

PERSPECTIVE

Trends and dynamics of philanthropic funding for biodiversity conservation in China

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Abstract

Implementation and funding mechanisms to reverse biodiversity loss formed the core of the discussion focusing on the Post-2020 Global Biodiversity Framework (“the Framework”), at the 15th Conference of Parties at the Convention on Biological Diversity hosted by China. Before financial support emerged from the private sector in China, biodiversity conservation had primarily been financed by the government. By the end of the 20th-century international non-governmental organizations and China’s local philanthropists began to launch pilot programs in the country. In the past 5 years, biodiversity conservation across China has received CNY 1.757 billion (approximately \$279 million) from the philanthropy sector. It represents the largest- and fastest-growing share (69%) of environmental philanthropic funding; however, it accounted for <1% of all the philanthropic in all sectors nationwide. We suggested Foundations and NGOs review and adjust their strategies to align with the Kunming-Montreal global biodiversity framework. Proactive connection and engagement with the philanthropies is required to expand its contributions while providing better pathways and support mechanisms for philanthropic funding for biodiversity conservation. Despite the philanthropic funding provided has been relatively modest over the past few decades, the philanthropic organizations have achieved significant positive results for biodiversity conservation in China. However, the funding for biodiversity conservation falls far short of what is needed to achieve the goals under the Kunming-Montreal global biodiversity framework. This study provides a comprehensive overview of biodiversity philanthropic funding in China. Based on the collection of data related to environmentally relevant grants provided by companies, foundations, and individuals, we conducted a visualization analysis to reveal China’s philanthropic funding flows between 2016 and 2020 in China. The profiles of donors and the receipts of the funding have been described.

KEYWORDS

Biodiversity Conservation Finance, China, private sponsorship, resources mobilization

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1 | INTRODUCTION

According to the 5th edition of the Global Biodiversity Outlook (GBO-5) published by the Secretariat of the Convention on Biological Diversity (SCBD) in 2020, none of the 20 Aichi Biodiversity Targets set at 10th session of the Conference of the Parties (COP-10) have been completely achieved, and only 6 have been partially achieved. The report indicated partial advancements in national biodiversity conservation efforts, yet the overall progress fell short of aligning with the Aichi Targets. One of the main reasons for this failure was insufficient financial resources for biodiversity conservation. Parties to the CBD have recognized and agreed that the mobilization of financial resources is an essential measure for implementing the goals and targets of the Kunming-Montreal Global Biodiversity Framework (Wei et al., 2021). GBO-5 showed that global biodiversity conservation was financed at approximately US \$78–91 billion per year (data from 2015 to 2017) (SCBD, 2020).

As of 2015, 97 parties of the CBD submitted their financial reports on biodiversity conservation to the CBD Secretariat, including the percentage of philanthropic funding for biodiversity conservation as a percentage of the gross domestic product (GDP) in each country. In most cases, this figure is significantly <0.5% (SCBD, 2020).

Philanthropic funding, including conservation-related donations from private companies, foundations, philanthropic trusts, and high-net-worth individuals, is an important source of funding for biodiversity conservation. From 2015 to 2017, philanthropic funding provided US \$6.6–13.6 billion annually for global biodiversity conservation (Organization for Economic Cooperation and Development [OECD], 2020). Overall, however, public funding from government and official development aids remains the primary source of biodiversity conservation finance, and contributions from philanthropic funding are comparatively small. Approximately, US \$3.6 billion, or 26%, of environmental philanthropic funding, is estimated to be used for biodiversity conservation per year in the United States (Giving USA, 2021).

In their projections regarding the financial need to achieve ambitious goals by 2030, the Paulson Institute and Nature Conservancy (TNC) emphasized that the global biodiversity funding needed is estimated to range between US \$598 and US \$824 billion annually. This funding is essential for the conservation of 30% of the Earth's terrestrial and marine regions by 2030, the sustainable transformation of three pivotal economic sectors (agriculture, fisheries, and forestry) within a span of 3–4 years, the preservation of coastal ecosystems, and the conservation of urban environments (Paulson Institute, 2021). Financial resources from the

public sector, including those provided by multilateral biodiversity conservation mechanisms, remain an essential funding source for the Kunming-Montreal Global Biodiversity Framework (Subsidiary Body on Implementation of CBD [SBI], 2020). Removing subsidies that harm the environment may be one of the most critical measures for closing this gap. In addition, the financial mechanism of GBF calls for private investment through market-based instruments, including philanthropic conservation funding. The decision on resource mobilization was adopted at COP-15 in Montreal, where conservation philanthropy was recognized, and a comprehensive strategy will be developed by COP-16 in 2024.

