

# ***Social Ecological Reconstruction for Conserving High-quality Development in Earthquake Stricken Areas: Take the "9.16" Earthquake Relief and Post Disaster Reconstruction of Yuchan Neighborhood Office in Luxian County as an Example***

Yilin Luo<sup>1</sup>, Hao Wang<sup>2,\*</sup>

<sup>1</sup>*Affiliated Hospital of Traditional Chinese Medicine of Southwest Medical University, Luzhou, Sichuan, 646000, China*

<sup>2</sup>*Yuchan Sub District Office, Luzhou, Sichuan, 646000, China*

*\*Corresponding author*

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**Abstract:** This paper applies the social ecosystem theory to analyze and study the "9.16" earthquake disaster area of Yuchan Neighborhood Office in Luxian County as a social ecosystem. The author analyzes the safety of individual life, property, information and life security in the social ecological micro system caused by earthquake disasters, and the social production, social order, information exchange, social supply and social emotion in the social ecological meso system; This paper analyzes the influence of earthquake disaster on social ecological macro system from four aspects of material civilization, political civilization, spiritual civilization and ecological civilization. The paper explores the high-quality reconstruction path of social ecology in disaster areas from macro, meso and micro aspects. The paper also discusses the importance of earthquake disaster on social ecological correlation and spiritual civilization in social ecological reconstruction, so as to provide decision-making reference for high-quality development of earthquake stricken areas.

## **1. The Impact of Earthquake Disasters on Social Ecology**

### **1.1. The Impact of Earthquake Disasters on the Social Ecological Micro System**

People are an important component of the micro-system in the social ecosystem <sup>[1]</sup>. After an earthquake disaster, the social ecological micro-system is mainly affected in the following ways:

Firstly, the safety of individuals' lives is affected in the disaster area. The earthquake disaster causes strong ground vibrations, accompanying ground cracks and deformation, resulting in building collapses and damages, equipment damages, igniting fires, explosions, outbreaks of epidemics, toxic substance leaks, radiation contamination, site destruction, and human and livestock casualties. The "9.16" earthquake caused 23,190 affected individuals and a total of 36 casualties in the Yuchan

Neighborhood Office, including 2 deaths due to house collapses, 8 severely injured individuals, and 26 lightly injured individuals. The entire area had to evacuate 60,482 individuals, with 2,432 individuals dispersed, and 8,021 individuals centralized resettled. It is evident that the earthquake disaster has caused a serious impact on the safety of lives in the disaster area.

Secondly, the safety of individuals' property is affected in the disaster area. The "9.16" earthquake caused damage to a total of 12,313 houses and 42,010 rooms in the Yuchan Neighborhood Office, with 86 houses and 174 rooms collapsing, 1,886 houses and 7,112 rooms severely damaged, and 10,341 houses and 34,724 rooms generally damaged. 4 roads were also damaged, and 1 fire broke out. In the context of the Chinese socio-economic conditions, immovable property is the primary asset of the general public. After an earthquake disaster, immovable property is the most severely damaged and threatened. In comparison, the risk of destruction to movable property is relatively lower. The earthquake has shown a great destructive power on the safety of individuals' properties in the disaster-stricken area.

Thirdly, the safety of individuals' information is affected in the disaster area. The earthquake destroys transportation, communication, and power facilities while interrupting wired communication lines and congesting wireless communication signals<sup>[2]</sup>. This interruption will result in the disruption of communication and exchange of information between individuals, individuals and groups, and individuals and objects controlled in everyday life, creating a lack of real information chains about people and things' actual status and developmental trends.

Fourthly, individuals' livelihood security is affected in the disaster area. The earthquake disaster destroys lifeline projects, leading to interruptions in the supply of water, electricity, oil and gas, and daily necessities. The interruption in life sources and work will lead to a significant impact on the daily lives and work routines of individuals. This will result in a shortage of supplies, with tents, quilts, emergency lamps, and other items not being available timely, and vehicle dispatching for transporting supplies being difficult. There will also be a shortage in manpower, and various disaster relief efforts are urgently in need of a large number of people. The demand for centralized resettlement points will be high, making it difficult to meet the requirements in a short time.

