



Using Involuntary Resettlement on Highway Projects to Alleviate Poverty: A Case Study from the Hubei Shiman Highway Project in China

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When properly designed and implemented, involuntary resettlement on highway projects can be used to improve overall living conditions and alleviate poverty for those affected by the project.

This technical note describes how this was achieved on the Shiyuan-Manchuangan Expressway project in Hubei China. By focusing on sustainable land development, better housing standards and infrastructure access, and centralized resettlement communities, the project has improved living standards and raised incomes for most affected residents. Public participation and continuous dialogue with affected parties throughout the project helped address residents' concerns and contributed to the positive outcome. These practices can be applied elsewhere to help achieve satisfactory resettlement outcomes.

Involuntary Resettlement in China

Resettlement can be a challenge in any transport project, particularly in China with its high population densities and limited available unused land. However, when a project's resettlement activities are properly designed and have the full support of the client, it is possible to overcome the challenges and achieve a successful outcome for those affected by the project.

This note highlights the factors that contributed to the successful resettlement activities under the Hubei Shiyuan-Manchuangan Expressway (Shiman) project, with particular emphasis on how they contributed to poverty alleviation for most affected persons. These practices can be applied in other projects to have similar successful resettlement outcomes.

The Shiman Highway Project

The Shiman highway project is located in the mountainous northwest area of Hubei Province in central China. It consists of a 107 km expressway that travels from near Shiyuan City to the border with Shaanxi province.

In accordance with the World Bank's safeguard policies, a Resettlement Action Plan (RAP) was prepared and disclosed prior to the start of construction. The RAP described the extent of resettlement, identified affected persons and resources, defined how resettlement would be addressed, and explained institutional arrangements.

About 780 ha of land in four counties was requisitioned for the project, including 363 ha of cultivated land. An area of 249,646 m² was cleared of buildings, including 69,554 m² of brick-concrete buildings, 32,470 m² of brick-wood buildings, 114,621 m² of earth-wood buildings and 33,001 m² of simple buildings. Some 1,480 households relocated, involving 5,007 persons. The extent of the resettlement activities was typical in China for an expressway project.



Shiman Alignment

Resettlement Organization

There are no detailed national requirements for resettlement in China. A comprehensive resettlement program was designed and implemented by the provincial resettlement group. The group was led by a vice governor and comprised officials from the Hubei Provincial Communications Department (HPCD).

In China, land acquisition/resettlement work is the responsibility of the Provincial Land Bureau, rather than the project owner (here, the HPCD). However, the HPCD appreciated from the beginning that the resettlement work needed to be treated as a project component and that it would be key to the project's success. Through their experience on two previous Bank-financed projects, the HPCD had learned that ensuring effective resettlement would reduce complaints and lower the potential for legal action that might otherwise slow down project implementation.

The importance of effective resettlement was further strengthened by the province's commitment to reducing poverty and supporting the national

government's New Socialist Countryside Plan, which emphasizes poverty reduction, centralized village sites and land development favorable to local farmers.

The HPCD established the Hubei Expressway Resettlement Office (HERO) to manage operations and ensure compliance with the RAP. HERO supported a multilevel organizational framework to plan and implement resettlement, with resettlement offices at the project level and several levels of government, including city, county, and township. All local offices were staffed by qualified resettlement specialists who received additional training.

HERO was involved in all stages of resettlement, from pre-construction through implementation to completion. Retaining the same experienced and capable team throughout the project ensured the quality of resettlement activities.

Key Institutional Factors Contributing To Successful Resettlement

- Recognition by the HPCD of the importance of resettlement
- Establishing the organizational framework in the project area during RAP preparation
- HERO staff continuity throughout the project
- Appointment of an experienced consultant to guide RAP preparation and implementation
- Staff learning by participating in RAP preparation

One of the project's objectives was to ensure that replacement houses were available prior to the demolition of existing houses. To achieve this, field surveys were begun over 18 months before construction commenced in November 2004, in order to identify those who would be affected. Particular emphasis was placed on the poor, who have limited income resources to reconstruct their new houses, and on preparing village-based land development plans. Teams composed of local government officials and representatives of the villages, the Hubei Land Resources Administration Department and the HPCD participated in these surveys.



