

Horizontal Policy Analysis— A tool to promote sustainable livelihoods development
with implications for *Ecological Resettlement* and other major development programs in
the Tibetan Plateau region

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Introduction

Drawing on current international health policy literature, with special focus on the social determinants of health (Blas & Sivasankara 2010, Raphael 2008, WHO 2008) and the critical role played by culture in health (Schech & Haggis 2000, Hawkes 2001, Gesler & Kearns 2002, Chandler & Lalonde 2008, Lalonde 2005), it has become increasingly clear in recent years that much benefit can be derived by promoting more horizontal (or cross-sectoral) development policy analysis, and coordination, amongst hitherto disparate government sectors. By extension, it is probable that many other areas of public policy – including environmental protection, employment, education, etc. – could also benefit from enhanced inter-disciplinary, inter-departmental cooperation and policy integration.

In Qinghai Province, several ambitious conservation and development programs/policies are now being carried out, covering vast areas of grassland and affecting a large portion of the pastoral (herding) population – with some official targets, e.g. for sedentarization, set at 100 percent of the herding population (Foggin 2008, People's Daily 2009) and with effort and investment higher than ever before (People's Daily 2011). Under the name of “ecological animal husbandry” many herders are now required to modify their traditional practices, and all are required to seriously consider alternate livelihood options.

These policies and programs are bringing rapid, radical transformation to both the social and ecological landscapes. Some programs, however, may have begun before sufficient or adequate scientific analyses had been carried out, including multi-disciplinary and/or international comparative studies. The primary aim of such studies would be to determine the expected likelihood of different social and environmental outcomes, on the one hand, and an evaluation of their associated long-term socio-economic costs, on the other hand. Only when these are considered systematically and comprehensively can a risk analysis be carried out; followed by evaluation of available development options; leading finally to sound and sustainable policy decisions. Without such a foundation, some development programs or policies could in fact be considered but large-scale, un-trialed experiments – with a potential for long-lasting, largely unknown, maybe irreversible, and quite possibly detrimental socio-environmental impacts.

Within development circles, it is recognized that amongst possible consequences of any development action are some impacts (or indirect ramifications) not originally expected. These are known as *unintended consequences*, and they usually occur outside the field or the scope *per se* of the initial development action. Thus, for example, an education policy could affect future options for sustainable livelihoods; or an environmental program could affect people's level of hope, health, or sense of well-being. Economics, education, livelihoods, health, environment, stability etc are all inter-connected and can be mutually reinforcing. It is for this reason that a new strategic approach to public policy analysis is so important. Namely, proposed policies should be analyzed not only vertically (i.e., from within their own fields or areas of expertise), but also *horizontally* — assessed by experts in *other related fields of work*. It is equally important that policies in different fields of development (e.g., health, transportation, education, civil affairs, etc.) be more closely integrated and coordinated in the future, in order to avoid unnecessary conflict or

detrimental consequences. The proper use of such a horizontal analytical approach (cf. *horizontal policy analysis*) aims simply to discover or to predict such consequences beforehand, and thus to reduce their occurrence, or plan for them, in integrated fashion.

The development tool introduced herein – Horizontal Policy Analysis (HPA) – may be used to improve regional development and conservation outcomes in the grassland areas of Qinghai Province, where many changes are now taking place. Special attention will be given in this chapter to some of the potential impacts of current development policy on local people’s livelihoods, their socio-ecological resilience to change, and social stability. The authors thus explore the innovative use of this tool, or analytic approach – and through this lens, suggest several priority areas for future or on-going policy discussions with respect to the conservation and development of this ecologically fragile but globally important, and culturally rich, socio-ecological system in the heart of the Tibetan Plateau.

Current Development and Conservation Programs/Policies in Qinghai Province

Since 2000, many different development policies and programs have been implemented in Qinghai Province—nearly all under the umbrella of the national *xibu dakaiifa* policy (in English, generally known as the ‘Great Western Development Strategy,’ also the policy to ‘Open Up the West’). The most prominent of these development programs are already discussed briefly in Foggin (2008). An expanded list of official government development and conservation initiatives that are (or have been) affecting the grassland regions in Qinghai Province is given in Table 1, below.

A particularly insightful, longer-term outlook on development in Qinghai Province is provided by Goodman (2004), who cautions that because authorities are concentrating primarily “on the development of...infrastructure and environmental sustainability... there remains a danger that in concentrating on *economic solutions* to the province's problems [then the province's] inherent *political, social and cultural contestations* may be ignored, to the detriment of the [government] leadership's wider goals” (italics added) – which include important development outcomes such as socio-economic sustainability as well as social stability.

Presently, one of the main topics of discussion and even debate in Qinghai Province (with regard to development policy) is the sweeping social experiment known as *shengtai yimin* – translated in this chapter as ‘Ecological Resettlement.’ This program generally involves removing people/families from their long-standing grassland homes, to new dwellings in specially built small towns or in the peripheries of larger urban centers. While such an approach to resolving apparent (or assumed) problems of grassland degradation and provisioning social services in pastoral areas already has around a quarter-century history in modern-day China (Du 2006; however, regarding the extent and the putative causes of grassland degradation, see Harris 2010, Brown et al 2008), it is not until the present time that such a relocation/resettlement program has been so extensive, affecting more than 500,000 herders, with explicit goal to settle the entire remaining Tibetan herder (nomad) population of the province in the next couple years (People’s Daily 2009, 2011). The

consequences of such programs, both positive and negative, will be long-lasting; extending well into the next generation.

If the experiences of other communities that have undergone similar transformations in the past are examined in greater detail – e.g., the long-term outcome of similar policies in Canada affecting First Nations and Inuit people for much of the past century (Foggin & Foggin 2008) – then it is clear that many of the consequences of development actions taken today will be *generational* in time span. It is imperative, therefore, that the right decisions be made now, as *critical junctures* in time (Hecht & Cockburn 1990) simply cannot be re-visited in the future. This may be just such a time in the cultural history of Tibetan herders in Qinghai Province; the socio-cultural equivalent of ecological theory's *state-and-transition model* of vegetation succession and change, with irreversible (and usually detrimental) step-wise changes occurring in the landscape (Westoby et al 1989, Behnke and Scoones 1993). Real harm has been observed in Canada, attributed in large part to poorly considered development policy of the past. It is for this reason that global comparative studies are so important, to avoid replication of unnecessary damage.

In addition, the consequences of large-scale policies or programs are rarely confined only to the original intended geographic areas of concern. Instead, many ramifications will be noted elsewhere as well, often in geographic regions far removed, and in both social and natural (ecological) arenas. All these inter-connections between different fields of study, and geographic areas, are the basic foci of *horizontal* policy analysis – which intends to lead to more sustainable, sound, and appropriately integrated development practices.

Other major development programs (or conservation programs with a human dimension) in Qinghai Province include poverty alleviation, public health interventions, educational initiatives, and of course several well-publicized environmental initiatives including the establishment of protected areas and grassland restoration projects (Table 1). Most of the afore-mentioned interventions have clearly stated goals and objectives, yet too often they are problematic at the stage of implementation because they are limited to single areas of concern – continuing the unfortunate tradition of a 'silo' approach (vertical approach) to policy analysis and development planning. This chapter seeks not only to redress in part the lack of any comprehensive overview of the development programs currently affecting the region, it also aims to provide a preliminary analysis of the multi-faceted interactions between different aspects of current development programming. HPA, with its inherent multi-disciplinary perspective, can help all stakeholders to better assess the real costs and benefits of different initiatives, by taking into account their many related environmental, social, economic and cultural factors – which jointly determine potential sustainability.

Table 1.

