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Sustainable Practicalities towards Good Governance in Fish Townships and Villages by Ethics-Based Approach

Yuru He [1,2], Shuolin Huang [1,3] and Yi Tang [3,4,*]

[1] Institute of Marine Science, Shanghai Ocean University, Shanghai 201306, China; yrhe@shou.edu.cn (Y.H.); slhuang@shou.edu.cn (S.H.)
[2] College of Foreign Languages, Shanghai Ocean University, Shanghai 201306, China
[3] College of Marine Culture and Law, Shanghai Ocean University, Shanghai 201306, China
[4] Fisheries Law Research and Consulting Center, Shanghai 201306, China
* Correspondence: ytang@shou.edu.cn

Abstract: As humanity's moral failure leads to wild aquatic resources decline, habitat destruction and community tension, an ethically sound path towards good governance is increasingly needed globally. To epitomize sustainable paradigm shifts of grassroots practicalities in the fish sector, an ethical governance framework is initially conceptualized with a meta-governance infrastructure and a value-based decision-making mechanism. The ethical approach is then contextualized by using fish-specific evidence and outlining evolution of participatory fisheries and aquaculture management in rural China as a case study. The empirical investigation of socio-ecological justice manifested in social empowerment, ethical conduct and ecological resilience reveals that in China: fisheries and aquaculture governance models have been transforming from hierarchical governance to integrated governance combining hierarchy, market and community; participatory ethics are embedded in civil organizations upgraded from fishery association, offices, leagues to societies and cooperatives, indicating a multi-stakeholder governance mechanism steered by the government as meta-governor; villagers' committees play a critical intermediary role in extending township governance and promoting autonomy of fishermen (farmers); local knowledge and traditional code of conduct regulates fish activities of fishermen (farmers) ready for community cooperation and mutual assistance; fish communities adopt socio-ecological measures to ensure property rights to fish (farm) and conserve aquatic resources. The current study aims to provide value reference in leveraging justified policy tools while promoting legitimacy of fish grassroots governance, in hope of contributing to a greener future of fisheries and aquaculture worldwide.

Keywords: socio-ecological systems; grassroots governance; sustainable fisheries; fish village; ethics

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1. Introduction

Governance has played a critical role in sustainable development, the ethical essence of which is good governance [1]. For good governance, a country is generally divided into different levels of administrative space according to geographical location and governance need. Townships and villages located at the "nerve endings" of a governance body have been the basic units of administration since ancient time. The fisheries and aquaculture sector is a key part of modern agriculture, and constitutes a special form of rural existence. Its administrative system assumes main right and obligation of developing the space where fishermen and farmers inhabit. In typical fish townships and villages (e.g., As stipulated in the China Fishery Statistical Yearbook [2], in rural areas, fish townships or villages are places where residents engaged in fish production and operation surpass 50% of the total employment or where fish output value exceeds 50% of that of agriculture, while those that fail to meet the above standards yet have been dominated by fisheries and aquaculture practices and approved by superior competent authorities may also be counted as places of the same nature), grassroots governments and organizations act as regulators

in maintaining a normative order and ensuring smooth operation. However, plagued by a decline in wild aquatic resources, habitat destruction and community tension globally, fish township and village heads often have to make painful political and social choices regarding the balance between economic development and ecological protection, and between hierarchical authority and fishermen' (farmers') rights and interests. Fortunately, ethics, a moral value system, provides a judgment coordinate and decision-making compass for governors confounded by a set of benign objectives [3]. It embeds ethical considerations into strategic process in developing effective short-term and long-term strategies [4]. As governance tactics based on different values are likely to generate diversified welfare effects, both the "hard" means of law and the "soft" value norms of ethics shall be fully leveraged, so as to achieve good goals in a modern society filled with uncertainties.

Since the introduction of the landmark Code of Conduct for Responsible Fisheries (CCRF) in 1995 that calls for fish-friendly actions of stakeholders worldwide, ethical issues concerning fish and aquatic habitats have been separated as an independent moral issue for good governance. In addition to institutional efforts [5,6] in analyzing the moral imperatives enshrined in the fish sector, scientists represented by Pitcher [7,8], Kaiser [9] and Lam [10–12] ventured into the application of ethical consideration to international or regional fisheries and aquaculture governance. However, such "ethics-based" governance has remained largely uninvestigated in China, despite some discussion on the environment and socio-cultural implications of fish policies [13,14], as well as fishermens' (farmers') education [15] and well-being [16], which is disproportionately lacking given the multi-presence of its rich practices.

As a big seafood producer, China is home to 718 fish townships, 7,550 fish villages, 4.63 million fish households, 18.28 million fish population, and 12.91 million fish labor force with 19.3% female practitioners [2]. Policy-wise, China has put forward the Rural Vitalization Strategy to build rural areas with thriving businesses, pleasant living environment, social etiquette and civility, effective governance, and prosperity [17]. It initiates an institutional arrangement featuring ethical concerns over good governance, engaging the mandate to mitigate rural decline, improve rural ecology and develop rural etiquette [18]. High-quality development of the fish sector affords a powerful approach to address moral failure and facilitate rural vitalization. At present, Chinese fish townships and villages are moving towards a coordinated development of aquatic ecology and social wellness. Key words with ethical implications, such as poverty alleviation, sustainability, responsibility, empowerment and distribution justice, are increasingly seen in domestic legal and policy documents. For instance, "ecological" aquaculture, "environmentally friendly" breeding fisheries and "diverse" recreational fisheries have been identified as priorities in the 12th Five-Year Fisheries Plan (2011–2015). To promote an all-round and sustainable economy, it is essential to not only take legal and policy measures, but also mobilize ethical means for guaranteeing the legitimacy of governance conducts.

This study contributes to the ethical perspectives on good governance by probing into the socio-ecological practicalities of grassroots governance in fish townships and villages. To that end, we adopt an interdisciplinary approach that combines normative ethics with grassroots governance through theoretical construction and field research. Layered on meta-governance theory and value-based decision making, we initially conceptualize an ethical framework for good governance in the fish industry from configuration to implementation. Next, we foreground the evolution of participatory fisheries and aquaculture management in rural China as a premise for case study. Going further, we integrate socio-ecological justice into empirically analyzing its empowerment of small-scale fish practitioners under government stewardship, integration of local knowledge and social code of conduct, and progression of ecological resilience. The findings provide value reference that promotes the legitimacy of grassroots governance in the fish sector through a holistic scan in Chinese practicalities, in hope of presenting a responsible governance path and envisioning a greener future of fisheries and aquaculture worldwide.

