RESETTLEMENT AS DEVELOPMENT AND PROGRESS? EIGHT YEARS ON: REVIEW OF EMERGING SOCIAL AND DEVELOPMENT IMPACTS OF AN 'ECOLOGICAL RESETTLEMENT' PROJECT IN TIBET AUTONOMOUS REGION, CHINA

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Abstract

The relocation of rural people away from marginal or fragile lands is an increasingly common approach used in China to achieve environmental protection and development objectives. However at present few studies have been made of the social impacts of such resettlement projects in China. Several key social dimensions of a significant resettlement project in the Tibet Autonomous Region are therefore analysed and discussed in this paper. It was specifically posited that the research findings presented here would (1) provide useful guidance for local government offices and government staff workers who are engaged in poverty reduction and agricultural development work; and (2) help to give residents of the community under consideration more voice and opportunity to interact with the outside world. A field survey was designed and led by the lead author in June 2009, with semi-structured interviews and a questionnaire, to ascertain the present situation in the target village and thus help to provide a useful basis for future policy recommendations.
Keywords: alternative livelihoods, settlement, relocation, social and development outcomes, Tibet Autonomous Region.

Introduction

'Ecological resettlement' is a development strategy commonly employed in recent years in China. Its primary stated purpose is the protection of natural resources considered to be ecologically fragile, combined with a development goal to help rural residents in remote, impoverished or fragile environments 'to escape poverty' (Du 2006). This strategy has generally been applied in pastoral areas of China, particularly in the Mongolian and Tibetan grassland regions (Dickinson and Webber 2007, Foggin 2005, Ptackova 2011). Similar nationally supported development plans, that is, with significant resettlement components, also are (or have been) seen in other pastoralist-inhabited areas in Asia and Africa (e.g. in Kazakhstan, Ethiopia, Uganda; see Attwood et al. 1988, Bennett 1998, Biressu 2009, Kinsey and Binswanger 1993, Loomis 1988, Pulkol 1994). Such social displacements and restructuring have often been undertaken in conjunction

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with the establishment of national parks or other forms of 'protected areas' (Cernea and Schmidt-Soltau 2006, Dowie 2009, West et al. 2006).

While the policy of *shengtai yimin* has sometimes been translated into English as 'ecological migration' or 'ecological relocation', the authors' preferred translation (used here) is 'ecological resettlement' – because only this term properly reflects and incorporates all three major elements of this fundamentally transformative development strategy: (1) the environmental rationale of the policy (cf. ecological conservation), (2) the movement of rural residents away from marginal or ecologically fragile lands (cf. relocation), and (3) a concomitant change of people's livelihoods (cf. sedentarization, settlement). The term should also be distinguished at the outset from the notion of 'environmental refugees', people who may undertake permanent movement, or migration, for example as an adaptive response to multi-year drought with intense desertification. In the case of the implementation of development policies or the establishment of nature reserves, however, rural people move away from their original homes to new residences (often to new livelihoods) in response to development plans or policies, not in response to the environmental situation per se.

In addition, the concept of resettlement can be further expanded to include not only the obvious geographic element, but equally the planners' aim that the relocated people should find or develop alternative livelihoods, which they will settle into and where they may find a level of contentment, fulfilment, sense of purpose and ultimately a new living situation, a new status quo, and social stability. In short, while ecological resettlement plans have been advocated in China primarily on the basis of an environmental rhetoric, certain socio-economic development benefits have been promised or implied as well. Whether none, some, most or all of the hoped-for social development or environmental benefits of relocation and settlement programmes have been (or are being) achieved is a widespread area of current enquiry in China.

The Chinese government has already endorsed the resettlement of large numbers of people, livestock and communities across vast tracts of grassland throughout the country. However, ecological resettlement should still be recognized for what it is: a largely untested social experiment continuing to the present time, with little attention given to monitoring and learning lessons from the social impacts, whether positive or negative, on the resettled people. Where post-implementation social impact studies have been undertaken, the overall timeframe is still relatively short (that is, only a few years). To help to fill this gap in knowledge, local perceptions regarding some of the main social and development outcomes of the first ecological resettlement project undertaken in the Tibet Autonomous Region (hereafter, Tibet) are introduced, analysed and reviewed in this paper.

Policy Context

In recent years resettlement has been the main method used in Tibet to achieve the state's development goals, under the umbrella of the development programme 'Building Socialism through Revitalizing Villages'. The government anticipates that resettled people will be able to improve their living conditions in such new villages (*xincun*), and that their relocation away from ecologically fragile areas will help to reduce pressures on the land and thus improve the environment in the source areas, or headwaters, of some of China's major river systems (Foggin 2008). Government funds for ecological resettlement support the construction of new houses, roads, electricity, and water supply in new villages.