Major policies and programs affecting local people, livelihoods and landscapes in the high altitude grassland regions of Qinghai Province, China

| Main sector | General description of policy or program | Key reference(s) |
|--|--|---|
| <i>Overarching policy in Western China</i> | China's Western Development Strategy , also known as the policy to Open Up The West , is the overarching development program in Western China Chinese: <i>xibu da kaifa</i> | China Daily 2009, 2011d Goodman 2004b Holbig 2004 Lai 2002 People's Daily 2000 |
| <i>Poverty alleviation</i> | The Sipeitao program aims to alleviate poverty by building winter homes and livestock shelters, planting fodder, and household fencing. Sometimes translated as 'four that form a complete set' or 'the four completions' – i.e., the four actions that help to eliminate poverty Chinese: <i>sipeitao</i> | Foggin 2000, 2008 Ptackova 2011 Yeh 2005 |
| | Regional fencing is supported primarily by the grassland bureaus, and aims to improve the quality of grasslands and to increase economic benefits | Bauer 2005 Miller 2000 Williams 1996, 2002 |
| | Poisoning campaigns seek to eliminate small mammals, such as plateau pika, which are said (by the proponents of this approach) to compete with livestock for forage | Smith & Foggin 1999 Xin 2008 Pech et al 2007 China Daily 2004 |
| | Community cooperatives constitute a new form of local governance that can increase local involvement in decision-making and encourage rural economic development; they are supported by some county and prefecture governments | Foggin & Bass 2010 Richard 2005 Pearce 2010 Lahtinen 2010 Plateau Perspectives 2010 |
| | Community-based grassland management more closely resembles traditional pastoral practices, and continues to be practiced – formally or informally – in different situations | Banks et al 2003 Richard et al 2006 Wang and Fu 2004 Waters-Bayer et al 2009 |
| | Ecotourism (and other forms of tourism) are actively promoted by several levels of government in Qinghai Province, as a tool for regional economic development | IGSNRR & QTB 2009a IGSNRR & QTB 2009b Li and Han 2001 QTB and JICA 2006 Wang et al 2009 |
| | <i>Community health</i> | Cooperative Health Insurance seeks to offset the cost of medical care for rural and urban residents in the province Especially in pastoral/nomad counties, the establishment of village clinics has been supported by health bureaus, a necessary component of the health insurance scheme |
| <i>Basic education</i> | Compulsory education has been the official position for years, but only recently has it been implemented more fully in pastoral areas, together with centralization of education | Beimatsho 2008 Foggin 2008 Xinhua 2009 |
| | Choice of the language(s) of instruction is also critical, both for access to higher-level education and for cultural reasons; with pros and cons in both directions | Foggin 2008 Foggin and Tashi, ms Xinhua 2010b |
| <i>Environmental protection</i> | The official Grassland Law of China was adopted in 1985 | Ho 1999 Nelson 2006 |

| | | |
|--|--|--|
| <i>Environmental protection (cont.)</i> | Nature reserves (and other protected areas) have a long history in modern China, from 1956 to present | Liu et al 2003 Nelson 2006 |
| | The Grain to Green program (or Converting Pastures to Grasslands program in pastoral areas) is the first and most extensive environmental programs developed under China's Western Development Strategy Chinese: <i>tuimu huancao</i> | Du 2006 Foggin 2008 Liu et al 2008 Yeh 2005 |
| | The Ecological Resettlement program , also known as the Ecological Migration program , is now widespread in the region and it is presently being implemented in several provinces; it combines sedentarization with relocation and urbanization Chinese: <i>shengtai yimin</i> | Dowie 2009 Du 2006 Foggin 2008 Foggin 2011 Ptackova 2011 Wang et al 2010 Xin 2008 |
| | A variation on 'ecological resettlement' is the program to Sedentarize Nomads , without requiring their relocation or urbanization <i>per se</i> ; the main goal here is to transform local livelihoods toward a more intensive (versus extensive) form of pastoralism, in effect creating 'group ranches' comprised of several households Chinese: <i>you mumin dingju</i> | Lu et al 2009 Miller 2000 Xinhua 2010 Xinhua 2011b Xu et al 2008 |
| | Overlapping with the above sedentarization and settlement programs (through 'ecological migration' or 'resettlement') is Payment for Ecosystem Services (PES) , one form of 'eco-compensation' currently being studied and trialed in China's grassland areas; payments are now being given to recently relocated and/or settled (former) herders, to offset their loss/change of livelihood options | Bennett 2009 ESPA 2010 Tennigkeit and Wilkes 2008 Xinhua 2011 Zhang and Lu 2010 |
| | In some cases, more collaborative forms of management are being promoted as well, in grassland areas, particularly in association with the Forest Bureau (and different nature reserves under its jurisdiction); this approach allows for the development of real partnerships with local communities, and it includes (or at least is supportive of) community co-management, contract conservation, and more some forms of more traditional community conserved areas | Foggin & Bass 2010 Foggin 2005, 2010 Kothari 2006 Richard 2003 Smyth and Jaireth 2003 Borrini-Feyerabend et al 2004 |
| <i>Broad development approaches (cross-sectoral)</i> | Globalization (as opposed to more traditional practices; see Goldstein et al 1990, Sheehy et al 2006, Wu 1997) | Liu and Diamond 2005 Liu and Raven 2010 |
| | Privatization , including Household Responsibility System (in contrast to community-based grassland management; see Banks et al 2003, Richard et al 2006) | Williams 2002 Yan and Wu 2005 Yan et al 2005 Yangzong 2006 |
| | Planned urbanization – often considered as a necessary precursor to or condition for development in China (as opposed to 'natural' urbanization, whereby people follow employment opportunities from the countryside to towns) | Li 2007 Liu 2005 Liu 2007 Shen 2006 Torrance 2008 |
| | Civil society (NGOs) – which allows greater involvement and innovation from the public, to work with government and official programs in complementary ways | Breivik 2007 Morton 2007 Yang 2005 |
| | Support is regularly given in China for projects or programs that enhance regional social stability , through development (enhancement) of local livelihoods and equity | People's Daily 2011c Pomfret 2000 Xinhua 2010c Xinhua 2011d |

Redefining Sustainability

Before moving into policy analysis *per se*, however, we should remind ourselves why it is that, in the first place, we should even be interested in inter-disciplinary studies? in the interface between society and ecology? or in the horizontal impacts of new development interventions?

The simple reason is *sustainable development*, or *sustainability* for short. Development is the pursuance of various ways and means to enhance people's welfare in a given region. Virtually all countries or regions, regardless of political ideologies, can espouse this as an essential and meaningful goal. Sustainable development is the achievement of this goal in the present, in ways that do not limit the potential for future generations also to maintain or enhance their welfare, nor exclude or overlook any significant segment of the present-day population (whether local, national, or global) also to improve their well-being. Thus sustainable development, by definition, must be economically and environmentally viable in the long-term, as well as socially and culturally equitable. There is no way around it—sustainability must incorporate all of these key features of the total human landscape.

Now, with sustainability as goal, we must incorporate and consider all of its components in our analyses. Of course this includes the standard socio-economic and environmental perspectives. What is less well recognized, however, is that sustainability should also be concerned with the concept of *culture* as a co-defining principle. More specific attention should thus be given to the essential role of culture in the future.

Until recently, the most common definition of sustainability has been “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987). This involves environmental responsibility with economic health and social equity. It is becoming increasingly evident, however, that cultural vitality is equally important—and that culture is the essential “fourth pillar” of sustainable development (Hawkes 2001), bringing with it the potential for lasting social stability, so desired in development programming. In Canada, it has been demonstrated how cultural continuity impacts mental health and overall sense of well-being amongst minority ethnic groups (First Nations) in British Columbia (Chandler & Lalonde 2008). Thus it is now clear that “a community's vitality and quality of life is closely related to the vitality and quality of its cultural engagement, expression, dialogue, and celebration. The four-pillars model [of sustainability] further recognizes ... the contribution of culture ... in supporting social and economic health” (Duxbury and Gillette 2007). It would therefore be useful, from many perspectives, to now adopt a broader view of the features of sustainability.