2. Materials and Methods

We propose an ethics-based approach to analyze good governance in the fish sector. For the purpose of this study, an ethics-based approach to good governance is defined as "the construction and implementation of a flexible infrastructure and mechanism under ethical values that optimize stakeholder relationships and performance to realize effective governance". In fisheries and aquaculture, the ethical dimension mainly involves socio-ecological sustainability of fish resources and practitioners. To illustrate this approach in a specific context, we select materials concerning participatory fisheries and aquaculture management practicalities in China as the research object to conduct historical analysis and interpretation, which provides a foreground for our case study.

2.1. Conceptualizing Good Governance in Fish Sector

In the modern sense, good governance indicates a social-ecological management system in pursuit of the supreme good to optimize the anthropogenic and non-anthropogenic felicity [19], revealing a novel relationship between government, market and society for cooperative management of public affairs. Meta-governance as a flexible infrastructure and value-based decision making as a sound implementation mechanism are combined to facilitate a good governance process in the fish sector.

2.1.1. Meta-Governance: Ethical Infrastructure

Corresponding to the three main ideal models narrated in the public governance theory: hierarchical governance, market governance and network governance [20], the fisheries and aquaculture governance model can be divided into government-led hierarchical governance, market-led property rights governance and community-led participatory governance. However, with the emergence of "fuzzy boundary" of modernity, there exists no quite clear division between traditional public administration and social actors [21]. The ultimate goal of governance (that translates into the fish sector as sustainable fisheries and aquaculture) shall transcend the goodness of subject responsibility, pluralism and spontaneity in common sense [22]. Current global institutional crisis in the industry indicates that a single governance model can no longer mediate cumulatively intensifying social and ecological contradictions. Multiple governments worldwide have realized they cannot solve such socio-ecological problems independently, but have to rely on partnerships with other public, private organizations to mitigate administrative overload and improve governance effectiveness. The decentralization process of competent fisheries and aquaculture departments strengthens the self-control of grassroots network by relinquishing some administrative control, thus mobilizing government-market, government-organization, and government-fishermen (farmers) interactions. Meanwhile, the public and private ethics are co-embedded to resolve the "evil" conflicts by employing the "good" complementarity of different models.

To reconcile governance rationalities, Jessop initiated the concept of "meta-governance" in 1997, by which he proposed a governance framework that "coordinates different forms of governance and ensures the minimum consistency among hierarchies, networks and markets" [23]. The theory aims to integrate different multi-stakeholder governance models to achieve optimal results by leveraging various means to control governance action. This ethical tool provides guidance for flexible coordination of complex stakeholder relationships. Meanwhile, as governance networks require effective operation of basic rules, the government is the most appropriate institutional designer, intermediary and coordinator [24]. Meta-governance focuses on overcoming the extreme sociocentric tendencies [25], while maintaining the government's specific rights and obligations in system design and implementation. In other words, the government is empowered to operate at the meta-level, assuming the role of a meta-governor for final coordination and decision.

The meta-governance for fisheries and aquaculture implicates holistic moral and practical considerations. With governance itself as the governance object, it is in pursuit of a sound socio-ecological path in which aquatic nature and humanity coexist in harmony.

It integrates the functions of the abovementioned governance models: government-led hierarchical governance emphasizes administrative rationality that facilitates general development and benefit of fish industry at macro level; market-led property rights governance stresses economic rationality that guides free individual choice of an economic man at micro level; and community-led participatory governance values communicative rationality that absorbs Local Ecological Knowledge (LEK) and advocates distributive justice at meso-level. In light of local system differences, a one-size-fits-all scheme is likely to fail due to its inability to cope with ever-changing internal and/or external turbulence [26]. To mitigate that rigidity, the meta-governance tool operates on meta-rationality that switches among governance patterns for different time periods and situations [27]. The hierarchical model is activated when participatory governance leads to regulatory complexity and endless negotiation, while market or participatory models are initiated when hierarchies are overloaded by fish-related issues, in which stakeholders take great interest. Fishing communities have vague natural boundaries with swimming aquatic resources, making them hard to be divided artificially, so the role of government as meta-governor is made all the more important to settle social-ecological disputes in the aquatic field.

Table 1 presents a comparative analysis of different governance models. The meta-governance approach is evidenced by the fisheries and aquaculture governance in China, which evolves from pure "hierarchical governance" to "integrated governance combining hierarchy, market and community". Its centralized government has the legitimacy and capacity to deal with a substantial number of fishing fleets, aquaculture farmers, processing enterprises and other stakeholders distributed widely at grassroots [28]. The hierarchical approach is promoted particularly in response to urgent, shared or large-scale problems such as systemic adjustments, fish crises and natural disasters (e.g., "Dual transform" policy for job transfer of marine fishermen; "Ten measures for sustainable marine fisheries against COVID-19" in Fujian Province). The market approach is generally applied to routine, non-sensitive issues where voluntary agreement is likely to be achieved with strong value consensus, mature trading conditions, and educated consumers who can make ethical choices to influence production decision. Fishermen (farmers)' production behaviors are influenced by consumers who pay for "high-quality at bargain price" and "green and traceable" aquatic products (e.g., Traceability system of Shanghai Freshwater Fish Wholesale Market). Role models are also set up among practitioners with other ethical instruction methods to stop moral decline. The participatory approach is adopted mainly to address multi-layered and unstructured problems that involve multiple stakeholders with strong sense of participation and rights consciousness (e.g., Collective fisheries property rights ownership system in Dongchu Island Village, Rongcheng city, Shandong Province). Once there are tensions and conflicts between different models, the meta-governor intervenes to coordinate the dynamic preferences of stakeholders, in an effort to ensure that the rights and interests of vulnerable groups are protected (e.g., Fisheries Circuit Court in Nanao County, Shantou City, Guangdong Province).

Table 1. Three main governance models and meta-governance model in the fish sector (inspired from Gray [20]).

