DEVELOPMENT PROJECTS IN TIBETAN AREAS OF CHINA: ARTICULATING CLEAR GOALS AND ACHIEVING SUSTAINABLE RESULTS

ROUNDTABLE

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CONTENTS

Page

STATEMENTS

Miller, Daniel, agricultural officer, U.S. Agency for International Development (USAID), Washington, DC 2
Goldstein, Melvyn, John Reynold Harkness Professor of Anthropology, Case Western Reserve University, Cleveland, OH 6
Samen, Arlene M., founder and executive director, One H.E.A.R.T., nurse practitioner, Maternal Fetal Medicine Division, School of Medicine, University of Utah, Salt Lake City, UT 9

APPENDIX

PREPARED STATEMENTS

Miller, Daniel 28
Goldstein, Melvyn C 31
Samen, Arlene M 33

SUBMISSIONS FOR THE RECORD

"Poverty Among Tibetan Nomads: Profiles of Poverty and Strategies for Poverty Reduction and Sustainable Development," submitted by Daniel Miller . 35
"Development and Change in Rural Tibet," by Melvyn C. Goldstein, Ben Jiao, Cynthia M. Beall, and Phuntsog Tsering, submitted by Melvyn C. Goldstein 54

DEVELOPMENT PROJECTS IN TIBETAN AREAS OF CHINA: ARTICULATING CLEAR GOALS AND ACHIEVING SUSTAINABLE RESULTS

FRIDAY, MARCH 19, 2004

CONGRESSIONAL-EXECUTIVE
COMMISSION ON CHINA,
Washington, DC.

The roundtable was convened, pursuant to notice, at 2:30 p.m., in room 2255, Rayburn House Office building, John Foarde (staff director) presiding.

Also present: David Dorman, deputy staff director; Andrea Yaffe, Office of Senator Carl Levin; Michael Schiffer, Office of Senator Dianne Feinstein; Joel McFadden, Office of Senator Dianne Feinstein; Susan R. Weld, general counsel; Steve Marshall, senior advisor; Selene Ko, chief counsel for trade and commercial law; and Carl Minzner, senior counsel.

Mr. FOARDE. Good afternoon, everyone. My name is John Foarde. I am the staff director of the Congressional-Executive Commission on China. Welcome to the resumption of our issues roundtable series. We have been away since late October, but are back today with a very important program.

On behalf of Congressman Jim Leach, our chairman, and Senator Chuck Hagel, our co-chairman, and all the members of the Congressional-Executive Commission on China, I would like to welcome our three panelists and all of you who are in the audience attending today.

This is our first roundtable for a while, but we have a couple coming up which I wanted to alert you to. In one case, the announcement has gone out already. In another case, it will be out later this afternoon.

We will be meeting again next week, on Friday, March 26, from 10 to 11:30 a.m., here in this room, 2255 Rayburn, for a session on WTO implementation and compliance in the context of agricultural standards and sanitary and phytosanitary issues. On April 2, 2004, also a Friday, in this very room at 10:30 a.m., we will meet to examine issues relating to commercial rule of law development in China, and an announcement will be going out about that session and the panel later today.

We are here today to examine a very particular set of issues relating to Tibet. The Tibet problem is a very big issue for the United States and is something that is always on the bilateral agenda between our two countries. The Tibet issue has many dimensions. It has a political dimension, an aid dimension, a strategic dimension,

a cultural dimension. But today we are interested in looking at the development dimension, and particularly development projects in the Tibetan Autonomous Region [TAR] and Tibetan areas of China.

To help us understand what the issues are and the long and the short of these questions today, we have three extremely distinguished panelists. All three have long experience in Tibet. I am going to introduce them briefly, all three of them, and then say a few words before each of them speaks.

From the U.S. Agency for International Development [USAID], is Dan Miller. Dan is an old friend of all of us on the Commission staff and someone from whom we have learned a great deal about Tibet over the last couple of years since we got under way.

Our second speaker will be Dr. Melvyn Goldstein from Case Western Reserve University in Cleveland. Dr. Goldstein's writings have been very helpful to me, personally, and I think to a great many of us here on the panel in understanding Tibetan history, Tibetan culture, and the issues that are involved in contemporary Tibet.

We are particularly pleased to bring Arlene Samen from One H.E.A.R.T. here to Washington, which I understand is your home town, to help us understand health projects and related issues.

So without further ado, let me ask Dan Miller to say a few words. Dan is currently an agricultural officer with the U.S. Agency for International Development. He has been working in Tibetan areas of China for 16 years. He has worked for international organizations and NGOs in Tibetan areas of China, including the World Bank, the Canadian International Development Agency, the Wildlife Conservation Society, the Nature Conservancy, the Mountain Institute, and the Bridge Fund.

Dan, Mel, and Arlene, I will say that our rules are relatively informal, but fairly inflexible. That is, we will give each of you 10 minutes to speak. After 8 minutes, I will let you know that you have 2 minutes left. Then when the 10 minutes have elapsed, I will have to ask you to end it there.

Inevitably, there are many points that you want to make that you do not have time for in your main presentation, and we will try to come back to those points during the question and answer session.

After each of you has made a presentation, we will give everyone here a chance to ask questions for 5 minutes each until we run out of questions, or until 90 minutes have elapsed, whichever is first.

So, Dan, please, go ahead.

STATEMENT OF DANIEL MILLER, AGRICULTURAL OFFICER, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT, WASHINGTON, DC

Mr. MILLER. Thank you, Mr. Foarde.

I am grateful to the Congressional-Executive Commission on China for giving me the opportunity to speak today. This roundtable on development projects in the Tibetan areas of China is a very important topic. I am especially pleased with the subtitle of this roundtable on articulating clear goals and achieving sustainable results. As a development specialist, I believe that development efforts in the Tibetan areas of China, in order to be successful, need

to give much greater attention to formulating explicit goals and objectives and ensuring that results are attained and that they are sustained.

In the short time I have to talk, I would like to focus on agricultural development, and, more specifically, on livestock development for Tibetan nomads and farmers, which also happens to be my area of expertise.

In the last 20 years, China has achieved remarkable agricultural and rural growth, greatly reduced poverty, and addressed many environment and natural resource degradation problems. In many of the Tibetan areas, however, broad-based rural economic growth has not been very significant. Poverty is still pervasive. However, not all Tibetans are poor. There are many nomads and some farmers in certain areas, especially where the environment is more favorable, that would probably not be considered poor, although social services and access to markets may still be limited.

To date, most Tibetan farmers and nomads have not participated fully in the assessment, planning, and implementation of development programs and the policies that affect their lives. Government development programs have generally taken a top-down approach and, despite many of their good intentions, have often been hampered because Tibetan farmers and nomads were not involved in both the design and implementation of activities. Many of the government's efforts have also been not as effective because of faulty assumptions that have been made about poverty and Tibetans' traditional agricultural and livestock production practices.

I have been amazed at the transformations that have been taking place in the Tibetan areas just in the last few years. In the nomad areas, nomads are being settled down. Range lands are being privatized and fenced. There has been incredible infrastructural development that has taken place in prefectural and county towns, even in the nomad areas. The Tibetan areas are certainly a dynamic development environment, but how much the Tibetan farmers and nomads are benefiting from these developments still needs much better analysis.

Rural development experience internationally and elsewhere in China demonstrates the benefits of adopting an integrated approach to rural development and to attacking poverty, an approach that involves both social and economic development, as well as environment management. An emphasis on economic growth within a community-based integrated development project or model has the greatest promise for a multiplier effect in reducing poverty in Tibetan areas and improving the lives of Tibetans.

Reducing poverty and promoting sustainable development requires expanding the income base for Tibetans. Because much of agriculture is dependent on livestock, improvements in livestock production and animal husbandry practices hold the potential for stimulating economic growth. Yet when you look at the types of development projects that are being implemented by many American-based NGOs in Tibetan areas, there is surprisingly little attention being paid to livestock development, or at least not in a strategic manner focusing on improving production and income.

In my opinion, the key issues for sustainable development in the Tibetan pastoral areas are widespread poverty, range land deg-

radation, unsustainable livestock production practices, poor market development, weak community participation, and lack of integration in addressing all of these problems. The development challenge now is determining how to target funding better to address these issues and to ensure that resources allocated for development and poverty reduction actually reaches the Tibetan farmers and nomads.

I would now like to go back to the subtitle of this roundtable, articulating clear goals and achieving sustainable results. Having been involved in rural development for many years, I firmly believe that clear objectives and strong commitment is what drives successful projects. There are numerous U.S.-based NGOs working in Tibetan areas of China, a number of them with funding from the U.S. Government—the American NGOs, that is. NGOs are widely perceived by the public as more effective than larger donors at reaching local people. Typically, NGOs operate small-scale community-based projects. While building schools and health clinics are certainly beneficial to the Tibetan people, real economic growth is not going to take place without addressing the agriculture and livestock sectors.

Having worked with both NGOs and larger multilateral and bilateral development organizations, I believe that the development planning process that many of the larger development organizations embrace, which are tools and procedures such as results-based management and logical frameworks, are a very valuable tool and could help NGOs working in Tibet to be more strategic and effective in their work. These tools provide a logical, step-wise framework for designing development projects and for organizing the implementation of activities and for reporting on results.

For development to be effective, what is important is that the proper analysis is carried out, and this also includes adopting a participatory approach so that the local people are involved; that outputs and activities for projects are clearly defined; that performance indicators are spelled out; and that monitoring and evaluation systems are designed.

Roles and responsibilities of the different actors in development also need to be defined and a work plan schedule developed. Since funding is often limited, development organizations also need to focus on those activities that will provide the greatest return on investment, which often means that economic analysis and cost benefit analysis is going to be necessary.

Evaluation of project performance in order to judge its effectiveness is also critical, especially if U.S. taxpayer money is being used.

The U.S. Government agency that I work for, USAID, has considerable experience and lessons learned about pastoral development that I think is relevant to Tibetan nomadic areas. For example, USAID's Global Livestock Collaborative Research Support Program has worked with pastoralists in South America, East Africa, and Central Asia. Many of the approaches from these activities could be applied to Tibet. USAID has also been involved with nomads in Mongolia, working with Mongolian herders to form herder groups and to develop range land management plans, and working with them to improve the business of herding. Many of these activities are also relevant to development in Tibetan areas. Many other bilateral and multilateral organizations have range livestock develop-

ment projects in the Inner Mongolia, Gansu, and Xinjiang parts of China, and there are also valuable lessons learned from these projects on organizing pastoral development in Tibetan areas.

I think that American NGOs and other organizations would be wise to learn about these activities and to see how they can adapt many of these lessons learned and the experiences to working with Tibetans.

The crucial problem now facing agriculture and livestock development in Tibetan areas appears to be organizational and behavioral rather than technical. Therefore, analysis of the socioeconomic processes at work are a key challenge.

To conclude, let me say that the challenges facing development in Tibetan areas are considerable. Opportunities do exist, however, for improving the livelihoods of Tibetans. With an area almost three times the size of Texas, there is room for many more American organizations and American people to be working in Tibetan areas.

Different groups bring diverse ideas, approaches, and expertise, which is beneficial. However, more attention will need to be given to making sure development efforts articulate clear goals, define their objectives and outputs, and that the impacts are measurable. There are no simple solutions. Activities will need to be undertaken at many levels, including at the central policy level, at the university and research level, at the county and township level, and at the nomad and farmer level. Promoting more sustainable development will also require policies and approaches that integrate ecological principles regulating ecosystem functions with the economic principles governing agricultural and livestock production and general economic development processes.

If this guidance is followed and if more financial resources can be directed to Tibetan areas, Tibetan livelihoods can improve, while sustaining one of the world's most significant ecosystems and a rich cultural heritage.

Thank you.

[The prepared statement of Mr. Miller appears in the appendix.]

Mr. FOARDE. Dan, thank you very much. You are remarkably disciplined, since the buzzer was just about to sound. So, congratulations.

We would like to go, next, to Professor Goldstein. Melvyn C. Goldstein is the John Reynold Harkness Professor of Anthropology at Case Western Reserve University in Cleveland, OH. He also directs the University's Center for Research on Tibet.

Dr. Goldstein is currently conducting research in Tibet and Mongolia. His earlier research has focused on Tibetan refugees in India, nomads in Mongolia, and cultural ecology in the Himalayas and Tibet.

He has authored or co-authored more than 80 articles and books on Tibet, and he has not been here in Washington in far too long. Welcome, Mel Goldstein. Thank you very much.

STATEMENT OF MELVYN C. GOLDSTEIN, JOHN REYNOLD HARKNESS PROFESSOR OF ANTHROPOLOGY, CASE WESTERN RESERVE UNIVERSITY AND DIRECTOR OF THE UNIVERSITY'S CENTER FOR RESEARCH ON TIBET, CLEVELAND, OH

Mr. GOLDSTEIN. Thanks very much, Mr. Foarde.

Rural Tibet has experienced a dramatic change in the past 25 years. Around 1980, the system of communal production in Tibet was replaced by the current quasi-market system called the "Responsibility System." In almost all areas, the commune's land and animals were divided among its members on a one-time basis. All individuals alive on the day of division got an equal share, but anyone born after that did not get anything. From then on, the household became the basic unit of production, as it had been in traditional Tibet, and a new economic era began.

Although I am sure you all have heard or read depictions of Tibet as exceptionally impoverished, and to an extent it certainly is, it is also clear that in the two decades since 1980 the standard of living in rural Tibet has improved a great deal. Tibet has a long way to go, but it is important to understand how far it has come and what problems it faces moving forward.

Much of what I am going to say is based on my own longitudinal research in rural Tibet that began in 1986, and in particular from a large field study of 13 farming villages in 3 counties that began in 1998.

On the positive side, almost all the rural farmers we studied had a favorable opinion of the Responsibility System. Ninety-four percent indicated that their livelihood improved since the de-collectivization in 1980. Seventy-seven percent said they produced enough barley for their family's food needs, and 67 percent said that they had one or more years worth of barley stored in reserve.

Similarly, the three main high-quality or luxury traditional foods, locally brewed barley beer, butter, and meat, were all widely consumed. Three-quarters of the households said they now make and drink beer regularly rather than just on special occasions, and the majority of families reported that they ate meat or fat either daily or several times a week. Ninety-one percent reported that they drank butter tea every day.

What accounts for these gains? First and foremost, there is a new economic framework that allowed households to keep the fruits of their labor. In farming, this allowed households to intensify the care with which they planted their own fields and resulted in most households quickly experiencing increases in production. These increased yields were further amplified by the government's new policy of exempting rural Tibetans from taxes.

This effect was even more impressive with respect to domestic animals, which increased 82 percent since de-collectivization, and more if I had counted chickens and pigs. Moreover, the milking animals that provide the essential milk that every rural household needs to make butter for Tibetan tea have increased an amazing 668 percent in these 20 years.

Finally, the new economic structure also has allowed an encouraged rural households to engage in non-farm income-generating activities, and, as we shall see, many have done so.

But I do not want to paint an overly rosy view of rural Tibet. Despite these improvements, Tibetans clearly have a long way to go vis-a-vis inland China. For example, as of 2002, none of the 13 villages we studied had running water in houses, and only the village immediately adjacent to a county seat had a water tap and electricity. None of the areas had improved dirt roads, let alone paved roads.

Critically, there is still a great deal of rural poverty. Despite starting equally in 1980, 14 percent of households were poor, in the sense that they did not have enough grain, either from their own fields, or bought through earned income, and another 28 percent of households were having a difficult time meeting their basic subsistence needs. Moreover, in the poorest areas we studied, about 30 percent of the households were poor, as I defined it. Thus, while progress in rural Tibet in some ways has been impressive, many families have faltered and are in dire need of assistance.

The situation in Tibet, however, is not static and there are fundamental changes going on that need to be mentioned, since these raise serious questions about whether the overall increases of the past 20 years can be sustained, let alone improved, over, say, the next 20 years.

First, and more critical, is a serious decline in per capita land holdings. As a result of population growth and fixed land size, there has been an average decline of 20 percent in per capita land holdings, and this decline does not take into account land lost to home building sites, floods, roads, et cetera. Since Tibet's rural population will continue to grow in the next decade, this process of decline will continue.

Second, the cost of living is increasing. In addition to general inflation, the price of key products, such as chemical fertilizers, has increased substantially, while at the same time there has been a decrease in government subsidies and an increase in local taxes. This combination is also likely to be exacerbated in the years ahead.

Compensating for this by trying to increase yields will not be easy because farmers are already using high levels of chemical fertilizers and improved seeds.

Similarly, it is unlikely that the value of Tibetan crops will increase and compensate for the changes. The market for Tibetan crops is limited and declining. Tibetan barley and wheat have no export potential outside of Tibet because the Chinese do not eat barley, and find Tibetan wheat too coarse. Even in Tibet, the increasing consumption by Tibetans of rice, vegetables and imported white flour means that they are consuming less barley and Tibetan wheat, and this trajectory is also likely to increase.

Tibetan farmers are acutely aware of these changes and challenges and they are trying to compensate in a variety of ways. For example, by contracting traditional fraternal polyandrous marriages in which two or more brothers take a wife, since this concentrates labor in the household and avoids dividing the land between the brothers. They are also increasingly using contraception to have fewer children, and, most critically, are actively taking steps to secure non-farm income.

It is clear to rural villagers and their leaders that, without a source of non-farm income, households cannot move from basic subsistence to a good standard of living. In the future, it may not even be possible for households that are now self-sufficient from their fields to remain so if they do not have some modicum of non-farm income.

Not surprisingly, in 1988, 44 percent of males between ages 20 and 34 were engaged in migrant labor for part of the year, and 49 percent of all households had at least one member so engaged. Most of these worked as manual laborers on construction projects. Moreover, it is significant to note that only 24 percent of households in the poorest areas were engaged in non-farm labor.

With respect to such work, we found widespread frustration and anger in the villages about the difficulties villagers face in finding jobs. Villagers commonly complained that there are not enough jobs for them and that, because their skill levels are low, most of the jobs they find pay poorly. The villagers overwhelmingly lay the blame for this on the unrestricted influx of non-Tibetan migrant laborers.

Rural Tibetans now find themselves in competition for construction jobs with large numbers of more skilled and experienced Chinese workers, and given the current policy, this competition will certainly increase. How Tibetans will fare in the future, therefore, is less clear. There are some positive signs, but it is hard to be very optimistic. What is really needed is a change in government policy that will give much greater priority to securing jobs for Tibetans, perhaps through a large-scale system of set-aside contracts for them over some period of time.

However, if the current policy continues, rural Tibetans will have to compete as best they can, and it is here that outside development organizations can, and should, play a helpful role. There are many things that rural communities need, but I believe that the greatest impact will come from those programs that address what rural Tibetans themselves primarily want and need, namely, assistance in generating non-farm income. Whether the life of rural Tibetans will improve in the next decade depends on many complicated factors occurring at the macro level. But it is clear to me that foreign development programs can make a useful difference in the lives of rural Tibetans, although, given the economic and political problems in Tibet, it will not be easy.

Thank you.

[The prepared statement of Mr. Goldstein appears in the appendix.]

Mr. FOARDE. You have given us lots of good ideas to think about and to come back to you in the question and answer session. Thank you very much.

We would like to continue now with Ms. Arlene Samen. Arlene is the founder and executive director of One H.E.A.R.T, the latter acronym standing for Health, Education, and Research, Tibet. She is a nurse practitioner in Maternal-Fetal Medicine at the University of Utah.

Arlene has worked with international health projects since 1985 and has spent the last 6 years in Tibet establishing a midwife

training and community-based life-saving skills program in Medrogongkar County, near Lhasa.

Arlene, welcome back to Washington, your home. Thank you for being here.

STATEMENT OF ARLENE SAMEN, FOUNDER AND EXECUTIVE DIRECTOR, ONE H.E.A.R.T. AND A NURSE PRACTITIONER IN MATERNAL-FETAL MEDICINE DIVISION, SCHOOL OF MEDICINE, THE UNIVERSITY OF UTAH, SALT LAKE CITY, UT

Ms. SAMEN. Tashi delek. I would like to thank the CECC for inviting me to share with you One H.E.A.R.T.'s work in Tibet.

Last October, while working at 15,000 feet in Medrogongkar County, I was suddenly called to help a pregnant woman in a remote village. She had been in labor for 4 long days. I found her alone in a cold, dark shed while her family huddled around a warm fire in the kitchen. Four hours later, the exhausted woman delivered a healthy baby boy into my bare hands. In the same county, this scene is repeated daily. Tragically, just a few days earlier, another young woman bled to death during childbirth.

Like other cultures, a Tibetan mother's death is devastating to her family, for it often threatens the health of her children and impacts the family for generations. The mother is the thread that holds the family together. When a Tibetan mother dies, her surviving children are 3 to 10 times more likely to die within 2 years. When a Tibetan mother dies, her surviving children are more likely to die young, and less likely to attend school or complete their education.

Many Tibetans believe that a mother's death during childbirth is ominous, a sign of bad spirits that bring misfortune to her family and her community. Saving the lives of Tibetan women and their children is of the utmost urgency for the survival of the Tibetan culture. One H.E.A.R.T.'s mission is to work with Tibetans to improve the circumstances of childbirth and maternal and newborn survival on the Tibetan Plateau.

Tibetan society is one of the few in the world in which there is no tradition of trained midwives who facilitate the delivery process. Poor nutrition and the lack of trained health personnel and emergency services combine to place Tibetan women and infants at high risk for labor-related deaths. The vast majority of births take place at high altitude in a cold environment and without access to electricity or health care. In spite of active campaigns by the Chinese Government to encourage women to deliver in a medical facility, more than 85 percent of Tibetan women deliver at home. Most babies are delivered with only the help of the mother or the mother-in-law of the pregnant woman, and their only assistance is the cutting of the cord. Amazingly, many Tibetan women deliver their babies completely alone.

It is believed that Tibet has one of the highest newborn and infant mortality rates in the world. Tibetan women are 300 times more likely to die than American women from various pregnancy and delivery complications. Post-partum hemorrhage is the leading cause of death. Likewise, babies are far more likely to die in Tibet than anywhere else in the world. We believe that most of these

deaths are preventable with minimal technology and simple interventions.

In 1998, a group of maternal and child experts founded One H.E.A.R.T. in an effort to address maternal and newborn death in Tibet. We are a 501(c)(3) organization based in the Maternal Fetal Medicine Division of the University of Utah's School of Medicine.

In the summer of 2000, One H.E.A.R.T., in collaboration with the Trace Foundation and the Netherlands Red Cross, provided the first skilled birth attendant course in Lhasa Prefecture. Since that time, we have focused our attention on Medrogongkar County. According to the Lhasa Health Bureau records, Medrogongkar County has the highest reported maternal and newborn death rates in the Lhasa Prefecture. An estimated 75 percent of stillbirths and 30 to 40 percent of infant deaths can be avoided with adequate nutrition, prenatal and skilled delivery, and post-delivery care for mothers. Medrogongkar, because of its close proximity to Lhasa, provides an ideal setting for training, monitoring, and evaluating these outcomes.

Our midwifery course is now an annual event and is being taught entirely by our Tibetan colleagues with clinical supervision by Carolyn Bell, a midwifery specialist. Our close working relationship with our Tibetan staff and partners and the Chinese health officials is helping to build a successful and sustainable infrastructure.

In January 2000, the University of Utah received a 5-year grant from the NIH NICHD. Under the guidance of principal investigators Dr. Michael Varner and Dr. Suellen Miller, and anthropologists Dr. Vincanne Adam and Dr. Sienna Craig, we developed the infrastructure for clinical research in Tibet and are now preparing to conduct clinical trials of centuries-old Tibetan medicine. Tibetans believe that this traditional medicine may help to prevent postpartum hemorrhage.

We are also conducting ethnographic surveys which have been extremely valuable for both this research project and our midwife training programs. Hundreds of village women have been interviewed about their cultural beliefs about childbirth. One H.E.A.R.T. works within these Tibetan cultural beliefs and practices in not only identifying those behaviors that may be harmful, but also determining which beliefs and practices can help us to develop and implement culturally appropriate and sensitive health care interventions.

In 2002, One H.E.A.R.T. formed a committee of foreign and Tibetan experts to address the difficult health problems facing the Tibetan families surrounding childbirth. The team includes physicians, midwives, and doctors from the Tibetan traditional medicine hospital in Mentzikhang, and the biomedical hospitals in Lhasa, as well as representatives from the Ministry of Health. The team discussed new ways to focus its collective expertise in a capacity-building effort in the TAR. Out of this group, the Curriculum and Research Development Committee was formed and they have taken a leadership role in directing these efforts, helping to develop research protocols for designing and teaching curriculums. One H.E.A.R.T.'s work with this committee is ongoing and, as time and

training progresses, we anticipate that the Tibetans will assume more and more responsibility for these programs.