2 | BIODIVERSITY CONSERVATION EFFORTS IN CHINA

2.1 | Biodiversity finance in China

The China's National Biodiversity Strategy and Action Plan (2011–2030) was formulated and implemented in 2010, setting the overall goals, strategic tasks, and priorities for biodiversity conservation across the country between 2011 and 2030 (Qin, 2020). China has made remarkable progress in conserving endangered wildlife and habitats, developing protected area systems, and facilitating ecological restoration (Ma et al., 2018). Government remains the primary funding source for biodiversity conservation in China. Government funding increased over the past 10 years. In two consecutive years (2017–2018), more than US \$38.5 billion (equal to CNY 260 billion at the exchange rate as RMB/USD = 6.5) was allocated to biodiversity-related work, which was six times more than that in 2008 (Ministry of Foreign Affairs for the People's Republic of China [MFA], 2020). China's CBD report on resource mobilization for biodiversity conservation from 2008 to 2015 shows an increase from US \$6.80 billion (CNY 44.17) to US \$25.97 billion (CNY 168.81 billion) or from 0.13% to 0.24% of the GDP (CBD, 2022) (Figure 1).

2.2 | Role of conservation philanthropy in biodiversity conservation in China

Nongovernmental organizations (NGOs) and foundations involved in biodiversity conservation in China can be traced back to 1980, when the World Wildlife Fund (WWF) came on board to help conserve giant pandas (*Ailuropoda melanoleuca*) and their habitats in



FIGURE 1 China's public funds spent on biodiversity conservation from 2008 to 2015 (unit: billion USD).

China (WWF, 2010). China's first nonprofit NGO, the Saunders' Gull Conservation Association, was founded in 1992, followed by several volunteer wildlife conservation groups. In 2004, the Society of Entrepreneurs and Ecology was founded and in 2008, the Society of Entrepreneurs and Ecology (SEE) Foundation, China's largest environmental grant-making foundation was established, which sponsored over 1,000 grass-root environmental groups up to now, and lead to the rapid growth of China's local environmental NGOs.

Although the amount of funding provided has been relatively modest over the past few decades, these NGOs and foundations have achieved significant positive results in bridging the gaps and demonstrating new models for biodiversity conservation in China (Wang et al., 2020). The following is a summary of their achievements:

- Through science-based surveys and assessments, NGOs and foundations have worked with a wide range of endangered and threatened species, such as snow leopards (*Panthera uncia*), Northern Chinese leopards (*Panthera pardus japonensis*), green peafowls (*Pavo muticus*), Chinese pangolins (*Manis pentadactyla*), and white-headed langurs (*Trachypithecus leucocephalus*), bridging the spatial and temporal gaps in government efforts. Organizations such as the Shan Shui Conservation Center, Chinese Felid Conservation Alliance, SEE Foundation, Xizi River Ecological Conservancy, and Guangxi Biodiversity Research and Conservation Association have implemented science-based surveys, in situ conservation, and community-based conservation to complement long-term government contributions.
- New conservation models in China, such as national parks, community-based co-management, community conserved areas, and privately protected areas piloted by both domestic and international environmental

NGOs, are playing a pivotal role in accelerating China's endeavors to establish a comprehensive protected area system and diversifying the country's types of protected areas.

- NGOs and foundations have successfully tested new approaches to public engagement in the conservation and value transformation of natural goods (purchase of ecological goods and payment for ecological services), for example, by supporting nature education and working with Internet companies. Regarding new financing mechanisms, a group of NGOs has been at the forefront of forest carbon sinks and blue carbon, leading to the development of new financing models. For example, the SEE foundations successfully piloted China's first blue carbon project, providing a new funding model for future marine conservation.