Governance Model	Government-Led Hierarchical Governance	Market-Led Property Rights Governance	Community-Led Participatory Governance	Meta-Governance Combining Government, Market and Community
Governance level	Macro	Micro	Meso	Holistic
Type of rationality	Administrative rationality	Economic rationality	Communicative rationality	Meta-rationality
Governance object	The regulator and the regulated concerning fish-related conduct	Producers and consumers of aquatic products	Stakeholders	Governance models
Ethics	Authoritarianism	Neoliberalism	Consensusism	Holism
Typical examples in China	"Dual transform" policy for job transfer of marine fishermen; "Ten measures for sustainable marine fisheries against COVID-19" in Fujian Province	Traceability system of Shanghai Freshwater Fish Wholesale Market	Collective fisheries property rights ownership system in Dongchu Island Village, Rongcheng city, Shandong Province	Flexible switch among governance patterns to cope with ever-changing internal and/or external turbulence; Highlighted role of centralized meta-governor: Fisheries Circuit Court in Nanao County, Shantou City, Guangdong Province

2.1.2. Value-Based Decision Making: Ethical Mechanism

Once the infrastructure is built, good governance measures need to be activated to run through the whole implementation process. Fisheries and aquaculture constitute a production relationship based on aquatic resources, and a way of human life that cohabits and communicates with these resources. Maintenance of order of such production and life requires guidance of moral values, which would otherwise result in the alienation of both man and nature under capital and technological suppression [29]. Value-based decision-making advocates the consideration, evaluation and selection of various schemes to be implemented by fish townships and villages in a manner consistent with ethical factors. In the face of moral dilemmas, it is imperative to create a multi-stakeholder participatory mechanism steered by the government meta-governor, identify public and private interests, and balance long-term and short-term socio-ecological objectives [30]. By integrating interests into the community's moral imagination and practices, villagers' enthusiasm for cooperation is aroused for working out good choices. When making decisions, specific steps are expected: activate moral imagination among villagers, determine ethical governance goals (ethical matrix), implement value-based decision-making and carry out governance practices [31] under government stewardship.

Positive moral imagination is the starting point to construct the ethos within a community, which can be employed by grassroots governors to regulate local production and life. For instance, one can be taught to regard fish as comforting, emotional creatures critical to the ecosystem, treat fisherwomen as an independent and equal supporters and guardians in a family, and envision the practices of fishing, farming, manufacturing as a kind of value experience of continuous, benign interaction with nature. Those imaginations create a mutual-domestication scenario [32] that deepens the emotional connection among members of socio-ecological community and facilitates their positive moral choices. Especially when some governance mechanisms are imperfect, this moral effort is made all the more valuable.

The second step is to establish ethical governance objectives at the grassroots. As the leveraging of moral responsibility for aquatic resources conservation has become a global trend beyond economic benefits, local communities also must turn to a sustainable path featuring conservation. If multiple objects concerning welfare, freedom and justice conflict with each other, ethical decisions shall be made. Community stakeholders act as de facto "moral judges" when adjudicating whether a relevant behavior is ethical. However, those

local members behind the "Veil of Ignorance [33]" are constrained by individual knowledge structure, judging ability and other factors, so not everyone is qualified for such task. In this case, a specific "commonsense morality" or a universal thinking frame shall be adopted to popularize moral considerations conforming to justice. If unchecked, such collective social work may lead to Cronyism, behavioral contagion, crime proliferation and market failure. Hence this cannot be achieved without the help of meta-governor. The presence of a functional, strong, and stable democratic regional government can offset the corrosive consequences of social capitals [34].

The ethical matrix provides a conceptual tool employing common ethical standards and principles [9]. Ideally, the parties construct and facilitate the analytic process without manipulating the results. The grassroots administration can set top-down objectives in the matrix theme cells from top to bottom, lead the negotiation, and invite fishermen (farmers) to be part of the evaluation process. On the other hand, fishermen (farmers) can organize bottom-up discussions, with the government reviewing grassroots proposals and formulating a final policy. This ethical assessment on matrix cells potentially assists administrators to make comprehensive and long-term decisions. The whole process is displayed in Figure 1.

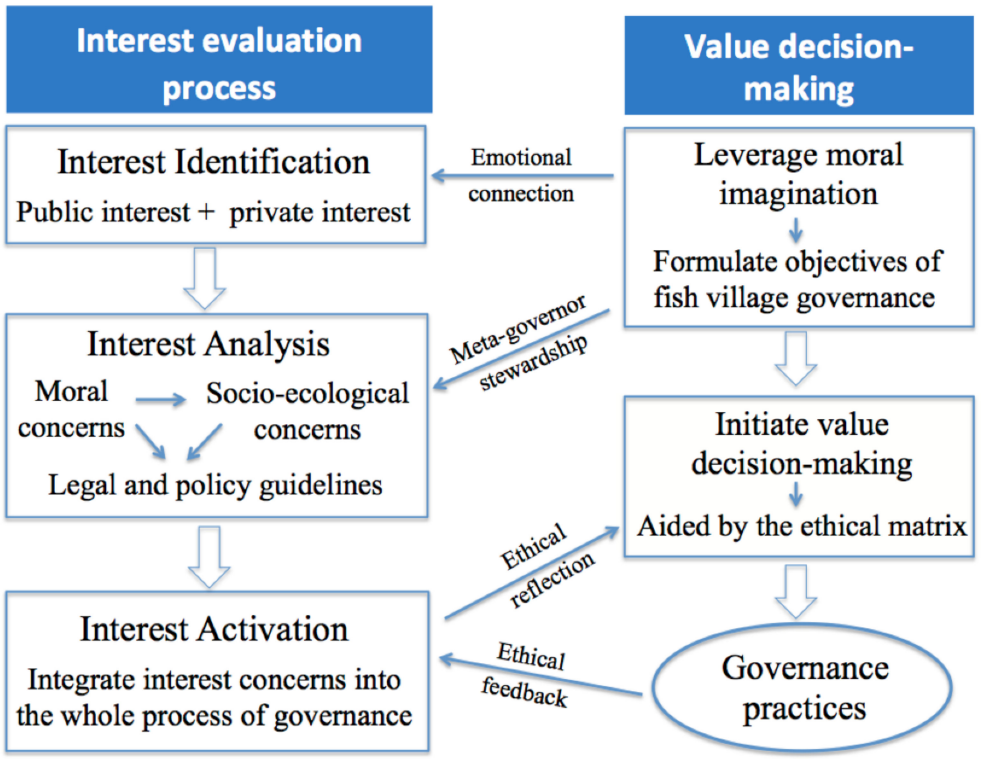

Figure 1. Value-based decision-making process in fish grassroots governance (inspired from Key [4]).

