“May They Live with Herds”

- Transformation of Mongolian Pastoralism in Inner Mongolia of China

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Preface

…April 2005, Kautokeino, Norway. The excursion gave me the idea of how Sami herders kept on the traditional migration with animals from the inland area to the costal area in the modern time.

…July 2005, Inner Mongolia, China. During the fieldwork in a Mongolian pastoralist family, I had several sleepless nights hearing the cry of hungry calves. In the dry weather, the less productive mother cows were separated from the calves for saving some milk for human consumption.

…October 2005, Tromsø, Norway. MacDougall's ethnographic movie "To live with herds" showed the socio-economic problems faced by *Jie* pastoralists in northeastern Uganda around the 1970's, which amazingly recalled me of many feelings I had in my fieldwork.

The three incidents spurred me to think of pastoralism as a shared way of life by different peoples in different parts of the world. This horizontal comparison subsequently posted the question on myself: why the indigenous resource management system functions in different degree in different countries? Therefore, this thesis is contributed to a contextual analysis of the Mongolian pastoralism transformation.

In the writing process, I am so grateful to the generous help from my supervisor Ivar Bjørklund, who is so patient as a listener, and so sharp as a guide. His expertise in Sami pastoralism research definitely favors me to take up a comparative approach. He is also so supportive to my attempt of using my economics background in this socio-anthropological research. His comments on "whatever you write, always keep reminding yourself how much it is related to the main point" makes this writing an effective training process.

I am also grateful to the kind informants during the fieldwork and my Mongolian translator Uri. I am indebted to the Sami center and SEMUT for the financial assistance in realizing this project. All thanks go to the MIS program, without which none of the above could happen and I could not know my marvelous fellow students.

This thesis is dedicated to my parents, sister, boyfriend and close friends, namely CirenYangzom , Peng Qi, Jinghua Xie, Xi Chu, Gu Yi, Qian Wang, Yuexia Tong and Chun Li couple, for the cheers and pains shared.

Abstract

This thesis is dedicated to a better understanding of Mongolian pastoralism transformation in the contemporary Inner Mongolia context. Such a comprehension requires both the knowledge of common resource management and a historical analytical approach. A multidisciplinary approach based on institutional theory is proposed, primarily because the research rationale on reflection of fieldwork information raises the hypothesis that outside forces are the main cause of Mongolian pastoralism transformation; also because the long-standing controversy over common resource management needs a comprehensive approach instead. Moreover, a historical dimension can be very well integrated in the institutional change theory. Hence, the transformation of Mongolian pastoralism is an imposed institutional change process in which external institutions constantly pushes internal institutions out of functions. The thesis is thus structured: From the presentation of internal institutions of traditional Mongolian pastoralism, to the explanation of external institution transformations, and to the observation of internal institutions adapting to the changing institutional environment. The discussion concentrates on the present change of Mongolian pastoralism under the Household Production Responsibility System and other related management policies. The appropriation of the present external management system is questioned through a cost-benefit evaluation, in which the vulnerabilities both of Mongolian pastoralism and the pastoralists are exposed. Therefore, the socio-economic, environmental and cultural predicaments faced by these people can actually be interpreted as the phenomena or outcome of institution maladjustments or institutional defects. New forms of cooperative usage of rangeland, as an expression of micro-level motive for “appropriate” institutional arrangement in sustaining pastoral practices, are finally discussed to suggest the transformation prospect.

Key Words: Mongolian pastoralism, internal institution, external institution, imposed institutional change, induced institutional change, Household Production Responsibility System

Contents

CHAPTER I Introduction

1.1. Choice of the theme

Having grown up in Inner Mongolia, I have strong personal attachment to this land and the people on it. This careness and interest have also been the initial impetus for me to join this study program in Tromsø. Inner Mongolia is a steppe historically occupied by different minority groups but all involved in pastoralism and even nowadays animal husbandry is still its main industry[1]. Mongols are the major minority group here, historically characterized by their mobile life style with their herds. However, this pastoral way of life has changed tremendously. Some top words about Inner Mongolia are "sandstorm", "tree plantation", "sedentarization", "stocking rates", "husbandry technology", "ranching industry" "forbidding grazing", "closing rangeland", "resettling pastoralists" and so on. These express the main concerns regarding this area and they also imply the absence of conditions for traditional Mongolian pastoral practices.

A question thus comes about: how is the Mongolian pastoralism nowadays? To understand such a theme, the research is designed to find out:

- the present situation of Mongolian pastoralism;
- how this situation came about;
- what factors influence its direction in future.

Information collected upon desktop work through various channels provides rather paradoxical settings and reflects different interests in the development of this area. For example, mass media overwhelmingly concentrates on reporting the deteriorating ecological situation of rangeland, inferring the overgrazing fact or tendency; local authorities blatantly declare to set urbanization, industrialization and involuntary resettlement of herders as the top development strategies; NGOs emphasize the diversity of local situations and advocate protection of cultural and human aspects in environment protection and economic

[1] In Inner Mongolia, pastoral economy covers 66% of the land. www.56-china.com.cn (56 Nation's Magazine), 2000, No.2.

development; scholars from history, humanity and anthropology disciplines become more involved in the field of problem reasoning, explanation and solution suggestion, which used to be dominated by ecologists, agronomists and economists. Upon this complexity, the fieldwork has been carried out to sort out the different dimensions and identify the main problems faced by the pastoralists.

1.2 Research area and fieldwork

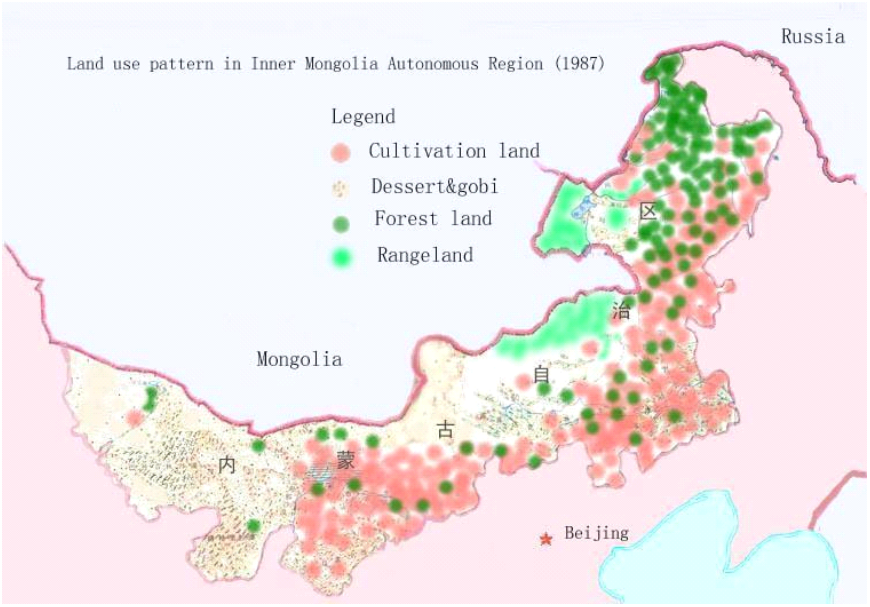
Inner Mongolia Autonomous Region (IMAR) was the first autonomous region of China set up on 1 May 1947. It is the third largest province in China covering an area of 1,183,000km2, bordering to the north with Russia and Mongolia. It is rich in minerals, coal and forest resources with vast areas of pastoral steppes[2]. Being part of Mongolian plateau, three quarters of its north and east are more than 1,000 meters above sea level. Climate in Inner Mongolia is continental, changing from arid to semi-humid from west to east, and to humid in the northeast, and the annual rainfall increases between 80 to 450 millimeters from west to east. Usually summer is short and warm but winter is cold and long, with frequent blizzards[3]. There are 23,864,000 inhabitants in Inner Mongolia, including 4,211,200 Mongols (17.64% of the total)[4].

Map 1.1. Research Area

Present land use pattern varies a lot across the expanse of the IMAR (see Map 1.2.). Two basic modes of production cultivation and pastoralism can be distinguished; however, more variations or mixed types of production techniques are actually the usual practice. Pastoralism is practiced in much narrower space, and the boundary between pastoral region and cultivated region is blurred rather than demarcated in most cases. To study the transformation of traditional Mongolian pastoralism, Shilingol League

[2] The area of natural steppe in IMAR is 860,000km2m, around 72.7% of the total area of IMAR. This figure is published on the official website of Inner Mongolia Agricultural Bureau: www.nmagri.gov.cn.
[3] Refer to www.wikipedia.com, www.cy.ngo.cn, and Sneath (2000).
[4] According to Bulletin of Inner Mongolia National Economy and Social Development 2005, released by IMAR Statistics Bureau in March 2006, on official website: www.nmgtj.gov.cn.

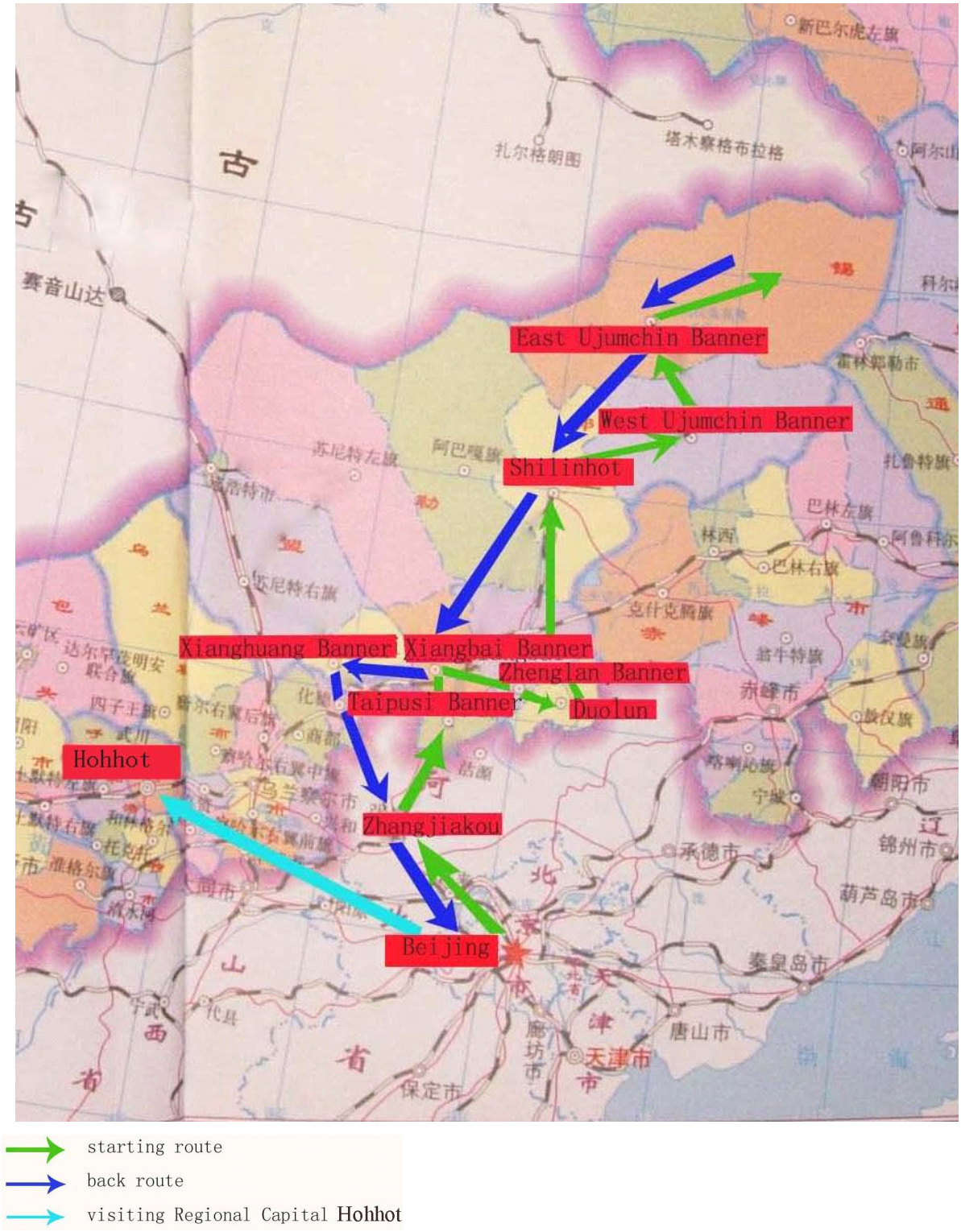
(prefecture) is chosen as the fieldwork area for its several characteristics. Shilingol League lies in the central area of IMAR. It has the total area of 202,580km2(around 1/5 of Inner Mongolia), and administers nine banners (county), one county and two cities with administrative office in Shilinhot. Located in the central area of the Mongolia plateau, Shilingol grassland is one of the main natural pastures of Inner Mongolia and is a representative area of traditional Mongolian pastoralism. It belongs to temperate semi-arid and arid continental and seasonal climate. The annual rainfall below 400 millimeters is more favorable to pastoralism than cultivation. The population is 1,006,000 (4.22% of that of Inner Mongolia), including 287,300 Mongols (28.6% of the total) [5]. Its closeness to inland China has historically facilitated immigration of the Han, and at present has assigned the region a significant environmental role.



Map 1.2. Land use pattern in IMAR Source: www. cy.ngo.cn

The two month's fieldwork (June-August, 2005) was comparatively short but it was essential for the formation of this topic and it consolidates the arguments of the thesis with much first-hand material. A specific fieldwork route was designed to cover the main region of Shilingol League, which is complied with one of the sandstorm routes, one of the main immigration routes of Chinese to Inner Mongolia in old days, and also one of the main business routes connecting inland China and Ulaanbaartar before 1920s.

[5] According to Bulletin of Shilingol League National Economy and Social Development 2005, released by Shilingol League Statistics Bureau in April 2006, on www.nmgnews.com.cn



Map 1.3. Fieldwork route in Shilingol League, Inner Mongolia, China. June-August, 2005

My trip started from Beijing by train, went through Zhangjiakou, the key door out of Great Wall to the steppe, and subsequently covered Taipusi Banner, Xiangbai Banner, Zhenglan Banner, Duolun, Shilinhot, West Ujumchin Banner, East Ujumchin Banner from south to north. Finally I stayed with a pastoralist family in Xianghuang Banner for a week (see map

1.3.). On this way, I have observed the landscape changing from intensively cultivated land, to small pieces of fenced rangeland, and to broad open grassland; the population density decreasing and Mongol population increasing; the brick houses, the motorcycles, the people in modern dress and the expansion of modern towns in deep grassland; the mining factories, the electricity power station, the black smoke from industrial chimney, the sewage pool, and the dying grass near roads under construction; the fenced tree plantation, the artificial grassland, planted fodder lands; and even the closure of degraded rangeland and unified life of resettled pastoralists, which are all apparently far from the "standard pastoral society". Their affinity to the land was strongly sensed but their worries of income, education and rangeland deterioration leaked many socio-economical, environmental and cultural predicaments they are facing nowadays.

1.3 Research Rationale

During the fieldwork interviews, when the author tried to discuss their present difficulties, how they coped with the economic strain and industrial contamination, and how they felt about urbanization and modern lifestyle, the Mongolian pastoralists usually preferred to comment on the present life by making a comparison with their previous life. For grandparent generation, they would trace back to the time even before the establishment of New China. It is fascinating to hear how the whole *ail*[6] used to move seasonally with animals in large scale, how many animals they used to have, how good the vegetation used to be, how important the role of a skillful pastoralist for animal management used to be and how worriless life used to be; talking about traditional Mongolian pastoralism, they explained about the internal arrangements they used to have and how the embodied herding skills and knowledge in the seeming casual movements are passed on to new generation through daily practices. However, life has been very different nowadays. Note that when they recalled how their way of life had changed, they divided it into phases, which were rather in compliance with the changes of political environment and the according governance policies. Most of them agreed that it is quite hard to practice characteristic Mongolian pastoralism under the present HPRS, by

[6] *Ail* is a Mongolian pastoral residential unit, which contains important cooperative function. It will be explained further in Chapter 3.

which rangeland is contracted to each household and fenced accordingly, and animal quantity and species are regulated by stocking rates. It was quite reflective to observe the ambivalent feeling: how they appreciate more conveniences in sedentary life, like electricity and education, nevertheless, how they worried about the reproduction of animals and annual recovery of contracted rangeland, and how a pastoralist laboriously dealt with the market for animal sale and fodder purchase.

Pastoralism, as a subsistence pattern in which people make their living by tending herds, has coexisted with cultivation in China for over thousand years. Nevertheless, the former has been in the remote and undesired peripheries while the latter has dominated inland areas. This periphery-center ideology has reflected on central authority's overlook of pastoralism for long history. However, since the beginning of last century, especially since the 1980's, this mode of production has greatly subjected to or been integrated into national development scheme and formal institutional arrangements for various purposes. It is generally agreed among academics that frequent political changes and the immigration of the Han (also a result of government policy) in the last century, are the most important historical factors that have long-standing influence on the Mongolian pastoralism. The first factor caused unstable policy variation governing pastoral activities, and the latter one greatly increased the demographic pressure and brought about encroachment of rangeland for cultivation. Hence, analysis of external institutions is fundamental to understand this historical transformation of Mongolian pastoralism.

Moreover, as an indigenous resource management system, pastoralism is a system in which human beings mediate the relation between land and animals (Bjørklund 1990: 7), but the introduction of external institutions bring other participants to this relation and the operation thus becomes more complex. One rather visible change is, like what has happened in many other places of the world, a sedentarization of pastoral people, even if it actually limits the flexibility and mobility in resource use. Crucially, the government initiated institutional changes concerning ownership, land tenure, land use pattern, animal quantity or species, management hierarchy, or administrative system, have all affected the existing pastoral

customs in this or that way.

What makes the Mongolian pastoralism more sophisticated nowadays is its being part of the Chinese economic reform and being part of the globalization in the general name of "development". One important setting for present research on Chinese pastoral area is the West Region Development Strategy (Xibu Da Kaifa Zhanlue) launched in 2000. Development of the middle-west region including IMAR, where economically lags a lot behind the east area, is currently on the top of Chinese economic reform agenda for realizing regional balance. Coincidentally, natural grassland area accounting for about 41.7% of China's domain and pastoral area accounting for 37%, are mainly located in the middle-west part of China[7]. Reflecting on pollution costs in east region industrialization, policy-makers set sustainable development as the guideline, claim to engage in ecological construction, environmental protection, infrastructure construction and resource driven industry. Many concrete measures and projects have been carried out accordingly but the outcome may not be so ideal as it was planned. For example, it was seen in several places during the fieldwork that the "Returning Farmland to Forestry" project encroached pastures in search of program funding that local government official's gain for "green coverage". Another example was that, to develop industry with a comparative advantage, several resource driven industries with high potential of pollution, were established on rangelands.