New homes for 15 resettled families in Wuyuping

An independent consultant was used to monitor resettlement effectiveness, prepare bi-annual reports, and summarize the final outcomes.

"... the resettlement under the expressway makes us walk out ... from a mountainous area to a roadside, from earth house to brick house, from single story building to multi-storied house, from inside of the mountain to the outside, and from village to township, and it also provides our offspring with a hope."

Villager

Management and Distribution of Resettlement Funds

Since in China land is collectively owned, the local villages played an important role in the resettlement activities. They were directly responsible for the distribution of resettlement funds, a process that followed these steps:

- The affected villages submitted detailed explanations of how they were affected by the project to the appropriate resettlement organization.
- The resettlement organizations at all levels and the local governments carried out training for village-level administrative departments and directed them to formulate appropriate development plans and resettlement fund use plans in a transparent manner.
- The village-level administrative departments negotiated with the affected persons, establishing the final resettlement fund use plans. These plans were submitted to the county/district level resettlement offices for review.
- The county/district level resettlement organizations reviewed the resettlement fund use plans and helped the villages to finalize them. No resettlement funds would be disbursed to a village without a feasible resettlement funds use plan.
- Once the county/district level resettlement organizations approved village-level resettlement fund use plans, they then disbursed the resettlement funds gradually according to the approved plans.

Compensation for houses and structures was paid directly to the affected persons. The county/district or township resettlement offices opened special accounts in local banking institutions for affected units, collectives and individuals and deposited funds directly into the accounts.

The resettlement offices at all levels made copies of the compensation rates documents issued by HERO, sent them to each relocated household, and publicized them in public places.

In some locations the relocated households received their compensation passbooks directly from township resettlement offices, while in others the resettlement offices gave cash passbooks to relocated households. One county resettlement office insisted on paying compensation in such a way that the compensation



Xujiapeng Resettlement Site

rates and amount of money were publicized and the passbooks were filled in by banks. These passbook approaches reduced the number of intermediate steps in receiving compensation, avoiding potential deductions and misappropriations. The relocated households

took all their compensation as soon as possible to cover the costs of new house construction.

Public Participation

The project carried out an extensive public consultation program throughout the entire project. Sixty-six village committees and 40 community neighborhood committees were involved in resettlement land development plans. Members of the 46 villages affected by the project had the opportunity to participate in the planning and decision-making process for land acquisition and resettlement.

The consultation process proved to be of great value in improving not only the effectiveness of resettlement activities, but also the quality of project design. The public made useful suggestions on the



Consultation with villagers

expressway alignment, the selection of centralized resettlement sites prior to relocation, the allocation of housing lots at these sites, land reclamation, the allocation and use of collective compensation, and the location and design of culverts and underpasses. Where appropriate, these suggestions were incorporated into the project design. For example, an underpass was provided for school children to travel from their school to the village; additional underpasses were provided to give farmers access to their land or villages.

The project adopted the following communications measures to help ensure transparency of resettlement.

- Before land acquisition and relocation began, announcements were made in public places in all townships and villages along the expressway, giving an overview of the Shiman project and the main policies and measures for resettlement.
- The RAP was publicized at all areas along the expressway so the affected residents would have access to its content.
- The HERO printed and issued a Resettlement Information Booklet to each affected household.
- The booklet contained the overview of the project, national and local policies and laws, compensation rates for structures and other affected possessions, and the number of affected family members in the household entitled to compensation.
- When the implementation of land acquisition and relocation began, the resettlement organizations at all levels issued resettlement information to affected persons by television, radio, leaflets, wall-newspapers and village conferences.

Addressing Grievances

The project put in place procedures for receiving and addressing complaints, establishing grievance channels at all levels of resettlement offices. Villagers could complain directly to HERO or the resettlement office at each county, or to their village leaders. Village leaders would report complaints to the resettlement office. Independent monitoring also played a role in monitoring complaints. Complaints were dealt with in a timely manner, for example, by authorizing county level officials to immediately deal with issues costing less than RMB50,000 (about US\$7,000) and then report to HERO, rather than wait for HERO's authorization.