During the fall of 2002, One H.E.A.R.T. gained permission from the Lhasa Health Bureau to review and analyze death records for infants and children in Medrogongkar County. It is clear that there are significant challenges even collecting maternal and child health data in such remote and inaccessible villages as those found in Tibet. The results confirmed previous observations and also highlighted the main causes of death. The single main cause of death in Tibetan children is death related to childbirth. From 1997 to 2002, 154 of the 339 deaths occurred on the day of birth and were charted as "breathlessness." Subsequently, Drs. Bernhard Fassl and Reini Jensen interviewed over 90 families who had one or more babies die at birth. This data helped us to analyze the causes of newborn breathlessness and stillbirth, and understand the causes and events that led to these deaths. The three main causes of breathlessness appear to be absence of trained birth attendants, inadequate management of babies who are not breathing, and insufficient protection from hypothermia.

Along with our Tibetan partners from the Health Bureau, One H.E.A.R.T. is developing interventions that are both culturally acceptable and self-sustainable, and we are implementing them in our training programs and public health outreach messages.

In April of this year, through funding from the Citizen Exchange Program of the U.S. State Department's Bureau of Education and Cultural Affairs and One H.E.A.R.T., six Tibetan doctors and health workers are coming to the United States for a 1-month medical training. This experience not only develops their medical skills, but, upon their return to Tibet, they can pass on this information to their fellow health workers.

As you can see, we face many challenges in the Tibet autonomous region. At times, our task seems daunting. However, with the passionate commitment of our staff and volunteers, and with the continued funding from the U.S. Government, private corporations, foundations, and individual donors, One H.E.A.R.T. is making a difference in Tibet one birth at a time.

Thank you for your time.

[The prepared statement of Ms. Samen appears in the appendix.]

Mr. FOARDE. Thank you very much, Arlene, for an extremely interesting presentation.

I am going to let our three speakers catch their breath for just a moment before we go to the question and answer session and just remind the members of the audience that you can find the written statements from each of our panelists on our website at *www.cecc.gov*. In a few weeks, we will have the full transcript of today's session up on the website, and you can also find the complete transcripts and statements from previous, and future, roundtables and hearings on our site as well.

Let us move, then, to our question and answer session. Normally, we give each of the staff panelists up here 5 minutes to ask a question and hear the answer, and then we will move on to the next person until we have gone through at least a round or two, or until 4 o'clock comes, whichever comes first. You all were so remarkably

disciplined that we will have plenty of time for this part of the program, which I think is the most interesting and most important.

So, let me get started. I know that we are going to have a question or two about what the United States has been doing in development programs in Tibet, but I wanted to preempt just a little bit and see, beginning with Dan Miller, if you would not comment a little bit on what other countries are doing. I think all of you have had experience either cooperating with other countries outside the United States on development projects in Tibet or evaluating or seeing them. So, if you would offer some comments on the level of effort, whether they are evaluating themselves in the types of ways that you thought U.S. programs should, et cetera, I think that would be very useful for us.

Mr. MILLER. Yes. I know specifically that the Canadian International Development Agency [CIDA] has a project in the Tibet Autonomous Region, because I was involved in the preparation of that project, which is a rural development program focusing on agriculture and livestock, as well as some health activities. In terms of financial commitment, I am not certain. Maybe it is on the order of $1 or $2 million U.S. dollars. But, again, having gone through this preparation with CIDA, their standard procedure for a results-based management type of approach, an integrated approach, is fairly narrowly focused in just a couple of areas.

I am aware that the New Zealand Government has been working in Tibetan areas in northwestern Yunnan Province; the Australian Government in the TAR, with health and drinking water, and also in western Sichuan Province Tibetan areas. Those are some of the larger bilateral projects that I am aware of.

Mr. FOARDE. How do they compare in dollar amounts, roughly, to what the United States is doing?

Mr. MILLER. Probably about the same. I mean, if you look at their entire program, probably about the same as ours. New Zealand, probably much less. I think right now we are going to be at about, this next year, close to $3 million or so. So, roughly the same.

Mr. FOARDE. Mel, any comment on that question?

Mr. GOLDSTEIN. I really do not. I do not have that much to add to it. I should say that I have found that what Dan said is exactly right. We need more evaluation built into these funding programs. I worked for the EU once in Qinghai Province and I could not even get permission to distribute my own report because it was classified. The people who wanted it had to contact the EU to get permission.

Mr. FOARDE. Could we clarify, classified by the EU, by the Chinese, or both?

Mr. GOLDSTEIN The EU.

Mr. FOARDE. By the EU.

Mr. GOLDSTEIN Yes.

Mr. FOARDE. Thank you.

Mr. GOLDSTEIN Too sensitive, all of these. Although I do not think it was. The point is that as an academic, it was not available. If I wanted to study what is being done in development in Tibet, it is not published. Whatever evaluations are done are done in-house, there is no way to get access. There are no outside groups

who have been hired to examine these projects. So, it is hard to know if they are effective or just pushing money through.

I think what Dan says, that the United States should try to take a more innovative role and set aside a small part of these millions of dollars for independent people to go out and systematically evaluate efficacy. That would be a useful step forward, I think, for all of development in Tibet.

Mr. FOARDE. Thank you.

Arlene, comments?

Ms. SAMEN. I would agree with both Dan and Mel. The United States has, I think, given relatively low amounts of money compared to others. The AUSAID, who are coming in, I have heard, somewhere between 7 and 17 million Australian dollars.

There has not been a lot of collaboration between them and NGOs. I think that if there were more collaboration and more systems set up for infrastructure and evaluation, that that could be extremely helpful, because there is no way to evaluate, really, what has been done.

In my particular area, in maternal health, we hear that WHO, UNICEF, etc., have come in, but you cannot find anything that they have done, or who to talk to, or how you can work with them. I think that would be very useful.

Mr. FOARDE. Very useful comments for me.

Since there are so many of our staff colleagues that wish to ask questions, I am going to pass the baton on to my friend and colleague, Dave Dorman, who is the deputy staff director of the Commission staff, and represents Senator Chuck Hagel, our co-chairman.

David.

Mr. DORMAN. First, I would like to say thank you to each of you for coming today and sharing your insights, your knowledge, and experience with the Commission on this very important topic.

I would like to just take 30 seconds to say that I have just learned that Dan Miller has accepted a 1-year assignment for USAID in Afghanistan running its agricultural programs. So, I know I speak on behalf of Senator Hagel and probably all of our commissioners when I say thank you for taking that very difficult and very important assignment.

I have three very quick questions; one for each of the panelists.

Dan, just a point of clarification. In your written statement, and also your testimony, you mentioned that the top-down approach of many well-intentioned government programs impacts the success level. Later in your statement you mentioned that low community participation also impacts success.

Are those two related? Are these two different problems or is the top-down approach generating low community involvement?

Mr. MILLER. In many ways they are two different problems, but they are related. Not only in Tibet itself, but throughout much of China, the government in many places takes a sense of, "this is what needs to be done for poor farmers and for poor herders," with their hearts in the right place, trying to help, but a very top-down type of approach. On the other hand, you also have very limited participation by the local people in making sure that their ideas,

their needs, and their interests are being reflected in development projects. So, it is two separate problems, but they are very related.

Mr. DORMAN. Professor Goldstein, you mentioned in your statement that one of the things that we should all be seeking to find a way to generate non-farm income. I was wondering, and I suspect this is probably a question that cannot be answered easily, if you could help us understand the relationship, if there is one—I suspect there is one—between finding ways to generate non-farm income, and not impacting the unique lifestyle and cultural identity of nomads and farmers.

Mr. GOLDSTEIN Well, I was talking primarily about farmers. Nomads, in some ways, are easier because they produce products that are more valuable. Farmers do not, so they need non-farm income.

Although 60 percent of families had increases and a better life now than they had in the past, they are worried about their children and whether their children will have a better life than they have, and how to get that. Given the options as I laid out, then they see the only realistic one for them is to find sources of non-farm income.

So some families that are better off buy trucks, some of them try to get into business, some have their kids learn carpentry because there is more income in that. Others just try to find jobs for their younger boys, and now girls, just working on road gangs and construction.

Yes, it is changing life in Tibet. I am working on a paper right now showing how this is changing the organization and leadership in families since the younger generation is the only one who can deal with the new world. The forces that are in play in China now are changing the social system. These changes do not make them less Tibetan, I think, any more than we are less American than we were in 1930. They are adapting the same way we in the United States have adapted to new situations, and are continuing to adapt now.

Mr. DORMAN. Good. Thank you.

One quick question for you, Arlene. You mention in your statement that, despite government efforts, over 85 percent of Tibetan women deliver outside of a medical facility. To what extent is that due to lack of access to medical facilities as opposed to just traditional preferences?

Ms. SAMEN. Well, I think it is multi-level. One, there are a lot of cultural beliefs behind why women deliver at home. There is a belief that childbirth itself is polluted, so they typically birth outside of the kitchen area, either in a shed, or in the barn, or even sometimes in a tent just so the rest of the household does not become polluted. So the concept of going to a facility to deliver is a little new to them. I think, through community outreach, they are getting pushed to do that because the government campaign has a new system where they give 20 RMB to the woman if she comes to the facility, and 10 to the person that brings her.

There is still resistance because of their cultural beliefs, and then there are also transportation issues, and then issues around reimbursement. Many families cannot afford to go deliver in a facility. There is a new cooperative medical system in place now in the TAR, at least. If they do not know how to use that system, then

if they do not go through the right avenues, they may end up at the Menzikhan, but if they did not have a referral to actually go there, they do not get reimbursed. So it is a little bit complicated, and we are working with the Health Bureau to better understand where we can focus attention to get people to use the facilities, and even to think is it appropriate for us to refer them?

Mr. DORMAN. Thank you very much.

Mr. FOARDE. Useful questions and useful answers.

Let us move on, now. I would like to recognize our friend and colleague, Michael Schiffer, who represents Senator Dianne Feinstein of California. Senator Feinstein has been a stalwart in U.S.-China relations on Capitol Hill for many years, and particularly Tibetan issues. So we are particularly delighted to have Michael and his colleague, Joel McFadden, here with us this afternoon.

Michael.

Mr. SCHIFFER. Thank you. Let me just start off by joining my colleagues and thanking you for participating in this roundtable today.

If I could start with a first question, I will address at least the first part of it to Dan. You mention in your comments that Tibetan farmers and nomads are not fully engaged in the design and implementation of the poverty alleviation programs. As you know, the Tibetan Policy Act has some guidelines that were intended to make sure that the U.S. Government's systems benefit the Tibetan people. How are those guidelines being incorporated into USAID's work?

I guess, a related question for Mel and Arlene is, on your end of things as you work with USAID, how do you see those guidelines and principles incorporated into the work that the USAID is pushing?

Mr. MILLER. Yes. As I had mentioned, Tibetan farmers and herders have not been fully engaged in the process of planning and development. With USAID, in terms of trying to develop a program where we would be supporting American-based NGOs to undertake activities, USAID staff undertook a trip out to Tibetan areas last summer, where we met with Tibetans at many levels, trying to better understand the problems and needs that they were having and things that they thought could be done.

Certainly, as part of our process for soliciting proposals, it will be necessary for those American groups, when they plan their projects, to make sure that they are involving local Tibetans in the planning process and in the implementation period when projects are being undertaken, and that the Tibetan language is being used whenever possible.

Mr. SCHIFFER. I do not know if you have any comment.

Ms. SAMEN. Right now, my project does not have any USAID funds. We do have NIH funds. I think, if we were to apply for funding to help us with this maternal health project, I agree with Dan, it would be very useful for us to keep the Tibetans in that loop. What I have seen is a lot of different NGOs come in and try to mandate or change the system. The way that it is really going to work and be an infrastructure there is to listen to what the Tibetans feel are their needs and to work within that context.

Mr. GOLDSTEIN I would just like to make a brief comment. I do not work with USAID or any government agencies, per se. But I

think we have to keep in mind here that Tibet is a real place. We are not talking about Washington, DC, or Maryland, we are talking about China, the People's Republic of China. Most of the people who are in government, the leaders, are all Communist Party members. You cannot just go in and convince 10 farmers to do something without the permission of their leaders.

That does not mean that they are unreasonable or that it cannot be done. It absolutely can. So I think, as we think of how to use U.S. Government funding in Tibet, the common people have to be involved in it, but we also have to make a real effort to work with all those communists, because that is who runs the country. I think it can be done and I think there would be no problem, and the interests of Tibetans would benefit from it.

Mr. MILLER. If I could just add to that. Having worked in a number of other areas of China, such as Xinjiang, Inner Mongolia, and Gansu, with minority people in those areas, working on projects, yes, wherever possible you have to be working with the government officials. Oftentimes, they are the Communist Party members.

But things are changing in Tibet and throughout China, including the Tibetan areas. People are becoming more aware of the need for participatory approaches and to be involving local people in the local level type of planning.

You have to remember that, really, this kind of development activity only started 10, 15 years ago, and so these areas in western China are slow to catch up. But people are now starting to be aware of it and it is starting to be reflected in many areas in the west. It is an education process as well and it is going to take some time, but there are some encouraging signs.

Mr. FOARDE. Thank you, Michael.

Let us go on and give Joel McFadden a chance to ask a question, if you have got one.

Mr. MCFADDEN. Please.

Mr. FOARDE. Go ahead. Sure.

Mr. MCFADDEN. Thank you all for coming today. I have a couple of questions here. One, is for Dr. Goldstein. I wanted to follow up on this discussion about generating non-farming income. My question was, you mentioned that some 44 percent of families have somebody involved as migrant laborers. How many of these migrant workers are actually staying within Tibet and how many are actually moving to some of the eastern Chinese cities, such as Shanghai and Beijing? To what extent is that helping their families?

Mr. GOLDSTEIN Yes, that is an excellent question. In fact, one of the real problems that Tibet has faced is that they cannot go as migrant laborers anywhere else because none of them speak Chinese. There were no Chinese in any of the villages I studied, and virtually nobody knew Chinese. Some of the kids near a county seat knew some Chinese. So basically, not only can they not go out to Shanghai and work, but even if there is a Chinese firm where it would be needed to speak Chinese to get a better job, they probably could not. That is a real problem.

It was 44 percent of all the males between a certain age, so that a lot of them are going out because they need the income. Income can be generated not just from road gangs, it could be from small

businesses, handicrafts, any intelligent, thinking projects. Projects do not need to be millions of dollars.

They could involve $20,000 in a local area that could generate some skills or something that could have a tremendous impact, and I think that is where we ought to look at USAID to find the right programs and have a broader spectrum of people competing, and then evaluate them.

Mr. MCFADDEN. I had a question for Ms. Samen, real quick. What sort of cooperation obstacles have you encountered in your work in Tibet from the local governments specifically? Are there areas where you would like to have more cooperation in a specific area where you have found obstacles in working with them, whether it is the TAR, the local health departments, or those sorts of folks?

Ms. SAMEN. When we first came in we were one of the few projects that actually brought U.S. Government funding in. Initially, we went in with some NIH funds. As you know, NIH is very research-oriented. Just the word "research" to them brought up lots of suspicion, and the fact that we were going out to do ethnographic surveys around childbirth. So once we both understood that research to us and research to them meant two different things—actually, the U.S. Embassy in Beijing was very helpful. There is a Chinese woman there that works in research and she was very helpful in helping us translate documents. Then we started off on a better foot.

Now, we have a really excellent relationship with the local health bureau and the regional health bureau. We have this committee that we developed and we meet on a regular basis. If we think something is sensitive, we go to them and ask them how best to handle this. We have an excellent relationship now.

The director of the health bureau will be coming to Utah next month and meeting with people from our State Health Bureau. I think, as long as we stay really focused on maternal and newborn outcomes and around medical education, it is great. If we started to veer off and get our noses in different directions, I think we would run into more problems. But as the obstacles have come up, we have sat down and talked about them. I think they know our motivation is pretty pure. Right now, I think they pretty much would let us do anything because we have gained their respect, and we certainly respect them. You cannot work there without having a relationship with the local government.

Mr. MCFADDEN. Thank you.

Mr. FOARDE. Now I would like to recognize Andrea Yaffe, who represents Senator Carl Levin, one of our commissioners. Since Andrea started working for the Senator in his personal office 2 years ago, she has been a real stalwart with us at all of our roundtables.

So, welcome, again. Go ahead, please, and ask questions.

Ms. YAFFE. Dr. Goldstein, you spoke about the competition the Tibetans are facing from the migration of Chinese laborers. I was wondering if our other two panelists could talk about the impact of Chinese migration on your efforts for development in the Tibetan region.

Mr. MILLER. Well, in my case, having spent considerable time in rural Tibetan nomadic areas, what you see happening is that, even

in the Tibetan Autonomous Prefectures, for example, many of the shops, as well as the construction, and the service industry, a lot of the jobs are being taken by the Han and Hui people that are migrating in. At least in the nomadic areas, a big part of the problem is that the people certainly do not have the training or the language to be able to compete for these jobs. There are jobs there, but nomads cannot compete for them because of language, because of skills. There could be opportunities for construction-related work, but a lot of them do not want to do construction work. So, there is that cultural aspect to it as well. But the biggest concern is really the lack of skills to be able to compete effectively on many of these types of jobs.

Ms. SAMEN. I do not see it as much in my particular area because Medrogongkar is all Tibetan, and the Han Chinese would not go out there to live or work, although, they just recently built a hot springs and a hotel nearby. But we are seeing more of the men in the families that live in the villages having to go into Lhasa or to leave their families to do road work or other types of work to bring income to the families. So I think it will become more of a problem in the future as the poverty level continues to drop because the crops are not selling and people have to leave their families to go get work, and so they are migrating more to the cities.

Ms. YAFFE. I guess, for all the panelists, what kind of programs do you think are necessary to address this problem so that the Tibetans are not going to be further marginalized as development continues? Do you have specific suggestions?

Mr. MILLER. I will start off with that. Certainly, any kind of activities for education, be it primary and secondary school, just the whole aspect of education, generally, is helpful and necessary. Then there is the vocational training, carpentry skills, welding skills, car mechanic, sewing, various of these types of trades so that Tibetans have these kinds of skills.

We also need to help them with business types of training so that the Tibetans, once they get these kinds of skills and training, could have some better business sense on how to operate small businesses like that. So, certainly those types of projects related to education and vocational training are very helpful.

Mr. GOLDSTEIN That is a difficult question. If I knew it, I probably would not be here, I would be trying to do it out there. But I think one thing, another caveat that I should mention, is that when we talk about Tibetans being marginalized, Tibetans are like Americans. Some of us have a lot of money in the stock market and are doing very well, and others are in the inner city on welfare. So the strategies for development are going to be very difficult for the hard-core poor in Tibet who are dependent on welfare, the same as the hard-core poor are in the United States. The middle-income groups who have some potential might be helped by vocational training and help, and then starting a little business while those who are better off and could use the money to maybe open a large trucking business, or something like that. It is very complicated, just as it is here. We cannot solve our own problems.

So, the thing over there is that with the political problems overlaying everything, it is hard, but it can be done. I have seen things

that work. I have experimented myself. It is not easy and it is certainly not easier than here.

Ms. SAMEN. I agree. I think it is a very complicated issue, and multi-level. But, starting just with helping with poverty and getting people to be able to eat better in our particular area, that really has an impact on pregnancy and newborn infants' lives. If we had funds from USAID, we could really be doing aid projects that can help to set up an infrastructure for health care out in the rural areas, because it is very limited. There are seven hospitals in Lhasa Prefecture and Lhasa City, but when you go outside of that area, the county hospitals are run down, they have no blood bank, they have no doctors who can provide any kind of emergency services. There is no transportation.

But any project has to be done in a way that there is a bilateral agreement saying that if there is an infrastructure built, that must stay in place. We should not put money there and turn around and walk away, because the hospital would fall apart and it would be the same problem all over.

Mr. MILLER. If I could follow up a bit on Ms. Yaffe's question, and also to go a little bit further on what Mel has said. It is very complicated and complex. I think oftentimes here in America sometimes people have this impression that, oh, Tibet is just kind of one area.

But when we are talking about the Tibetan areas of China, you are talking about close to 2.5 million square kilometers. We have farming communities. We have nomad communities. We have different environmental situations. In very western Tibet, it is a very dry, high, cold desert, almost strictly pastoral nomadism taking place. In the eastern ethnic Tibetan regions of western Sichuan and northwestern Yunnan Provinces, very fertile environments exist. People there are much better off. There is easier access to roads and markets.

So, it is a very complex situation that you cannot just give a general prescription for development. You really need to be looking at site-specific activities. Then, on top of that environmental layer, you have the administrative layer because things are different in the Tibet Autonomous Region than they are in Qinghai Province or Sichuan Province.

So, you have many layers that all need to be considered when you are looking at coming up with activities or programs to train Tibetan people so they can more easily take on jobs. It is very complicated and complex. It is not as easy as we think it is at times.

Mr. FOARDE. Thank you all for your comments.

Let me keep going and recognize Steve Marshall. For almost 2 years, Steve has been our CECC staff expert on Tibet and we have learned a great deal about Tibet and its beauty, its problems, and everything else from Steve. Steve is responsible for organizing today's roundtable, so we appreciate that as well.

The gavel is yours.

Mr. MARSHALL. Thank you. I am really, really pleased to have heard everything each of you has had to say. This is decades of experience and a lot of heartfelt concern we are hearing today.

I want to focus on sustainability. You cannot just come up with foreign funds indefinitely and keep pouring them out on the sand.

Since you have "been there and done that" and have known these things over time, can you describe to us specifically, in your own experience if possible, precise examples of sustainable projects? You went out there, you did something, you got it going, and it keeps going.

Arlene, would you like to start?

Ms. SAMEN. Yes. The first 2 years that One H.E.A.R.T. did midwife training in Tibet, it was taught solely by midwife experts that we brought from around the world. Last summer, partly due to the SARS situation, we could not get back in time to start the course. But our Tibetan colleagues, who are obstetricians, they felt confident enough, having attended the courses before, that they felt they could go ahead and start it. So they pretty much taught the course on their own. Then by the time we were able to come back, we just basically came back and supervised part of the clinical rotation. But they now have written their own midwife training manual in Tibetan and it is culturally appropriate for them. The course will go on whether we get there or not this summer. So that, for us, has been one thing that has been quite sustainable.

We are having a little more difficulty in keeping the infrastructure sustainable out in the community area, but have set up a monitoring and evaluation system this year. It looks like we are identifying some leaders out there that will really take the ball and run with it. One of the people who is coming to Utah next month is the director of MPH from Medrogongkar County. He actually is very passionate about the work and it is our hope that he will just continue on with the project out in that area whether we are there or not.

Mr. MARSHALL. Thanks.

Dan, can you expand on that a bit?

Mr. MILLER. Yes. I will try to mention two or three things. First, regarding a project on biodiversity conservation on the Chang Tang Wildlife Reserve where I first started doing some work with George Schaller and the Wildlife Conservation Society back in 1993. Initially, this was just surveys of wildlife and nomads and range lands in the area to get a sense of what really the situation is, and what is going on. We went back a couple of years, or I went back a number of years with that, and then other people have continued working. But what you have now is that this reserve is starting to be managed. There are now periodic surveys done on wildlife in the area. There is a program of training for the forest guards, as they call them, to control poaching. There is work with the villages to make them aware of conservation issues and the importance of conserving the animals. That is something that I see has continued, if we are talking about sustainability.

The capacity of those institutions involved has been strengthened and is now able to continue. This was catalyzed from the beginning largely through the efforts of Dr. Schaller and his organization and the teams of people that they are working with, so that effort has continued.

The same with the Qomolangma Nature Preserve. Some of that initial work was done on surveys and trying to come up with management plans for the area. That work is now, I think, well in place.

Another example is some work that I saw in Tibetan areas in Gansu Province. Actually, it was with some initial funding from Oxfam Hong Kong, working with a Tibetan man with a Ph.D. at Lanzhou University who works with Tibetan nomads in the area. He designed a community-based rangeland management approach that was very successful and happened to be the right place to do it. There were receptive local community officials, receptive villagers, and it worked. That model for a group-based management of grasslands, instead of everything on an individual basis, raised the foundation for a much larger World Bank project in Xinjiang and in other parts of Gansu. They really promoted an approach in which you are looking at village-based management and group-based management to pastoral development, rather than just an individualized approach. So, I think that is something that shows sustainability of efforts.

Mr. MARSHALL. Thank you.

Mr. FOARDE. Let me recognize our colleague Susan Roosevelt Weld, who is the general counsel of the CECC staff, for a question or two, please.

Ms. WELD. Thanks, John.

I want to start with Arlene. I am wondering if, in Tibet, there are strong women's groups. Are there traditional women's organizations that you could work with on birth practices?

Ms. SAMEN. We just now started working with the Women's Federation, and also will be starting to do focus groups within communities with women. There usually does seem to be one or two in a community that will stand up and be active and take a voice.

Tibetan women are extremely shy and often will not want to talk about health care issues or issues surrounding birthing. But now that we are doing a lot of education about why it is so important that women be aware of what happens during pregnancy, what happens if they were to die or their children were to die, women are becoming more interested and wanting to take more of a role. So I feel that the program is definitely going to be headed in that direction. We have identified several community women whom I think will have a voice. But it is not a typical Tibetan behavior to be very vocal about their own bodies or their own rights.