## **1.2. The Impact of Earthquake Disaster on the Social Ecological Meso System**

The mesoscopic system of social ecology is composed of the interactions among microsystems within society. After an earthquake disaster, the social ecological meso system is primarily affected in the following ways:

Firstly, social production is temporarily stalled. Earthquake disasters are sudden and catastrophic social calamities, with widespread and destructive effects. As all three elements of social production, namely the means of production, production tools, and laborers, are affected by earthquake disasters, social production is temporarily halted. Furthermore, in modern society, division of labor is increasingly detailed, and industry chains are more closely integrated. If a link breaks, it will affect the entire industry. For example, the "9.16" earthquake caused 26 enterprises in Yuchan Neighborhood Office to shut down, and all 46 schools in the area were closed.

Secondly, social order briefly loses control. After an earthquake disaster, various social organizations and functional departments immediately focus on earthquake relief efforts. Individuals in the disaster area go from their normal lives of work, study, and daily routines to prioritizing life and property preservation. When all social components in the disaster area focus on the same thing and take action towards it, the division of labor and cooperation in society can become problematic, leading to a brief loss of social order.

Thirdly, a momentary information isolated island emerges. Due to damage to communication infrastructure caused by earthquakes, information chains are severed, leaving organizations and

individuals with incomplete or nonexistent information. As a result, different social organizations can't assist one another, and information cannot be shared. In some cases, areas may even be cut off entirely from the rest of the world, creating brief information isolated island <sup>[3]</sup>.

Fourthly, social supply capacity is reduced. Due to the vast reach of earthquake disasters, they can have a massive impact on social life and economic order, resulting in a temporary stagnation of production and consumption. Many social goods are left damaged and ruined in the wake of an earthquake. In particular, medical care institutions may be unprepared, with insufficient staff, uneven professional skills, incomplete service procedures, irregular systems, low information technology capability, and ineffective management <sup>[4]</sup>. In short, the social supply cap.

Lastly, social panic and anxiety may arise. In situations where life is threatened, property is lost, and societal order is disrupted, individuals in earthquake stricken areas may exhibit irrational and unreasonable behavioral and psychological reactions, giving rise to social panic and anxiety.

### **1.3. The Impact of Earthquake Disaster on the Social Ecological Macro System**

The social ecological macro system is constituted by all micro and meso systems present in society. When an earthquake disaster strikes, the impacts on the macroscopic system of social ecology are chiefly manifested in several ways.

Firstly, material civilization is adversely affected. The earthquake disaster inflicts heavy damage on human labor output and natural resources, which in turn hinders material production and socio-economic functioning at the individual, organizational, and national levels. The destructive impact of the earthquake disaster on material civilization is so colossal that it can obliterate the historical accumulation and contemporary wealth creation in a snap.

Secondly, political civilization is adversely impacted. Given the immense harm caused to material civilization in earthquake-stricken zones, the political civilization in those regions is profoundly affected. Socialist political civilization displays unique political advantages in earthquake relief efforts by enabling collective mobilization of nationwide resources, thereby laying the foundation for sustainable development of socialist political civilization.

Thirdly, spiritual civilization is adversely influenced. The earthquake disaster induces a temporary halt in various domains such as education, science, culture, arts, healthcare, and sports in the disaster-stricken areas. However, despite the temporary setbacks, remarkable stories of human triumph over adversity emerge in the wake of such calamities. Such heartrending tales reinforce the content of socialist spiritual civilization, inspire ingenuity among the people of the disaster-affected areas, and elevate their moral and intellectual standards.