The principal complaints were:

- inconvenient or delayed provision of sewers, roads, electricity and water to resettlement sites;
- landslides around resettlement sites;
- inadequate funding for basic facilities at centralized resettlement sites;
- damage to irrigation systems;
- using land compensation fees to pay debts;
- dissatisfaction with village assignment of housing lots;
- blasting damaging to near-by structures and windows; and
- insufficient land allocated to residents.

When grievances were identified, specific actions were taken to ensure that they were addressed to the satisfaction of all parties. For example, a complaint made to a World Bank supervision mission concerning a housing site was immediately investigated by HERO and a satisfactory solution found. The independent monitor confirmed the affected person was satisfied with the outcome, and this was verified by a subsequent Bank mission.

Resettlement Strategy

From the very start, the project adopted a number of specific objectives with regard to resettlement.

Minimize Resettlement Impact: The road alignment was optimized at the design stage, and when possible during construction, to minimize the resettlement impact. This approach served to reduce the total amount of land required by the project by over 26% from preliminary estimates, and the number of affected persons by over 25%.

Save Cultivated Land: On this mountainous terrain, cultivable land is scarce. As villagers in the area rely on farming for survival, the project sought to limit the road's impact on cultivated land. In some areas the alignment was modified during the design stage to protect farmland. At the same time, many of the houses had little value, especially the earth-wood houses, and many farmers dreamed of building new houses. After broad public consultation, the HPCD decided to acquire more built land and less cultivated land. Compensation rates for house demolition were increased by the HPCD for this purpose. These efforts resulted in savings in cultivatable land acquired from 11% to 57% depending on the type of land.

Create New Arable Land: Over 113 ha of arable land was created in one of three ways. The most common method (over 93 ha) was by using waste earth from the construction activities to fill ravines. After leveling, they were covered with topsoil. Waste earth was also used to fill unused land and cold spring paddy fields, which changed them from no/low yield to high-yield farmland. Finally, in conjunction with the contractors, construction machinery was used to convert unused slopes into terraces. These newly created lands were returned to rural



Crops planted on new arable land

communities for cultivation at no charge (no reduction in resettlement funds).

Relocate to More Productive Land: Poverty, defined by national standards as less than the average GDP per capita (8,319 Yuan in Hubei Province in 2002), is widespread in the project area. Indeed, some areas that the Shiman expressway passes through have extremely limited land resources that constrain the production and earning capacity of area residents. Some 16 families were relocated to areas with better farming and commercial opportunities, and given additional funding to help them become established. This program was fully supported by those involved, who saw no future in their previous locations.

Centralize Resettlement Sites: The terrain did not always make it practical for new building sites to be found near the original locations. Where scattered resettlement was not practical, centralized resettlement sites were established to make efficient use of village infrastructure and services, with the support of affected villagers. Preparing these sites required the leveling of terrain and provision of water, power and road infrastructure, all of which were arranged by the project. Over 20 centralized sites were established and over 95% of residents were satisfied with the new arrangements and considered that they had improved their living conditions.

Restore Roads and Irrigation Systems: The construction of an expressway always impacts village roads and irrigation systems, especially during the early stages when there are major earthwork activities.



New aqueduct built by project

During this period, the project either temporarily protected existing structures or built new ones that allowed residents to move freely and maintain productive activities.

Monitoring and Evaluation

Resettlement monitoring was crucial to ensuring the success of the program. Several methods were used for monitoring and evaluation of resettlement activities including (i) standard reporting systems; (ii) regular liaison meetings with city, county and district resettlement offices; (iii) regular reporting on local progress and emerging problems, and exchange of experience and solutions adopted; (iv) regular field

inspections; and (v) ongoing public participation and continual dialogue with those affected to hear their suggestions and views about the resettlement process.

Nine monitoring indicators were adopted by the independent consultant to monitor resettlement effectiveness.

- familiarity of affected persons with the resettlement process;
- regular submission and availability of monitoring reports to the resettlement organizations at all levels;
- regular visits to resettlement organizations to gauge work progress;
- collection of comments on resettlement work from affected persons;
- collection of resettlement information from local residents via surveys;
- community meetings held in public areas convenient to affected residents in order to collect information and feedback;
- regular visits to resettlement sites;
- examination of activities from similar projects to benefit from lessons learned; and,
- staying in touch with affected residents through distribution of booklets, or by telephone, letter, or email, to disseminate information and increase transparency.

