

## High-Quality Development of Agricultural Science and Technology Journals: A Case Study of the Editorial Practice of Southwest China Journal of Agricultural Sciences (Postprint)

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### Abstract

[Objective] Taking the publishing practice of Southwest China Journal of Agricultural Sciences as an example, this study explores strategies and specific measures for the high-quality development of agricultural science and technology journals in China. [Methods] Through typical case analysis, data statistics, inductive summary, and comparative analysis, we systematically review the significant achievements and practical experience of Southwest China Journal of Agricultural Sciences in editorial publishing, academic value, and journal influence over the past five years, objectively analyze existing problems and influencing factors, identify current challenges and pressures faced by the journal, and further explore optimization pathways. [Results] Quality improvement and quantity reduction, strengthening peer expert review, conducting special column planning, and establishing youth editorial boards can ensure academic quality and broaden manuscript submission channels; improving digitalization levels, “going out” for exchange and learning, and strengthening editorial team construction can upgrade publishing standards; there are still shortcomings in column solicitation, joint publishing, and promotion; digital transformation and competition from similar journals have become current challenges. [Conclusion] The study proposes thoroughly practicing four major optimization paths — “scholar-run publishing, open publishing, digital publishing, and collaborative publishing” —to promote high-quality journal development, providing practical implementation plans and references for similar agricultural science and technology journals.

## Full Text

### Preamble

#### Exploring High-Quality Development of Agricultural Science and Technology Journals: A Case Study of the Publishing Practice of *Southwest China Journal of Agricultural Sciences*

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### Abstract

**[Objective]** This paper examines strategies and specific measures for high-quality development of agricultural science and technology journals in China, using the publishing practice of *Southwest China Journal of Agricultural Sciences* as a case study. **[Methods]** Through typical case analysis, data statistics, inductive summarization, and comparative analysis, this study systematically reviews the significant achievements and practical experiences of the journal in editorial publishing, academic value, and journal influence over the past five years (2020-2024), objectively analyzes existing problems and influencing factors, identifies current challenges and pressures, and further explores optimization pathways. **[Results]** Key findings indicate that improving quality while reducing quantity, strengthening peer expert review, conducting special column planning, and establishing a young editorial board can ensure academic quality, broaden submission channels, and enhance digitalization levels. “Going global” through exchanges and learning, along with strengthening editorial team building, can upgrade publishing standards. However, shortcomings remain in column organization, joint publishing, and promotion. Digital transformation and competition from similar journals have emerged as present challenges. **[Conclusion]** The paper proposes four major optimization pathways—“scholar-run publishing, open publishing, digital publishing, and collaborative publishing”—to promote high-quality journal development, providing practical implementation plans and reference points for similar agricultural science and technology journals.

**Keywords:** agricultural science and technology journals; high-quality development; publishing experience; problems and challenges; optimization pathways

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## 1. Publishing Achievements