In central Tibet, resettlement projects are also embedded within the context of a longer-term, nationally sponsored agricultural development programme called the Yijiang Lianghe (One River, Two Streams) Project, which was originally launched in 1994. This project was introduced to the Namsaling area in 1998. The goal of this project is to bring agricultural and other development transformations to the whole region, including eradication of poverty, by creating a 'bread basket' in central Tibet. To this end, over RMB 4 billion (around USD 570 million) has already been invested, mostly by the central government (Yeung and Shen 2004).

The first and largest resettlement initiative undertaken under the Yijiang Lianghe Project is the Namsaling Dekhi New Village project. Over the past decade, the provincial government has invested around RMB 32 million (approximately USD 4.6 million) in the project, in several phases. This initiative was initially managed and supervised under a newly created project office, but was later reassigned to the Poverty Alleviation Bureau and Agricultural Development Bureau. The provincial government has made enormous efforts to establish this project as a model for poverty reduction across the whole region (ZPAO 2007). The majority of project funds have been used to develop an irrigation system, but to date water issues remain a concern for many villagers. Poor soil conditions and limited farmland, as well as housing issues and limited job opportunities, present other challenges for sustainable development.

Study Area

As a step towards filling the knowledge gap regarding social and development impacts of resettlement projects, the authors have reviewed the case of resettlement in Dekhi Village, situated in the Namsaling area of Chanang (Zhanang) County, Lhoka (Shannan) Prefecture, Tibet. Over the past decade, the Namsaling area has received the largest resettlement-related government investment in Tibet, largely under the auspices of the aforementioned Yijiang Lianghe project. It is under this agricultural project that the Namsaling Dekhi New Village (or Dekhi Village, for short) was planned, developed and populated.

Dekhi Village is located near a bend in the Yarlung Tsangpo River about 15 km west of the county administrative town. The village encompasses a sandy area of about 3,000 *mu* (200 ha). There were no trees along the riverbank a decade ago. The village name 'Dekhi' means 'blessed' in Tibetan. Nonetheless, the issue of limited irrigation water has long plagued Dekhi Village. Water is the key element for the survival and development of agriculture in this region. For this reason, the Yijiang Lianghe project invested RMB 15.3 million in 2001 to build a new irrigation system for use by the incoming villagers. Construction included a collection pond, a 210 metre dam, 148 water collection cisterns (one per household), 551 metres of water culverts, 2,945 metres of concrete irrigation channels, sixty-two water overflow outlets, six tractor bridges, three footbridges, and a large water regulation gate. The whole of the village's sandy land has been converted into 1,000 *mu* of cropland and 2,000 *mu* of roadside tree plantings. The basic rationale was expressed in the slogan: 'With the river as foundation, agriculture will succeed, thus leading to reduction of poverty.'

Many local people were keen to implement the ambitious Yijiang Lianghe project, including its associated ecological resettlement activities. Altogether 148 families moved to the new village – eighty-eight from Chanang County and sixty from Tsona (Cuona) County, from both farming and herding backgrounds – selected largely on the basis of their low economic status in their original home areas, in conjunction with official perceptions and positions regarding local environmental problems. As with other relocation initiatives in China, in such resettlements local people generally 'have been given inadequate right of participation and options in the process of their displacement and resettlement' (Yan and Qian 2004).

All the resettled people moved into 148 newly built houses. The resettlement plan specified standard house sizes. Households with one to three people received a 150 sq m house, families with four to seven people received a 300 sq m house, and families with eight or more people received a 340 sq m house. The houses had either one or two floors, and all included a 50 sq m yard. However, as none included an animal shelter, most residents with two-storey houses converted their ground floor into a barn, and many residents with single-storey houses converted half of their yards into livestock pens. At present the villagers' main economic activity is farming, with a total area of 1,500 *mu* (100 ha). County government documents also indicate that, before moving to the new village, the majority of villagers had only between 0.5 *mu* and 2 *mu* (0.03 to 0.13 ha) of land per capita – much less than the present (new) average. However not all individuals have benefited equally, and some have lost some land (in terms of area) in the resettlement. In addition, the project built one kilometre of road, and 3,500 trees were planted in the vicinity of Dekhi Village (ZPAO 2007).