Ms. WELD. That is puzzling, in a way, because I know that the male/female ratios of newborns in Tibet are more favorable to women than they are in the rest of China now. So I have wondered, and asked Steve about this, whether that meant that there is something cultural in Tibet which is more favorable to women.

Ms. SAMEN. Mel probably can answer that better than I can.

Mr. GOLDSTEIN I do not think so. That is a fascinating thing, I believe, although I do not quite understand what it is. It is not because women have a higher status than they have elsewhere in China.

Ms. WELD. Interesting. My next question is, this Commission has the duty to look at the rule of law in China. Thinking about issues of poverty and income in rural areas, I wonder, which laws are useful to promote this? For example, now we see that people are allowed to have private property which will be protected in the Chinese Constitution. There has recently been reform of the laws of land use. I would like to know whether those new laws are helpful.

Are they implemented in Tibet or are they only implemented in other parts of China? Are they useful to the Tibetan people in this respect?

Mr. MILLER. Let me start off with that. One law that I think is very important is the Grassland Law. My understanding is that it recently went through a revision, and I am not sure what the status is of it right now, or if it has actually finally passed. But my understanding is that there was a lot of discussion about whether that law should include provision for group-based management of grasslands, rather than just on an individual basis. So, certainly China's Grassland Law is something that would be of importance in the Tibetan areas.

Mr. GOLDSTEIN I just do not really have anything to add about that. I think these would count much more in the urban areas where there is property and people are buying and selling, but in rural areas there is not a lot who would be involved in that; they only own the house that they have, perhaps. So, I really cannot add anything.

Ms. WELD. Thank you.

Mr. FOARDE. Let me go on then and recognize our friend and colleague, Selene Ko. Selene is senior legal counsel on the Commission staff. She handles a number of issues, including commercial rule of law development, but has interests in a great many things. Over to you for a question.

Ms. KO. One of the things that I follow fairly closely is U.S. Government funding of programs throughout China, including the Tibetan areas of China. So, I am very interested in understanding how the process for allocating funds to projects through government funding, such as USAID, works. Dan, if you could talk a little bit about USAID's priorities for the funding? How does it decide on projects? Is there some sort of public bidding process, and is there any evaluation process?

You discussed a few suggestions for areas where more funding could be used, education, training, and then you talked about agricultural projects. Are those areas that are focuses of USAID's funding for Tibet? From an NGO perspective, how accessible is this money to the NGO community, and do you see many NGOs trying to avail themselves of the opportunities provided by the funding?

Mr. MILLER. Yes. My understanding is that U.S. Government funding to Tibetan areas, I believe, really got started in fiscal year 2000 or 2001, when the funds were handled by the State Department and provided to American NGOs. Now USAID is managing some of this funding. In terms of the priorities, it really comes out of the Tibet Policy Act that states that funding should be used for activities to promote sustainable development, conserve Tibet's environment, and preserve the cultural heritage of the Tibetan people.

So, those are the three categories, you might say, that we are bound by law to be supporting with USAID programs to American NGOs. That is pretty broad, but certainly then within the sustainable development aspect, USAID is in the process of developing what is called a Request for Applications [RFA], and a notice will be going out in the Federal Register.

A lot of that is then addressing these three major concerns. So then a bidding process would take place that is transparent, in

which NGOs are asked to submit proposals that are then evaluated by a technical committee in a competitive process to determine which ones are deemed the best available.

In this process of preparing this Request for Applications, USAID visited the Tibetan areas in Qinghai Province last year. I provided a background paper on the environmental analysis that was done. We have been in close consultation with the U.S. Embassy in Beijing on this, and in consultation with the Special Coordinator for Tibet's office at the State Department on determining this program.

In terms of looking specifically at agriculture, I would say that we certainly need to look at some of these aspects that I mentioned, about trying to promote economic growth and improving the lives of the Tibetan people.

Ms. KO. Is there any evaluation process envisioned as part of the grant making process?

Mr. MILLER. Well, certainly, USAID has a legal obligation to ensure that these funds are being used appropriately, and USAID has a regular evaluation process whenever funds are being used. But this project is still just getting started, but certainly there will be an evaluation process that will be gone through to look at the effectiveness of these activities.

Ms. KO. Thank you.

Mr. FOARDE. Thank you, Dan. I would now go to our friend and colleague, Carl Minzner, who is also a senior legal counsel for the Commission staff.

Carl.

Mr. MINZNER. Thank you so much. I really appreciate the opportunity to ask questions of such a distinguished panel with so many collective years of experience in Tibet.

Let me return to a topic that was touched on earlier. I think, as many people know, the Chinese Government policy for development in Tibet falls within sort of a broader plan for providing development for western China.

One view that is often expressed on Capitol Hill, among other places in the United States, is that this policy, although it might have some incidental benefits to local Tibetans, is really part of a coherent plan or a policy designed to facilitate Han migration to Tibet.

Based on your experience in Tibet, what can you say about this? Is this an accurate assessment? Is there truth to this idea as to the motivations behind the Chinese Government's development policies? I will ask all three of you.

Mr. MILLER. I will jump in here, first. Yes. This is oftentimes call the Great Western Development Strategy, I believe you are referring to, where the Chinese Government realized that the western regions were lagging far behind the eastern regions in terms of development, so there has been considerable effort going into developing these areas.

Now, a lot of it has been in the last couple of years, with infrastructure development, roads, highways, railroads, and air facilities. Is this part of a plan for Han migration into these areas? I cannot say. But what I see is that, yes, the infrastructure development is taking place. The authorities realize that development has lagged behind. These areas need to develop. It is not just the Tibet

Autonomous Region or Qinghai Province, it is Inner Mongolia, it is Xinjiang, it is Ningxia, it is Gansu, all of these areas. And, yes, it is creating jobs for local people, and also for people coming in from various places. I cannot say what the real motivation is behind it, other than what I see happening on the ground.

Mr. GOLDSTEIN Nor can I say what the real motivation is. I think I do not have to say much to you distinguished gentlemen, other than development is politics. As development is politics in the United States, and it is certainly true in China. What I can say is that there are different opinions, I think, in the Chinese leadership as to what is in the national interests of the government there with regard to Tibet and, let us say, other minority areas. The policy that they have chosen is what I would think of as the more hard-line policy, because it is open competition. It would be like when the Chinese started opening up in 1980, if Deng Xiaoping had said any foreign company can come and buy whatever factory they want and just export whatever money they want and not transfer any technology to China.

Well, that is what the policy is in Tibet. The Chinese Government has talked about policies where a kind of economic development would be formulated in which Tibetans get more of the advantages, more of the profit of it, but they decided against that direction and in favor of open competition.

Now, one cynical interpretation would be to say that this was to improve migration. That is probably a part of it. The other thing is, how would you win over Tibetans if you are unwilling to reach a compromise with the exiles over political sharing?

Their idea from the beginning has been that, by improving the standard of living as quickly as possible, you will win over their economic interests. So, that, I am sure, is a part of it, too. When you look at a program like this, I think people in Beijing have to say, "Is this counterproductive or productive?" I think they may be moving more to programs that are going to give more specialized preference to Tibetans because it is so obvious on the ground and to their leaders that Tibetans just need more jobs in the future or they are going to have a worse situation than they have now. So, I do not know if that answers your question, but I think it is complicated.

Ms. SAMEN. I do not know what the Chinese policy is, but certainly Tibet is viewed as a place of income generation. It is mostly tourism. There is also mining and the railroad coming in, and definitely a place where there is opportunity for entrepreneurship.

So whether the Han Chinese or the Tibetans who are going to jump on that train has yet to be seen. But it is definitely growing by leaps and bounds, and there is a lot of financial opportunity there.

I agree with Dan and Mel. The Tibetans really need to learn more about business, infrastructure, and vocations because it is just going to grow exponentially in the next few years. I personally would like to see a lot more Tibetans involved in the growth.

Mr. FOARDE. Interesting question, and interesting answers as well. Thank you all. We are getting very close to the end of our session this afternoon, but I would like to recognize for the last round of questions Steve Marshall.

Steve.

Mr. MARSHALL. I will follow up on the last question here. There is a very interesting comment, Dr. Goldstein, at the end of your paper about short-term alleviation of some of the poverty by using set-asides for jobs or rebates for Tibetan entrepreneurs to get them more involved in the economy.

Is there something that, in your experience and to the extent you understand the Chinese laws, could actually be brought about? My sense is that it is, within the development programs and the autonomy law and so on. But I would wonder what you think, based on working on the ground and dealing with local officials.

Mr. GOLDSTEIN I am not a legal expert, so I am not really familiar with the laws. But I think it certainly can be done. They talk about it now and there is a lot of thinking about it. They have talked about it in the past. When governments give out contracts, they can give out any kind of contract that they want. They can have a contract that says that 30 percent of the subcontractors have to be Tibetan.

Now, who will do it? Not some of the farmers I am dealing with. But in those farm communities there are families who are doing phenomenally well, and they have companies, and they have skills, and business skills, and they could organize it. Right now, people generally go from these farming communities after they plant, which is sometime in the spring, and they come back just before the harvest, so they are away for 3 or 4 months on the road, trying to find jobs.

Very often, Tibetans organize 50 or 60 people and take them 500 miles away on a project. So, that is already going on, that there are Tibetan businessmen who try to get a contract from Lhasa, and then do something.

It could be revved up very quickly, I think. And outside programs could then come in and try to provide some extra skills for what might be needed and then help people to organize by giving them the loan to buy the trucks to do the work. In that case NGOs could have a substantial impact. Tibetans are ready for it. Whether they want it or not, they all know they need it. Given an opportunity, if you can convince them, I think they will take it.

But on the other hand, they are stubborn. Under the current government rules, they often do not have to do things. Even the local Party secretaries cannot make them do things. Two years ago, the local Governor of a county wanted them to plant all the crops in certain areas to be more effective, he thought. People did not want to do that and they blocked it, despite the Governor and despite the higher level officials.

So, you have to convince the local Tibetans that the program is really useful and they are going to make money in it and it is in their interests. If you do, I think it will have impact. I think it is within the laws of China and within the feeling of many of the Tibetans in the government in Tibet to do that.

Mr. MARSHALL. Thanks.

Arlene, Dan, can you expand on that or add to that?

Ms. SAMEN. I will let Dan, because I am really in health care.

Mr. MILLER. I was just going to say, too, that, yes, I see that there are these opportunities out there. Mel has given more of a

specific example. But certain entrepreneurial types of people have things.

If you were then to come in with a training program to develop the trade skills or specific skills that some of the workers might require, or to provide business development services for that entrepreneur and give them access to credit or loans, that he could get things going, yes, those types of opportunities are there.

Again, it is just a matter of finding them and then coming in with the right kind of assistance to those individuals, you might say, but it is sort of the whole aspect of financial services and skilled trade development.

Ms. SAMEN. I think there is a lot of room for micro-finance projects in Tibet. I think the Tibet Poverty Alleviation Fund is just starting some of those, and the Bridge Fund, certainly. But there is a lot more room for that.

I mean, just in my midwifery project, just opening up to people in the community, recently when I was there, three of the women from the Women's Federation came to me and said they would like to be midwives.

So, I think, given opportunities for either education or business, micro-finance, and given the assistance and mentorship that they need, I think that the Tibetans can have self-sustaining programs.

Mr. MARSHALL. Thank you.

Mr. MILLER. I would just like to add that it is not only just micro-finance. Micro-finance is usually small amounts, a couple of hundred dollars or so. You need more than that to buy a truck or to really get something going. So, yes, micro-finance is important, but also larger financial services are going to be necessary to jump-start some of these things that will then employ a lot more people.

Mr. FOARDE. Thank you all.

The magic hour has come far too soon. We have had a very interesting session, with lots of great ideas and information that will be very useful to us in putting together our annual report this year.

On behalf of Congressman Jim Leach and Senator Chuck Hagel, our co-chairmen, and each of our 23 commissioners, I would like to thank our three panelists, Dan Miller, Mel Goldstein, and Arlene Samen for sharing your expertise and taking the time to come this afternoon.

I would like to thank all of you who came to attend and to listen, and to our staff colleagues who came this afternoon.

Just a reminder, next Friday, March 26, at 10 a.m. in this very room we will have our next roundtable. I hope to see all of you there.

Thank you, and good afternoon.

[Whereupon, at 4 p.m. the roundtable was concluded.]

A P P E N D I X

PREPARED STATEMENTS

PREPARED STATEMENT OF DANIEL MILLER

MARCH 19, 2004

Thank you very much. I am grateful to the Congressional-Executive Commission on China for giving me the opportunity to speak today. This roundtable on development projects in the Tibetan areas of China is an important topic. I am especially pleased with the subtitle of the roundtable on articulating clear goals and achieving sustainable results. As a development specialist, I believe that development efforts in Tibetan areas of China, in order to be successful, need to give much greater attention to formulating explicit goals and objectives and ensuring that results are attained and that they are sustained.

As a bit of background let me say that I have spent part of every year for the last 16 years working in Tibetan areas of China. In the beginning, I conducted research on rangelands, wildlife and nomads and later was involved in designing and implementing wildlife conservation and rural development projects for a variety of bilateral and multilateral organizations, and NGOs. At last count, I have made 35 trips to Tibetan areas in western China. I have been fortunate to have been able to visit and work in numerous areas, including the remote Chang Tang region in the northern Tibetan Autonomous Region and western Qinghai Province, the central valleys of the TAR, eastern Qinghai Province, and the Tibetan areas of Gansu, Sichuan, and Yunnan Provinces.

My work in Tibetan areas of China was preceded by many years working with Tibetan refugees and Tibetan-speaking herders and farmers in Nepal and Bhutan. I also speak Tibetan. I admit I have trouble carrying on a political or philosophical conversation in Tibetan—as I do in English—but I can easily converse in Tibetan with Tibetan farmers and nomads about agriculture, livestock and rangeland management.

In the short time I have to talk, I would like to focus on agricultural development in the Tibetan areas of China and, more specifically, on livestock development for Tibetan nomads and farmers, which happens to be my area of expertise.

Of the Tibetan population in China of about 5 million people, almost 2 million Tibetans are nomads who make their living primarily from animal husbandry. Another 2½ million people are agro-pastoralists, who combine both cropping and livestock raising for their livelihoods. As such, livestock development and the management of the rangeland resources is fundamental to the future development of the majority of the Tibetan people.

Rangelands of the Tibetan Plateau encompass about 1.65 million square kilometers, an area slightly larger than the country of Mongolia—or about 2½ times the size of the State of Texas. Thus, the Tibetan rangeland environment is one of the world's largest rangeland landscapes. It is also one of the earth's most important ecosystems as it contains the headwaters environment for many of Asia's major rivers and has been identified as one of the world's priority areas for conservation of biodiversity. Despite its vast extent, the global significance of its biodiversity, the regional importance of its watersheds, and the millions of Tibetan nomads and farmers who are dependent on the rangelands, they have not been given the consideration they deserve.

In the last 20 years, China has achieved remarkable agricultural and rural growth, greatly reduced poverty and addressed many environmental and natural resource degradation problems. In many of the Tibetan areas, however, broad-based rural economic growth has not been very significant yet. Poverty is still pervasive and inhibits the government's and rural communities efforts to create economic opportunities. Tackling poverty in the Tibetan areas is also constrained because of the poor understanding of the nature of poverty and the lack of reliable information about improved farming systems and more appropriate pastoral production practices. Some of these aspects on the nature of poverty among Tibetan nomads are dealt with in more detail in my prepared statement.

To date, most Tibetan farmers and nomads have not participated fully in the assessment, planning and implementation of development programs and policies that affect their lives. Government development programs have generally taken a top-down approach and, despite their good intentions, have often been hampered because Tibetan farmers and nomads themselves were not involved in the design and implementation of activities and by faulty assumptions about poverty and Tibetan's agricultural and livestock production practices.

In addressing poverty and implementing rural development in Tibetan areas, one is faced with problems of two production systems. On the one hand, there is the traditional agricultural and pastoral production systems, which can be seen as an evolutionary response to environmental limitations; it is a pattern for survival, which has proved successful. On the other hand, there is also another system, which is a new pattern for survival and increased production, based on the technical rationale brought in from outside but not yet adjusted to social factors and subjected to the test of time; its technical innovations are promoted by development projects and technical specialists. Dealing with problems, which relate to the entire system, including the interaction of old and new strategies will require much more careful analysis when planning development in Tibetan areas. Let me add here, that I have been amazed at the changes I have seen taking place in just a few year in many of the nomad areas in China where rangelands are being privatized and fenced and nomads are encouraged to settle down. It certainly is a dynamic environment.

Rural development experience internationally, and elsewhere in China, demonstrates the benefits of adopting an integrated approach to tackling poverty—an approach that involves social and economic development as well as environmental management. An emphasis on economic growth within a community-based integrated development model has the greatest promise for a multiplier effect in reducing poverty in Tibetan areas. It addresses the needs of Tibetans in local communities and the opportunities that exist for increasing incomes and improving livelihoods.

The lack of markets of livestock and agricultural products, of agro-processing that adds significant value, and of financial services are important contributors to the environmental, economic and social problems afflicting Tibetan areas. Development of integrated markets for agricultural and livestock products that increase the flow of products and price signals that reward higher quality is essential to adding economic value, reducing the negative impacts of overgrazing and environmental degradation, and improving the livelihoods of farmers and nomads. Development of demand-based agricultural processing enterprises that add significant value to agricultural and natural resource products means a greater emphasis on quality rather than quantity. It also underscores the importance of providing increased alternative opportunities for employment and income for Tibetan farmers and herders.

Reducing poverty and promoting sustainable development in Tibetan areas requires expanding the income base for Tibetans. The economic base of the majority of Tibetan people is primarily agriculture and animal husbandry is the dominant agricultural activity across much of the Tibetan plateau. Therefore, improvements in livestock production and animal husbandry practices, in both agricultural and nomadic areas, hold the potential for stimulating economic growth. Yet, when we look at the types of development projects that are being implemented by most American-based NGOs in Tibetan areas there is surprisingly little attention being paid to livestock development.

The key issues for sustainable development in the Tibetan pastoral areas to be resolved are: (1) widespread poverty; (2) rangeland degradation; (3) unsustainable livestock production practices; (4) poor market development; (5) weak community participation; and (6) lack of integration in addressing the problems. The development challenge is determining how to target funding better to address these issues and to ensure that resources allocated for development actually reaches the Tibetan farmers and nomads.

I would now like to go back to the subtitle of this roundtable: articulating clear goals and achieving sustainable results. Having been involved in rural development for many years, I firmly believe that clear objectives and strong commitment drive successful projects. There are numerous US-based NGOs working in Tibetan areas of China, a number of them with funding from the US Government. NGOs are widely perceived by the public as more effective than larger donors at reaching local people. Typically, NGOs operate small-scale, community-based projects.

Having worked for both NGOs and larger multilateral and bilateral development organizations, I think the development planning process that larger development organizations like USAID, the Canadian International Development Agency (CIDA) and the World Bank embrace—tools such as results-based management and logical frameworks—are very valuable and could help NGOs be more strategic and effective in their work in Tibetan areas. These tools—and there are numerous training programs and manuals on them—assist you to clearly define goals, development objectives, outputs and activities. It really doesn't matter if you are designing a large $50 million project or a small, $50,000 project—the process is the same.

What is important is that the proper analysis is carried out, outputs and activities are clearly defined, performance indicators are defined, and a monitoring and evaluation system is designed. Roles and responsibilities of different actors also need to be defined and a work plan schedule developed. Since funding is limited, develop-

ment organizations also need to focus on those activities that provide the greatest return on investment. Economic analysis has to play an important role in identifying costs, benefits and risks and in evaluating design alternatives during project planning.

Defining development goals and objectives and achieving sustainable results in Tibetan areas will require that those organizations currently working there, and those desiring to work there in the future, learn to use these development tools that have proven to be useful.

With respect to sustainability, the basic objective for sustainability is to institutionalize the project/program outcomes in partner organizations. This requires permanent changes in institutional knowledge, processes, and systems. Having a project sustainability strategy helps ensure that project strategies, management structures and processes foster stakeholder participation, capacity building and ownership of results. The likelihood of sustainability is increased when local partners are involved in decisionmaking. When they participate in decisionmaking about the use of resources, they are building their capacity to assess needs, formulate solutions, and ensure their effective implementation.

The US Government Agency I work for, USAID, has considerable experience and lessons learned about pastoral development that is relevant to Tibetan nomadic areas. For example, the Global Livestock Collaborative Research Support Program has worked with pastoralists in South America, East Africa, and Central Asia. Many of the approaches from these activities could be applied to Tibet. USAID also has been working with nomads in Mongolia, forming herder groups and working with herders to develop rangeland management plans and improving the business of herding that is relevant to Tibetan pastoral areas. A number of other bilateral and multilateral organizations have range and livestock development projects in Inner Mongolia, Gansu, and Xinjiang regions of China and have valuable lessons-learned on organizing pastoral development.

In addition, a Sino-US Center for Grazingland Excellence was recently established in Gansu Province of China that will provide opportunities for American scientists to work with scientists from universities throughout Western China, including the Tibetan Autonomous Region, on rangeland and pastoral development related research. I see this as an excellent opportunity for US-based NGOs working in Tibetan areas to team up with American and Chinese scientists (including Tibetans and Mongolians) to design long-term research efforts to help solve many pastoral development related issues.

There is a great need for more multidisciplinary research that brings together the expertise of social scientists, ecologists, agronomists, economists, and pastoral specialists to develop a better understanding of the nature of poverty and existing agricultural and pastoral production practices among Tibetan farmers and nomads. Research also needs to be more participatory and farmers and herders need to play a larger role in setting research priorities and in determining the merits of research findings.

Research efforts need to be directed toward understanding current nomadic pastoral production and farming systems and how they are changing and adapting to development influences. Practices vary considerably across the Tibetan areas and these differences need to be analyzed. How do increasing demands for livestock and agricultural products in the market place affect future agricultural and livestock sales? What constraints and opportunities for improving production are recognized by the farmers and nomads themselves? What forms of social organization exist for managing livestock and rangelands? How have these practices changed in recent years and what are the implications of these transformations? Answers to these and related questions will help unravel many of the complexities of current agricultural and pastoral production systems, of which we still know so little about, and will help us to better plan future interventions.

The crucial problem now facing agricultural and livestock development in Tibetan areas appears to be organizational and behavioral, rather than technical. That is to say, what social forms of production are likely to be viable in the changed socio-economic situation that now faces most rural Tibetans? Analyses of the socio-economic processes at work are a key challenge for development workers.

Finally, let me conclude by saying that the challenges facing development in the Tibetan areas of China are considerable. Opportunities do exist, however, for improving the livelihoods of Tibetans. To be successful, development projects need to develop a better understanding of the ecosystems and agricultural and pastoral production systems, greater appreciation for Tibetan nomads and farmers and their way of life, and consideration of new information and ideas. There are no simple solutions. Due to the multifaceted dimensions of the development problems, actions will need to be taken on several levels: at the central policy level, at the university

and research level, at the county and township level, and at the nomad and farmer level. Promoting more sustainable development in Tibetan areas will require policies and approaches that integrate ecological principles regulating ecosystem functions with the economic principles governing agricultural and livestock production and general economic development processes.

PREPARED STATEMENT OF MELVYN C. GOLDSTEIN

MARCH 19, 2004

Rural Tibet has experienced a dramatic change in the past 25 years. Around 1980, the system of communal production in Tibet was replaced by the current quasi-market system called the "responsibility system," and in almost all areas, the commune's land and animals were divided among its members on a one time basis. All individuals alive on the day of division got an equal share but anyone born after that did not get anything. From then on, the household became the basic unit of production as it had been in Traditional Tibet. A new economic era began.

Although I am sure you all have heard or read depictions of Tibet as exceptionally impoverished, and to an extent it certainly is, it is also clear that in the two decades since 1980, the standard of living in rural Tibet has improved a great deal. Tibet has a long way to go, but it is important to understand how far it has come and what problems it faces moving forward.

Much of what I am going to say is based on my own longitudinal research in rural Tibet that began in 1986, and in particular, from a large field study of 13 farming villages in three counties that began in 1998.

On the positive side, almost all the rural farmers we studied had a favorable opinion of the responsibility system. Ninety-four percent indicated that their livelihood had improved since decollectivization in 1980. Seventy-seven percent said that they produced enough barley for their family's food needs, and 67 percent said that they had one or more year's worth of barley stored in reserve.

Similarly, the three main high quality or luxury traditional foods—locally brewed barley beer, butter, and meat—were all widely consumed. Three quarters of the households said they now make and drink beer regularly rather than just on special occasions and the majority of families reported that they ate meat or fat either daily or several times a week. 91 percent reported they drank butter tea every day.

Finally, the material situation of village households is another empirical way to assess standard of living. We addressed this by asking households about their ownership of a range of durable consumer goods that went beyond the "basics." The results were mixed. While 71 percent of households owned a pressure cooker, 60 percent had a Tibetan carpet set, and 57 percent had a metal stove and 53 percent a bicycle, only 30 percent had a sewing machine.

