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Study on the Attention of Flood Disaster Management Policy in China: Based on the Text Analysis of 325 Central Policies

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Abstract

Flood disasters are among the most frequent and destructive natural hazards in China, making flood prevention and mitigation a persistent issue critical to national security and development. From the perspective of policy attention and through the lens of punctuated equilibrium theory, this study examines the evolution of governmental policy focus on flood governance. Utilizing Python, we conduct high-frequency word identification, co-word analysis, and keyword clustering on 325 policy documents from 1949 to 2024. The findings reveal that China's flood governance policy has evolved through four distinct stages: initial exploration, steady development, deepening adjustment, and consolidation with innovation. The government's attention priorities varied significantly across these periods, with the Ministry of Water Resources playing a key role in promoting policy transformation and upgrading. In terms of attention allocation, flood control has remained a consistent thread throughout the policy process, water conservancy projects have served as the primary means of combating floods, and science and technology have emerged as the fundamental driver of systemic modernization in flood governance. Looking ahead, aligned with the goals of modernizing the national security system and governance capacity, China should adhere to a green, technology-driven, and rule-of-law-based approach to flood governance. Guided by the requirements of ecological civilization, it is essential to actively explore modern technological applications in governance and strengthen the legal framework for water management, thereby fostering high-quality development in flood disaster governance.

Keywords

Flooding; Policy Attention; Policy Change; Textual Content Analysis.

1. Introduction

Most regions of China are located within the East Asian monsoon climate zone, characterized by concentrated rainfall and frequent flood disasters. These inundation events consistently result in significant loss of life and property damage.[1]In 2023 alone, flood and waterlogging disasters affected approximately 52.789 million people, accounting for 55.3% of the total population impacted by natural disasters nationwide, and caused direct economic losses of 244.57 billion yuan, representing 70.8% of the total losses from natural disasters. In order to better understand the impact of flood disasters on China's urban development, this paper compiles and analyzes relevant data from the China Flood and Drought Disaster Bulletin over the past decade. The analysis reveals that between 2013 and 2023, all provinces (autonomous regions, and municipalities) in China experienced flood disasters of varying severity. The cumulative impacts over this period include an affected population of 753.671 million people, 5,600 fatalities and missing persons, 2.1027 million collapsed houses, and direct economic losses amounting to 2,457.746 billion yuan. [2]Furthermore, the total affected crop area reached 71,753.6 thousand hectares. The temporal trends for the nationwide number of affected people,

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fatalities and missing persons, collapsed houses, direct economic losses, and affected crop area are presented in Fig. 1.

