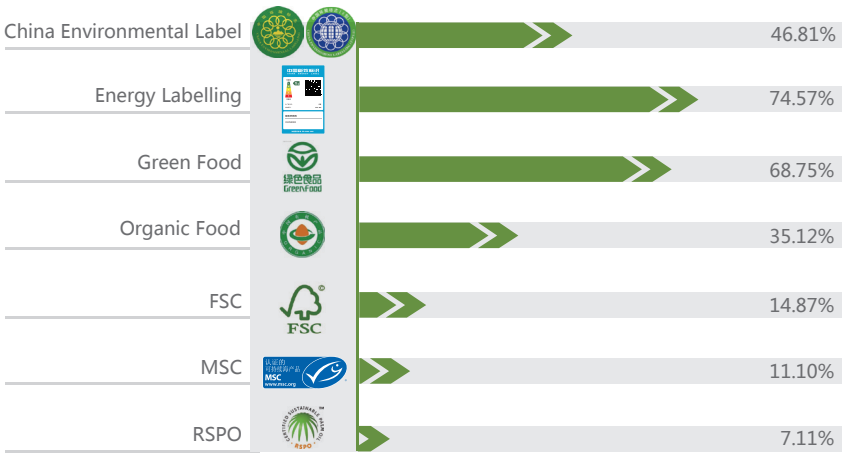
environmental labelling, indicating that the price is the most important factor that is considered by consumers when choosing sustainable products, and the second is the specific information (50.58%) that is beneficial to the environment.

Energy Labelling has the highest rate of recognition (74.57%), followed by green food, 68.57%, while the Chinese environmental labelling awareness rate of less than 50%, only 46.81%. FSC, MSC and RSPO were generally less than 10%.

In the daily consumption, only 33.38% of the surveyed people will be consciously selectinged energy efficient products, 44.10% of the population conscious choice of organic (green) products, it can be concluded that even if consumers are highly aware of the concept of sustainable consumption, but most consumers do not consciously choose green products in their daily lives

Besides the price, the reason for not choosing sustainable products are: low credibility of producers (46.58%), not knowing which products are sustainable products (34.86%), and many consumers (22.84%) doubt the product quality. Regulating the green product market for ensuring sustainable products meet sustainable standards, educating consumers to correctly identify green products, and expanding the scope of third-party product certification can better cultivate the sustainable consumption of the market environment, and are conducive to sustainable production and consumption of a virtuous circle.

Figure 3-2: Awareness of environmental labels



The lack of information and uncoordinated certification and labelling systems limits the extent to which consumers choose certified products. Making certifications recognisable is important in order to attract consumers to purchase certified products. Therefore, more promotion and publicity of environmental and sustainable certification is necessary.

To take the MSC (Marine Stewardship Council) as an example, the purpose of its certification is to protect marine resources, maintain the marine ecology and fish stocks. When MSC first entered China, consumers did not consider this relevant to their daily life, so the impact of MSC certification was not high. However, MSC promoted the certified products in terms of source traceability and popularisation of sustainable seafood knowledge, leading high-end consumers who pay attention to food safety to more readily accept the certification. In recent years, awareness of the MSC logo has improved, especially in Shanghai, Shenzhen and other economically developed regions where the willingness to pay a premium is higher.

Box 1: Environmental labels in China

China Environmental Label	Energy Labelling	Green Food	
Organic Food	Sustainable Forest Products	Sustainable Seafood	Sustainable Palm oil

Chapter IV: From production to consumption – improving supply chains for sustainable consumption

1. The power of enterprise

Production enterprises are both practitioners of sustainable production and the source of sustainable consumption. In the face of consumers' growing demand for sustainable products, producing sustainable products that meet the needs of consumers will further drive the sustainable consumption market towards healthy growth.

Sustainable consumption is closely related to sustainable production, and the improvement of production processes at the source can achieve a large degree of preventive improvement. The survey shows that 31.8% of consumers are not only concerned about the environmental impact of products, but also pay attention to the social impacts, while choosing sustainable products. The younger generation of consumers pay more attention to the embodiment of corporate social responsibility [15]. Sustainable production is one of the most important ways to implement corporate social and environmental responsibility. Sustainable production may increase costs to a certain extent, but on the other hand, sustainable strategies can also enhance the brand value of the enterprise , and reduce environmental risk. As the product supply chain is lengthy and complex, consumers may not be able to identify environmental impacts of the products at all stages. Only when the production enterprises take the initiative on social responsibility, to achieve effective control of the supply chain, can they fully guarantee the sustainable consumption demands and interests of the consumers.

Looking at the best practices of Chinese enterprises and international companies in China, sustainable supply chain management is critical in order to achieve sustainable production. Leading enterprises' actions include: developing clear strategic objectives for sustainable development and reaching a consensus with stakeholders; strengthening environmental management of upstream suppliers; promoting responsible procurement of raw materials; improving energy use in production processes, reducing pollutants emissions; ensuring that the supply chain is transparent and traceable, etc.

2. Innovation from retailers

After 20 years of rapid growth, China's retail industry has become deeply rooted in the daily life of society. Large supermarkets, fresh food supermarkets and convenience stores have long been the preferred channels for shopping, influencing people's consumption habits and lifestyles. In recent years, retailers have responded positively to the advocacy of sustainable development by the government, and strived to encourage greener consumption. This includes a commitment not only to low energy consumption in store operation, but also to integrating environmental conservation low-carbon development into the daily operation and management of enterprises. Meanwhile, as a window connecting production and consumption, retailers play a vital role in promoting sustainable consumption.