According to meta-governance discourse, a participatory decision-making led by the government is more consistent with the ethical principles of welfare, freedom and justice established by the Food and Agriculture Organization of the United Nations (FAO). In a normative or paradigmatic process, empowered stakeholders engage in interactive consultation on governance objectives, solutions, and practices, and endeavor to accelerate collective acceptance of new solutions by observing formulated rules [35]. The government intervenes in a timely fashion to identify and adjudicate dynamic preferences of stakeholders with ethical value orientation and norms (e.g., CCRF) to ensure effective protection of vulnerable groups' rights and interests. Meanwhile, participants reveal their emotions, demands and evaluation by continuing to join in or withdraw from the negotiation, forcing the reform of decision-making mechanism for distribution justice. This interaction mecha-

nism fits well with small-scale fisheries and aquaculture, where villagers can report to their communities on fishing and farming conditions on a formal and regular basis, monitor each other's practice, and fully engage in the process of formulating rules and regulations. This decision-making procedure based on value discourse is conducive to promoting social justice and reducing non-compliance. Through a legal, transparent and socially valuable process, grassroots meta-governor can control the formulation, implementation and evaluation of ethical program, and drum up greater acceptance and support from a wider range of participants, which can therefore be regarded as a goodwill means to solve current ethical dilemma in the fish sector.

2.2. Contextualizing Participatory Fisheries and Aquaculture Management in China

The study selects China's participatory fisheries and aquaculture management as a case research object. The information used to describe its evolution comes from widely available resources, such as governmental websites and documents, historical records, peer-reviewed articles and grey literature. Chinese grassroots fish localities can be divided into inland and marine townships/villages geographically; into pure fishing or aquaculture, leisure, semi-fishing and semi-agricultural townships/villages based on production functions; and into fishing and aquaculture townships/villages considering major resource use patterns. Diversified communities providing their residents negotiation platforms tend to enjoy greater opportunities to address the allocation dilemma of competitive public resources. Since ancient times, Chinese fishermen (farmers) have performed fishing and aquaculture under a collective spirit. To protect group operation efficiency and individual rights and interests, various organizations have been gradually initiated. Guided and underpinned by relevant administration agencies, these institutions play an increasingly significant role in activating ethical behaviors and promoting social cohesion in fish localities for good governance. In this section, we outline the evolution of such participatory management as a foreground for analysis.

2.2.1. Historical Progression

According to earliest recorded history, since the Tang Dynasty, waterside rural families were registered as professional fishermen (farmers). In the Song Dynasty, to facilitate government regulation and taxation, villagers in the South of Yangtze River formed civil fisheries and aquaculture societies with families as units or via attachment to affluent families. In the Yuan and Ming dynasties, every 8–10 fishing vessels in villages were organized into a fleet shed as required in the "fishing shed" system for safer operation at sea. The Qing government set up the "fleet master" system, built fishing groups and levied taxes based on vessel sizes, so the roles of fishermen began to be hierarchically differentiated. In the middle and late Qing Dynasty, the "fishery association" of fellow villagers developed in coastal villages of Jiangsu and Zhejiang provinces [36]. As a variant of townsmen associations, fishery associations led to a man–nature symbiosis model. There existed unwritten divisions between traditional fishing waters of different societies, as observed in members' practices. Such association had a clear hierarchy. Under specific norms, it divided fishing areas according to its members' conditions and suitable fishing methods for orderly production. For instance, the unique usages of the Zhoushan fishing ground were clearly designated by different fishing gears. Those who violated regulations and destroyed others' gears would face various forms of civil punishment if detected. Those substantive or symbolic punishments reflect the deterrent effect of community ethical evaluation.

Meanwhile, under customs constraints, local fisheries cooperation kept expanding, with a division of production, processing and sales among members. Fisheries organizations in Zhejiang province were upgraded from a primary form to a senior one ("fishery office"). Compared with fishing associations, fishery offices were larger and shared closer ties with the government and undertook more onerous tasks. To ensure a smooth communication with government, the posts of directors were held by better-educated intellectual.

The office shall bear joint and several liabilities for fishery production accidents. During the reign of Emperor Guangxu, coastal defense was severely challenged. After the Sino-French War, "fishery league" emerged as a mixture of government departments and industrial organizations, highlighting the importance of fishing leaders. The league took the lead in safeguarding sea frontiers, yet the ambiguity of government participation and opacity of tax collection and use retarded the modernization of such system. It was not until Zhang Jian who organized the Jiangsu and Zhejiang Fishing Corporation and fishery societies that the above governance perplexity was properly addressed. In 1929, the National Government of the Republic of China introduced the Fishing Association Act, Article 2 of which stipulated that "Fishery associations are legal persons" [37]. The associations improved fisheries community welfare and built a bridge between the government and fishermen (or commercial fishing companies), which not only facilitated the government's management of fishermen, but also supported fishermen's claim of legal rights and interests from the government. Since then, the relationship between administrative institutions and grassroots organizations has undergone a new transformation, gradually forming a participatory system. Afterwards, fishery (aquaculture) cooperatives featuring professional economic cooperation was formed, further promoting modernization and standardized development of mutual aid organizations in aquatic production.

2.2.2. Contemporary Development

Autonomy of small communities presents a benevolent way for human beings to accumulate social capital for moral good [38]. Fish townships and villages constitute vast small social communities, and their self-governance is a socio-ecological screen that shall not be circumvented by state administration before its obtaining of legitimacy [39]. With economic development and division of labor, there are many stakeholders and value demands within fish communities, and the subject consciousness and right awareness of all participants (especially small-scale fishermen and farmers at grassroots) are constantly boosted.

Since the founding of New China, assorted industrial cooperatives have been established during Agriculture Cooperative Movements. In the 1950s and 1960s, to systemize grassroots governance, marine fishermen were encouraged to set up and join mutual aid teams and production cooperatives, and poor fishing workers were provided with specialized funds to pay for cooperative shares. In the 1980s, voluntary fish culture consortiums for contracted freshwater aquaculture emerged. In general, 3–10 expert families jointly contracted a water surface for breeding, decision-making and technical guidance, and even provided support for seedlings, feed and fishing gears. In late 1980s, fishermen and farmers began to invest means of production or capitals into newly formed joint-stock cooperatives, which gradually grew into joint-stock enterprises. In 2006, professional cooperatives for fisheries and aquaculture were established, extending cooperation to both the upstream and downstream value chains. Meanwhile, multiple industrial and fishermen (farmers) associations respectively tailored for the interests of enterprises and fishermen (farmers) have been founded [40]. Contemporary Chinese fish community organizations can be categorized into: political organizations, villagers' self-governing organizations, economic organizations and others. Political organizations refer to a township or village Party organization (township Party committee, village Party branch) and administrative organization (township people's congress, township government). Autonomous organizations refer to villagers' committees (VCs). Economic organizations include industrial and commercial enterprises engaged in aquatic production and operation activities, economic groups with common interests, as well as central and local intermediary organizations of different natures, such as the China Distant-water Fisheries Association, the China Shipowners Mutual Insurance Association, the Rongcheng Fishermen's Association, etc. They provide services to their members and promote socio-ecological development through self-governance. Other organizations include families, schools, fellowship, recreation and sports associations, and organizations of a common faith (e.g., religious organizations) [41], with ethical intervention in private life.