At a broader geographic level, Chanang County (in which Dekhi Village is situated) is located in the south-central part of Tibet, in the middle section of the Yarlung Tsangpo River (Figure 1). The county has an area of 2,163 sq km with

around 67,000 *mu* (4,467 ha) of arable land. It has a population of approximately 35,000, of whom 99 per cent are Tibetan. The county is divided into eleven townships (*xiang*) and sixty-three villages (*cun*). The county is mountainous, with the valley of the Yarlung Tsangpo dividing it into roughly equal northern and southern parts. The course of the river through the county is 45 km long, while the river valley is around 8 km wide. Much of this width is taken up by the river itself, particularly at peak volume. At an average altitude of 3,680 metres above sea level, the county has a temperate dry plateau climate – with an annual average of 3,092 hours of sunlight, 140 frost-free days, and a precipitation of 420 mm. High winds are common during winter and spring, and natural disasters sometimes occur, including drought, sandstorms, snowstorms and flooding. The county town has long been a vibrant socio-economic centre, even prior to 1953, with a relatively long history of agricultural development, especially crops along the banks of the Yarlung Tsangpo. Today, the main industries also include the production of local handicrafts, such as pottery, gold and silverware. The main county town is located around 40 km from Lhasa Gongga airport, and transport access (e.g. to Lhasa) is relatively good. The Qutsu–Tsona Highway also runs through Chanang and the road network in the county extends 120 km. Public transport reaches eight villages in the southern area and there is also some river-based transport.

As mentioned above, the people and families who relocated and settled in the new Dekhi Village came not only from different areas of Chanang County, but

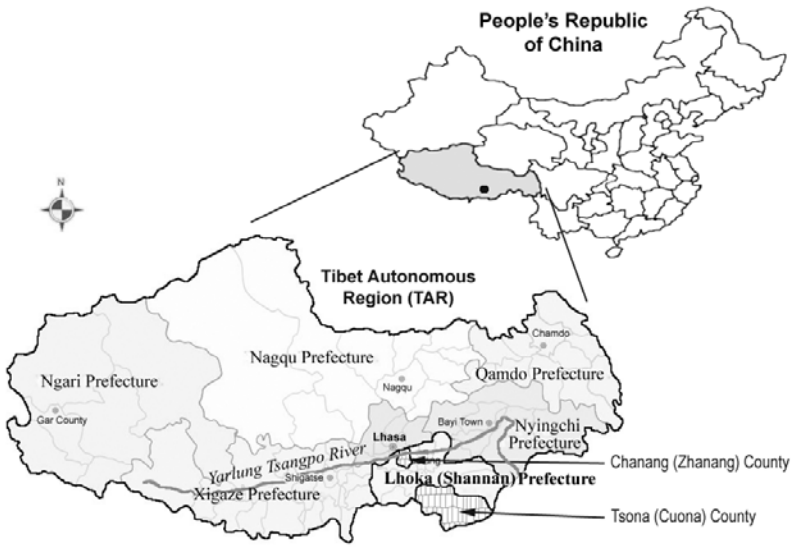

Figure 1. *Map of Tibet, China, showing administrative boundaries of prefectures and counties. Chanang (Zhanang) County is shown in red, while Lhoka (Shannan) Prefecture is shown in yellow.*

also from Tsona County – which is further south, closer to the Himalayan Range and near the border with Bhutan and India's Arunachal Pradesh. The main difference between the two subgroups is that more of the resettled people from Tsona were livestock herders in their previous home areas, or had livelihoods dependent on both farming and herding, whereas the people who relocated from elsewhere in Chanang were mostly farmers.

There are several key reasons why the Namsaling area was selected to plan and implement the first ecological resettlement project in Tibet: (1) good transport routes, including proximity to a major highway (the project can thus readily serve as a model demonstration village); (2) no people were living at the site prior to construction and settlement; (3) Chanang was recognized as one of the poorest agricultural counties in Tibet; and (4) the county area was a significant socio-cultural centre in Tibet prior to 1953, but had been severely impacted during the Cultural Revolution in 1966–1976. The ecological resettlement component of the Yijiang Lianghe Project began in the Namsaling area in the summer of 2001, after arable land had been prepared and an irrigation system built; and it ended two years later, in the summer of 2003, after the new inhabitants moved from their prior farms or rangeland to begin a new life in Dekhi Village. In their previous livelihood situations, most had been farmers (though almost always with at least some livestock) and some had been full-time herders (pastoralists). Nearly all the villagers had been amongst the poorest families in their original home areas. All had also lived in a region deemed to have some particular environmental problem or concern that needed to be addressed.