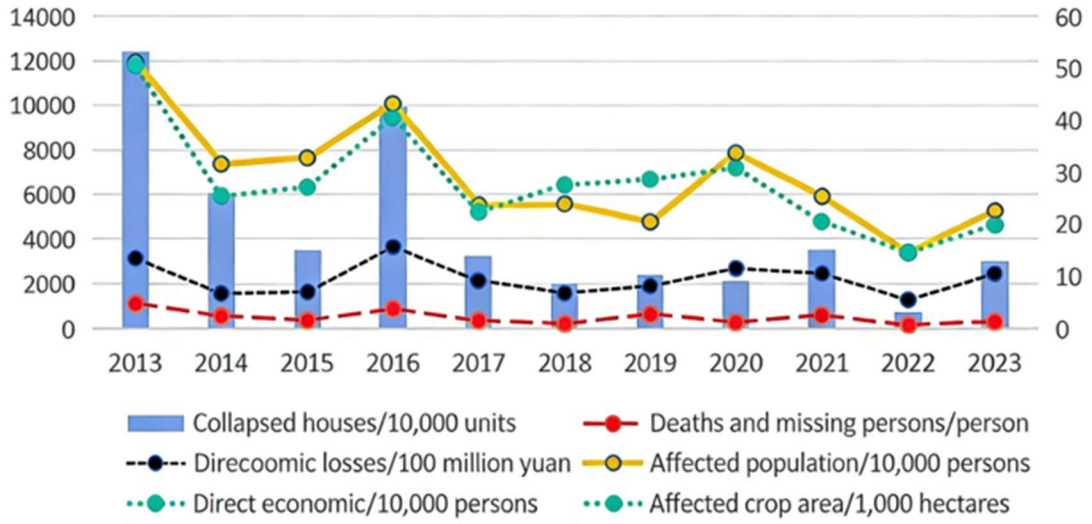

Fig. 1 Trend of Flood-Induced Losses from 2013 to 2023

Thus, flood disasters have emerged as a key and persistent challenge to urban safety. Different policy documents and statements by central leaders on "flood control, disaster relief, and emergency response capacity" reflect China's emphasis on flood disasters and its resolve to actively prevent and respond to such events. Although related policies and regulations were enacted as early as 1950, systematic work surrounding these policies has yet to be fully developed. With the ongoing advancement of the modernization of the emergency management system and capabilities, identifying the key focus of flood disaster policies to enhance urban resilience and promote sustainable urban development has become a major concern in academia, laying a solid foundation for this study. Therefore, this research integrates the Punctuated Equilibrium Theory and the attention-driven policy process to reveal the historical evolution and focal characteristics of China's policy attention on flood disasters, so as to provide insights for the future development of flood disaster governance policies in China.

2. Literature Review

The concept of "attention" originates from psychology, referring to the process of directing and focusing individual consciousness on a specific object. [3]The allocation and shift of attention serve as a key mechanism for understanding policy change. Punctuated Equilibrium Theory places attention at its core, positing that the evolution of public policy is driven by the interaction between policy image and policy venue. [4]Their mutual shaping and dynamic adjustment form the basis of policy stability. However, when intense friction arises between the two, a shift in decision-makers' attention or the involvement of new policy actors may disrupt the existing policy monopoly, triggering "punctuated shifts" in policy, which then propel it into a new stage of equilibrium. In the field of flood disaster governance in China, the overall evolution of policy attention exhibits distinct characteristics of prolonged stability punctuated by critical turning points, indicating the suitability of this theory for systematically describing its change trajectory and underlying patterns.

Attention is a scarce resource that is transferable, contestable, and allocable. Policy attention allocation refers to the adjustment and distribution of resources by the government in accordance with its policy orientation and priorities. Over time, the attributes of societal resources and the evolving realities of development drive the government to refine its specific

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policy targets, striving to address public issues emerging in different social contexts.[5] On the one hand, when policymakers and implementers allocate greater attention resources to flood disaster governance, more high-quality resources are channeled into the governance process, thereby enhancing its effectiveness in China.[6] On the other hand, the implementation of actions aimed at achieving flood governance objectives requires governmental regulation and coordination.[7] The involvement of the central government can serve as a "protective umbrella" for policy execution, helping to concentrate resources on flood control measures and ensuring their efficient utilization.[8]

Existing domestic studies have elucidated the pathways and directions for flood disaster governance, providing an important reference for China's efforts in this field. However, these studies often lack in-depth mining and analysis of policy texts related to flood disaster governance, and few have examined the current status and characteristics of the central government's policy attention allocation from the perspective of attention configuration. In light of this, building upon existing research, this paper employs textual analysis and integrates Punctuated Equilibrium Theory with attention theory to elucidate the evolutionary process and internal logic of policy attention shifts in flood disaster governance. The findings aim to offer an evidence-based reference for decision-making in accelerating the development of a modern disaster prevention and mitigation system.

3. Research Design

3.1. Data Sources

This study focuses on policy documents related to flood disaster governance issued by the state. To ensure the scientific validity of the data, the primary source was the Peking University Law Database. The selection was centered on the core aspects of flood disaster governance, with the policy issuance date limited to on or before April 1, 2024. The specific screening criteria were as follows: First, the search was conducted based on two combined conditions: the document title needed to contain at least one of the following keywords: flooding, flood control, flood, water conservancy, flood prevention or river management. Subsequently, the full text of the document was required to contain all of the above keywords. Second, the policy types related to flood disaster governance primarily include notices, decisions, opinions, etc. Documents not pertaining to flood disaster governance, industry regulations, public announcements, meeting notices, approval letters, and judicial interpretations were manually excluded. Following the above steps, a total of 325 central-level policy documents issued between 1949 and 2024 were selected as the research sample.