What accounts for these gains? First and foremost is the new economic framework that allowed households to keep the fruits of their labor. In farming, this allowed households to intensify the care with which they planted their own fields, and resulted in most households quickly experiencing increases in production. These increased yields were further amplified by the government's new policy of exempting rural Tibetans from taxes.

This effect was even more impressive with respect to domestic animals which increased 82 percent since decollectivization, and more if chickens and pigs are counted. The milking animals that provide the essential milk that every rural household needs to make butter for tea, have increased an amazing 668 percent.

Finally, the new economic structure also has allowed and encouraged rural households to engage in non-farm income generating activities, and as we shall see, many have done so.

But I do not want to paint an overly rosy view of rural Tibet. Despite these improvements, Tibetans clearly have a long way to go vis-a-vis inland China. For example, as of 2002, none of the 13 villages we studied had running water in houses and only the village immediately adjacent to a county seat had a water tap and electricity. None of the areas had improved dirt roads, let alone paved roads.

And, critically, there is still a great deal of real poverty. Despite starting equally in 1980, 14 percent of households were poor in the sense that they did not have enough grain either from their own fields or bought through earned income, and another 28 percent of households were having a difficult time meeting their basic subsistence needs. Moreover, in the poorest areas we studied, about 30 percent of the households were poor as I defined it. Thus, while progress in rural Tibet in some ways has been impressive, many families have faltered and are in dire need of assistance.

The situation in Tibet, however, is not static and there are fundamental changes going on that need to be mentioned since these raise serious questions about whether the overall increases of the past 20 years can be sustained, let alone improved over, say, the next 20 years.

First, and most critical, is a serious decline in per capita land holdings. As a result of population growth and fixed land size, there has been an average decline of 20 percent in per capita land holdings, and this does not take into account land lost to home building sites, floods, roads, etc. Since Tibet's rural population will continue to grow during the next decade, this process of decline will continue.

Second, the cost of living is increasing. In addition to general inflation, the price of key products such as chemical fertilizers has increased substantially, while at the same time there has been a decrease in government subsidies and an increase in local taxes. This combination is also likely to be exacerbated in the years ahead.

Compensating for this by trying to increase yields will not be easy because farmers are already using high levels of chemical fertilizers and improved seeds.

Similarly, it is unlikely that the value of Tibetan crops will increase and compensate for the changes. The market for Tibetan crops is limited and declining. Tibetan barley and wheat have no export potential outside of Tibet because Chinese do not eat barley and find the Tibetan wheat too coarse. And even in Tibet, the increasing consumption by Tibetans of rice, 1vegetables and imported white flour, means they are consuming less barley and Tibetan wheat, and this trajectory is likely to increase.

Tibetan farmers are acutely aware of these changes and challenges and they are trying to compensate in a variety of ways, for example by contracting fraternal polyandrous marriages in which two or more brothers take a wife since this concentrates labor in the household and avoids dividing the land between the brothers. They are also increasingly using contraception to have fewer children, and most critically, are actively taking steps to secure non-farm income.

It is clear to rural villagers and their leaders that without a source of non-farm income households can not move from basic subsistence to a good standard of living, and in the future it may not even be possible for households who are now self-sufficient from their fields to remain so if they do not have some modicum of non-farm income.

Not surprisingly, in 1998, 44 percent of males between the ages 20 and 34 were engaged in migrant labor for part of the year and 49 percent of all households had at least one member so engaged. Most of these worked as manual laborers on construction projects. Moreover, it is significant to note that only 24 percent of households in the poorest area were engaged in non-farm labor.

With respect to such work, we found widespread frustration and anger in the villages about the difficulties villagers faced in finding jobs. Villagers commonly complained that there are not enough jobs for them and that because their skill levels are low, most of the jobs they find pay poorly. The villagers overwhelmingly lay the blame for this on the unrestricted influx of non-Tibetan migrant laborers.

Rural Tibetan farmers now find themselves in competition for constructions jobs with large numbers of more skilled and experienced Chinese workers, and given the current policy, this competition will certainly increase. How Tibetans will fare in the future, therefore, is less than clear. There are some positive signs, but it is hard to be very optimistic. What is really needed is a change in government policy that would give much greater priority to securing jobs for Tibetans, perhaps through a large-scale system of set-aside contracts for them for some period of time.

However, if the current policy continues, rural Tibetans will have to compete as best they can, and it is here that outside development organizations can and should play a helpful role. There are many things that rural Tibetan communities need, but I believe that the greatest impact will come from those programs that address what rural Tibetans themselves primarily want and need, namely, assistance in generating non-farm income. Whether the life of rural Tibetans will improve in the next decade depends on many complicated issues occurring at the macrolevel, but it is clear to me that foreign development programs can make a useful difference in the lives of rural Tibetans, although given the economic and political problems in Tibet, it will not be easy.

PREPARED STATEMENT OF ARLENE M. SAMEN

MARCH 19, 2004

Tashi Delek. I want to thank the CECC for inviting me to share with you One H.E.A.R.T.'s work in Tibet.

Last October, while working at 15,000 feet in Medrogongar County, I was suddenly called to help a pregnant woman in a remote village. She had been in labor for 4 days. I found her alone in a cold, dark shed, while her family huddled around a warm fire in the kitchen. Four hours later, the exhausted woman delivered a healthy baby boy into my bare hands. In the same county, this scene is repeated daily. Tragically, just a few days earlier, another young mother bled to death during childbirth.

Like other cultures, a Tibetan mother's death is devastating to her family for it often threatens the health of her children and impacts the family for generations. The mother is the thread that holds the family together. When a Tibetan mother dies, her surviving children are three to ten times more likely to die within 2 years.[1] When a Tibetan mother dies, her surviving children are more likely to die young and less likely to attend school or complete their education.[2]

Many Tibetans believe that a mother's death during childbirth is ominous, a sign of bad spirits that bring misfortune to her family and her community. Saving the lives of Tibetan women and their children is of the utmost urgency for the survival of the Tibetan culture. One HEART's mission is to work with Tibetans to improve the circumstances of childbirth and maternal and newborn survival on the Tibetan Plateau.

Tibetan society is one of the few in the world in which there is no tradition of trained midwives who facilitate the delivery process. Poor nutrition, the lack of trained health personnel and emergency services combine to place Tibetan women and infants at high risk for labor related deaths. The vast majority of births take place at high altitude, in a cold environment and without access to electricity or health care. In spite of active campaigns by the Chinese government to encourage women to deliver in a medical facility, more than 85 percent of Tibetan women deliver at home. Most babies are delivered with only the help of the mother or the mother-in-law of the pregnant woman, and their only assistance is the cutting of the cord. Amazingly, many Tibetan women deliver their babies completely alone.

It is believed that Tibet has one of highest newborn and infant mortality rates in the world. Tibetan women are three hundred times more likely to die than American women from various pregnancy and delivery complications. Post partum hemorrhage is the leading cause of death. Likewise, babies are far more likely to die in Tibet than anywhere else in the world. We believe that most of these deaths are preventable with minimal technology and simple interventions.

In 1998, a group of maternal child experts founded One HEART, in an effort to address maternal and newborn death in Tibet. We are a 501(c)3 organization based in the Maternal-Fetal Medicine Division of the University Of Utah School Of Medicine.

In the summer of 2000, One HEART, in collaboration with The Trace Foundation and the Netherlands Red Cross, provided the first skilled birth attendant course in Lhasa Prefecture. Since that time, we have focused our attention on Medrogongar County. According to Lhasa Health Bureau records, Medrogongar County has the highest reported maternal and newborn death rates in the Lhasa Prefecture. An estimated 75 percent of stillbirths and 30–40 percent of infant deaths can be avoided with adequate nutrition, prenatal and skilled delivery and post-delivery care for mothers. Medrogongar, because of its close proximity to Lhasa, provides an ideal setting for training, monitoring, and evaluating these outcomes.

Our midwifery course is now an annual event and is being taught entirely by our Tibetan colleagues with clinical supervision by Carolyn Bell, FNP/CNM, Midwifery Specialist. Our close working relationship with our Tibetan staff and partners and the Chinese Health officials is helping to build a successful and sustainable infrastructure.

In January 2000, the University of Utah received a 5-year grant from the NIH/NICHD. Under the guidance of Principal Investigators Drs. Michael Varner, and Suellen Miller, and Anthropologists Drs. Vincanne Adam and Sienna Craig, we de-

[1] M.A Strong, "The Health of Adults in the Developing World: The View from Bangladesh." Health Transition Review 2(2):215–24,1992.

[2] Family Care International, "Safe Motherhood as a Vital Social and Economic Investment," Safe Motherhood Fact Sheet, New York, 1998.

veloped the infrastructure for clinical research in Tibet and are now preparing to conduct clinical trials of a centuries old traditional Tibetan medicine.

Tibetans believe that this traditional medicine may help to prevent post partum hemorrhage.

We are also conducting ethnographic surveys which have been extremely valuable for both this research project and our midwife training programs. Hundreds of village women have been interviewed about their cultural beliefs around childbirth. One HEART works within these Tibetan cultural beliefs and practices, not only identifying those behaviors that may be harmful, but determining which beliefs and practices can help us to develop and implement culturally appropriate and sensitive health care interventions.

In 2002, One HEART formed a committee of foreign and Tibetan experts to address the difficult health problems facing the Tibetan families around childbirth. The team includes physicians, midwives, and doctors from the Tibetan traditional medicine hospital (Mentzikhang) and the biomedical hospitals in Lhasa, as well as representatives from the Ministry of Health. The team discussed new ways to focus our collective expertise in a capacity building effort in the TAR. Out of this group, the Curriculum and Research Development Committee was formed and they have taken a leadership role in directing these efforts, helping to develop research protocols for designing and teaching curriculums. One HEART's work with this committee is ongoing and as time and training progresses, we anticipate that the Tibetans will assume more and more responsibility for these programs.

During the fall of 2002, One HEART gained permission from the Lhasa Health Bureau to review and analyze death records for infants and children in Medrogongar County. It is clear that there are significant challenges even collecting maternal and child health data in such remote and inaccessible villages as those found in Tibet. The results confirmed previous observations and also highlighted the main causes of death. The single main cause of death in Tibetan children is death related to childbirth. From 1997–2002, 154 out of 339 deaths occurred on the day of birth and were charted as "breathlessness." Subsequently, Drs. Bernhard Fassl and Reini Jensen interviewed over 90 families who had one or more babies die at birth. This data helped us to analyze the causes of newborn "breathlessness" and stillbirth and understand the causes and events that lead to these deaths. The three main causes of "breathlessness" appear to be: first, the absence of trained birth attendants; second, the inadequate management of babies who are not breathing at birth; and third, insufficient protection from hypothermia.

Along with our Tibetan partners from the Health Bureau, One HEART is developing interventions that are both culturally acceptable and self-sustainable and implementing them in our training programs and public outreach messages. Tibetan and foreign experts agree that consistent and continued training in basic midwifery skills and emergency obstetric services, combined with community outreach messages regarding safe motherhood, can, over time, significantly decrease the number of women and children dying in childbirth.

In April of this year, through funding from the Citizen Exchange Program of the U.S. State Department's Bureau of Educational and Cultural Affairs and One HEART, a group of six Tibetan doctors and Health workers is coming to the United States for one month of medical training. This experience not only develops their medical skills, but upon their return to Tibet, they can pass on this information to their fellow health workers.

As you can see, we face many challenges in the Tibet Autonomous Region. At times, our task seems daunting, however with the passionate commitment of our staff and volunteers and with continued funding from the U.S. Government, private corporations, foundations, and individual donors, One HEART is making a difference in Tibet, one birth at a time.

Thank you for your time.

SUBMISSIONS FOR THE RECORD

POVERTY AMONG TIBETAN NOMADS: PROFILES OF POVERTY AND STRATEGIES FOR POVERTY REDUCTION AND SUSTAINABLE DEVELOPMENT[1]

SUBMITTED BY DANIEL MILLER[2]

INTRODUCTION TO THE TIBETAN PASTORAL AREA

The Tibetan nomadic pastoral area, located on the Tibetan plateau in western China, is one of the world's most remarkable grazingland ecosystems (Ekvall 1974, Goldstein and Beall 1990, Miller 1998c). Stretching for almost 3,000 km from west to east and 1,500 km from south to north and encompassing about 1.6 million sq. km., the Tibetan pastoral area makes up almost half of China's total rangeland area, equivalent in size to almost the entire land area of the country of Mongolia. As such, the Tibetan pastoral area is one of the largest pastoral areas on earth.

The Tibetan pastoral area sustains an estimated two million nomads and an additional three million agro-pastoralists and supports a large livestock population of some 10 million yaks and 30 million sheep and goats. Tibetan nomadic pastoralism is distinct ecologically from pastoralism in most other regions of the world (Ekvall 1968, Miller 2000). The key distinguishing factors that separate Tibetan nomadic areas from cultivated areas are altitude and temperature, in contrast to most other pastoral areas where the key factor is usually the lack of water. Tibetan nomads prosper at altitudes from 3,000 to 5,000 m in environments too cold for crop cultivation. Yet, at these elevations there is still extensive and very productive grazing land that provides nutritious forage for nomads' herds. Tibetan pastoralism has flourished to this day because there has been little encroachment into the nomadic areas by farmers trying to plow up the grass and plant crops. A unique animal, the yak also distinguishes Tibetan nomadic pastoralism, which is superbly adapted to the high altitude, cold environment. The wild yak is the progenitor of all domestic yak populations. The domestication of the wild yak, about 4,000 years ago, was a key factor in the development of Tibetan civilization.

The nomadic pastoral systems developed by Tibetan nomads were a successful adaptation to life in one of the most inhospitable places on earth (Clarke 1998, Manderscheid 2001a, Goldstein and Beall 1990, Miller 1998a). Over centuries, nomads acquired complex indigenous knowledge about the environment in which they lived and upon which their lives depended. Tibetan nomads mitigated environmental risks through strategies that enhanced diversity, flexibility, linkages to support networks, and self-sufficiency. Diversity is crucial to pastoral survival. Tibetan nomads keep a diverse mix of livestock in terms of species and class; they use a diverse mosaic of grazing sites, exploiting seasonal and annual variability in forage resources; and they maintain a diverse mix of goals for livestock production. The organizational flexibility of traditional Tibetan nomadic pastoralism, which emphasized mobility of the multi-species herds, developed as a rational response to the unpredictability of the ecosystem (Goldstein et al. 1990, Levine 1998, Miller 1999b, Wu 1997).

The economic viability and environmental sustainability of Tibetan pastoral production systems are under considerable scrutiny these days (Ciwang 2000, Sheehy 2000, Wu and Richard 1999, Yan and Luo 2000). Tibetan nomads are some of the poorest people in China and reducing poverty in the Tibetan pastoral areas is a daunting challenge. Many nomads are caught in a downward spiral of increasing poverty, frequent risk of livestock loss from severe snowstorms, physical insecurity, and rangeland degradation (Clarke 1998, Gelek 1998, Miller 2000). With rangelands increasingly being divided and allocated to individual households it is also becoming more difficult for nomads to increase livestock numbers, thus limiting their options to earn more income from increased numbers of animals and have a chance to rise out of poverty. Developing strategies to address poverty among Tibetan nomads requires an understanding of China's approach to rural development and poverty reduction in the pastoral regions and better knowledge about the nature of poverty in Tibetan pastoral areas.

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BACKGROUND ON RURAL DEVELOPMENT IN THE PASTORAL REGIONS OF WESTERN CHINA

In much of China's pastoral region, including the Tibetan areas, traditional livestock production and grazing management strategies have been greatly altered in the past several decades as the nomadic way of life has been transformed to one more oriented toward a market economy (Cincotta et al. 1992, Manderscheid 2001b, Miller 2000). Following the establishment of the People's Republic of China in 1949, the goal for agriculture has been to increase grain production, which resulted in the conversion of large areas of marginal rangeland to crop land; much of which was later abandoned as rain-fed grain production in the semi-arid areas proved futile.

Since the early 1980s, goals for the pastoral areas have been to increase livestock offtake, which has been promoted through the privatization of herds and rangelands, sedentarization of herders, intensive grazing management strategies, and introduction of rain-fed farming techniques for growing forage and fodder. Many of these developments were responses to economic objectives. In many cases, however, they have conflicted with the goal of maintaining rangeland ecosystem health and stability. In addition, they have not always been consistent with the local herders' own goals (World Bank 2001b). Longworth and Williamson (1993) concluded that the pastoral areas have been negatively affected by three sets of policy-related issues: population pressures; market distortions; and institutional uncertainties. These factors have interacted with the adoption of new technologies, including the opening of additional water wells and animal health programs; supplementary winter fodder/feed from agricultural byproducts; and cultivation of improved pasture, which in many cases has led to an increase in livestock numbers, thus, leading to rangeland degradation.

With the decollectivization of the agricultural sector, China has achieved remarkable agricultural and rural growth, greatly reduced poverty and addressed many environmental and natural resource degradation problems. The livestock sub-sector has experienced especially strong growth and rapid expansion during the past two decades and the livestock sub-sector has consistently outperformed the agricultural sector as a whole (Nyberg and Rozelle 1999). Average annual economic growth rates close to ten percent, combined with specific efforts to diversify regionally and within the sub-sector have contributed significantly to raise farmers' and herders' incomes and has improved the availability and variety of food and livestock products for local and export markets.

Reforms in the rural areas have been deliberate, gradual, and quite effective as the rural sector has moved away from a planned economy. The total number of people living in absolute poverty in the country has dropped to some 106 million, or about 11.5 percent of the population. The Chinese government has a strong commitment to poverty reduction, and the scale and funding of its poverty reduction program, and the sustained dramatic reduction of absolute poverty over the last 20 years of reform, are exemplary (World Bank 2001a). Replicating these accomplishments and improving sustainability in the future, however, will be more difficult as many of the potential gains from the transition reforms have been achieved and weak demand has now slowed growth.

A recent World Bank study (Nyberg and Rozelle 1999) concluded that future productivity gains in the agricultural sector will have to come from greater efficiencies of production, stimulated by market forces, and greater productivity of scarce natural resources through improved natural resource management and introduction of new technologies. Sustained rural development will also require more dynamic and effective rural institutions and financial systems, improved land tenure regimes, improved incentives for investing in agricultural development, liberalization of production, pricing and marketing policies, and better targeted investments in rural infrastructure and social services. There is also evidence now indicating that an increasing share of the remaining rural poor are concentrated in China's western provinces, and mostly within remote and mountainous townships. The educational, health, and nutritional status of these remaining rural poor is deplorable, and minority peoples are known to represent a highly disproportionate share of the rural poor (World Bank 2001a).

Animal husbandry is one of the few major industries upon which further economic development of the strategically important pastoral areas in western China can be built. However, in the context of the Chinese agricultural sector, animal husbandry ranks a poor second in importance to grain production. Furthermore, within the animal husbandry sub-sector, pastoral livestock have not received as much emphasis compared to pigs, poultry and dairy cattle. Consequently, at the national level and even in most pastoral provinces, relatively few research or administrative resources have been devoted to pastoral livestock problems.

In addition to the emerging strategic and political significance of the pastoral area, the changing food consumption patterns in China have awakened new interest in ruminant livestock grazed on the rangelands. The growing consumer preference for milk and meat is forcing a reassessment of priorities within the Chinese animal husbandry sub-sector (Longworth and Williamson 1993). As China modernizes, the rangelands are expected to help meet the country's growing demands for livestock products in the future.

China is facing major difficulties dealing with the simultaneous problems of improving the livelihoods of the pastoral population while protecting and maintaining the numerous economic and environmental benefits provided by rangeland ecosystems (Smith and Foggin 2000, Sneath 1998). Current information on rangeland degradation suggests that current strategies are not working (Ling 2000, Liu et al. 1999. Liu and Zhao 2001). Rangeland degradation is caused by many complex factors, but it is hard to avoid the conclusion that the most fundamental underlying cause has been poor government development policies relating to the pastoral areas (World Bank 2001). Other problems include a general lack of applied, cross-disciplinary, and ecosystem-level research, which would provide a better basis for developing more integrated and sustainable rangeland management systems. A disproportionate amount of rangeland research is oriented to livestock and ways to maximize productivity from intensive livestock production, rather than understanding how livestock fit into the rangeland ecosystem and how to optimize production in an environmentally and socially sustainable way.

China is also facing a dilemma regarding the effective privatization of land tenure in the context of its pastoral areas (World Bank 2001b). A

concerted effort is now underway to establish clearly defined individual private property rights to land by allocating grassland to individual herders on long-term contracts. This policy entails high transaction costs, both private and public. Strict interpretation of the policy by local officials also prevents the adoption of more innovative forms of group-based rangeland tenure systems, often based on the traditional grazing management systems.

Despite the growing awareness of and interest in the pastoral areas in Chinese policymaking circles, remarkably little research has been undertaken on a systematic basis in the pastoral areas. For example, while considerable effort has been devoted to surveying the extent of rangeland degradation, there have been almost no studies of the policy/institutional framework within which the degradation problem has emerged. Indeed, in China, rangeland degradation is widely perceived as a technical problem for which there are technological solutions (Longworth and Williamson 1993).

In China, many attitudes toward rangelands appear to be influenced by the notion that sedentary agriculture, particularly crop-based agriculture, is the superior development option. Rangelands are viewed as systems to be controlled and modified, much like cropland, rather than to be managed as natural ecosystems. This view is reflected in many of the terms that are used in discussion of pastoral development such as "grassland construction" and "grassland ecological-engineering" (Miller 2002b). Development is focused on agronomic and production aspects instead of ecological sustainability. There appears to be little acceptance of the fact that most of the rangeland in China is of low productivity or that this situation is unalterable, either for ecological, technical and/or economic reasons (World Bank 2001).

There is a similarly narrow-minded view of the validity of traditional nomadic pastoral production practices (Clarke 1987, Goldstein and Beall 1991, Miller 2002b). The purposeful, seasonal movement of nomads' herds is often viewed as "wandering" and an unsound type of use of the rangeland, instead of an efficient utilization of forage. Traditional herd structures, perfected over centuries, are seen as "irrational" and "uneconomic." Nomads themselves are often perceived as "backward" and "ignorant" (Box 1). Nomads have played an important role in the rangelands of China for thousands of years. As such, the social dimension of rangeland ecosystems should be an important aspect of research and development in the pastoral areas of China but, unfortunately, it is not.

In China, both organizational divisions between academic disciplines and the intellectual assumption that view human beings as separate from their natural environment have impeded the integration of social and natural scientific research (NRC 1992). Chinese rangeland research primarily focuses on biotic interactions among soils, plants, and herbivores, with little attention paid to the behaviors and motives of the pastoralists. When Chinese researchers do focus on pastoralists, the information is typically limited to narrow economic parameters, reporting such figures as animal units, stocking ratios, and production/consumption levels (Williams 2002).

The issue is compounded by the rather narrow approach taken to rangeland ecosystem research in China. There has been a general lack of applied, interdiscipli-

nary ecosystem-level research, which would provide a better basis for developing more integrated and sustainable rangeland and pastoral development programs. Researchers have generally neglected such topics as the effects of traditional pastoral systems on rangeland ecology, the dynamics of herd growth and traditional risk management strategies among nomads, and the impact of large numbers of Han Chinese farmers into pastoral areas to convert rangeland to cropland.

Box 1. Nomads "in the way" of Modernization

Chinese rangeland policy initiatives are informed by a long history of antagonism with the grassland environment and its native inhabitants. For centuries, Chinese literati viewed and described neighboring mobile populations and their homelands in the most disparaging terms. These derogatory Confucian attitudes were only strengthened by Marxist orthodoxy after 1949. The Marx-Lenin-Mao line of political philosophy viewed nomadic pastoralism as an evolutionary dead-end standing in opposition to national progress, scientific rationalism, and economic development. Mainstream Chinese intellectuals in the reform era still consider the land and people to be "in the way" of modernization—obsolete and disposable in their traditional composition.

Source: Williams (2002:10)

A serious re-evaluation of the approach being taken to rangeland management and pastoral development in China is needed (World Bank 2001b). While there is no doubt that China's diverse efforts to prevent particular types of land degradation are having positive effects in some areas, and there are some promising new productivity enhancing technologies for some locations, there has been insufficient adaptation of strategies and policies to suit local environmental or social conditions. The tendency has been to apply a "one-size-fits-all" approach, which is not acceptable given the diversity of rangeland ecosystems, the different pastoral production practices, and the cultural diversity of the people who rely on the rangelands (World Bank 2001b).

There is growing awareness among policymakers in Beijing that the rangelands and the animal husbandry related industries in the pastoral areas are under serious threat (World Bank 2001b). There is also concern with the lack of economic development that has taken place in the pastoral areas of western China and the fact that minority pastoralists are some of the poorest people in China. Evidence of this is the development of the Great Western Development Plan that will target investments in the western provinces and autonomous regions, including Tibet.

In the Tibetan pastoral areas, stimulating agricultural growth, reducing poverty, and managing the environment are huge challenges. Here, complex interactive issues related to the environment, technology, policies, and human population growth greatly hamper development (Levine 1999, Miller 1998b, Richard 2000). The key issues for sustainable development in the pastoral areas of the Tibetan plateau are: widespread poverty; rangeland degradation; unsustainable livestock production practices; poor market development; and lack of community participation in the development process.