Fourthly, ecological civilization is negatively impacted. The earthquake disaster severely impairs natural landscape and resources of the afflicted regions. In the post-disaster reconstruction period, adherence to standards of ecological civilization assumes greater salience. Planning and layout of disaster reconstruction must be based on the fundamental objective of harmonious coexistence between humans and nature, harmonious coexistence between humans, and eco-friendly cyclic development, comprehensive growth, and sustained prosperity in society. Consequently, the exigencies of post-earthquake reconstruction entail more exacting demands.

## **2. Reshaping the Social Ecological Landscape in Earthquake Stricken Areas**

### **2.1. High-quality Reshaping of the Social Ecological Macro System in Earthquake Stricken Areas**

#### **2.1.1. Fully Implementing the New Development Concept Accurately and Comprehensively**

Adhering to the five major development concepts of innovation, coordination, greenness, openness, and sharing is a profound transformation that relates to the overall development of China. The high-quality reshaping of the macroscopic system of social ecology in the earthquake stricken areas is critical to the top-level design of social ecological high-quality development.

In regards to innovative development, firstly, exploring the integration of industries is essential, with a focus on city residents going to the countryside and social capital investment, accelerating the integration of primary, secondary, and tertiary industries and dedicating to developing the composite economy. Secondly, exploring new types of practices is fundamental, by adhering to modern agricultural park construction as a platform, promoting tourism, experiential leisure farm construction, exploring green products, rural living and other new forms of business. Thirdly, exploring interest-sharing models and establishing new models of interest-sharing among enterprises, village collectives, and farmers, such as “output value sharing” and “asset investment” are recommended.

In terms of coordinating development, based on the ideas of resource complementarity, dislocation development, and co-building and win-win, extensive exchanges and cooperation are carried out, promoting cooperation between Yuchan Neighborhood Office and surrounding areas, crossing towns, villages, and groups, and cooperating to develop modern agriculture industrial parks. Establishing a new type of cooperative alliance for surrounding regions, promoting equality exchange, benefit sharing and group development among agricultural enterprises, family farms, cooperatives and small farmers.

In terms of green development, adhering to efficiency, harmony, and sustainability is fundamental, taking social ecological capacity and resource carrying capacity as the elements of development and “greening” and “ecologizing” the process and outcome of economic activities and social activities in social ecological reshaping.

In terms of open development, it is imperative to adhere to the principle of attracting large corporations to invest in the area, based on the resource advantages and leading industries, and to continually innovate in the methods used to attract these enterprises. This should include the regular promotion of investments in industrial, agricultural, and cultural tourism sectors. Additionally, it is essential to prioritize the functional orientation of upward striving, reform experimentation, project funding, and preferential policies as the focal point of the town's development. Leveraging external resources to inspire and stimulate internal and external momentum, and combining efforts to focus on major projects and achieve substantial outcomes.

In terms of shared development, it is crucial to leverage the “three-property-rights separation” reform in land use, expand the space available for existing construction, and foster the development of large-scale agriculture and animal husbandry facilities on homesteads. Additionally, the integration of collectively-managed land into the market can also widen the scope for rural development initiatives. Furthermore, the comprehensive land remediation initiatives extend the national land expansion capabilities, and the pilot program in rural land supply can provide more comprehensive space for rural redevelopment. These approaches must be underpinned by integrated rural infrastructure reform and public service development, consistently prioritizing shared development philosophies to realize more equitable and sustainable outcomes. This philosophy must be infused into post-disaster reconstruction work, emphasizing the critical importance of shared opportunities and shared prosperity.

### **2.1.2. Comprehensively Implementing the Concept of “Putting the People First”**

At the material civilization level, it is critical to fully harness the resource advantages of the region and strive to improve the level of social development. It is essential to provide sufficient quality material guarantees that meet the living needs of the inhabitants. In addition, it is vital to focus on improving the material production capabilities of individuals or organizations by enhancing the social resources elements to offer quality and competitive products. Special attention must be given to the reconstruction of the industrial and value chains post-disaster, with a primary focus on the expansion of the rural social ecological resource value and the extension of the industrial chain.