Below are several additional considerations and examples, which may help to elucidate why and how *culture* should become *more fully incorporated into policy analysis and planning*, distinct from other social considerations:

1) Culture and sustainable development

“Culture is gradually emerging out of the realm of social sustainability and is being recognized as having a separate, distinct, and integral role in sustainable development. In 1995, UNESCO defined the cultural dimension of community development as being ‘the whole complex of distinctive spiritual, material, intellectual and emotional features that characterize a society or social group. It includes not only the arts and letters, but also modes of life, the fundamental rights of the human being, value systems, traditions and beliefs.’ ... Community development aims to strengthen the economy and the social ties within a community through locally based initiatives. The community development process is often characterized as a ‘triple bottom line’ of amalgamating environmental, social, and economic well-being into a common audit. The bottom line is now expanding to include cultural well-being and good governance.” (Duxbury et al 2007)

“[C]ommunities must nurture built environment and settlement patterns that are uplifting, inspirational, and memorable, and that engender a special feeling of attachment and belonging.... A sustainable community respects the history and character of those existing features that nurture a sense of attachment to, and familiarity with, place. Such ‘community landmarks’ may be natural—a meadow or an ancient tree, an urban creek—or built—a civic monument, a local diner, an historic courthouse or clock tower. Finally, in a sustainable place, special effort is made to create and preserve places, rituals, and events that foster greater attachment to the social fabric of the community.” (Beatley & Manning 1997)

2) Local livelihoods and cultural continuity

“Local communities in developing countries are the first to encounter the adverse effects of climate change. Poor and marginalised groups such as the Himalayan mountain population and downstream flood plain inhabitants are particularly vulnerable. One approach to reducing vulnerability and strengthening local level adaptation is that of ‘bottom-up’ community-led processes built on local knowledge, innovations, and practices. The focus should be on empowering communities to adapt to a changing climate and environment based on their own decision-making processes and participatory technology development with support from outsiders. ... Regional cooperation needs to advance in order to address the ecological, socio-economic, and cultural implications of climate change in the Himalayas.” (Eriksson et al 2009)

“[A]n indigenous [or other minority] group’s culture, religion, and language may be so closely linked to a particular way of life and resource base [or traditional livelihood] that modernization and the development of this resource base by a dominant center effectively undermines the group’s right under Article 27 [of the International Covenant on Civil and Political Rights] to ‘enjoy their own culture’ [or use] their resource base.” (Schech & Haggis 2000) (Note: China has signed, though not yet ratified, the ICCPR.)

“[A]nyone whose identity is undermined by radical personal and cultural change is put at special risk...for the reason that they lose those future commitments that are necessary to guarantee appropriate care and concern for their own well-being. ... Communities that have taken active steps to preserve and rehabilitate their own cultures [maintained

cultural continuity] are shown to be those in which youth suicide rates are dramatically lower [amongst First Nations in Canada]”(Chandler & Lalonde 1998)

3) Resilience in social-ecological systems

“What is a social-ecological system? Resilience refers to the capacity of a social-ecological system both to withstand perturbations from for instance climate or economic shocks and to rebuild and renew itself afterwards. Loss of resilience can cause loss of valuable ecosystem services, and may even lead to rapid transitions or shifts into qualitatively different situations and configurations, evident in, for instance people, ecosystems, knowledge systems, or whole cultures. (Berkes et al 2003)

“A human society may show great ability to cope with change and adapt if analyzed only through the social dimension lens. But such an adaptation may be at the expense of changes in the capacity of ecosystems to sustain the adaptation... Similarly, focusing on the ecological side only as a basis for decision making for sustainability leads to too narrow and wrong conclusions... [T]he term social–ecological system [emphasizes] the integrated concept of humans-in-nature and [aims] to stress that the delineation between social and ecological systems is artificial and arbitrary... Recent advances [in studies of resilience] include understanding of social processes [such as] social learning and social memory, mental models and knowledge-system integration [i.e., of traditional ecological knowledge, or TEK]... social networks... and systems of adaptive governance that allow for management of essential ecosystem services.” (Folke 2006)

“Mobility is still vital for most [Tibetan] herders, although with escalating settlement, livestock mobility is being curtailed. The system was designed around the seasonal movement of livestock; herds rotated between pastures to use forage in summer and reserve grass for autumn and early winter to prepare animals for the long winter. The survival today...of Tibetan pastoralists bears witness to their extraordinary indigenous knowledge, resourcefulness and animal husbandry skills.[There has been] remarkable resilience. [But now] quite sophisticated livestock and grazing management systems are being altered as modern development sweeps across the Tibetan steppes.” (Miller 2005)

For all of these reasons, it is important in any analysis of development programs to assess not only the internal logic of the proposed action (i.e., from within its own field), but also the real extent of impact, including indirect ramifications, in all of the key areas or pillars of sustainability— that is, impacts on Economy, Environment, Society, and Culture.

Horizontal Ramifications: Using HPA as Analytical Tool to Enhance Sustainability

As summarized in Foggin (2008), Foggin and Phillips (2010), Harris (2010), Lahtinen (2010), Yeh (2005, 2009), Pearce (2010), McBeath and Huang-McBeath (2006); many development policies and programs in Qinghai Province are affecting the lives and livelihoods of Tibetan herders, bringing radical transformations to the socio-ecological landscape. Table 2, below, gives a preliminary overview of how *Ecological Resettlement* and other selected development policies in the region can each be assessed according to their impact, both direct and indirect, on the economy, environment, society, and culture.

Table 2.

Horizontal Policy Analysis: Policy Impacts on Economy, Environment, Society and Culture in Tibetan Regions of Qinghai Province

Overall outcome: ↑ = improved situation ↓ = deteriorating situation ↑↓ = multiple outcomes ↔ = little change, or no direct impact

| KEY POLICIES organized by main development focus | The Four Pillars of Sustainability (Page 1) | | | |
|--|--|---|---|---|
| | <i>ECONOMY</i> Material prosperity | <i>ENVIRONMENT</i> Ecological balance | <i>SOCIETY</i> including Health, Education, Hope, Equity, etc. | <i>CULTURE</i> including sense of well-being, cultural continuity |
| <i>Development policies related to poverty alleviation and rural economic development</i> | | | | |
| 1. <i>Sipeitao</i> program | Reduced overwinter mortality of livestock, hence increased net income (for households that can match government subsidies, where cost-sharing is required) ↑ | Changes in land use patterns, potential for increased land degradation near permanent houses and near settlements, reduced seasonal mobility and flexibility of grazing practices ↓ | Improved living conditions (e.g., air quality, temperature), possibly more time each year spent near sedentary forms of health care and education ↑ | Partial loss of traditional (customary) grazing practices, loss of cultural heritage and adaptation to environmental conditions in the grasslands ↓ |
| 2. Regional fencing | Assumed improvement in grassland quality, and hence long-term household income; but startup costs are high, and maintenance not ensured ↑↓ | Movement of some wildlife (and livestock) is hindered, mortality reported, ↓ | Loss of some mobility and flexibility (which could help herders to respond better to variable climatic events), change in social relations ↓ | Loss of some aspects of the traditional pastoral experience, partial loss of overall sense of freedom on the vast rangeland (steppe) ↓ |
| 3. Rural cooperatives | New opportunities open for economic development with mutual aid and a supportive policy environment ↑ | Government support for rural cooperatives focused on new economic activities that can be called ‘ecological pastoralism’ ↑ | Self-governance inherent in cooperatives can allow them to choose, e.g., to direct some of their profit to social needs ↑ | Self-governance inherent in cooperatives allows for local decision-making and creative self-expression, innovation ↑ |
| 4. Focus on ecotourism | May provide new income and skills for some local people and communities; but may equally benefit only external tour operators, unequal benefit ↑↓ | May be used to promote good environmental stewardship; but may equally be just a ‘green washing’ of companies ↑↓ | Can be used to bring benefit to local communities, but much effort needed to ensure good community partnerships ↑↓ | Culture may be externally defined, only an attraction for tourists; or some new genuine partnerships may develop, with increased local pride ↑↓ |

| KEY POLICIES organized by main development focus | The Four Pillars of Sustainability (Page 2) | | | |
|--|--|---|---|--|
| | <i>ECONOMY</i> Material prosperity | <i>ENVIRONMENT</i> Ecological balance | <i>SOCIETY</i> including Health, Education, Hope, Equity, etc. | <i>CULTURE</i> including sense of well-being, cultural continuity |
| <i>Development policies related to community health</i> | | | | |
| 5. Health insurance | Direct refund of large portion of people's medical costs ↑ | | Enhanced accessibility to healthcare ↑ | |
| | | ↔ | | ↔ |
| 6. Rural clinics | If less illness (due to enhanced accessibility of services), local economic situations improved ↑ | | Increased access to healthcare, availability of immunizations, good model for rural services ↑ | |
| | | ↔ | | ↔ |
| <i>Development policies related to basic education</i> | | | | |
| 7. Compulsory education | Diversified and enhanced opportunities in future; but may also require urbanization (problematic employment) ↑↓ | Can incorporate classes on environmental awareness, but this is not done universally ↑↓ | Increased rates of education, also critical immunizations sometimes provided; but may also require urbanization, new forms of employment ↑↓ | Some families do not want to send their children to boarding school, due to inadequate care (cf. teacher-student ratio, etc.); also possible cultural erosion ↓ |
| 8. Centralization of education | | Could contribute to the loss of a way of life (pastoralism) that has proven sustainability and resilience over centuries ↑↓ | Enhanced teacher quality; but possibility of crowding in boarding schools, possibility of other negative impacts ↑↓ | Formal education system is very different from homes in farming herding areas ↓ |
| | ↔ | | | ↓ |
| 9. Language of instruction | Increased job opportunities associated with bilingualism (i.e., speaking /writing both fluent Chinese and Tibetan) ↑ | Loss of fluency in mother tongue can be associated with a loss of 'traditional ecological knowledge' (TEK); yet better Chinese (and English) can also open other avenues of learning ↑↓ | In earlier years education may be more effective in mother's tongue, but more opportunities present later if also fluent in national language; better still if there is bilingual literacy ↑↓ | Loss of mother tongue can lead to a significant loss of cultural heritage, also creates barriers to inter-generational relationships, cultural identity, and social learning ↓ |
| | | | | ↓ |