It is worth noting that collective economy of certain fish villages with a high degree of organization remains attractive to fishermen (farmers). Governed by VCs, certain local economies enjoy sound growth, facilitating villagers' collective welfare, freedom and justice. A best practice can be seen in the "company + aquaculture farmer household" development model in Guanwu Village, Lianjiang County, Fujian Province. The Party secretary serves as the chairman of the village-run aquaculture company, and the priorities of VCs switch from simple administrative work to economic services. The property rights of collective assets and farmers' private assets are integrated but clearly divided. A dynamic cooperation between collective economy and private economy is carried out with the joint-stock system, greatly increasing production efficiency and villagers' income [42]. Existing community management cases mainly include the collective property right model (e.g., Shandong Rongcheng collective fisheries model) and the industry association model (e.g., Laoba Port Fishing Association management model).

Well-managed fish townships and villages have been at the forefront of poverty alleviation. In 2020, 98.99 million rural residents, 832 counties and 128,000 villages were lifted out of poverty [43], with the average per capita net income of fishermen reaching 21,108.29 yuan. The rice-fish planting and breeding complex industry has helped 200,000 poor households to free themselves from destitution and hunger, providing successful experience for rice-planting developing countries, especially those in Southeast Asia. Meanwhile, local production conditions enjoy continuous improvement. With stronger basic and supporting facilities, port construction, marine ranches, deep-water cages, safe communications, industrial aquaculture and fishing platforms have been upgraded. Figure 2 outlines the evolution of Chinese participatory management in the fish sector.

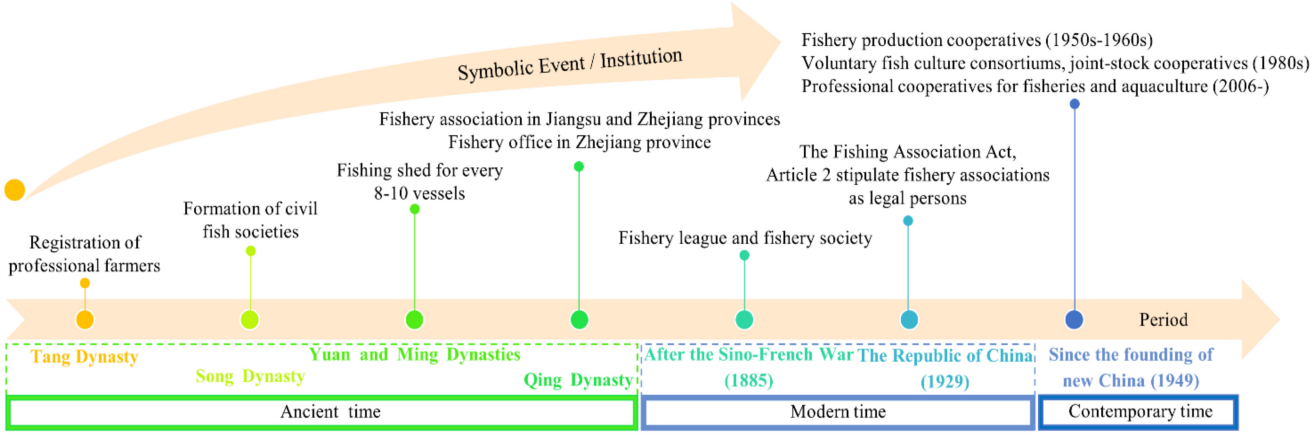

Figure 2. Timeline for evolution of participatory fisheries and aquaculture management in China.

3. Research Results and Discussion

As foregrounded, an ethical governance approach is constructed and Chinese fish sector is investigated to have transformed toward multi-stakeholder governance mechanism steered by the government as meta-governor. Having established and exhibited an organizational base, we move on to unravel diversified sustainable practicalities manifested in its fish sector, which display socio-ecological justice that potentially deals with unfair distribution of fisheries services and/or unequal access by certain fish-related groups and classes to such services impeding good governance.

3.1. Empowering Local Small-Scale Practitioners under the Guidance of Government Meta-Governor

According to the Chinese Constitution, township is the lowest administrative unit that sets government. Before 1980s, China universally adopted a top-down supervision and management mode regardless of locality type. Villages theoretically functioned as villagers' self-governing institutions. However, over a long historical period, top-down

administrative control was dominant and the role of village-level institutions was largely limited. In the vertical governance hierarchy of "state—province—prefecture-level city—county (county-level city)—township (town)—villages", grassroots political institution assumed full responsibility to implement and monitor management measures, and directly handled various demands of fishermen (farmers), which often resulted in administrative overload, lack of social trust, resource degradation, and other crises in fish community.

With a mandate to guarantee rural autonomy, develop grassroots democracy, and safeguard the legitimate rights and interests of villagers, the Organic Law of the Villagers' Committees was promulgated on November 4, 1998, and villagers' committees have been adopted as village administrative institutions. Subject to villagers' supervision, VCs are expanding channels for villagers to participate in rural governance by improving democratic elections, democratic decision-making, democratic management and democratic supervision, in an effort to facilitate a sound rural governance pattern embedding ethical concerns. Villagers aged over 18 are granted indiscriminate right to elect and stand for election. Elected village officials are expected to enjoy greater support from villagers and act in a more accountable manner. VCs leaders serve as spokesmen and communication channels, who help convey and implement the policies of competent authorities at higher levels and organize villagers' meetings on important matters concerning their core interests. For instance, a fish village has a fishpond to be contracted, then a villagers' meeting will be organized to discuss and decide the duration, methods and prices of the contract. Such contract will not go into effect until more than two-thirds of the villagers sign it. In the current Chinese rural system, small-scale villagers are key members of village collective economic organization. Their autonomous operation and assumption of sole responsibility for profits or losses have become a common economic mode within community. Meanwhile, they shall fulfill due civic obligations of maintaining village appearance and ecosystem integrity. In addition, the political and economic status of female members is on the rise. Thanks to the overall promotion of women's status in New China, there is a louder voice of rural women in labor and economic distribution. Take the women in fishing villages of the eastern Shandong province as an example. After the late 1950s, the agricultural cooperative movement spread to fisheries and various forms of cooperatives have been established. Local female practitioners are enabled to join farming and fishing to purchase fishing gears, pay for processing, attend community meetings, and demand dividends. They are allowed to stay home for three days a month during menstruation. Those protected hard-working fisherwomen also win respect and recognition within community [44].