Survey Methods

Semi-structured interviews with residents of Dekhi Village (in forty-two households, comprising more than three hundred people) were carried out by five researchers from the Tibet Agricultural University from 22 to 28 June 2009. These interviews, together with a questionnaire-based survey, were conducted entirely in the Tibetan language. The survey questionnaire design was based on the lead author's experience of human development needs assessments carried out in the CIDA Basic Human Needs Project and with the Tibet Tianyuan mining company. The content of this survey included questions relating to villagers' perceptions about the relocation and settlement process, subsequent changes in living and work conditions, experiences of obtaining general information and relevant technical knowledge, and access to education and healthcare. It was posited that the research findings would: (1) provide useful guidance for government offices and government workers engaged in poverty reduction and agricultural development in the future; and (2) give Dekhi Village residents more

voice and opportunity to interact with the outside world, itself an empowering process. Information and results from these approaches are presented below.

The Experience of Namsaling Dekhi New Village in Tibet, China

Comprehensive analysis of this resettlement experience has yielded several important lessons and valuable yardsticks that may help to better assess potential outcomes, both positive and negative, for future resettlement projects in Tibet and elsewhere. Information and perceptions gathered from local residents through formal interviews (together with the questionnaire survey) as well as informal discussions, are integrated here with other data and information gathered through discussions with local government leaders and from official documents. Key findings are presented below.

Housing Programme

Most of the relocated families initially considered their new houses to be much better than their old houses. Some of the resettled villagers had already wanted to obtain a new house and were glad to move to Dekhi Village. The majority of interviewees (91 per cent) found their new houses, when they first moved in, to be better than the houses in other nearby villages, and 96 per cent thought that their houses were better than their old houses (Table 1). However, following the implementation of the more recent 'Socialist New Village Programme', even the relatively new houses in Dekhi Village are not as good as the more recently built houses in other neighbouring villages in terms of design, living area, and living conditions for Tibetan people. Some Dekhi Village residents have therefore tried to alter their houses, generally without success. Compared to other houses in

Table 1. *Resettled villagers' rating of the housing quality in Dekhi Village*

Question:
Do you consider your current house to be better than, similar to, or worse than your former house?

Original County	**No. of responses (no. of families), by source county**		
	Better	**Similar**	**Worse**
Chanang County	30	3	5
Tsona County	23	6	9

n = 42 households (over 300 individuals)

Source: Gongbo Tashi, 2009 survey

Note: Some interviewed households had family members from more than one place of origin

adjacent areas, those in Dekhi Village no longer fully satisfy the residents, and this dissatisfaction is increasing over time. As a result, some villagers have begun to overlook the advantages and convenience that access to public transportation has brought, and now generally feel cheated.

What are the main reasons the houses ceased to satisfy the resettled villagers? Just like Tibetan herders, villagers who farm (such as the residents of Dekhi Village) also rely heavily on livestock. Because livestock manure is the main source of fuel for cooking and fertilizer, Tibetan farmers cannot maintain their current farming lifestyle without livestock. Normally, a farm family will allocate about half of its house space as a livestock shelter. Most of the resettled households therefore converted their ground floor accommodation into a barn, with the remaining 50–70 sq m to be used by the family. However this living space was usually insufficient for their needs. Moreover such limited living space constrained, and discouraged the formation of, extended family households. Villagers were not permitted to expand their houses into their yards. They were entitled to expand their houses eastwards along the road, but they lacked the financial capacity to do so. As a result, housing has become one of biggest problems in this new village.

Provision of Water Resources

Based on the interviews with residents as well as special discussions with village leaders, the following scenario has emerged. In 2000, the government laid 8,450 metres of drinking water pipes to bring clean water from higher up the valley to all 148 households in Dekhi Village. However, subsequent expansion of the 'New Village' concept has resulted in four other villages also connecting pumps to the Namsaling drinking water system. Due to this additional consumption, as well as a significant drought in 2009, the drinking water supply for Dekhi Village has become inadequate. The water shortage in 2009 lasted for more than five months, causing great difficulties and distress, even some chaos amongst the villagers. Some – particularly farmers who had previously had good water resources in their former homes – have begun to long for their old residences and livelihood situations.

Over the past decade the project has also built an irrigation station with transmission lines, substations, a diversion canal, two pumping stations, and four 35 kW distribution systems. At an additional cost of nearly RMB 17.9 million, these facilities now provide good irrigation control over a total area of 1.92 million *mu* (1,280 sq km). The water intake points, however, are all higher than the natural water sources. As a result, the villagers can only pump water during the seven or eight months of the summer wet season; but not when crops need irrigation during the dry season or in drought conditions. The government has tried to resolve this problem through various means, including a further investment of RMB 1.5 million in 2005 to build a small reservoir together with a 70 metre well; but this system also experienced mechanical failure during early

trial operations, following which the contractor suddenly left Tibet, leaving the project incomplete for the following four years. More recently, in 2009, a local leader met one of the provincial leaders and explained Dekhi Village's water problems to him – leading to yet another project by local government. The installation of a small water pump partially resolved the irrigation water issue that has now plagued Dekhi Village for the past eight years. At present, local government pays the electricity bill for irrigation pumping. However, many Dekhi Village residents are concerned that they may need to pay these fees – unaffordable costs to them – in the future. The local government is now working to reduce the operational costs of irrigation and to create a low-cost, effective water diversion system. If these problems are not solved, then the water irrigation scheme will continue to fail in meeting its socio-economic objectives.