At the political civilization level, three key aspects must be emphasized. Firstly, the reinforcement of social security and service systems, including the improvement of employment and elderly guarantee systems, construction of poverty prevention warning mechanisms, and assistance and relief services. Secondly, the creation of an innovative social management service system, emphasizing rural governance system development, strengthening rural government construction, rural rule of law, and rural ethics. Lastly, the enhancement of social stability and public security. The socialist core values must guide the post-disaster reconstruction, comprehensively building a high-quality political civilization.

At the spiritual civilization level, two crucial aspects must be addressed. Firstly, the upgrading of education, science, culture, and health service levels, emphasizing the development of educational science, the implementation of a comprehensive five-fold education structure, prioritizing moral character development, improving the quality of education, and satisfying the needs of the people. Secondly, the enhancement of rural ethics, implementing citizen moral construction initiatives, strengthening ideological moral education, training civilized qualities, and promoting citizen morality. Additionally, it is critical to improve the village regulations, conform to the spirit of the rule of law, modern governance concepts, and promote organic integration between autonomy, rule of law, and moral governance. It is necessary to initiate a campaign of promoting new conventions and customs, fostering a culture of civilized rural living, guiding villagers to cherish scientific and cultural advancements, and shun feudal superstitious activities, thereby enhancing their scientific, cultural, and moral qualities.

At the ecological civilization level, post-disaster reconstruction must prioritize and strengthen ecological protection and restoration. Firstly, it is essential to promote comprehensive human settlement environment management, execute home beautification, village greening, illumination, environmental purification, and “five-part project” initiatives, showcasing high-quality and distinctive beautiful countryside landscape. Secondly, the reconstruction must consider preventing and controlling three major defense battles against air pollution, water pollution, and soil pollution, promoting the improvement of sewage, garbage treatment facilities, advancing rural non-point source pollution management, and carrying out rural toilet revolution. Lastly, it is vital to aggressively propel natural forest protection and soil and water conservation projects. The results of ecological civilization construction must benefit the earthquake stricken areas comprehensively, elevating their status in comprehensive ecological civilization construction <sup>[5]</sup>.

### **2.1.3. Strengthening the Weak Points to Promote the Common Progress of People and Society**

Through the test of the earthquake disaster, the deficiencies and weak points in the social and ecological construction of the disaster area have become evident, including: weak industrial support, a fragile community economy, stagnant industrial upgrading, low agricultural efficiency, and increased hollowing out of rural areas, which, combined with financial constraints, are the biggest impediments to high-quality development. The underdeveloped infrastructure in the region poses significant public safety hazards, and the late start of smart city construction has resulted in

overburdened public resources. There is a glaring contradiction between development and ecological protection and land resource conservation; changes in population, industry, infrastructure, and political culture have a direct impact on the regional land ecological system [6].

In terms of industrial layout, the primary focus should be on fostering new entities in agriculture while implementing projects that nurture new agricultural business entities, to support them as the main force in building modern agriculture and propelling its development. Through tax benefits, funding support, and other policies, the development bottlenecks of industries such as information technology, research and development, and cultural innovation, can be overcome by supporting strong industrial giants and nurturing technology-driven growth firms that develop characteristic and counter-cyclical industries.

As far as regional layout is concerned, the first step is to depend on the resources of the Laixi River to build an advanced area combining tourism and agriculture. Then a pre-development zone should be established around the primary axis of the harbor city avenue that merges agriculture and industry, followed by the promotion of a comfortable and delightful countryside zone based on the infrastructure development of the county town. Subsequently, rural-urban integration development strategies should be adopted to create a community that advances in conjunction with the urban-rural collective zone and, finally, a pioneering zone for nurturing a sustainable paradise combining tourism and agriculture. By scientifically organizing and allocating resources, a solid foundation can be laid for high-quality development.