| KEY POLICIES organized by main development focus | The Four Pillars of Sustainability (Page 3) | | | |
|--|---|--|--|--|
| | <i>ECONOMY</i> <i>Material prosperity</i> | <i>ENVIRONMENT</i> <i>Ecological balance</i> | <i>SOCIETY</i> including Health, <i>Education, Hope, Equity, etc.</i> | <i>CULTURE</i> including sense of <i>well-being, cultural continuity</i> |
| <i>Development policies related to environmental protection</i> | | | | |
| 10. Returning Pasture to Grasslands | No direct impact; but people who leave their land for ~10 years then must live on small government subsidies, with a possibility of losing abilities in pastoral living or need to find new employment ↓ | Assumption of good outcome through recovery of degraded grassland; however grassland ecosystems developed over centuries with grazing – and removal of all grazing might lead to alternate (unexpected) vegetation states, not recovery ↑↓ | ↔ | Abandonment (possibly only temporary) of long-standing pastoral livelihood practices and associated culture ↓ |
| 11. Protected areas (PAs) | Income matters not generally considered... but possible loss of grazing rights (e.g. in core zones); some new economic opportunities maybe available for some herders (as wardens, monitors), also ecotourism ↑↓ | The main stated purpose of PAs is ‘conservation’ ↑ | ↔ | ↔ |
| 12. Collaborative management | Encourages local communities to innovate ways of combining conservation and development within the context of PAs, allows novel forms of income generation (e.g., ecotourism) ↑ | Most successful conservation occurs by working as partners with local communities; joint management of grassland, wildlife and other natural resources; combines local (traditional) with outside experts in partnership; sense of genuine local ownership, encourages full participation, learning from experience ↑ | Both development and conservation can occur simultaneously ↑ | Allows for local expression of culture (through livelihoods) to be practiced ↑ |

| KEY POLICIES organized by main development focus | The Four Pillars of Sustainability | | | | (Page 4) |
|---|--|---|--|---|----------|
| | <i>ECONOMY</i> <i>Material prosperity</i> | <i>ENVIRONMENT</i> <i>Ecological balance</i> | <i>SOCIETY</i> including Health, <i>Education, Hope, Equity, etc.</i> | <i>CULTURE</i> including sense of <i>well-being, cultural continuity</i> | |
| <i>Development policies related to environmental protection (continued)</i> | | | | | |
| 13. Ecological Resettlement | A form of urbanization (see below) with the potential to induce (through loss of hope, inadequate vocational training, etc.) long-term unemployment ↓ | Not necessary for long-term sustainable utilization and conservation of grassland ecosystems ↔ | Real potential for long-lasting negative social consequences including loss of hope, poor health, inadequate vocational training and employment, increasing disparities, etc. ↓ | Loss of cultural patterns, community structure and support systems, etc. ↓ | |
| 14. Payment for Ecosystem Services (PES) | Funds given to support local individuals (or communities) ↑ | Payments made only for good environmental practices; but monitoring may be difficult ↑↓ | New funding sources might filter into rural development (but this is not certain) ↔ | May be a development option that allows continuation of (sustainable) pastoral practices ↑ | |
| <i>Other broad approaches to 'sustainable development' currently being pursued in China</i> | | | | | |
| 15. Privatization (from the period of decollectivisation onward) | Less community cohesion, fewer support mechanisms, more individuals likely to fail (economically) without proper community support structures; yet improved incentives too ↑↓ | Parcelization (division) of land into ever smaller units not well adapted to the local climatic conditions, possible overuse ↓ | Some loss of community structure, cohesion, and support mechanisms; but possibly also innovations ↑↓ | Traditional community forms lost to privatization (and other factors generally inherent in globalization); yet at the same time every culture continues to evolve, change, adapt... ↑↓ | |
| 16. Market economy (globalization) | New economic opportunities may become clear, but also sometimes wrong attribution of value to local (livestock-related) products ↑↓ | Short- and long-term benefits may become confused, leading to environmental degradation (for short-term economic gain) ↓ | Market mechanisms can be leveraged to help provide (or improve) social services, but market alone should not be a driving force ↑↓ | Market economy (and other aspects of globalization) can erode local appreciation for all things traditional; cultural preservation and continuity should be encouraged, for long-term community health ↓ | |

| KEY POLICIES organized by main development focus | The Four Pillars of Sustainability (Page 5) | | | |
|--|---|--|--|--|
| | <i>ECONOMY</i> <i>Material prosperity</i> | <i>ENVIRONMENT</i> <i>Ecological balance</i> | <i>SOCIETY</i> including Health, <i>Education, Hope, Equity, etc.</i> | <i>CULTURE</i> including sense of <i>well-being, cultural continuity</i> |
| <i>Other broad approaches to 'sustainable development' that are being pursued in China (continued)</i> | | | | |
| 17. Sedentarization | Some increased ability to connect to a broader market economy, yet at the same time loss of long-standing practices adapted to the local ecological situation ↑↓ | Change in land use patterns generally brings overuse of natural resources near homes and near settlements ↓ | Some increased ease in the provision of social services, yet same services also can be provided in rural pastoral (nomad) context as well ↑↓ | Loss of some aspects of traditional culture, seasonal mobility, extensive grazing patterns ↓ |
| 18. Urbanization | New arrivals (migrants) often reside on periphery of towns, not able to integrate, unable to develop or occupy new roles (economic opportunities) ↓ | Apart from not being required in the first place (to protect the environment), can also lead to various new problems such as overuse of nearby resources and other unexpected impacts ↓ | Some social services may be geographically local, but not necessarily more accessible from a socio-economic, language, or cultural perspective ↑↓ | Resettlement to new towns constitutes a major personal and communal upheaval ... and may lead to societal and cultural confusion, loss of a sense of identity, etc. ↓ |

As we move into the 21st Century, it is clear that grassland ecosystems, as well as pastoralism, are undergoing fundamental changes; in many cases, changes that may not easily be reversed (Blench 2001). And many of the factors affecting the land and the people who are dependant on the land are not as much environmental as anthropogenic—by way of regional policy decisions.

This chapter has already provided an overview of such socio-political factors as they pertain to the Tibetan Plateau grasslands, including a brief analysis of their horizontal impacts (see Tables 1 and 2). Such perspective and analysis is critical to better understanding the long-term potential impacts and outcomes of development programs. This approach is particularly important in light of a redefinition (refining) of the concept of Sustainability to include *culture* as well as standard elements of environment, society, and economy. Now, taking this horizontal analytical approach further, we will discuss in greater detail the specific situation of Ecological Resettlement policy.

HPA and the ‘*Shengtai Yimin*’ Policy

“Qinghai Province plans to build 25,000 settlements for herding families this year. ... More than 46,000 settlements [already] have been built since the project started in 2009...helping nomadic people in the province settle down in permanent homes.”