Agricultural Production and Animal Husbandry

New arable land has been created by the government near Dekhi Village through transporting topsoil from other places and spreading it over the sandy plain. Depending on the depth of the new 'good soil', the new land can be categorized into three types. 'Grade One' cropland has topsoil with a depth of about 20 cm and can yield over 500 *jin/mu* (or 3,750 kg/ha) of wheat. Much of this cropland is located in areas that had previously been abandoned by neighbouring villages (when the land was sandy and largely unproductive) before upgrading with new topsoil for use by Dekhi Village residents. 'Grade Two' cropland has 10–20 cm of good topsoil covering the sand, and can yield around 350 *jin/mu* (2,625 kg/ha) of wheat. 'Grade Three' cropland has less than 10 cm of topsoil, and it is very difficult to grow any kind of crop, or trees, on such land.

Cropland allocation to individual households was done by random lots, not on the basis of equitable access to land according to different land quality. As a result, some families only received 'Grade Three' cropland. This is one of the main reasons that around a quarter of the households have been unable to improve their economic status through resettlement. Over 90 per cent of the households received larger areas of cropland in the new village, compared to their previous holdings, but often their land was of poorer quality. Some resettled households are thus experiencing problems from the reduction in living and livelihood space.

Nearly all the farmland used by Dekhi Village residents (over 90 per cent) was created or improved in 2000. However, by 2009 it had already become very poor soil, with a maximum yield of only 3,750 kg of winter wheat or 1,800 kg of canola per ha. Some villagers originally from Tsona County could not even achieve yields of 750 kg/ha of wheat due to a combination of biophysical and socio-cultural (i.e. livelihood) constraints.

Most of the farmland in Dekhi Village is thus too poor to yield enough barley to make the Tibetan staple food, roasted barley flour, or tsampa (*zanba*). Instead, the villagers must now trade their wheat and canola for barley from neighbouring

villages, to satisfy their tsampa needs. Many farmers in Tibet apply large amounts of organic or natural fertilizers to their fields, but because of the small numbers of livestock in Dekhi Village, there is limited scope for this. Poor soil quality thus leads Dekhi farmers to apply chemical fertilizer to their cropland at double to triple the average local application rates, sometimes applying over 50 kg/*mu*. As a result, crop production costs are about 60 per cent higher than the average for neighbouring villages. In this context, agricultural output can only satisfy subsistence needs and most households fail to earn any profit. It is clear that Dekhi Village residents therefore gain very little from farming these new lands.

A similar problem exists for resettled herding households. Of the households from Tsona County, 12 per cent had been livestock herders. They had previously utilized large areas of alpine grassland, but after resettling in Dekhi Village they received only 2 *mu* (1.3 ha) of cropland per capita. As a result, their loss of access to productive land was proportionally greater than for resettled farming households. Moreover, the land they received was mostly hemmed in on the southern and western sides by the village, blocked by mountains to the east, and constrained by the Yarlung Tsangpo River to the north. In addition, livestock grazing in areas planted with trees is forbidden. Therefore, for their livestock production needs, these families can only rely on utilizing about 2,000 *mu* (133 ha) of adjacent, unconverted sandy land for feeding their livestock. Other grassland in the vicinity has traditionally belonged to residents of other villages, and disputes arise when any Dekhi livestock are found grazing on neighbouring pastures. Herder families thus had to make a significant reduction in their livestock numbers (Table 2). However, abandonment of livestock production is not considered to be culturally appropriate or feasible, according to many interviewees, since livestock not only provide farmers with fertilizer and fuel but also satisfy many other cultural and psychological needs. One young Tsona woman observed, 'Livestock are a symbol of a happy life. If we have no livestock, then our family life has no animation or joy.'