The context for practicing Mongolian pastoralism has changed profoundly: the complex surroundings, the component elements, the rangeland, the animals and the pastoralists, are all changing or having to adapt. As Galaty & Johonston(1990: preface) put it, pastoralism, a way of life shared by different peoples, is generally experiencing "the 'slow-furling waves' of inexorable changes", as well as "the rapid dynamics of economic transformation and development, the incorporation of pastoralists into broader markets, the commoditization of land, labor and livestock, and the experience of and resistance to sedentarization and state encapsulation". This process must be full of resistance and compromises between internal informal institutions in resource management and the formal authorities, as well as between

[7] Refer to the official website of National Ministry of Agriculture www.agri.gov.cn.

close social bonds and materialized relations, between subsistence economy and production economy, between traditional knowledge and modern science, and between maintenance and transformation. Furthermore, it finds expressions in socio-economic, environmental and cultural predicaments in the case of Mongolian pastoralism as revealed above. In this process, the author perceives the imposed institutional change in relation to resource management as the driving force of Mongolian pastoralism transformation. Hence, institutional theory is used to explore the transformation of Mongolian pastoralism.

1.4. Methodology

If methodology is a set of designed methods to reach the research goals, the efforts can be divided into two parts—fieldwork and the desktop investigation.

1.4.1. Participant observation and interview

Observation is a very important tool in fieldwork. On seeing the actual area and meeting the people involved, one can detect new problems and may possibly change the question list accordingly. Participation and observation of daily life generate reflections, questions and new reflections.

Open-ended interviews were employed extensively as a method to understand how the pastoralists perceive their own situation. They were not necessarily formal since the population is scattered on the rangeland, and one *gacha*(village) may consist of only ten households with some family members were out at work. Therefore, more individual interviews have been carried out than group interviews. The individual interviews were taken under various circumstances: in the house, by the road, on the rangeland, in a restaurant and even on the bus. There was no strict restriction on age and gender of the interviewee, but generally he-she was above 18 years old.

There was no fixed questionnaire to fill in, however, the author initially asked for basic personal information such as background: age, education level, ethnicity, language; family composition and origin; and occupation, income sources. These questions were not raised in

order but rather the questions flowed following a logic shown in figure 1.1.. Occupation and ethnicity are the two indicators that differentiated which questions followed. Answers to these questions testified the correctness of the historical factors identified by the author[8].

Afterwards, the author concentrated on further interviewing pastoralists and former pastoralists. To the pastoralists, the author raised questions like:

- What are the herding practices alike nowadays?
- How many animals does your family have? How much rangeland does your family contract?
- How much income does your family have? What are the income resources?
  (Or do you feel the income is sufficient to support the family? Is it increasing with the years?)
- Does your family have any problems with herding nowadays? What are they?
- What are the important policies regulating pastoralism nowadays? What is the implementation agency?
- When was the HPRS implemented in his/ her village? What did they do?
- How do you compare life before and after the launch of HPRS? (For example, living conditions, animal quantities, rangeland conditions, daily tasks and so on.)
- What do you think is typical "Mongolian pastoralism"?
- How has nomadic life changed in the past century? (This was a question posted to the old generation.)
- Would the young generation like to become herders? What knowledge do they need to learn? How are they taught?

To the former pastoralists, the author posed such questions as:

- When and why did you change your occupation?
- How did you learn the new skills needed for the present job?
- Is this your personal choice or is it a common thing in your surrounding?
- How do you feel about life now compared to before?
- Do you feel that you could become or would like to be a pastoralist again?

These questions reflected the central concerns of the author. The list of questions was in

[8] The two factors are the frequent political changes and the immigration of Han.

reality quite long with any one question inducing several related discussions.

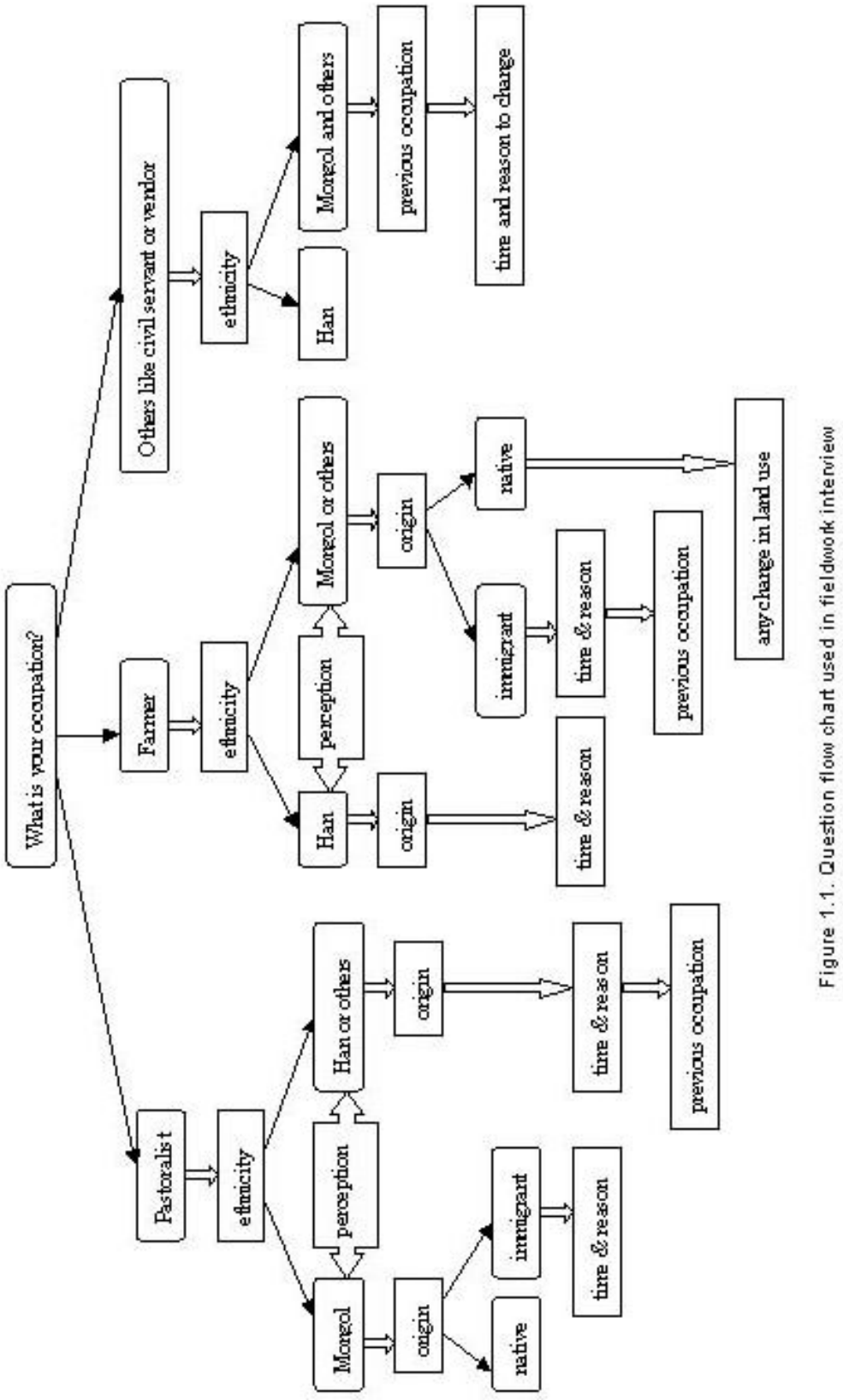


Figure 1.1. Question flow chart used in fieldwork interview

Besides, careful observation was still quite essential during the interviews. Since the interview was a rather contextual matter, the author had to observe the surroundings, the participants, the facial expressions and even the tones of the responses to decide if he/ she were telling his/ her true thought. In addition, some of the interviewees could only speak Mongolian and so the author had to rely on the translation of an informant. To grasp the whole meaning of the conversation, the author also took the language of gesture into consideration.

1.4.2. Interdisciplinary approach and comparative insight

There are several reasons for an interdisciplinary approach in this thesis. First of all, the resource management topic necessitates it. The emergence of the notion "Tragedy of the Commons" and its subsequent controversy have brought scholars from different disciplines into this debate. Brox (1990) has a good analysis of the two confronting disciplines: biologists and economists versus social anthropologists. He summarizes "epistemologically, the conflict often presents itself as on between a priori reasoning and the study of empirical variation", and "the schism may also be seen as based on the conflict of interest between the traditional rights of marginal populations and the expansionist tendencies of capitalist or planned economies"(Brox 1990: 227). To have an overview of the controversy and further explain how institutional theory copes with the controversial points, an interdisciplinary approach must be taken.

Secondly, institutional theory does not represent a fully-fledged theory, but rather a research program, that shows numerous interconnections with other disciplines such as law, philosophy, anthropology, sociology and political science (Arhen 2002: 49).

Thirdly, the sophisticated circumstances in China ask for interdisciplinary reasoning. China has been experiencing the transition from planning economy to market oriented economy, and especially in the less developed pastoral area, the factor and outputs are far from perfect. To understand the evolution of this history, it relies on knowledge from several disciplines.

Fourthly, the central topic has a political economy dimension. The hypothesis of the thesis is that the transformation process of Mongolian pastoralism is mainly determined by central political change and policy orientation. Moreover, the present environmental function shouldered by the rangeland and the regional development strategy over the region are both aspects of political economy.

Comparison is kept in mind during the whole research process. It is not only because pastoralism is such a way of life shared by several different peoples across the world that valuable insight can be achieved through a horizontal comparison; but also because the topic and contents of this thesis are a reflection of the indigenous resource management knowledge got in the study of this master program.

1.5. Literature review

A considerable numbers of literatures are consulted in writing this thesis. These concerning the institutional theory and these about the common resource management are fundamental for the general theoretical construction; works of Arhen (2002), Coase (1937, 1960), Dale (2002), Lin (1988, 1989) and North (1990) are mainly referred to in elaborating institutional theory; books and articles of Acheson & McCay (1987), Berkes (1983), Brox (1990), Hanna (eds. 1996), Hardin (1968), McCay & Jentoft (1998), Ostrom (1990, 1999) and Scott (1995, 2000) inspire hot arguments in the common resource management.

Historical materials cover the policies regarding rangeland management in different regimes, the pastoral life in different historical periods, the descriptions of traditional Mongolian pastoralism, the factors influencing the rangeland and the pastoralists and so on. Knowledge from Mongolian sagas, summarized by some Mongolian ethnologists, are important to reveal the Mongol's life in ancient times; the Chinese historians' works are especially important in seeing how happened before the Qing Dynastry (1636-1912), of which Wang, Jiange's are quite helpful; in the period from the turn of the 20th century to the establishment of Inner Mongolian Autonomous Region, some Russian ethnologists who traveled across the Mongolia steppe at that time, such as A.M. Pozdneev, several Japanese investigators, and a

famous American scholar, Owen Lattimore, together provided valuable descriptions of human geography, political and economic situation of Inner Mongolia at that time. Especially the immigration of the Han peasants to the rangeland and their conflicts with Mongolian pastoralists were captured.

On researching the contemporary change of Mongolian pastoralism, both the western academic sources and the Chinese literatures are looked through. The western ones include the comparative study of the pastoralism in Inner Asia done by Caroline Humphrey and David Sneath; the official assisted research cooperation between China and Australia on promoting industrializing husbandry done by Longworth and Williamson; and some researches produced by a central Asia Workshop in Nordic Institute of Asia Studies. In regard of the present institution governing rangeland management, the Household Production Responsibility System, Dee Mack Williams has written several articles and one book depicting the local execution process of this system based on his fieldwork. Although Chinese scholars of social sciences have just started in recent years to join the discussion (which used to be dominated by scientists) of the problems of the rangeland environment, Mongolian pastoral economy and the pastoralists with a socio-economic angle, they have contributed many valuable standpoints of the causes and the solutions.

Additionally, the comparative way of thinking also integrates the articles in the compendium of the Indigenous Resource Management course into the writing.

1.6. Organization of the thesis

This thesis consists of seven chapters. **Chapter 1** intends to clarify the objectives of the research, the background of the focused area, the hypothesis of the topic, the employed methodology and the consulted literatures. **Chapter 2** sets up the theoretical framework supporting the general structure of the thesis. Since rangeland is a kind of common resource, this chapter starts the discussion with the controversy over the common resource management. Further on, through a discourse of the divergence in the traditional analytical approaches of the common resource management, the author induces an institutional approach to examine

this issue. Afterwards, the institution and institutional change are defined in relation to the discussion of Inner Mongolian pastoralism. Following the theory that the transformation of Mongolian pastoralism is a process of external institution changes compelling internal institution changes, Chapter 3, 4 and 5 will systematically interpret this process together. **Chapter 3** will present the three coherent internal institutions of traditional pastoralism, and moreover, their combined function in realization of traditional pastoralism. **Chapter 4** gives an historical overview of the transformation of the external institutions over rangeland use, which include the ownership, the use right, and the government management policies. Most of this chapter will be given to the discussion of the present land tenure regime HPRS, and also the main management policies nowadays determining the pastoral life. The administrative hierarchy and legal institutions are addressed as well because they are two influential factors, even if contradictory in many situations, to decide how these external institutions actually take effects. **Chapter 5** will analyze the adaptive changes of the internal institutions of the Mongolian pastoralism. In this historical description, concentration is put on the three internal institutions presented in chapter 3. The focus is still located on the contemporary transformation. How the indigenous resource management system has been interrupted, disabled and replaced by imposed institutions will be accentuated. Moreover, the differentiation of Mongolian pastoralists is particularly looked through because the central role of pastoralists in Mongolian pastoralism is greatly impaired by this differentiation. **Chapter 6** makes a simple benefit-cost of this imposed institutional transformation process. This estimation is illuminative rather than determinative, which is to show the much higher costs paid through it. **Chapter 7** is the conclusion chapter. By giving an empirical and theoretical discussion of some emerging models, the author suggests that a proper resource management system is imperative in reviving the dynamics in pastoralism. Finally, in the conclusion section, the hypothesis of this thesis is re-emphasized.

CHAPTER II Theoretical Framework

Upon fieldwork research, the author raises the hypothesis that imposed institutional change in relation to resource management has been the main force of Mongolian pastoralism transformation. Accordingly, various interwoven problems can find an institutional explanation. This chapter will give a detailed introduction of institutional theory in relation to its application in this research, so that the theoretical framework of the thesis is outlined.

To discuss a pastoral economy, the characteristics of rangeland as a kind of common resource and its management, are fundamental. However, there has been great controversy over its nature and management. This chapter starts with a review of the controversy, different schools' approaches and their policy recommendations, so as to introduce how an institutional approach can bridge their differences. Presentation of the "institution" from different dimensions will enrich its application to the institutions going be discussed in the next chapters. Discussion of institutional change theory outlines the logic beneath the general structure. Last but not least, the usefulness of an institutional approach to development research is addressed in light of the present political economic setting in IMAR.

2.1. Controversy over common pool resource management

One view is that rangeland is a kind of common pool resource where one's use subtracts from another's use and where it is often necessary but costly to exclude beneficiaries from using the resources (Ostrom et. al. 1999). This definition reveals the underlying problem in competitive and potential free usage of the same resource. Hence, the problem of the "commons" has always been a controversial topic across several disciplines in western academics. Despite of its long-standing troublesome image, which has been recognized by Aristotle two thousand years ago[9], the contemporary debate over this problem is largely inspired by Scott Gordon (1954) and Garret Hardin (1968), when they "develop the merciless logic of unlimited harvesting of common and freely accessible resources" (Brox 1999: 227).

[9] Aristotle says: "that which is common to the greatest number has the least care bestowed upon it." Cited in Acheson & McCay (1987): 2.

In his famous article "Tragedy of the Commons", Hardin uses biological model to pass on such a message that resources held in common, like river, air, sea and grassland, are subject to self-interest motivated exploitation at the expense of the society and even individual's long term welfare. Especially he depicts a herdsman's rational practice on a common pasture. Each herder receives a direct benefit from adding one more his own animal and shares a portion of the costs of overgrazing with other herdsmen. Therefore,

The rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another…but this is the conclusion reached by each and every rational herdsman sharing a commons. Therein lies the tragedy. Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin for all. (Hardin 1968: 1244)

Gordon (1954) uses a more economic model to illustrate the same insight in another common pool resource--fishery. This school of thought, referred as Common Property Theory (CPT) by Brox (1990), generally relies on the cost-benefit analytical tool of neo-classical economics to imply the "externality" tendency.

However, this view has been greatly challenged by many social anthropologists. With rich documentation of empirical variations, like those in McCay and Acheson' essay volume, *The Question of the Commons* (1987), they criticize that CPT does not speak the whole truth and does not fit their observations; the world is not like it appears to be in graphic or numeric models of the economics and the real world is full of cases that can not be truthfully represented by Garret Hardin's biological or Scott Gordon's economic models (Brox 1990: 228). This *priori* reasoning approach of CPT limits its scope to account for empirical variation and proves itself an incomplete theory. And even radically, some social scientists straightly reject this "falsifiable hypothesis" (Berkes 1983). Generally, two falsifiable assumptions hold back its applicability in real world: (1) the "rational man" premise and (2) the "open access" assumption. "Rational man" is assumed to be free of taking advantage of

the resource in common, but in real world, people are unusual to be out of any such restrictions as ethnic rules, cultures and communal obligations; "common" does not equal to "open access". The *terra nullius* assumption overlooks the existent local resource management system and property arrangement. Therefore, McCay and Acheson (1987: 6) criticize CPT for ignoring contextual factors "such as, for example, the presence or absence of rules about uses of the commons, alternatives to exploitation of common resources, ways of monitoring and controlling the behavior of others in a commons, and so forth".

2.2. Divergence in analytical approaches and policy recommendations

Although CPT itself is questionable, the concern of common resource management it raised is unfalsifiable. Brox (1990) summarizes the above conflict between two opposing schools of social scientists as one between a priori reasoning and the study of empirical variation. The author perceives their divergence stemming from very different analytical approaches. The priori reasoning is a typical reflection of neoclassical economics approach, from the "rational man" premise, the utility evaluation, the cost-benefit curve analysis, to the underlying self-interest motivation. Therefore, CPT proponents, mostly biologists and economists, employ economic language to reach the disastrous conclusion. However, greatly inspired by the very object of its criticism, the empirical study relies on fieldwork to reveal the embedded resource extraction practices and indigenous management systems, which underscores the importance of "context" and the role of communities. Hence, the opponents, mainly social anthropologists, accumulate rich materials to testify the non-existent tragedy in history and to elaborate the neglected contextual situation in social terms.

The divergence in analytical approaches also leads to different policy recommendations. From neoclassical economics perspective, problem with the "commons" can be understood as the "failure" of liberal capitalist market, and in return asks for necessary government intervention (McCay & Jentoft 1998). The proposed solution for "tragedy of the commons" is usually to establish some kind of property regime, either privatization or nationalization, to cut off the "open access". The rationale is that if people own the resource or need to pay for its usage, then they will economize with it. For example, a national, provincial or regional

authority may be given the role of owner, with the right to claim a rent from those who harvest the resources, or the right to harvest the resource, initially granted to all who do, may be traded on the market, and eventually concentrated in the most efficient hands (Brox 1990: 233). So the realization of this policy is still based on the price mechanism of an efficient market. Social anthropologists put more energy into fieldwork to find out the various "specific mechanisms keeping the aggregate exploitation of common resources at a sustainable level before common property theorists entered the stage" (Brox 1990: 230) and argue for the legitimacy of existent indigenous resource management systems. At the same time, they emphasize the importance of "context" differentiating situation from place to place, and from community to community.