Faced with the “Matthew effect” in China’s agricultural science and technology journal development—where the strong become stronger and the weak become weaker—and the journal’s internal and external challenges, *Southwest China Journal of Agricultural Sciences* has confronted these challenges head-on, continuously exploring innovative development paths. Through nearly five years of publishing practice, the journal’s academic influence has significantly improved. First, its impact factor has steadily increased. According to the *Annual Report on Chinese Academic Journal Impact Factors* from 2020 to 2023, the composite impact factor rose from 1.267 to 2.089, an increase of approximately 65%; the comprehensive impact factor increased from 0.993 to 1.539, a 54.98% growth, with its ranking rising from 16th to 10th place, placing it in the Q1 zone. The *Chinese Science and Technology Journal Citation Report* shows that the core impact factor grew from 0.819 to 1.290, a 57.51% increase. Meanwhile, CSCD-JCR Chinese Science and Technology Journal Citation Indicators reveal that the impact factor increased from 0.5454 to 0.8592, a rise of about 58%. Evaluations from CNKI, Chinese core science and technology journals, and CSCD all demonstrate that the journal’s impact factor has steadily increased year by year, particularly in 2023 when it achieved substantial growth, successfully reversing the unfavorable downward trend before 2020. Second, the number of high-impact papers has increased. In 2022, CNKI’s *Academic Essentials Database* released high-impact papers from 2011–2022, with 54 papers from the journal selected, including 23 high-PCSI papers, 33 highly cited papers, and 24 highly downloaded papers; five papers simultaneously achieved “high PCSI, high citation, and high download” status. Notably, 14 papers were selected after 2020. From 2022 to 2024, 29 outstanding papers were selected for the bilingual dissemination project of scientific journals by the China Association for Science and Technology, further expanding the journal’s academic influence both domestically and internationally. Third, the journal has received multiple new honors. As the only agricultural journal, it was successfully selected for the “Tianfu Journals Excellence Action Plan” by Sichuan Provincial Association for Science and Technology in 2022. In 2024, it was included in the Tier 2 category of the *High-Quality Science and Technology Journals in Agricultural Engineering Field*, ranking 18th among similar journals. It has maintained its “dual-core” status, ranking 10th in the 2023 Peking University Chinese Core Journal edition, up two places from the 2020 edition, and ranking third nationally among comprehensive agricultural journals hosted by provincial academies of agricultural sciences. Additionally, it has received honors including the 2021 China Agricultural Journal Excellence Award, the 2021 “Western Bull Award” for “Top Ten Excellent Chinese Journals,” and the fourth “Western Bull Plan” for “Excellent Chinese Science and Technology Journals” [7].

## 2. Practical Experiences

### 2.1 Raising Acceptance Standards to Ensure Academic Quality

First, the journal has emphasized paper quality. Over the past five years, it has focused on enriching disciplinary diversity, increasing from 29 to 43 subject categories. Among published subject keywords, frontier hotspots such as high-throughput sequencing, genetic diversity, rhizosphere soil, enzyme activity, gene expression, and photosynthetic characteristics have shown increasing trends. Second, the journal has gradually raised its submission standards. Since 2020, the editorial offices from six southwestern provinces have worked together, prioritizing quality over quantity, shifting from “maintaining quality while controlling quantity” to “improving quality while reducing quantity.” The quality of accepted manuscripts has steadily improved, with publication volume further reduced. From 2021 to 2023, 36 regular issues were published, carrying 1,081 papers, with annual publication numbers decreasing year by year to 394, 368, and 319 papers, respectively. Compared with the previous three-year period, the average annual publication volume decreased from 471 to 360 papers, a reduction of 23.6%, while the manuscript acceptance rate dropped from 30% to 20%. Third, the proportion of manuscripts from different regions has remained stable: Sichuan (including other non-hosting provinces nationwide) (54%) > Yunnan (21%) > Guangxi (14%) > Guizhou (8%) > Chongqing (3%). Compared with the previous three-year period, manuscript numbers from four provinces continued to decline (Sichuan by 19%, Yunnan by 24%, Guangxi by 28%, Guizhou by 9%), except for Chongqing which remained stable. In addition to southwestern China, submissions from northwestern China, northeastern China, and southeastern coastal regions have continued to increase. Furthermore, based on submission quantity and quality, combined with innovation, timeliness, and editorial quality, dynamic fine-tuning of publication volume per issue has been implemented.

### 2.2 Implementing Scholar-Run Publishing to Broaden Submission Channels

First, the journal has strengthened peer expert review. It has actively screened and invited domestic agricultural experts, particularly young and middle-aged senior professionals, to participate in peer review. Before 2020, the external review expert database contained only about 300 members; by 2022, it expanded to 770, and now exceeds 1,300, with young and middle-aged experts accounting for approximately 60%. The journal precisely matches suitable experts, with each manuscript undergoing external review by two peer experts who evaluate its academic level, research content, methodology, and application prospects, providing specific revision suggestions and acceptance recommendations. Second, the journal has conducted special column planning. It has shifted from “relying on unsolicited submissions” to “organizing special columns,” publishing a “Rhizosphere Microorganisms” special issue and a “Land Use Transition and Agricultural Sustainable Development” column in 2022; in 2023, it published four