POVERTY AMONG TIBETAN NOMADS

In China, the Tibetan pastoral areas exhibit some of the highest incidence and intensity of poverty. Poverty in the Tibetan pastoral areas is due to many factors but the major causes of poverty include: (1) the harsh environment, characterized by cold temperatures, sandy or infertile soils, drought, snowstorms; (2) low agricultural productivity; (3) lack of financing and access to modern technologies to improve productivity; (4) low literacy levels and poor education systems; and (5) poor health care systems. In addition, the relatively high rates of population growth and large family size have trapped many families in continuing poverty. Frequent natural disasters, such as snowstorms that decimate livestock herds, can greatly increase the levels of poverty in pastoral areas. In addition, nomads' incomes are usually low and their asset base is often small, conditions that frequently undermine their health, well-being, and potential to make improvements in their livelihoods.

Poverty exhibits certain common characteristics, but the Tibetan nomadic pastoral population and the poverty they experience have distinct features. The pastoral areas of the Tibetan Plateau have a small human population that is widely spread across physically isolated locations. Tibetan nomads are usually less healthy, less educated, and tend to experience poorer service delivery and declining employment opportunities than in other regions. Tibetan nomads usually face interlocking barriers to economic, social and political opportunities. They also lack a political voice because they are remote from the seats of power. These factors limit their access to basic infrastructure, undermine their ability to obtain social services, and in some

cases reduce their rights to own or access land. Due to heavy reliance on rangeland-resource based livestock production systems, Tibetan pastoralists are very vulnerable to climatic changes and natural disasters. For example, the winter of 1997/98 was very severe across much of the Tibetan Plateau and an estimated 3 million head of livestock died in the Tibetan Autonomous Region alone, leading to greatly increased poverty among the pastoral population (Miller 1998b).

In the Tibetan pastoral area, the challenges for rural development are especially daunting. Despite the political and strategic importance of the region, rural economic growth has not been very significant. Poverty is still pervasive. Widespread poverty inhibits rural development as well as the capacity of the region to seize new economic opportunities. Most Tibetan nomads have low cash savings rates and seldom participate in formal loan and credit programs. In general, nomads seldom take out loans to improve grasslands because it usually takes too long for returns to be generated. Most herders also simply sell animals to meet cash needs. There are also great differences between pastoral regions in terms of integration with the market economy and in the degree to which the production system has been transformed from nomadic to semi-nomadic or sedentary (Levine 1999, Manderscheid 2001b). Rapid economic differentiation among herders has meant that some are able to use market opportunities to their advantage, while others are only subject to market vagaries and depend largely on subsistence production. Distance from towns, roads, and markets are important factors contributing to poverty as are cultural practices.

Poverty in the Tibetan pastoral areas is extremely heterogeneous. Many of the poor herders, both individuals and households, are economically active and possess a mix of income sources while others, especially the elderly, disabled and women-headed households, have to rely on other families and government support for survival. Animal husbandry remains the primary source of income, employment and livelihood for Tibetan herders, and a flourishing livestock sector is necessary to reduce poverty. There are few alternative sources of income and employment outside of the livestock sector for Tibetan herders. This is in contrast to many other rural poor areas of China where poor farmers are turning to the rural non-farm sector for employment and alternative sources of income. Many of the rural poor from other parts of China also migrate to the cities in search of work, which is generally not the case for Tibetan nomads. Since livestock production on the Tibetan Plateau is very dependent on the vagaries of nature, there is great annual and interannual variation in income and consumption. This often leads to the poorest pastoral households experiencing considerable deprivation during tough times, which can have adverse long-term consequences for babies and young children.

Widespread poverty in the Tibetan pastoral area also affects rural communities and hinders their ability, and the government's ability, to provide adequate social services, maintain roads, and create economic opportunities. Tackling poverty in the pastoral areas is constrained because of the poor understanding of the nature of poverty in these areas—who the poor are and the obstacles they face—and lack of reliable information about the farming systems and nomadic pastoral production. To date, the nomads have not participated fully in the assessment, planning and implementation of development programs and policies that affect their lives. Government programs have generally taken a top-down approach and, despite their good intentions, have often been hampered because nomads themselves were not involved in the design and implementation of activities and by faulty assumptions about poverty and Tibetan nomads' pastoral production systems.

Reducing poverty among Tibetan nomads in Western China is a major development challenge. Efforts to reduce poverty and improve livelihoods of pastoralists must address the roots of rural poverty. Fully understanding rural poverty and defining an effective poverty reduction strategy are preconditions to action (World Bank 2000). Tackling poverty in pastoral areas is constrained because of the poor understanding of the nature of poverty—who are the poor and the obstacles they face—and reliable information about the pastoral production system.

PROFILES OF POVERTY AMONG TIBETAN NOMADS

To better understand the nature of poverty among Tibetan nomads, profiles of poverty are presented for Naqu Prefecture in the Tibetan Autonomous Region. Naqu Prefecture encompasses about 400,000 km2, or about one-third of the total land area of the Tibetan Autonomous Region. There are 11 counties in Naqu Prefecture, including 147 townships (xiang) and 1,527 Administrative Villages. The total human population of Naqu is about 340,000 people, in about 50,000 households. Nomadic herders make up about 90 percent of the population and these nomads are almost totally dependent upon livestock for a livelihood. Naqu's rangelands support a livestock population of about 6.8 million animals, consisting of yaks, cattle, sheep,

goats, and horses. Naqu is predominantly a nomadic livestock area and rangelands are estimated to cover about 87 percent of the total land area of the Prefecture. About 65 percent of the rangeland is considered to be usable rangeland. There is some crop cultivation that takes place in the lower elevation regions of Jiali Sokshan and Biru counties.

The proportion of different livestock species raised by nomads in Naqu Prefecture differs across the region according to rangeland factors and the suitability of the landscape for different animals. Herd compositions within a geographic area can also vary with the skills, preferences and availability of labor of the nomads. Across most of western Naqu Prefecture, sheep and goats are more common than yaks. For example, in Shuanghu County in northwest Naqu, yaks only make up 4 percent of total livestock numbers. In contrast, yaks comprise 53 percent of all livestock 400 km to the east in Jiali County. These differences can largely be explained by differences in vegetation between the two areas. In Shuanghu, the climate is drier and the dominant alpine steppe and desert steppe is better suited to goats and sheep. In Jiali, which is in the alpine meadow vegetation formation, there is more annual rainfall and the rangeland ecosystem is better suited to raising yaks.

The dynamics of poverty among Tibetan nomads can be better understood from Tables 1–6 which present data from Takring and Dangmo Townships in Naqu County. Many nomads interviewed indicated that an ideal herd for an average nomad family (about 5 people) to have a good life would be 40 yaks and 200 sheep/goats. However, as indicated in Table 1, nomads in Taking and Dangmo on an average basis only have about 30 yaks and 50–75 sheep/goats per family. This is considerably less than the ideal.

Table 1.—Livestock Per Household in Takring and Dangmo Townships

Township	Yaks per family	Sheep per family	Goats per family
Takring	31	38	12
Dangmo	30	52	15

Source: Township Records, 1999.

Table 2 depicts the number of animal sold and consumed per family, on an average basis for the two townships of Takring and Dangmo. The data indicates that the nomads in these two townships have very few animals to sell for cash income. Most of their production goes to subsistence for their own consumption. This reflects the fact that average herd sizes are quite low and provide little offtake for income earning purposes or to buy additional items the family may require.

Table 2.—Livestock Sold and Consumed Per Family in Takring and Dangmo Townships

Township	Yaks sold per family	Yaks eaten per family	Sheep sold per family	Sheep eaten per family	Goats sold per family	Goats eaten per family
Takring	0.49	2.17	3.97	10.74	0.12	2.86
Dangmo	0.84	1.81	1.73	8.25	0.07	1.49

Source: Township Records, 1999.

Table 3 shows the income earned per family from livestock and livestock products on an average basis for Dangmo Township. The greatest amount of income is earned from yaks and then from sheep. Yaks provide 74 percent of the total income from all livestock products for nomads.

Table 3.—Income Per Family From Livestock Products in Dangmo Township

Township	Sheep wool sold per family	Goat cashmere sold per family	Yak cashmere sold per family	Yak sold per family	Sheep sold per family	Goat sold per family
Dangmo	30.8 jin	1.45 jin	11.86 jin	0.84	1.73	0.07
Value in RMB	@3 = 92.4	@70 = 101.5	@10 = 118.6	1,428	432	7

Prices for live animals: Yak @ RMB 1700, Sheep @ RMB 250 Goat @ RMB 100. 1 jin equals 0.5 kg.

Table 4 depicts the total economic output from Dangmo Township for 1999. The data shows that yaks contribute a majority of the economic output, almost 60 percent of the total economic value. Although sales of wool and cashmere are important,

raising sheep and yaks for home consumption and sale are key factors in pastoral production among Tibetan nomads in Naqu.

Table 4.—Economic Output from Dangmo Township for 1999

Product	Value (yuan)	Percent of total
12,200 jin of sheep wool @ Y 3.5	42,700	1.4
576 jin of goat cashmere @ Y 70	40,320	1.3
4,697 jin of yak cashmere @ 10	46.970	1.5
1,048 yak @ Y 1,700	1,781,600	59.6
3,952 sheep @ 250	988,000	33.1
617 goat @ Y 100	61,700	2.1
4 horses @ Y 7,000	28,000	0.9
	2,989,290	99.9

Note: includes total animals sold and consumed by the households. Not included is wool used and butter/cheese eaten. Very little butter/cheese is sold from Dangmo.

Table 5 shows total livestock numbers and total annual offtake by livestock species in Takring and Dangmo Township. Yak offtake, which includes animals sold and eaten makes up about 8 percent of the total herd. Sheep offtake is about 38 percent in Takring and 19 percent in Dangmo. Goat offtake is 23 percent in Takring and only 10 percent in Dangmo. The differences between Takring and Dangmo cannot be totally explained by livestock numbers per household as Takring actually has fewer sheep per household, on an average basis, than Dangmo but has higher offtake. Some of this is probably due to access to markets as Takring is much closer to the main market in Naqu.

Table 5.—Livestock Numbers and Total Annual Offtake in Takring and Dangmo Townships

Township	Total yak	Yak offtake (percent)	Total sheep	Sheep offtake (percent)	Total goat	Goat offtake (percent)
Takring	20,780	1,742 (8.4)	25,028	9,622 (38.4)	8,371	1,958 (23.4)
Dangmo	11,718	1,048 (8.0)	20,710	3,952 (19.0)	5,778	617 (10.7)

Source: Township Records, 1999.

Table 6 depicts the percentage of livestock, by species, that are either sold or consumed by the nomads. In Takring, of total yak offtake, only 18 percent are sold, but 82 percent are for home consumption. The ratio for sheep in Takring is 27 percent sold and 73 percent consumed by nomads themselves. What is interesting is that very few goats are sold, which probably reflects the low demand for goat meat in markets in Tibet. Goats are raised primarily for cashmere and as meat for the nomads themselves.

Table 6.—Livestock Sold and Consumed for Takring and Dangmo Townships

Township	Yak sold (percent)	Yak eaten (percent)	Sheep sold (percent)	Sheep eaten (percent)	Goat sold (percent)	Goat eaten (percent)
Takring	320 (18)	1,422 (82)	2,598 (27)	7,024 (73)	81 (4)	1,875 (96)
Dangmo	332 (32)	716 (68)	686 (17)	3,266 (83)	28 (5)	589 (95)

Source: Township Records, 1999.

The type of information presented above helps understand the nomads' pastoral production system and has implications for development. For example, the data shows the importance of the nomads' livestock production for home consumption. There is little excess livestock or livestock products available for sale. Development interventions that improve nomads' risk management and strive to reduce livestock losses and improve productivity could result in additional animals for sale which could lead to improvements in nomads' livelihoods.

Nomadic pastoral production is labor intensive as yaks have to be milked, animals have to be herded and cared for, manure needs to be collected and dried for fuel, butter and cheese need to be made, water needs to be fetched, clothing and tents need to be woven, kids need to be looked after and fed and there are seasonal activities such as lambing, shearing, 1hay-making, and medicinal plant collecting that require extra effort. Households with inadequate labor to raise enough livestock have

been especially affected and become trapped in poverty. Those families with adequate labor, but who have been poor managers of their livestock and grazing land also face difficulties. With the division and allocation of rangeland to households taking place across much of the Tibetan nomadic pastoral area, even poor households now have grazing land that belongs to them and if they do not have enough livestock they can rent pasture to richer nomads who have more livestock than the determined carrying capacity of their allocated rangeland.

The harsh environment of the Tibetan Plateau and especially periodic, heavy snowfalls compounds the labor problem and even affects those households with sufficient labor and who are good managers. Snow disasters can decimate herds and cause even rich nomads to become poor. Fencing of the more productive pastures to reserve them for winter/spring grazing, the growing of hay and the construction of livestock shelters greatly reduces the risk of losing animals during a bad winter. Many nomads, especially those who can afford the investments, are adopting pastoral risk management practices to reduce the danger of losing animals to winter storms. Reducing mortality of young lambs and yaks will provide the opportunity to earn more income and/or provide more food for the family, since a large portion of nomads' livelihoods comes from the home consumption of sheep and yaks and the sale of animals. This can be accomplished by: (1) improving livestock management, especially at lambing; (2) growing hay to feed in winter, especially during later stages of pregnancy and lactation for sheep; (3) fencing winter/spring pasture and deferring grazing on it during the growing season so that forage is available in the winter/spring; and (4) improved marketing of animals to reduce number of animals being kept over the winter.

For poor nomads with few or no livestock at the current time but who do have rangeland allocated to them, a sheep distribution program, which provides adult female sheep to nomads can be a means to reduce poverty. This is especially true if it is designed so that after 3–4 years the nomads return a number of sheep so that other poor households can benefit. Livestock herd projections indicate that a nomad family that is given 50 adult ewes would be able to build their herd up to about 100 ewes in four years, even with giving back 40–50 ewe lambs in the 4th year, and still sell the male animals every year (or a combination of household consumption and sale). If a sheep distribution program were linked with rangeland development and forage development (growing of oats for hay to be fed in the winter) and an improved livestock shed for lambing, the risk of losing animals in the winter would be greatly reduced. Improved road access to what were previously quite remote nomad areas also now allows nomads to take more advantage of markets for livestock.

Tibetan nomads face considerable challenges in adjusting their traditional pastoral production practices to the new rangeland tenure arrangements now in place with the division and allocation of grazing land to households and the general "settling-down" of nomads. Opportunities for individuals to greatly expand livestock numbers are now limited because herders must balance livestock numbers with the carrying capacity of the rangeland. Nomads are compelled to become livestock ranchers and to optimize animal productivity on finite amounts of grazing land. This requires greatly improved management of the rangelands and livestock, rehabilitation of degraded rangeland, more efficient marketing of livestock and livestock products, and, for some nomad households, a move away from livestock production to other cash income-earning activities.

NOMAD VULNERABILITY AND LIVESTOCK LOSSES

The winter of 1997–1998 was the worst in recent history for much of the Tibetan nomadic pastoral area. Unusually heavy snowfall in late September was followed by severe cold weather, which prevented the snow from melting. Additional storms deposited more snow and by early November grass reserved for winter grazing were buried under deep snow. Yaks, sheep, and goats were unable to reach any forage and started to die in large numbers. By early April 1998, it was estimated that the Tibetan Autonomous Region (TAR) had lost over 3 million heads of livestock (Miler 1998b). Naqu Prefecture in the north was especially hard hit but many areas in the TAR were affected. Losses in Naqu Prefecture alone were estimated at about one million animals, or about 15 percent of the Prefecture's total livestock population. In Nyerong County as a whole, one of the areas hit hardest, 30 percent of the livestock died and some townships within the county lost as many as 70 percent. Many townships in Nyerong and other counties lost 40 to 50 percent of their domestic animals. Almost one quarter of a million nomads were affected and hundreds of families lost all their animals. Economic losses from livestock deaths alone were estimated at US$ 125 million in the Tibetan Autonomous Region.

Nomads suffered greatly as a result of the heavy snowfalls. Because the snow came so early, many nomads were caught with their animals still in the summer pastures and were unable to drive the livestock to winter quarters where some hay and feed was available. Many nomads were unable to sell animals they had planned to market in the fall of 1997, or even to barter livestock for barley grain they require. As a result, nomads lost not only their animals but also their source of income to purchase necessities they require. Many families fed whatever grain they had for themselves to their livestock to try to save the animals from dying. Before the snowstorms began, it was estimated that 20 percent of Naqu Prefecture's 340,000 nomadic population were considered to be living in poverty. As a result of the livestock losses experienced during the winter of 1997–1998, it is estimated that about 40 percent of the nomad population in Naqu Prefecture were facing poverty. Many other nomads, although still technically above the poverty line, had their livelihoods reduced. The effect of the winter of 1997–1998 will reverberate among the affected nomads for many years to come, as it will take considerable time for nomads to buildup their herds again.

The devastating effect of severe snowstorms is illustrated in Tables 7–10 for Nyerong County, Naqu Prefecture of the Tibetan Autonomous Region. Nyerong County as a whole lost 24 percent and 20 percent, respectively, of their yak and sheep population during the severe winter of 1997–98. Sangrong Township was especially hard hit. In Sangrong, total livestock population in 1998 was less than half what is was the previous year (Table 8). On a household basis, the losses were especially severe with average number of yaks per household dropping from 44 to 18 and sheep declining from 63 to 28 (Table 9). Some Administrative Villages within Sangrong Township were especially affected by the severe winter losses with livestock numbers per household declining drastically (Table 10).

Table 7.—Livestock Data for Nyerong County, 1998

	End of 1998 Population	Herd Composition (percent)	Percent Females	Death losses 1998	Death loss in percent of total	Offtake sold and eaten	Offtake in percent of total numbers
Yaks	129,189	32.8	53.4	43,880	23.8	10,853	5.9
Sheep	219,105	55.6	51.1	63,002	19.1	48,386	14.6
Goats	38,650	9.8	58.5	8,007	15.3	5,549	10.6
Horse	6,760	1.7	42.2	1,184	14.9	0	
Total	393,704						

Source: County Records.

Table 8.—Livestock Population For Sangrong Township, Nyerong County 1996–1998

	1996	1997	1998
Yak	12,653	13,631	5,670
Sheep	20,461	19,570	8,826
Goats	2,848	2,800	1,470
Horse	425	401	314
Total	36,387	36,402	16,280

Source: Township Records.

Table 9.—Numbers of Class of Animals and Sheep Equivalent Units (SEUs) Per Household and Per Person in Sangrong Township, Nyerong County for 1996–1998

	1996	1997	1998
Yaks per household	40.8	43.9	18.1
Sheep per household	66.0	63.1	28.2
Goats per household	9.2	9.0	4.7
SEUs per household	285.0	297.9	128.3
SEUs per person	56.5	58.8	25.5

Table 10.—Household and Livestock Data for Three Villages in Sangrong in 1996–1998

	Village #9		Village #11		Village #12	
	1996	1998	1996	1998	1996	1998
Households	24	26	25	27	30	30
People	122	135	120	122	153	155
Yaks	1,312	632	1,134	374	1293	462
Sheep	2,483	814	1803	410	2,290	791
Goats	210	70	194	69	369	132
Horses	28	18	39	23	61	36
Yak per household	55	24	45	14	43	15
Sheep per household	103	31	72	16	76	26
Goat per household	9	3	8	3	12	4
Horse per household	1.16	0.69	1.56	0.85	2.03	1.2
SEUs per household	390	159	314	91	313	114
SEUs per person	77	31	65	20	61	22

Source: Township Records.

Tables 11–13, present data from Dangmo Township, Naqu County, Tibetan Autonomous Region that also helps illustrate the impact of severe snowstorms on nomads and how these climatic events can con tribute to poverty. Table 11 shows end of year livestock population for the years 1995–1998. The number of yaks declined from 11,268 to 10, 551 and sheep numbers declined from 20,345 to 18,188 between 1997 and 1998. Table 12 shows total offtake and total number of livestock that died, by species, for years 1995–1996. Table 13 shows percent offtake and percent death loss of the total herd for each species. Although losses from the severe winter of 1997/98 were not as great as in Sangrong Township, losses were still high, with 11 percent death loss in sheep and over 7 percent in yaks. In 1998, numbers of animals that died were almost equal to number of animals eaten and sold.

Table 11.—Livestock Population for Dangmo Township, Naqu County for 1995–1998

	1995	1996	1997	1998
Yaks	12,077	11,058	11,268	10,551
Sheep	21,509	21,713	20,345	18,188
Goats	5,062	5,142	4,051	4,890
Horse	593	592	593	591
Total	39,241	38,505	36,257	34,220

Source: Township Records.

Table 12.—Livestock Offtake and Death Loss in Dangmo Twp. for 1995–1998

	1995		1996		1997		1998	
	Offtake	Died	Offtake	Died	Offtake	Died	Offtake	Died
Yak	615	340	1,011	990	1,115	450	966	920
Sheep	3,076	805	3,417	1,443	4,527	1,573	3,083	2,748
Goats	400	211	596	353	703	342	532	535
Horse	29	5	38	18	29	17	59	

Source: Township Records.

Table 13.—Percent Offtake and Death Loss of Total Herd for Dangmo Township, Naqu County, Tibet, 1995–1998

	1995			1996			1997			1998		
	Offtake	Died	Total	Offtake	Died	Total	Offtake	Died	Total	Offtake	Died	Total
Yak	4.7	2.6	7.3	7.7	7.6	15.3	8.7	3.5	12.2	7.7	7.4	15.1
Sheep	12.1	1.9	14.0	12.8	5.4	18.2	17.1	5.9	23.0	12.8	11.4	24.2
Goats	7.1	3.7	10.8	9.8	5.8	15.6	13.8	6.7	20.5	8.9	8.9	17.8
Horse	0	4.6	4.6	0.8	5.9	6.7	2.8	4.5	7.3	2.5	8.8	11.3

Source: Township Records.

ELEMENTS OF A POVERTY REDUCTION STRATEGY FOR TIBETAN NOMADS

The profiles of poverty among Tibetan nomads described above shows the diverse nature of poverty among Tibetan nomads and the many challenges they face. In addition to a lack of animals and income to meeting basic human needs, many nomads also lack basic services such as health and education. Poor nutrition is also a problem. Reducing vulnerability, powerlessness, and inequality are critical challenges in pastoral areas. A poverty reduction strategy for Tibetan nomads should encompass the main determinants of poverty, promote economic opportunities, facilitate empowerment, reduce vulnerability, and determine exit strategies (World Bank 2000).

Promote economic opportunities for poor nomads

The main determinant of poverty reduction is a robust rural economy with sustained growth and efficiency. This requires improving agricultural productivity, fostering non-farm activities, developing rural infrastructure, and expanding markets. A strategy for poverty reduction for Tibetan nomads should promote rural incomes and employment by fostering economic growth in livestock and non-farm sectors, liberalizing access and removing market distortions, and increasing accessibility to infrastructure, knowledge, and information systems. Such measures would lead to faster access to and accumulation of productive assets (human, physical, natural, and financial) controlled by the pastoralists and/or increase returns to those assets. Public policy choices to increase incomes and assets of nomads include:

- Providing greater security for those assets they already possess, e.g., strengthening rights to rangeland and improving or preserving adults' health status;
- Widening market access by nomads to productive assets, including land, labor, and financial services;
- Facilitating micro-finance arrangements to promote the accumulation of assets;
- Providing infrastructure, such as roads, electricity, and other local public goods; and
- Accelerating the production and transfer of appropriate new technology for rangeland and livestock production.

For nomad children, the priority is to ensure adequate nutrition, followed by access to health care and education. The existence of well functioning institutions and the efficiency of government expenditure directly affect these opportunities.

Facilitate empowerment of nomads

Empowering nomads to take more charge of the development that is affecting them is essential for poverty reduction. Sustainable development in the Tibetan pastoral areas should encourage a social, legal, and policy framework that enables nomads to more effectively influence public decisions that affect them and/or reduce factors that hinder their ability to earn a better livelihood. Since development activities that affect nomads depend on the interaction of political, social, and institutional processes, a poverty reduction strategy should ensure that the political environment is conducive to civic participation, and that government programs are decentralized and transparent. Actions to facilitate empowerment of poor nomads include:

- Improving the functioning of institutions to facilitate economic growth with equity by reducing bureaucratic and social constraints to economic action and upward mobility;
- Laying a political, social, and legal basis for inclusive development by establishing mechanisms for participatory decisionmaking;
- Creating, sustaining, and integrating competitive markets and related institutions that provide agricultural inputs and outputs;
- Reducing social barriers by removing ethnic and gender bias and encouraging the representation of nomads in community, provincial and national organizations;
- Fostering local empowerment and decisionmaking through decentralization of administrative, fiscal and political structures;
- Strengthening the participation of nomads in public service delivery;
- Eliminating biased pricing structures and other policies that negatively affect herders and the rangeland environment; and
- Increasing public expenditures in pastoral areas.

