

# Green Food Packaging Industry to Explore and Analyze

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## ABSTRACT

In the context of the current increasingly poor global environment and the rising awareness of environmental protection, green food packaging, as an important part of reducing environmental pollution and promoting sustainable development, has attracted widespread attention. Through the SWOT analysis method, this paper analyzes the current development status and trends of the green food packaging industry, and discusses its role in protecting the environment and saving resource consumption. Special attention is paid to the application and development of biodegradable materials, recyclable materials and recycling technologies in green food packaging. In addition, this paper evaluates the impact of policies and regulations on the green food packaging market, and puts forward suggestions and strategies to promote the sustainable development of the industry. In summary, green food packaging is not only an important means to achieve the goal of sustainable development, but also provides far-reaching insights into the future direction of the food packaging industry.

## KEYWORDS

Green Concept, SWOT Analysis Method, Food Packaging, Packaging Industry.

## 1. BACKGROUND OF THE STUDY

Data from the National Bureau of Statistics show that in 2019, most large-scale food industry enterprises realized operating income of 862.32 billion yuan, up 4.5% year-on-year, and total profits of 556.91 billion yuan, up 6.8% year-on-year. The rapid development of the food industry has driven the development of the food packaging industry, and the market demand shows growth. By 2026, the global food packaging market size will reach 606.3 billion yuan, with a compound annual growth rate of 5.6%. China's packaging equipment market demand will reach 16.850 billion yuan in 2023, with a compound annual growth rate of 10.15% [1]. At the same time, new trends are emerging within the packaging industry. Due to the increasingly harsh global environment, the need to use recyclable and biodegradable food packaging, environmental protection, non-toxic and harmless, zero pollution of the environment, green packaging, not only for the protection of the environment, but also for the survival of human beings can be healthy, the sustainability of society can be guaranteed.

## 2. POLICIES RELATED TO THE GREEN PACKAGING INDUSTRY

### 2.1. Green Packaging Industry Policies at the National Level

In recent years, in order to promote the greening, reduction and recycling of packaging, China's various departments have introduced a series of policies, the National Development and Reform Commission in 2020, the National Postal Bureau, the Ministry of Industry and Information Technology, the Ministry of Justice and other departments issued the "opinions on accelerating the promotion of green transformation of the courier packaging," the establishment of the courier green

packaging standardization joint working group to unify the guidance of the courier packaging standards development work. Develop a standard system framework diagram covering product, evaluation, management and safety categories and the design, production, sales, use, recovery and recycling of each link, unified express green packaging, recycled packaging, the core of the key indicator requirements [2]. 2021 The CPC Central Committee and the State Council issued the "National Standardized Development Outline" to establish and improve the standard of cleaner production, and continuously improve the recycling of resources, product green Design, green packaging and green supply chain, comprehensive utilization of industrial waste and other standards [3]. 2022 The State Council issued the "Notice on Further Strengthening the Governance of Excessive Packaging of Commodities", encouraging commodity sellers to put forward to the supply side of the green packaging of commodities and simple packaging requirements, the implementation of the green product certification of express delivery packaging, and promote the use of green express delivery packaging [4].

## **2.2. Green Packaging Industry Policies at the Local Level**

Provinces and cities in order to fully implement the national standard for green packaging, one after another issued a series of policies, 2021 Hubei Province issued the "Provincial People's Government on accelerating the establishment of a sound green low-carbon and recycling development of the implementation of the economic system" to strengthen the green transformation of courier packaging, to carry out the pilot of the large-scale application of recyclable courier packaging, to 2025, e-commerce express delivery of the basic realization of the basic is no longer the second packaging, in-depth development of the green life creation Action[5]. In 2022, Jiangsu Province issued the "General Office of the Provincial Government forwarded to the Provincial Market Supervision Bureau and other departments on the deep promotion of green certification to promote green low-carbon and recycling development opinions of the notice" to increase the market supply of green logistics standards, improve the green logistics standard system, and actively carry out the certification of green packaging and environmental protection products, new green supply chain and other aspects of the certification work[6]. In 2022, Yunnan Province issued the "On the Notice on the Action Plan to Accelerate the Establishment and Improvement of a Green, Low-Carbon and Recycling Development Economic System in Yunnan Province" was issued, mentioning that enterprises are encouraged to carry out green design, select green materials, implement green procurement, implement green manufacturing, green packaging, green transportation, and do a good job in recycling and disposal of discarded products, and to realize the full-cycle greening of their products.

