Preliminary Study on Social Stability Risk Assessment of Land Integrated Renovation Project: A Case Study of Shichuan River Project in Fuping

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Abstract. Many uncertain factors in the construction of major projects may lead to social stability risk events. Taking the land integrated renovation project of Shichuan River (Urban Section) in Fuping as an example, this paper discusses the connotation of social stability risk in the land renovation project, and claims that during the construction and management of the land integrated renovation project of the Shichuan River (Urban Section) the risk of land acquisition and demolition and the risk of environmental damage are the more important risk factors in the identification of social stability risk.

1. Introduction

1.1. Background of social stability risk assessment
In the past decade, China's industrialization process has accelerated, infrastructure level has leapt, people's living standards have improved significantly, and social development has achieved remarkable results. But while achievements have been made, the social stability risks associated with the implementation of these major projects have often been overlooked. It is an urgent problem for the government, experts, scholars and construction companies to foresee and reasonably mitigate the potential risk. China has not yet formed a social stability risk assessment system before 2005 [1], and group incidents happened frequently from 2005 to 2009, "social stability risk assessment" became one of the key words in urban development [2]. Many provinces and cities have enacted relevant policies and regulations so far. This paper refers to the document issued by the General Office of the Communist Party of China and the General Office of the State Council in February 2012, combined with the examples of land integrated renovation project, to provide reference for the analysis of social stability risks in the industry, and to provide direction for project risk management.
1.2. Current situation of social stability risk of land renovation project

The land integrated renovation project has the characteristics of large scale, huge investment, long cycle, high risk, complex stakeholders and strong regional influence and so on [3]. Referring to a great deal of documents, social stability risk assessment in the fields of urban construction, hydraulic engineering and other infrastructure construction have gradually been paid attention to in theoretical research, while the related research in land renovation project focuses on the inducement or influence of land acquisition conflict [4, 5], while the analysis of other social risk factors is less. For a variety of reasons, it will lead to serious risk of social stability crises when conflicts among stakeholders, construction companies and government can’t be resolved [6]. In this paper, we will discuss how to further improve the risk assessment process of social stability of the land integrated renovation project by a case study of Shichuan River (Urban Section) in Fuping.

2. Project overview and benefit

Shichuan River is located in Fuping County, Shaanxi Province, China. It flows from northwest to southeast. The land area of Shichuan River basin is about 1233 km². Due to the expansion of land area and other factors, some watercourses have been covered or filled up, then lost their function [7]. In 2013, Fuping County carried out the land integrated renovation program of the Shichuan River (Urban Section). This paper may provide some references for social stability risk assessment for land integrated renovation projects through comprehensively analyzing the project contents and the social benefits of the land integrated renovation project of the Shichuan River (Urban Section).

2.1. Land integrated renovation technique

2.1.1. Soil remediation. This project applies physical reconstruction technology, which will be treated by soil replacement technology. The main measures are to remove the bottom mud of the river bed, remove the polluted surface soil and collect the garbage piled up in the river course, and then replaced them with clean soil, which will effectively reducing the soil pollution [8]. For the contaminated soil, the disposal methods are as follows: domestic waste will be transported to the landfill site for centralized treatment, and the waste soil containing humus is treated as the filling material of the shore landscape, while the left soil is disposed on-site. For water pollution, self-purification is the main way to keep the water clear [9].

2.1.2. Ecology remediation. To realize the goal of ecological construction, and survival rate of animals and plants in the river, the rolling dam project is designed after the construction in river course, which can reduce the flow velocity of the river and solve the problem of low oxygen content in the water. The roller dam can guide the upstream water to increase aeration and increase the oxygen content in the water. In addition, the roller dam uses rubber as its material, which reduces the project cost and has less impact on the environment. In the process of landscape design, the principle of harmonious coexistence between human and ecology is considered, and the soil is reconstructed organically. The ecological slope protection was adopted and the slope protection plants were planted in the slope protection projects on both sides of the river [9].

2.2. Project benefit

2.2.1. Ecology benefit. The implementation of the land integrated renovation project of the Shichuan River can control the river pollution, enlarge the waterfront space, strengthen the air circulation and improve the water environment of the basin. At the same time, the lower reaches of the river adopt the intermediate water treatment station to treat the waste water, which reduces the water pollution and discharge, improves the surrounding environment and forms a beautiful, ecological, safe and river course with landscape. The project plays an important role in enhancing the overall image and taste of the region. In addition, watershed management reduces the isolation of "island" habitats, enhances the
region's resilience to natural disasters, and forms public open spaces, which is of strategic importance
to local development [9].

2.2.2. *Economy benefit.* The implementation of the land integrated renovation project of the Shichuan
River (Urban Section) in Fuping has greatly improved the ecological environment on both sides of the
river and enriched the recreational and cultural activities for local residents. Both shores are in the
process of commercialized development, top-end nursing home and third-class hospital are also in the
phase of planning and construction. Beautiful scenery along the riverside and closeness to a good middle
school have led to the growth of housing prices. The beautiful riverside landscape, high-end commercial
district and convenient infrastructure have attracted people from Xi'an, Tongchuan, Yanliang and other
places around to settle down, which has promoted the healthy economic development in the region. The
implementation of the project has improved the environment, improved community functions, improved
cultural service conditions, and improved residents’ life style.