3.2. Research Tools

Given the extensive scope of the research object involving the analysis and comparison of 325 policy texts and the computational demands of the process, which include substantial loops, iterations, substitutions, and conditional judgments, this study employs Python (version 2.7.13) as the primary analytical tool. Python is an open-source, object-oriented, interpreted programming language with dynamic typing. In addition to its built-in standard library, it offers a vast collection of third-party libraries developed and contributed by programmers and engineers.[9]This feature allows researchers to directly utilize existing modules from both standard and third-party libraries, significantly reducing redundant work. In the domain of text analysis, Python provides a rich and mature ecosystem of specialized libraries. These can be invoked at corresponding stages of text comparison to enhance efficiency, enabling rapid processing and comparison of large-scale, lengthy texts.

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3.3. Research Methods

3.3.1. Dictionary Construction

Dictionary construction serves as a fundamental step in textual analysis, aiming to ensure the accuracy of semantic interpretation and the validity of analytical outcomes by assigning specific weights to vocabulary and filtering out irrelevant information. This study developed both a user dictionary and a stop-word dictionary, establishing a dual-filtering mechanism. The specific construction process is as follows: First, a user dictionary was built to identify and weight key terms. High-frequency words were extracted from the policy texts using Python and supplemented with relevant terms through manual annotation. After deduplication and merging, a user dictionary containing 319 entries was formed, ensuring that the analytical algorithm prioritizes core vocabulary during tokenization. Second, a stop-word dictionary was constructed to exclude interference. Based on the Harbin Institute of Technology stop-word list and combined with manual annotation results of the policy texts, the stop-word dictionary was set to the highest filtering priority. Ultimately, a customized stop-word list containing 1,268 entries was created, thereby precisely defining the scope of analysis and enhancing the reliability and validity of text processing.

3.3.2. Text Segmentation

Words represent the finest granularity in natural language processing. Since analytical algorithms cannot directly process raw text, segmentation is performed using vocabulary weights and preference information from the user dictionary and stop-word dictionary. This process divides the original policy texts into individual words to facilitate further analysis. Using the Jieba segmentation tool in Python, 325 flood disaster-related policy documents were segmented. Only verbs, nouns, and gerunds were retained, resulting in the total vocabulary counts for the four stages.

The TF-IDF value reflects the importance of a keyword within a set of textual data, consisting of two components: term frequency (TF) and inverse document frequency (IDF). The former indicates the frequency of a keyword in a specific dataset, while the latter is calculated by dividing the total number of documents by the number of documents containing the keyword, then taking the base-10 logarithm. [10]The formulas are as follows:

$$TF_{ij} = \frac{n_{ij}}{n_j}$$

$$IDF_i = \lg \frac{|D|+1}{|t_i \in d_i|+1} + 1$$

$$TF - IDF_{ij} = TF_{ij} \times IDF_i$$

The formula defines: TFij denotes the frequency of the i-th keyword in document j; nij represents the occurrence count of the i-th keyword in document j; nj indicates the total frequency of all words in document j; IDFi is the inverse document frequency of the i-th keyword; |D| denotes the total number of documents; ti represents the number of documents containing the i-th keyword; di indicates the total number of documents containing the i-th keyword. For visualization purposes, both the numerator and denominator are logaritmed to base 10 and adjusted by adding 1. TF-IDFij represents the final TF-IDF value of each keyword, where higher values indicate greater keyword importance. The keyword processing results are presented in Table 1.

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Table 1. High TF-IDF Value Keywords (Partial)

Initial exploration stage	Steady development stage	Deepening adjustment stage	Consolidate the innovation stage
water conservancy	embankment	flood control	emergency
agriculture	flood control	information	according to law
production	infrastructure	tide over the flood	technology
channel	city	technology	monitor
irrigation	plan	watershed	information
flood control	production	responsibility	ecology
masses	construct	contingency plan	rivers and lakes
experience	river channel	facility	water resources

3.3.3. Co-occurrence Analysis

In the field of bibliometric analysis, co-occurrence analysis has become an important quantitative method for rapidly identifying disciplinary trends. Its core logic lies in examining the spatial distribution relationships among selected keywords to reflect the allocation of policy attention within a given period, thereby interpreting the contextual implications carried by these terms. [11]Based on the keyword identification results from Table 1, the keywords were mapped back to the original policy texts, and their spatial distribution was calculated to derive the co-occurrence analysis results, as detailed in Table 2.