The China Sustainable Retail Roundtable (CSRR), established in 2013 is co-sponsored by the China Chain Store & Franchise Association (CCFA) and the World Wildlife Fund (WWF). and supported by UN Environment, the government, NGO, and certification institutions. It focuses on the sustainable development of the retail industry, brought together a group of industry leaders, including Vanguard, RT-Mart, Wal-Mart China, Carrefour China, Metro, AEON China, Tianhong, IKEA China, H&M, Gome, JD, Xibei Catering, City Supermarket, Decathlon, Starbucks and other well-known chain brands. Together they have more than 12,000 stores in China, with annual sales of more than one trillion RMB (around 100 billion USD). With the aim of "becoming a promoter of sustainable production and consumption", they have been actively participating in the CSRR, communicating, reaching consensus, joining with suppliers and stakeholders to explore the need to promote the development of sustainable supply chains for key commodities, integrating online and offline with consumers in public education, and dissemination of sustainable consumption concepts.

Since 2013, relying on strong physical store resources, the CSRR has held the Sustainable Consumption Week (SCW) for four consecutive years in China. By 2016, there were 93 cities, and more than 900 physical stores participating in the activities, throughout Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, Guangzhou, Suzhou and other major cities, influencing more than 30 million consumers. With the aim of enhancing understanding of sustainable consumption and promoting public participation, the SCW undertook activities through different themes such as classrooms and salons, providing sustainable lifestyle and consumer knowledge to consumers and communities.

In recent years, Chinese consumers have been increasingly concerned about food safety, health issues and environmentally-friendly products, providing a strong incentive for the retail industry to transition to sustainable management and supply chains. In 2016, the China Retail Industry Sustainable Retail Development Roundtable (CSRR) released established the "Responsible Procurement Initiative for China's Retail Sector", to send a greater voice to the community, and help to achieve the retail industry's sustainable development goals: CSRR members will follow the national strategy of developing an 'ecological civilization', protect the global environment and natural resources through the practices of responsible procurement, advocate for both China's and the international retail industry to transition to a sustainable development model; strengthen the supply of green products and services; create a green business environment; and promote the progress to sustainable development for the retail industry together with the community.

Retailers are aware of the trend toward sustainable consumption and production, however taking advantage of this is still a major challenge. As retailers lack professional knowledge, advice, tools, communication platforms as well as personnel and management capacity, UN Environment and CCFA have partnered to establish the China Retail Sustainable Consumption Platform (CRSCP). The platform is a demonstration project which provides retailers with guidance and tools for sustainable development strategies, and guides them in addressing their resource challenges. In addition, the CRSCP promotes the concept of sustainable consumption amongst the community, using the power of the market to promote sustainable practices. The CRSCP will serve as a platform for promoting the UN-China Sustainable Consumption Partnership and the implementation of the 10-Year Framework Programme on Sustainable Consumption and Production in China.

The CRSCP provides the retail industry with sustainable consumption ideas, actions and knowledge, to help enterprises understand their own sustainable development level, and provide timely updates on sustainable policies, standards, technology, products, and supplier information, to guide the retailers to seek their own solutions on sustainable operation and management.

The CRSCP partnership currently consists of government organizations, international standards bodies, third-parties and other stakeholders that provide knowledge and integration of resources.

中国零售业可持续消费平台
China Retail Sustainable Consumption Platform

Sustainable development evaluation is one of the core tools of the platform, and aims to help enterprises to assess their own level of sustainable development through a systematic understanding of strategy, consumption patterns, procurement, operations and stakeholder communication. Once the level of awareness and practice is understood, the direction for improvements and appropriate solutions to problems can be identified.

For more information, please visit the website: http://www.crscp.cn/

Chapter V: Urban garbage sorting, recycling and resourcization

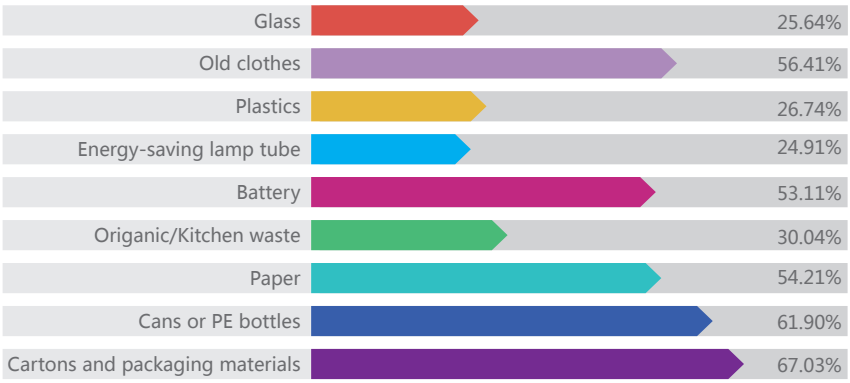
1. Source issue of household waste recycling

China has a very low rate of urban garbage sorting. The majority of household waste is processed through landfill and incineration. The main reason lies in the lack of effective sorting and recycling channels for urban garbage.

Packing materials are the most sorted household waste (67.03%), followed by plastic bottles (61.90%) and newspapers (54.11%). These can be collected and recycled at community centres or shops.

In contrast, there is lack of recycling for used clothes (56.41%) and batteries (53.11%), due to the lack of adequate recycling channels.