How can Tibetan nomads be empowered and put more in charge of their own future? It is becoming increasingly clear that local-level nomad organizations, or pastoral associations, provide a path to empower nomads. Pastoral associations are not new to Tibetan nomadic societies as traditional grazing management practices often relied on group herding arrangements and informal group tenure of rangelands. In many areas, vestiges and new variations on traditional pastoral organizations exist. However, the legal and regulatory frameworks often do not support local-level nomad groups and group tenure arrangements. Pastoral associations could help

facilitate the participation of nomads in the design and implementation of development programs, improve the government's understanding of pastoral systems, contribute to formulating more appropriate rules for rangeland use, and reduce the level of government resources required for monitoring rangelands. Pastoral associations could not only provide a formal means for nomads to more effectively manage their rangelands, but to do a better job of marketing their livestock and livestock products as well. Empowering nomads requires a thorough understanding of pastoral production systems, knowledge of existing group arrangements and the incentive structures that exist for group actions and new institutional arrangements. A change in attitudes toward nomads and their production systems is also required.

Reduce the vulnerability of the poor nomads

Poverty entails not just an inability to guarantee basic needs, but also a vulnerability to unexpected fluctuations both in future real income and access to public services. Nomads throughout the Tibetan plateau are exposed to considerable risks that affect their livestock production system and their livelihoods. Risks are also associated with markets, service delivery, and the very foundations of society and polity. Many of these risks are highly localized while others are more general. For many nomads, natural disasters in the form of severe winter snowstorms poses one of the greatest risks and increases their vulnerability to remaining trapped in poverty. To address this problem, measures need to be taken to reduce ex ante exposure to risk and improve the ex post capacity of the poor to cope with risk. Priority actions to reduce ex ante exposure of nomads to risks might include:

- Developing early warning systems for droughts and snowstorms;
- Improving public services, such as roads and health clinics;
- Producing and transferring appropriate range-livestock technology to herders, which improves livestock productivity; and
- Improving market accessibility for nomads to sell their livestock and livestock products.

Possible priority actions to improve ex post capacity to cope with risks could include:

- Facilitating livestock restocking programs to replace animals lost in the disasters.

Provide exit strategies for poor nomads

One of the primary goals of a poverty reduction strategy is to promote broad-based economic growth that helps the poor climb out of poverty, but in some cases in the pastoral areas this goal may be difficult to achieve. One reason is that the natural resource base cannot support the growing human population. Severe rangeland degradation in some areas is already calling into question the sustainability of current livestock production practices. In such cases, possible exit strategies for tackling poverty could take the form of migration of some people out of the most degraded areas and establishing social support programs to assist the poor. In some pastoral areas, permanent out-migration may be the most cost-effective mechanism for reducing poverty.

Effects of policies and the economy on poverty

Macroeconomic policies and institutional reforms as well as the quality of local governance have a profound affect on poverty in pastoral areas. This is because they affect the rate of economic growth, which is the single most important macroeconomic determinant of poverty. They also influence the allocation of government funding and shape the type of economic growth. Steady economic growth creates more jobs and increases incomes, thus helping to reduce poverty. Growth also increases tax revenues, enabling local governments to allocate more to health and education, which work indirectly to reduce poverty.

Measuring progress in reducing poverty

It is important to monitor progress in reducing poverty among nomads. Not only is monitoring an effective way to inform others about the State of nomads' well being and encourage debate on development approaches and priorities, but it also helps promote evidence-based policymaking by senior decisionmakers. This allows more feasible poverty reduction goals and targets to be determined for the future. Monitoring requires selecting poverty indicators and setting poverty reduction targets. Poverty indicators should be reliable, quick and cheap. It is better to identify a few indicators and measure them well rather than measure a number of indicators poorly. Indicators should also show the direction of change in tackling poverty. Once indicators are chosen, a baseline needs to be established to measure future progress.

A recent World Bank (2001a) report on rural poverty in China concludes that the key issue related to poverty reduction is not allocating more funding, but the more efficient and effective use of available resources. Findings from the study also indicate that both the problems and the development opportunities facing the western mountain areas have been underestimated, largely because of a lack of an appropriate framework to develop local strategies and programs. The widespread poverty in Tibetan pastoral areas suggest that efforts should be expanded and improved to ensure that the broader gains of economic and rural growth in the country are more widely shared among the poor, nomadic Tibetan population.

FUTURE CHALLENGES

The Government of China has placed high priority on the sustainable development of the pastoral areas in western China, including the Tibetan areas. This is evident in the Western Development Strategy which emphasizes two main objectives: (1) to reduce economic disparities between the western and other regions; and (2) to ensure sustainable natural resources management. In addition, while sustainable growth in agriculture and ensuring food security was one of the five key areas of China's development strategy articulated in the Ninth Five Year Plan, in the 10th Five Year Plan, there has been a noticeable shift in the focus away from increased quantities of agricultural products toward improved quality and more ecologically sound types of production. Thus, China appears committed to address rangeland degradation and poverty in the pastoral regions. However, it is confronting major difficulties in dealing with the simultaneous short and long-term tradeoffs, such as improving the welfare of people living in pastoral areas and protecting and maintaining the numerous economic and environmental benefits provided by rangeland ecosystems.

A critical crisis is emerging as China attempts to transform the traditional Tibetan nomadic pastoral system to one more oriented toward a market economy. Livestock development has been promoted through the privatization of herds and rangeland, intensive grazing management strategies with the construction of fences, and introduction of rain-fed farming techniques for growing forage. Many of these interventions have been responses to political or economic objectives and while they have improved the delivery of social services, in many instances, they have conflicted with the goal of maintaining rangeland health and stability. Programs to settle nomads, to divide and allocate the rangeland to individual herders, and to fence the rangeland fundamentally alter the mobile nature of Tibetan nomadic pastoralism and jeopardize many worth aspects of the indigenous pastoral systems. These attempts to foster sedentary livestock production systems have a high probability of destroying the highly developed pastoral system that has existed for centuries on the Tibetan plateau. Both the rangeland environment and the nomadic pastoral culture are under threat in areas where the culture of mobile pastoralism has been eliminated or substantially reduced.

Stimulating agricultural growth, reducing poverty and managing the environment are monumental tasks in the Tibetan pastoral areas of Western China. In these grazingland landscapes, complex interactive issues related to the environment, technology, policies, and human population growth greatly hamper development. There is a vicious cycle of increasing human populations leading to pressure to convert rangelands to cropland and to increase livestock stocking rates to maintain rural incomes. This leads to rangeland degradation, reducing the capacity of the pastoral areas to support livestock and the human populations that rely on them. Rangeland degradation is an increasing problem in many areas, calling into question their sustainability under current use. Furthermore, much of the economic growth and inappropriate development policies have contributed to unsustainable use of natural resources and degradation of the environment. Given the seriousness of the problems related to livestock production in the pastoral areas, new approaches that better integrate livestock production with improved range management, more efficient marketing of livestock and livestock products, a focus on poverty reduction, and pastoral risk management are warranted.

Poverty alleviation experience internationally, and elsewhere in China, demonstrates the benefits of adopting an integrated approach to tackling poverty—an approach that involves social and economic development as well as environmental management. Investments in education and health can greatly foster long-term sustainable development in pastoral areas. For Tibetan nomads, the challenge is determining how to target funding better and to ensure that resources allocated for poverty alleviation actually reaches the poorest sectors and families in the pastoral areas.

Despite their extent and importance, the Tibetan pastoral area has received limited attention from range ecologists and nomadic pastoral specialists. The lack of information limits the proper management and development of the pastoral area. Rangeland ecosystem dynamics are still poorly understood and scientific data on ecological processes are limited. Many questions concerning how rangeland vegetation functions and the effect of grazing animals on the pastoral system remain unanswered for the most part. There is a great need for more in-depth analysis of the relationship between herbivores and the vegetation resource and the relationship between domestic livestock and wild herbivores in the pastoral areas.

The poor perception of the rangeland environment and traditional Tibetan livestock and grazing management systems, along with the limited support for pastoral development and rangeland resource management, needs to be counterbalanced by fresh perspectives and new information regarding rangeland ecosystem dynamics and pastoral development. It is becoming increasingly apparent that many of the existing paradigms for explaining the dynamics of rangeland ecosystems have not captured the vigorous nature of the rangeland ecosystems of the Tibetan plateau and, therefore, traditional measures for range conditions and carrying capacities may not be effective gauges for management. Emerging research findings on the dynamics of semi-arid rangelands, indicate that non-equilibrium models for describing pastoral system dynamics and state-and-transition models for explaining vegetation succession are valuable concepts (Ellis and Swift 1988, Westoby et al. 1989, Laycock 1991, Fernandez-Gimenez and Allen—Diaz 1999). These fresh perspectives and concepts provide new frameworks for rangeland monitoring and offer promise for improved analyses of rangeland ecosystems on the Tibetan plateau. They also suggest new possibilities for innovative approaches to designing improved, and more sustainable, rangeland management and pastoral development.

The socio-economic dimensions of Tibetan pastoralism are also not well known (Clarke 1992, Goldstein and Beall 1989, Levine 1998, Miller 1999). Greater efforts need to be directed toward developing a better understanding of current nomadic pastoral production systems and how they are changing and adapting to development influences. Practices vary considerably across the pastoral area and these differences need to be analyzed. Why do nomads in different areas maintain different livestock herd compositions? What are current livestock offtake rates and how do increasing demands for livestock products in the marketplace affect future livestock sales? What constraints and opportunities for improving livestock productivity are recognized by nomads themselves? What forms of social organization exist for managing livestock and rangelands. How have these practices changed in recent years and what are the implications of these transformations? Answers to these, and related questions, will help unravel many of the complexities of current pastoral production systems on the Tibetan plateau, of which we still know so little about.

Although there is much in common across the Tibetan pastoral areas there are also striking regional differences that need to be addressed at local community levels. This calls for strengthened community participation and the development of sustainable participatory mechanisms for community-based rangeland resource management. Improved analyses of the socioeconomic processes at work in Tibetan pastoral areas are urgently required (Box 2). It will also be important to determine which aspects of indigenous knowledge systems and traditional pastoral production strategies can be built upon and used in the design of new rural development interventions for tackling poverty and managing rangeland resources.

Box 2. The Role of Social Scientists in Pastoral Development on the Tibetan Plateau

Ecological environments are constructed and transformed by complex and reciprocal interactions between human populations, animal populations, and the physical forces of nature that occur across local, regional, and global scales. At any scale of analysis, these interactions are understood only incompletely, and the great variety of perspectives across many disciplines are all instrumental in the effort to promote human understanding of socially defined environmental problems. Anthropologists can contribute substantially to the effort by situating human decisionmaking behaviors within specific communities of known individuals to observe how practices of local resource management are both constrained and enabled by powerful social forces that are not necessarily obvious or material. The attempt to broaden the interpretive framework for understanding human-environment relationships in this way should be welcomed by all.

Source: Williams (2002: 202).

In addressing poverty and implementing pastoral development in the Tibetan pastoral area, one is faced with problems of two production systems (Dyson-Hudson and

Dyson-Hudson 1991). On the one hand, there is the traditional pastoral production system, which can be seen as an evolutionary response to environmental pressure; it is a pattern for survival that has proved successful insofar as Tibetan nomads continue to exist. On the other hand, there is also another system, which is a new pattern for survival (and increased livestock production), based on the technical rationale brought in from the outside but not yet adjusted to social factors and subjected to the test of time; its technical innovations are promoted by development projects and technical specialists. It is in dealing with problems which relate to the entire pastoral system, including the interaction of new and old strategies, that require much more careful analysis when planning pastoral development.

Policies and development strategies for the Tibetan pastoral areas need to consider the ecological constraints inherent in the arid and semi-arid ecosystems, the interests and aspirations of the local pastoral population, and alternative methods of meeting social objectives for the pastoral areas. Sustainable development of the pastoral areas also needs to recognize the significance of nomads' indigenous knowledge of the environment and management of rangeland resources. Range and livestock development can no longer ignore local circumstances, local technologies, and local knowledge systems (Miller 2002, Wu 1998). Traditional pastoral production practices have been tried and tested. In many cases, they are still very effective and are based on preserving and building on the patterns and processes of the rangeland ecosystem (Box 3).

Box 3. Tibetan Nomads' Indigenous Knowledge Systems

Over hundreds of years, Tibetan nomads acquired intricate ecological knowledge about the rangeland ecosystems in which they live and upon which their livestock production economies depend. Nomads' husbandry of land, water, plant, and livestock resources and their strategies are highly skilled, complex and organized, reflecting generations of acute observation, experimentation, and adaptation to a harsh environment. Local climatic patterns and key grazing areas were recognized, allowing nomads to select favorable winter ranges that provided protection from storms and sufficient forage to bring animals through stressful times. Forage plants were identified that had special nutritive value. Other plant species were known for their medicinal properties or as plants to be avoided since they were poisonous. A wide diversity of livestock and grazing management techniques were employed which enabled nomads to maintain the natural balance of the land upon which they were dependent. For example, nomads usually raise a mix of livestock species; each species has its own specific characteristics and adaptations to the environment. This multi-species grazing system maximizes the use of rangeland vegetation. Maintaining mixed species herds is also a risk management strategy employed by nomads to minimize loss from disease or harsh winters.

The organization of traditional Tibetan nomadic pastoralism, which emphasized multi-species herds, complex herd structures, regular movements of livestock, and linkages with agricultural communities developed as a rational response to the unpredictability of the rangeland ecosystem. Complex forms of social organization within nomadic pastoral societies also developed that aided allocation of rangeland resources and, through trade networks with other societies secured goods not available within the pastoral systems. Pastoralism evolved through long-term adaptation and persistence in a harsh environment and the grazing and livestock management systems that developed were rational responses by herders to the resources and risks of an inhospitable environment. Nomads mitigated environmental risks through strategies that enhanced diversity, flexibility, linkages to support networks, and self-sufficiency. Diversity is crucial to pastoral survival. Nomads keep a diverse mix of livestock in terms of species and class; they use a diverse mosaic of grazing sites, exploiting seasonal and annual variability in forage resources; and they maintain a diverse mix of goals for livestock production. The organizational flexibility of traditional nomadic pastoralism, which emphasized mobility of the multi-species herds, was a fundamental reason for Tibetan nomads' success on the Tibetan plateau.

The expanded appreciation for the complexity and ecological and economic efficacy of Tibetan pastoral production systems is encouraging. It provides hope that the vast indigenous knowledge nomads possess will be better understood and used in designing new interventions. Greater awareness of the need to understand existing pastoral systems should also help ensure that the goals and needs of nomads are incorporated into new programs and that nomads become active participants in the development

process. Pastoral development programs must involve nomads themselves in the initial design of interventions. Tibetan nomads' needs and desires must be heard and the vast body of indigenous knowledge they possess about rangeland resources must be put to use when designing new range-livestock development projects. An important message for pastoral policy-makers and planners is the need for active participation by the nomads in all aspects of the development process and for empowered nomads to manage their own development.

Given the generally poor experience with settling nomads in other pastoral areas of the world, it will be interesting to watch the attempts to foster more sedentary livestock production systems on the Tibetan plateau. What effects will the privatization of rangelands have on rangeland condition? Will nomads overgraze pastures that they view as their own property now? What effect will private rangeland and fences have on traditional mechanisms for pooling livestock into group herds and group herding? What kinds of rangeland monitoring programs are needed to look after the privatized rangeland? These will be important questions to seek answers to in the future.

China needs to re-orient its policy objectives for the rangelands and pastoral areas, not only in terms of range management and livestock production, but also in the management of rural development itself. The traditional approach of maximizing agricultural output is no longer relevant to current circumstances in China. The need now is for ecologically and economically sustainable development of the pastoral regions, neither of which is consistent with output maximization (World Bank 2001b). Policies and development strategies for the Tibetan pastoral area should be based on much better consideration of ecological constraints, the interests and aspirations of the Tibetan nomads themselves, and alternative methods of meeting social objectives.

The challenge for the future is to balance the diverse cultural, social and economic needs of Tibetan nomads with the need to maintain the rangeland resources and conserve the biodiversity and cultural heritage of the Tibetan pastoral landscape. Because of the importance to the nation and the international community, China needs to do a much better job of managing the Tibetan pastoral region for cultural, social, economic, and ecological sustainability and diversity. Although there is much in common across the pastoral areas there are also striking regional differences that need to be addressed at local community levels. This calls for strengthened community participation and the development of sustainable participatory mechanisms for community-based rangeland resource management.

Participation by local people in the planning and implementation of pastoral development programs in Tibetan pastoral areas remains weak. A top-down approach still prevails, stemming from the attitude that the government knows best what is good for herders. Frequently, inadequate consultation with nomads, bureaucracy, poor understanding of local needs and constraints impede nomads from participating in decisions and render development programs ineffective and unsustainable. In the Tibetan pastoral areas, the varied social and cultural differences of the different nomad groups is a strong argument for pursuing participatory approaches in order to enable access and more equitable distribution of potential development benefits. Reducing poverty among pastoralists is also going to require increased attention to women and their role in range-livestock development (Box 4).

In summary, sustainable pastoral development in Tibetan pastoral will require: (1) greater concern about the welfare of the nomads; (2) increased concern about rangeland degradation and ecosystem processes; and (3) the political will to address the problems. Concern and political will, however, are not enough. There also has to be improved human resource capability to design and implement suitable policies and actions. Lack of capacity at the local level is one of the main constraints to more sustainable pastoral development and rangeland management in Tibetan pastoral areas. It will be necessary, therefore, to foster an enabling environment for local-level capacity building among Tibetan nomads. This must take into account the local variability and site-specific conditions related to climate, soils, ecology, livestock production, and socio-economic factors (Oygard et al. 1999).

Box 4. Nomad Women and Their Role in Poverty Reduction

Throughout the Tibetan pastoral area, women play a very important role in the pastoral economy. Since they bear and rear children, women directly influence future human resources. As managers of the household and tent, pastoral women make vital decisions about the use of natural resources (e.g., fuel, water). As herders, women are responsible for many of the activities regarding livestock production. Their decisions and actions have effects on rangeland resources and livestock. Efforts to improve livestock produc-

tivity, conserve and manage rangeland resources, reduce population growth, and improve pastoral peoples' livelihoods will, therefore, have to focus on pastoral women. These efforts will have to try and reduce women's time constraints; remove barriers to women's access to credit and extension advice; introduce technologies usable by and beneficial to women; and improve women's educational levels. Women are key actors in the sustainable development of the pastoral areas. The government, donors, researchers, and pastoral specialists need to better acknowledge pastoral women's critical roles.

CONCLUSION

The challenges facing pastoral production, environmental conservation and sustainable development in Tibetan pastoral areas are considerable. Opportunities do exist, however, for improving the management of rangeland resources, increasing livestock productivity, and bettering the livelihoods of the pastoral population. Programs stressing multiple use, participatory development, sustainability, economics, and biodiversity could be realized through complementary activities in range resource management, livestock production, and wildlife conservation. Implementing such programs requires a better understanding of the rangeland ecosystem, greater appreciation for nomads and their way of life, and consideration of new information and ideas emerging about nomadic pastoral systems, rangeland ecology, and rural development and poverty reduction.

Livestock production on the Tibetan plateau can be sustainable because rangeland ecosystems can tolerate the disturbance caused by livestock grazing. Much of the rangeland of the plateau is surprisingly resilient to livestock grazing; overgrazed rangeland can recover from livestock grazing naturally as long as the disturbance is not too great. Ecological processes that sustain rangeland for livestock also support wildlife, biodiversity, and other natural resource functions.

Sustainable pastoral development in Tibetan pastoral areas depends heavily on the local-level users of the rangeland resources; the Tibetan nomads. It is at this level that rangeland resource use decisions are made on a daily basis. It is also at this local level that awareness, incentives and institutional and infrastructure conditions must be appropriate in order to secure sustainable rangeland management and poverty reduction (Oygard et al. 1999).

In the past, policies for developing the pastoral areas emphasized economic growth at almost any cost with insufficient attention paid to promoting efficiency and rangeland ecosystem sustainability. In recent years, rehabilitation of degraded rangelands has become an important feature of national programs, but the focus is almost entirely on investment in "technical fixes" and/or "quick fixes" with little attention paid to the underlying social and administrative issues which are often at the heart of the rangeland degradation and poverty problem. Development strategies for the Tibetan pastoral areas need to adopt an integrated ecosystem approach that views livestock production as just one important aspect of an overall rural development and poverty reduction strategy.

For the Tibetan pastoral areas, the development approach needs to move from a focus of sustaining livestock outputs from the rangelands to one of sustaining ecological processes and a wide variety of goods, services, conditions and values. Ecological sustainability requires maintaining the composition, structure and processes of the rangeland ecosystems. The concept of ecological sustainability provides a foundation upon which the management of the rangelands can contribute to goals of economic and social sustainability.

There are no simple solutions to addressing poverty among Tibetan nomads. Due to the multifaceted dimensions of the problems, actions will need to be taken on several levels: at the central policy level; at the university and research center level; at the level of range and livestock extension services; and at the herder level. Promoting more sustainable pastoral development in the Tibetan pastoral area will require policies and approaches that integrate ecological principles regulating rangeland ecosystem functions with the economic principles governing livestock production and general economic development processes.

REFERENCES

Cincotta, R., Y. Zhang and X. Zhou. 1992. Transhuman alpine pastoralism in Northeastern Qinghai Province: An evaluation of livestock population response during China's agrarian economic reform. Nomadic Peoples: 30: 3–25.

Ciwang, D. 2000. The status and harnessing of the grassland ecological environment in Naqu, Tibetan Autonomous Region, pp. 106–112. In: Z. Lu and J. Springer

(eds.) Tibet's Biodiversity: Conservation and Management. China Forestry Publishing House, Beijing.
Clarke, G. 1998. Socio-economic change and the environment in a pastoral area of Lhasa Municipality, Tibet, pp.1–46. In: G. Clarke (ed.) Development, Society and Environment in Tibet. Papers presented at a Panel of the 7th International Association of Tibetan Studies, Graz, 1995. Verlag de Osterreichischen, Wien.
Dyson-Hudson, N. and R. Dyson-Hudson. 1991. Pastoral production systems and livestock development projects : An East African perspective, pp. 219–255. In : M. Cernea (ed.) Putting People First : Sociological Variables in Rural Development. World Bank, Washington, DC.
Ekvall, R. 1974. Tibetan nomadic pastoralists: Environment, personality and ethos. Proceedings of the American Philosophical Society, 113(6): 519–537.
—. 1968. Fields on the Hoof: The Nexus of Tibetan Nomadic Pastoralism. Holt, Rinehart and Winston, New York.
Ellis, J. and D. Swift. 1988. Stability of African pastoral systems: Alternate paradigms and implications for development. Journal of Range Management, 41: 450–459.
Fernandez-Gimenez, M. and B. Allen-Diaz. 1999. Testing a non-equilibrium model of rangeland vegetation dynamics in Mongolia. Journal of Applied Ecology 36: 871–885.
Foggin, M. and A. Smith. 2000. Rangeland utilization and biodiversity on the alpine grasslands of Qinghai Province, pp. 120–130. In: Z. Lu and J. Springer (eds.) Tibet's Biodiversity: Conservation and Management. China Forestry Publishing House, Beijing.
Gelek. 1998. The Washu Serthar: A nomadic community of eastern Tibet, pp. 47–58. In: G. Clarke (ed.) Development, Society and Environment in Tibet. Papers presented at a Panel of the 7th International Association of Tibetan Studies, Graz, 1995. Verlag de Osterreichischen, Wien.
Goldstein, M. and C. Beall. 1989. The impact of China's reform policy on the nomads of Western Tibet. Asian Survey, 24(6): 619–641.
—. 1991. Change and continuity in nomadic pastoralism on the Western Tibetan Plateau. Nomadic Peoples 28: 105–122.
—. 1990. Nomads of Western Tibet: Survival of a Way of Life. Oydessy, Hong Kong.
Goldstein, M., C. Beall, and R. Cincotta. 1990. Traditional nomadic pastoralism and ecological conservation on Tibet's Northern Plateau. National Geographic Research 6(2): 139–156.
Laycock, W.A. 1991. State states and thresholds of range condition on North American rangelands: A viewpoint. J. Range Manage. 44(5): 427–433.
Levine, N. 1998. From nomads to ranchers: Managing pasture among ethnic Tibetans in Sichuan, pp. 69–76. In: G. Clarke (ed.) Development, Society and Environment in Tibet. Papers presented at a Panel of the 7th International Association of Tibetan Studies, Graz, 1995. Verlag de Osterreichischen, Wien.
—. 1999. Cattle and the cash economy: Responses to change among Tibetan pastoralists in Sichuan, China. Human Organization, 58(2): 161–172.
Ling, H. 2000. Status of grassland degradation in the major grazing areas of Tibet and measures of recovery, pp. 101–105. In: Z. Lu and J. Springer (eds.) Tibet's Biodiversity: Conservation and Management. China Forestry Publishing House, Beijing.
Liu, S., L. Zhou, C. Qiu, J. Zhang, Y. Fang and W. Gao. 1999. Studies on Grassland Degradation and Desertification of Naqu Prefecture in Tibet Autonomous Region. (In Chinese). Tibet People's Press, Lhasa.
Liu, Z. and W. Zhao. 2001. Shifting-sand control in Central Tibet. Ambio 30(6): 376–380.
Longworth, J. and G. Williamson. 1993. China's Pastoral Region: Sheep and Wool, Minority Nationalities, Rangeland Degradation and Sustainable Development. CAB International, Wallingford.
Manderscheid, A. 2001a. The black tent in its easternmost distribution: The case of the Tibetan Plateau. Mountain Research and Development 21(2): 154–160.
—. 2001b. Decline and reemergence of nomadism: Tibetan pastoralists revive a nomadic way of life and production. GeoJournal 53: 173–182.
Miller, D. 1998a. Fields of Grass: Portraits of the Pastoral Landscape and Nomads of the Tibetan Plateau and Himalayas. ICIMOD, Kathmandu
—. 1998b. Tibetan pastoralism: Hard times on the plateau. Chinabrief, 1(2): 17–22.
—. 1999a. Nomads of the Tibetan Plateau rangelands in Western China, Part Three: Pastoral Development and Future Challenges. Rangelands, 21(2): 17–20.
—. 1999b. Nomads of Tibetan rangelands in Western China, Part Two: Pastoral Production. Rangelands

—. 2000. Tough times for Tibetan nomads in Western China: Snowstorms, settling down, fences, and the demise of traditional nomadic pastoralism. Nomadic Peoples 4(1): 83–109.