Table 2. Co-occurring Word Matrix (Partial)

keywords	city	emergency	tide over the flood	Water conservancy	flood control	according to law	river channel	ecology	Ministry of Water Resources
city	0	2	2	0	15	0	0	8	0
emergency	0	0	0	0	26	0	0	0	0
tide over the flood	2	0	0	0	18	0	4	0	2
water conservancy	2	0	0	0	18	0	0	6	29
flood control	2	26	18	18	0	16	0	0	22
according to law	0	0	2	0	16	0	0	0	2
river channel	0	0	2	0	21	2	0	15	0
ecology	2	0	0	0	2	1	18	0	14
Ministry of Water Resources	0	0	2	29	22	6	0	0	0

4. Results and Analysis

4.1. Analysis of Quantitative Characteristics of China's Flood Disaster Policies

China is a country prone to multiple hazards, with various disasters, particularly flood disasters, consistently posing significant risks to people's livelihoods and national development. In the face of increasingly severe disasters, the central government has progressively increased its supply of policies for flood disaster governance. This study conducts a detailed analysis of the macro quantitative characteristics of China's flood disaster policies from the perspectives of policy release time, issuing bodies, document types, and quantity.

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4.1.1. Analysis of the Evolution of Flood Disaster Governance Policies

Since the State Council issued the Decision on Harnessing the Huai River in 1950, the state has begun to prioritize flood disaster governance. Over the years, the central government has maintained a stable annual output of policy documents until 2001, when a rapid increase emerged. The annual number of documents first exceeded 10 in 2002. Subsequently, the number of central government documents fluctuated, reaching a peak in 2018 with 17 documents issued in a single year. After maintaining this level for three years, the annual output sharply declined, hitting its lowest point in 2022 with only one document issued.

The quantity of policies can reflect the level of governmental attention to flood disaster governance during specific periods. By statistically analyzing the number of policy documents released by government departments each year, the volume and trends in central government flood disaster governance policies across different stages can be identified (Fig. 2).