Figure 5-1: Waste that can be better categorised



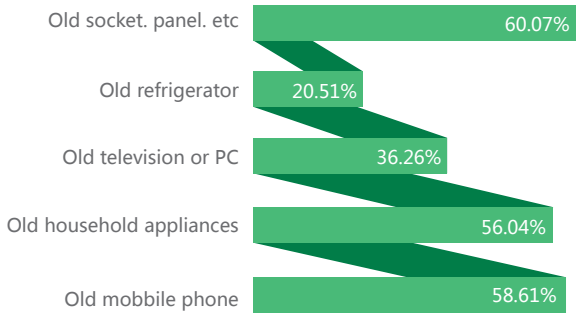
Sorting rate of organic garbage, including kitchen waste is only as low as 30% in China with even lower recycling proportion. Large majority of urban citizens usually mess kitchen waste with other household garbage, creating tremendous trouble at the back end of recycling.

To raise the rate of garbage classification requires the transition from existing consuming habit to greener and more sustainable one, starting from waste sorting at individual household. In our case study of Beijing living community, 34.1% of the interviewees are ok with the idea of having server trash bins.

2. Reverse logistics of electric waste

According to UN University, China's electric waste reached 6 million tons in 2014 accounting for 14.4% of the global total. [16] Currently over 50% of the electric waste produced in China is collected through the channel of community recycling stations. However, there's still risk of 'waste leakage', meaning that the electrical waste will not be sent to recycling enterprises. Moreover, such channels favour large appliances such as air conditioners with generate higher profits, while leaving smaller items behind. The survey shows that 60.07% of consumers find it difficult to recycle used cell phones and batteries.

Figure 5-2: Electronic items consumers consider difficult to recycle



3. Diverse approaches for household waste recycling

Household waste and electrical waste calls for diversified approaches to recycling. According to the survey, fixed-location community recycling (52.77%), trade-in purchasing (53.18%) and charity donations (43.12%), are among the most popular methods of recycling.

The conundrum that exists due to the deficit between the drastic increase in the amount of household and electrical waste, and public support through paying additional costs, cannot be solved by administrative measures alone. Innovative recycling modes have in fact emerged in recent years, such as the "Internet+ Community" and the Extended Producer Responsibility(EPR) recycling mode. By involving the private sector, the economic and social benefits of waste recycling are maximized.

Case Study 2:

Tetra Pak Sustainable Development in China

In line with Life Cycle Assessment, Tetra Pak is committed to minimising its impact on the environment throughout its operations, from raw material purchasing to product design, production, transportation and post-consumption recycling. Tetra Pak China ensures that 3R principles (Renewing, Reducing, Recycling) are followed in every aspect of its operations.

- **Renewing**

The core of sustainability is to reduce the carbon and environmental footprint by using renewable resources.

100%

100% of the paperboard used by Tetra Pak comes from well-managed forests.

- **Reducing**

Tetra Pak has achieved a reduction in absolute CO2 emission by improving energy efficiency in production and supporting green power. It ensures that the company can deliver sustainable products to customers.

22,000 tons

Tetra Pak' s Hohhot plant uses only "green electricity", reducing CO2 emissions by 22,290 tons between 2013 to 2015.

- **Recycling**

Tetra Pak has been promoting carton recycling and the use of recycling systems to reduce the impact of used beverage cartons on the environment.

18.4 billion cartons recycled

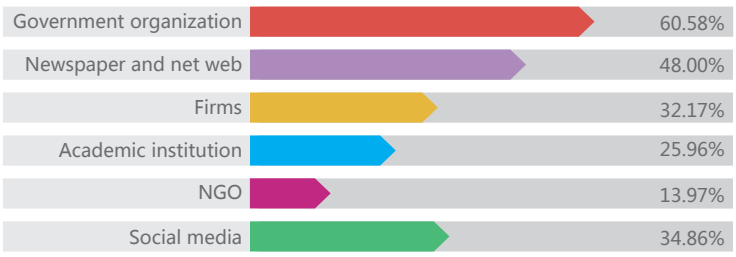
In 2015, the volume of recycled used beverage cartons reached 167,000 tons in China, equivalent to more than 18.4 billion 250 ml Tetra Pak cartons. This recycle rate represents a 10.6% increase from the previous year.

Chapter VI: Stakeholder roles in the promotion of sustainable consumption

1. Leadership from government

Our study reveals that people expect government to take the leadership role in promoting sustainable development (60.58%), followed by media (48.00%) and social networks (34.86%).

Figure 6-1: Stakeholder most influential in promoting sustainable consumption



Government subsidies to enhance the market competitiveness of sustainable products are conducive to reducing the green industry learning curve. And the introduction of more mandatory restrictions or prohibitive measures to eliminate the products that have negative environmental impacts, improving the thresholds for market access, and reduce negative environmental impacts at the source. Since the 12th Five Year Plan period, the Chinese government has quickened the pace of regulation, including the introduction of administrative measures

for organic products, and providing guidelines for green industry development. In this survey, 57.51% consumers think that government should further increase publicity on sustainable consumption with a view to raising the awareness among citizens. And 37.07% consumers hope the government can establish demonstrative or pilot communities to lead the development of sustainable consumption.