(Xinhua 2011b)

Government officials often assume that the nomads are directly responsible for the current state of environmental degradation on the Tibetan Plateau, and therefore they recently began to enact a policy of Ecological Resettlement with the aim to relocate more permanently a large segment of the herding population into new towns. Some officials argue that herders – despite their nearly 5,000 years of a pastoralist life on the Tibetan Plateau – have now begun to overgraze the region, leading in some areas to degradation of the land, in other areas to a paucity of flora and fauna. In fairness, however, there are also many other factors involved in such observed changes... Land/environmental degradation has occurred in large part due to changing climatic conditions; and as our global climate continues to shift, observed trends will most likely continue—through no or little fault of the nomads themselves, who merely are following a way of life known to them for millennia. As several authors have shown, the socio-cultural system used by the Tibetan nomads “has allowed them to subsist on the Northern Plateau [part of the Tibetan Plateau] for centuries without destroying their natural resource base precisely because it fostered a balance between their highly adapted herds and their harsh environment” (Goldstein et al., 1990). Research in several African nomadic areas also has shown that in an arid climate, nomadic groups play such an integral role in the maintenance and flexibility of the local ecology that to remove the herders would be disastrous. Throughout the Tibetan Plateau region, it is rapidly becoming apparent that the removal of herders from the land, moving them into towns, is also creating negative social consequences, detrimental not only to the local people and communities, but regionally as well.

With regard to Ecological Resettlement (*shengtai yimin*), it has been noted on recent work trips undertaken by one of the authors (JMF) that social outcomes of the policy are largely negative. For example, in two new villages in Zhiduo County (comprised of ~200 families each), the main

areas of concern for local residents now include: lack of employment, no or little income, poor health, poor hygiene, and culture shock with few basic life skills appropriate for town life (Du, pers. comm.). Thus socio-economic and cultural impacts are very challenging for the affected people. When considered under the rubric of HPA, this means that at least 3 of the 4 so-called *pillars of sustainability* are not met by this policy; yet it still remains widespread in the region.

The current policy in China (i.e., *shengtai yimin*) is still an untested trial at an enormous scale – with potential devastating long-term (generational) social, cultural and possibly environmental consequences; some of them irreversible. There are several reasons for this assessment. Mainly, the rationale behind the policy remains inadequate, as the resettlement required has not yet been convincingly argued as the only or the best way to circumvent environmental degradation in the region. Several alternative options do exist. For example, other forms of local governance or community co-management may be viable alternatives. These alternatives could allow for the joint operation between government authorities and local herders for wildlife monitoring and for the conservation of selected endangered species; greater integration of local human development needs or aspirations with conservation goals, and for this purpose enhanced dialogue with local protected area management authorities; and collaborations to help mitigate emerging conflicts between local people and problematic species such as brown bear. Such collaborative options are now being considered and developed within the provincial Forest Bureau, together with several national and international partners (Foggin 2010, Ma 2010, Plateau Perspectives 2010).

To mitigate some of the observed challenges associated with *shengtai yimin* policy, a variation of the policy is also now being tried—the sedentarization of mobile/nomadic herders (Chinese, *you mumin dingju*). While this approach to ‘modernization’ may also have challenges to overcome – or, it could be argued, even this new approach should not be tried (see Smyth and Jaireth 2003) – at a minimum it does overcome, at least in theory, some greatest societal and cultural pitfalls that are associated with relocation and settlement required under the previous program. In some of our initial (informal) surveys, it appears that a *dingju* approach to pastoral development would allow, in particular, for small groups of herders to work together, perhaps with the formation of local associations or cooperatives, in ways that will allow the merging/integration of traditional and modern practices. It may thus be possible for environmental benefit also to be accrued, with maintenance of more traditional knowledge through rural-based development (as opposed to relocation, urbanization). Taken together with more collaborative forms of resource management (as are being developed with the provincial Forest Bureau and protected area administrations), it is possible that a more equitable and sustainable approach to pastoral development will be found.

General Discussion

“President Hu Jintao on Sunday said Tibet must maintain social stability and push forward reform to achieve sound development. ‘Meticulous efforts must be paid to the tasks of reform, development and stability to boost leapfrog development and maintain perennial stability in Tibet,’ Hu told the Tibetan delegation to the NPC.”

(People’s Daily 2011c)

“China will spend two thirds of central budget on improving the people's livelihood in 2011, Finance Minister Xie Xuren said Monday. The funds will be used to boost education, health care, social security and job creation, Xie told a press conference. The government will also use the money to improve agriculture, water conservation, transport and environmental protection, he said.”

(Xinhua 2010c)

“China is poised to further improve its people's livelihoods and promote social equity in 2011. ... Only with deep respect and extensive care for people's wills and interests can a ruling party have inexhaustible support from the people and the country... A critical period for China to build a well-off society in an all-around way, the coming five to ten years will be a more difficult phase of China's reforms, which will be marked by the interweaving of short-term and long-term problems... That means China will be faced with a more urgent and challenging task in transforming its economic growth mode, improving people's livelihoods and safeguarding social stability.”

(Xinhua 2011d)

In efforts to improve people’s standard of living and to prevent serious ecological degradation, government has recently enacted at least eighteen different policies (see Table 2) that have had, and are likely to have, immense socio-economic consequences for the Tibetan people’s way of life. Unfortunately, there are often unforeseen, unintended consequences to such widespread and rapid restructuring of society. This chapter has presented a preliminary examination of the said policies in holistic fashion, each policy examined independently and in concert with each other; that is, in both a linear and a vertical manner, to show how researchers and policy-makers may gain a better grasp about how individual policies, often created in a vacuum (i.e., independently), may affect the outcome(s) of other policies. More importantly, we have aimed to demonstrate how all these policies, when considered together, might affect the pastoral (herder) communities where they are enacted— sometimes in a very positive manner, sometimes in a negative manner.

Traditionally, most organizations (including government) only examine a proposed policy in a vacuum, or a ‘silo,’ with little recognition or analysis of its ramifications on, and/or interactions with, other policy areas. This type of situation may occur for different reasons – with financial, personnel, or political constraints being most common. Unfortunately, because there are too few, if any, attempts to understand how new policies are acting upon (or being acted upon by) other development policies, a comprehensive picture of the impact of development initiatives among pastoralists in Qinghai Province is lacking; and our current understanding is incomplete at best.

The main lesson from this chapter for “policy analysis” is that HPA constitutes an analytical approach that may lead to much greater insight into a variety of possible outcomes of a policy, all of them important, including the economic as well as environmental, societal, and cultural outcomes or impact. As we have done, albeit briefly, with Ecological Resettlement— all other development programs or policies also could benefit from being considered/viewed through a

similar multi-spectral lens. This integrated approach (HPA) may thus help key stakeholders to create better plans for regional sustainable development. It also can help to reduce the risk of negative outcomes and unintended consequences, and thus help maintain social stability. HPA is an important tool that may be used to enhance sustainability on the Tibetan Plateau, which is an ecologically important region for China and the world.

Recommendations

Below are some final recommendations that may help to enhance sustainability in the region:

- Enhanced dialogue and coordination between different government sectors
- Greater involvement from the social sciences in issues of ecological protection
- Increased opportunities for more local stakeholder voices to be heard, considered
- Further development of more collaborative forms of natural resource management
- Support the expansion of community-centered, grassland-based (rural) development
- Increased attention to cultural matters, including the promotion of ‘cultural continuity’
- Further exploration of the value and application of *Horizontal Policy Analysis* (HPA)

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REFERENCES

- Bain, I. 2010. 'Sustainable development in western China: managing people, livestock and grasslands in pastoral areas' (book review). *Mountain Research and Development*: 30:1: pp. 59-60.
- Banks, T., Richard, C., Li, P. & Yan, Z. L. 2003. 'Community based grassland management in Western China: Rationale, pilot project experience, and policy implications'. *Mountain Research and Development*: 23:2: pp. 132-140.
- Bauer, Ken. 2005. Development and the enclosure movement in pastoral Tibet since the 1980s. *Nomadic Peoples* 9 (1 & 2): 53-81.
- Beatley, Timothy, and Manning, Kristy. 1997. *The ecology of place: Planning for environment, economy, and community*.
- Behnke, R. H. and I. Scoones 1993. Rethinking Range Ecology. In: Behnke, R. H., I. Scoones and C. Kerven (eds) *Range Ecology at Disequilibrium: New models of natural variability and pastoral adaptation in African savannas*. pp. 1-30. London: Overseas Development Institute.
- Beimatsho. 2008. Population, Pasture Pressure, and School Education: - Case Studies from Nag chu, TAR, PRC. *Journal of the International Association of Tibetan Studies* 4: 1-21.
- Bennett, Michael. 2009. Markets for Ecosystem Services in China. An Exploration of China's "Eco-Compensation" and Other Market - Based Environmental Policies. *Forest Trends*.
http://www.forest-trends.org/publication_details.php?publicationID=2317
- Berkes, Fikret, Colding, Johan, and Folke, Carl (editors). 2003. *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge: Cambridge University Press.
- Blas, Erik, and Sivasankara, Anand (eds). 2010. Equity, Social Determinants and Public Health Programmes. WHO. http://whqlibdoc.who.int/publications/2010/9789241563970_eng.pdf
- Blench, R.M. 2001. Pastoralism in the new millennium. FAO: Animal Health and Production Series, No 150.
- Borrini-Feyerabend, G., Pimbert, M., Farvar, M.T., Kothari A., and Renard, Y. 2004. *Sharing Power: Learning by doing in co-management of natural resources throughout the world*. Tehran, Iran: Cenesta (with IIED and IUCN/ CEESP/ CMWG).
- Breivik, I. 2007. *The political ecology of grassland conservation in Qinghai Province, China: discourse, policies and the herders* (Masters thesis). Norwegian University of Life Sciences: Norway.