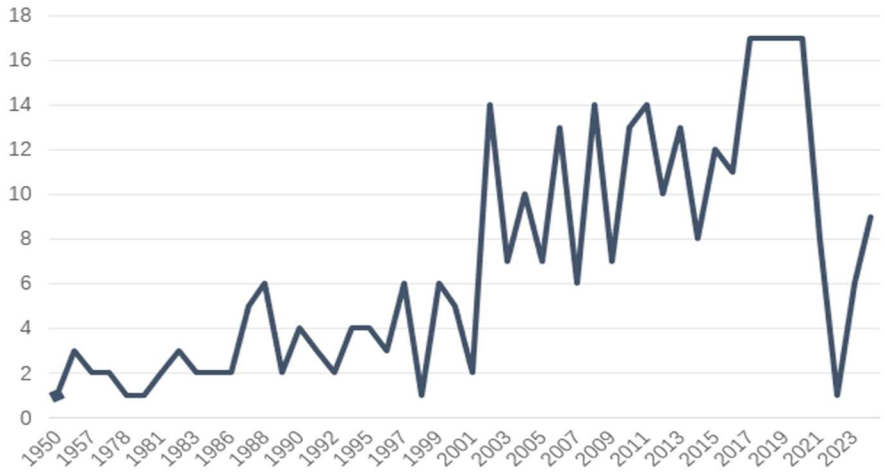

Fig. 2 Number of Policies Issued on Flood Disasters

4.1.2. Analysis of Policy Issuing Bodies in Flood Disaster Governance

From the perspective of governance policy actors, a total of 46 entities participated in the formulation of the 325 flood disaster governance policies, including the Ministry of Water Resources, the State Council, the National Flood Control and Drought Relief Headquarters, the National Development and Reform Commission, the State Administration of Work Safety, the Ministry of Civil Affairs, the Ministry of Housing and Urban-Rural Development, the Central Committee of the Communist Party of China, and the Ministry of Transport. Among these policies, 266 were issued by single departments, while 59 were jointly issued by multiple departments. A statistical description of the collaboration among policy issuing bodies (see Fig. 3) reveals that 2001 and 2022 serve as two relatively distinct turning points. The characteristics of flood disaster governance actors varied across different periods: From 1950 to 2001, the gap between the number of multi-actor joint releases and single-actor releases in flood disaster governance policy formulation and issuance was relatively small. Between 2001 and 2022, flood disaster policy formulation and issuance were predominantly led by single actors, with direct releases from departments such as the Ministry of Water Resources, the State Council, the Ministry of Finance, and the State Administration of Work Safety. In 2022, only single departments issued policies, after which the number of documents issued by various actors showed an upward trend again.

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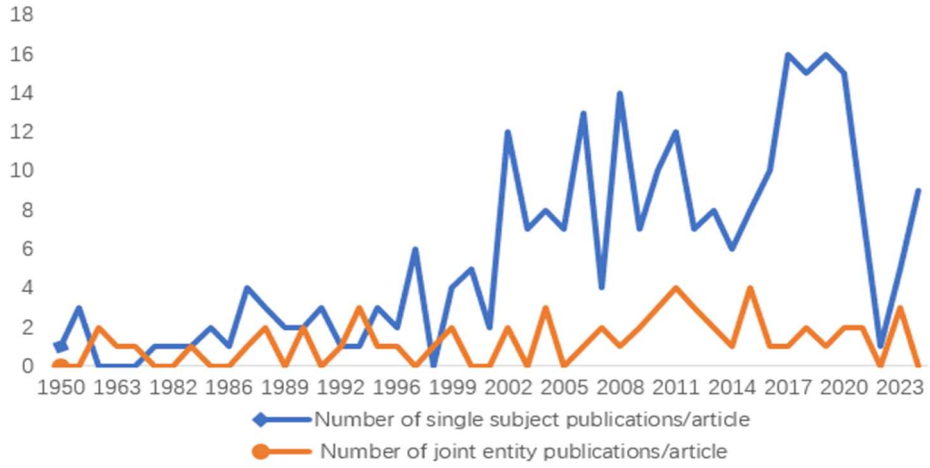

Fig. 3 Number of Documents Issued by Flood Disaster Policy Entities

4.2. Content Analysis of China's Flood Disaster Policy Texts

4.2.1. Phasing of Flood Disaster Governance Policies

The keyword extraction results indicate significant differences in the semantic focus of China's flood disaster governance policies across different periods. To analyze the historical evolution and focal characteristics of policy attention on flood disasters, it is necessary to classify the policy stages. Drawing on existing research on policy attention, several scholars have used major events in the policy development process as criteria for phase division, which is methodologically sound. Accordingly, this paper adopts major flood disaster events since the founding of the People's Republic of China as demarcation points.

Since data on direct economic losses, affected population, and damaged crop areas are closely tied to the regions where floods occur, these indicators cannot serve as objective measures of the severity of flood disasters. Therefore, this paper employs the return period of hydrological elements, as defined in the Hydrological Information and Forecasting Standards, as the criterion for identifying major flood disaster events. Specifically, three exceptionally severe flood disasters with hydrological element return periods exceeding 50 years since the founding of the PRC are selected as benchmarks: the 1975 Henan Flood, the 1998 Yangtze River Mega-Flood, and the 2016 Mega-Flood. Based on these three major events, the development of China's flood disaster policies is divided into four phases for analysis:1949-1975: Preliminary Exploration Phase ,1976-1998: Steady Development Phase,1999-2016: Deepening Adjustment Phase, 2017-2024: Consolidation and Innovation Phase.

Furthermore, it is noteworthy that a distinct hiatus appeared in China's flood disaster governance policies in 2022. A potential explanation for this punctuated break is that in 2022, the Omicron variant swept across the globe, and China entered its most stringent phase of pandemic prevention and control. Searching for “pandemic prevention and control” on the website of the Central People's Government of the People's Republic of China and limiting the timeframe to January 1 to December 31, 2022, retrieved 4,438 related documents. Given the finite nature of governmental attention allocation within any specific period, central-level policy attention during this time was predominantly concentrated on the pandemic response. Consequently, the issuance of policies related to flood disasters slowed down, resulting in a pronounced pattern of “punctuated equilibrium” for flood disaster policies in this period.