—. 2002a. Homes on the range: The end of Tibetan nomadic pastoralism or a base for sustainable development on the Tibetan Plateau?, pp. 260–268. In: T. Chuluun and D. Ojima (eds.) Fundamental Issues Affecting Sustainability of the Mongolian Steppe. IISNC, Ulaanbaatar.

—. 2002b. The importance of China's nomads. Rangelands, 24(1): 22–24.

National Resource Council. 1992. Grasslands and Grassland Sciences in Northern China. National Academy Press, Washington, D.C.

Nyberg, A. and S. Rozelle. 1999. Accelerating China's Rural Transformation. The World Bank, Washington, DC.

Oygard, R., T. Vedeld and J. Aune. 1999. Good Practices in Dryland Management. World Bank, Washington, DC.

Richard, C. 2000. Rangeland policies in the Eastern Tibetan Plateau. Issues in Mountain Development 2000/4. ICIMOD, Kathmandu.

Schaller, G. 1999. Wildlife of the Tibetan Steppe. University of Chicago Press, Chicago.

Sheehy, D. 2000. Range Resource Management Planning on the Qinghai-Tibetan Plateau. Unpublished report prepared for the Qinghai Livestock Development Project. ALA/CHN/9344. EU Project, Xining, Qinghai Province, China.

Smith, A. and M. Foggin. 2000. The plateau pika is a keystone species for biodiversity on the Tibetan Plateau, pp. 131–140. In: Lu, Z. and J. Springer (eds.) Tibet's Biodiversity: Conservation and Management. China Forestry Publishing House, Beijing.

Sneath, D. 1998. State policy and pasture degradation in Inner Asia. Science 281: 1147–1148.

Westoby, M., B. Walker and I. Noy-Meir. 1989. Range management on the basis of a model which does not seek to establish equilibrium. J. Arid Environ. 17: 235–239.

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

World Bank. 2001a. China: Overcoming Rural Poverty. World Bank, Washington, DC.

World Bank. 2001b. China, Air, Land, and Water: Environmental Priorities for a New Millennium. World Bank, Washington, DC.

Wu, N. 1997. Ecological Situation of High-Frigid Rangeland and Its Sustainability: A Case Study of the Constraints and Approaches in Pastoral Western Sichuan, China. Dietrich Reimer Verlag, Berlin.

—. 1998. Indigenous knowledge of yak breeding and crossbreeding among nomads in western Sichuan, China. Indigenous Knowledge and Development Monitor 1(6):7–9.

Wu, N. and C. Richard. 1999. The privatization process of rangeland and its impacts on the pastoral dynamics in the Hindu-Kush Himalaya: the case of western Sichuan, pp. 14–21. In: D. Eldridge and D. Freudenberger (eds.) People and Rangelands: Building the Future, Proceedings of the VIth International Rangeland Congress, July 19–23, 1999, Townsville, Australia. VI International Rangeland Congress, Inc., Aitkenvale, Australia.

Yan Zhaoli and Luo Guangrong. 2000. The pastoral production system in Hongyuan, Eastern Qinghai-Tibet Plateau. In: Proceedings of the Third International Congress on Yak, 4–9 September 2000, Lhasa, Tibet, PR China.

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■ Neo-Left and Neo-Right in Post-Tiananmen China • KALPANA MISRA ■ East Timor's Founding Elections and Emerging Party System • DWIGHT Y. KING ■ Development and Change in Rural Tibet: Problems and Adaptations • MELVYN C. GOLDSTEIN, BEN JIAO, CYNTHIA M. BEALL, and PHUNTSOG TSERING ■ Hong Kong Haze: Air Pollution as a Social Class Issue • RACHEL E. STERN ■ Japan and South Korea: Security Relations Reach Adolescence • JASON U. MANOSEVITZ ■ Tensions in Recent Sino-Japanese Relations: The May 2002 Shenyang Incident • MING WAN ■ Facing Citizen Complaints in China, 1951–1996 • LAURA M. LUEHRMANN ■

DEVELOPMENT AND CHANGE IN RURAL TIBET

Problems and Adaptations

Melvyn C. Goldstein, Ben Jiao, Cynthia M. Beall, and Phuntsog Tsering

Abstract

This article reports on a multi-year study of the impact of China's reform policies since the early 1980s on rural change in the Tibet Autonomous Region. The study was conducted with 780 households in 13 villages, using qualitative and quantitative methods.

Introduction

The manner in which China's economic reforms have impacted on Tibet's[1] rural farmers is one of the least-understood aspects of the controversy over China's management of Tibet. Many in the West have criticized China, arguing that Beijing's overall development policy in Tibet benefits Han (Chinese) rather than Tibetans. Pierre-Antoine Donnet, for ex-

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1. Tibet here refers to the Tibet Autonomous Region (TAR) of the People's Republic of China, not to the ethnic Tibetan areas in Sichuan, Gansu, Qinghai, and Yunnan Provinces. See Melvyn Goldstein and Cynthia Beall, "China's Birth Control Policy in the Tibet Autonomous Region," *Asian Survey* 31:3 (March 1991), pp. 289–91, for a discussion of the reasons for this distinction.

ample, states, "From the point of view of economic performance, after forty years of Chinese Marxism, Tibet's situation looks disastrous from any angle."[2] Gabriel Lafitte similarly argues that despite large inputs of development funds from Beijing, Tibet would rank at the very bottom of the U.N.'s list of nations (if it were a nation), along with countries like Rwanda, Somalia, Sudan, Afghanistan, and Mozambique.[3]

The Chinese government, not surprisingly, argues otherwise. Although it recognizes that Tibet is one of the poorest areas in China, Beijing consistently cites official government statistics to demonstrate the success of its policies in improving economic conditions there.[4] In a similar vein, an academic study of macro-development in Tibet concludes that "Tibet has moved from quasi-stagnation before 1959 to a plateau of rapid dependent growth today," the term "dependent" here meaning that the growth derives from central government funding.[5]

In one sense, such a divergence in views is not surprising, given the dearth of independent research data. Virtually all publications on development in Tibet are based on picking and choosing from often-dubious official Chinese government statistics. Despite the fact that roughly 81% of Tibet's population reside in rural villages, virtually no data deriving from firsthand fieldwork in farming communities exist.

This article addresses that gap by examining current conditions in village Tibet and the manner in which the economic changes engulfing the rest of China have played out there. In particular, the paper examines the interaction of three critical areas of change—decollectivization and land division, population and family planning, and economic development and labor migration—and the manner in which Tibetan farmers are adapting to it.

The data presented in this paper are based on a study of life in rural Tibet that was conducted from 1997 to 2000 by Case Western Reserve University's Center for Research on Tibet and the Tibet Academy of Social Sciences in Lhasa with support from the Henry Luce Foundation. Thirteen farming villages from four rural townships (Chinese: *xiang*) in the two main cultural divisions in central Tibet (Tibetan: *dbus* and *gtsang*) were selected based on

2. Pierre-Antoine Donnet, *Tibet: Survival in Question* (London: Zed Books, 1994), p. 139. See also Ronald Schwartz, "The Reforms Revisited: The Implications of Chinese Economic Policy and the Future of Rural Producers in Tibet," in *Development, Society, and Environment in Tibet,* ed. Graham Clarke (Graz, Austria: Austrian Academy of Sciences Press, 1995).

3. Gabriel Laffite, "Tibet as a Developing Society," paper presented to the Future of Tibet Colloquium, Canberra, Australia, September 2, 1995, p. 4.

4. Information Office of the State Council of China, "Tibet—Its Ownership and Human Rights Situation," *Beijing Review,* September 28–October 4, 1992, pp. 9–42, <http://www.tibetinfor.com.cn/tibetzt-en/whitebook>.

5. Barry Sautman and Irene Eng, "Tibet: Development for Whom?" *China Information* 15:2 (2001), pp. 20–74.

TABLE 1 *Location and Size of the Study Population*

	# of Households	% of Households
Ü		
Lhasa Municipality		
Lhundrup County	199	25.5
Khartse Xiang	199	25.5
Village A	31	4
Village B	21	2.7
Village C	49	6.3
Village D	33	4.2
Village E	65	8.3
Medrogongkar County	199	25.5
Tsashol Xiang	199	25.5
Village F	93	11.9
Village G	105	13.5
Tsang		
Shigatse Prefecture		
Panam1	382	49.1
Norgyong Xiang	198	25.4
Village H	108	14
Village I	69	8.7
Panam2		
Mag Xiang	185	23.7
Village J	60	7.7
Village K	35	4.5
Village L	90	11.5
Total	780	100

SOURCE: Data collected by authors.

the authors' knowledge of rural Tibet and discussions with other Tibetan researchers. The aim of this research design was to include a mix of subsistence situations. Two of these four *xiang* were located close to county seats and better off economically (Panam County's Norgyong *xiang* and Lhundrup County's Khartse *xiang*). The other two *xiang* were located further from county seats and less well off (Medrogongkar's Tsashol *xiang* and Panam's Mag *xiang*) (see Table 1).

Official statistical data for Tibet's counties give a sense of these economic differences: Panam County placed 17th in Tibet's 73 counties, Lhundrup 47th, and Medrogongkar ranked near the bottom at 66th.[6] There are no comparable published statistical data for *xiang* in Tibet.

6. Tibet Statistical Bureau, *Xizang tongji nianjian: 1995* [Tibet statistical yearbook: 1995] (Beijing: China Statistical Press, 1995), p. 178.

The study collected a wide range of information including data on social, economic, reproductive, and cultural issues. Traditional anthropological interview methods were used along with focus groups, participant observation, and informal discussions. In addition, two surveys were conducted: a detailed socioeconomic survey of each household and a separate reproductive survey with all women 18 years and older.

There was no interference from the government in the design or analysis of queries, and no government officials accompanied us to interviews with villagers. Nor did we have to make appointments through officials to see villagers. We were free to visit households whenever we wished, day or night.

Characterictics of Study Population

The 13 study villages contained 780 households, all of which were included in the study. 49.8% of the population were males and 50.2% were females. The median age of the sample was 22. 63.7% of respondents 18 years and older were married, 4.9% were widowed, and less than 1% were divorced. Household size was high, the average containing 7.1 persons, with a range from one to 15 people.

A breakdown of the composition of the population by age and sex reveals an expansive triangular shape, with 34% of the population under the age of 15. This is intermediate between adjacent Third World countries such as Nepal and Bhutan, which have 43% of their population under 15, and China as a whole, with 26%. The age-dependency ratio—the proportion of the population in the dependent ages (under 15 and over 65) relative to those in the productive ages (15–64)—was 63.6. This also was intermediate between Nepal/Bhutan (respectively, at 88.7/85.2) and China as a whole (47.1%).[7]

All 5,590 individuals in the 13 villages were ethnic Tibetans. There were no Han or Hui (Muslim) Chinese living there, either as residents or as temporary workers. Nor were any Chinese working in the four study rural *xiang* centers as officials or shopkeepers. The villages were entirely Tibetan in language and culture.

The study villages were farming communities, although all also kept some animals for milk and meat. In a few areas where sizable adjacent pastures existed, larger numbers of sheep and goats were raised. The diet was traditional Tibetan, with parched barley flour (*rtsam ba*) being the staple food in all areas. Villagers, however, now eat a range of non-traditional foods like rice, sweets, and, in some villages, chicken, eggs, and pork.

Constraints on religion in contemporary Tibet exist, but religion is an important part of rural society. In terms of formal practitioners, 3.6% of all

7. Population Reference Bureau, *World Population Data Sheet* (Washington, D.C.: Population Reference Bureau, 1999).

TABLE 2 *Religious Activities That Households Engaged in During 1997*

Item	*Yes* % (*n*)	*No* % (*n*)
Invite monks to one's house to do prayers	50.9 (396)	49.1 (382)
Purchase religious items such as incense	43.8 (341)	56.2 (437)
Give alms to monks or monasteries	38.7 (301)	61.3 (477)
Do religious rituals like Lhapsö (offerings to mountain deities)	33.2 (258)	66.8 (520)
Consult astrologer, shaman	3.3 (50)	96.7 (1,504)
Arrange for monastery to do prayers for one's household	3.3 (26)	96.7 (754)

SOURCE: Ibid.

males were monks, and 2.6% of females were nuns. 16.3% of households had one member living as either a monk or nun. These numbers would certainly have been considerably higher if there were no government limits on the number of monks and nuns.

Households were queried about their engagement in a range of traditional Tibetan religious activities during the previous year (1997). Table 2 reveals that 50.9% of households invited monks to do prayers/rites in their home; 43.8% spent money on religious items (prayer flags, incense, etc.); and 38.7% gave alms to monks/monasteries. The average household expenses for all religious activities in 1997 was estimated by respondents at 128 yuan ($15.50), but there was a substantial range, depending on the economic status of households. For example, whereas rich and middle households spent on average 209 yuan ($25.30) and 206 yuan ($25), respectively, poor households spent on average only 15 yuan ($1.80). Other communal religious practices like the pre-harvest village religious procession through the fields (*'ong skor*) were also performed.

During a 2002 follow-up stint of fieldwork in Mag, one of the study *xiang*, all 26 elderly (age 60+) were interviewed about the status of the elderly, including their religious activities. The fieldwork revealed that all the elderly engaged in daily religious prayers, but in differing amounts: 35% said they spent over one hour a day doing prayers (using rosaries, prayer wheels, or doing circumambulation); 27% spent one-half to one hour; 23% spent five to 30 minutes; and 11% spent very little time. The least-religious interview subject said he spent "very little" time but went on to elaborate that he was atypical, saying, "My children say our father is a strange man who doesn't do prayers or circumambulation. It's true. I do not have a strong religious feeling." But then he added, "We have an altar in our house and our [family

member who is a] nun offers butter lamps and the water offering [on our altar]." Consequently, it is clear that villagers in this study engaged actively in a variety of overt religious activities.

Notwithstanding this pattern, government policy considers Tibetan Buddhism in a negative light and constrains/controls it in various ways. For example, limits on the size of existing monasteries or nunneries are enforced, and there are prohibitions against the creation of new religious institutions. Moreover, in the 1990s, many monasteries and nunneries that had unilaterally exceeded their limits were forced to send the "excess" monks and nuns back to their families. At the same time, the government also began to enforce more strictly a rule that prohibits males under 18 years of age from becoming monks, despite the Tibetan tradition of boys becoming monks before they reach their teens.[8] Similarly, the government strictly prohibits the exhibition of the Dalai Lama's photo. There is also an official culture that criticizes traditional religious practices like divination, disparages expenditures on religious rites, and invokes tight regulations on other folk practitioners like shamanic mediums. Informal discussions with Tibetans revealed widespread resentment of this. A few villagers explicitly voiced the view that these policies are incompatible with the state's claim of religious freedom.

Educationally, Khartse, Tsashol, and Mag *xiang* all had primary schools. The first two *xiang*'s schools included first to sixth grade, and the latter only grades 3–6, as students in that *xiang* go to village schools for grades one and two. Norgyong *xiang* did not need a primary school since it is contiguous with Panam's County seat and its students attend the county's primary school after completing grade three in their village level school. On average, 48.4% of all individuals in the study had been to school for some period. However, among children 7–15 years of age, it was reported that 80.6% had attended school at some time, and 75.4% were currently attending school.[9] Of those currently in school, 54.1% were male.

We did not try to assess the quality of teaching or levels of knowledge, but 53.5% of males and females aged 15–45 reported that they can read Tibetan. Official statistics for 1995 reported 38.5% literacy, but this was for *all* persons 15 years and older.[10] In our sample, this percentage increased to 73% when only males of that age range were examined. By contrast, only 9.5% of individuals aged 15–45 reported that they can speak some Chinese (including

8. Tibetans believe that to create excellent monks it is essential for them to join the monastery at a young age.

9. This is similar to the primary school statistics for the TAR, which for 1997 reported that 78.2% of all children aged 7 to 13 were enrolled in primary schools (*Xizang tongji nianjian: 1998* [Tibetan statistical yearbook: 1998] (Beijing: China Statistical Publishing House, 1998).

10. *1995 Nian Quanguo 1% Renkou Chouyang Diaocha Ziliao: Xizang Fence* [1995 national 1% population sample results: Tibet section] (Beijing: China Statistical Publishing House, 1996).

the local village officials). Most of those reporting an ability to speak some Chinese resided in Norgyong, the *xiang* located just beside the county seat.

With this general introduction, let us now turn to the major changes in post-Mao Tibet, beginning with decollectivization.

Decollectivization and the Post-Mao Agricultural Economic Structure

As in the rest of China, decollectivization in the TAR from 1981 saw the division of virtually all commune land among member households. In Tibet, this was normally done on a per capita basis.[11] Once land division was implemented, the basic productive resource—arable land—typically was fixed in the household. Children born after land division did not (and still do not) receive land, and households, with a few exceptions, have no way to increase their holdings, because land cannot be bought and sold.[12] Households, therefore, essentially hold their land indefinitely, albeit on an unspecified long-term lease arrangement.

Despite this limitation, land reforms have had a profound effect. Households were once again the basic unit of production that they had been in the pre-communal era. They controlled their labor and capital and, by and large, could manage their farms as they saw fit.[13]

The impact of these reforms on farmers' standard of living is almost universally perceived by villagers to be positive. 94% of all 780 households felt their livelihood had improved since decollectivization, and in even the poorest *xiang*, Medrogongkar, 93.4% of respondents responded positively, saying their livelihood had improved. When responses were analyzed by socioeconomic status, it was found that 99.1% of rich and 81% of poor households reported that they had better livelihoods. The almost universal reason villagers offered for this was not new technology but rather their newly acquired freedom to work hard on their own resources for personal profit.

11. In the areas in the study that had been part of communes, all individuals, regardless of age or gender, received equal shares on the day of decollectivization. In Lhundrup, an area that had been part of a state farm, non-working members were allocated only 70% of the share of working members.

12. The main exception to this involves marriage. Generally, children who marry into other villages do not keep the share of land they acquired at the time of land division. However, when a marriage takes place in the same village, land does shift to the household receiving the bride or groom. It should be noted that there appear to be a few village areas in the TAR where land reverts back to the government at death, and is reallocated to children born after decollectivization. This is not usual and was not the case in any of our study sites.

13. There are some exceptions to this. For example, farmers were required to buy set amounts of fertilizer for their fields, and in some areas, households were made to sow specific crops in delimited areas so that whole sections of farmland could be planted with the same crop.

Similarly, when respondents were asked whether they think they now have a better life than their parents, 85.5% responded positively. Only 8.6% said they were worse off. As Table 3 illustrates, even older villagers in the age category 60–79 years held this view—and their parents would have been adults at the end of the traditional society, i.e., they would have been between 40 and 60 years of age when the socialist period began in 1959.

There was also optimism about the future. When asked whether they think their children will be able to have a better livelihood than they now have, 92% said yes. In sum, villagers overwhelmingly reported that their material lives had improved since the end of the communal system. A number of specifics about village life were examined in order to compare these reports with actual conditions.

At the time of decollectivization, each household received a share of the commune/state farm's livestock, on a per capita basis, in addition to arable land. These animals (sheep, cow, ox, *dzo* [yak-cow hybrid], yak, mule, donkey, and horse) became private property that households were free to sell or buy as they wished. Table 4 reveals that the number of livestock per household has increased 82% since land division, and more so (109%), if non-traditional animals like pigs and chickens are included.

For villagers, milch animals (cows, female yak, and *dzo*) are one of the most important types of livestock because they provide the milk that Tibetans process into butter and consume in Tibetan tea, which is considered essential to a high-quality diet. Table 5 reveals a striking 668% increase in such milch animals. Not surprisingly, this increase has made butter tea (versus black tea) a staple for most households, 91% of which reported they drank butter tea every day. 95% of the households also reported that they use more butter now than during the commune era.

Animals are also used for plowing. With the exception of study villages in Lhundrup County that have used tractors to plow their fields since the early days of the state farm in the 1960s, the other village sites all used animal power (pairs of *dzo*, yaks, horses, or oxen) to plow. As Table 6 shows, there was an average increase of 124% in the types of animals that can be used for plowing.

Agriculture was the core of the local subsistence economy in all of the study villages, and five main crops were planted: barley (57% of fields), wheat (20%), mustard seed (12.7%), lentil (10.8%), and potatoes (3.6%). Between 72% and 81% of respondents reported that the yields of these crops had increased since decollectivization (see Table 7). However, it should be noted that only 19% of households reported that their yields are now much

TABLE 3 *Responses to the Query: "Do You Have a Better Life Now Than Your Parents Did?"* (in %)

Current Age	*Better*	*Worse*	*Same*
60–69 (N = 111)	87.4	6.3	6.3
70–79 (N = 39)	92.3	5.1	2.6

SOURCE: Ibid.

TABLE 4 *Number of Animals Per Household*

	# Of Animals/ Household at Decollectivization	*# Of Animals/ Household in 1996*	*Amount of Change*	*% Change*	*# Of Animals/ Household in 1996 Minus Chickens and Pigs*	*Amount of Change*	*% Change*
Lhundrup	9.2	18.5	+ 9.3	+172	15.8	+ 6.6	+ 72
Medrogongkar	7.1	24.9	+17.9	+252	23.7	+16.6	+234
Panam1	20.1	35.1	+15.1	+ 75	28.0	+ 7.9	+ 39
Panam2	22.2	43.0	+21.1	+ 95	38.5	+16.3	+ 73
Total	14.5	30.1	+15.8	+109	26.2	11.9	+ 82

SOURCE: Local *xiang* and village records.

TABLE 5 *Changes in the Number of Milch Animals Per Household from Decollectivization Until 1997*

	# of Milch Animals at Decollectivization		*# of Milch Animals in 1997*		*Amount of Change*	*Amount of Change*
	Cases	*#*	*Cases*	*#*	*#*	*%*
Lhundrup	181	0.2	198	3.7	+3.5	1,519.3
Medrogongkar	183	1.1	198	4.7	+3.6	327.8
Panam1	179	0.2	197	3.5	+3.3	1,415.1
Panam2	168	0.4	185	3.5	+3.0	694.4
Total	711	0.5	778	3.9	+3.4	668.4

SOURCE: Local *xiang* and village records.

larger than during the commune era.[14] These reports of moderate increases in yields were supported by our in-depth and focus group interviews.

14. At all sites, the official *xiang* statistics were found to be overstatements, and thus are not used in this article. The issue of farm yields will be dealt with in a separate paper.

TABLE 6 *Changes in the Number of Plow/Transport Animals Per Household from Decollectivization Until 1996*

	# of Plow Animals at Decollectivization	*# of Plow Animals Now*	*Amount of Change*	*Change Rate %*
Lhundrup	0.376	1.121	0.745	+198.3
Medrogongkar	1.799	6.696	4.525	+208.4
Panam1	1.119	1.964	0.845	+ 75.6
Panam2	1.880	2.589	0.709	+ 37.7
Total	1.382	3.093	1.712	123.9

SOURCE: Local *xiang* and village records.

TABLE 7 *Perceptions of Changes in Crop Yields after Decollectivization*

	Barley		*Spring Wheat*		*Mustard*		*Lentils*		*Potato*	
	N	*%*	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Same	98	13	88	13	97	13	44	8	105	14
Less	48	6	51	7	35	5	8	1	28	4
A little more	428	55	360	52	420	56	338	60	413	55
Much more	149	19	139	20	146	19	119	21	146	20
Don't know	55	7	56	8	55	7	58	10	57	8
Total	778	100	694	100	753	100	567	100	749	100

SOURCE: Data collected by authors.