Finally, at the completion of the project, the World Bank arranged for a detailed survey to assess the effectiveness of the resettlement effort.

Effectiveness of the Resettlement Program

“Even if now I have a rough time for moving, I am pleased because this benefits our own offspring.”
Villager

The resettlement activities can be divided into three stages:

- **Housing:** Starting in 2004, the first activities focused on replacing houses.
- **Infrastructure:** After new housing was in place, from mid-2005 the emphasis was on land reclamation, restoring farming production, and farm support activities such as irrigation and rural road reinstatement.
- **Wrap-up:** After the first two stages of resettlement were essentially completed in late 2006, the focus

was on identifying any oversights or leftover problems to ensure that livelihoods were restored.

In late 2007, on behalf of the World Bank, the independent resettlement consultant assessed the overall performance of the resettlement program. The assessment randomly sampled 20% of the affected households. Some 79% of those sampled were affected by land acquisition and relocation; 16% by relocation only, and 5% by land acquisition only. A total of 1,295 persons were involved in this survey, including 775 laborers (above 16 years old, no students) and 406 persons doing farm work where they lived.

The effectiveness of the resettlement program was assessed in terms of improvement of physical infrastructure, satisfaction with resettlement, and livelihood rehabilitation.

Physical Infrastructure Improvements

Improvement in Housing Standards: Two measures of housing quality were used: building materials and number of floors. Prior to the project, the majority of houses were single-story, earth-wood houses over 15 years old. After the project, there were no earth-wood houses, and most were two-story houses. The size of homes also increased. Prior to the project some 28% had floor areas below 100 m², and only 18% had more than 180 m². Afterwards, only 9% were below 100 m² and 80% were over 180 m².



Earth-wood house



New brick-concrete house

Table 1: Change in housing materials

Brick-concrete		Brick-wood		Earth-wood	
before	after	before	after	before	after
26%	97%	16%	3%	59%	0%

Table 2: Change in House Type and Size

One-floor		Two or More Floors	
before	after	before	after
84%	12%	16%	89%

Isolation: Owing to the mountainous terrain, many of the original houses were isolated with limited access to

roads. Before the project, 21% were within 10 m of a road, and 16% were over 500 m from a road. After the project, 33% were within 10 m of a road, and only 3% were over 500 m from a road. The average distance to a road was reduced by 55%.

Access Improvements: Before the project, there were three types of access to houses: (i) informal roads (open land), (ii) simple walkways, and, (iii) formal roads. Only 5% had informal roads before the project and this was reduced to 0% after the project. The number with formal road access was increased from 41% to 75%. Many new settlement areas also now have access to the Shiman expressway via connecting roadways. This improved road access supports better living standards through improved access to market, education, and social services.

Drinking Water Improvements: Three different sources of water were available prior to the project: (i) river and pond water, (ii) well water, and (iii) tap water. Whereas at the start of the project some 64% of the households had access to tap water, 100% had tap water after the project.

Access to Electricity: Electricity access at the start of the project was very high, and by the end of the project all households had access to electricity.

The resettlement program was therefore successful in physical terms because (i) most relocated households lived in better quality, larger houses; (ii) there was better access to better quality roads; and (iii) all households had access to electricity and better quality water than before.

Satisfaction with Resettlement

The post-resettlement survey asked whether people were satisfied with the resettlement process, and whether their standard of living had increased and the quality of their living environment had improved.

When considering satisfaction, it needs to be appreciated that some 42% of those resettled would have been pleased to be resettled even in the absence of the project. This percentage varied by location, reflecting the fact that some areas were particularly isolated or more mountainous, or had less arable land than others.

Living standards increased for some 71% of those resettled, and a majority also experienced an improvement in the quality of their environment. The owners of brick and concrete households were less satisfied than others since the quality of the relocated houses were not improved.

Table 3: Assessment of Resettled Conditions

	Better	Unchanged	Worse
Standard of Living	71%	16%	13%
Quality of Living Environment	51%	32%	17%

When asked for their views on their overall satisfaction with the resettlement process, 42% were very satisfied; 32% were satisfied and 26% were dissatisfied. Those who were dissatisfied gave these reasons: (i) an unsatisfactory compensation rate because the actual cost of brick houses was more than the replacement cost for earth-wood houses (46%); (ii) inadequate transparency of the compensation process (7%) since the old houses were compensated equally to the new; (iii) difficulties in relocation and resettlement (22%); and (iv) no place for those resettled to raise livestock at the centralized resettlement areas (25%). The importance of the different reasons varied depending on the location.