Policy changes are often accompanied by shifts in policy attention, and different directions of evolution reflect the specific state of policy feedback. By analyzing the allocation of policy attention in China's flood disaster governance across different development stages, it is possible to identify, from a long-term perspective, whether sufficient motivation for policy change exists. Based on keyword identification, the co-word matrices from different periods

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can be utilized to analyze the historical evolution of policy attention allocation in China's flood disaster governance.

4.2.2. Preliminary Exploration Phase of Flood Disaster Governance Policies

Analysis based on high-frequency word detection reveals that “agriculture” and “water conservancy” were the central focuses of central policy texts during this preliminary exploration phase of flood disaster governance (Fig. 4). Further examination of the co-occurrence matrix indicates a close association between the terms “irrigation” and “agriculture”, which were key concerns in central policies of this period. Thus, policy attention during this phase was predominantly focused on breakthroughs in agricultural irrigation technology and the construction of water conservancy projects.

From a word-grouping perspective, “water conservancy” was also closely linked to “the masses”, with five co-occurrences. Examining specific policy content, a 1950 document emphasized that water conservancy departments should concentrate their efforts, promptly and deeply guide the masses in their work, striving to overcome floods and droughts, increase agricultural production, ensure people's safety, and support the development of industry and transportation. In 1957, the construction of farmland water conservancy was officially proposed for the first time, highlighting it as the most effective fundamental measure for preventing flood and drought disasters. The policy stressed that such efforts must align with practical production needs, mobilize and organize the masses for long-term implementation to achieve the desired outcomes. During this period, as the nation was rebuilding from scratch, the central government highly valued the power of the masses. They were not only vital contributors to increasing agricultural production but also the core force behind water conservancy construction.

Simultaneously, apart from “the masses”, terms closely associated with “water conservancy” included “technology”, “experience”, and “cadres”, each co-occurring three times. This indicates that during this stage, the central government began to recognize the importance of water conservancy technology in flood disaster governance, as reflected in the policy texts. Moreover, the frequent appearance of “experience” suggests that flood disaster governance during this phase heavily relied on the accumulated experience of leading cadres, reflecting an insufficient scientific understanding of flood disasters and the absence of a systematic, science-based governance framework.

Fig. 4 Co-occurring Word Network in the Initial Exploration Stage

4.2.3. Steady Development Phase of Flood Disaster Governance Policies

The catastrophic 1975 Henan floods resulted in the failure of two large dams, including the Banqiao and Shimantan Reservoirs, along with twelve medium and small-sized dams. The disaster inundated 29 counties and cities within Henan Province, submerging 1.7 million hectares of farmland, of which 1.1 million hectares were severely damaged. Approximately 11

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million people were affected, with more than 200,000 fatalities. Following this punctuated turning point, the central government placed heightened emphasis on flood control, leading to a steady increase in the number of flood disaster governance policies and ushering in an extended period of policy equilibrium.

Analysis based on high-frequency word detection indicates that during this steady development phase, "flood control" and "infrastructure" became the central focuses of central policy texts. Examination of the co-occurrence matrix reveals that terms closely associated with "flood control" included "Ministry of Water Resources", "river channels", and "cities", appearing 7, 8, and 6 times, respectively (Fig. 5). Compared with the preliminary exploration phase, policy attention in flood disaster governance had shifted from agricultural irrigation to flood control. The main actors in flood governance also transitioned from the masses and cadres to water conservancy departments, while the focus of intervention moved from farmland water conservancy to river channel dredging.

Simultaneously, the emphasis of China's flood disaster governance shifted from rural to urban areas. The co-occurrence network further shows that terms closely linked with "cities" included "infrastructure", "river channels", and "water conservancy", co-occurring 6, 5, and 4 times, respectively. This highlights the importance of urban infrastructure development, which not only promotes urban economic growth and provides essential funding for national water conservancy projects but also reduces losses and enhances flood resilience in cities during flood events. Additionally, the term "knowledge" was closely associated with "flood control", indicating a shift in China's flood disaster governance from primarily experience-based approaches to an emphasis on disseminating flood control knowledge and adopting more scientific disaster management methods.