columns on “Heavy Metal Stress and Enrichment,” “Maize Science,” “Cultivated Land Protection and Food Security,” and “Land Consolidation and Ecological Restoration”; in 2024, it published four columns on “Potato Industry and Green Development,” “Genomics,” “Agricultural Waste Biomass Carbonization Technology and Application,” and “Digital Rural Areas.” Among these, the “Land Use Transition” column won the 2023 Sichuan Journal Excellent Planning Award. Third, the journal has established a young editorial board. To implement the “scholar-run publishing” concept, in 2023, the journal selected 85 outstanding young scholars from the Chinese Academy of Sciences, Chinese Academy of Agricultural Sciences, Jiangsu Academy of Agricultural Sciences, Northwest A&F University, South China Agricultural University, and other research institutions to form the first young editorial board. A young editorial board WeChat group was established to fully mobilize the initiative and creativity of young scholars, launching a “column editor-in-chief” model to guide young editorial board members to actively participate in column planning, writing, soliciting contributions, reviewing, and promotion, further enhancing the journal’s academic quality and external influence [8]. Column planning for 2025 is also actively underway; as of the end of December 2024, 16 column topics have been solicited from young editorial board members, with 45 column editors-in-chief, and the WeChat public account has published four calls for papers on “Tobacco Composite Planting and Soil Management,” “Southern Grassland Resources,” “Horticultural Crop Viruses and Viroids,” and “Soil Environmental Protection and Quality Improvement,” with 11 column editors-in-chief, each column having 2-3 editors-in-chief.

### 2.3 Adhering to Multiple Measures to Upgrade Publishing Standards

First, the journal has promoted digital publishing. It has further standardized the official website’s online editorial platform, achieving an online-offline collaborative working mechanism of “unified entry, internal distribution, and collaborative review,” completely resolving the asynchronous “collection-review-editing” process caused by independent publishing by editorial offices in six provinces. The review cycle has been shortened from 2-3 months to 1-1.5 months, and the publication cycle from one year to 4-6 months. Since 2022, papers that have passed review and been accepted have been pre-released on CNKI, shortening the network dissemination cycle from one year to four months, improving the dissemination speed and social value of academic papers, and enabling timely exchange and rapid sharing of cutting-edge knowledge. A WeChat public account has been established to update the journal’s work dynamics promptly. Since Issue 9 of 2021, “Journal Excellent Article Recommendations” have been pushed monthly, with 2,286 followers as of the end of December 2024, increasing at an average monthly rate of 1.6%, 70 tweets posted, averaging two per month, with a maximum readership of 2,238 and an average of 510 reads, maintaining relatively stable activity. Second, the journal has implemented a “going global” approach. It has actively joined industry organizations such as the Chinese Association of Agricultural Science Societies, China Periodicals Association, China Agriculture and Forestry Journal Cluster, and China Agricultural Journals Net-

work to grasp industry dynamics, actively promote, seek mutual support, and share resources. Teams have been organized to conduct benchmarking studies at the Hebei Academy of Agricultural and Forestry Sciences, Chinese Academy of Tropical Agricultural Sciences, Zhejiang Academy of Agricultural Sciences, Jiangsu Academy of Agricultural Sciences, China Rice Research Institute, and Ningxia University to learn from each other's strengths. Third, the journal has strengthened editorial team building. Each editorial staff member participates in 1-2 industry trainings annually to improve editing skills and professional competence, earning the 2020 China Agricultural Journal Excellent Team Award and the 2023 "Western Bull Plan" Excellent Editorial Team Award, with multiple editors receiving "Excellent Editor" awards from the Sichuan Provincial Journal Association, Sichuan Editing Society, and "Western Bull Plan."