Brown, Colin G., Waldron, Scott A., and Longworth, John W. 2008. Sustainable Development in Western China: Managing People, Livestock and Grasslands in Pastoral Areas. Cheltenham, UK: Edward Elgar.

Chandler, M.J. & Lalonde, C.E. 2008. Cultural continuity as a moderator of suicide risk among Canada's First Nations. In Kirmayer, L. & Valaskakis, G. (Eds.). Healing traditions: The mental health of Aboriginal peoples in Canada (pp. 221-248). University of British Columbia Press.

Chandler, M.J., and C.E. Lalonde. 1998. Cultural continuity as a hedge against suicide in Canada's First Nations. *Transcultural Psychiatry* 35(2): 193–211.

China Daily. 2004. Pika wrongly accused. 20 May 2004.
http://www.chinadaily.com.cn/english/doc/2004-05/20/content_332171.htm. Accessed 16 June 2011.

China Daily. 2009. Wen: China to continue to develop western region. 16 October 2009.
http://www.chinadaily.com.cn/china/2009-10/16/content_8803115.htm. Accessed 15 June 2011.

China Daily. 2011c. Chairman promises changes for Tibetans. By Cui Jia. 7 March 2011.
http://www.chinadaily.com.cn/china/2011npc/2011-03/07/content_12125948.htm. Accessed 9 March 2011.

China Daily. 2011d. Western China Development Strategy, 10 Years On. 15 June 2011.
<http://www.chinadaily.com.cn/china/westdevelopment/index.html>. Accessed 15 June 2011.

Dowie, Mark. 2009. Conservation Refugees: The hundred-year conflict between global conservation and native peoples. Cambridge, Massachusetts: The MIT Press.

Du, F. 2006. Grain for green and poverty alleviation. The policy and practice of ecological migration in China. *Horizons* 9(2).
http://www.policyresearch.gc.ca/doclib/HOR_v9n2_200608_e.pdf;

Duxbury, Nancy, Eileen Gillette, Kaija Pepper. 2007. Culture as a Key Dimension of Sustainability: Exploring Concepts, Themes, and Models. Centre of Expertise on Culture and Communities, Working Paper No. 1. of the Creative City Network of Canada. URL:
<http://www.cultureandcommunities.ca/downloads/WP1-Culture-Sustainability.pdf>

Eriksson, Mats, Xu, Jianchu, Shrestha, Arun Bhakta, Vaidya, Ramesh Ananda, Nepal, Santosh, and Sandström, Klas. 2009. The Changing Himalayas: Impact of Climate Change on Water Resources and Livelihoods in the Greater Himalayas. Kathmandu: ICIMOD – For Mountains and People.

ESPA. 2008. China Ecosystem Services and Poverty Alleviation Situation Analysis and Research Strategy. Final Report to DFID. 84 pp.

[http://www.nerc.ac.uk/research/programmes/espa/documents/Final%20Report%20China%20 - %20annex.pdf](http://www.nerc.ac.uk/research/programmes/espa/documents/Final%20Report%20China%20-%20annex.pdf)

Foggin, J.M. 2000. Biodiversity protection and the search for sustainability in Tibetan plateau grasslands. PhD dissertation. Arizona State University, Tempe, USA. 397 pp. URL: <http://www.plateauperspectives.org/foggin2000>

Foggin, J.M. 2005. Highland Encounters: Building new partnerships for conservation and sustainable development in the Yangtze River headwaters, heart of the Tibetan Plateau. In: J. Velasquez, M. Yashiro, S. Yoshimura and I. Ono (eds). 2005. Innovative Communities: People-centred Approaches to Environmental Management in the Asia-Pacific Region. Tokyo, Japan: United Nations University (UNU) Press. 360 pp.

Foggin, J.M. 2008. Depopulating the Tibetan grasslands: National policies and perspectives for the future of Tibetan herders in Qinghai Province, China. *Mountain Research and Development* 28(1): 26-31.

Foggin, J.M. 2008. Depopulating the Tibetan grasslands: National policies and perspectives for the future of Tibetan herders in Qinghai Province, China. *Mountain Research and Development* 28(1): 26-31.

Foggin, J.M. 2010. ICCAs as ‘contract conservation’ in the Chinese Tibetan Plateau region. In G. Borrini-Feyerabend et al., Bio-cultural diversity conserved by indigenous peoples & local communities – examples & analysis. Companion document to IUCN/CEESP Briefing Note 10: Strengthening what works – Recognising and supporting the conservation achievements of indigenous peoples and local communities. ICCA Consortium, CENESTA, GEF, SGP, GTZ, IIED, IUCN/CEESP; September 2010.

Foggin, J.M. 2011. Rethinking ‘Ecological Migration’ and the Value of Cultural Continuity – A Response to Wang, Song and Hu. *AMBIO: A Journal of the Human Environment* 40:100-101. DOI 10.1007/s13280-010-0105-5.

Foggin, J.M., and M.H. Bass. 2010. Mainstreaming Environment into Development: Collaborative land management in the Tibetan grasslands, China. LEAD International URL: <http://www.lead.org/page/573>.

Foggin, J.M., and J. Phillips. 2010. Looking for stability: Holistic policy analysis in light of rapid development among Kham Tibetan herding groups. *Himalayan Journal of Development and Democracy*, Vol 5(1):64-71.

Foggin, J.M., and Torrance-Foggin, M.E. [Submitted]. Providing social services for Tibetan herders in the Sanjiangyuan region: A case study from Yushu Tibetan Autonomous Prefecture, Qinghai Province, circa 1998–2010. *Pastoralism: Research, Policy and Practice*.

Foggin, P.M. and J.M. Foggin. 2008. The practice and experience of settlement and relocation among Canada's Aboriginal peoples. In: P. Potter and Du Fachun (eds). 2008. Proceedings, Canada-China Forum, Western Development and Socio-Economic Change. Beijing, China: Institute of Ethnology and Anthropology (IEA), Chinese Academy of Social Sciences (CASS) and University of British Columbia (UBC). 472 pp.

Foggin, J.M., and Tashi, Gongbo. [Submitted]. Can Ecological Migration policy in the Tibetan plateau region achieve both conservation goals and human development goals? A review of the Canadian experience of relocation and settlement. Paper presented at the XVI Congress of the International Union of Anthropological and Ethnological Sciences, International Workshop on Ecological Resettlement: Local Participation and Policy Improvement, on 30 July 2009, Kunming, China.

Foggin, P.M., M.E. Torrance, and J.M. Foggin. 2009. Accessibility of Healthcare for Pastoralists in the Tibetan Plateau Region: A case study from southern Qinghai Province, China. Pages 83-91 in: Cao H (ed), Ethnic Minorities and Regional Development in Asia: Reality and Challenges. Amsterdam, Holland: Amsterdam University Press.

Folke, Carl. 2006. Resilience: The emergence of a perspective for social-ecological systems analyses. *Global Environmental Change*, 16:253-267.

Gesler, Wilbert M., and Kearns, Robin A. 2002. *culture / place / health*. Critical Geographies Series. Routledge: London. 182 pages.

Goldstein, M.C., Beall, C.M., Cincotta, R.P. 1990. Traditional Nomadic Pastoralism and Ecological Conservation on Tibet's Northern Plateau. *National Geographic Research* 6(2): 139-56.

Goodman, David S. G. (ed). 2004b. China's Campaign to "Open Up the West": National, Provincial- level and Local Perspectives. Cambridge: Cambridge University Press.

Goodman, David S.G. 2004. Qinghai and the Emergence of the West: Nationalities, Communal Interaction and National Integration. *The China Quarterly*, Special Issues, New Series 5: 65-85.