In summary, during this steady development phase, the central government prioritized urban flood control and infrastructure development, while attention to rural flood disaster governance relatively declined. Compared with the preliminary exploration phase, the connections between keywords in this stage were closer, the policy system became more comprehensive, and policy implementation was strengthened.

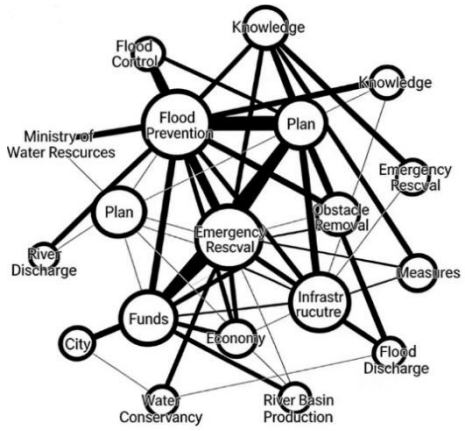

Fig. 5 co-occurrence word network in steady development stage

4.2.4. Deepening Adjustment Phase of Flood Disaster Governance Policies

In 1998, a catastrophic flood occurred across multiple river basins, including the Yangtze, Nenjiang, and Songhua rivers, affecting 29 provinces (autonomous regions, and municipalities) across the country to varying degrees. The disaster resulted in 4,150 fatalities and direct economic losses amounting to 166 billion yuan. In October of the same year, the State Council issued a document emphasizing that in strengthening water conservancy construction, the principles of comprehensive planning, overall consideration, addressing both symptoms and root causes, and integrated management must be upheld. It is essential to combine benefits

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promotion with harm mitigation, prioritize both resource development and conservation, and advance both flood control and drought relief. This document provided guiding principles for future flood disaster governance. Following the punctuated event in 1998, the development of China's flood disaster governance policies entered a prolonged period of equilibrium.

Based on high-frequency word detection (Fig. 6), “flood control” remained a central focus of policy attention during this deepening adjustment phase. A closer examination of the specific policy context reveals that, compared to the previous two stages, the central government placed greater emphasis on flood control work and water conservancy project construction in major river and lake basins. Policies stressed strengthening flood prevention and waterlogging drainage infrastructure, enhancing disaster resilience, and promoting sustainable socioeconomic development within the basins.

Simultaneously, the term “ecology” appeared with relatively high frequency during this period, often co-occurring with words such as “water resources,” “river basin,” and “governance.” This indicates that ecological governance became a significant component of the flood disaster management process. Furthermore, terms such as “in accordance with the law,” “emergency response,” and “responsibility” emerged in this phase. Analysis of the policy texts shows that China issued its first “National Flood Control and Drought Relief Emergency Plan” in 2006 and revised the “Flood Control Law of the People's Republic of China” multiple times during this period, reflecting the continuous advancement of legal system development in flood disaster governance.

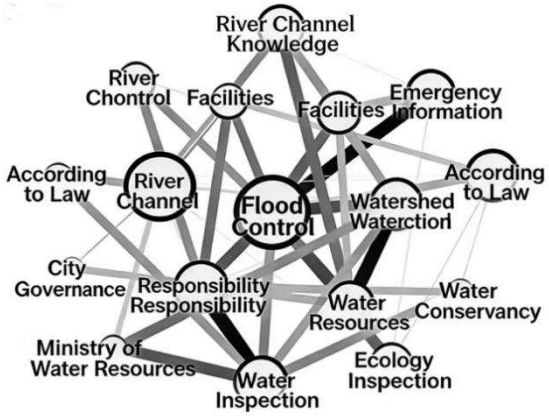

Fig. 6 co-occurrence words during the deepening adjustment stage

In summary, compared to the preceding stages, policy attention during this phase converged on ecological governance and legal framework development. The keywords became more diverse, and significant changes occurred in the overall policy substance, governance pathways, and models. The policy content during this stage represents a targeted response to practical challenges.