Therefore, the two opposing schools are serving different market segments: generally the CPT school of thought is used by expansive, corporate, or state sponsored interests, whereas the social anthropologists become advocates of the communities or marginal populations (Brox 1990: 227). However, the CPT model is more popular among policy makers in practice, maybe "related to its ability to generate both liberal and conservative political solutions" (Acheson & McCay 1987: 5). Then the regretful result is that like CPT itself ignoring the social context, its policy suggestion does not take the potential institutional change into consideration and thus trespass traditional resource users' interests.

To end the battle in academic field and more influentially the conflict of interests in policy-making and implementation, it is necessary to find an interdisciplinary discourse. Brox (1990) tries to bridge the gap between "armchair economists" and "anthropological fieldworkers" by taking CPT as an *analytical tool* instead of a *natural law* to help observing the empirical world. The author perceives that an approach, which can make up for falsifiable assumptions of neo-classical economics and takes *context* into consideration at the same time, is essential for intermediating the school divergence.

2.3. An institutional approach towards "the commons"

The concept of institution is initiated and systematized by some economists. In neoclassical

economic models, well-defined property rights, perfect information, and frictionless transactions are in general implicitly assumed, but those are often to the contrary of real world operation. Therefore, since the Old Institutional Economics (OIE), those scholars generally criticize the neoclassical approach and the conventional economic models for "their unrealistic assumptions and their tendency to ignore the fact that economic processes operate within a social framework that is shaped by cultural and historical forces" (Scott 2000: 2). This "contextual turn" has given great inspiration to studies in political science and sociology, which broadens the study of economic life to both an institutional process and a socially embedded activity (Dale 2002), even if there has come no quite systematic theory so far. A new strand of economics based on Coase (1937)'s classical works, *The Nature of the Firm*, New Institutional Economics (NIE), has contributed most to "endogenize institutions and investigates more systematically the significance of institutions for economic behavior" (Arhen 2002: 48). The institutional theory in this thesis is not confined to a specific school of theory, but rather upon comprehension of the institutional research both in economic and sociological fields. The author tries to address their related points for arguments but the structure of this thesis is based on the institutional change theory in NIE.

2.3.1. Conception of institution

In pastoralism, people are so closely involved with the natural environment that the ways they interact with the environment are fundamental to their daily operation. Like questioned by Hanna (1996)[10], those ways or "institutions" are not at random or arbitrary, but rather systematic. Ostrom (1990) emphasizes this systematic attribute by describing institutions as "the sets of working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what procedures must be followed, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions".

[10] Hanna (eds.) (1996): I. When we think about the way people interact with the environment, the following questions naturally arise. Who has rights to nature? Is it possible to define rights that exclude some from the use of nature? How are the rights specified, what are the rules under which rights are exercised, and what are the duties and responsibilities that accompany those rights? How are rights allocated among competing interests? To what extent are they connected spatially and temporally, and how do they evolve? Are they in tune with the dynamics of resource stocks, and processes and functions of ecosystem?

Even if there exist great divergences on the conception of "institution" in wider social sciences, its two basic indications are generally agreed upon[11]. Firstly, institution is a label for **organized social groups**, which include not only formal organizations, such as legislatures, political parties, regulatory agencies, administrative hierarchy and private corporations, but also informal organizations, like local cooperatives among households; secondly, institution is a label for **rules**, both normative ones, such as constitution, laws, regulations, and formal private rules, and non-normative ones, such as convention, ethical rules, customs and other cultural elements. In this thesis the norm "institution" refers to organizations as well as rules, arrangements, and mechanisms that structure the behavioral relations among human being in use of natural resources. Figure 2.1. especially gives a classification of those institutions that will be discussed in the following chapters. It is crucial to keep in mind that, institutions are tools for adjusting people's relation in resource use so that they may be established in various ways, either informal or formal, as long as they function in practice.

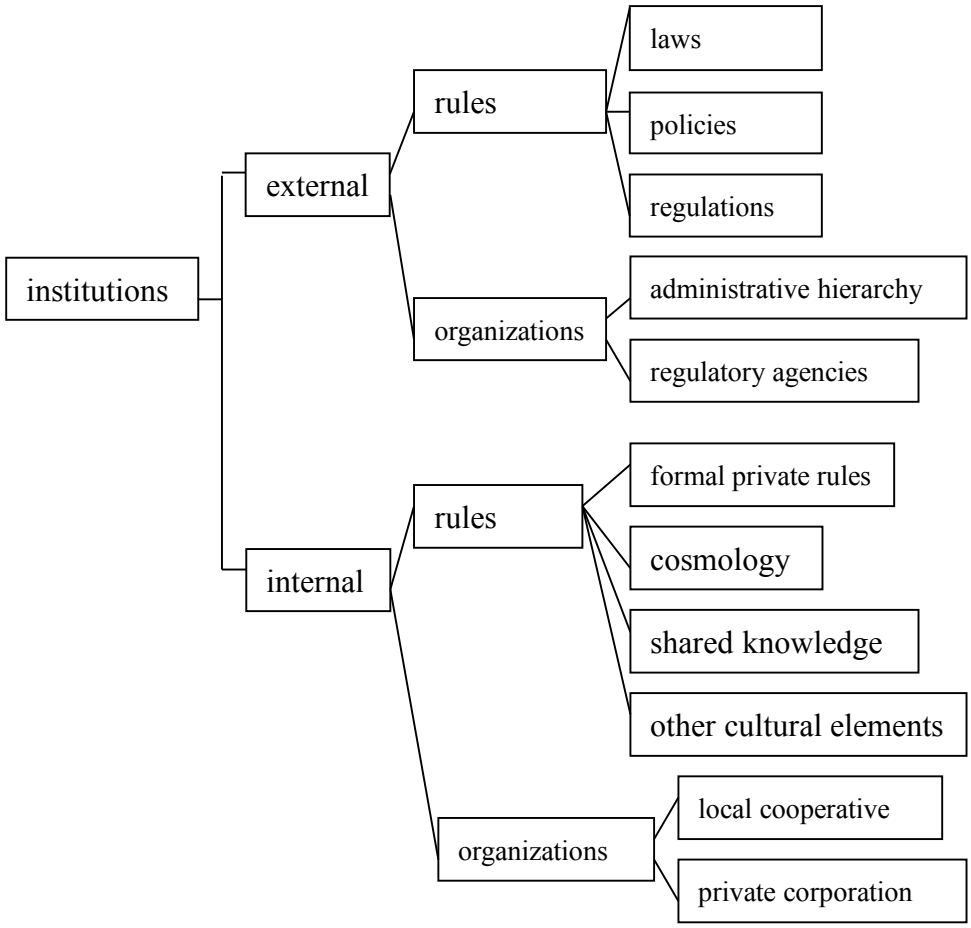


Figure 2.1 Classification of institutions

[11] Refer to Ahrens (2002): 50.

Sociologist Scott (1995) emphasizes three institutional axes: (1) the composition of institutional elements; (2) the carriers of institutional elements; (3) the levels of institutional elements. In the composition of institutional elements, Scott identifies "three pillars" of institutions as regulative, normative and cognitive elements. Regulative elements are based on a logic of "what is my interest?", which means it is in the actor's self-interest to conform with them; normative ones are based on a logic of "what is expected of me?", which means it is appropriate to obey them; cognitive ones set the shared knowledge and belief systems of a group as the basic guidelines of human action. The carriers can be culture, routines and structures. This classification will be useful in discussing the characteristics of different institutions. As to the multiple levels of jurisdiction, they will be reflected in the regional development discussion.

2.3.2. Institutional change as a historical process

In the historical process, institutions started from oral agreement among concerned people, respect of usual practice, or periodical negotiation among concerned parties. They were guided by different values, cultures or beliefs in different geographic levels but the informality did not reduce its utility. Noteworthily, in many cases, its enforcement depended more on moral, spiritual or ethical restrictions than economic punishments. Nevertheless, with the increase of central political power, some institutions were stabilized and formalized to official recognized institutions, some were replaced by new official institutions and still others kept on functioning at the civil level parallel with the official institutions. However, the implementation of new institutions is always a back-and-forth process full of controversy, conflict and dispute. Therefore, to observe the historical transformation of resource use pattern will be to examine the institutional change:

- **where** come the new institutions;
- **why** the institutions change in such a way;
- **how** they proceed.

These examinations are exactly in compliance with the research objectives of this research (mentioned in 1.1.), which means the institutional theory is the appropriate tool to accomplish this research of Mongolian pastoralism transformation.

Institutional economist Lin (1989) distinguishes the cause by **induced** institutional change and **imposed** institutional change. He uses demand-supply principle to define that, "induced institutional change results from a voluntary change introduced and executed by private individuals or groups, which respond to profitable opportunities caused by institutional disequilibria", and "the demand for institutional innovation is typically driven by individuals or members of particular groups who expect a change in rules to yield net benefits for distributional and efficiency reasons"; "an imposed institutional innovation refers to a change that is initiated and executed by government fiat", and "institutional innovation imposed by the state may (but does not necessarily) occur purely for redistributive purposes in order to provide benefits to specific groups of constituents at the expenses of others". Further, norms "internal institution" and "external institution" are used respectively to refer to institutions established in the above different motivated institutional changes.

The way institutions are designed will strongly influence the interaction between people and the natural environment (Hanna eds. 1996: I). Internal institutions are generally a reflection of indigenous people's knowledge upon using the local resources, but the situation of external institutions may vary, depending on whether the authority is from the society itself or from another society. Because usually external institutions established by local society may consult and reflect on the existing internal institutions but those established by outside society may not take the local internal institutions as a base and may possibly refer to another society's institutions. Besides, internal and external institutions often have different emphases on institutional elements and carriers of the elements: internal institutions consist of more cognitive elements, modern external institutions of more regulative elements; correspondently, internal institutions rely more on those "soft carriers" like culture, belief, ethics or routines, but external institutions depend more on "hard carriers" like structures.

Applying this institutional theory to the case of Mongolian pastoralism, the author will first present the main internal institutions in Chapter 3, including Mongolian cultural perception of rangeland rights, the traditional Mongolian pastoral knowledge, and traditional cooperative

unit "*ail*", to exemplify how Mongolian pastoralists used to be guided and controlled to exploit natural resources in a sustainable way. In Chapter 4, the author will explore how the external institutions are established and changed in several historical phases. Discussion will focus on these policies, arrangements and systems that affect three elements of pastoralism—nature, animals and the pastoralists. Property rights regime is a central topic among these institutions. Besides, the motives behind the external institutions will be analyzed, whether it is for consolidation of internal institutions or for realization of political, military or economic strategies in a bigger geographic level, like the "banner system" and the present "pastoralist resettlement strategy"; the origin of external institution will be reviewed, because a successful institution from another area may bring very different result in this area, like the Household Production Responsibility System (HPRS).

Based on the discussion of the previous two chapters, Chapter 5 is going to highlight how the internal institutions have changed under the implementation of changing external environment: how the practices used to be bounded by conventions, ethnic rules, customs, or even cosmology are substituted by laws and regulations; how the supervision unit of traditional community or groups were substitute by administrative hierarchy or regulatory agencies; how the traditional production cooperative "*ail*" changed its form in order to continually function; how the pastoralists adjust constantly to be in compliance with the new framework or otherwise, how they try to maintain their original practices in another way, or either there is a compromised way to solve the possible conflicts.

It might simplify the question of institutional transformation, but a brief evaluation of the cost during this process (Chapter 6) may give some insights into institution construction. On one hand, the policy makers should keep in mind what kind of principle should be obeyed, what kind of value should be respected and what kind of context should be considered in adjusting an improper institution or in creating a new institution. For example, an institution, which is designed to be supported by normative elements, but without an actual ethic base among the concerned group, will be trampled constantly in practice. On the other hand, there is always a power to induce the emergence of some institution in the needed form (Chapter 7).

2.4. Institutional change under development

As it is mentioned in Chapter 1, the present political setting of the research area is the West Region Development Strategy (Xibu Da Kaifa Zhanlue). What kind of development this strategy implies is rather important because it decides what kind of policies the government is going to launch. Although there is hardly a fixed and final definition of development, there are some types of development pursuing different goals. Lund (1994) summaries four types of development: growth development, area development, alternative development and sustainable development. In a long period since 1978[12], China has given priority to economic development and economic growth is the only measure of development. Meanwhile, the policies are all directed to growth and so institutions are structured to serve this function. However, three problems are increasingly disturbing China nowadays--industrialization pollution, regional disparity and urban-rural disparity. The launch of the West Region Development Strategy in 2000 is clearly an action to tackle those problems. Under this strategy, more favorable policies and supports have been channeled to the west region and so it is a regional development strategy; it also claims to engage in ecological construction and environmental protection at the same time of developing resource driven industry. Hence, it is a sustainable development strategy. These reform activities place considerable importance on reforming institutions as a way of improving performance and the new projects or policies will definitely impact the existing institutions. Therefore, this ongoing institutional change under development will also be highlighted.

[12] The year when the central government declared "economic reform and open door" policy.

CHAPTER III

Traditional Mongolian Pastoralism Regulated by the Internal Institutions

An old Mongolian story

A child asked Mom: Mom, why do we move frequently from place to place?

Mom replied: If we always lived in one place, the Earth mother would feel painful; we move frequently like flowing blood and the Earth mother will feel comfortable

This famous Mongolian tale implies their special feeling towards the rangeland. It is not only an explanation of their mobile life, but also a principle passed on orally from generation to generation. It tells of the intimate emotion with the Earth mother, and about the need to interact with it. This chapter will explore the rangeland in Inner Mongolia from three dimensions and so will reveal the interrelated and delicate internal institutions in seek of optimal resource use. Those institutions have the characters that they are mostly composed of cognitive elements, relying greatly on shared belief, moral standard, and knowledge; they are conveyed mostly through culture and routines; they operate on a rather local level. Traditional Mongolian pastoralism is just composed of such seemingly "soft" but effective restrictions. It exemplifies how these internal institutions restrain the assumed self-interested "rational men" in CPT to exploit the resources in the real world. Like many case studies on the specific characters of native management systems (Bjørklund 1990, Freeman 1989, McCay & Acheson 1987, Usher 1987) and on how people are bounded by other elements of their cultures (Feit 1994), this chapter echoes the argument that "people are mediating their relation with nature through social arrangements instead of being a predator" and "people are mediating their relationship with nature through social arrangements." (Bjørklund 1990:76)

3.1. Rangeland right in Mongolian cultural context

Cultural realities-including attitudes, values, preferences, perceptions and identities- can be just as important in shaping land use decisions as the material realities of political economy (Williams 2002: 61). Traditional Mongolian culture understands rangeland as an integrated part of the comprehensive ecological system composed of the plants, the specific geographic

setting and the animals on it; in the Mongolian language, the word grassland, *talnutag,* contains the community or homeland meaning, and emphasizes the social aspect of the landscape. They also think that human beings are a part of the all-encompassing nature; the Monglian term for nature, *baigal*, derived from the verb *bai* (to be), includes human existence (Humphrey & Mongush & Telengid 1993: 51). Mongols especially believe that the balance of nature is regulated by the Sky (*tenger*) father and the Earth is appreciated as mother because it gives birth to all life. Therefore, "**Sky father and Earth mother**"[13] constitutes the essence and core of Mongolian **cosmology**. The entities living between the sky and the earth, inanimate as well as animate, are thought to have their own qualities or super powers. They used to have various rituals, like the *Oboo ceremony*[14], to worship those powers or spirits. Therefore, shaman activities used to be an important part of life. Being guided by their cosmology, the Mongols established numerous **moral rules** concerning the correct way to treat natural objects and living beings. Since human beings are part of nature, they are allowed to use natural resources for existence but they do not have the right to destroy the harmony of the nature by any means. Therefore, the general rule is to preserve the entities in their natural states. Overuse of resources is severely criticized and it is thought that misfortune will be incurred in this way[15].

Domesticated animals may have destructive activities towards nature, especially with the expansion of flocks; so herders have the responsibility to guide them away from the overuse of nature. Therefore, the need and tradition of a mobile way of life was developed. They call their campground *nutuk*, related to the word "to move" *neghuku*, implying the life on migration.

This existence is totally contrary to the neighboring Chinese peasants who dwell on fixed pieces of land for life and the difference in way of life directly impacts on their perception of

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[13] This notion has been discussed by many scholars as the basis of Mongolian ecological thoughts. Bao, Qingwu, *Institutional Change and nomadism civilization* in Aorenqi (eds.) (2004); and Gegengaowa, Wuyunbatu (2004): *Mongolian Ecological Culture*.

[14] *Oboo* is the ritual cairn, often located on mountain. The *oboo* site is thought to be inhabited by the spirits of nature or ancestors. David Sneath contributes a description to the Oboo ceremony, in the book *Changing Inner Mongolia—Pastoralism Mongolian Society and the Chinese State*, pp. 235-244.

[15] Several examples are given in this article written by Humphrey & Mongush & Telengid (1993).

and relationship with the land. Just as Lattimore (1951: 66) has captured:

It is not only probable but certain that the steppe society was not ruled by a standard of landownership comparable to that of China. No single pasture could have any value unless the people using it were free to move the some other pasture, because no single pasture could be grazed continuously. The right to move prevailed over the right to camp. "Ownership" meant, in effect, the title to a cycle of migration.

From this perspective, as long as the right to long-term use of a pastures or the right to move around the pastures is vested in the Mongolian herders, even if the nominal ownership is not in their hands, they can practice their herding traditions smoothly. Recognition of the use right of specific pastures, both by internal members and by neighboring tribes, was consolidated through long time customary use. However, during seasons of disasters, tribal members could "borrow" land for herding upon negotiation with other tribes; this reflects a general acceptance of customary land use rights (Aorenqi eds. 2004: 75). This is in no way means that there have been no conflicts or disputes over the boundaries. Additionally, unlike the modern values of land as a capital investment, Mongols traditionally take the quantity of livestock and not the occupation of the pasture area as the symbol of wealth; and unless they have more animals to graze, many households have little need for a major change in land use.

3.2. Mongolian pastoralism-indigenous resource management knowledge

What actually is traditional Mongolian pastoralism? David Sneath points out that, there is no such thing as ahistorical timeless "traditional" Mongolian pastoralism(Humphrey & Sneath 1999: 219). Lattimore raises this question as well when he writes a series of articles about this frontier region from his fieldwork research from the 1930's to the 1960's. In his view, there has for centuries been no true Mongolian nomadism and he indicates that the pastoral practices of Mongols under the Qing Dynasty reflect that "the Mongols live under a form of society which was established as a compromise between the political requirements of the Manchu empire, and the social and economic traditions of the Mongols themselves" (Lattimore 1962: 420). In support of these opinions, this section of discussion will not essentialize the traditional Mongolian pastoralism, but to elaborate on Mongolian pastoral practices that have been formed and stabilized during long-term interaction with nature. Even

in face of the increasing external political overarching governance, practices may change in appearance or be limited in geographic scope. This will be further explored in Chapter 5.