Case study 3:

Shenzhen and the introduction of carbon trading targets to the public transportation system

In Shenzhen, the tertiary sector accounts for the highest and the fastest growing part of the economy; among which "modern industry" is developing rapidly. The internet industry is a pillar of the local economy, and renewable energy, advanced technologies, and the energy-efficiency industry are all developing rapidly. This has provided the region with the economic basis and conditions for achieving sustainable energy consumption, allowing the local government to further develop ambitious policies in relation to sustainable consumption.

In order to actively develop a green low-carbon transport system, in 2016 Shenzhen also increased investment in the field of green public transport. As of 2016, Shenzhen had 4,887 electric buses and 3,571 electric taxis, and the three bus franchises in Shenzhen are committed to promote the use of 10,352 pure electric buses in order to further develop the low-carbon public transportation system. By the end of 2017, 100% of Shenzhen's public transport vehicles will be switched to electric buses, with a significant impact on the city's overall energy consumption.

At the same time, Shenzhen is exploring the application of Internet+ in public transport innovation, and one of the three major bus franchises in Shenzhen has launched the "Internet + new energy + traditional bus"—the "E-Bus" custom bus service. Through the construction of an online platform, passengers and buses can achieve effective docking of vehicles and car demand. The "E-Bus" provides the public with a point-to-point shuttle, to ensure a high-quality bus service that provides for "one person, one seat". These initiatives have received public support, as they help the public to enjoy high-quality, green bus services, achieved through a modern, scientific approach.

As one of the first of seven carbon trading pilot regions selected by the National Development and Reform Commission, Shenzhen started carbon trading on June 18, 2013. Since then, the low-carbon

economy has played a leading role in the city's socio-economic development.

In order to meet its commitment to achieve a peak in CO2 emissions by 2020 or earlier, Shenzhen planned in 2015 to integrate the public bus system into its carbon trading system and set targets for emissions reduction for public transport companies.

2. NGO participation

According to China Development Brief statistics [17], by May 2017, there are 476 environment-related NGOs, 109 international NGOs, and 50 environmental protection foundation in China, which are important forces contributing to environmental protection. Although the history of NGO development in China is still very short, but in recent years, NGOs as China's independent (third) party status gradually established. NGO organizations through their own activities, to raise public concern about the environment, to promote environment protection, to achieve sustainable consumption transition, and constantly expand its own social impacts. The advantages of NGOs in raising social recognition, resource sharing, cooperation, community education is increasingly prominent.

At present, the role of NGOs is more significant, but also more widely in promoting the scope of sustainable consumption. Many environmental NGOs are rooted in folk, close to the lives of the people, in guiding consumers to change their lifestyles, which plays an irreplaceable role promote sustainable consumption knowledge and so. In addition, many international NGO organizations are committed to the sustainable and green transition of the supply chain. They communicate with producers, suppliers and stakeholders through the development of standards, the promotion of international standards in China, and the training of relevant enterprises, certification and other effective ways to promote the product supply chain sustainable process.

Compared with the developed countries with mature environmental NGOs, China's environmental NGOs are still in the early stages of development. How to better play the role of environmental NGOs, in the promotion of sustainable consumption need to address the following challenges: Firstly, with the surge in the number of environmental NGOs in China, it is a common issue that the lack of communication trust and consensus between the government and NGOs. Secondly, the lack of funding channels and the shortage of funds restricted the NGOs play its unique role to a large extent. Thirdly, the environmental NGOs are weak in professional competence and lack the information and expertise that needed for promoting sustainable consumption. Residents' committees and property management companies have direct and significant impact over people's way of life and consumption. Over 50% of interviewees

expressed their wish to receive information as well as support from residents' committee, while 61.54% believe that through community promotion, the rate of garbage collection could be improved.

However, the number of community-based NGOs is small and the professional competence is weak, requiring the development of professional NGOs or third-party service providers.

Case Study 4: Green Light Year

Ms. Ni Huan is a 2004-05 graduate of M.Phil in Development Studies from University of Cambridge. She has a couple of years of working experience with international organizations. She founded Green Light-Year in 2016. In the past one year, her NGO has become one of Shanghai's community bases of public education for promoting green lifestyle.

Experiential "Community+Campus"and "Community+Business" Low Carbon Tour: connecting low carbon facilities in surrounding community into a tour product featuring with green know-how, fun and public participation.

Interactive green DIY courses: Inviting creative designers to upcycle waste materials into creative and artistic items. Through learning by doing, community learners can make a green gifts for themselves and their family members.

Participative nature education and know-how transfer: specialized volunteer teams go into communities and classrooms to demonstrate sustainability-related knowledge and practices. Using well designed courses to compete community kids from a range of weekend classes, and take them to discover nature and understand surrounding ecological environment.

Inviting technology experts to go into communities and campus: professors are being "dig out" from university labs and invite them to share thoughts of AI, E-F1 and application of new energy with the public and teenagers.

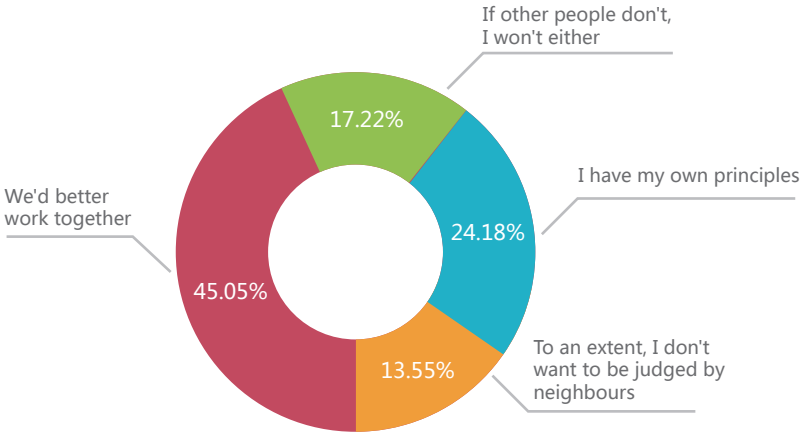
Green Light-Year has established collaboration with university student societies from Shanghai Jiaotong University, East China Normal University, East China University of Science, Shanghai Dianji University. These university students have become Green Light-Year’s strong external supporting team.