The critical question for rural households is whether they are able to produce enough grain to meet their family's food needs. Focus group discussions were held to discuss in detail the grain situation of all households in each village. These discussions revealed that 77% of households produced either enough grain or a surplus of grain. Direct survey questioning of each household revealed a similar result—67% said they had one or more year's grain stored away, and another 21% said they had six months' to a year's grain in storage.

Key Indicators

Barley is not only used for parched barley flour, the Tibetan staple food, but also fermented to produce beer. This is consumed in large quantities and is another key "high-quality" traditional food. 95.4% of households said they consumed more beer than during the commune era, and 76% of households said they now make beer regularly. On average, households reported using approximately 416 kilograms of barley per year for making beer. That

TABLE 8 *Consumption of Meat/Fat in Two Counties*

Site	*% (n) Daily*	*% (n) 1–3 Times a Week*	*% (n) Once or Twice a Month*	*% (n) Holidays and the Busy Work Season*	*% (n) Rarely or Never*	*Total*
Lhundrup	26.1 (52)	45.2 (90)	14.6 (29)	12.6 (24)	1 (2)	100 (198)
Medrogongkar	18.7 (37)	37.9 (75)	12.1 (24)	25.8 (51)	4.5 (9)	100 (196)
Total	22.6 (89)	41.9 (165)				

SOURCE: Ibid.

amount of grain is roughly equivalent to the output of 3 *mu* (2 hectares) of land which, in turn, is roughly equivalent to the share of land one person received at the time of decollectivization. Thus, conditions are such that most households are able to divert substantial amounts of the main staple crop to the production of a high-quality, non-staple food.

Another important measure of Tibetans' diet and living standard is the consumption of meat. Table 8 reveals that the majority of families in Lhundrup and Medrogongkar reported that they ate meat/fat frequently, either daily or several times a week. For example, in Medrogongkar's Tsashol *xiang*, the poorest one in the study, the proportion was 56.6% of households, and in Lhundrup's Khartse, the second richest *xiang*, it was 71.3%.[15]

Another empirical indicator of improved livelihood and quality of life is housing. 55% (N = 430) of households reported that they had either built a new house or expanded their old house since decollectivization. The average reported cost of these improvements was 5,078 yuan ($614) (median = 3,000 yuan [$363]). Even in Medrogongkar, 42.4% of households reported they had either built a new house or expanded on their old house.

Thus, despite many reports of extreme poverty in rural Tibet, our data reveal that the majority of inhabitants in the areas studied have made marked progress since decollectivization and secured basic subsistence, in the sense of good food and housing, according to traditional Tibetan standards. However, despite these improvements, because conditions during the communal period in Tibet were poor, the current level of development and the standard of living in rural Tibet are still limited. Compared to rural eastern China, Tibetans clearly have a long way to go, even in the better-off areas. For

15. Data from Panam1 and Panam2 had to be discounted because of a linguistic error in our survey question about consumption of meat (Tib. *sha*). Unbeknownst to us, the referent of the term "sha" in Panam does not include meat fat, as it normally does in other areas like Lhundrup and Medrogongkar, so the Panam responses did not answer the question we asked.

TABLE 9 *Percentage of Households in Different Economic Strata by Site*

	Lhundrup	*Panam1*	*Panam2*	*Medrogongkar*
Rich	28	40	19	14
Middle	24	30	23	23
Lower Middle	27	19	24	30
Poor	24	8	31	37

SOURCE: Ibid.

example, none of the 13 villages we studied had running water in houses, and only the village immediately adjacent to a county seat had a running water tap for the village. Similarly, only that village had electricity. None of the areas had improved dirt roads, let alone paved roads.

Moreover, roughly 14% of sample households were poor by our criteria,[16] and another 28.5% fell into the category of lower-middle households (which we defined to mean that they had a difficult time meeting their basic subsistence needs). Table 9 further reveals that in the two poorest *xiang*—Medrogongkar and Panam2—roughly one-third of the households were poor (37% and 31%, respectively). And, in Medrogongkar, 47.2% of the households reported they were not producing enough grain for their own subsistence from their land. By contrast, government statistics for China as a whole report that less than 5% of the rural population was below the poverty line.[17]

Another indication of deficiencies in the rural standard of living derives from the project interviewers' subjective assessments of the physical condition of each family's house. They reported that two and a half times as many houses were considered to be in poor condition than were considered to be in good condition (12.5% good, 55.1% average/adequate, and 32.5% poor).

Still another area where rural Tibetans lag behind is in education. Although improvement is clearly being made, and the majority of children now go to school for some period of time, 19.4% of children aged 7 to 15 had never been to school (69.4% of these were females); only 17.3% of individuals who had ever gone to school had completed primary school (six years). Furthermore, only 7.1% had gone beyond primary school. Given the rapid

16. After extensive discussion with local officials, individual villagers, and focus groups, we operationalized a household as poor if it did not have sufficient grain either from its own fields or from income earned in work, and had to borrow or get welfare to meet its needs. In borderline cases, other factors such as the quality of the house, the number of possessions in the house, and the number of animals were also considered.

17. World Bank, *China: Overcoming Rural Poverty* (Washington, D.C.: World Bank, 2000), p. vi.

TABLE 10 *Material Possessions Owned by Households*

Item	*% of Households Owning at Least One*
pressure cooker	71.4
at least one set of knotted carpets	60
metal stove	57
bicycle	53
Coleman lantern	49
tape recorder	43
altar	36
sewing machine	30
wristwatch	26
radio	25
small tractor	18
clock	7
solar stove	8
television (only one village had electricity)*	5.8
truck	2.8
solar generator	1.5
large tractor	0.9
motorcycle	0.4

SOURCE: Ibid.
*In the one village that had electricity, 18.7% of households had television sets.

modernization of Tibet's economy, it could be argued that rural Tibetans were not getting adequate education for competing effectively in the new market economy.

The material situation of village households is another empirical way to assess standard of living. We addressed this by asking households about their ownership of a range of durable consumer goods that went beyond the "basics" of pots, pans, beds, and bedding. As Table 10 reveals, the results were mixed. For example, while 71% of households owned a pressure cooker and 60% had a Tibetan carpet set, just slightly more than half had a metal stove (57%) and a bicycle (53%). Moreover, less than half had a tape recorder (49%), and only 30% had a sewing machine.

Thus, although virtually all villagers felt that village material life had improved considerably as compared with the commune era, there is an obvious need for improvement in rural conditions. However, whether the gains made since decollectivization are a trend that will continue is linked to two other trends: population increase and non-farm income.

TABLE 11 *Mean Number of Live Births and Surviving Children to Currently Married Women Aged 20–59 (by Five-Year Age-Categories)*

Age Category	*# of Women*	*Mean (Median) # Live Births*	*S.D.*	*Range*	*Mean # Live Births Surviving*	*S.D.*	*% of Live Births Deceased*
20–24	73	1.1 (1)	0.8	0–3	1.0	0.8	9.1%
25–29	144	2.3 (2)	1.2	0–6	2.1	1.1	13
30–34	142	3.4 (3)	1.4	0–7	3.0	1.3	11.8
35–39	137	4.1 (4)	1.7	0–8	3.8	1.6	7.3
40–44	93	5.7 (6)	2.4	0–14	5.0	2.0	12.3
45–49	85	6.5 (6)	2.7	0–15	5.6	2.3	13.9
50–54	78	6.9 (8)	2.7	0–13	6.1	2.6	11.6
55–59	63	7.1 (7)	2.8	0–12	6.0	2.6	15.6
Total	815	4.3 (4)	2.8	0–15	3.8	2.4	11.6

SOURCE: Ibid.

Population Dynamics

While China's new semi-market economic system was unfolding in rural Tibet, decisions were made in Beijing and Lhasa with regard to family planning that had an important impact on rural society.[18] In contrast to inland China, from the mid-1970s to the late 1980s, the government opted not to emphasize birth limits and family planning in Tibet. No official birth limits for rural Tibetans were set until the early to mid-1990s, and even today, such limits are not only higher than in inland China but are not strictly enforced. Not surprisingly, rural Tibet has been, and still is, characterized by relatively high fertility.

As Table 11 illustrates, the 141 currently married women aged 50–54 and 55–59 (i.e., women who have completed their reproduction), had, on the average, 6.9 and 7.1 live births, respectively. Similarly, women under the age of 44 (i.e., women who started their reproduction after decollectivization) also had high fertility. For example, currently married women aged 35–39 had, on the average, 4.1 live births, and those 40–44 had 5.7.

The proportion of births that were third, fourth, or a higher birth order also indicates high fertility and is evidence for the absence of any program of systematic forced birth limits in Tibet's rural areas. Of the 131 births that occurred in 1997 to the women in our study, 45.4% were third or higher birth order, 31.5% were fourth birth order or higher, and 20.8% were fifth or higher. Similarly, 70.1% of the 1,110 women who have ever given birth (i.e.,

18. This section derives from Melvyn C. Goldstein, Ben Jiao (Benjor), Cynthia M. Beall, Phuntsog Tsering, "Fertility and Family Planning in Rural Tibet," *China Journal* 47 (January 2002).

who are ever-parous) had three or more live births, 55.9% had four or more, and 41.4% had five or more. The absence of a policy of birth control in Tibet's rural sector is also reflected in the fact that even local officials had large families. The average number of surviving children for the 20 local village heads for whom we had information was 5.1.

This high fertility, moreover, was coupled with moderate/low mortality. For example, only 12.9% of children born to the oviparous women in our sample had died.[19] 65.2% of these women had no children die, 21.2% had one child die, and only 13.6% had two or more children die. In other words, on average, 87.1% of all children born to women in the study survived. This mortality rate is moderate to low in comparison with indigenous Tibetan populations in northwest Nepal that had no modern health care when they were studied in 1976. For example, in Limi, 43% of the children born to living women had died,[20] and during the same time period in nearby Nyinba, 54.3% of children born to living women had died.[21] However, it should also be noted that relative to other groups in China, the offspring mortality experienced by women in the present sample is still high. For example, Chinese statistics indicate that the Han Chinese, Koreans, Mongolians, and Hui had lower proportions of children dying: 2.6%, 5.5%, 6.8%, and 8.6%, respectively.[22]

The laissez-faire population policy that characterized rural Tibet in the 1980s changed in the 1990s, and birth controls are currently being emphasized in rural areas, where the official limit is normally considered to be three births per couple. However, it is clear that for most of the period since decollectivization, Tibetan villagers had no birth limits, and even today, the official three-child birth limit is not strictly enforced. The result of this has been population growth. For example, in the TAR as a whole, the number of ethnic Tibetans increased 35.3% in the 17 years from 1982–99 (1,764,000 to

19. Another recent survey reported 13.2%. See Nancy Harris et al., "Nutritional and Health Status of Tibetan Children Living at High Altitudes," *New England Journal of Medicine* 344:5 (February 2001), p. 345.

20. Cynthia M. Beall and Melvyn C. Goldstein, "Fraternal Polyandry in N.W. Nepal: A Test of Sociobiological Theory," *American Anthropologist* 83:1 (March 1981), p. 8.

21. Nancy Levine, *The Nyinba: Population and Social Structure in a Polyandrous Society*, Ph.D. dissertation, University of Rochester, 1977, p. 304.

22. Tianlu Zhang and Mei Zhang, "The Present Population of the Tibetan Nationality in China (in English), *Social Sciences in China* 15 (Spring 1994), p. 57. This paper also reports a higher 1990 mortality rate for the TAR (17.4%) than we found. Data also came from Jianhua Shi and Shuzhang Yang, "Xizang zizhiqu renkou shengyu zhuangkuang" [Fertility status in the Tibet Autonomous Region], in *Dangdai Zhongguo Xizang renkou* [Tibetan population in China today], eds., National Population Census Office under the State Council and the Population Census Office of the Tibet Autonomous Region (Beijing, 1992), pp. 266–82.

TABLE 12 *Change in Number of Mu Per Capita from Decollectivization to 1996*

	# Of Mu Per Capita at Decollectivization		# Of Mu Per Capita Now		Amount of Change in Mu	Amount of Change
	Cases	*# Per Capita*	*Cases*	*# Per Capita*	*# Per Capita*	*%*
Lhundrup	180	5.1	199	4.3	−0.7	−14.5
Medrogongkar	176	2.6	198	2.1	−0.5	−21.1
Panam1	181	3.3	198	2.4	−0.9	−28.6
Panam2	163	2.3	185	1.9	−0.5	−20.7
Total	700	3.3	780	2.7	−0.7	−19.9

SOURCE: Local *xiang* and village records.

2,388,009).[23] Data from the localities in our study sites revealed similar increases.

Land Holdings Per Capita

The absence of an active family-planning policy has fostered population growth which, given the matrix of fixed land resources, has impacted negatively on rural Tibetans by fostering a decrease of 19.9% in per capita land holdings since decollectivization (see Table 12). This decrease would be slightly higher if the farm land that was taken out of production for new house sites or lost to flooding was included in government statistics. Not surprisingly, 33% of all study households said that in 1997 their fields in general did not produce enough grain for household needs, and 26% reported that they did not produce enough during the previous year.

At the same time, Tibet, as in the rest of China, experienced inflation in the price of manufactured goods and other essential products such as fertilizers. For example, in the TAR, the cost of deep dressing fertilizer increased 107% between 1988 and 2000, and sugar, tea, cooking oil, and rice increased by 133%, 188%, 336%, and 400% respectively, between 1984 and 2000.[24] By contrast, the price of barley, over the period 1985–98, increased only 56%.[25] There have also been increases in taxation and fees for services previously provided free by the government, e.g., salaries of local leaders and health

23. Rong Ma, *Xizang de renkou yu shehui* [Population and society in Tibet] (Beijing: Tongxin chubanshe, 1996), p. 37; Tibet Population Sampling Bureau, *Xizang tongji nianjian: 2000* [Tibet statistical yearbook, 2000] (Beijing: Zhongguo tongji chubanshe, 2000), p. 325.

24. Local records and *Xizang wu jiazhi* [Tibet merchandise price history], ed., Economic Planning Bureau (Lhasa, 2000), manuscript.

25. Local records. According to *Xizang wu jiazhi*, between 1984 and 2000, there was an 89% increase.

care. All individuals 18 to 60 years of age are required to provide 20 days of free labor annually. This inflation has leveled off over the past two years, but the overall effect has been to exacerbate the income shortfall of many families.

One obvious solution to these problems would be to open up new land for farming. However, in our study areas, there is virtually no land available for this. Nor is arable land available for leasing from others, because there has been very little permanent outmigration. Increasing yields on existing land is also not a viable option without large outlays of new funds for irrigation works. Similarly, the value of Tibetans crops is unlikely to increase in the future, as Tibetan barley and wheat have no marketability in the rest of China. They are only consumed by ethnic Tibetans, and urban (and many rural) Tibetans actually prefer flour from Nepal or China to that made from Tibetan wheat.

Villagers are trying to cope in a number of traditional and non-traditional ways. One traditional option—making sons monks and daughters nuns—could relieve some of this pressure, because monks and nuns relinquish their shares of land to their household when they join the monastery. However, its utility is limited because, as mentioned earlier, there are membership limits on monasteries and nunneries. In the 1990s, not only were these limits enforced in the areas we studied, but monasteries and nunneries with residents in excess of government-set limits were forced to return the "excess" monks and nuns back to their home villages. This, of course, exacerbated the decreasing land-person ratio. Goldstein witnessed in 1997 an interesting interchange about this between the mother of an "expelled" nun and the local party secretary at the former's house. The party secretary was a local man and knew the family well. The mother served him a cup of local Tibetan beer, and after some small talk, she launched into a diatribe about the recent expulsion of her daughter from the nunnery. She was very verbal and basically said that this policy was destroying the lives of monks and nuns like her daughter who, after returning to the village, were neither real nuns nor real villagers. The party secretary didn't try to enlighten her with any of the official rhetorical justifications. He just shook his head and, with a forlorn look on his face, said, in effect: "There is nothing I can do. There is nothing anyone can do. You will have to try to make the best of it."

Villagers are trying to cope in a number of other traditional and non-traditional ways. One strategy employed in many areas was the revival of traditional marriage patterns such as fraternal polyandry (two or more brothers jointly marrying a wife), since this helps to conserve land intact across gener-

ations, and concentrates adult male labor in households.[26] Another was the revival of traditional inheritance norms that favor the main household against segments that fission off. From the standpoint of the main household, this helps to ensure that it will remain economically strong, although the practice creates weak new households. A third, and unexpected, strategy was the use of modern contraception to bear fewer children.[27] There was widespread feeling that the cost of having many children is high, especially for poorer households. Our reproductive survey revealed that of the 515 currently married women aged 25–44, 52.6% were using modern family planning, and of the 372 currently married women aged 30–44, 58.1% were using contraception. However, most of these users have been utilizing contraception only since the mid-1990s, and over half (52%) of these women began using contraception only after they had had four or more children. Thus, this high usage is recent, and appears primarily aimed at preventing fifth and subsequent pregnancies and, to a lesser extent, birth spacing. Contraception has not, therefore, yet had a large impact on overall fertility and population growth. Moreover, even if contraceptive use increases in the coming years, as we think it will, population growth is likely to continue for the indefinite future because of the young age structure of the population, albeit probably at slower rates.

This leads to the fourth major adaptive strategy—participation in off-farm work.

Development Policy and Off-Farm Work

Although the rural Tibetans in our study are generally unable to participate in the migrant labor market in inland China because they do not know the Chinese language and, even if they did, there is already a scarcity of jobs for ethnic Chinese there, they do pursue non-farm work opportunities in the TAR. In fact, they see this as critical for their economic well-being.

The study found that 48.8% of the 780 households surveyed had one or more members engaged in non-farm labor for part of 1997–98. Table 13 shows that in three of the four study areas, the percent of households sending one or more non-farm laborers averaged 57%, while in the fourth and poorest area, Medrogongkar, only 24.2% of households did so. A total of 19.4% of all individuals between the ages of 15 and 49 engaged in some form of non-farm work that year, and 27.2% of individuals between 20 and 34 did so. 44% of males between the ages of 20 and 34 engaged in non-farm work.

26. Ben Jiao, *Socio-economic and Cultural Factors Underlying the Contemporary Revival of Fraternal Polyandry in Tibet*, Ph.D. dissertation, Case Western Reserve University, 2001.

27. This topic is examined more fully in Melvyn C. Goldstein et al., "Fertility and Family Planning in Rural Tibet."

TABLE 13 *No. of Households Having One or More Non-Farm Laborers (in %)*

Lhundrup	53.8
Panam1	55.6
Panam2	62.7
Medrogongkar	24.2
Total	48.8

SOURCE: Data collected by authors.
NOTE: Focus group interviews reported that 70.7% of households usually send at least one member for non-farm income.

TABLE 14 *Percentage of Households Having One or More Non-Farm Laborers by Economic Status*

Economic Status	*% Having One or More Non-Farm Wage Laborers*	*% of Households Having Two or More Non-Farm Wage Laborers*
Rich	61.6	21.5
Middle	54.6	15.4
Lower middle	42.3	2.8
Poor	30.8	3.7

SOURCE: Data collected by authors.

TABLE 15 *Median Income in Yuan for Households from Non-Farm Work by Economic Status*

	Median Income
Rich	3,900
Middle	1,500
Lower middle	1,000
Poor	700

SOURCE: Data collected by authors.

Villagers engaged in five basic types of non-farm work: (1) migrant manual and low-skill labor (usually construction); (2) skilled and craft labor (usually carpentry, masonry, or painting); (3) private business (running a shop, trading, transportation); (4) ritual work (such as mantra specialist); and (5) government employment (such as official, teacher, health aide). Migrant la-

borers typically left the village for a four-month period beginning with the end of planting and ending at the start of harvesting.

Villagers consider off-farm income essential for achieving a high standard of living, and Table 14 provides data in support of this. It shows, for example, that whereas 61.6% of rich families had one or more members engaged in non-farm, income-producing activities, only 30.8% of the poorest families did. And while 21.5% of rich households had two or more non-farm income earners, only 3.7% of poor households did.

Households in the study earned a wide range of income. Because a few households had incomes over 10,000 yuan ($1,209) per year—these operated trucking and construction businesses—median-income figures are used in the following analysis in order that these few households do not skew the results. For households that had a member engaged in non-farm work, the median income earned was 1,280 yuan ($155). That was equivalent to approximately 29% of the cash value of their total agricultural production.[28] In Table 15, the importance of non-farm income for standard of living is illustrated by the fact that rich households had 5.6 times as much non-farm income as poor households, and middle-income households had 2.1 times as much. It is not surprising, therefore, that villagers explicitly consider securing income from non-farm work essential for a high standard of living in today's world.

However, despite this involvement in non-farm work, villagers and their leaders almost universally complain that there are not enough jobs for them, and because their skill levels are low, that most of those who find jobs get only the lower-paying jobs. Thus, the income they earn is low. For example, roughly 52% of those who worked at off-farm labor engaged in manual labor, whereas only 26% engaged in skilled work, 18% in business, and 4% in government jobs. The different earning capacities of these types of jobs is substantial. In 1997–98, the reported median income earned per worker in manual labor was only 1,000 yuan ($121), while that of those in skilled labor was 65% higher at 1,650 yuan ($196), and in business it was 100% higher at 2,000 yuan ($242). Working for the government was the highest income at 2,160 yuan ($261).

Villagers and many of their leaders are frustrated by the dearth of job opportunities in construction projects, blaming this not on the lack of economic investment in Tibet but rather on the unrestricted influx of non-Tibetan migrant laborers. Thus, the third area of policy change that has had a critical

28. To obtain this estimated cash value of crops, we multiplied the average number of *mu* [1 *mu* = 0.067 hectares] per household (17.4) by the average seed sown for barley (30 *jin*) [1 *jin* = 0.5 kilograms] by an average yield of 11 times the seed sown to get the total yield in barley. The price for a *jin* of barley in 1998 was 0.78, so this was multiplied to get the cash value. This is a rough estimate, since a portion of the crop is wheat and oil seed, but it suffices to give a general idea of the importance of this income.

impact on rural Tibet in the post-Maoist era is the type of development policy that has been implemented in Tibet and its impact on non-farm wage labor opportunities.

Throughout China, the post-Mao reforms have freed villagers to move from their official village residence and allowed them to seek work elsewhere. However, minority areas pose a special problem to economic development policy, since minority autonomous regions were explicitly created to preserve minority cultures and benefit minorities. The autonomy law of 1984 gave autonomous regions the right to override national laws when they were deemed not suitable for the needs of the minority population, including economic and development issues.[29] A question for the government, therefore, was how to implement the market-development and migrant labor policies in Tibet where, for many reasons, Tibetans were clearly disadvantaged vis-à-vis non-Tibetans (Han and Hui). Two models were discussed in the 1980s. In one, rapid development in Tibet would be stressed, with the door to Tibet being open to all Chinese without restraints. The government would provide huge amounts of infrastructural development money, and whoever came to compete for jobs was fine. The overt rationale for this was the need to accelerate the pace of development in Tibet.

In the other model of economic development, Tibetans would be given preferential treatment for jobs, contracts, etc. The aim was still rapid development, but this would be tempered somewhat so that the citizens of the minority autonomous region would be the primary beneficiaries of economic growth. This approach is somewhat analogous to the model being used in China's dealings with more advanced Western companies, where combinations of preferences and constraints are used so that the less skilled group—the Chinese—has time to catch up and compete.

The debate over these alternatives was settled in the mid-1980s, when China opted for the former model. The result has been an influx of huge numbers of non-Tibetan migrant laborers and businesspeople (mainly Han). The majority of the residents in Tibet's capital, Lhasa, now are Han Chinese, and the secondary towns are moving in that direction. Thus, as rural Tibetans found it increasingly necessary to compensate for decreasing per capita land holdings and turned to off-farm labor, they found (and find) themselves in difficult competition with large numbers of better-skilled, experienced China workers and businesses. Given the current policy, this competition from non-Tibetans will certainly increase as the new Western Region development policy pumps more funds into infrastructural projects in Tibet. Tibet's economy is likely to shift further and further into the hands of Chinese firms and labor-

29. The law is cited in <http://www.novexcn.com/regional_nation_autonomy.html>.

ers. The development of a rail link between Tibet and Inner China will further exacerbate this trend.

Conclusions

Decollectivization in Tibet has clearly brought improvement to the livelihood and standard of living of rural Tibetans, although it has also created economic stratification and a stratum of very poor households. However, the state's policies on land tenure, family planning, and development/migrant labor have interacted to create serious structural problems for rural Tibetans. Tibetan villagers now cope with increasing population, decreasing land per capita, and increasing prices and taxes, by utilizing a variety of traditional strategies such as fraternal polyandry and adopting new coping strategies such as family planning and non-farm wage labor. However, although the government is trying to improve this situation by making a more concerted effort to reduce fertility and population growth in Tibet by increasing the use of contraceptives, with regard to the key problem area—access to income from off-farm labor—there is no sign that the government is considering reforming the current "open door" policy to provide, for example, job preferences or set-asides to citizens of the autonomous region in the government-funded construction sector, or to establish tax-rebate programs for construction projects that hire Tibetans. Thus, unless major changes in development policy such as these are instituted, the progress rural Tibetans have made since decollectivization may not continue, let alone increase, in the coming decade.

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