Mongolian pastoralism is not only an optimal means of adapting to special natural conditions but also the only effective form of utilizing the pastures (Bold 1996:69). This is generally characterized by **mobility,** extensive land use and the seasonal changes of pasture. Because of the arid and harsh climate on Mongolian steppe, pastoralists must range over large areas to provide sufficient forage for their herds. Most households migrate jointly to the same summer pasture year after year, where there is better supply of water and then return to a more permanent winter location, usually one where it is convenient to accumulate fuel for winter. The temporal movements are usually regular, linear, and stable, with well-defined spatial routes.

When migrating, the herders play an intermediary role between pastures and animals; the mobile balance is thus realized. The division of pastures into seasonal campgrounds is the key in this nomadic tradition for making full use of natural grazing opportunities to feed animals. According to the different natural situations in different places, the pastures can be divided into four season campgrounds, three seasons or two seasons. The allocation of rangeland for which season is decided by its seasonal applicability; the topographic condition, water source condition, vegetation condition and so on are taken into account. Generally, at least two campgrounds, summer and winter, should be guaranteed. Spring and autumn campgrounds can be transitional areas and are used for comparatively shorter periods of time. Summer campground is often located on mesa or upland where it is cool; on pasture where water is abundant and feeding distances are short because animals drink more frequently in summer and; on pasture where favorable summer vegetations grow. Reversely winter campground is usually located in a valley, on low-lying land or sloped land facing the sun, where it is warm; on pasture where there is less access to water or just with enough snow because animals just drink once every several days and; on pasture where good winter vegetations grow (Wang 2003 b).

In my fieldwork area, most of Shilingol League falls into the "steppe type", one of the six types of Mongolian pastoral movement system classified by Simukov (1934)[16]. This type is characterized by the summer campground on open space, preferably near water and the winter campground on the southern slopes of mountains or in hollows to provide shelter from the wind. The livestock eat snow to gain water in the winter, but require other water sources on the summer pasture. The autumn campground is usually chosen for its access to sources of natural salt or soda.

After the seasonal pastures are chosen, the specific route of herding within the pasture has great impact on the rangeland productivity. The main campground is settled first on the specific place of the pasture and movements within pasture are then flexibly decided upon the grazing conditions of the pasture. The movement route of the camp is designed in consideration of the specific annual conditions of water, soil and vegetation. Usually, on the spring pasture, the camp moves every seven to ten days; in summer, they move every three to six days; in autumn, they move every two to four days; and in winter, they move every ten to fifteen days. Different campgrounds not only accommodate different animals' nutritional and energy needs, but also accomplish different tasks. Animals need to gain enough weight on the summer and autumn pastures; keep the weight on and prepare for calving or lambing on the winter and spring pastures. Additionally, the order in which the pastures are used also needs to rotate annually to give pastures longer rest and recovery time.

Making up their herds, Mongolian herders also have the characteristic combination of the "five animal species". That is; horses, cattle, camels, sheep and goats. This combination attempts to make full use of various grazing sources. For example, horses like eating grass seeds and tender grass, cattle like the upper grass, sheep eat most kinds while goats like grass roots. This combination also serves the mobile life well because they ride horses to herd the animals, and use camels and cattle to aid with the transport of goods.

[16] A. D. Simukov, Russian ethnographer. He carried out research in the early 1930s and developed a classification of six types of movement system based upon geographical location, and he gave each of the six types of movement system the name of the region where it was found.

Actually there is no fixed type of migration and the herding practices may vary to some extent even in neighboring pastures. However, the pastoral task is the same- "to obtain the optimal relation in time and space between pasture and animals" (Bjørklund 2003: 124)[17]. These strategies all generate from the daily interaction with the situated circumstances and pass on from generation to generation as a special form of knowledge.

3.3. *Ail*—basic socio-economic cooperative unit

In such a nomadic society, a special form of joint effort is necessary in the assistance of regular movement, especially with the expansion of flocks. The ancestors of the Mongols created their characteristic cooperative forms named *kuriyen* and *ail* (*hoton*, or *hot-ail*). *Kuriyen* means "circle" in Mongolian and it was usually composed of tens to hundreds of households encamping in circle with the clan head in the center. It was a kind of cooperative among tribal members on a large scale and long distant migration. With the expansion of herds and increasing demand for larger grazing lands, the conflicts between tribes were sharpened and this style of organization integrated more political and military functions. However, after the division of land among various tribes by Genghis Khan in the 13th century, such big scale tribal migration lost its significance and, *ail* [18], the smaller scale cooperative form among several families, became the basic unit for seasonal migration within the tribal boundary.

Ail means "family" in Mongolian and usually includes stem family members and close relatives. As a pastoral residential unit, the *ail* used to be an encampment of several tents called *ger* (yurt), which usually contained between two to seven *gers*. The head of an *ail* was mostly an old wealthy male, called *ah* (elder brother, older male relative, or friend) by other members. Each household in a *ger* usually composed of a couple and their unmarried children, and the parental household mostly lived alongside the household of their married sons. However, this stem family based hot-ail often included other relative households to form larger encampments, particularly on the summer pastures (Sneath 2000: 41). Kinship was

[17] This generalization of Sami pastoralism does tell the truth of Mongolian pastoralism as well.
[18] Also called hot-ail or hoton in different regions and different historical period.

central for the ways in which people related to one another, especially on the low populated steppe. The collaboration it entailed was often voluntary and frequently came about because close kin or friends wanted to live and work together. Hence, it was the natural basis of any possible form of cooperation from the beginning. However, mutual assistance was more necessary between non-relative families because of the shortage of labor on the steppe, especially because of the demand of frequent migrations. Many problems might arise from mobility such as the shortage of seasonal labor, transportation animals or lack of carts. Shared knowledge of the destined pastures is very valuable for those who might move there. Moreover the different animals needed to be herded separately because of their different moving speeds[19] and this in turn demanded the need for more labors. In daily herding, the member families of *ail* also pooled their herds together and divided the herding tasks of the separate species while retaining respective ownerships of their livestock. When they needed to migrate to different pastures, they could separate the animals easily by special prints or memorized characteristics. Therefore, constant cooperation was in every household's interest and they supported each other in times of migration, construction of campgrounds, shearing wool, calving and many other times. Therefore, this form of cooperation was economical in practical terms and benefited all households.

Crucially, this arrangement gives the mobile life **flexibility** in that it is rather seasonal and its composition of members may vary from year to year. Therefore, it is better to understand this organization as a periodically stable unit and to be aware of both its composition and its variation. Firstly, it is a manifestation of social relations in a residential form, based largely on kinship, but also on dependency or friendship (Sneath 2000: 39). Secondly, the combination of various households on the summer pasture and the separation to return to different winter pastures where they might live with other households, are functional rather than structural. This unit can be seen as an ecological adaptation in a social sphere and through centuries of function it does not fade but has kept working like an institutionalized internal arrangement with however, some compromise to the corresponding external

[19] Horse can move 40-50 km per day, cattle can move 30-35 km per day and sheep/goat can move 15-20 km per day. Wang (2003)b: 11.

institutions under the different social systems.

3.4. Pastoral wisdom in the triangle balance

The above parts discuss the three correlated dimensions in realization of Mongolian pastoralism: the culturally bound perception of rangeland rights, the contextual knowledge of resource use, and the specific socio-economic organization. These institutional arrangement efforts echo Bjørklund (2003: 125)'s analysis that "this constant attempt to mediate the relationship between pasture, animals and their owners must, by necessity, be organized in specific ways". If the pastoral map is zoomed out to the world scale, it can be found that different pastoralists across the world are playing the same role, that is, to mediate the balance between herds and the rangeland. The difference is that they have created different systems to accomplish this same task according to different culture and natural environment.

For example, the Sami pastoral society had the well-defined system to achieve mobility and flexibility in resource management; they have abundant knowledge of animal composition, seasonal routes and pasture availability; they cooperate through the Sami cultural institution *Siida*. Therefore, the correlated internal institutions, or the general indigenous resource management system, are formed to seek the balance of the triangle relation in figure 3.1.

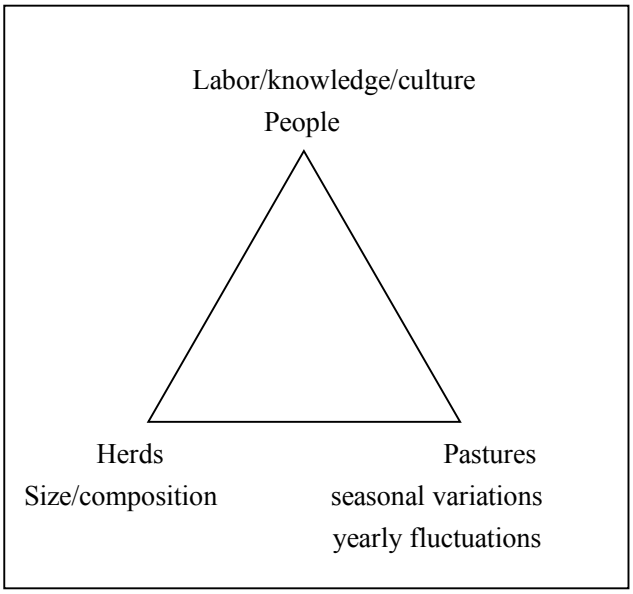

Figure 3.1 Triangle balance between people, herds and pastures[20]

[20] Consult Bjørklund (2003): 126, figure 8.2.

CHAPTER IV

Transformation of External institutions Governing Mongolian Pastoralism

An historical approach is developed in this chapter to show how the external institutions governing Mongolian pastoralism transferred through different period of time. Since these external institutions are generally products of the government, such a discussion is divided into several sections based on change of political regimes. Although immigration and land reclamation policy was not a part of the resource management policies, it directly changed the setting of Mongolian pastoralism - increased demographic pressure on the rangeland and competitive usage of the rangeland resources. Hence, its far-reaching impact on the pastoralism is an indispensable part of the discussion. In description of the different external institutions under different political regimes, their different reflections of the existing internal institutions are noteworthy.

4.1. Transformation of external institutions over different historical period

4.1.1. Situation before the establishment of IMAR (before 1947)

Since the "Mongol" appeared in the early twelfth century, this nation history was full of internal power struggles between tribes and so their lands were fragmented rather than unified most of the time. Hence, control over inhabitants and lands were always rather localized. Initially kinship-based clan had great importance in the regulation of social life (Sneath 2000: 196). Rangeland was owned and used collectively by the tribal members, and even the tribal leader had no right to dispose the land at his own will (Yan 2004a: 271). However, tribal leader was the representative in its control and distribution. Every leader knew quite well the people in the clan, the boundary of the tribal rangeland and where to herd in different seasons (Ayan & Wuen 1999: 72).

With the unification of clans by Genghis Khan, the nominal ownership of all the rangeland came under his name. Afterwards, he endowed the rangeland and conferred the hereditary position *Noyan* to tribal leaders through the "feudatory system" in 1206, which was actually a redistribution of Mongolian rangeland resources (Ayan & Wuen 1999: 78). The endowment

of land to *Noyan* actually included the military and administrative control over the pastoralists on it. *Noyan* occupied the rangeland, but common pastoralists used it as before, only that they should operate within the designated boundaries. In general, the commoners were affiliated to the nobles both for rangeland use and by regulation.

At this time, the Mongolian regime created the earliest law codes on rangeland use and conservation (Ho. 2000a: 254), like the Great Law promulgated by Genghis Khan, the Tsaaziing Bichig Code (1230), and the Laws by Khubilai Tsetsen Khan (1321). Their contents covered seasonal shift and rotating herding, prohibition of firing, prohibition of polluting water, prohibition of destroying rangeland, protection of forest resources, prohibition of hunting in spring and summer season, protection of wild female animals and so on (Aorenqi eds. 2004: 395). They provided specific rules on what should or should not do in protection of the rangeland resources, and even on what rewards or penalties should be given at breaking the rules[21]. Generally they were the reflection of the traditional Mongolian cosmology and culture or they were mostly the legalization of their previous routines. Additionally, traditional shamanism was carried forward and formalized through temples and rituals with official support.

After the collapse of Mongol Empire (1206-1368), the social system of Mongol society did not change so much but more split to *aimag* until they were reorganized into the "banner system"[22] during the Qing Dynasty (1644-1912). This system generally divided Mongol steppe into Out Mongolia and Inner Mongolia[23] (Sneath 2000: 9). Inner Mongolia was divided into 6 *chuulgan*, composed of 49 *banners*, and another eight banners of Chahar and those of Tumed and Barga Mongols out of the *chuulgan* administration (Sneath 2000: 35). Shilingol League at that time was smaller than it is nowadays because the south part of it mostly belonged to Chahar.

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[21] Quite a numbers of rules are exemplified in those two books: Aorenqi (ed.) (2004), pp. 359-418, and Gegengaowa & Wuyunbatu (2004), 139-160.

[22] This system was originally used to organize Manchu tribes and since Mongols became close alliance with Manchu in territorial expansion, they were also integrated into this system with military function.

[23] The division between Inner and Outer Mongolia was an administrative distinction formally introduced by the Qing Dynasty. Inner Mongolia was the term given to regions south of Gobi, close enough to the seat of government to be administered directly by the Li-fan-yuan, the Court of Dependencies.

Although the establishment of the banner system greatly respected the Mongolian tribal tradition, it fundamentally fragmented Mongolian intertribal unification and instead strengthened central governance. Since 17th century, banner became the main unit of Inner Mongolian administration and Mongol nobles were assigned as hereditary banner rulers *Jasag*. Mongolian society became more stratified through the class and administrative hierarchy in the Qing Dynasty (table 4.1. shows the rank of people and table 4.2. shows the administrative structure). The status of a Mongolian was generally ascribed by birth and the administrative structure over territory was framed in compliance with the class hierarchy.

Noyod noble (members of the Borjigin clan of Genghis Knhan and their spouses)	***Jasag*** One of the banner prince's son
	Tajj Other sons of the banner prince.
	Others
harch/ albat commoner	Personal servants of nobles and officials
	Monastic servants and subjects
	Imperial subjects owning legal obligations to their lord
	Slaves owned by nobles or wealthy commoners

Table 4.1. Social class of Mongols in the Qing Dynasty[24]

Unit	Leader	No. of Household
Chuulgan league	-	-
Aimag	-	-
Hoshuu banner	*Jasag*	-
Sum[25]	*Jangi*	150
Gachaa/bag	Minor official	50
Arban	Official head	10

Table 4.2. Administrative hierarchy of Mongolian society in the Qing Dynasty[26]

The characteristics of the banner system greatly affected the rangeland management system.

[24] Based on description in Sneath (2000): 21-25.
[25] In monastic district, it was called *otog*.
[26] Based on description in Sneath (2000): 35.

Banner became the most important unit of pastoral management[27] (Sneath 2000: 35). On one hand, despite of its nominal ownership to the Manchu emperor, rangeland within each banner was used commonly by all members of the banner. Principally, all Mongolians, from prince to slaves, had the right to herd within banner boundary[28] (Tian 1987: 183). On the other hand, the daily management of rangeland was executed through the administrative hierarchy twisted with class from *Jasag* to minor officials.

During the Qing Dynasty, more law codes were produced by local rulers, like the Khalkh Jrum (1709) and the Woqilai (1728/1729)[29] (Ho. 2000a: 254). Besides, traditional Mongolian shamanism met great threat from Lamaism. Lamaism took on some elements of the local beliefs but local shaman activities were greatly forbidden and suppressed.

Inner Mongolia experienced enormous political changes in the years after the Qing Dynasty. In the period of the Republic of China (1912-1949), even though several administrative boundaries changed and different powers took control of the local areas, the basic administrative division into banners remained in function. During Sino-Japan War (1937-1945), the Japanese begun to introduce a new administrative and educational system in the occupied Inner Mongolia areas, but they also continued to recognize the titles, honors, and prerogatives of hereditary princes within their banners. Additionally, from the end of the Qing Dynasty right up until the advent of the P.R.China, Mongolian banners throughout Inner Mongolia continued to use Manchu law as the basis of civil administration (Sneath 2000: 21).

4.1.2. Situation before the launch of HPRS (1947-1978)

At the time when IMAR was established, most areas kept the social or political institutions formed during the Qing Dynasty. This means that, principally rangelands were still used commonly by the pastoralists who lived on it.

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[27] As an official letter dated 1877 stated, "the grass and water of a territory may be managed and assigned only by the ruler *jasag* of the said land". Cited by Natsagdorj (1967: 267) and referred to by Bawden (1968:89).

[28] Cross-banner herding had to be permitted by the related banner.

[29] For example, the fifth law code of Woqilai Tuxiethuhan provides that anyone who accidentally sets fire to pasture will be fined one horse and five head of cattle and have to recompense for the losses of the pasture. The witness will be rewarded with one head of cattle out of the five fore mentioned, while the one who extinguishes the fire will get the remaining four. If the offender puts down the fire himself he may be exempted from prosecution.

Land Reform Campaign from 1947 to 1952 composed the classification of people according to their backgrounds and the wholesale redistribution of property. It **confiscated** a large proportion of the rangeland was to *sums* or the state, in order to "reverse the inequities of the pre-liberation period and provide all herders with free access to the rangeland" (Longworth 1993: 45). However, a less radical reform approach was chosen in livestock ownership[30] based on the principle of "Three don'ts and Two Favorables"[31]. The livestock were not redistributed from landlords, rich herders, monks or local leaders to landless or tenant herders as it was to the farmers in agricultural provinces. However, instead, it increased wages paid to the herders responsible for tending livestock owned by the landlords/ tribal leaders and rich peasants.

The move towards collectivization in China started from 1952 with the establishment of Mutual Aid Teams and Cooperatives. Mutual Aid Teams pooled labor and equipments during peak seasons of production for mutual assistance. More advanced Cooperatives required herders to share income on the basis of contributed labor and livestock. Cooperative basically respected herder's ownership of the animals and gave back profits accordingly. The formation of the People's Commune began in 1958 and was completed by 1959. But this time livestock were **sold or contributed** to the People's Communes. In Inner Mongolia, 2,830 Livestock Producers' Cooperatives, mostly composed of Mongolian pastoralists, were organized into 152 People's Communes, which covered over 90% of the pastoral households and more than 80% of the total livestock (Liu & Zheng eds. 1983: 357). Though private livestock permitted in pastoral areas[32] were often much more than those in agricultural areas, they were confiscated into communes during the following Cultural Revolution period (1966-1976).

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[30] The Outline Law for Agrarian Land Reform (1947) gave the general instruction on redistribution of livestock from landlords and other rich livestock owners to poor herder households, but its implementation was left to the regional administrations. Because where the radical policy was implemented in IMAR, it led to animals being slaughtered by anguished owners. In some banners, rich herdsmen reacted to these measures by killing the animals they though would be confiscated. It is reported that the resulting turmoil led to the death of 80 or 90 per cent of the cattle and horses in the region. Liu & Zheng (eds.) (1983).

[31] Three Don'ts are "don't settle scores with herd-owners", "don't distribute herd-owner's livestock" and "don't determine the class status of herdsmen". Two Favorables are "be favorable to the hired herdsman" and "be favorable to the herd-owner".

[32] In pastoral areas of IMAR a household was permitted to retain 3 cattle, 10 to 20 sheep, and 1 to 2 horses. Within a few years these numbers were increased to 20 cattle, 50 sheep and 5 to 10 horses. Longworth & Williamson (1993): 45.