Although VCs are given certain autonomy to manage their own affairs, they are under the jurisdiction of township government, and are therefore subject to the latter's guidance, support and assistance. The running of VCs is often bounded by a lack of financial support, as it is mainly funded by not-so-rich villagers in handling public issues and welfare undertakings. Villagers may be bribed to "give up" their democratic rights, which erodes the fairness and justice of election. If members are prone to only value their own fish interests, the engagement in political affairs will be compromised. In this case, it is imperative to develop a pan-village level ethical approach for sustainability. The timely intervention of political institutions shall be highlighted to fill the void created by those non-qualified stakeholders. Under the Rural Vitalization Strategy, the government meta-governor is responsible for developing production against poverty and hunger, promoting rational use of aquatic resources and conservation of ecological habitat, and ensuring justified distribution of public properties. As stipulated, the Administrative Department of Fisheries and Aquaculture at or above the county level can establish superintendency agencies in key waters and ports and appoint inspectors. This political institution is well-positioned to transmit the regulatory information to those below, while demonstrating their implementation and negotiations to those above. In the meantime, VCs operate at the grassroots to heighten mutual assistance and unity among small-scale practitioners for better enforcement. Thus, a practical co-governance model by government meta-governor and villagers' self-governing organizations is advocated and formed.

3.2. Promoting Value-Based Decision Making by Local Knowledge and Social Code of Conduct

Along the fish value chain, fishing, farming, processing and selling activities cannot be conducted beyond specific social relations. Such behaviors originated from survival needs that are pressured by population growth, and in turn contribute to social welfare. Behind those practices, there is an action logic supported by "co-creation of common knowledge" [45], and actors need to rationalize their motivation and process according to the basic norms universally recognized by the society they live in. The normative long-standing knowledge such as cultural tradition, custom and ritual structure constitute the "legitimate order" of traditional society. China's traditional rural culture is filled with various moral and etiquette norms. This ethical awakening emerged before the law, yet still maintains a critical role in regulating fishing and farming behaviors no matter how the society evolves.

Grassroots fish societies value community consciousness and mutual assistance. Chinese rural society structure is summarized as a conceptualization of "differential mode of association" linked by family clan relations [46]. In an acquaintance society, fishermen (farmers) take care of each other and invisibly restrain each other by moral discourse. They make moral judgments based on close proximity, ethical knowledge and practical experience, which contribute to the formation of local rules and regulations. As an organic component of rural society, fish townships and villages heavily rely on local natural resources, bonding together people who have lived here for generations. Just like peasants' emotional attachment to farmlands, fishermen (farmers) identify ponds, rivers, lakes and seas as an alternative form of land. However, unlike the "small-scale peasant economy" rooted in dry fields nationwide, the floating nature of water arouses a broader-minded awareness for cooperation among its practitioners, which is particularly evident in marine fishing.

Marine fishing remains one of the world's most perilous occupations. Of the 40 million men and women engaged in the fish sector worldwide, an average of 32,000 fishermen and persons are killed every year, increasing 33.33% over the past decade [47]. Vessels sailing in rough seas may suffer from collision, fire and capsizing at any time. Sustainable and efficient access to aquatic resources largely depends on the solidarity and cooperation of community members. However, cooperative operation increases fishing effort and greatly improves harvest efficiency. As a result, marine fishermen have developed a collaborative spirit, helping to take care of each other within families, between families and even within communities. The song "Fishing Boat" vividly describes the busy production scenario of the Daiquyang fishing ground in Zhoushan city during a fishing season, whose lyrics are translated as follows: "For Yangan Lane sails the fishing boats, with the captains calling their bros, to quickly open the cabins and labor with hauling folks. Shortly after the cast of net, they can return with overloads." [48] In its lyrics, the captains acting as helmsmen led their crew to sing the working song and cooperated for a full haul.

As an important supplement to government decrees and regulations, Chinese traditional fishing regulations also restrain folk fishing behaviors. Here are listed typical "ethics" for fishing at sea, as exemplified in the Fisherman's Code of Conduct in Rongcheng City, Shandong Province [49]:

1. Family relatives shall not board the same boats. Considering the high-risk of offshore production, male labors tied by kinship are not allowed to go fishing together in order to prevent a family from losing all male members. Instead, men from different families are required for co-production to ensure that there is at least one bread-earner in each of those family to carry on their family lineage. The men left on shore often assist women with other fisheries affairs and household chores, hoping their relatives would return home with a healthy body and a full load.
2. Off the boat, do whatever you want to do; yet on the boat, do whatever the captain tells you to do. On dry land, fishermen enjoy relatively equal status and can freely exchange views with each other. But on a vessel, they follow the captain who acts as the "King" to make authoritative instruction. At sea, the crew shall be unconditionally obedient

to the captain, for only in a highly centralized and unified order of authority, can they sail ahead with one mind to maximize the chance of survival. If a member disobeys the order, it will be difficult for him to gain the trust and support of community in future. This kind of social trust system is a typical ethical system that relies on moral disciplines rather than explicit laws to help strengthen governance and ensure the order of marine fishing.