3. Community publicity

The behavior of most consumers will be affected by others: 24.18% of consumers will be strong holding their own principles for garbage classification. They are strong supporters of sustainable consumption; nearly half of consumers (45.05%) hope that everyone should work together. Other people's behaviours will affect their own: 13.55% of consumers feel that if they do not classify their own garbage will be judged by the others, there are 17.22% of people think that if others do not classify their own classification would be meaningless.

Therefore, community education is particularly important in improving the recycling of domestic waste, by improving the unanimousness of consumers behaviours for waste classification.

Figure 6-2: Does other people' s behaviour matter?



Case Study 5:

The establishment of Shijia Eco-community

From June 2015 to June 2016, with the funding support from Chaoyangmen Street Community Office and assistance from Vantone Foundation, Shijia Community began its process in establishing eco-community, hoped that through the application of ecological technology in the community, it will promote the reduction of community kitchen waste, promoting the recycling of recyclable waste and utilising idle resources, to gradually build the recycling cycle of garbage localisation. The activities mainly include:

Water use optimization

-Water-saving irrigation

- Water system biological purification

-Utilisation of reclaimed water

-Family practices on water saving

Waste resources management

-Family balcony farming

-Planting in public land of the community

-Gardening

Energy-saving publicity

-Energy saving facilities demonstration

-Family energy saving practices

Chapter VII: Policy recommendations

Sustainable consumption in China is still at an early stage, which means both the awareness of consumers and the policy environment are not well developed. The self-interested nature of much economic activity is in contradiction with the maximisation of public welfare. The transformation requires all stakeholders to take on social responsibility. Changed consumption patterns and support from government are both required. Promoting awareness of sustainable consumption in China can help to enhance the pace of economic transformation towards sustainability, and therefore should be integrated with the central government's policymaking, as well as local government actions.

According to the survey, 60.2% of the respondents thought that government subsidies were the most effective means of promoting sustainable consumption, and 57.5% thought that the government should strengthen publicity on sustainable consumption. 48.8% of the respondents wanted to introduce more mandatory restrictions or prohibitions to eliminate products that have negative environmental impacts. 37.1% of the respondents suggested that the government should promote demonstration residential communities.

It can be seen from these results, that central government policy-making still has a decisive role to play in the promotion of sustainable consumption. Therefore, the inclusion of sustainable consumption into existing policies and programs is critical for China to achieve its goals in this area.

Central government

1. Integrate sustainable consumption into national political, economic and social development frameworks in order to promote sustainable consumption at the policy level. Implement and promote an action plan to achieve the UN's Sustainable Development Goal 12 (SDG12). For instance, break the goal down into localised quantitative targets, develop indicators for evaluation systems and development frameworks etc.

2. Promote the implementation of relevant laws and regulations; utilize and improve existing pricing systems, tax systems and fiscal incentives to promote sustainable consumption patterns to incentivise sustainable consumption practices. For instance, introduce investment and financing mechanisms that are conducive to sustainable consumption; improve public transport and other infrastructure; encourage the development of green industry; and promote the awareness raising and development of standardised sustainable product certification,

identification and evaluation systems among consumers and businesses.

3. Encourage relevant research institutions and organisations to build a platform for the research and implementation of sustainable consumption, and promote knowledge exchange. Encourage social organisations, institutions and the public to participate in the promotion of sustainable consumption.

Local government

1. Strengthen capacity building for local government; improve awareness within local government; promote sustainable consumption practices; and, consider sustainable consumption in local policy making.
2. Actively participate in and implement sustainable public procurement; promote the development of a market for sustainable products and services; enhance society's awareness and concern about sustainable consumption.
3. Develop goals that match the local socio-economic circumstances. In accordance with the local industrial structure, develop practical, quantitative goals, considering economic development, sustainability and product quality.
4. Encourage social organisations, institutions and the public to participate in sustainable consumption promotion; facilitate in-depth cooperation with local community organisations and NGOs; encourage civil society organisations to play a role in organising and participating in public education activities to promote awareness of sustainable consumption.

References

[1] http://staging.unep.org/pdf/GEO5_Chinese.pdf

[2] Global Footprint Network, "World Footprint," 2016. [Online]. Available: http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint/. [Accessed: 04-Apr-2016]

[3] WWF China, Market Transformation Initiative[R], 2012

[4] UNEP (2015), Indicators for a Resource Efficient and Green Asia and the Pacific - Measuring progress of sustainable consumption and production, green economy and resource efficiency policies in the Asia-Pacific region, Schandl, H., West, J., Baynes, T., Hosking, K., Reinhardt, W., Geschke, A., Lenzen, M. United Nations Environment Programme, Bangkok. https://wedocs.unep.org/rest/bitstreams/17411/retrieve

[5] UNEP, Nairobi, Element of Policies for Sustainable Consumption, 1994.