3 | METHODS

3.1 | Data collection for biodiversity-related philanthropic funding

The data collection and analysis were based on Yishan's model for the flow of philanthropic funding (Figure 2). Yishan is a leading philanthropic data provider, and a philanthropic data collection model has been developed by Yishan.

In Figure 2, the rectangles represent governments, companies, individuals, and public institutions. Among them, "A" stands for government departments that purchase services from NGOs and foundations. "B" and "C" represent funding providers to the nonprofit sector. The oval shapes represent nonprofit organizations such as foundations, NGOs, Red Cross, religious organizations, and charitable trusts. D refers to foundations or trusts initiated by a company or entrepreneur financing nonprofit projects. "E" refers to grant-making foundations that only manage grants to NGOs rather than implement the projects themselves. "G" and "H" refer to governments and companies that receive grants by providing services, respectively. The connecting line with arrows represents the philanthropic funding flow. The model avoids duplicate calculations of philanthropic funding and ensures the authenticity of funding data.

This study has not collected data on international philanthropic funding for biodiversity conservation in China and individual donations through internet crowdfunding platforms because the data are not available or accessible.

All data related to environmentally relevant grants provided by companies, foundations, philanthropic

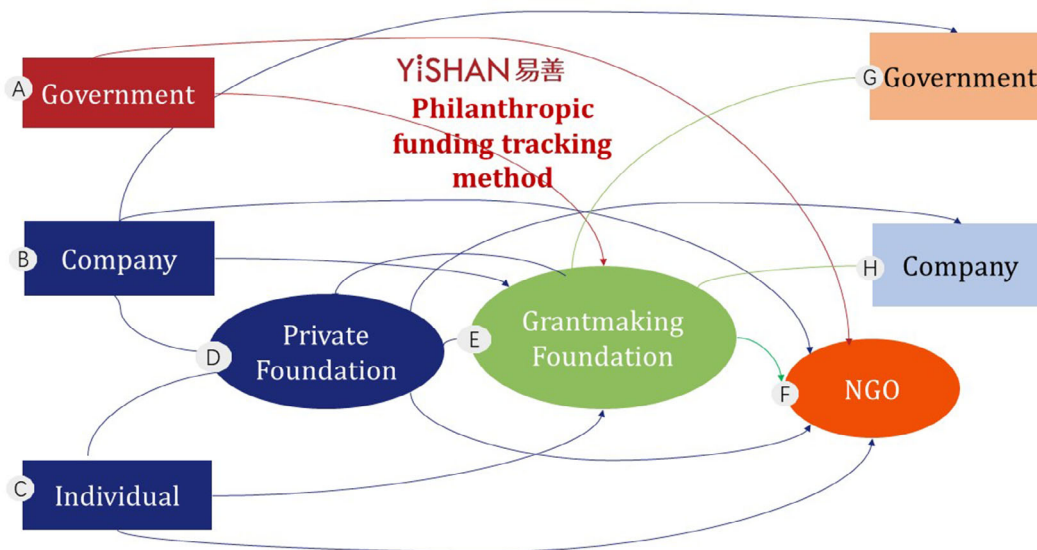


FIGURE 2 Yishan's model for flow of philanthropic funding.

trusts, and individuals were retrieved based on the Yishan model from the annual reports of China's philanthropic foundations and publicly listed Chinese companies. Python tools were used, and the data were manually checked to ensure the quality.

3.2 | Constructing a classification framework for biodiversity philanthropic funding data

After consulting experts, we created four categories of environmental philanthropic funding, each with a subcategory: biodiversity, energy and climate change, pollution prevention, and other unclassified. Within the biodiversity category, four clusters were identified: species conservation, forest and ecosystem restoration, national parks and protected areas, and unclassified.

4 | RESULTS

4.1 | Overview of biodiversity philanthropic funding in China

The data collected show that the total volume of environmental philanthropic funding during 2016–2020 reached US \$388 million (CNY 2.523 billion) to US \$77 million (CNY 505 million) annually. Overall, environmental philanthropic funding accounts for only a small portion of China's philanthropic funding. In the environmental philanthropic funding traced over the past 5 years, US \$270 million (CNY 1.757 billion) was

allocated to biodiversity conservation, accounting for 69% of the environmental philanthropic funding, a much higher proportion than that allocation for pollution control, energy, and climate change (Figure 3). The Sankey diagram of environmental philanthropic funding flows reveals that biodiversity conservation is the top priority of environmental philanthropic funding in China.