### 3. Existing Problems

#### 3.1 Insufficient Column Planning and Solicitation

First, there is insufficient active solicitation and organization of manuscripts. Currently, the forms of active solicitation are relatively singular, mainly relying on column planning. From 2022 to 2024, nine columns and one special issue were published over three years, with a maximum of four columns per year and a minimum of only two. Each column averages six papers, accounting for less than 8% of annual publications, and multiple planned topics have been abandoned due to insufficient high-quality manuscript sources. The journal still relies primarily on unsolicited submissions, with far from adequate active solicitation efforts. Successful columns and special issues are few, and characteristic columns featuring southwestern regional features have not yet been launched, with scarce high-quality papers. Second, the academic resources of the editorial board and young editorial board need to be further tapped. After 2020, the journal clarified the editorial board system and updated its members, but the editorial office has not done enough in actively contacting editorial board members, inviting their submissions and recommendations, or leveraging their personal academic influence for journal promotion. The young editorial board was just established recently and currently mainly assists in column topic planning and solicitation, with enormous academic potential yet to be realized, particularly in excavating high-quality papers.

#### 3.2 Insufficient Collaboration in Joint Publishing

First, there is a lack of unified manuscript review standards. The journal adopts a large-region collaborative publishing model, but editorial offices in different provinces have not formed strict and uniform acceptance standards, resulting in uneven quality of submitted manuscripts. Some papers that are too simple, conventional, repetitive, limited, or lack academic innovation and significance pass the initial review. Before external review, authors are not required to revise formatting, basic elements, or obvious errors, increasing the difficulty for external reviewers, wasting review resources, and complicating subsequent editing

and proofreading. Second, there is insufficient communication among editorial offices. Editorial staff are dispersed across six southwestern provinces, with geographical limitations, coupled with staff turnover, new hires, and retirements in each editorial office, resulting in weak connections among offices. Limited daily communication on editing, reviewing, and proofreading leads to differences in editorial quality, increasing the difficulty of later proofreading work and causing inconsistencies in manuscript quality, review progress, and publication cycles, making optimization of the large-region collaborative publishing model urgent.

### 3.3 Insufficient Promotion and Marketing

First, there are limitations in new media application. Currently, the journal mainly operates its official website and WeChat public account. The website only has a Chinese interface and has not yet launched an English version, hindering inclusion in more international databases to some extent. The WeChat public account has few followers, tweets, reads, and shares, resulting in low promotional intensity. There is no mobile-adapted editorial system or interactive system, and manuscript submission, review, and dissemination still require completion on the computer-based official website, lacking a mobile platform for dynamic contact among editors, readers, authors, and scholars. The reading system is also limited to plain text, lacking multimedia resources, and has not ventured into video production or other new media promotion. Second, there are few offline promotion activities. Editors remain at the level of knowledge transmitters, focusing daily work on manuscript editing and proofreading, rarely attending editorial publishing academic conferences to give presentations or participating in industry journal exhibitions. They have not entered high-level academic conferences in various agricultural disciplines to actively integrate into research circles and establish contacts with experts and scholars, nor have they conducted presentations in universities and research institutions to excavate core author groups.

## 4. Challenges and Pressures

### 4.1 Digital Transformation Has Become an Irresistible Trend

From international to domestic contexts, digital technology is sweeping across the era with unstoppable momentum, and China's academic journals have entered a critical period of transformation after years of digital reform [9]. Digital transformation is an irreversible trend of the times, with leading domestic journals building and fully operating digital platforms and beginning to experiment with Open Access (OA) models. Currently, the journal's digitalization level remains low, still at the level of office informatization. Although it has joined major domestic databases, registered DOI numbers, and activated CNKI network-first publication for dissemination, it remains paper-based and has not achieved full-process digital publishing and knowledge services, nor does it have deep understanding of open access. Meanwhile, the journal's media convergence development is limited to WeChat and its official website, never venturing into



video. At present, besides fully operating WeChat public accounts and short videos as internal technology integration, external cross-boundary integration and AI artificial intelligence technology have placed higher demands on academic journals. Only by continuously improving publishing standards in content digitization, digital platform integration, digital dissemination and enhancement, brand and author services, and copyright and digital publishing can journals meet the continuous iteration and updates of the digital era [10].