## **3. FOOD PACKAGING INDUSTRY STATUS**

### **3.1. The phenomenon of excessive packaging**

Excessive packaging refers to the packaging cost and commodity value is not equal and unreasonable packaging behavior, the more common phenomenon is the cost is too high, too much material, complex structure and so on. Excessive packaging of food is a common phenomenon in the packaging industry, it has been reported that more than half of China's commodities are over-packaging problems, preliminary estimates, the annual waste of nearly 40 billion yuan due to over-packaging, to change the phenomenon of over-packaging should be a combination of the source management and the end of the governance, and at the same time for control. Source management is the reduction of food packaging control, from the design, to avoid the existence of all unnecessary, non-functional materials or structures; end governance that is, after the use of packaging recycling or degradation, so that packaging waste can be used for its best use, even if it can not be recycled, but also does not cause damage to the natural environment [7]. Excessive packaging will produce serious problems, thus leading to environmental problems, some data show that, in addition to drinking water pollution, marine lake ecological pollution, air pollution, the most serious is the problem of packaging pollution.

Over-packaging not only causes great damage to the environment and resources, but also causes serious losses to our economy, the annual cost of China's packaging waste disposal and non-recycled waste resources increased year by year, while over-packaging of products businessmen will increase the price, harming the interests of consumers.

### **3.2. Analysis of the cultural performance of traditional food packaging**

Traditional Chinese culture emphasizes treating people with courtesy, respecting traditional festivals, and giving gifts as an important way of interpersonal communication. In the past, simple kraft paper and twine packaging was enough as a precious gift, reflecting the cultural concept of "gifts are light and love is important". However, with the development of the times, gift packaging has gradually evolved into a "big box set of small boxes" of exquisite gift boxes, and sometimes this beautiful packaging may cover up its essence and cultural significance, and even lead to waste phenomenon. Traditional food itself carries rich cultural connotations and national traditions, so the packaging design should be able to skillfully reflect these values and meanings. Such design is not only the appearance of the product, but also an important expression of cultural heritage, which should respect and show the traditional aesthetics, while taking into account the sustainability of environmental protection and resource utilization. Therefore, while pursuing aesthetics and functionality, packaging design should be able to deeply reflect and convey the essence and values of traditional Chinese culture.

### **3.3. Analysis of the current situation of food packaging greening**

Under the background of low-carbon society, the state has introduced a series of policies to control packaging pollution phenomenon, as well as related manufacturers of food packaging for low-carbon design and production, the expectation that through the product will be the concept of low-carbon spread in the public life, and efforts to change the above mentioned over-packaging problems. Such as the domestic well-known brand Master Kong, its Master Kong iced tea, Master Kong sugar-free iced tea two for the experimental launch of the country's first unlabeled drinks, the bottle used in the green environmental protection material PET material, to take the form of boxed sales, the use of recycled paper in the carton of its packaging [8]. Its packaging design adopts the form of label-free, saving the original PVC label, to achieve material minimization design, usually drink bottles will use ink printed with the date of production, shelf life and other news, the design uses laser printing technology, in the completion of the information marking at the same time, reduce the use of ink, most of the raw materials for its packaging is taken from recycled paper, in order to reduce the area of ink, the choice of spraying the product on the Kraft paper In order to reduce the ink area, we choose to print the product information on kraft paper to realize the reuse of packaging and reduce the pollution caused by the ink to nature at the same time.

Domestic for food green packaging design, is still trying to explore the exploration stage, the number of green food packaging is not much. Including the audience for the concept of low-carbon culture there is still a cognitive gap, some consumers for the green design can not be understood and recognized, resulting in the consumption will not buy it.

## **4. GREEN FOOD PACKAGING INDUSTRY SWOT ANALYSIS**

### **4.1. Advantage Analysis**

Green food packaging industry, enterprises in the green technology has carried out a large number of R & D investment, accumulated a wealth of technical experience and innovation capacity. The government's policy support for environmentally friendly products and green food packaging has increased, and market demand continues to expand, providing a favorable development environment

for the industry. Under the background of globalization, there are frequent technical exchanges and cooperation with the international community, which can quickly absorb and apply the latest green packaging technology. Some enterprises have established a good brand image and market recognition in the field of green food packaging, which is conducive to the promotion and sale of products in the market.

