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## Research on New Media Communication of Agricultural Government Affairs—A Case Study of the “China Fisheries” WeChat Official Account Post-print

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### Abstract

This study takes the agricultural government-affairs WeChat public account “China Fisheries” as a case example to analyze the audience background and structural composition of government-affairs new media, as well as the reading and dissemination patterns of media content. Based on empirical data investigating metrics such as article initial open rate, forwarding/sharing rate, forwarding-induced follower increase rate, and secondary dissemination rate, the study concludes that the “China Fisheries” WeChat public account maintains healthy operations with untapped potential for greater communication impact. The article concludes by proposing recommendations for enhancing the communication effectiveness of agricultural government-affairs WeChat public accounts, offering reference and guidance for the operation of various government-affairs new media platforms.

### Full Text

## Research on Communication of Agricultural Government-Affiliated New Media: A Case Study of the “China Aquatic Products” WeChat Official Account

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### Abstract

This paper takes the agricultural government-affiliated WeChat official account “China Aquatic Products” as a case study to analyze the audience background

and structural composition of government-affiliated new media, as well as content reading and dissemination patterns. Based on data analysis of metrics including initial article open rate, forwarding and sharing rate, follower increase rate through forwarding, and secondary dissemination rate, the study concludes that the “China Aquatic Products” WeChat official account is operating healthily with considerable untapped communication potential. The article concludes with recommendations on how agricultural government-affiliated WeChat official accounts can enhance their communication power, providing reference and guidance for the operation of various government-affiliated WeChat official accounts.

**Keywords:** new media; agriculture; government affairs; communication; WeChat official account

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New media refers to emerging media forms that have arisen under new technological support in today’s environment where everything can serve as a medium [1]. It is also a communication model that utilizes digital technology to deliver information and services to users through channels such as computer networks, wireless communication networks, and satellites, as well as terminals including computers, mobile phones, and digital televisions.

Since its inaugural issue in 1958, *China Aquatic Products* has served as a national-level publicity medium and a primary platform for fisheries communication nationwide. In 2015, keeping pace with media development trends, the publication launched its “China Aquatic Products” WeChat official account. After nearly five years of operation, it has gained widespread attention within the industry, publishing over a thousand pieces of information annually with a stable, professional readership exceeding 50,000. Multiple articles have achieved over 100,000 views, and various promotional activities—including award-winning essay contests, photography competitions, online voting events, and showcases of outstanding grassroots extension personnel—have achieved excellent publicity results and social impact.

To further expand the account’s influence and elevate its new media service capacity for the rural revitalization strategy and high-quality green development of fisheries, the authors conducted an in-depth analysis of the account’s back-end data from the first half of 2020. This study examines multiple dimensions including audience background information, geographic distribution of readership, reading volume, and forwarding volume, making data-driven analyses and judgments. Finally, it proposes recommendations for increasing audience engagement, reading volume, and sharing rates, aiming to provide a reference for enhancing the communication capacity of various agricultural government-

affiliated WeChat official accounts.

## 1. Audience Background and Structure Analysis

### 1.1 Basic Audience Data

As of the time of analysis, the “China Aquatic Products” WeChat official account had approximately 51,000 followers. In terms of age distribution, audiences aged 26-35 account for 38.05%, those aged 36-45 comprise 26.02%, and those aged 46-60 represent 21.40% (see [Figure 1: see original paper]). Regarding gender structure, male audiences constitute 78.47% while females account for 21.45% (see [Figure 2: see original paper]).

Geographically, the top three provinces are Guangdong (15.62%), Shandong (9.89%), and Jiangsu (9.00%) (see ), all traditional major provinces in China’s aquaculture industry. Additionally, Fujian, Zhejiang, Hubei, and Liaoning—coastal provinces and inland aquaculture hubs—also show relatively high proportions.

### 1.2 Regular User Data

Since July 2019, the WeChat official account backend has introduced a data analysis function for regular readers. Regular readers refer to users who have the account permanently displayed in the “Frequently Read Subscriptions” bar at the top of their WeChat “Subscription Messages” list. As an important means of understanding active readers, this function allows operators to clearly grasp the number and proportion of regular readers, serving as a basis for evaluating the quality of official account operation.