Table 2. *Average livestock numbers, pre- and post-resettlement in Dekhi Village*

Original County	Yak and Cattle		Sheep and Goats		Donkeys and Horses	
	Before	After	Before	After	Before	After
Chanang County	1,320	255	876	107	267	0
Tsona County	2,457	126	1,260	32	253	0

n = 42 households (over 300 individuals)

Source: Gongbo Tashi, 2009 survey

Other Income Generation

The resettled households of Dekhi Village face many difficulties in maintaining or improving their incomes, whether from agricultural production (farming and herding) or other sources. Before resettlement, many Dekhi residents originally from Tsona earned much of their cash income by collecting medicinal herbs such as caterpillar fungus *Cordyceps sinensis*, and also *Fritillaria*; average annual household earnings often exceeded RMB 20,000. The resettled residents of Dekhi Village, however, have lost access rights to their original environment and the associated opportunities for resource-based income generation. They have also lost certain social and cultural resources, such as experience and ability to locate traditional herbal medicines. They have not yet been able to replace this knowledge or expertise with a commensurate ability to use various 'urban resources' available to them in their new village environment.

Residents of Dekhi Village from Chanang County, on the other hand, have experienced less difficulty in making the transition between one set of resources and livelihood to the other. This is explained in part by the improved transport services in the vicinity of Dekhi Village, and their pre-existing practice of seeking temporary off-farm work after the spring sowing. The extent of this economic activity had previously been constrained by poor access to transport; however, that constraint has now been removed. Dekhi villagers originally from Chanang thus rapidly availed themselves of opportunities to seek such work further afield, for example in Lhasa, Shigatse and Nyingchi. As a result, the off-farm component of their incomes increased by about 60 per cent, that is, by an average of RMB 8,000 per annum. By comparison, Tsona villagers, and especially former herders, generally lacked the experience or connections necessary to find similar short-term (temporary) jobs in urban areas.

Overall, paid employment outside of the new village has become the main source of income for its residents, with 80–95 per cent of family incomes coming from such jobs. In addition it was found that, on average, 85 per cent of the residents' income is spent on food (despite their farming occupation).

Improved transportation and reduced livestock-rearing options have thus changed the income sources for many residents. Previous options have been constrained, and other new options not yet fully realized. Before resettlement, for example, many people in Dekhi Village had produced and sold items such as *nambu*, the fleece used to make the traditional Tibetan *quba* garment. The high quality wool produced in Chanang is renowned in Tibet and has a very good market value. However a lack of grazing land in and around the village has resulted in residents abandoning the production of such livestock-based goods as a main source of income, and instead choosing to work primarily as manual labourers. Most people now work in the construction industry in larger cities, and some have entered the transportation business.

Following relocation, with the increased range of income generation opportunities available, as well as changes (including loss) in some opportunities,

there are now greater occupational and economic disparities between households. Family incomes thus vary enormously, with some households even hiring and managing whole construction teams – and with commensurate annual incomes in excess of RMB 50,000. Other families involved in transportation earn around RMB 20,000 per year. Most residents, however, only work as construction labourers, earning around RMB 3,000 per capita annually. At the lower end of the spectrum, some people lost everything when they moved to Dekhi Village and now have no income.

Health Care and Medical Insurance

Along with a legitimate concern for economic matters, health matters also rank high. Most residents of Dekhi Village (92 per cent) feel that they now enjoy better access and quality of health services. However, about one-third (35 per cent) of interviewees said they did not know the criteria for reimbursement of medical costs, and 43 per cent thought the cost of insurance was now higher than when they lived in their previous home. This has led to some concern and even dispute, as the economics of health care can affect many other aspects of life as well. This situation has most likely arisen from the fact that explanations about health care and insurance were given by the health department in Chinese only, even though 70 per cent of the villagers speak only Tibetan (that is, less than one-third can speak both Tibetan and Chinese).

Promotion of Farming Skills and Acquisition of Information

Although the Namsaling area has long been used as a demonstration zone for technical improvement of agriculture in Tibet, and technicians from the Tibet Agriculture Research Institute have conducted many experiments in the area, only two of the interviewees said they were acquainted with the technicians who had conducted such experiments. Most interviewed residents were also unable to identify any farming skills they had learned since relocating to Dekhi Village. Only one herder from Tsona claimed to have learned some farming skills for the first time – and that was from his neighbour, not from an extension specialist. The majority of interviewees (92 per cent) indicated that television programmes provided a lot of information, but the most useful knowledge came from other villagers (30 per cent). Some other interviewees didn't even consider that 'information' had anything to do with them. Thus it is clear that both the form and content of agricultural extension techniques must be improved.

There are very few training courses on farming skills in the village, and most are conducted in a classroom context in Chinese. Local villagers gain very little from such training opportunities, especially without practical, on-site demonstration or other forms of ongoing support. The promotion of new farming skills has been inadequate throughout Tibet, but is worse in many resettlement villages where herders lack even the most basic understanding of farming. It is

these people who may need the most training and instruction if ecological resettlement schemes are to succeed.