[6] Maurie J. Cohen , Sustainable Consumption Research and Policy: Retrospect and Prospect , Meeting on Forming a Future Earth Knowledge Action Network (KAN) on Sustainable Consumption and Production, 2016

[7] HeiskanenE, Pantzar , M . Toward Sustainable Consumption : Two New Perspective, Journal of Consumer Policy[J],1997,20(4):409-442 .

[8]RopkeI. The Dynamics of Willingness to Consume.Ecological Economics[J],1999,28(3):399-420 .

[9] China State Council. The China 21st Century Agenda,Beijing,1994.

[10] China National Development and Reform Commission (NDRC) , Guideline on Energy Saving to the Public. Beijing.2004.

[11]NDRC, Department of Publicity of CPC; Ministry of Science and Technology, Guiding Opinion on Promoting Green Consumption. Beijing. 2016

[12] Alibaba Research Institute, Report on China's Green Consumer. 2016

[13] Yan Li, Yi Lu, Xiyue Zhang, Leping Liu, Minghan Wang Xiaoqun Jiang, Propensity of green consumption behaviors in representative cities in China, Journal of Cleaner Production[J], 1328-1336, 2016.

[14] China Consumer Association. "Hearing the Consumers" Survey Report.2016.

[15] World Economic Forum, Engaging Tomorrow's Consumer Project Report, 2014.

[16] Baldé, C.P., Wang, F., Kuehr, R., Huisman, J. (2015), The global e-waste monitor – 2014, United Nations University, IAS – SCYCLE, Bonn, Germany

[17] China Development Brief. http://chinadevelopmentbrief.cn/

ANNEX Ⅰ: Methodology of Survey Analysis

Sustainable consumption is a complex activity, influenced by economic, social, psychological and other factors. Changes in consumption patterns are not only determined by economic development, but also a range of external conditions. China's economic development is uneven, leading to a large gap between urban and rural development. Currently, the concept of sustainability is widely accepted in urban areas, while rural acceptance is not as high. Therefore, the sustainable consumption information survey selected ten cities in China, including Beijing, Dalian, Qingdao, Xi'an, Chengdu, Nanjing, Shanghai, Hangzhou, Shenzhen, and Wuhan, which cover the majority of geographic regions of China and are in economically developed areas. They represent a higher than average acceptance of sustainable consumption.

It was estimated that 10,000 questionnaires would be distributed in ten cities, and the number of samples selected according to the proportion of the population distribution. We did not target consumers within a specific economic group or LSM (living standard measure)

Considering the age, habits and other factors, this survey was intended to be conducted in a combination of online and street interviews, allowing participants to choose their preferred method. The actual distribution of questionnaires was 9,550, and the number of valid responses was 9,370, a rate of 97.1%.

City	Beijing	Shang hai	Wu han	Shen zhen	Cheng du	Nan jing	Qing dao	Hang zhou	Xian	Da lian	Total
Questionnaires Distributed	1500	1900	750	900	1000	700	750	750	700	600	9550
Valid feedback	1497	1550	815	894	997	656	984	788	623	566	9370

3-4 sites for street interviews were selected in each of the ten cities, within the city's commercial centre, and respondents were able to choose between online or paper questionnaires.

City	Interview sites			
Beijing	Tongzhou Wanda Square	Shiji Jinyuan Square	Ikea Huiju Shopping Centre	AEON Shopping Centre Beiqing Road
Shanghai	NO. 19 Exit of Renmin Square Metro Station	No. 1 Department Store	Shanghai No.1 Grocery Store	Exits of Nanjing East Road Metro Station
Wuhan	Walking Street of Jianghan Road	Wuhan Square	Wanda Mall Lingjiao Lake	
Shenzhen	Coastal City Mall, Nanshan District	Jingtian Metro Station, Futian District	Ganglong City, Baoan District	
Nanjing	Xinjiekou Commercial Area	Confucius Temple	Hunan Road	
Qingdao	Leke City, Licang District	East Walking Street, Shibei District	Big thumb Square, Laoshan District	
Hangzhou	Hangzhou Mansion	Longxiangqiao Metro Station	Wushan Square	
Chengdu	Chunxi Road, Wangfujing Commercial Circle	Jinsha Xidan Shopping Mall, Yonghui Supermarket Commercial Circle	Waishuangnan Ito Yokato Commercial Circle	Huarun Xiyue Square
Xi'an	Nanmen Wangfujing Department Store	Shijijinhua Fencheng Fifth Road	Gaoxinjinying, Shijijinhua	
Dalian	Qingniwa Commercial Circle, Zhongshan District	Xi' an Road Commercial Circle, Shahekou District	Wanda Square Commercial Circle, New High-tech District	

In the 9,370 valid questionnaires, 45.2% were from male respondents and 54.8% from female respondents. The age of the interviewees ranged between 18 and 70 years old. Many previous studies have shown that the younger generation is the biggest supporter of sustainable consumption, but due to economic and spending power constraints, 18-year-old consumers cannot be economically independent, and there is no consistent consumption pattern. The 60-70-year-old consumer group has a lower income on average, and it is relatively difficult to change their consumption patterns. For this reason, the age limit of the survey was defined as 70 years old.