## 4.2 Increasingly Fierce Competition Among Similar Journals

Academic indicators over the past five years show that among 33 comprehensive agricultural journals in the Peking University core journal list, both impact factors and total citation frequencies have grown rapidly, while publication volumes have declined, with 74.19% of core journals gradually reducing their publication volume. From 2010–2020, the average publication volume of Peking University core journals was about 240 papers, decreasing at an average annual rate of 2.637%. However, the journal's academic indicator growth rate is lower than the average level of similar journals, while its publication volume is higher than the average. Competition among similar journals is increasingly fierce, with “national team” journals represented by *Scientia Agricultura Sinica* consistently leading, and “local team” journals such as *Agricultural Research in the Arid Areas*, *Acta Agriculturae Boreali-Sinica*, *Journal of South China Agricultural University*, *Journal of Nanjing Agricultural University*, *Southern Journal of Agriculture*, *Journal of Northwest A&F University (Natural Science Edition)*, *Journal of China Agricultural University*, and *Jiangsu Journal of Agricultural Sciences* all developing rapidly. Their publishing standards, manuscript quality, editorial quality, and digital development have placed them at the forefront of regional agricultural journals, providing valuable lessons for reference. Meanwhile, the journal faces severe pressure and competition from similar university journals, most of which have sufficient financial support, do not charge page fees, focus solely on academic benefits, and can “select the best among the best” for publications, maintaining high academic standards. This poses a significant impact and challenge to the journal's traditional “supporting journals through publications” model.

## 5. Optimization Pathways

### 5.1 Deepening the Scholar-Run Publishing Model

First, the journal should advance the subject editor model. Editors at *Southwest China Journal of Agricultural Sciences* are both “editors” and “scholars.” Under the chief editor's office and various editorial offices, the journal should explore a subject editor responsibility system based on its main professional fields, establishing subject editors for crop genetics, resources and environment, plant protection, cultivation practices, and physiological biochemistry. This will drive editorial staff to shift from focusing solely on “manuscript editing” to “academic



editing” composite work, enhancing the professionalism, academic nature, and review efficiency of responsible editors [11]. Second, the journal should normalize the “column editor-in-chief” model. It should further strengthen active solicitation efforts, focusing on disciplinary hotspots, frontier directions, and regional characteristics, encouraging young editorial board members to independently select topics, and planning columns, special issues, and special publications. Special issues can take three forms: commemorative special issues, academic conference special issues, and independently selected topic special issues [12]. In addition to encouraging editorial board and young editorial board members to recommend or recommend high-quality papers, the journal should closely monitor core author groups and actively conduct solicitation in universities and academic conferences. Third, the journal should continue to expand high-quality external review experts, actively inviting leaders of national (provincial) major projects, discipline leaders from various host institutions, and young leading talents to serve as external reviewers [13], focusing on recruiting experts with deep professional knowledge and rich practical experience in interdisciplinary integration between agricultural science and other disciplines (such as biotechnology, information technology, economics, environmental science, etc.).

## 5.2 Upholding the Open Publishing Concept

First, expand the journal’ s “circle of friends.” Establish working contacts with core journal evaluation units such as the Documentation and Information Center of the Chinese Academy of Sciences and Peking University Library; strengthen cooperation and exchanges with digital publishing institutions such as CNKI, Wanfang, and VIP; conduct benchmarking studies with excellent journals to learn from successful experiences and publishing measures; strengthen work reporting with science and technology associations, journal associations, industry societies, and journal clusters to actively secure project support. Second, expand the journal’ s “circle of experts.” Rely on the editorial board and young editorial board to strengthen daily contacts with editorial board members, track their research progress and achievements in real-time, and actively invite them to write, review, plan columns, and promote the journal. Third, expand the journal’ s “circle of authors.” Strengthen cooperation with national (provincial) agricultural societies, crop societies, plant protection societies, soil societies, and other institutions; actively participate in various annual meetings, societies, and associations, playing the role of academic support units; select manuscripts “through conferences” and make friends with core authors; based on southwestern agricultural regional characteristics, focus on frontier directions at home and abroad, fully tap the advantages of the young editorial board and young academic seminar platforms, plan and hold young editorial board academic seminars, and achieve active communication between the editorial office and young editorial board members as well as broad author and reader communities.