The forest and ecosystem restoration subcategory accounted for the largest share in the biodiversity category, with 23% of the funding allocated to species conservation, reaching US \$63 million (CNY 408 million). Most of the funding went to protect the Yangtze finless porpoise (*Neophocaena asiaeorientalis*), snow leopard (*Uncia uncia*), and coastal bird species. In addition, more than US \$9 million (CNY 60 million) went to projects for national parks and protected areas, mostly in privately protected areas and community-conserved areas.

Philanthropic funding for biodiversity conservation increased rapidly, with annual growth rates of 21%, 35%, 43%, and 29% from 2016 to 2020, respectively (Figure 4).

4.2 | Profiles of donors of philanthropic funding for biodiversity conservation in China

The majority of the total philanthropic funding for biodiversity conservation in China comes from companies, foundations with endowments, or charitable trusts. Donations from high-net-worth individuals and individuals are minimal.

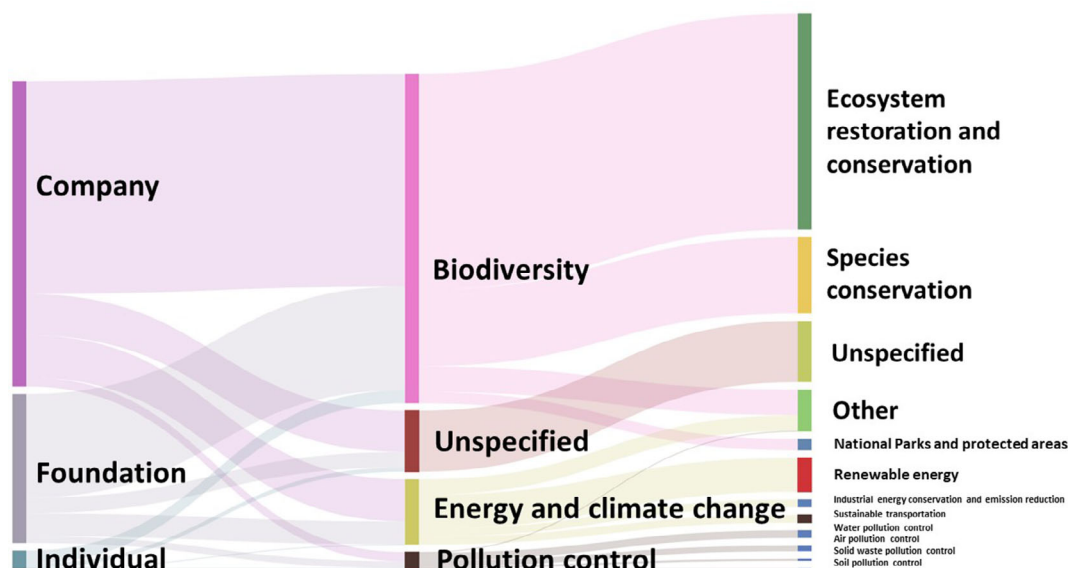


FIGURE 3 Sankey diagram of China's philanthropic funding flows from 2016 to 2020.

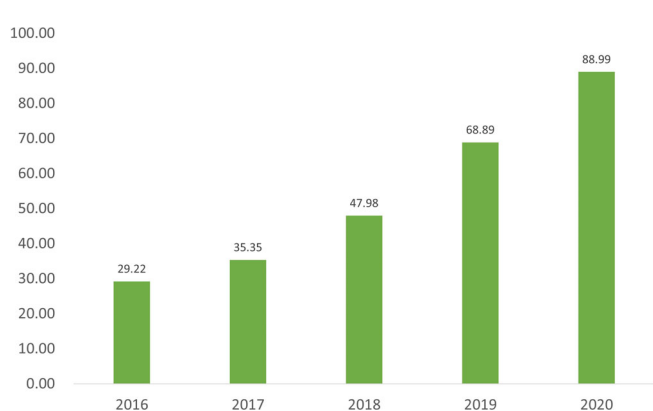


FIGURE 4 The size and the trends of China's philanthropic funding for biodiversity conservation (unit: million USD).