3. **Social stability risk assessment in land integrated renovation project**

3.1. **Social stability risk assessment process**

The Social Stability Risk Assessment of major projects is based on the maintenance of regional social
stability, and the risk factors that may endanger the social stability of the project area are predicted,
investigated and identified in a systematic and scientific way before the project is implemented, while
comprehensive evaluation of risk level is analyzed and reasonable measures to mitigate risks are
formulated afterwards.

(1) Risk Investigation. Risk investigation is the basis of risk assessment. According to the
characteristics of the project and the actual conditions of the site, a variety of survey methods are land
integrated, opinions (including reasonable and unreasonable, realistic and potential demands) from
various stakeholders were fully collected, based on which the internal management factors and external
environmental factors that induce the risk of social stability are investigated.

(2) Risk Identification. Risk identification is a systematic and continuous identification of risk based
on risk investigation, focusing on the analysis of the causes of risks. Based on the results of risk
investigation, the stage of risk is studied in the situation that may lead to conflict, or the standpoint that
the stakeholders do not understand, approve, or support. The cause and property of risks and the
relevance of each risk need to be analyzed. Check list method, brainstorming method, scenario analysis
method, flow chart method, system decomposition method etc. are well known recognition methods
[10].

(3) Risk Assessment. Risk assessment generally includes the determination of evaluation content,
evaluation method, single risk factor ranking, comprehensive risk rating and so on. According to the
official document, the content of evaluation is composed of four chapters: legitimacy, rationality,
feasibility and controllability, to evaluate supportability of the external environment, and controllability
of the potential risks. It is preferable to combine quantitative and qualitative methods, such as Delphi
Method, questionnaire method, case comparison and so on [11].

(4) Risk Mitigation. Risk Mitigation is to determine risk mitigation measures, to complete
contingency plan and risk monitoring-warning process based on evaluation conclusions.

3.2. **Risk factors of land integrated renovation projects.**

The identification of risk factors is the most important step in the whole process of social stability risk
assessment, whose accuracy has marked impact on the result of the risk assessment process. Therefore,
this paper will focus on the identification of risk factors of land integrated renovation projects. There
are six kinds of risk factors in construction projects, construction risk, environmental risk, ecological
risk, economic risk, safety risk and social risk [12].

The land integrated renovation project of the Shichuan River (Urban Section) is consistent with the
City Development Program. The design and construction documents have approved by government.
Moreover, the project is a benefiting program with initiative risk, which is controllable by construction companies. Based on the analysis of the project general situation and the benefit, it is considered that the construction and operation technology of the project is less complicated, safety index is relatively high, and construction safety risk is rather low, while the project has little influence on water, electricity, transportation and other daily life. In addition, the government, construction company and media have done certain publicity work in the early stages of the project to make the people fully aware of the necessity of this project, to understand the improvement of ecological environment and living standard that this project may bring. At the same time, this project is a PPP project led by the Fuping County government, which reduces the risk of capital and project management to a certain extent.

In the process of social stability risk assessment of the land integrated renovation project of Shichuan River (urban section) in Fuping, the risk factors of land requisition and demolition, and the risk of ecological environment should be identified.

(1) Land Integrated Renovation Project will inevitably involve the issue of land requisition and demolition. Since land requisition and demolition involves the interests of the residents and organizations, if the stakeholders and government can not come to an agreement on land requisition and demolition, it may lead to a situation that stakeholders stand on the opposite side to government. Once this negative sentiment has accumulated, it is likely to turn into a violent event, such as furious boycott, mass petition, refusal to remove from their homes, violent confrontation, and demonstrations, thus affecting social stability.

(2) The ecological and environmental risks of the land integrated renovation project are mainly caused by the waste water, waste gas, solid waste and the destruction of the ecological environment. The wastewater mainly includes mud water from excavation, daily sewage water from construction workers, oily wastewater from washing and repairing of construction machine and transport vehicles, and rain erosion of floating soil, building sand and other surface runoff sewage. The construction activities such as surface excavation, backfill, abandoned soil and transportation of soil will affect the land resources and vegetation in the region, and may cause the risk of local ecological environment change.

4. Conclusions
Many uncertain factors in the construction of major projects may lead to social stability risk incidents; the social stability risk assessment of the land integrated renovation project is deficient both in practice and in theory, despite the fact that several relevant policy documents have been issued by the state. Taking the land integrated renovation project of Shichuan River (Urban Section) in Fuping as an example, this paper discusses the connotation of social stability risk of major land renovation projects from the basic theory of risk management by consulting relevant papers. The risk assessment process of land renovation is proposed, and it is considered that during the construction and management of the land integrated renovation project of the Shichuan River (Urban Section), the risk of land acquisition and demolition and the risk of ecological environment are the dominate risk factors in the social stability risk identification of the project.

In addition, due to the strong spatial-temporal impact of major projects and the large number of stakeholders, the results of this study are biased towards comprehensive analysis. In practice, it should also be targeted at the actual conditions of the project and regional characteristics, focusing on the potential regional conflicts and the core conflicts of stakeholders. The dominate risk factors need to be carefully identified in order to further select and determine the evaluation indicators and corresponding measurement methods, to ensure the effectiveness of the project risk assessment results, and provide guidance for the formulation of social stability maintenance measures.

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