The basic administrative structure established in the Qing Dynasty was followed but there were many changes in the composition of leagues and the division of banner areas. The present composition of Shilingol League and the banner boundaries were mostly fixed until 1958. Besides, because of loose administration at the grass-root level, boundaries between *gachaa*s were gradually recognized and established, especially in the less populated remote areas. In the collectivization period, People's Communes were mostly in place of *sums*, composed of about 650 households; there were Production Brigades under the People's Commune, with an average size of 50 to 80 households, generally in place of *gachaas*; there were also several Production Teams under the Production Brigade, each composed of around ten households. This vertical system was an all function tool in realization of egalitarian communism. Through it, strict state planning and control of economy were realized; political and social controls over rural communities were extended; and most importantly property ownership was unified to *Jiti Suoyouzhi* (collective ownership)[33].

In rangeland use and pastoral economic management, brigade was the level responsible for production and financial management as well as development planning. The brigade leaders made arrangements for seasonal use of grazing land, allocation of labor and money for production, selling productions and distributing incomes among the accumulation fund, public welfare fund and the households (Li & Ma & Simpson 1993: 67). All people became labors earning work points as their only income. Production teams under brigade were the actual implementation unit, responsible for recording work-points or household consumption of animals and for selling products and organizing production activities.

In Cultural Revolution period, all production fell into paralyzing status and political struggle became the priority task. Lamaism was greatly criticized and forbidden for worship. Most temples and monasteries were destroyed and monks, even those who already become

[33] *Jiti* (Collective) was a vague term during this period. It could refer to a whole Commune, or a Brigade, or a Production Team and an administrative *gachaa* After 1978, there were still discrepancy in which unit this word refers to, the sum, the administrative *gachaa* or the natural coverage of *gachaa.* Until 2002, the revised Rangeland Law proclaims that the term exclusively refers to an administrative *gacha*, which owns or controls the land contracted out to the households.

pastoralists, farmers or workers, suffered a lot of tortures.

4.1.3. Change of immigration policy and its impact on Mongolian pastoralism

Since the Qin Dynasty (B.C.211-B.C.206), the Great Wall was built and rebuilt to stop attacks from pastoral minorities and this symbolized separation did cut off migration in both ways for long time of the history. At the beginning of the Qing Dynasty, the "divide and rule" policy kept strict restriction on Mongol-Han interactions, but small-scale immigrations were generally not punished, especially during the natural disaster seasons or years. Most of these poor peasants, often forced by poverty, famine or drought to venture for a living out of the Great Wall, immediately took on their familiar cultivation practices on the pasture and generally could make a better living because of less exploitation.

The occupation right over rangelands gave nobles the chance of transferring it into personal profits. With the increase of farming immigrants, the Mongolian nobles sold rangelands for "cultivation money" and charged land rental annually. Mongolian society was generally a rather closed one before the Qing Dynasty. Even if the external changes might bring redistribution of interest, wealth and land among the Mongols, it was mainly within this group with quite unified beliefs and values. However, the Manchu system made the Mongol aristocracies "a class of tribute-extracting overseers at the edge of the empire" and "such was their alienation from ordinary Mongols"(Sun 2005: 32).

The immigration and land conversion were officialized to the "land reclamation policy" launched in the name of "migrate and consolidate the frontier" in 1902, when the dying Qing government wanted to collect more treasuries. It is estimated that around 50,000,000 *mu* rangeland were officially allowed for cultivation (Yan 2004a). Immigration to Inner Mongolia area accordingly increased sharply at the turn of 20th century. It is calculated that, at the beginning of the Qing Dynasty, there were 1,043,470 Mongols in Inner Mongolia (Zhang 1982: 227); in the last year of the Qing Dynasty, there were around 880,000 Mongols and 4,000, 000 Hans (Yan 2004a: 33). The increase of Han population also can be reflected in the

increase of administrative branches[34]. At the beginning of the Qing Dynasty, there was no province or town; in 1911, there were already 50 administrative branches (Yan 2004a: 1). The subsequent development of railway network further changed the relationship of the outer territories with the Chinese heartland. The railway network[35] sped up the immigration process of inland people to Inner Mongolia. Inhland settlers following the railway took over ever-larger tracts of Mongol land (Sun 2005: 33).

In 1947, the newly established IMAR adopted the policy "protect the range, prohibit reclamation". However, the second round of rangeland conversion was soon initiated by the political devours. The Great Leap Forward (1958-1962) emphasizing "concentration on grain production" brought about massive constructions of agriculture bases on rangelands. After collectivization in the 1960's, cooperation between agriculture and animal husbandry was called on because it was believed that pastoralism provided fertilizer to agriculture and agriculture provided stems and corn to pastoralism. But in reality, the Mongolian pastoralists were not willing to do cultivation and the government moved in Han peasants to do it (Sneath 2000: 88-89). During the Cultural Revolution period, the slogan "pastoralists do not eat guilty grains" brought more units, like production farms, armies, governmental units, schools and factories to establish state farms on the rangeland. It is estimated that there were 2,067,000 hectare rangelands converted across Inner Mongolia during 1958-1976, and these units converted 933,000 hectares of it (Enkhee 2003: 6). The second great increase of Han immigration started with the big flood in of hungry peasants from the neighboring provinces during the three natural disaster years (1959-1961). Since the late 1960's, government organized immigration was dominant, mainly for agriculture production and frontier security.

4.2. The present management of Mongolian pastoralism under HPRS

4.2.1. HPRS—an institution from agricultural provinces

The Eleventh National Congress of the Communist Party and the Third Plenary session of the Central Committee of the Chinese Communist Party in 1978 authorized the major reforms of

[34] Mongols were administrated through banner system, while Hans were administrated through province/town system.
[35] It was centered in Beijing with one line from Beijing through Zhangjiakou to Hohhot and Baotou. The railway from Beijing to Zhangjiakou was finished in 1909. It was extended to Hohhot in 1921and to Baotou in 1922.

de-collectivization in rural areas of China and the fundamental household production responsibility system (HPRS) became officially recognized in 1981. This system originated from an individual initiated experiment in an extremely poor agricultural region of central China where peasants contracted pieces of commune land for household cultivation. The experiment brought immediate growth of agricultural output and household yields and this practice thus spread rapidly to many other parts of China. By the end of 1983, almost all households in China's rural areas had switched to the new system of farming (Lin 1988: S201).

The success of HPRS lies in the enhanced household production incentives. Compared to the egalitarianism of the commune system, "eating from the common pot", pursuit of private wealth was encouraged by the new institutional arrangements. The central institutional changes included: (1) land rights regime. Individual households get periodical land-use rights over allocated cropland through land tenure contracts[36], despite the collective ownership of land. The allocation of land is typically based on household size and household labor supply; (2) basic interest unit. Individual households in place of the Production Brigade and Production Team became the basic decision-making and implementation unit of production, income distribution and accounting. Farm management was decentralized to the household level and each household became responsible for individual profits and losses. This reform was also accompanied by looser governmental interventions in supply and demand of produce market, implying an advance of market economy and a withdrawal of planning economy.

It is important to emphasize that the HPRS was developed by the farmers and spread rapidly because of its merits, instead of being imposed by the central authority. Lin (1988) believes that this institutional shift evolved spontaneously in response to underlying economic forces. The author thinks that it is also a reflection of Chinese peasants' historical perception of land, which should be divided into family plots with a fixed abode. The HPRS system was created and became effective in the Chinese cultivation cultural context. However, when the HPRS

[36] The contract was initially for 15 years and in 1993 it was extended to 30 years.

was introduced to pastoral areas of China, it was no longer not an indigenous system, and instead of being a spontaneous choice, it became a top-down government imposed institutional change.

4.2.2. HPRS in pastoral IMAR

The top motive behind the introduction of HPRS to pastoral areas was to increase production by enabling pastoralists to become economically better off. The HPRS, called the "Double Contract Household Production Responsibility System" in pastoral regions, was executed in a few steps to realize individual household ownership of animals, and use rights of collectively owned rangelands.

The first step was to lease the animals. Individual households contracted the livestock from the commune and after paying a leasing fee to the People's Commune and tax to the collective public welfare fund, they were free to keep the remaining profit. The second step was to privatize the ownership of the leased animals. By 1983, animals throughout the IMAR were sold to households by the People's Communes (Longworth & Williamson 1993: 98). The animals were valued and distributed to households, based on the household size and the labor supply in the household. Species and types of animals were also distributed evenly. In most cases, the pastoralists had five to seven years to pay the collective welfare fund for their animals without any interest being charged (Longworth & Williamson 1993: 98). However, this process differed a lot from place to place. Some rich collectives did not enforce the payment; some pastoralists in other collectives refused to repay their loans because they had willingly contributed their animals at the beginning of collectivization. Most interviewees in the different banners of Shilingol League said they had gotten the animals free from the local collectives at that time and they thought the distribution was quite fair. Interviewees in one *gachaa* near Uliyasitai town of East Ujumchin Banner gave a specific number of distributed animals: each adult was allocated 50 animals including 25 sheep, 3 cows and 2 horses[37]. However, in most regions this number was lower. Additionally, these local Mongolians were allocated more animals than the Han and those living on pastureland were distributed more

[37] One cow or one horse equals to five sheep. A child accounts for half an adult.

animals than those working in *sum* with fixed salaries.

The third step was to contract the rangelands to individual households. Before carrying out this institutional change, boundaries of rangeland between *sums* and *gachaas* were assessed or reassessed in the abandonment of communes. The division of rangeland was mostly for spring and winter pastures; summer and autumn pastures were generally used collectively by the whole banner or *sum*, even nowadays. Therefore, the rangeland fell into three categories after this allocation: (1) the private household rangeland utilized for private animal grazing and hay production; (2) the collective land for settlement turfs or houses and roads; (3) the collective rangeland utilized by collective members together for animal grazing. Allotment of specific rangeland areas to particular households was generally based on household size, labor supply of the household, the number of livestock it had, the species of livestock involved, and the history of family using the pasture. Some researchers state that rangeland was allocated to the households on the basis of a 70% weighting for the number of people in the family and a 30% weighting for the number of animals owned by the family (Longworth & Williamson 1993: 99). Additionally, for fairness, the drawing of lottery was also the common form in land allotment. However, interviews found that the initial contracts did not create clear property boundaries; instead, they mostly referred to geographic landmarks for demarcation such as hills, slope, or trees.

The "rangeland contract" gives households use-rights of rangeland, however, the ownership of the rangeland remains with either the *jiti* or the state. This contract was originally quite a simple agreement guaranteeing access to specific rangeland for an initial 15 year (extended to 30 years later). However, it gradually evolved into a more complicated and explicit legal document. Presently it is in the form of a "Rangeland Certificate". Each household keeps a Rangeland Certificate, stating how much rangeland is allocated to the household of a residential group and its location on a map. The use of rangeland was initially free of charge, however, from 1987, a "usage fee" (rental fee) based on the *mu* unit was charged to collect funds for the maintenance and development of the pastures.

Most households have operated under HPRS since 1985. By 1990, all of the cutting rangeland and about 90% of the remaining usable pasture in the IMAR had been contracted out to households (Longworth & Williamson 1993: 100). A pastoral household under the HPRS gives a good illustration of a rational supplier in neoclassical economics; whoever is in full charge of its production materials (animals and rangeland), makes decision of what to herd and how many to raise according to market demands and the ability to supply in the harvest time. Hence, they are able to get a full income after tax.

However, the execution of HPRS in time, form and result varied greatly from place to place before the mid-1990's This makes it informal, inefficacious or unsecured. Interviews have generally found that allocation of rangeland was implemented earlier and with more clarity in the southern banners than in the northern banners of Shilingol League. In addition, the "rangeland contract" differs from *sum* to *sum*. Some contracts specified the areas assigned to the individual households, but it did not designate the precise location of the pastures; some *gachaas*, mostly in less populated regions with quite closed communities, received only precise area of rangeland for the whole *gachaas* but, did not allocate it to individual households; many pastoralists had the contracted rangelands but never saw contracts kept by the *gachaa* committee. Such incidents make HPRS an incomplete institutional arrangement.

4.2.3. HPRS in rescue of "Tragedy of the Commons"

Though HPRS is an induced institutional change in rural China, it is in compliance with the general theory directing Chinese economic reform, that of neoclassical economics. Therefore, on one hand, it believes that a privatized system provides rational individual incentives for personal wealth and an impetus for social economic efficiency. On the other hand, when HPRS was applied to rangelands, it echoed the solution of CPT school of thought. The problems of rangeland degradation, overgrazing and desertification have become issues of serious concern for the Chinese government since the beginning of economic reform. Conventional analysis of the Chinese rangeland tenure indicates that there was complete open access to rangelands during the commune period and consequently, a classic "Tragedy of the

Commons" was in progress[38] (Banks 2003: 2130). This diagnosis justified the new land tenure scheme. By allocating exclusive and long-term use rights of rangeland to individual households, HPRS realizes partial privatization of pastures. Nevertheless, it is questionable to blame open access during the commune period for rangeland degradation or overgrazing. Typical of the "Tragedy of the Commons" is the conflict between private ownership of animals and public or "fuzzy" ownership of rangeland. Under the People's Commune, both animals and rangeland were owned by the "blurry" *Jiti*, and everyone depended on the Work Point system to earn a living. Therefore, there existed no incentive to overgraze. The encroachment of collective property was in the form of consumption materials instead of production materials. Even though there were phenomena of open access and free riding over commune boundaries, it was due to the lack of a proper monitoring system rather than private exploitation; it was more a manifestation of chaos and the lack of responsibility since the profits of the animals went to the community finally. In addition, analysis of data shows that livestock numbers increased steadily rather than sharply during the commune period[39]. The rangeland degradation in Inner Mongolia does not lie in the conflict between private animal ownership and common land overgrazing. Hence, it is not surprising to see that rangeland conditions have not improved under HPRS[40].

4.2.4. Management based on enclosure and stocking rates

Further reform in rangeland management is pushed forward by official concerns of desertification tendencies. The amount of pasture now in use in Inner Mongolia is certainly less than was in use early this century. This is due to several big scale rangeland conversions (discussed earlier), and the subsequent increased grazing pressure on the grassland. However, the worsening effect of desertification was not relieved after the implementation of HPRS. In 1994, over one third of usable rangeland had been reported as being degraded to some degree, while total biomass production per hectare had declined to 30-50 percent of that in the 1950's (Li 1994: 24). Rational use of rangeland was not realized after the implementation of HPRS

[38]The supposed "Tragedy of the Commons" has frequently been blamed for rangeland degradation problems in China.

[39] The livestock numbers were stable in the 1960's and increased sharply in 1970's, but in terms of standard stocking units, there was a steady rather than dramatic increase in livestock between 1960 and 1980. See figure 2.5. and figure 2.6.. Humphrey & Sneath (1999): 44-46.

[40] The situation of land degradation will be discussed in 6.1.2.

as it is assumed. HPRS tended to clarify the rangeland tenure, but it did not bring about a successful result with regard to rangeland as to cropland. Rangeland has many differing characteristics to those of cropland. A farming household invests in a fixed piece of cropland and harvests from this same piece of land. One does not intrude on another household's land for cultivation. Therefore, the land tenure is clarified by HPRS. However, rangeland is large and spatially dispersed. Even if HPRS nominally divided rangeland to individual households, without fencing, one family's animals might easily cross proposed boundaries to graze another's rangeland. Consequently, many disputes arose. Additionally, in many places, HPRS was only a "partial" contract that obviously encouraged grazing-in-common practices and discouraged investment in pasture conservation and improvement by individual households[41] (Longworth & Williamson 1993: 321). The privatization of rangeland was thus invalid and it actually created the very basis of "Tragedy of the Commons" by having private animals with open access to common rangeland. In addition, there is a strong conviction in specialists and administrative circles that the pastures are overgrazed and that overstocking is the cause of the widespread grassland degradation, even though statistics of livestock numbers show no big growth in the 1980's (see figure 4.1.). To tackle this problem, enclosure of household rangelands and appraisal of rangelands in terms of stocking rates were required to be carried out by the central government. My fieldwork has found that this enclosure was generally carried out between around 1995 and 1997.

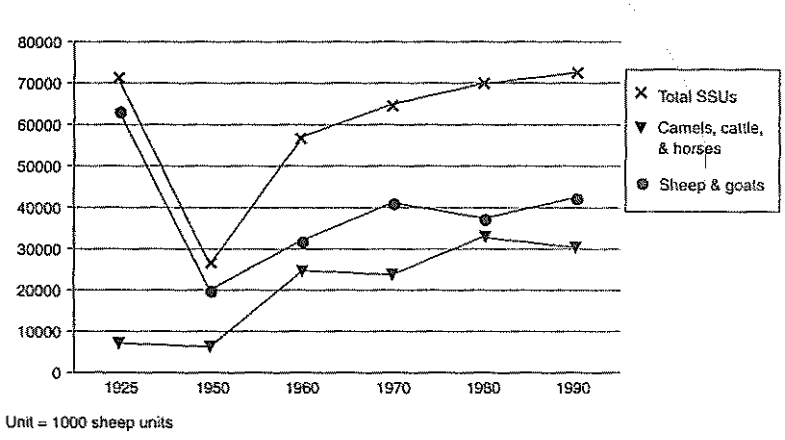


Figure 4.1. Livestock of Inner Mongolia in standard stocking units

Stocking rates become an immediate step after the enclosure of rangelands. The government

[41] Partial contract refers to that in some areas, the contract specifies the area assigned to the household, but it does not designate the precise location of this pasture.