### 5.3 Enhancing Digital Publishing Levels

First, accelerate digital publishing. Implement special digital publishing funds for the journal, upgrade typesetting and editorial systems, and transition from Founder Feiteng typesetting to XML structured typesetting to meet digital publishing requirements. Actively respond to the call of Sichuan Provincial Press and Publication Bureau to obtain digital publishing licenses, release electronic journals, and achieve digital transformation and upgrading of publishing. Second, build an English official website. Based on the existing Chinese official website, launch a corresponding English interface, including an English online publishing system and English editorial system, to adapt to the internationalization and digital development needs of scientific and technology journals, effectively improving the journal's international influence and helping the journal join more international renowned databases such as the Netherlands' Scopus. Third, create a new media matrix [14]. Integrate digital platforms such as the journal's official website and WeChat public account, fully operate the WeChat public account, enrich content, increase tweet frequency, and maintain high activity. Simultaneously, video promotion can be launched, producing short videos such as celebrity interviews, expert interpretations, and academic trend predictions to increase the interest and participation of academic journals. Online academic seminars, exchange meetings, and academic forums can be held, establishing cooperative relationships with other media or institutions to jointly promote academic research achievements.

### 5.4 Consolidating the Foundation of Collaborative Publishing

First, ensure stable and increasing basic funding. The high-quality development of the journal requires host institutions from six southwestern provinces to ensure stable and increasing basic publishing costs. The editorial department should strictly control publishing costs, with each host institution reasonably sharing costs according to manuscript usage proportions. Second, secure funding for research projects. Each host institution should rely on its own advantages and resources to encourage editorial teams to apply for institutional research projects. Editorial offices from various regions should strengthen cross-collaboration and jointly actively seek support from industry and regional project funding. Third, strictly implement the review and editing system. To avoid uneven manuscript quality and waste of academic resources, editorial offices from various regions should unify submission standards, with all three stages of initial review, re-review, and final review being indispensable, adding two external review experts for external review to further ensure paper academic quality. Based on the "responsible editor" and "responsible proofreader" systems, the "three proofreads" should be earnestly implemented, with important papers requiring additional proofreading rounds. In response to problems in daily editing and proofreading work, Sichuan's chief editor's office should hold online editorial meetings and reading meetings in a timely manner to standardize and unify practices. Meanwhile, with quality as the core, all parties should jointly

eliminate “relationship papers,” “title papers,” and “project-completion papers.” Fourth, build a strong editorial team. Through recruitment, employment, and other methods, introduce young people with passion and innovative ability for editorial work. Ensure each editor participates in the required training hours annually. Encourage editors to participate in national or provincial editorial business training. Establish the concept of “scholar-run publishing,” encouraging editors to attend 2-3 domestic high-level academic conferences annually to update knowledge structures and broaden horizons.

In the new era, the state and local governments have put forward higher requirements for the development of academic journals. *Southwest China Journal of Agricultural Sciences* should be guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the spirit of General Secretary Xi Jinping’s important speech at the National Science and Technology Conference, earnestly implement the *Opinions on Promoting the Prosperous Development of Academic Journals* [15], and follow the overall approach of “scholar-run publishing, open publishing, digital publishing, and collaborative publishing.” The journal should vigorously improve paper quality, enhance review and editing quality, promote digital transformation, strengthen exchanges and cooperation with research institutions and universities, enable more high-quality and latest academic achievements to be showcased in the journal, continue to maintain the “dual-core” honors of Chinese core journals and Chinese science and technology core journals, promote continuous improvement in all indicators, lay a solid foundation for inclusion in the Chinese Science Citation Database (CSCD) core database, and strive to join the ranks of first-class agricultural science academic journals, becoming one of the top choices for domestic agricultural research scholars to submit their work.

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