It was suggested that the levels of satisfaction would have been increased by (i) raising the compensation rates to better reflect the costs of new construction (48%); (ii) paying more attention to disruptions during infrastructure construction (26%); (iii) carefully considering the working needs and daily lives of peasants when planning new housing sites (22%); and (iv) paying more attention to the participation of displaced persons during rehabilitation (4%). However, in spite of compensation rates forming such a dominant role in dissatisfaction, 80% surveyed thought it was reasonable to adopt the compensation rate provided for in national land compensation legislation.

Satisfaction with Livelihood Rehabilitation

By both income and subjective measures used in the survey, livelihoods have been improved. Comparison of income levels of affected families before and after resettlement shows a 60% increase in average income from RMB6,148 in 2004 to RMB9,850 Yuan in 2007. The increases occur for all activities, with a doubling of income from industrial and commercial sources.

Table 4: Income levels of affected families before and after resettlement (RMB Yuan)

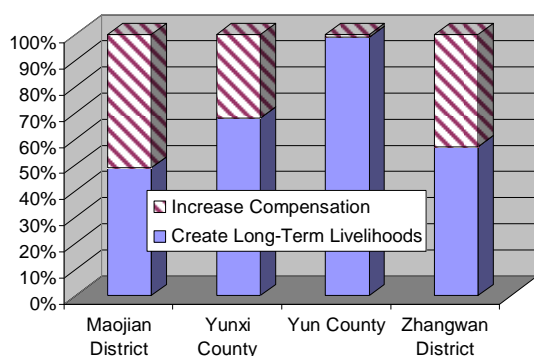
	Planting	Fishing & poultry	Industry & construction	Transport, commerce & service	Gross income
Before (2004)	2,640	466	1,953	1,089	6,148
After (2007)	3,425	687	3,399	2,339	9,850

In the subjective evaluation, the survey found that 75% of affected families felt their livelihood has obviously improved, 16% that it has improved somewhat, and

4% that it had stayed the same. Among the 4% who felt that livelihood had fallen, most had experienced illness or accidents unrelated to resettlement.

The survey results also showed the high priority assigned by affected households to creating better opportunities for long-term livelihoods by maintaining land for cultivation and providing suitable infrastructure, compared to the importance of increasing compensation.

Land Acquisition Priorities



Conclusions

Despite many challenges, including the limited supply of arable land, the resettlement efforts associated with the Shiman project are considered to be a success both in terms of physical infrastructure provision and overall satisfaction with the resettlement outcome. Some 71% of affected households have a better standard of living, 51% have a better quality of living environment, and 75% have a better livelihood, with average incomes having increased by 60%. This was achieved by adopting a strategy of using resettlement to alleviate poverty at the onset of the project.

The success of the resettlement program can largely be attributed to (i) effective leadership by the HPCD; (ii) efficient management and distribution of resettlement funds; (iii) public participation throughout the entire project and responsiveness to village issues and concerns; (iv) effective procedures for receiving and addressing complaints; and (v) dealing with complaints in a timely manner.

The focus of resettlement activities should be on assisting those affected to establish long-term livelihoods.

Some issues still continue to be resolved, including providing even better access to higher quality water. Despite the remaining issues, most residents feel their quality of life has increased as a result of this project.

Poverty Alleviation Strategy

View resettlement as an opportunity to alleviate poverty and improve living standards.

- Minimize resettlement impacts through proper infrastructure alignment and design.
- Use a social assessment survey to identify the key needs in the area.
- Provide sufficient compensation to replace assets at prevailing market prices.
- Implement income restoration activities as quickly as possible.
- Do not demolish houses unless alternative housing is available—especially in winter.
- Provide additional food, cooking oil, and money to comfort displaced poor families.
- Preserve cultivated lands.
- Create new arable land.
- Preserve and restore existing roads and irrigation systems.

For Further Information

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Reports and other information on the project can be downloaded from:

<http://tinyurl.com/255rny>

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