3. Save the unacquainted in distress at sea. Sea conditions are so unpredictable that no one can guarantee smooth sailing. Chinese culture emphasizes "benevolence and righteousness". If a passing vessel finds someone in distress who sends out a call for help, even if he is a complete stranger or even an "enemy", its fishermen, assuming that their own safety is not jeopardized, are supposed to try their best to rescue him and do not charge any fee afterwards. For thousands of years, fishermen have embraced the philosophy of saving lives in distress the same way as stipulated in the United Nations Convention on the Law of the Sea (UNCLO)(See UNCLO, Article 98, Duty to render assistance).
4. Inspect the shore after coastal flooding to pick up drifted wreckage and return them to interested parties. Chinese fishermen are influenced by a traditional culture of "returning a thing intact to its original owner", and a doctrine of Karma and Transmigration. Whenever a shipwreck is found, they will use long-handed hooks, nets or other tools to salvage the bodies of victims and relics. These floating bodies and objects are known as "Fu Shui (meaning 'the drifted')" among the folk, who will try to locate the victims' relatives, mark their bodies and bury them on the spot so that they can be laid to rest for their relatives to identify them. If the relics are identifiable (e.g., Fishing vessels, nets and other production tools with printed serial numbers), they will be handed over to interested parties, or otherwise to the marine protection agencies. In fact, the unmarked relics may be claimed by those salvagers. Sometimes, they even fight over one item, disgracing the originally good intention of benefiting others.
5. Only brother-in-laws can be candidate ropemen for the diving operation. Dive fishing is a most dangerous type of operation at sea. In the past, there was no electronic devices, so a diver with strings strapped to his wrists could only communicate with a ropeman on deck by an agreed signal, which was then relayed to the oxygen pumper and the rower for further operation. As a medium for survival, the candidate of ropeman shall be carefully approved by both the diver and the captain. In China, brother-in-laws (husband's brother and wife's brother) are not related by blood yet bear moral responsibilities to each other to care for the well-being of their own sisters, while the vulnerable relations between father and son, between father and elder brother, or among siblings may breed family conflicts and generate subsequent risks of inflicting injury within the immediate kinship. In practice, brother-in-laws are the best and even the only candidates for ropemen. This is a vivid case of applying family ethics to fishing.
6. Take preventive measures to stay within a manageable fishing circle and debarking within restricted hours. According to China Fishery Mutual Insurance Association, the average death rate of Chinese fishermen is 214 per 100,000 per person per year, 2.7 times the world average of 80 and 55.2 times the average of other industries [50]. Such a safety threat is severe even today, not to mention in the old days when there was inadequate maritime protection. Chinese fishermen have developed a collective sense of safety to be always prepared for a rainy day. When fishing at sea, the crew conscientiously follow the rules of "staying within a manageable circle and debarking within restricted hours". To be on the safe side, even the most skilled captains acquainted with the power of rough seas never venture into unfamiliar waters. A single fishing operation lasts no more than 4 h. Fishermen often board the ship with cooking stoves and enough dry food, but do not cook on board. Before weather forecasts were available, they even collaborated to bring fishing vessels ashore every day to protect them from water erosion.

Communities and families offer fishermen spiritual comfort. Despite multiple difficulties in fishing, when they return home and see their parents, siblings, wives, children and familiar villagers, their fears and fatigue will gradually disappear. Fishermen seldom travel far from home. Under the ethical constraints of family ties, peer pressure, and local rules and regulations, they help each other and sail forward together, trying their best to protect themselves and the lives of others against the odds of sea.

The original and unwritten civil rules and regulations commonly recognized by fishermen (farmers), including values, customs, folk norms, ideologies, habitual practices, and other intangible rules, present a self-governing approach to maintain social order and reduce governance cost. They provide an ethical tool to preserve local knowledge and morality, and a foundation for implementing a community-based management in Chinese fish townships and villages.

3.3. Progressing towards Ecological Resilience for Sustainable Fisheries and Aquaculture

Apart from social directives, the fish sector also advocates "ecological holism" to promote fish welfare both in historical and modern times. Since Chinese philosophy regards clear waters and green mountains as invaluable assets, "high-quality growth of green agriculture" is prioritized on the agenda. Fish townships and villages are at the foothold of implementing relevant national policies.

For fishing communities, achieving the balance between fishermen's income increase and aquatic resources conservation on a organizational basis is key to good governance. It is not automatically achieved by market force and within community, and therefore requires the government meta-governor's effort. With the top-town implementation of "dual control" system of reducing vessel number and power since 1987 [51], summer moratorium since 1995, "zero growth" of marine harvest since 1999, job transfer of fishermen since 2002, and the ten-year fishing moratorium in Yangtze River since 2021, townships and villages are carrying out ethical measures such as season or area enclosure, catch quota systems, minimum mesh size and minimum landing size control, monitoring and crackdown on illegal, unreported and unregulated (IUU) fishing, provision of subsidies for fishermen who have to find new ways of living, so as to realize eco-civilization and sustainable fisheries in the region [51]. Given that the no-take policy may bring injustice to fishermen's livelihood, superior administrations arrange supervisory cadres to visit fishing villages, hold meetings with fishermen representatives, interpret subsidiary policies to them, know their demands and interests, in order to win their trust and support on long-term socio-ecological interests. Social security services, financial support and professional training are also provided to enhance their employability on land. Considering the psychological and technical realities of fishermen's(farmers') attachment to and reliance on aquatic resources, "on-site transfer of production" and "transfer from fisheries to aquaculture" are offered.

On the other hand, as the only country where aquaculture output exceeds fishing harvest, China attaches great importance to aquaculture communities. Aquaculture is a major human-water interaction carrier that has long domesticated and utilized aquatic plants and animals. The affection of fish farmers towards aquatic seedlings is just like that of peasants toward wheat sprouts. In their moral imagination, ponds and fish fry are key elements for them to obtain food and wealth. But their pursuit of higher production has to be adjusted by the government meta-governor for eco-welfare. In 1985, Directive on Relaxing Policies and Accelerating Aquaculture Development was promulgated, allowing aquaculture production to be contracted to households, lifting the control on seafood prices, and regulating grassroots market [52]. Since then, the development guideline primarily oriented toward aquaculture has taken shape in townships and villages, relieving the pressure on wild species. To protect the exclusive means of production and regulate culture practices, a license system for aquaculture has been adopted. The Rural Land Contract Law (2003) further regulates the rural household contract responsibility system, which stipulates that fishponds belongs to agricultural land [53]. Villagers employing "ponds" for aquaculture activities shall apply for a certificate from the competent administrative department at

or above the county level in advance. They are also subject to relevant regulations in the production, safety, promotion and trade of seedlings. Moreover, according to the Fisheries Development Plan and Opinions on Accelerating the Green Development of Aquaculture (2019), farmers are encouraged to carry out ecological farming and recreational fishing.