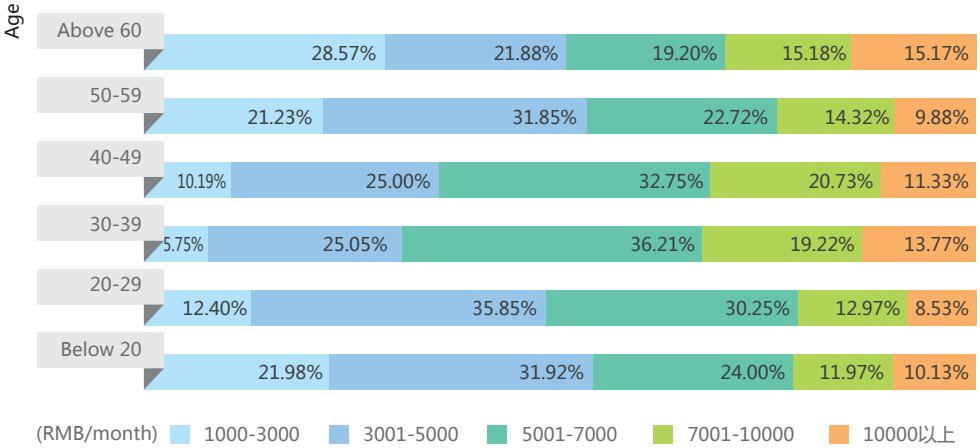
In terms of education levels, those with undergraduate degrees were the largest respondent group. 21.6% had completed high school-level or

below, while 25.2% had attended college, 33.1% had an undergraduate degree, and 10.1% had graduate degrees.

Education level of the respondents

In terms of household population, the largest proportion came from three members families, accounting for 45.2% of the survey population. Families that have four or more members accounted for 37%. The family structure in the survey is in line with China's average family structure, with three-member families common, or a family structure of 4-5 from three generations living together .

Per capita income of the surveyed consumers ranged from 1,000 RMB/month to 10,000 RMB/month and above. Different age groups per capita monthly income displayed large differences: 30-39 years olds and 40-49 years olds accounted for a significantly higher proportion of the high-income bracket (≥5,000 RMB). In other age groups, 18-20 year olds accounted for the smallest share of income of over 5,000 yuan. For the majority of this population, their income mainly comes from parental support, meaning they are not economically independent.



The distribution of age in the sample is different from the average according to the 2015 China Demographic Yearbook. In order to better reflect the whole picture, the data for older groups is adjusted by demographic post-stratification weighting.

Age	< 20	20-29	30-39	40-49	50-59	≥ 60
Population Statistics [25]	22.24%	16.86%	14.61%	17.90%	12.84%	15.55%
Survey Statistics	17.92%	37.69%	25.43%	12.25%	4.32%	2.39%

ANNEX II ： Survey

2016 Questionnaire of Consumer Information on Sustainable Consumption

To understand the current status of Chinese consumer's sustainable consumption, UNEP launched the Consumer Information Project on sustainable consumption. It aims to guide consumers toward green lifestyle and wise consumption, and to ultimately transition to a more sustainable consumption pattern. This questionnaire is anonymous. All information is confidential and the relevant results will be used for the research and project proposes ONLY. Thank you very much for your feedback and cooperation!

1、The city you are currently living: :

☐ Beijing ☐ Shanghai ☐ Wuhan ☐ Shenzhen ☐ Chengdu
☐ Nanjing ☐ Qingdao ☐ Hangzhou ☐ Xi'an ☐ Dalian
☐ Other:_____

2、How old are you :

☐ Below 20 ☐ 20-29yrs ☐ 30-39yrs ☐ 40-49yrs
☐ 50-59yrs ☐ 60yrsand above

3、Gender : ☐ Male ☐ Female

4、Educational background :

☐ High School and below ☐ College degree
☐ Undergraduate ☐ Graduate and above

5、How many people in your family :

☐ 1ppl ☐ 2ppl ☐ 3ppl ☐ 4ppl and above

6、Income level per month per person :

☐ 1000-3000RMB ☐ 3001-5000RMB ☐ 5001-7000RMB
☐ 7001-10000RMB ☐ 10000RMB and above

7、Would you consciously choose products with the labels below when you go shopping? (you can choose more than one)

☐ Energy-saving ☐ Eco-labeling ☐ Organic ☐ Other:_____

8、Where do you buy the green products?(you can choose more than one)

☐ Physical Stores (supermarket, shopping mall)
☐ Professional delivery ☐ On-line shopping platforms ☐ Other:_____

9、Why you choose green produces? (You can choose more than one)

☐ Saving cost ☐ Environmentally friendly
☐ High and reliable quality ☐ Brand ☐ Food safety and health
☐ Celebrity campaign ☐ Advertisement ☐ Price discount
☐ Other:_____

10、Why you do not buy green products ? (You can choose more than one)

☐ Expensive ☐ Lower level of quality compared to normal products
☐ Low credibility, don't believe they are real green products
☐ Can' t tell if it is green product ☐ Other:_____

11、Do you recognize the following labels? (You can choose more than one)

☐ China Environment Labelling ☐ China Energy Label ☐ Green Food Label

☐ Organic ☐ FSC ☐ MSC ☐ RSPO

12、What information do you think needs to be provided with labeling (You can choose more than one)

☐ Environmental impact
☐ Advantages compared to the normal products
☐ Social impact ☐ Other:_____

13、Regarding the price, how much higher can you accept when purchasing green products ?