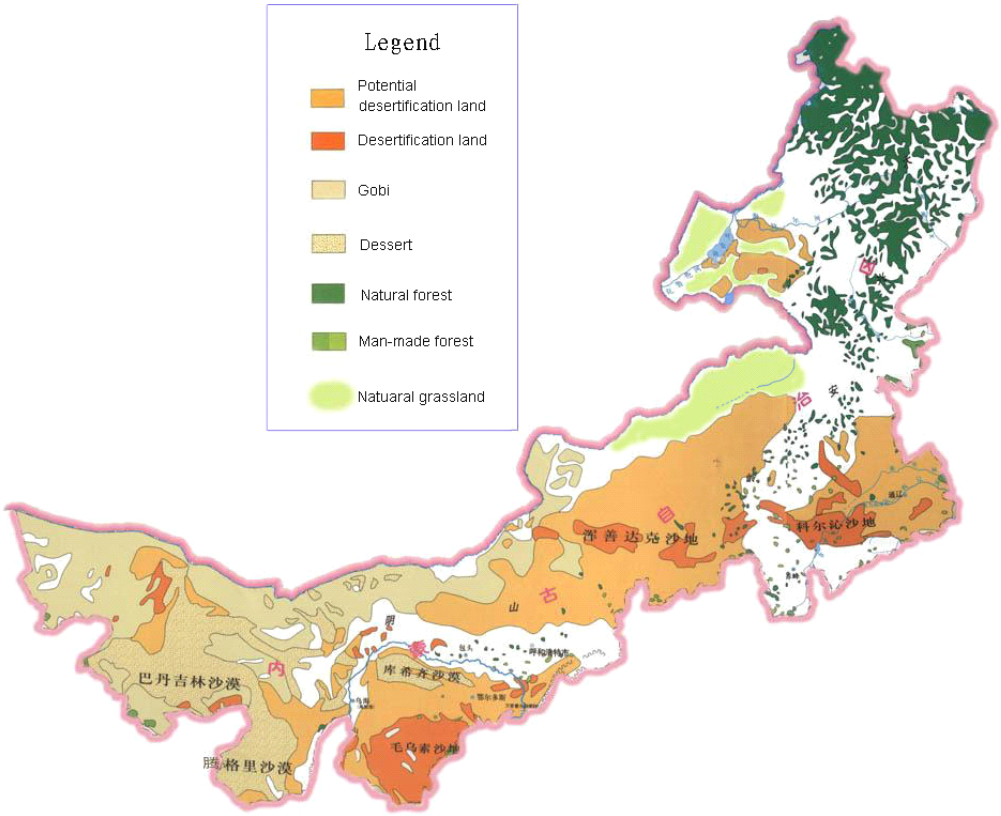
intends to guide pastoralists in "rational" use of rangeland with "scientific knowledge". "*Yi Cao Ding Mu*", that is, "to decide the number of household animals according to the availability of grass", is the central idea. Natural rangeland productivity and proper stocking rate are assessed by the League Grassland Monitoring Bureau[42] and then released to public every August based on the *sum* unit. Following this, banner grassland monitoring bodies go to each pastoral household to assess the correct animal quota, based on the available vegetation of the contracted rangeland area, official stocking rates and also by taking extra factors into consideration. Stocking rates are expressed in sheep unit (standard stocking unit), which is a weighed total of all the various kinds of animals. The present Shilingol Vegetation and Animal Balance Implementation Detailed Rules (2005) stipulates that an adult sheep or goat is equal to one sheep unit, an big animal (including horse and cattle) is equal to five sheep units, and a pup animal born in the current year is equal to half an adult animal. Enforcement of maintaining a sustainable balance between herds and vegetation has been the official goal of rangeland management since 2002. In a system of incentives and penalties, ensuring producers' abidance by the carrying capacity, stocking rates is the central indicator. However, these government measures create doubt over the effectiveness of HPRS because HPRS has assumed that private enclosures would force independent households to confront the discrepancies between forage demand and forage availability among their separate herds (Williams 1996: 38). Thus, the pastoralists would have "the incentive to both stock rangeland within carrying capacity and invest in improvement" (Banks 2003: 2130).

4.3. Measures in sustainable use of rangeland

The more frequent sandstorms influencing Beijing since the late 1990's are signals of crucial ecological changes. The recognition of serious pasture degradation (see Map 4.1.) in Inner Mongolia led to prioritizing of its regional ecological function over local economic development. Evidently, a great deal of official capital has been channeled into improving rangeland conditions. In 2002 the central government demonstrated their concern about the environment in Inner Mongolia by pledging RMB 4.7 billion (USD 573 million) over the ten years to mitigate grassland degradation (Bijoor 2002: 30). At the turn of the 21st century, the

[42] It is a subordinate organ of the Department of Animal Husbandry and Veterinary Sciences.

Western Region Development Strategy set up guidelines for producing the below measures in sustainable use of rangeland in Inner Mongolia.



Map 4.1. Desertification status of land in IMAR

(source: www.cy.ngo.cn, refer to *Green Map of China 2001*)

4.3.1. "Returning Farmland to Forestry" project

The massive project of returning farmland to forestry constitutes a major part of the conservation measures. This project aims to control land erosion or desertification and to improve the environmental situation in many areas of China, through converting cropland to forest or grassland and planting trees on desolate mountains and other land areas. This nation-wide project started in 2001 from Inner Mongolia where it has been implemented in the biggest scale to date. It is reported that the project land has accumulated to 35,040,000 *mu* (around 2% of the total area of IMAR) in Inner Mongolia over the past five years, 13,300,000 *mu* (above 1/3) of which is converted cropland and 21,740,000 *mu* (about 2/3) of which is desolate mountain or land. 96 banners or towns with 1,690,000 households (6,000,000

persons) are involved in it. It is said the project is efficient because the annual artificial forestation has been lifted to 10,000,000 *mu* compared to 5,000,000 to 7,000,000 *mu* before 2002. The green coverage rate within the project area has increased from 15% to 70%, and thus soil erosion, wind erosion and desertification are generally halted[43].

This "grain for green" project is one of the most visible constructions on the rangeland. From entering the landmark of Taipusi Banner, the first banner of Shilingol League neighboring the southern non-pastoral province (see Map 1.3.), fenced pieces of grassland or trimly planted small woods can be seen here and there. Each of them has a signboard, making such statements as; "Experimental point of converting cropland for grassland", or "Sand control experimental point", or "Ecological conservation area".

4.3.2. "Close Rangeland and Resettle Pastoralists" strategy

The local government has also taken several initiatives in response to national concern for the environment. *Weifeng Zhuanyi Zhanlue*("Close rangeland and resettle pastoralists" strategy) is a major policy initiated by Shilingol League government. The government deems that letting the rangeland rest is the best way to prevent the possible "ecological crisis". Starting with an administration unit of 6 persons, this policy has been systematically implemented since 2002 to nowadays. Just recently the Shilingol League government released the "2002-2010 Shilingol League Implementing "Close Rangeland and Resettle Pastoralist Strategy Planning Compendium (Revision)"[44]. The compendium is a summary of five-year's experience and also a prospectus of intending action. In order to begin the journey to the sustainable development, a series of systematic and integrated policies are enacted upon under this strategy. The core content is to "close rangeland for grazing, withdraw from pastoralism and shift to other industries, and realize intensive operation". In practice, it primarily involves two tasks: to close the rangelands, and to resettle the pastoralists.

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[43] News from Xinhua News Agency, reported by Li, Yunping on March 28, 2006. http://politics.people.com.cn/GB/14562/4244444.html

[44] On Shilingol League government official website, http://www.xlgl.gov.cn/htm/cyxm/wfzy/20060819338.htm, August 19, 2006.

According to the different situations of rangelands, they are classified into three categories: 1) completely forbidding grazing areas (about 11.7% of the total league land), applied to severe degraded rangelands that can no longer provide basic production and subsistence resources to the pastoralists. Under this category, livestock are not allowed to graze either seasonally or year-round. 2) Sand control areas (about 17.4% of the total league land), where grazing is forbidden during spring in order to make a good growth of grass from mid-April to mid-June. 3) Rotating grazing areas (about 64.5% of the total league land), applied to pastures in good condition. In such areas, grazing is also forbidden during spring and rotating grazing is expected to be realized gradually. A direct result of this grazing restriction will be the demand on pen-raising facilities and fodder. The administration believes that the grazing restriction will assist the grassland in two ways: it will enable grass to a gain foothold during an ecologically sensitive period, spring, when new seedlings have begun growing and it will cause herders to reduce their stocks because of the excess cost incurred by pen-raising (Bijoor 2002: 30).

Pastoralists are moved where resources are scarce and the ecosystem is fragile. Their life diversifies depending on where they live. In completely forbidding grazing areas (involving about 9.4% of the total league rural population), the whole *gachaa* is moved to outskirts of towns or places with good infrastructures[45] to do pen-raising or to go into industrial and service industries. However, principally, they still hold the use rights of the originally contracted rangelands. “Milk cow village” is the present dominant form and is most frequently seen during the fieldwork. The government considers that cow-raising is better for the grassland ecosystem since they are suitable for pen-raising and can use fodder more efficiently. In sand control area (involving about 9.7% of the total league rural population), some poor pastoralists are moved out as those in the first category and the remaining households need to construct fodder land and shed facilities to do pen-raising during seasonal grazing prohibition. Though pastoralists in rotating grazing areas (about 21.4% of the total league rural population) do not need to move out, they need to change the entire procedure of

[45] Usually the good infrastructure is defined with “five accesses”, including access to water, road, electricity, telephone and television.

herding, including fodder in place of natural grass, and pen-raising instead of free-grazing.

This strategy to be carried out over nine years, is a considerable investment by the government. The big numbers in table 4.3. indicate the government's determination to combat the ecological degradation and more importantly, they imply the relevant changes about to happen for so many pastoralists over such a large area.

Year	Sand control	Closure for grazing	Ecological immigrant	Moving to another location	Cropland for forestry[46]	Total investment
2002	196.5	32.5	46	12	25	312
2003	187.2	40 #	51	12	40	390.42 *
2004	196.2	42	40	22	50	350.20

Table 4.3. State investment in "Close Rangelands and Resettle Pastoralists" strategy 2002-2004
Unit: Million RMB

* including 30.4 for agriculture compositive development special project, 13.92 for Thousand Village poverty alleviation special project, and 15.9 for drinking water special project.

subsidiary fodder 109.925 million kilo.

[46] The cropland to forestry project is integrated into the general ecological strategy.

CHAPTER V

Adaptive Transformation of the Internal Institutions of Mongolian Pastoralism

The Mongolian pastoralism may change or adjust in response to the ecological environment, and in this kind of adaptation, the pastoralists may take rather active actions to fix the problems. Nevertheless, here the author tries to analyze the more passive transformation of Mongolian pastoralism in the process of history. To anatomize how the Mongolian pastoralism have adapted in terms of social measures, when the overarching systems have changed, chapter 4 has lined a periodical change of the overarching system and the coming discussion will follow the established phases to explore the internal transformation. The author suggests that the internal transformation is mainly in relation to the three aspects discussed above, the comprehension of rangeland right in Mongolian culture, the traditional Mongolian pastoralism wisdom, and the socio-economic unit *ail* in rangeland management. Most of the time they may be expressed in less visible manners, or in alternative appearance, being persistent in the values, the indigenous knowledge, and the voluntary institution.

5.1. Rangeland use over different historical period

5.1.1. Customary use of rangeland before collectivization (Before 1958)

Mongolian pastoralism first experienced the official limitation of migration territory in the Mongol Empire. The long-distance big scale migration of the whole tribe in old days, *Kuriyan*, was replaced by households united migration within the boundaries (Aorenqi eds. 2004: 100)[47], which however did not narrow the pastoral space so much on such a big steppe. The rough demarcation was also not so strictly enforced (Aorenqi eds. 2004: 52). Actually this political power from the pastoral society was so aware of the secret to sustain on this steppe that it secured the traditional way of herding and the conditions to practice it with state orders and legal codes. Even though the general system organized every household into different levels of group for the military function, it also integrated the production function. Each group head was not only an administrative officer but also a leader for finding enough pasture for the group herds (Gegengaowa & Wuyunbatu 2004: 172). In the years after the

[47] Wang (2001) estimates that, if the pastoral population density was 0.5person per km2, one Kuriyen composing of 1,000 households, around 5,000 persons, would move around 10,000 km2 pastureland, which was nearly the size of one banner in the Qing Dynasty.

Mongol Empire when political structure fell into smaller tribal unions, the mobile pastoral activities were carried on as before except that they were again a whole tribal migration and the migration routes changed according to the power territories[48].

Another division of the Mongolian steppe in the Qing Dynasty built up the banner system as the central governance over the Mongols, of which rangeland management was a subordinated function. First, all pastoral activities must be conducted within the banner. Since the division of banners generally followed the original tribal territories, each banner was generally composed of different seasonal pastures. However, at this moment banner boundaries were rather strictly enforced, mainly to show a successful local separation and to symbolize an effective central control[49]. Second, a group of nobles, from *Jasag* to minor officials managed the daily use of rangeland. Their sociopolitical status gave the nobles great advantages in resource use.

The banner system directly reduced the migration distance and the different size of banner provided very different herding area to the pastoralists. For example, migration distance was around 30km in Xiangbai Banner, but could reach 60km in Sunite Banner and Ujumchin Banner in the north part (Wang 2001). Fortunately, the availability of different pastures within banners made traditional Mongolian resource management knowledge still feasible. Mongolian pastoralists at that time were still mostly pure nomads, who did extensive herd grazing and changed campgrounds seasonally.

Though the strong "paternalistic authority"[50] fixed every member a position in the stratified administrative and social class hierarchy, the dominant culture in banners was still so typical of Mongolian nomads, informal but practical. This mixture was crucial and central to the day-to-day operation of the pastoral economy because the two powers reconciled differently in different aspects and thus induced different changes to the internal elements of traditional Mongolian pastoralism.

[48] Description of the nomadic life at that time can be found in Burjgin & Bilik 2003: 54.
[49] Violation would penalize the responsible leaders for one-year salary. Wang (2001).
[50] Sneath (2000: 37) uses the word "paternalistic authority" to summarize the Mongolian pastoral society at that time.

The power of "paternalistic authority" could be best interpreted in the rangeland access. The rangeland management within banner was totally decided by the noble officials. Their main administrative responsibilities included assigning pastures, judging grazing disputes and arranging neighboring areas of pasture in adverse climate conditions. An immediate outcome of their control over access to pasture was the priority or exclusive occupation of good pastures[51]; a derivative outcome was that every pastoral household tried to stay on good terms with the temporal authorities. This not only ensured their security and access to grazing land (Sneath 2000: 54), but also favored them in possible grazing disputes.

From another perspective, this power did not erase the households' customary rights to use recognized pastures, and thus evidenced the respect held for their historical roots. Individual households generally had customary use to particular pastures even if they were not firmly divided except winter ones. Winter was considered to be the season short of forage and thus each household had exclusive use of a fixed winter pasture. The allocation was rather flexible upon negotiation. The division of pasture between different households was also a fairly loose one, marked by topographical features such as rivers and hills (Sneath 2000:36), but the winter pasture boundaries were rather strictly executed. Those reflected the succession of indigenous practices.

Moreover, the acceptance of customary use rights of rangeland, in spite of its authority ownership, was supportive to some basic Mongolian values towards the rangeland, like their conceptualization of the rangeland and the environment. Hence, ceremonies like *oboo*, were still significant to ensure that these spiritual masters of the land would secure favorable conditions. Additionally, wealth was still constituted by livestock, not pasture *per se* (Sneath 2000: 36).

The banner system also elevated the importance of household cooperation. In a stable

[51] An extremely detailed study of one Mongolian pastoral community in the mid-1950s, *Social History Investigation of the Mongolian Nationality*, reported that in the pre-revolutionary period banner princes, monasteries, and some other powerful families, all tended to claim the exclusive right to use large areas of prime pastureland (Mengguzu Shehui Lishi Diaocha IMAR Editorial Group 1986: 40).

political environment, small unit reliance was more dominant. However, interpersonal relationship among Mongolian pastoralists experienced tremendous change during this time because of their stratification in wealth. The multiplex nature of relations between rich and poor households, named as "patron-client relation" by Sneath (2000: 41), was reflected in several arrangements.

One customary arrangement was to the entrustment of placing herd (Mengguzu Shehui Lishi Diaocha IMAR Editorial Group 1986: 60-63). In this arrangement, the herding households who did not own enough animals but still managed their pastures were entrusted with livestock of nobles, monasteries, and rich families. This system could benefit the herding household a proportion of the animal produce and offspring; those lamas, noble officials or rich families could retain and grow their animals without personal attendance. This arrangement also enabled some families specialized in herding some types of livestock instead of all.

The role of *ail* was prominent among household cooperation at this time. The general principle was still that the constitute households pooled their herds together and divided pastoral tasks among them so as to benefit from the scale economy and labor specialization. However, it entailed more economic consideration in its organization at this time. Simukov (1933: 29) noted "wealthy households preferred to have two or three poor households in their *ail*" and "grouping in *ail* on the basis of property equality was very uncommon". Work shared between members of such composition was clearly favorable to the rich herdsmen, because they owned more numbers of the livestock, but the poor herdsmen got necessary facilities, like camels, carts and seed animals. Importantly, mutual solidarity, friendly interpersonal sentiments and mutual obligations were still necessary elements embodied in this organization.

The social stratification also caused their differentiation in productive strategies. Sneath thinks that the Mongolian pastoral households were operating in the strategy spectrum between "yield oriented" and "subsistence oriented" (Humphrey & Sneath 1999: 225). Rich

households owned large numbers of animals were "yield oriented". Their large herds enjoyed scale economy in many ways: a little more labor than small ones and a relative large numbers of movements in both length and frequency and the feasibility of herding different animals separately. Poor households owned small numbers of herds were more "subsistence oriented". With the small herds, if they did not participate in joint large scale herding activities, they would limit their mobility to unavoidable ones in both lengths and times. The labors and equipments required by migration thus differed the household or *ail* based production strategies.

Significantly, most Mongolian routines, laws and rules in rangeland use and conservation were inherited and obeyed during the Qing Dynasty. The basic Mongolian cosmology and their attitudes towards the nature were not affected so much in spite of the general suppression of shamanism.

5.1.2. Impact of the first round Han immigration and land reclamation

Han immigration directly increased the demographic pressure on the rangeland and the cultivation activity unprecedentedly altered the land use pattern. The occupation of land straightforward reduced the pastoral space and it frequently disturbed the pastoralist's migration route, campground arrangement and grazing habits.

The first round of Han immigrants to Inner Mongolia at the turn of the 20th century mostly settled down around the provincial boundaries when they found a proper land to cultivate and so the rangelands close to Out Mongolia was seldom reached at this time. Mongolian pastoralists and their activities were thus affected in different degrees depending on their locations. Pastoral space was much narrowed in the south. For example, the migration frequency in the south was obviously much less than it in the north. Pastoralists in the north migrated 15 to 16 times a year but those in the south only moved 5 to 6 times a year (Wang 2000: 27).

The affected Mongolian pastoralists divided into two groups: those who insisted on

pastoralism and those who preferred to turn to agriculture (Wang 2000: 32). Radical resisters made severe confrontation against the reclamation activities. Other pastoralists who insisted on nomadic pastoralism had to move northward to the pure pastoral area. During the Republic of China, when large area of rangeland in Xiangbai Banner and Xianghuang Banner (southern banners of Shilingol League) was converted, many pastoralists moved with large quantities of animals northwards. This nevertheless caused shape increase of grazing pressure on the northern rangeland and many sheep died because of inadaptability to the new environment (Wang 2004: 106). The common pastoralists stayed in their original areas had to adjust their pastoral practices for coexistence with the agricultural activities. Cut by farmland, use of rangeland based on the banner unit was impractical. In Xiangbai banner, migration was confined downward to *sum* boundary and winter pasture was clearly allocated to the households (Mantie diaochabu 1937: 294). There were also frequent conflicts between the pastoralists and peasants because of the intercross of land. Peasants often complained that the crops were eaten or trespassed by animals but the pastoralists complained that there were much less pastures to graze, herding route was subjected to the change of land use, and mobile way of life was also getting harder because of the limitation of campgrounds.

One of the prominent changes was pastoral sedentarization. Russian traveling ethnologist, A.M. Pozdneev, recorded that most Mongols experienced a process of settlement from mobile tent to fixed tent and finally to Han style house in mid-Inner Mongolia (Pozdneev 1983: 428). Pastoral activities based on sedentary life were either conducted in a fixed home ground, or between two fixed campgrounds[52]. Besides, empirical study indicated that less animals that could be raised in sedentary life (see table 5.1.).

Place	Fixed tents	Mobile tents	Livestock quantities	Population
Mobeibodama	5	50	Cow200, horse 200, sheep 2500, camel 150	128
Hazhaqiwusilema	26	--	Cow 100, sheep 500	150

Table 5.1. Comparison of two pastoral groups in Chahar semi-pastoral area in 1935[53]

[52] For instance, in the south Shilingol League, most middle-income pastoralists lived in the houses in winter and in mobile tents in summer; pastoralists also constructed pens and raised animals with harvested hays at home ground (Wang 2003a: 68).