## **2.2. Reconstruction of the Social Ecological Meso System in Earthquake Stricken Areas to Achieve High-quality Development**

### **2.2.1. Strengthening the Construction of Grassroots Government Organizations and Give Full Play to their Role as the Mainstay in Rebuilding**

Solidify the foundation of organizational construction and consolidate the strength of grassroots organizations. In the work of earthquake relief and post-disaster reconstruction, government departments must shoulder their responsibilities and continuously strengthen their leadership in the region by improving their organizational construction, equipping government-level teams, and standardizing government branches, etc. Applying the theory of social ecological systems, innovative work measures should be taken around organizational construction, ideological construction, and style construction, and explore the establishment of a “three-in-one” work pattern for government branches [7].

Promote team building and comprehensively improve the competence of cadres. To achieve this end, a long-term mechanism for cadre training needs to be established, adopting a comprehensive “theoretical training + simulated training + tracking effectiveness” model. Various forms of learning, including “invitation-based events + field trips”, “online + offline”, and “history education + member education”, should be implemented to provide continuous and empowering education for village (community) cadres.

Strengthen government guidance and improve community governance mechanisms. Efforts should be made to pursue the following three objectives: Firstly, promote the joint construction of community property governance by integrating governmental organization building and property management. It is essential to construct a linked governance pattern comprising the “residential district government organization + homeowners’ committee + property service enterprise” under the leadership of community organizations. Secondly, promote the construction of community shared space demonstration points to implement a “governmental organization building +” and “property management +” service. Thirdly, implement the “Four Micro Governance into the Community” campaign-“micro-battlefield”, “micro-classroom”, “micro-wish”, and “micro-action”.

Deepen the concept of “walking in the footsteps of the people” and solidly advance the concept of “safeguarding the people’s hearts”. By aligning government members and cadres “on the front lines”, we can engage in post-disaster reconstruction, provide volunteer service activities, and establish a dense red “protective network” that supports effective pandemic control. Through these efforts, we can effectively address the pressing needs and concerns of the people.

### **2.2.2. Speeding up the Restoration of the Functions of Organizations and Enhancing the Capacity of Social Production and Service Safeguarding**

It is imperative that each organization resumes their respective duties. Due to the sudden and unpredictable nature of earthquakes, the social ecology system is inevitably devastated in the aftermath of such disasters, and the intermediate system in the social ecological system is in a state of temporary stagnation or functional transformation. Only by expeditiously restoring the functions of organizational institutions and enhancing the capacity of social production and service safeguarding, can the social ecology system in earthquake stricken areas transition from “mutation” to “stability”.

Furthermore, it is essential for individuals and organizations to make contributions to society to the best of their abilities. The occurrence of earthquake disasters inevitably results in significant changes in the conditions under which individuals or organizational institutions contribute to society. Under these changed conditions, only by adhering to the principle of continuous contribution to society, can the social ecology move forward.

Finally, it is important for individuals and organizations to take up their respective social responsibilities. In modern social ecology systems, the division of labor and positioning of individuals or organizational institutions are more refined and clear. Thus, the demands on each actor’s responsibility for the social ecology system are more stringent. Only by assuming the responsibilities that the social ecology system imposes and fulfilling them can the social ecology system recover its inherent vitality.

### **2.2.3. Forming an Overall Social Linkage and Enhancing the Capacity of Social Organizations to Develop**

Earthquake relief and post-disaster reconstruction have disrupted the normal development trajectory of social organizations, as well as the normal development trend of the social ecology system. From the perspective of the mutual influence of humans and the environment, a comprehensive and multi-angle analysis of the causes should be conducted to find the best overall solution, solve the problems faced by specific groups, help them overcome difficulties, and promote healthy social development <sup>[7]</sup>. This requires social organizations in the mesoscopic system to have internal developmental dynamics that promote mutual growth. By means of internal reconstruction, reform, transformation, and other efforts, endogenous development drives can be generated. Meanwhile, the integrity of the social ecology system demands that each social organization use their functions and responsibilities to form an interlinked social network that can develop under the drive of the social ecology network. This will enhance their development capacity as societal ecological development demands change.