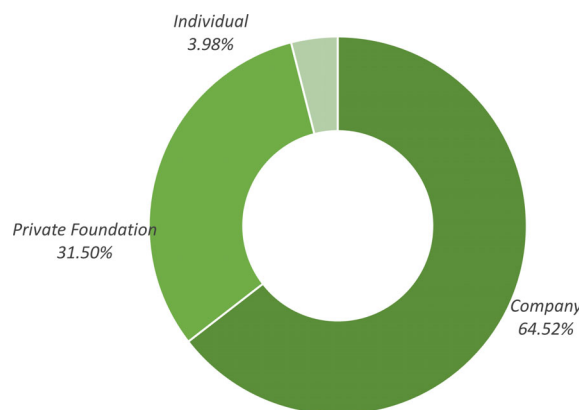


FIGURE 5 The profile of China's biodiversity donors from 2016 to 2020.

Figure 5 shows the profiles of the philanthropic donors for biodiversity conservation in China. Companies (64.52%) provided the largest share of philanthropic biodiversity funding, and 31.50% of philanthropic funding for biodiversity conservation was provided by foundations with endowments or philanthropic trusts.

Based on the data, local private Chinese companies are active in providing funding for biodiversity conservation. Particularly, China's financial institutions and Internet giants have provided a large share of philanthropic funding for ecosystem restoration in China. Interestingly, Chinese Internet companies are interested in donating to biodiversity conservation via Internet platforms. For example, Alipay developed the Ant Forest platform on its mobile app, which donates to foundations or NGOs for forest plantation projects on behalf of its users.

4.3 | Profiles of the recipients of philanthropic funding for biodiversity conservation in China

Figure 6 shows that 65.68% of the philanthropic funding went first to grant-making foundations and then to NGOs, 5.39% went directly to operating foundations or NGOs, and a small amount of funding went directly to purchasing services (6.22%).

5 | DISCUSSION

The data show that China's philanthropic funding for biodiversity conservation has been steadily increasing since 2015, with an annual growth rate of 32%. This is related to the fact that after the 18th National Congress

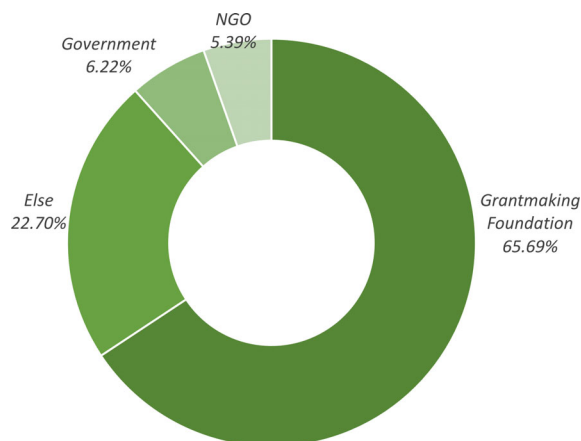


FIGURE 6 Profiles of the recipients of China's philanthropic funding for biodiversity from 2016 to 2020.

of the Communist Party of China, a “Beautiful China” initiative was launched as an ambitious goal towards an ecological civilization, and Significant efforts have been taken to reform China's protected area systems with a focus on national parks and conserving rare and endangered species. In addition, the United Nations Convention on Biological Diversity provides an excellent opportunity for China to conserve biodiversity and draw philanthropic funding support. However, philanthropic funding for biodiversity conservation in China remains limited, and a large gap exists between the demand for conservation and the supply of philanthropic funding.

5.1 | Major funding focus: Afforestation and reforestation

In 1998, China initiated large-scale “natural forest conservation” and “farmland to forest” campaigns. Over the past two decades, these efforts have promoted the restoration and expansion of forests across the country, with forest cover and stock volumes rapidly increasing nationwide (Viña et al., 2016). Another key part of China's nationally determined contributions to climate change mitigation is the target to increase its forest stock volume by 6 billion cubic meters by 2030 compared with that in 2005 (Niu et al., 2023). Afforestation and reforestation have accounted for the majority of philanthropic funding for biodiversity conservation in China over the past 5 years. Furthermore, projects aimed at combating desertification, such as the SEE Foundation's 100 Million Sacsoul Trees and Ant Group's Ant Forest, have gained recognition and become major ecosystem conservation and restoration projects.