[53] Mantie Jingji Diaochahui (1935): 27-29

When animal quantities were not enough to make a living, pastoral households had to take on cultivation as a supplementation. They often cultivated land near the summer camp where had access to better water points. Cultivation also became an option for pastoralists when there were disasters. Pozdneev (1983: 471) observed that the pastoralists in mid-Inner Mongolia who suffered a big loss of animals after cattle plague had to turn to cultivation. This conversion to agriculture fundamentally changed the landscape of rangeland. Mongolian pastoralists who turned to farmers became gradually detached from the core of their material culture-pastoralism. In the mixed region of southern Shilingol League, settled or semi-settled Mongolian pastoralists also took on many elements of Han farmer practices.

It should be aware that the actual social change in the pastoral regions was rather slow even though the political environment was so tangled and unstable during the period between 1900s and 1940s China. Because their control of grass-root practices, especially in deep grassland, was indeed loose[54]. In the initial years after the establishment of IMAR, though several reform polices were declared to get rid of the class hierarchy and land ownership in pastoral area, it took time to form and recognize the new orders. The arrangements formed in the previous society got rather rooted. For example, when the privileges of nobles and monasteries to use good pastures had been abolished by the communist revolutionary reform policies in the late 1940s and early 1950s, the land used by each family remained almost the same as before (Mengguzu Shehui Lishi Diaocha IMAR Editorial Group 1986: 40). The mixture and unclear demarcation of farmland and pastoral land, had caused a lot of disputes among peasants and pastoralists. Even though after the establishment of IMAR, local governments were rather dedicated to confirming the existent demarcation of farmland and rangeland, daily conflicts of rangeland encroachment still happened from time to time.

5.1.3. "Free-riding" during the Commune period (1958-1978)

The pastoral Inner Mongolian society was radically reorganized through collectivization under People's Commune. Collectivization virtually changed the ownership of animals and

[54] For instance, in East Ujumchin Banner, according to some senior herdsmen, the pastoralists had no movement limitation before the People's Commune period (Li et. al. 1993: 65).

rangeland, the allocation of and the consumption of animals. The traditional comprehension of labor division, the function of household and the utility of *ail* group in pastoralism was greatly challenged. The brigade took over several important functions of household; decisions like production, consumption, financial management and development planning, were all made by the brigade; brigade also made arrangement for seasonal use of pastures, and allocated labor and money for production. Pastoralists became work point earners relying on their labors of looking after the animals. The collectivization implied that the pastoral economy management had largely been in the hands of cadres rather than private owners.

In practicing pastoralism, many changes in the unification or separation of some brigades affected the unit boundaries, which created troubles to migration. Among families, specified labor division was designated. Each household was assigned to take care of one kind or flock of animals. The brigade also arranged "specialists" to take care of valuable horse herds (Li & Ma & Simpson 1993: 68). However, cooperation among households like *ail,* was arranged by brigade instead of being upon private coordination. Those changes actually undermined the importance of traditional Mongolian organization and the identity of being a Mongolian pastoralist. Nomadic movements were still frequent in pure pastoral area at the beginning of the People's Commune period. However, the egalitarian mechanism in income distribution and loose management during the Cultural Revolution period led to less and less movement of the herds. There was also phenomenon of free grazing over commune boundaries in lack of strict monitoring system. But it was mainly because everyone thought that all things belonged to the state and thus it did not matter.

Sedentarization was greatly promoted by the government since the 1960's because nomadism was considered as backward and something to be eliminated. It was assumed that permanent houses and shelters in winter would improve pastoralist's living conditions. However, due to water shortage or limited grazing land, the critical time for calving and lambing in the spring, houses and shelters were actually built in the spring pastures in most of the pastoral areas in Inner Mongolia (Li & Ma & Simpson 1993: 68).

Additionally, communist ideology was so prominent in public sphere that the practice of Lamaism and other ceremonies like sacrificing the *oboo* largely disappeared or were reduced to a secret private matter. Importantly, the Commune institution was also structured for executing political campaigns down to the grass root level.

But, in fact, a whole series of fundamental aspects of Mongolian society had been retained even if life in the new society would bear increasingly little resemblance to the old (Sneath 2000: 95-6). Household was still the actual base of daily operations, private cooperation still held a deep root, the indigenous knowledge in encampment, mitigation between animals and rangeland, household internal labor division, and so on were not radically altered. The revival of the traditional Mongolian pastoralism elements after 1980s was a clear evidence of their persistence.

5.1.4. Impact of the second round immigration and land reclamation

The consequences of Han immigration and rangeland reclamation in 1960s were extraordinarily impressive during this fieldwork. Many stories were told and the converted landscape was as well evident. Beside the general increased demographic pressure on rangeland, different immigrants had influenced the Mongolian pastoralists and the pastoral economy. It was found that the disaster immigrants were generally dispersedly located and they often took on the local activities, either cultivation or herding; the organized immigrants to state farms were directly involved in large scale cultivation of rangeland and most of them had moved to *sum* centers or towns. Interviews found that generally Hans were cultivators and Mongolians were pastoralists. Actually the regional distribution of Mongolian population is mostly in compliance with the regional pastoral economy situation: there are more Mongolians in the banners more replying on pastoralism (see figure 5.1). From south to north of Inner Mongolia, migrated Hans get less and less. In northern Shilingol League, there had been few Han living there before 1950s, but nowadays there are around 30% Hans and even 70% in the city, like Shilinhot. However, it was strongly felt during the fieldwork that the Hans and the Mongolians had quite separated circles. The migrated Hans were not generally incorporated into the web of interpersonal relations of the Mongolian community, but dealt

with on a more purely commercial basis as a relatively impersonal source of labor (Sneath 2000: 46).

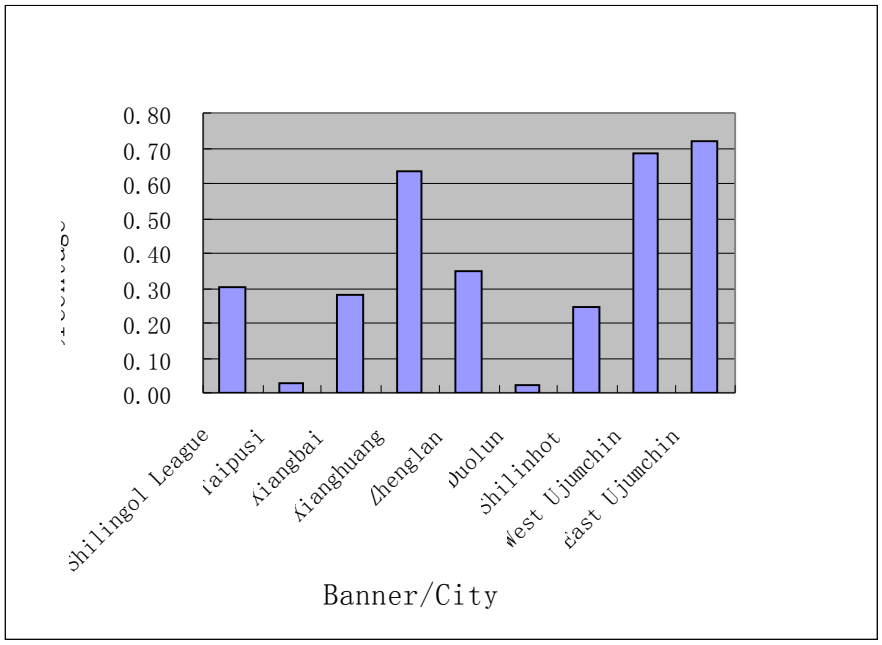


Figure 5.1. Mongolian population proportion of banner/city in Shilingol League 2002[55]

The consequent expansion of agriculture has also converted many Mongols into peasants. The following table 5.2. indicates that there had been less proportion of Mongolian population engaged in pastoralism but more in agriculture.

Year	Pastoral	Semi-agriculture	Agriculture	Total
1947				
Number	148,232	513,917	--	662,149
Percentage	22.4	77.6	--	100.0
1995				
Number	528,401	1,921,463	417,617	2,867,481
Percentage	18.4	67.0	14.6	100.0

Table 5.2. Distribution of Mongolian rural population by activity, 1947-1995[56]

The immigration of Han to Inner Mongolia basically changed its demographic feature and tremendously increased the pressure on land use. More importantly, migration of Han generally went together with the conversion of rangeland. Rangeland reclamation not only itself narrowed the room of pastoralism, but also had far-reaching ecological impact to the present environment. Although there were some areas suited for cultivation in a short term,

[55] Based on Inner Mongolia Yearbook 2003.
[56] From Wang et. al. (1997): 128.

most of the Inner Mongolia region was too dry to sustain agriculture. After a few year' cultivation, those pieces of lands turned soon into sand and so caused erosion or desertification. They are affecting the neighboring rangelands and even alter the whole environmental systems.

5.2. Practices of Mongolian pastoralism under HPRS

5.2.1. Transformation of resource management system under HPRS

Pastoral economy was again defined as a matter of household management through the Household Production Responsibility System. As a part of the economic reform in China, this system reflects the guiding neoclassical economics theory in many ways. It is ideally assumed that each pastoral household is a rational supplier in reaction to the market demand. It will make husbandry decisions based on possessed production factors (both labor and rangeland). After nearly twenty year's implementation in Inner Mongolia, the practices of pastoralism are much closer to the theoretical model than other places, which means that pastoralists organized in household units settle on allotments for year-round use and carry out their management. Under HPRS, the relationship between animal, rangeland and pastoralists (see figure 5.2.) is very different from it in traditional pastoralism (see figure 3.1.). Importantly, the role of pastoralist becomes a supplier of market demand rather than a mediator between the rangeland and animals.

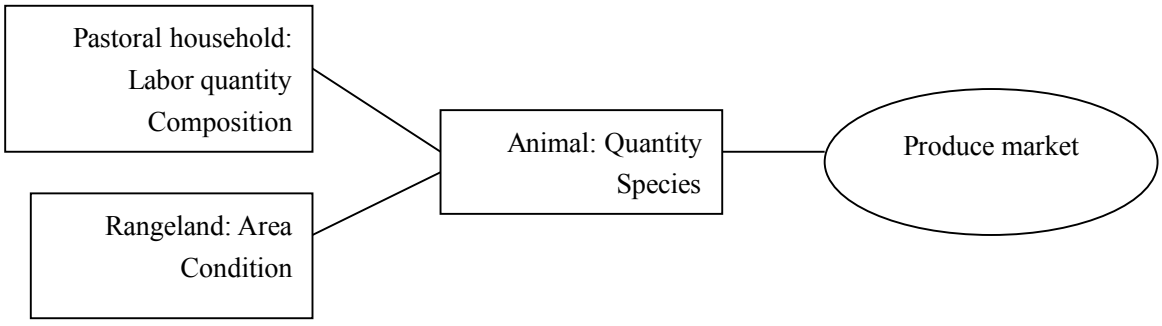


Figure 5.2. Ideal pastoral production process under HPRS

Therefore, it is not surprising to see that this institutional design is contradictory to several fundamental premises of Mongolian pastoralism. Basically, the mobility and flexibility being achieved through extensive use of rangeland and seasonal change of pastures, are terminated by this official institutional arrangement. It is also concerned with the change of relationships

among households, which may reflect animal management, facility use and labor cooperation.

Significantly, HPRS disables the share of most facilities. Each household needs to construct individual facilities on their contracted rangeland. However, the conditions of different households vary because they have different financial abilities. This is especially clear at the time of disasters. Many poor households cannot afford much investment in construction of sheds and pens so that their animals were blocked to death under the collapsed shelters. Water source is another example. Since contracted rangelands have different access to the existed water points, most families need to invest in a well. Rich households can invest in electric pumps to make good use of underground water and even to irrigate fodder field; however, poor households can only afford a well with poor quality surface water.

The household production system also tremendously changes the cooperation relationship among pastoralists, of which the *ail* transformation is a good demonstration. *Ail* is an informal but voluntary organization upon various kinds of complementary need but this need is rooted in the mobile life when combination of both labor and animals can bring more benefits to everyone. However, after allocation of the rangeland, the utility of such organization decline dramatically. On one hand, less mobility required less labor cooperation; on the other hand, combined animal herding is hard to arrange on private contracted lands. There are still *ails* composed of two or three households, moving to the undivided summer pastures. Economic interest becomes the top concern of such cooperation, no matter if it is among relatives or just neighbors or even between Mongolians and Hans. Sedentary life actually broke several potential *ails* because the households live in different centralized *gachaa* and had to graze in their designated areas. Hence, flexibility in *ail* composition is further limited. Despite of the decreased need of cooperation in migration, assistance or help among households in daily operation or in emergency is indispensable. The local government has made permanent the economic importance of kinship relations by allocating pastureland to an extended family (Humphrey & Sneath 1999: 136). Residential neighbors are definitely the first choice of daily assistance, but it is not always the case. It well happens that the kin-

related household manage separately both in their production and consumption activities on their common allocated pasture, while households belonging to different residential groups may well establish extensive cooperation in herding management (Sun 2005: 92).

With household, pastoral activities have also undergone big transformation. Generally the content under the HPRS is rather different from before. A comparison of present year-round pastoral activities with the traditional ones (see table 5.3.) show that pastoralists nowadays need to spend less time in migration but more time in preparing fodder and shelters. There was no such Mongolian tradition to store fodder or hay for animals in autumn and winter. Local government promoted it as a strategy to rescue starved livestock in white disasters and to save loss. After the forbidding grazing in spring or year-round in some areas, cultivated fodder and mowed hay become main source of animal food. Besides, there are also some periodic activities, like fencing maintenance, shelter maintenance, hybridization and veterinary inspection. These new activities show from an angle the change of pastoral management and the change of pastoralist lifestyle.

Month	Traditional pastoral activities	Present pastoral activities
March	Calving and lambing	Calving and lambing Cultivating fodder
April		
May		
June	Migration to summer pasture Clipping sheep and collecting mohair from goats	Migration to summer pasture Clipping sheep and collecting mohair from goats
July		
August	Migration to autumn pasture	Harvesting/buying fodder Mowing hay Migration to sedentary pasture
September		
October		
November	Migration to winter pasture	Cleaning shelter
December		Selling animals Feeding animals in shelter
January		
February	Migration to spring pasture	

Table 5.3. Comparison of year-round pastoral activities

Further, the change of labor division is as well evident. In nomadic times, men herded livestock at some distance from the encampment, looked for lost animals, dug well and decided migration route; women were responsible for all works in encampment and primary

process of produce (Wang 2005: 68). However, with the reduction of migration, men worked less and less. As noticed in my fieldwork, women do almost all the works and men only do some heavy works because nowadays most of the works are accomplished near the settled place. The main job of a man in a day is to drive motorcycle to the contracted rangeland in the morning to open the fence door for animal entrance and in the evening to let animals out for home pens. Even though, paternalistic power is still dominant in animal sales and other big decision.

A prominent result of executing HPRS is a more rapid sedentarization. Limitation of movement within contracted rangeland under HPRS obviously favored a sedentary lifestyle. After forty years, 90% of the pastoralists in Inner Mongolia have settled or semi-settled (Yeshan 2004: 133). Beside several other advantages[57], sedentary lifestyle is especially believed to provide higher ability in resisting natural disasters and thus guarantee production stability. In the snow disaster of 1977, 90% of the animals in Shilingol League died (Yeshan 2004: 133). Whereas, it is ambivalent to see that in the prominent snow disasters in 1984-85 and 1998 when sedentarization had taken place in most areas, still plenty of animals died out of starvation and coldness when several-meter-deep snow covered the land and the transportation was cut off. In traditional Mongolian pastoralism, herders relied on bigger herd quantities and the possibility of moving to other pastures to reduce the impact of natural disasters. This movement could be out from the winter and summer pastures, and even across the banner boundary (Wang 2001). One can not look at local parts as isolated plots unless one is willing to face the disastrous consequences this may have for the individual management units confined to such local plots (Sun 2005: 97). Contracted rangeland and sedentary lifestyle thus limit availability of pastures in face of seasonal and accidental variations of the ecosystem. Nowadays the pastoral households must reply on better-constructed shelters, ample storage of hays, and prompt assistance from outside world to fight against disasters, which however depend on household financial ability, hay production and market and the organization of assistance, these very elements of "industrial society".

[57] Such as better communications with outside world, centralized supply of services like health care, education and power supply, and improved living and working conditions.

5.2.2. Restrictions on household resource management

Fieldwork finds that the pastoral household resource management is in an awkward situation; it has fundamentally diverged from the traditional system, but it has been hopelessly far away from the ideal design as well. Because none of the production factors including labor, rangeland and animals, are not at full disposition of the pastoral household as they are presumed in the ideal household management system. Instead, they are subjected to many restrictions.

Restriction of labor is not only from less cooperation among households, but also from fixed area of contracted rangeland. The initial allocation of rangeland and animals based on the number of household population looked rather fair. However, different household's domestic development cycle makes them greatly different after a few years. Fertility, mortality and marriage practices make household highly imbalanced in per capita rangeland. So there exists a general contradiction between rangeland redistribution and household imbalanced land area. The government position is to affirm the contracted land by Grassland Certificate, because periodic reallocation of land may be harmful to both land tenure security and the investment on contracted land. The heritage thus becomes a choice for the family, which means not all of them can be pastoralists. Hence, the prevalent solution of this land shortage is to have fewer children or some of the family members moving to urban areas for other occupations.

Rangeland and animals are more directly subjected to stocking rates stipulated by the government. Ironically, the presumption of it is that the local pastoralists have no such mechanism nor such knowledge, nor such motives to use the resources in a sustainable way. This actually shows the establishment of external institutions in ignorance of internal institutions and thus the government indeed takes away some important decision-making rights from the pastoralist. The launch of stocking rates required them to reduce some livestock but this definitely means the household living standard become lower. Some big families can no longer rely barely on pastoralism to support the whole family. Most families interviewed in Shilingol League actually thought that the present stocking rate (28 *m* per

sheep unit) was too high to have enough herds.

Pastoral households have adjusted their management of animals and vegetation accordingly after the execution of stocking rates. First, animal structure has greatly changed. Although the total animal quantity of Shilingol League has raised from 7.13 million in 1981 to 15.21 million in 2002, big animals has dropped from 1.276 million to 0.726 million, of which horses has decreased from 0.46 million to 0.13 million and camels has deceased from 54,000 to 6900 (Aorenqi eds. 2004: 106). Since one big animal will take five times the rangeland area of a small animal, households with small contracted rangeland only raise small animals and those with bigger contracted rangeland also raise some cattle. However, horses and camels are seldom parts of the herds anymore. Besides, the availability of modern transportations and the less mobile lifestyle make the utilities of camel and horse decrease a lot. Even though many families want to raise one or two horses, the symbol animal of Mongolian culture, they cannot afford their consumption. Most families still raise at least one or two cattle for producing milk products, which is a big part of their diet. Additionally, goats are greatly blamed for its severe destruction to the grassland, they are not allowed by most local governments. Therefore, a household's herd is composed of many sheep, a few goats and a few cattle. The big herd of sheep is also a response to the market demand. Sheep has the advantage of higher productivity and more commercial value including its hairs. The table below (see table 5.4.) shows that different banners have quite different livestock structure but generally most banners have much more small animals than large animals, especially these with deep-rooted pastoral economy. The change of household animal composition not only means that some traditional management knowledge is no long practical, but also implies or reflects changes in people's life. Because the various species used to provide different necessities for the pastoralists: sheep and goat for meat and winter clothing, cattle for milk, horses for riding and camels for transportation.