Since this feature’s launch, the regular user ratio of the “China Aquatic Products” account has steadily climbed from 10.10% to over 16%, reaching a peak of 18.13% in March 2020 (see ). This significantly exceeds the industry average of 11% reported in an August 2019 survey of 7,242 official accounts by a new media industry organization. Geographically, the vast majority of regular users come from fourth-tier cities and below, with this proportion rising from 31% in July 2019 to 51% in June 2020 (see [Figure 4: see original paper]).

This analysis introduces the concept of “user persona” [2], also known as user profiles, which serves as an effective tool for delineating target users and connecting user demands with operational direction. In new media operations, inaccurate user persona analysis leads to numerous problems: imprecise content selection that fails to meet regular users’ reading needs, resulting in the loss of high-quality regular users; inconsistent reading volumes caused by factors such as uninformative titles, aesthetically mismatched images, inaccurate abstracts, and irregular push times that degrade the reading experience; and difficulties in decision-making for advertising and marketing that sustains the account’s operation, thereby affecting promotional effectiveness.

### 1.3 Audience Data Analysis

Based on the above data analysis, we can construct the following regular user persona for the “China Aquatic Products” WeChat official account: male users account for 81.6%, ages are concentrated between 36-60 (comprising 63.72% of regular users), and most reside in third-tier cities and below (accounting for 72.5% of regular users). Interestingly, according to 2018 statistics from the National Fisheries Technology Extension System, personnel aged 36-49 represent 52.23% of the total workforce, those over 50 account for 28.38%, staff at municipal, county, regional, and township stations comprise 84.85% of the total, and the male proportion stands at 73.21%. These figures substantially “match” the regular user composition of the “China Aquatic Products” account (see ).

Since the account’s launch, the highest-clicked content was the “Most Beautiful Fishery Technician” selection voting event in July 2018, which accumulated 760,000 votes within a week. By age structure, the most represented age group among regular users is consistently 46-60 years old, slightly different from the age group with the largest overall follower base (see [Figure 3: see original paper]).

We can thus preliminarily conclude that after five years of operation, the “China Aquatic Products” WeChat official account, through its unique advantages and continuous promotion, has become deeply rooted in the national fisheries technology extension system, forming a solid regular readership backed by this system.

However, we must acknowledge that a considerable potential audience remains untapped. According to the *2020 China Fisheries Statistical Yearbook*, China has 4.6368 million fishery households, a fisheries population of 18.282 million, and 12.917 million fisheries practitioners. These individuals constitute an important component of China’s fisheries sector and equally need timely access to regulations, major policies, development directions, and public opinion information issued by ministries and bureaus.

## 2. Content Dissemination Data Analysis

### 2.1 Article Reading Data

For intuitive analysis and presentation, we selected backend reading statistics from April 2020. During that month, the “China Aquatic Products” account pushed content 22 times, publishing 111 articles with average daily reads exceeding 2,500. April 2nd marked the peak with nearly 10,000 reads (see [Figure 5: see original paper]). Analyzing reading channel composition, we found that only 31% of total reads came from official account sessions (i.e., subscribers opening articles directly from their “Subscription Messages” ), while 33% originated from forwarding in WeChat chats and 26% from 朋友圈 (Moments) sharing (see [Figure 6: see original paper]).

## 2.2 Article Sharing Data

Article sharing volume correlates positively with reading volume, though channel distribution differs slightly. Direct sharing from the official account session accounts for 35% of shares, 25% occurs in WeChat user chats, and 30% comes from 朋友圈 forwarding, as shown in [Figure 7: see original paper] and [Figure 8: see original paper].

## 2.3 Popular Message Data

Analyzing popular message content, eight of the top ten most-read articles in April 2020 were policy documents and government information from the Ministry of Agriculture and Rural Affairs' Bureau of Fisheries, one was from the National Fisheries Technology Extension Station, and one was an award selection notice from the China Society of Fisheries (see ). This content demonstrates high homogeneity, consisting entirely of information released by national-level fisheries administrative departments and public institutions. This indicates that the positioning of the "China Aquatic Products" account perfectly aligns with its purpose: as a national fisheries media outlet dedicated to authoritatively publishing and interpreting the latest fisheries policies, discussing strategies for high-quality green fisheries development, and disseminating mainstream ideology to guide public opinion and enhance the communication power, guidance, influence, and credibility of news and public opinion [4]. We can thus infer that most followers are fisheries practitioners within the system who are particularly concerned with national policies and government information.