	Same price	Higher within 5%	5%-10% higher	10%-20% higher	20%-30% higher	Price doesn't matter
Food						
Electronic Appliances (LED Lamps, Energy saving lamps etc)						
Furniture and construction material						
Clothing						
Daily necessities commodities						

14、Would you be willing to buy electric vehicle? (You can choose more than one)

- ☐ Yes, very willing, because it reduces environment pollution
- ☐ If the charging station and battery technology could be improved, I will consider it
- ☐ Willing if the transportation cost is greatly lower than a petrol vehicle
- ☐ Not in the short-term

15、Do you think the following methods could be more convenient for buying green products(You can choose more than one)

- ☐ Special counters for green products in physical stores
- ☐ Green product stores ☐ Online browsing
- ☐ Special promotion on green products ☐ Others:_____

16、Which of the following sustainable consumption habits you are already doing? (You can choose more than one)

- ☐ Online browsingDaily waste sorting and recycling
- ☐ Online browsingOnline browsing Prefer using public transportation or walking when possible
- ☐ Online browsingSetting the temperature of the air conditioner no lower than 26℃ in summer, no higher than 28℃ in winter
- ☐ Online browsingSeparately dispose of batteries and light bulbs
- ☐ Online browsingReduce the standby time of household appliances
- ☐ Online browsingUse water-saving faucets and toilets
- ☐ Online browsingReduce food waste, take away the left-overs when eating out
- ☐ Online browsingSecond-hand use of water (flushing the toilet with used water)
- ☐ Online browsingBuy locally produced products
- ☐ Online browsing ☐ Other:_____

17、How do you feel about renting instead of buying for durable consumer goods?

- ☐ Acceptable
- ☐ Acceptable under the condition that there are good supporting services
- ☐ Unacceptable ☐ Other: _____

18、For old clothes and household appliances, in which way do you prefer to recycle?

- ☐ Community collection sites ☐ Collected and recycled by retailers
- ☐ Trade-in (old for new) services ☐ Donation ☐ Other:_____

19、Which of the following agencies can be trusted to lead on sustainable consumption (multiple choice)

☐ Government ☐ Traditional media ☐ Companies
☐ Academia ☐ Social Media ☐ Other: _____

20、Do you think any measurement could be helpful?(multiple choice)

☐ Publicity ☐ Government Subsidies ☐ Pilot Community
☐ Compulsory or restraining measures to eliminate the products with bad environmental impacts ☐ Other: _____

21、Do you agree that everyday actions can help to improve the environment?

☐ Strongly agree ☐ Agree ☐ Partly agree ☐ Slightly agree
☐ Don't agree

扫一扫，绿色消费在身边

Please Scan the QR code for answering on-line

Annex III : Community Survey

Questionnaire: Community Survey on Sustainable Consumption

1. Regarding your home trash, which is handled separately (Multiple choice)

A. Express boxes or other paper crates;
B. Cans or PE beverage bottles
C. Newspapers and a variety of paper;
D. Organic waste (leftovers, fruit and vegetable skin, etc.)
E. Batteries F. Energy saving lamps
G. Plastic products H. Waste clothes
I. Glass products

2. Where are the garbage disposed after being sorted ? (Multiple choice)

A. Waste recycling station;
B. community or business recycling;
C. community classification trash;
D. Fixed-point electronic recycling cabinet;
E. Waste collection of mobile personnel;

3. Do you know which categories of waste are hazardous waste? (Multiple choice)

A. Batteries; B. Food, fruits and vegetables and other organic waste;
C. Energy-saving lamps; D. All kinds of electronic waste;
E. Plastics; F. Paper

4. Do you think your home has a high sorting rate for recyclable household waste?

A. High; B. Not high

5. What do you think is the main difficulty in the classification of domestic waste? (Multiple choice)

A. Too much trouble for recycling; B. Recycling is not convenient;
C. The family space is too small to store the waste;
D. Waste recycling prices are too cheap;
E. Don’ t know how to classify;
F. There is always a variety of waste in the classification bins;

6. Can you accept multiple trash cans at home?

A. Can accept;
B. Can accept if the size is not much larger than the current trash;
C. Can not accept

7. Do you know where the waste battery has the greatest impact on the environment? (Multiple choice)

A. Air pollution; B. Soil contamination; C. Surface water pollution

8. Do you know the waste of energy-saving lamps will cause what harm? (Multiple choice)

A. Heavy metal pollution;
B. Waste of glass and metal and other recyclable materials;
C. Causing long-term effects on our health;
D. Endangering organisms;

9. Your home appliances disposal methods: (multi-selection)

A. Trade-in; B. Waste recycling station; C. Waste collector;

10. What types of your home e-waste are more difficult to deal with? (Multiple choice)

A. Mobile phones;
B. All kinds of small household appliances;
C. TVs or computers; D. Refrigerators;
E. Sockets, latches, panels or portable chargers;

11. Who do you think is most helpful to you for getting information on recycling? (Multiple choice)

A. Property company; B. Community management;
C. Neighbours; D. Internet;
E. Manufacturer; F. Sellers of the product;

12. What do you think will help improve waste recycling? (Multiple choice)

A. Community education and publicity;
B. Make it simpler for living garbage classification;
C. Improve waste recycling prices;
D. More convenient ways to collect;
E. Improving consciousness, to change personal habits;

13. In the community that you are living, will the way neighbours deal with garbage affect you?

A. Of course. If neighbours do not take action, what is the meaning of my action?;
B. No, I have my own principles;
C. To an extent. I don't want to be judged by my neighbours
D. I think it’ s better we work together;

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