## **2.3. High-quality Reconstruction of Social Ecological Micro System in earthquake Stricken Areas**

### **2.3.1. Give Full Play to the Pioneering and Exemplary Role of Governmental Staffs**

Government officials in the earthquake stricken areas should set an example in politics. They

should firmly establish the “four consciousness”, strengthen the “four confidences”, and maintain the “two safeguards”. They should also take the lead intellectually by actively thinking about earthquake relief work in accordance with the requirements of political guidelines and adhering to scientific and green reconstruction principles. In terms of action, they should actively and regularly promote the “I do practical things for the people” activity and contribute to the high-quality economic and social development of the disaster area. Government officials are also a part of the societal ecology, and if they can lead as exemplars, the positive energy of the societal ecosystem will be enhanced, and the reshaping of the societal ecology will be more effective.

### **2.3.2. Focusing on Improving Individual Comprehensive Quality and Employability**

The earthquake relief and post-disaster reconstruction have raised higher requirements for individuals’ comprehensive qualities and employability, and individuals’ functional recovery in the societal ecosystem faces more difficulties. Therefore, it is necessary for society to provide more cultural training, skills training, and psychological counseling. People who have undergone training have broader horizons, more active thinking, greater confidence in themselves, and more job opportunities in more developed areas away from their hometowns [8].

### **2.3.3. Striving to Improve Individual Ideological and Moral and spiritual Civilization**

The earthquake disaster has had a profound impact on the worldview, values, and morality of individuals in the disaster-stricken areas, particularly those who have suffered significant familial upheaval. Consequently, their spiritual well-being has been subjected to tremendous turmoil. In the aftermath of the reconstruction effort, elevating the level of ideological and moral education alongside promoting cultural values and building spiritual civilization are crucial dimensions for assessing the effectiveness of any post-disaster recovery. The enhancement of the societal ecosystem’s soft power in the disaster-stricken area is contingent on these efforts.

## **3. Conclusions and Discussion**

### **3.1. It is the first Time to Apply the Social Ecology Theory to Analyze the social Ecology of the Earthquake-stricken Areas Objectively**

Drawing upon the theoretical framework of social ecology and the personal experiences of the author in the context of earthquake relief and post-disaster reconstruction, this paper offers a novel and objective analysis of the devastation wrought by the earthquake disaster across three-dimensional levels: namely, micro, meso, and macro. This analysis provides valuable insights that can inform and guide emergency management decision-making in future disasters.

### **3.2. Through the System Demonstration, Puts Forward the Viewpoint to the Post-disaster Reconstruction and the High Quality Development**

In the context of promoting high-quality development, this paper presented a pathway and methodology for the reconstruction of social ecology at the macro-level in earthquake stricken areas. The key aspects considered include the comprehensive and accurate implementation of the new development concept, the central focus on the people, the elimination of weak links and the bolstering of strengths, and the advancement of collective progress between individuals and society. At the meso-level of social ecology, this paper proposed strategies that involve strengthening grass-roots governmental organization construction to leverage the central role of these organizations, the acceleration of the recovery of organizational functional capacity to enhance social production and



service security capabilities, and the formation of overall social cooperation to elevate the developmental capability of social organizational institutions. At the micro-level of social ecology, the paper outlined important points related to the full utilization of governmental officials' exemplary leadership roles, the focus on enhancing individual comprehensive qualities and employability, and the crucial emphasis on improving individual moral and spiritual maturity. Through systematic analysis, this paper served as a feasible reference guide for addressing high-quality development in earthquake stricken areas.

### 3.3. Discussion

The impact of earthquake disasters on the social ecology of disaster-stricken areas is considerable. The correlation between the intensity and frequency of earthquakes and aftershocks with the destruction and influence on the social ecology of disaster-stricken regions warrants further investigation by experts and scholars.

In the reconstruction of social ecology in earthquake stricken areas, more attention has been given to hardware construction. However, the importance of software construction relating to ideological and moral values and spiritual development in social ecology reconstruction must not be overlooked. Further research is needed to determine the significance of these factors.

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