Traditional Chinese fish areas are typical resource-based communities largely "live by water", treating aquatic resources in rivers, lakes and seas as their core livelihood capital. The above changes in local development mode and subsequent variations in fish conditions will inevitably affect residents' livelihood strategies [54]. At present, many fishing villages with resources constraint are experiencing a "landing" process. With the change of geographical and social functions in the industrial structure (e.g., from fishing to aquaculture; from the primary industry to the secondary and tertiary industries) and customs or cultures (e.g., the "land boat riding" performance as a novel wedding custom), the production and life relationships at grassroots present new ethical features, and fishermen (farmers) are becoming increasingly urbanized. How to guard itself against ecological encroachment while improving the livelihoods of fishermen and farmers still remains a hard nut to crack.

3.4. Practical Gaps

Despite sustainable practicalities, China's socio-ecological engagement in the fish sector is still insufficient compared with developed fisheries and aquaculture economies. In practice, villagers' committee fails to function as a completely independent and justified self-governance mechanism, for it entails not only social and economic autonomy (in charge of public welfare undertakings), but also certain administrative autonomy (handling public affairs and assisting township governments in management). On the other side of the spectrum, many fishermen and farmers are subject to poor schooling and little ethical education and are thus neither willing to cooperate with other stakeholders nor qualified for effective community negotiation, compromising the availability of meta-governance at grassroots. Moreover, due to brain drain in rural societies, there is a lack of youth engagement both in the fishery industry and in community governance. Fishing fathers are reluctant to persuade their better-educated sons to continue this "marginalized" work at sea. Problems concerning decent work, moratorium, vessel decommission, license application, access to finances, vocational skills and decision-making hinder them from stepping in and contributing as an active stakeholder. The younger generation suffers from an identity crisis in their struggle between rural bondage and urban integration, leading to cultural fracture and demoralization of traditional community ethics. Moreover, in the mist of eroded beliefs and eco-crisis, professional fishermen bidding farewell to nets and boats find themselves less competitive in their transfer into aquaculture or other industries.

Within fish communities, ethical measurement fills the political and legal vacuum, yet some traditional moral judgments may be "unjustified" for the suspects. For instance, according to Zhoushan Customs, in the Qing Dynasty, fishermen caught breaking or stealing nets would be tied to the stakes covered with fishing nets and drowned. If they confessed their offense to a relative, a local patriarch would hold a meeting to discuss appropriate punishment, which even included flogging or death penalty. For those who escaped, the association would make a scarecrow, hang it at the spot where they fled, whip it, and throw it into the toilet. The patriarch would then intervene in the conflict between fishermen, charging the offending party opera performance fees as a fine to distinguish between "good" and "evil" [55]. With a strong deterrent effect, the violence in such punishments may go beyond moral court and erode benign governance. Even if the villagers' judgment is morally robust, the darker side of social capitals at the grassroots can lead to multiple problems (as mentioned above, Cronyism, behavioral contagion, crime proliferation and market failure, etc.).

In terms of ecological conservation, while township governments and religious sites have set up free life ponds to develop villagers' compassion and care for aquatic creatures, civil fish-releasing activities may trigger biological invasion and impair fish welfare in turn.

Meanwhile, despite diversified eco-ethics regulating fisheries and aquaculture conduct (e.g., "cherish all living beings", "large ecosystem of stereoscopic agriculture and fish-rice farming"), animal welfare legislation is still lacking. In addition to the current protection of endangered wildlife in legal design, non-endangered aquatic species are also expected to receive proper care in fishing and farming conduct to ensure their well-being as species and safety as products.

Given the governance gaps in fish communities, China needs to develop renewed human-human and human-fish relations aligned with welfare concerns and ethical principles. This can be done through de-administration of the self-governing VCs, improved schooling for fishermen and farmers, greater exposure to vocational and ethical training for villagers' capacity building, provision of attractive grassroots support and decent employment opportunities for returning youth practitioners, the discarding of unjustified traditional moral rulings, and tougher supervision on production links for species health and safety. The presence of multiple grassroots communities and cooperatives shows that community-based management is feasible [56]. In future, it shall improve the community management system in aspects of organization construction, system innovation, legal support and supporting measures, so as to allow grassroots fishermen (farmers) to actively participate in the ethical decision-making process and solve unstructured puzzles in the fish value chain.

4. Conclusions

In view of the socio-ecological contradictions arising in rural development, an ethical approach is proposed to realize an all-round improvement of villagers' living standards and ecosystem welfare for good governance. Fish localities, as the basic administrative unit of fisheries and aquaculture governance, are constantly exploring a development path in line with sustainable value orientation. This study attempts to construct an ethical configuration for good governance by exploring the application of meta-governance and value-based decision-making in the fish sector. With China's practicalities as a case study, it outlines the evolution of its community-based fisheries and aquaculture management with participatory ethics and explores the socio-ecological justice in its fish townships and villages. The results show that:

- After decades of development in fish industry, the basic fisheries and aquaculture governance models have been transforming from "hierarchical governance" to "integrated governance combining hierarchy, market and community". The organization transformation from fishery associations, fishery offices, fishery leagues to fishery societies and fishery cooperatives has been permeated with participatory ethics.
- Villagers' committees play a significant intermediary role in extending vertical governance and promoting villagers' autonomy. Fishermen dealing with open waters have developed a broader mind for community cooperation and mutual assistance, which is particularly evident in marine fishing where traditional code of conduct serves as an invisible hand to regulate fishing activities. For socio-ecological justice, townships and villages meta-governors primarily employ moratorium, fishing licenses, minimum mesh and landing size control, IUU fishing crackdown, and "double transfer" subsidy for fishermen who exit fishing, while aquaculture counterparts mainly adopt the aquaculture certificate management system, and the household contract responsibility system.
- Existing governance gaps concerning VCs de-administrative nature, youth engagement, decent work, unjustified conduct, fish welfare need to be stressed and properly addressed within communities.

To conclude, grassroots fisheries and aquaculture governance takes an ethical paradigm shift from a hierarchical model featuring "anthropocentrism" to an integrated multi-stakeholder model valuing grassroots participation and prioritizing ecological conservation, with socio-ecological approaches in fish townships and villages to mitigate ecological degradation, reduce poverty and hunger, facilitate aquatic resource allocation, address gender

inequality, epitomizing a local ethical contribution to the world. Such grassroots governance is only a microcosm of rural society, and whether such ethics-based experiences can be promoted on a larger scope deserves scholarly attention. Encouraged by the spirit of CCRF, we recommend further research on sustainable fisheries and aquaculture governance paradigms and practices by leveraging local moral resources and governance ethics, and activating ethics education for grassroots stakeholders.

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