4.2.5. Consolidation and Innovation Phase of Flood Disaster Governance Policies

In 2016, the Yangtze River Basin experienced the most severe flooding since 1998, with widespread flood disasters across the country. A total of 31 provinces (autonomous regions and municipalities) and 2,404 counties were affected, impacting 100.95 million people and causing direct economic losses of 364.3 billion yuan. According to the earlier analysis of the annual issuance volume of flood disaster policies, the number of documents issued annually surged after 2016, reaching the highest level since the founding of the People's Republic of China. Consequently, the central government’s flood disaster governance policies entered a new period of equilibrium, characterized by the emergence of new keyword features.

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High-frequency word analysis (Fig. 7) shows that, compared with the previous three phases, "flood control," "river basin," "water conservancy," and "ecology" remain focal points of central policy attention during this stage. Notably, the term "information" has emerged as a high-frequency keyword in this period. In the context of policy texts, a 2018 document issued by the Ministry of Water Resources emphasized the need to "make full use of existing water-informatics resources such as networks, computing power, storage, and databases to achieve data sharing with water-related application systems, including water resources management, flood-and-drought-control command, soil and water conservation, water-conservancy construction management, and water-administration law enforcement." This reflects the central government's heightened attention to information resources in flood-disaster governance.

Moreover, the term "technology" co-occurs frequently with "water conservancy," "monitoring," and "early warning" 17, 12, and 8 times respectively. This indicates that, during the consolidation and innovation phase, the central government attaches great importance to the development of hydrological monitoring and early-warning technologies, aiming to shift the focus of flood-disaster governance forward in the process and thereby secure more time for post-disaster response.

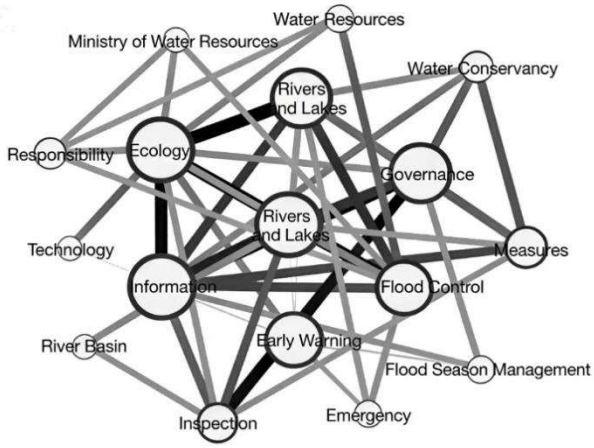

Fig. 7 co-occurrence words in the consolidation and innovation stage

In summary, policy attention in this phase concentrates on consolidating and refining existing policies and on developing and utilizing emerging technologies. By applying technologies such as big data, cloud computing, and artificial intelligence for accurate prediction, early warning, and operational dispatch, China continues to improve its legal and regulatory framework for flood prevention and disaster reduction, as well as its emergency management system.

5. Summary

Based on 325 policy documents on flood disaster governance issued by the General Office of the Central Committee of the Communist Party of China, the General Office of the State Council, and various national ministries and commissions from 1949 to 2024, this study adopts an attention perspective and integrates the punctuated equilibrium theoretical model. By applying textual analysis methods such as keyword identification, co-word analysis, and high-frequency word extraction, the historical evolution and focal characteristics of policy attention on flood disasters in China were examined. The findings indicate:

The evolution of policy attention in China's flood disaster governance has undergone four distinct phases: the preliminary exploration phase, the steady development phase, the deepening adjustment phase, and the consolidation and innovation phase. The focus of central

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policy attention on flood disaster governance varied across these periods. Initially aimed at ensuring public safety, flood disaster governance has evolved into a systematic project that now plays a vital role in ecological protection and economic stability. With the continuous refinement of the policy system, the role of water conservancy projects in flood disaster governance has been increasingly emphasized. The improvement of water-related infrastructure and innovations in monitoring and early-warning technologies have provided impetus for enhancing modern flood disaster governance capabilities.

From the perspective of the longitudinal evolution of attention allocation, flood control has consistently remained a central focus throughout the government's attention to flood disaster governance, while water conservancy projects have served as a crucial means of combating floods. Science and technology play an irreplaceable role in enabling the transformation of flood disaster governance, improving its efficiency, and restoring the ecology of rivers and lakes. These advancements contribute significantly to the modernization of disaster prevention and mitigation efforts.

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