## 2.4 Reading Time Data

Using April 1, 2020 (a normal push day) and April 4, 2020 (a Qingming Festival holiday with no push) as examples, we analyzed hourly reading patterns. On the normal workday of April 1, we pushed content at 4:22 PM, immediately triggering a reading peak that gradually declined over time, with a slight rebound after dinner before dropping to a low point late at night. On the non-push holiday of April 4, two reading peaks occurred in the morning after waking and after dinner (see [Figure 9: see original paper]).

## 3. Analysis and Judgment Based on Audience Background and Content Data

In the operation of many WeChat official accounts, managers typically only examine follower counts or total article reads. However, total follower counts cannot measure subscriber activity. Some accounts may have tens of thousands of followers, yet most users never open the account to read, resulting in actual operational status inferior to accounts with fewer followers but higher open and sharing rates—the latter having broader reach and deeper influence. User information sharing on social networks plays a crucial role in platform construction

and social media marketing for new media operations [5]. Several key metrics serve as references for evaluating whether an official account is operating healthily.

### 3.1 Initial Open Rate

Initial Open Rate = Number of reads from official account session / Total number of reads from all channels. Reads from other channels primarily result from forwarding and sharing, which belong to secondary dissemination. The initial open rate measures whether articles are attractive and whether the account has high subscriber activity. Statistics show that a consistently low initial open rate below 3% indicates extremely low follower activity, meaning such accounts, despite large follower numbers, have minimal actual influence [6]. Calculated using April 2020 data, the “China Aquatic Products” account’s initial open rate is 31%, far exceeding the industry average.

### 3.2 Forwarding and Sharing Rate

Forwarding and Sharing Rate = Number of shares / Total number of reads from all channels. This metric indicates the proportion of readers who choose to share an article. Articles with sensational titles but irrelevant content may have high initial open rates but extremely low forwarding rates, resulting in poor dissemination effects. According to statistics, a reasonable forwarding and sharing rate should consistently exceed 10%. The *People’s Daily* WeChat official account’s copywriting style cleverly uses punctuation and distinctive vocabulary to strengthen content expression and create a “down-to-earth” media image, while using fixed keyword tags for section classification to facilitate audience participation and enhance user stickiness [7]. Calculated using April 2020 data, the “China Aquatic Products” account’s forwarding and sharing rate is 10%, reaching a reasonable level.

### 3.3 Follower Increase Rate Through Forwarding

Follower Increase Rate Through Forwarding = Net increase in followers / Number of forwarding shares. How many new followers each forward can generate is a question worth investigating [8]. Some lifestyle accounts targeting the general public can achieve follower increase rates exceeding 100% through well-optimized articles, while generally well-operated accounts typically see rates of 20%-30%. Excellent content without necessary techniques can also result in low follower increase rates. Calculated using April 2020 data, the “China Aquatic Products” account’s follower increase rate is 18%, at a relatively low level, likely directly related to the narrow audience scope and strong dependence on personalized needs of professional accounts.

### 3.4 Secondary Dissemination Rate

Secondary Dissemination Rate = Number of reads from forwarding / Total number of reads. For official accounts with many followers, the secondary dissemination rate indicates an article's ability to spread through 朋友圈 and WeChat groups. If secondary dissemination can break through the boundaries of primary dissemination to achieve or even surpass the effect of original content, it can successfully reach audience groups and strengthen the media-event-audience connection, influencing audiences again and driving events forward [10]. A consistently low secondary dissemination rate below 50% indicates insufficient user "loyalty" to the account. Calculated using April 2020 data, the "China Aquatic Products" account's secondary dissemination rate is 59%, above a reasonable level, also directly related to the high stickiness of professional account audiences.

Thus, we can conclude that the "China Aquatic Products" WeChat official account is a healthily developing platform. If subsequent maintenance and management place greater emphasis on content quality and operational techniques, it possesses considerable untapped communication potential.