Other Technical Training and Educational Opportunities

Not one interviewee in Dekhi Village considered they had learnt any advanced farming skills after resettling, and only 10 per cent (all herders) felt they had learned something about the planting of crops. Two households trained at county level to become demonstrators and learned about chemical and pesticide use, but nothing was taught about other relevant farming techniques. In addition, of the eight to ten government staff workers in the county and township agri-technical extension centres, only one person was well known to local villagers (because he had spent two years promoting biogas techniques in the village). In the absence of technical training workshops or other forms of external agricultural knowledge transfer, most villagers therefore have simply found ways to educate themselves.

Many interviewees stated that their main objective in resettling was to improve their access to education (as well as medical care), especially for their children. This was because transport conditions in their original homes were so poor and posed significant risks. One settler from Tsona explained, 'I was worried every time my kids went to and from school, especially when they came in late.' Nearly two-thirds (60 per cent) of the households interviewed indicated that improved housing conditions and access to schooling for their children were their main reasons for moving. Indeed, a new comprehensive primary school was recently built in Dekhi Village and so children can now attend easily. However, employment prospects remain poor, and several school leavers from the village have failed to find suitable non-labour jobs – they are presently working on their family's farmland – a situation that has caused some parents to question afresh the merits of education.

When asked whether their children liked farming, only one-third (32 per cent) answered 'yes', and two-thirds said 'no'. To the question 'What do you hope or expect for the future? What will your child do in the future?' – only one person answered 'farmer' while twenty-nine answered 'don't know'; another six replied 'teacher,' four said 'business' and two said 'worker.' Regarding higher education, 94 per cent of interviewees did not know about the Tibet Agriculture and Animal Husbandry College, and all indicated that they did not have any sense of need to relate closely to the current education system. It thus appears that most Dekhi residents do not have much concern or knowledge about the education system and they are not sure what to expect from schooling for their children or how they might benefit from education in general. Despite its status as a demonstration site, Dekhi Village has failed to make any significant breakthrough in farming skills promotion or basic education in Tibet.

Traditional Farming Skills

It is noteworthy that most interviewees were in agreement that traditional farming methods are good for the soil and less costly for farmers, although more laborious. At the same time, the villagers have become more dependent on machinery for ploughing, harvesting and threshing. It was also recognized that soils should be replenished with organic fertilizer, but this option remains limited since Dekhi villagers do not have enough land to raise livestock (hence relying instead on chemical fertilizers even though they recognize the harm it brings to the soil and to crop yields over the longer term). As a result, nearly two-thirds of interviewees (63 per cent) believed that traditional farming skills would soon vanish, and a further 12 per cent thought they had vanished already.

Local Perceptions about the Resettlement Programme

In the community survey, level of 'contentment' (in Tibetan, *dreaky tsui*) was also discussed. About one-quarter of respondents still preferred their surroundings before resettlement, even though the locations were remote, largely because their homes there were generally cleaner and less polluted. In answer to the double question 'When or where would you live a happier life?' – 26 per cent of the respondents said 'before resettlement' and 24 per cent indicated in their 'original surroundings'. Most village residents, however, had previously suffered from floods and various other natural disasters, which do not occur (or can be avoided) in the new village – and on this basis, most people consider that they now are living an easier life. Yet at the same time, with a degrading environmental situation and loss of some traditional agricultural skills (for example), many people in the village are now losing some of their initial enthusiasm for their new home. In fact, less than half of the people (43 per cent) feel the current situation is 'good' for resettled villagers. The village leader explained one of the problems this way: 'Many outsiders [people from other villages] call us beggars because they think we had nothing when we were removed from our original places, but this is totally wrong.' Such social biases have resulted in growing dissatisfaction among some of the Dekhi Village residents and increased their desire to return to their former homes – a desire that also has increased as new economic opportunities arise in their original home areas (for example, because of road construction and associated new business opportunities). Several families have thus already left Dekhi Village and returned to their original homes.

General Discussion

In the eight years, from 2001 to 2009, since the process of building and then settling Dekhi Village began, many transformations have taken place – in the environment, in people's livelihoods, in socio-developmental structures and

processes, and in people's perceptions of the past and present, as well as their hopes and aspirations for the future.