Green packaging materials are constantly being developed and updated, and the use of biodegradable materials, recyclable materials and recycling technology is particularly important. In order to make the green food packaging industry better and faster development, it is necessary to explore a green sustainable development path. In recent years, the food packaging industry is also more and more enterprises using green materials, which is a positive and optimistic trend for the lasting development of the packaging industry to play a role in promoting.

#### **4.2. Disadvantage Analysis**

At present, the green food packaging industry is facing the urgent need for structural adjustment. Although China has a large number of packaging enterprises, but the vast majority of them are still in the small and medium-sized, the lack of large-scale enterprise groups that can have an impact on the international market. Green food packaging as an emerging industry, technology research and development requires a large amount of capital investment, which is a challenge for small and medium-sized enterprises, because they are difficult to bear the market risk and the high cost of technological innovation. In addition, the standard and evaluation system of green food packaging needs to be further improved. There are many deficiencies in design, production, consumption and waste recycling, and the lack of mandatory laws and regulations and effective enforcement mechanisms further exacerbate these problems. The government's ineffective implementation of laws and regulations is also one of the key factors restricting the development of green food packaging industry.

#### **4.3. Opportunity Analysis**

In recent years with the global environmental protection awareness, green food packaging in the international market has a greater space for development, especially in developed countries and regions. The prosperity of global free trade for China's export enterprises to open up a broad space for development, especially in the field of green food packaging, this development trend not only brings advanced green technology and consumer concepts, but also promotes close cooperation in international academic exchanges, so that China's packaging industry can grasp and apply the latest scientific research results of green food packaging in a timely manner. National government policy support for green products has increased, the market potential is huge, especially in the food packaging and consumer goods industry. The continuous development of science and technology, the emergence and application of new technologies have brought more innovative opportunities and market advantages for the green food packaging industry.

#### **4.4. Threat Analysis**

Green food packaging industry, a large number of enterprises, the technical level of different sizes, peer competition is fierce, while alternatives and other environmentally friendly packaging technology may be a threat to green packaging may be formed. Green food packaging by the constraints of economic factors, due to the long production cycle of green food packaging products, economic investment, green food packaging products and traditional food packaging compared to not have the price advantage, the price problem has become an important factor restricting the development of green food packaging industry. Green packaging depends on environmentally friendly materials, raw material price fluctuations may affect the production costs and profitability of

enterprises. Packaging policy, changes in environmental regulations may have a significant impact on the production, sales and market access, the need for sustained attention and response.

## 5. CONCLUSION

To promote the development of the green food packaging industry, it is necessary to start from various aspects, such as system construction, technological innovation and market guidance, in order to promote the optimization of the industry's structure and sustainable development. The government should formulate and implement relevant policies, such as tax incentives and subsidies, to motivate enterprises to adopt environmentally friendly materials and recyclable packaging solutions. At the same time, it should strengthen regulation and strictly enforce environmental standards to promote the standardized development of the industry. Enterprises and research institutes should increase R&D investment in green packaging materials, such as biodegradable plastics and bio-based materials, and improve the environmental performance and service life of materials through technological innovation. In addition, it is necessary to strengthen public education on environmental awareness, advocate the concept of green consumption, and enhance public acceptance of green packaging.

Promote cooperation between upstream and downstream enterprises, jointly build a green packaging industry chain, optimize supply chain management and promote synergistic development of the industry. Vigorously develop the circular economy model, promote the recycling of packaging materials, establish a perfect recycling system, improve resource utilization efficiency and reduce environmental pollution. Formulate and promote green packaging standards, regulate industry behavior, and enhance the quality and market competitiveness of green packaging products. By strengthening international cooperation and drawing on advanced experience and technology, we will jointly address global environmental challenges.

Promoting the sustainable development of green food packaging industry requires the joint efforts of the government, enterprises and the public to build a more environmentally friendly, healthy and sustainable food packaging ecosystem and contribute to the realization of green development goals through comprehensive measures in various aspects such as policy support, technological innovation, public education, industrial cooperation and international exchange.

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