Harris, R. 2010. Rangeland degradation on the Qinghai-Tibetan plateau: A review of the evidence of its magnitude and causes. *Journal of Arid Environments* 74: 1-12.

Hawkes, Jon. (2001). *The fourth pillar of sustainability: Culture's essential role in public planning*. Melbourne: Cultural Development Network & Common Ground Press.

Hecht, Susanna B., and Cockburn, Alexander. 1990. *The Fate of the Forest: Developers, Destroyers, and Defenders of the Amazon*. University of Chicago Press. 408 pages.

Ho, Peter. 1999. *Rangeland Policy, Pastoralism and Poverty in China's Northwest: Ningxia Province in the Twentieth Century*. Doctoral dissertation, University of Leiden.

Holbig, Heike. 2004. The Emergence of the Campaign to Open Up the West: Ideological Formation, Central Decision-making and the Role of the Provinces. *The China Quarterly* 178: 335-357.

IGSNRR & QTB. 2009a. Ecotourism Development Planning for Sanjiangyuan Region in Qinghai Province (2009 - 2025). The Institute of Geographic Sciences and Natural Resources Research (IGSNRR) and Qinghai Tourism Bureau (QTB). [In Chinese]

IGSNRR & QTB. 2009b. Tourism Master Planning for Jiegu Area in Yushu Tibetan Autonomous Prefecture of Qinghai Province. The Institute of Geographic Sciences and Natural Resources Research (IGSNRR) and Qinghai Tourism Bureau (QTB). [In Chinese]

Kothari, A. (2006). 'Community Conserved Areas', in Lockwood, M., Worboys, G. L. & Kothari, A. (Eds). *Managing Protected Area: A Global Guide*. Earthscan: London, UK. pp. 549-573.

Lahtinen, Anja. 2010. Governance Matters: China's developing western region, with a focus on Qinghai Province. Doctoral dissertation. Publications of the Institute for Asian and African Studies 11. Helsinki: Helsinki University Print.

<https://helda.helsinki.fi/bitstream/handle/10138/19191/governan.pdf?sequence=1>

Lai, H. H. 2002. 'China's western development program: its rationale, implementation, and prospects'. *Modern China*: 28: pp. 432-466.

Lalonde, C.E. (2005). Creating an Index of Healthy Aboriginal Communities. Developing a Healthy Communities Index: A collection of papers, (pp. 21-27). Report prepared for the Canadian Population Health Initiative, Canadian Institute for Health Information.

<http://web.uvic.ca/~lalonde/manuscripts/2005HealthyCommunities.pdf>

Li, Tao. 2007. A Study of the Tibetan Rural Urbanisation Model. *China Report* 43(1): 31-42.

Li, Wenjun and Han, Nianyong. 2001. Ecotourism Management in China's Nature Reserves. *AMBIO* 30(1):62 - 63.

Li, X., Brierley, G.J., Shi, D., Xie, Y., Qiao, Y., Li, J. and Sun, H. In press. Ecological protection and restoration in Sanjiangyuan Natural Reserve, Qinghai Province, China. *GeoJournal*.

Liu J, Zhiyun O, Pimm SL, Raven PH, Wang X, Miao H, Han N. 2003. Protecting China's biodiversity. *Science* 300(5673):1240-1241.

Liu, Jianguo, and Diamond, Jared. 2005. China's environment in a globalizing world: How China and the rest of the world affect each other. *Nature* 435: 1179-1186.

Liu, Jianguo, and Raven, Peter H. 2010. China's Environmental Challenges and Implications for the World. *Critical Reviews in Environmental Science and Technology* 40: 823-851.

- Liu, Jianguo, Li, Shuxin, Ouyang, Zhiyun, Tam, Christine, and Chen, Xiaodong. 2008. Ecological and socioeconomic effects of China's policies for ecosystem services. *PNAS* 105(28): 9477-9482.
- Liu, Jiuyan. 2005. Integrated Ecosystem Assessment of Western China. Millennium Ecosystem Assessment. www.maweb.org/
- Liu, Xinxue. 2007. Path Selection of China's Western Region Urbanization. *Journal of US-China Public Administration* 4(1) (Serial No. 26): 57-60.
- Lu, Tao, Wu, Ning, and Luo, Peng. 2009. Sedentarization of Tibetan nomads. *Conservation Biology* 23(5): 1074.
- Ma, Hongbo. 2010. Environmental Governance and Community Development: A Case Study from Cuochi Village in the Qinghai-Tibetan Plateau. Paper presented at _____.
- McBeath & Huang-McBeath. 2006. 'Biodiversity conservation in China: policies and practice'. *Journal of International Wildlife Law and Policy*: 9:1: pp. 1-25.
- Melvyn Goldstein, Cynthia Beall, Cincotta. 1990. "Traditional Nomadic Pastoralism and Ecological Conservation on Tibet's Northern Plateau," *National Geographic Research*, Spring 1990; 149.
- Miller, D. J. 2000. 'Tough times for Tibetan nomads in Western China: snowstorms, settling down, fences and the demise of traditional nomadic pastoralism'. *Nomadic Peoples* : 4:1: pp. 83-109.
- Miller, Daniel. 2005. The Tibetan Steppe. Pages 305-342 in J.M. Suttie, S.G. Reynolds and C. Batello (eds), *Grasslands of the World. Plant Production and Protection Series No. 34*. FAO Food and Agriculture Organization.
- Morton, Katherine. 2007. Civil Society and Marginalization: Grassroots NGOs in Qinghai Province. In Bin Wu, Heather Xiaoquan Zhang, Andrew Flynn and Richard Sanders (eds) *Marginalization in China: Perspectives on Transition and Globalization*, Ashgate Publishing.
- Nelson, R. 2006. 'Regulating grassland degradation in China: shallow-rooted laws?'. *Asian-Pacific Law & Policy Journal*: 17: 2: pp. 385-417.
- Nicole F. Bernier and Nathalie Burlone. 2007. Breaking the Deadlock: Public Health Policy Coordination as the Next Step. *Healthcare Policy*, 3(2).
<http://www.longwoods.com/content/19367>. Viewed 9 March 2011.
- Pearce, Miriam. 2010. What are the possibilities for a sustainable future in the Sanjiangyuan region of the Qinghai-Tibetan Plateau? Unpublished Masters thesis, School of Geography and Environmental Studies, University of Tasmania.

Pech, Roger, Jie, Bu, Arthur, Anthony D., Zhang, Yanming, and Lin, Hui. 2007. Population dynamics and responses to management of plateau pikas *Ochotona curzoniae*. *Journal of Applied Ecology* 44(3): 615-624.

People's Daily (Online). 11 March 2009. Nomadic people in Qinghai to settle within five years. URL: <http://english.people.com.cn/90001/90776/90882/6611715.html>

People's Daily (Online). 23 May 2011. Qinghai to build 300 additional ecological pastoral villages. URL: <http://english.peopledaily.com.cn/90001/7388664.html>

People's Daily. 2000. Western Development Key to China's Development Strategy: Jiang. 16 September 2000. http://english.peopledaily.com.cn/english/200009/16/eng20000916_50629.html. Accessed 15 June 2011.

Plateau Perspectives. 2010. Kegawa Herders Cooperative. In Annual Report 2010: Rebuilding Yushu after the earthquake, and other community development and conservation projects on the Tibetan Plateau. Xining, China: Plateau Perspectives. <http://plateauperspectives.org/downloads/Annual%20Report%202010.pdf>

Pomfret, John. 2000. Go West, Young Han. *The Washington Post*, Friday 15 September 2000. <http://www.hartford-hwp.com/archives/55/470.html>. Accessed 16 June 2011.

Ptackova, Jarmila. 2011. Sedentarisation of Tibetan nomads in China: Implementation of the Nomadic settlement project in the Tibetan Amdo area; Qinghai and Sichuan Provinces. *Pastoralism: Research, Policy and Practice* 1: 4. <http://www.pastoralismjournal.com/content/1/1/4>

QTB & JICA. 2006. The Study on Comprehensive Tourism Development in Greater Xining Area, Qinghai Province, the People's Republic of China. Final Report. PACET Corporation. Qinghai Tourism Bureau (QTB) and Japan International Cooperation Agency (JICA).