With regard to ecological resettlement as a development strategy, numerous domestic reports have already been written in China, mostly emphasizing the positive external and/or regional impacts of resettlement projects. Conservation benefits have been highlighted in most cases, particularly in studies or recommendations focused on the source areas of the Yellow, Yangtze, Mekong, Salween and Yarlung Tsangpo rivers (see Du 2006, Wang et al. 2010). Yet despite the massive scale at which resettlement is planned (*People's Daily* 2009), such reports have only rarely documented in any detail the more local impacts such as the living conditions or local environmental situation of relocated communities. In fact, there are few in-depth, systematic analyses or evaluations of new villages built under the ecological resettlement policy – particularly in terms of the perceptions and feelings of the villagers themselves. As a result, certain mistakes may be made in the course of implementation across a wide array of resettlement projects, which could be avoided. Certain media are now beginning to draw attention to some of the social challenges emerging in new villages (e.g. *Xinhua News* 2010), yet the paucity of more formal social surveys has allowed many resettlement projects to advance unmonitored – sometimes resulting in growing negative feelings amongst resettled people, sometimes also in significant (and avoidable) financial burden for local and national economies (Foggin 2011, Foggin and Phillips forthcoming, Yan and Qian 2004).

The present analysis and discussion is based on a field survey conducted by the principal author, assisted by five graduate students, in one Tibetan resettlement village in June 2009. All of the interviews and discussions were carried out in the mother tongue of the villagers, lending particular strength to this study since this approach is likely to have generated greater trust between researcher and villagers, a richer dataset, and a more nuanced interpretation than if extensive translation had been necessary during data collection.

As outlined above, 148 families (712 people) lived in Dekhi Village at the time of the survey. When people moved to the new village as part of the ecological resettlement programme, each person received approximately 50 sq m of living space (as shared housing) and, on average, 2 *mu* (0.13 ha) of arable land. Most villagers presently consider that housing, transportation, and access to education and health services have generally improved since they moved to Dekhi Village, and 95 per cent of the interviewees reported having an 'easier' life than before. However, natural resource conditions (i.e. farmland and rangeland conditions) have changed dramatically, and acquiring new skills for crop farming and for living in a small urban setting has proved to be very challenging for the majority of villagers. Some economic disparities were noted between households, but even more marked are the observed differences between the subgroups defined according to original home areas (i.e. Chanang versus Tsona counties) – a phenomenon most likely related to the ease or difficulty with which people can

transition from one form of traditional livelihood to another (farming versus livestock herding).

Through the survey, it was noted that livestock constitute another critical element in the local people's cultural lives, as well as for their economic livelihood. It is unfortunate that planners and other officials who designed and implemented the resettlement project lacked sufficient awareness or concern about livestock issues, or the relationship between Tibetan people and animals, to incorporate animal husbandry-related needs into the resettlement plans. A lack of adequate grassland near Dekhi Village for livestock to graze is another serious problem that still needs resolution.

From the regional perspective, creation of Namsaling Dekhi New Village has been the largest project in the Yijiang Lianghe 'One River, Two Streams' agriculture development programme in Tibet, and the first demonstration village in Tibet resulting from the ecological resettlement policy. Despite many well-intentioned attempts to design the project, there have been many operational and implementation challenges. Apart from cultural matters, the technical issues of particular concern include the irrigation system (water pumping station), loss of quality farmland topsoil, inappropriate house design, poor extension service or acquisition of new information, loss of traditional agricultural knowledge, and inadequate levels of contentment in the new village. As a result, this resettlement project has not been able to achieve or demonstrate its specific design potential.

The case of Dekhi Village also serves to illustrate some of the problems facing resettlement projects and policies in general. Though such policies are formed and enacted from a desire to alleviate poverty, as well as to protect ecological conditions, too often they are formed with insufficient consultation or sustained interaction with the people most directly affected – leading to insufficient community ownership and cultural awareness. When this occurs – for example, inadequate consultation with local stakeholders – scholars, government leaders and local residents alike may begin to see poverty rise, cultural traditions deteriorate, and ecological damage increase. Thus while ecological resettlement projects are generally well intentioned, due to a lack of continual examination and (re) assessment, some potential successes may never be realized. From a purely economic perspective, the vast sums of money used for such resettlement programmes could also be more effective, whether for poverty alleviation purposes or for environmental conservation, if used in less socially disruptive ways.

With greater cooperation and integration across sectors (see Foggin and Phillips forthcoming) and inclusion of all administrative levels as well as representatives from farming and herding communities in development planning and decision making (cf. co-management approaches; Foggin and Torrance-Foggin 2011), it is possible to achieve better and longer-lasting results. Ecological resettlement may sometimes be part of a solution, but it is never the entire solution to the complex societal problems of poverty or environmental degradation. Thus, in Tibet as elsewhere in the world, a concern for local people's livelihoods

and socio-economic goals, environmental resource conservation, regional and national goals, and equitable partnerships and dialogue amongst major stakeholders must all be present simultaneously in order to meet shared goals of development improvements, social harmony and stability, and environmental sustainability.

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