## 4. Strategies and Recommendations for Enhancing Communication Power

As an established comprehensive core journal in the fisheries industry, *China Aquatic Products* began operating its WeChat official account in 2015 amid the widespread impact of new media on print media, striving to continue building this historic brand through integrated development of new and traditional media. Based on the above analysis, we have formed a more scientific and reasonable judgment of the account. The following improvements can be made to better serve high-quality green fisheries development with superior content and more precise, thoughtful operation, while providing reference for other agricultural government-affiliated WeChat official accounts.

### 4.1 Accurately Grasp Account Positioning

Every product has target users, and product iterations revolve around user needs. As a media product, a WeChat official account's readers are its target users, and content should be developed around reader needs. Unlike industry accounts such as "Aquaculture Frontier" and "Agricultural Finance Aquaculture Edition" that directly target fish farmers, the mainstream readership of "China Aquatic Products" consists of fisheries workers in government agencies, public institutions, research institutes, and the fisheries technology extension system, as well as relevant enterprise management personnel. Future operations must firmly maintain this fundamental positioning, dedicating greater effort to authoritatively publishing and interpreting the latest fisheries policies, discussing strategies for fisheries development, promoting advanced fisheries production technologies and models, and advocating environmental protection and public

welfare concepts. This will differentiate the account from other fisheries self-media platforms and establish a unique position.

#### **4.2 Closely Follow Industry Hot Topics**

Identifying industry hot topics is the most essential capability for operating a successful official account. Major hot topics are those discussed nationwide, such as “turtles and softshell turtles may be intermediate hosts of the novel coronavirus” in February 2021 and “salmon spreading COVID-19” in June. These major topics appear infrequently in niche industries, perhaps only once every few months. Minor hot topics refer to issues that can cause a sensation within a specific field but cannot spread widely beyond it. Minor topics can also generate quality articles, such as the April article “Ministry of Agriculture and Rural Affairs: Implementing Five Major Actions for Green and Healthy Aquaculture.” Pursuing major topics can purely serve dissemination purposes to increase visibility, while pursuing minor topics can attract target users, making them feel the account’s unique appeal and developing them into regular readers. For the “China Aquatic Products” account, it is essential to expand exclusive information sources, leverage its own advantages, and establish efficient and smooth information transmission mechanisms with fisheries administrative departments at all levels and renowned industry experts to obtain more exclusive first-hand materials promptly. This will enable the account to closely follow or even trigger industry hot topics, attracting readers while playing a guiding role in public opinion for fisheries development.

#### **4.3 Enhance Content Interest and Readability, Increase Interactive Activities**

High-quality, readable content is the fundamental requirement for successful official account operation. Content quality directly determines forwarding rates; only excellent content can retain regular users and attract new ones. Followers attracted by quality content demonstrate stickiness and loyalty. When creating content, we should focus on using appropriate writing and editing techniques to transform dry policy documents into easily understandable graphics and text. Sharp tones and humorous writing styles can also turn rigid professional commentary into popular content. For image selection, prioritize contextualized pictures to improve recognition and appeal. Well-crafted abstracts should closely connect with themes and be engaging. Adding more interactive feedback in official account sessions is also necessary, such as having users reply with keywords “XX” to participate in activities or access more detailed information about specific topics, which proves quite effective in increasing followers. Additionally, under the normalization of COVID-19 prevention and control, timely online live events around relevant hot topics—such as inviting renowned experts to analyze the latest policies and fisheries situations or explain advanced technical operation difficulties and solutions—can also achieve excellent dissemination results.

#### 4.4 Focus on Multi-Channel Reader Development

In addition to stabilizing the existing regular user base, multi-channel reader development should be emphasized. For instance, the account should increase self-promotion in large-scale national fisheries-related events where *China Aquatic Products* serves as cooperative media, placing QR code advertisements in appropriate locations such as event publications and reports. It should also invite participants to follow the account during events organized by the National Fisheries Technology Extension Station and China Society of Fisheries to access follow-up content. Collaborating with other industry official accounts for mutual promotion—using whitelist arrangements to republish original articles with links appearing at the top of reposted content—can help reach more industry readers.

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