Some of these projects are designed with forestation and reforestation methodologies under the Clean

Development Mechanism or are otherwise involved in the voluntary carbon market, as companies and the public become increasingly aware of ecosystem carbon sinks. The primary purpose of these projects is to address climate change with the objectives of community participation and biodiversity conservation. We classify these projects as nature-based solutions (NbS). Our data show that afforestation and reforestation projects without fully consideration of biodiversity received US \$112 million (CNY 725 million) in funding, and NbS were allocated US \$37 million (CNY 240 million).

Overall, afforestation and reforestation remain major philanthropic fields for biodiversity conservation in China. One reason is that the deliverables of afforestation projects are tangible and easy to quantify. However, current forest plantation projects are mainly focused on plant monoculture species, without considering long-term biodiversity conservation outcomes. Long-term project monitoring and evaluation systems are also lacking. Collaboration with relevant government departments and NGOs, along with the application of both national and international standards, is imperative to ensure that afforestation efforts yield favorable biodiversity outcomes while mitigating potential adverse ecological impacts.

5.2 | The climate–biodiversity philanthropy nexus

China's philanthropy plays a key role in climate-change mitigation in the mixed actor model of climate governance (Ni et al., 2023). Between 2008 and 2019, forest and ecosystem restoration received US \$465.70 million in donations, accounting for 65% of China's climate philanthropic funding. The potential synergies between biodiversity conservation and climate change mitigation should be considered.

Biodiversity can provide ecosystem services that regulate the climate. Harnessing the power of nature can help conserve and restore ecosystems and address climate change through NbS. NbS are defined by the International Union for Conservation of Nature and Natural Resource (IUCN) as actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, while simultaneously benefiting people and nature (IUCN, 2020). The concept of NbS was adopted by the Glasgow Agreement under the United Nations Framework Convention on Climate Change and the Kunming-Montreal Global Biodiversity Framework under the CBD.

If climate philanthropic funding could be combined with biodiversity philanthropic funding and NbS interventions, more funds could be allocated to biodiversity conservation.

5.3 | The niche of philanthropic funding for biodiversity conservation

By comparing philanthropic funding for biodiversity conservation with government funding for biodiversity conservation, it is clear that the government plays a crucial role in China's biodiversity conservation efforts. To achieve China's goals and targets under the Kunming-Montreal Global Biodiversity Framework, philanthropic funding for biodiversity conservation should be encouraged. Due to the unique role of NGOs and their foundations, philanthropic funding for biodiversity conservation can play an important role in leveraging government funding and testing new models or approaches (The People's Bank of China [PBC], 2021).

China released its Biodiversity Action Plan and national ecosystem conservation and restoration strategies. Engaging in philanthropic funding for biodiversity has been listed as a priority. However, the total volume of philanthropic funding for biodiversity conservation is remarkably low. An appropriate niche of philanthropic funding for biodiversity conservation should be identified, and strategies for cooperation with government funding should be developed.

6 | CONCLUSION

This study examined philanthropic funding for biodiversity conservation in China using data collected between 2016 and 2020. The findings demonstrate the philanthropic funding flows in China. Furthermore, we found that philanthropic funding could play an important role in biodiversity conservation in China to achieve long-term conservation goals.

The Kunming-Montreal Global Biodiversity Framework adopted at the end of 2022 in Montreal is important for future global environmental governance. The framework has listed 23 targets for governments, businesses, and philanthropy to guide the journey of biodiversity conservation worldwide by 2030. Foundations and NGOs in China must also review and adjust their strategies to align with the global biodiversity framework. To pursue its biodiversity goals and targets, China's philanthropic funding must work together to leverage government funding for conservation.

AUTHOR CONTRIBUTIONS

Li Zhang conceived the idea and designed the research framework. Ze Tao and Fangyi Yang collated data and performed analysis. Fangyi Yang and Li Zhang wrote the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

All data on philanthropic giving for the environment were retrieved from the annual reports of China's philanthropic foundations and publicly listed Chinese companies. The results of the data analysis can be obtained from Yishan's website: api.yishancredit.com/Content/sthj/sjt.html. All data can be obtained by contacting the corresponding author.

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