Raphael, D. (2008). Public policy and population health in the USA: Why is the public health community missing in action? *International Journal of Health Services*, 38, 63-9

Richard, C.E. 2003. Co-management processes to maintain livestock mobility and biodiversity in alpine rangelands of the Tibetan plateau. In: Lemons, J.; Victor, R.; Schaffer, D. (eds.) *Conserving Biodiversity in Arid Regions: Best Practices in Developing Nations*. Dordrecht, The Netherlands: Kluwer Academic Publishers:249-273.

Richard, Camille, Yan, Zhaoli, and Du, Guozhen. The Paradox of the Individual Household Responsibility System in the Grasslands of the Tibetan Plateau, China. 2006. *USDA Forest Service Proceedings RMRS-P-39*: 83-91.

- Richard, Camille. 2005. Developing alternatives to resettlement for pastoralists on the Tibetan plateau. *Nomadic Peoples* 9 (1 & 2): 103-106.
- Schech, Susanne, and Haggis, Jane. 2000. *Culture and Development: A critical introduction*. Blackwell. 226 pages.
- Sheehy, D. P., Miller, D. & Johnson, D. A. 2006. 'Transformation of traditional pastoral livestock systems on the Tibetan steppe'. *Sécheresse*: 17:1-2: pp.142-151.
- Shen, Jianfa. 2006. Understanding Dual-Track Urbanisation in Post-Reform China: Conceptual Framework and Empirical Analysis. *Population, Space and Place* 12: 497-516.
- Smith, A. T. & Foggin, J. M. 1999. 'The plateau pika (*Ochotona curzoniae*) is a keystone species for biodiversity on the Tibetan plateau'. *Animal Conservation*: 2: pp. 235-240.
- Smyth, Dermot, and Jaireth, Hanna (eds). 2003. *Innovative Governance: Indigenous Peoples, Local Communities and Protected Areas*. New Delhi: ANE Books.
- Tennigkeit, Timm, and Wilkes, Andreas. 2008. An Assessment of the Potential for Carbon Finance in Rangelands. ICRAF Working Paper No.68.
- Torrance, Marion. 2008. Health consequences of rapid urbanization. Paper presented at the XVI Congress of the International Union of Anthropological and Ethnological Sciences, International Workshop on Ecological Resettlement: Local Participation and Policy Improvement, on 30 July 2009, Kunming, China.
- Wang, Suosheng, Heo, Jinmoo, Yamada, Naoko, and Hwang, Suktae. 2009. Comparison of Ecotourism Policies and Implications for China's Ecotourism Development. *Journal of China Tourism Research* 5: 259-272.
- Wang, Xiuhong, and Fu, Xiaofeng. 2004. Sustainable Management of Alpine Meadows on the Tibetan Plateau: Problems Overlooked and Suggestions for Change. *AMBIO* 33(3): 169-171.
- Wang, Z.M., K.S. Song, and L.J. Hu. 2010. China's largest scale ecological migration in the three-river headwater region. *AMBIO: A Journal of the Human Environment* 39(5-6): 443-446.
- Waters-Bayer, Ann, Yan, Zhaoli, and Wettasinha, Chesha. 2009. Local innovation in range management on the Tibetan Plateau. Paper presented at the Sino-German Tibetan Rangeland Ecosystem Research Symposium, 20-26 July 2009, Lanzhou, China.
- Watts, J. (2006). China's rural health reforms tackle entrenched inequalities. *Lancet*, 367, 1564-1565.
- WCED (World Commission on Environment and Development). 1987. *Our Common Future*. The Brundtland Commission, UNESCO.

Westoby, Mark, Walker, Brian, and Meir, Imanuel N. 1989. Opportunistic management for rangelands not at equilibrium. *Journal of Range Management*, Vol. 42, No. 4.

WHO (World Health Organization). 2008. Closing the gap in a generation: Health equity through action on the social determinants of health.
http://www.who.int/social_determinants/thecommission/finalreport/en/index.html

Williams, D.M. (1996). Grassland enclosures: catalyst of land degradation in Inner Mongolia. *Human Organization* 55(3): 307-313.

Williams, D.M. 2002. *Beyond Great Walls: Environment, Identity, and Development on the Chinese Grasslands of Inner Mongolia*. Stanford University Press.

Wu, N. 1997. 'Indigenous knowledge and sustainable approaches for the maintenance of biodiversity in nomadic society: Experiences from the Eastern Tibetan Plateau'. *Die Erde*: 128: pp. 67-80.

Wu, N., and Richard, C. 1999. The privatization process of rangeland and its impacts on pastoral dynamics in the HinduKush Himalaya: The Case of Western Sichuan, China. Paper presented at the International Rangeland Congress, Townsville Australia, July 19-23, 1999.
<http://www.eldis.org/vfile/upload/1/document/0708/DOC9644.pdf>

Xin, Hao. 2008. A Green Fervor Sweeps the Qinghai-Tibetan Plateau. *Science* 321 (1 August 2008): 633-635.

Xinhua. 2009. China to expand 9-year compulsory education in ethnic minority regions. 13 April 2009. http://news.xinhuanet.com/english/2009-04/13/content_11177568.htm Accessed 16 June 2011.

Xinhua. 2010. Implementation of housing projects for herdsmen in Sichuan Province. [In Chinese]. 27 July 2010. http://paper.ce.cn/jjrb/html/2010-07/28/content_112870.htm. Accessed 15 June 2011.

Xinhua. 2010b. Qinghai clarifies purpose of bilingual education reform. 23 October 2010. http://www.china.org.cn/china/2010-10/23/content_21184014.htm. Accessed 16 June 2011.

Xinhua. 2010c. China's endeavor to boost people's livelihoods, social equity. 31 December 2010. http://news.xinhuanet.com/english2010/china/2010-12/31/c_13672624.htm. Accessed 9 March 2011.

Xinhua. 2011. China launches grassland protection subsidy program. 6 May 2011. http://www.china.org.cn/environment/2011-05/06/content_22511169.htm. Accessed 28 May 2011.

Xinhua (Online). 2011b. Qinghai to build more settlements for herding families in 2011. 27 March 2011. URL: <http://english.cri.cn/6909/2011/03/27/2021s628788.htm>. Accessed 15 June 2011.

Xinhua. 2011d. China to spend two-thirds of central budget on livelihood. 7 March 2011. http://www.chinadaily.com.cn/china/2011npc/2011-03/07/content_12130468.htm. Accessed 9 March 2011.

Xu, Jianchu, Yang, Yong, Li, Zhuoqing, Tashi, Nyima, Sharma, Rita, and Fang, Jing. 2008. Understanding Land Use, Livelihoods, and Health Transitions among Tibetan Nomads: A Case from Gangga Township, Dingri County, Tibetan Autonomous Region of China. *EcoHealth* 5(2): 104-114.

Yan, Zhaoli, and Wu, Ning. 2005. Rangeland privatization and its impacts on the Zeige wetlands on the Eastern Tibetan Plateau. *Journal of Mountain Science* 2(2): 105-115.

Yan, Zhaoli, Wu, Ning, Dorji, Yeshe, and Ru, Jia. 2005. A review of rangeland privatization and its implications in the Tibetan Plateau, China. *Nomadic Peoples* 9 (1 & 2): 31-51.

Yang, Guobin. 2005. Environmental NGOs and Institutional Dynamics in China. *The China Quarterly* 181: 46-66.

Yangzong, C. 2006. The Household Responsibility Contract System and the question of grassland protection: a case study from the Chang Tang, northwest Tibetan Autonomous Region. Masters Thesis: University of Tromsø, Norway. <http://www.ub.uit.no/munin/bitstream/handle/10037/291/thesis.pdf?sequence=1>

Yeh, E. (2005) 'Green governmentality and pastoralism in Western China: 'Converting

Yeh, E. T. 2005. 'Green governmentality & pastoralism in Western China: 'Converting pastures to grasslands''. *Nomadic Peoples*: 9:1&2: pp. 9-30.

Yeh, E. T. 2009. 'Greening Western China: A critical review'. *Geoforum*: 40: pp. 884-894.

Yip, W., and Hsiao, W.C. 2009. Non-evidence-based policy: How effective is China's new cooperative medical scheme in reducing medical impoverishment? *Social Science & Medicine* 68: 201-209.

Zhang, Xiaoyun, and Lu, Xianguo. 2010. Multiple criteria evaluation of ecosystem services for the Ruergai Plateau Marshes in southwest China. *Ecological Economics* 69: 1463-1470.