The second resource management change in response to the government restriction is to explore more sources of fodder supply as a supplement of the natural vegetation. With access to extra hay or fodder, the household can raise more animals. Presently there are three

channels to get more fodder, to buy from abundant neighbors, to buy from the forage companies, or to plant fodder in a small part of the contracted rangeland. Cultivation of fodder is greatly promoted as the supplementary way of supplying fodder because it is much more productive than rangeland in short term. Besides, the present "forbidding grazing" policy in spring or year-round, makes pastoral households store enough fodder for these periods. According to interviews, there are more cultivated fodder fields in semi-pastoral areas than pastoral areas, mainly because of the smaller contracted rangeland. A simple calculation can prove that fodder production is more economic. Usually each *mu* can produce 2,500 to 3,000 kilo fodder and a cow can eat around 20 kilo fodder a day. This means that 1 *mu* can support one cattle for about 125 days (four months) and so 3 *mu* can support the cattle for a whole year. Comparatively, stocking rate stipulates that one cow needs 140 *mu* natural rangeland to graze. However, this kind of husbandry, cultivating fodder and feeding the animals in pens, is much alike the practices of sedentary Han peasants.

Livestock Banner	Sheep & Goats	Large animals	Small to large animal ratio
Taipusi banner	211.5	27.8	7.60
Xiangbai banner	351.6	36.8	9.55
Xianghuang banner	336.2	13.6	24.72
Zhenglan banner	256.2	99.9	2.56
Duolun town	236.6	43.4	5.45
Shilinhot	813.7	23.1	35.23
West ujumchin banner	1544	90.8	17.00
East ujumchin banner	2403.6	109	22.05
Abaga banner	1079.8	76.4	14.13
West sunite banner	660.9	13.1	50.45
East sunite banner	685.7	46	14.91

Table 5.4. Livestock quantity of banners in Shilingol League 2003[58] Unit: Thousand

Hence, the actual pastoral production process (see figure 5.3.) is not like the ideal one (see figure 5.2.) because all the production factors including labor, rangeland and animals, and further the constituent factors of each factor, are actually subjected to some governmental policies or measures in this way or anther as they are discussed above.

[58] Based on statistics from Inner Mongolia Yearbook 2004.

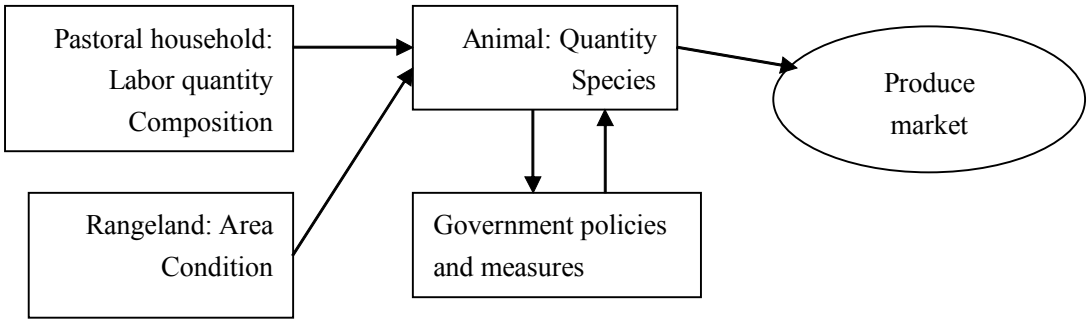


Figure 5.3. Actual pastoral production process under HPRS

To sum up, contemporary Mongolian pastoralism no longer exists in a systematic series of strategies in rangeland resource management because the setting provided by external institutions provide restrain its coherent internal institutions from functioning as before. Nevertheless, this does not erase the frequent application of traditional herding knowledge in daily practices, which in another way implies the strength and deep root of the indigenous knowledge.

5.3. Gradual differentiation among Mongolian pastoralists

It is important to distinguish the different changes that HPRS and the afterwards governmental management measures have brought to different pastoral areas. Firstly, governmental policies are executed in different manners based on different administrative foundations; secondly, different areas have quite different demographic features formed in different historical experiences; thirdly, different outcomes of reform in different areas assort them to different policy target group in further development scheme.

5.3.1. Differentiation among *gachaa* members

Pastoralists generally became wealthier than the commune period after the implementation of HPRS. But a few years afterwards, the household economic situation of *gachaa* members started to be quite different from each other. This had to do with their different family cycle and different management of herds. The fieldwork has found that most of the pastoral households still heavily rely on animal husbandry for their income and there are relatively few opportunities to supplement their income from other activities. Hence, their different economic situation can directly indicate their difference in pastoral management. According

to an investigation done by Tuya in 2002[59], 25 households in 8 banners have been allocated in such a distribution: 24% rich households, 52% middle households, and 24% poor households. Interviews in different *gachaas* also confirmed this distribution. However, with the rather high stocking rates, all households need to seek for extra fodder to keep the quantity of animals. Rich households can afford extra fodder but poor households have to slaughter animals in compliance with the strict policy. A vicious cycle is going on in such way: the rich households with the ability to invest are getting more animals, the poor households with no ability to invest are getting fewer animals.

In the way of getting extra fodder, renting extra pasture has significant result. Pastures for rent (around RMB3-4 per *mu*) are usually the contracted rangeland of bankrupted pastoral households. They will either work for others or move to town for opportunities. Pasture for renting can also be personal portion of rangeland, which cannot be used by married away persons. Interviews have found that pasture renting has become common in pastoral area. However, an anxious phenomenon is that pasture-renting has become a new investment way of urban capitalists (Sun 2005: 65). They rent the pasture and employ the bankrupted pastoralists to take care of the purchased animals. Thus there is an on-going trend of commercialized and centralized operation of pastoralism and use of rangeland in the pastoral areas of Inner Mongolia.

Gachaa members are not unified as pastoralists anymore for several reasons. Firstly, at the time of contracting rangeland, these living in the *sum* center were not qualified for any pasture and it terminated several people's dependence on animal husbandry after being laid off from their jobs in town. Secondly, not all members of a household can be involved in pastoral activities because of limited rangeland and animals. Thirdly, members of poor households often become shepherds to work for rich household with many animals to manage. Shepherd has become a popular job for bankrupted pastoralist who has no other skills.

The differentiation of pastoral household also reflects on their different attachment to

[59] From http://www.nmgfgw.gov.cn/html/2006-3-21/2006321171814.htm.

pastoralism. Some households believe that being pastoralists is their destiny for life, even if the management is getting hard; other households think that raising animals is only a way to earn living and they do not believe the young generation with education in towns can bring them better life in future; some households have moved to town to engage in other activities with the governmental promotion of urbanization. However, they leave one or two members to take care of the animals and come back to help in busy season.

5.3.2. Differentiation between north and south

Because of the historical formed difference between southern and northern part of Inner Mongolia, the implementation of HPRS has brought about different outcomes in the south and the north. There used to be a lot of conflict between peasants and pastoralists in the south part because of animal trampling and converting rangeland. Contracted land right actually clarified their boundaries and especially after fences built up, the rangeland was much less offended. However, in the north part, rangeland is a rather abundant resource compared to the less population. In the first few years of HPRS, rangeland was only nominally allocated to each household but confinement of grazing to household rangeland was not exactly in place until fencing was required later. The contracted rangeland areas were also dramatically different between the south and the north. Interviews found that in the southern banner, the contracted rangeland area per person was only around 150 *mu*, but in the northern banner, each person had more than 1500 *mu* rangeland. This difference decides that there are much more space to move herds in the north and thus traditional Mongolian resource management knowledge are practiced more systematically there.

The afterwards strict implementation of stocking rates made pastoralists in the south have much fewer animals than the north and thus they are generally poorer than their counterparts in the north. They also had different arrangement of herding. The small quantity of animals owned by each household in the southern banners has made separate herding rather inefficient. Hence, joint herding of each species animal on collective summer pasture by rotating duty of *gachaa* members is a common practice in the southern banners. In the northern banners, most households organize production based on stem family and move two or three times a year

among the seasonal pastures.

Rangelands in the south are also facing more severe degradation than the north. The table below (table 5.5.) shows that population densities of south banners are much higher than their rangelands' carrying capacity. In the present political priority regarding ecology, the south and north parts, being assorted to different policy groups, are experiencing further differentiation.

Table 5.5. Grassland degradation and population carrying capacity of banners

Prefecture	Grassland degradation (%)	Population carrying capacity standard	Actual population density
East ujumchin	37	3	1.15
Shilinhot	23	4-5	11.23
West ujumchin	25	4	3.18
Abaga	62	1-2	1.57
West sunite	38	1-2	2.58
East sunite	38	3	0.96
Xianghuang	83	2-3	5.62
Xiangbai	50	3-4	11.37
Zhenglan	41	3-4	8.15

in Shilingol League[60] Unit: person/km2

5.3.3. Differentiation caused by ecological location

It was strongly felt during the fieldwork that the pastoralists are more and more subjected to environmental policies. The two big projects, "Returning Farmland to Forestry" and "Close Rangelands and Resettle Pastoralists", imply that the local ecological situation is detriment to the pastoralists' fates. These pastoralists, already being socially and environmentally marginalized, have to adjust to the new arrangements, and it is hard to say what kind of prospect they are going to have.

The concerned semi-pastoralists or pastoralists of "Returning Farmland to Forestry" project

[60] Revision based on Bao (2002): 210. Maker: Tian, ying. Rangeland degradation ratio is based on 1981-1985 the third time rangeland survey, which was done by Inner Mongolia Rangeland Survey Academy.
Population carrying capacity standard=United Nation land carrying capacity standard-Rangeland degradation caused carrying capacity decrease.
Actual population density is calculated based on population and land area statistics from Inner Mongolia Yearbook 2003.

have to stop their previous way of using land. They need to keep animals in pens at home and feed them with fodder. Besides, they take on the responsibility of conserving the land or the trees planted so that they can get compensation or subsidies annually after governmental inspection. This project has detached them from the familiar way of herding animals and is converting their way of life.

In the three categories of the "Close Rangelands and Resettle Pastoralists" strategy, pastoralists are facing different paths ahead and they need to adjust accordingly in different ways. Prominently, the pastoralists who were completely moved out of their original rangelands, are experiencing the most dramatic changes. Two resettled *gachaas* on opposite sides of a highway are chosen below to reveal what they have experienced. One *gachaa* was the first resettled *gachaa* in experiment of this strategy in 2000 and the other was moved to this location in October, 2004. What kind of model the strategy constructs was clearly visualized. Through interviews of several families, a general review of their resettlement processes were given. Moreover, they talk more about what kind of activities they are involved in at present. The interviews have found that the pastoralists are schemed under the same framework now, and it seems to provide same facilities to all the members, but because of their previous different situation, for example financial status, and their different power in the social system, the group is experiencing the on-going divergence. Significantly, a comparative overview gives an insight into how this strategy is changing.

Five minute' motorcycle drive from Sanggendalai town, a communication center of Zhenglan banner, I reached a village with apparent newly look. I was told that this was the first *gachaa* in implementation of "Close Rangeland and Resettle Pastoralists" strategy in Shilingol League and nowadays it was a model *gachaa* in its successful experiences. This *gachaa* was wholly removed here in 2001, and within its 115 households, there were only 30 Han households. This was a typical milk cow village exactly the same as the model was in the strategy blueprint: a centered residence site of built houses in lines with shelters for each house, milk cows raised in shelters and a milk station in the village.

The milk station had two rooms, one for milking and the other for refrigeration. The milk was transported to milk factories, either in Shilinhot (the capital of Shilingol League) or inHohhot (the capital of Inner Mongolia). There are three big milk companies named Yili, Mengniu and Wandashan and they had a little bit different purchase prices of the milk. At that time, the purchase price of Yili and Mengniu was RMB1.64 per kilo, and that of Wandashan was RMB1.66 per kilo. But those were for the milk from the black-white milk cow, and milk from normal cow was only RMB 1.30 per kilo.

A "model milk cow-raising yard" belong to the *gachaa* leader was located in the center of the village. It was composed of three yards, one as the pen, one for feeding and drinking, and the other for fodder storage. There were around 20 big milk cows and 10 calves. However, both the facilities and the herd scale were quite unique in this village. The two herders working there said that they were shepherds working for the *gachaa* leader and were provided accommodation with extra RMB300 each month. They were from Mongols from other place and there were also a few members of this *gachaa* who did not buy milk cows but worked for others as shepherd. Averagely each household had three to five milk cows, each producing milk around 20 kilos per day. Usually households with more animals preferred joint herding but those with fewer herded by themselves. The next interview was done with an old couple that did not raise any milk cow. The old man said his two sons had moved their animals to rented pastures (around 10,000 *mu*) in East Ujumchin Banner when they were relocated. Some families sold half of their animals and entrusted another half to some relatives or friends. However, most families had not enough money to rent pasture and had to sell their animals at half price[61]. For the entrusted animals, they needed to pay RMB80 (initially RMB50) for each month and after having calves, they needed to pay more. But cow price was dropping and the profit was really slim. Their rangeland was fenced in 1997 and Grassland Certificate was given in 1998. He was a senior in this *gachaa* and was consulted before fencing. Even though he had expressed that animals only moved within each household's rangeland would destroy the pasture, it was implemented. At the time of resettlement, their rangeland had not sign of severe degradation but because the *gachaa* leader was a regional

[61] Cow for RMB600-800 but the normal price is around RMB1500; lamb for RMB100 but the normal price is RMB200 to300.

model, the project planned to start with their *gachaa*. All of their houses were dismantled except the *gachaa* leader's but they got no compensation for that. His family used to have 4 warm shelters and 17 cool shelters. The dismantle made him lose around RMB200,000.

At that time their winter pastures were closed and the undivided summer pasture was still being used. Each person had 175 *mu* contracted rangeland and exchanged 15 *mu* of it for the present location. Although there were still some usable pastures in their original location, it was too distant to herd and return in one day. The collective summer pasture was mainly for haymaking. Besides, the milk cows need to milk three times a day and self-collected milk was given lower price. Therefore, only the cows of *gachaa* leader would graze in their original place in some season because they still had the house and shelters.

When they moved here, they paid RMB2,000 for a double room house with one warm shelter. Milk cow was bought at the price of RMB13,000 to 15,000. Loans were offered initially without interest for ten years. However, it was shortened to two years soon. Every four households joint to dig a well. Since milk cow needed very different techniques to raise from the normal animals, the government also organized training program for them. However, most pastoralists had no great interest to learn and mostly herded the milk cow in their old ways. The old man said even if infrastructures like electricity and communications were more convenient, most families were poorer than before. Their *gachaa* used to be the richest one in this region and even the poorest family did not rely on loans. But now there were several families having to survive with credits. Each household had to have one or two persons to work outside in order to support the family but language was a barrier in many cases. Later interview in another comparative poorer family confirmed this. It was seen that young men in the poorer family did transportation to earn more income, but most women had few things to do at home. They complained about several disadvantages of raising milk cow compared with their previous animals. It was risky to raise milk cow because it was so expensive and easy to get ill; it needed better food and care, otherwise, it did not produce enough milk; one or two milk cows could not support a family at all[62]. Some loans

[62] To make a simple calculation, each milk cow can produce 20kg milk each day and each kilo can sell for RMB1.60. Each cow need to eat 8kg fodder each day and 1 kilo fodder is RMB2. Therefore, one cow can bring such profit in one month (30 days), (1.60*20-2*8)*30=RMB480.

or debts to the fodder suppliers were quite normal among them.

The resettlement village across the road was actually a unity of two *gachaas*, totally 110 households, about 20 Han households. The appearance of its construction was almost the same as the other resettlement village. However, only half of the households moved here after ten months and many houses were empty because the other households were reluctant to come. The interviewees generally agreed that their original place was so severely desertified that they had to move out for a living. They said the soil of their rangeland was originally worse than the surrounding areas and desertification was obvious and quick in the recent ten years. Pastoral households of this *gachaa* was generally poor and so each household could only afford one or two cows, including the gachaa leader's family.

From the chats, several situations have been found different from the other resettlement village. Each household needed to pay RMB3,000 for the double-room house with one warm shelter; one pregnant milk cow cost RMB15,000 (actually some household got non-pregnant ones). Loan was still available but only one year interest exempted (which was originally promised to be three years) and needed to return from the second year; every household had a well dug by the government but the water quality from the shallow well was bad; their houses in the original place were kept; several households were unwilling to come and they were still in the original place. A general complaint is the economic predicament. Some woman said she used to have 40 to 50 cows, which not only produced milk products, but also provided fuels. Some also complained about the high cost of living here, but the only advantage was for children to get education. Most households were depending on the money they got by selling animals before moving here. The *gachaa* leader's wife told me that *gachaa* leader went to the banner government to ask for the promised subsidies since there was no execution by the *sum* government for a long time. It was interesting to hear some Hans operating the milk station saying that the Mongolian pastoralists were not familiar with the policies and they did not know how to protect their rights. What they used to do was just to follow some statements and regulations from the authorities.

The interviews in those two *gachaas* illustrate that the resettlement project has not been a

matured project. The milk cow village model has not brought the assumed better-off life to most pastoral households. On the contrary, they are vulnerably exposed to the market. On one end, they need to endure the waving demand of milk companies, and on the other end, they have to cope with the fluctuating price of fodder. Moreover, they need to tackle the loans. Such challenges have never been a part of a Mongolian pastoralist' life. Many argue that this is the avoidable pain on the way to development and modernization. However, the development plan without consultation of the local social context may not reach the presumed result and may produce unexpected social problems. These ecological immigrants are uncertain of the future in the resettled place, and they are doubtful of the day going back to their real homes.

CHAPTER VI Cost-Benefit Analysis of Institutional Transformation

At the beginning of this institutional change, the better-off achieved in short term was indeed eye-catching, but the increasing loss of the original internal arrangement benefits gradually offsets the merit of this new system. Several adaptive measures are also seen to survive the present framework. Since HPRS is expected to elevate the pastoralist's living standard and the afterwards policies are dedicated to a rational sustainable use of rangeland resources, an overview of the change in those two aspects will be given first. Afterwards, as an institutional change, it involves several costs in many ways. Based on institutional change theory, transaction cost, path dependence, enforcement and monitor mechanism are especially analyzed. In light of the several land encroachment cases and the recent special emphasis on legislation governance in place of bureaucratic governance, the cost of deficient legal institution is also counted as a big part of the cost. The cost analyzed here also includes the intangible one like the loss of the material cultural context. To evaluate the success of an institution, a rough equivalence to benefit-loss calculation, development is the general norm so often employed. Further on, the implied meaning of development by most policy-makers is analyzed to challenge its popular use.

6.1. Assumed benefits of new institutions

In the following, I will discuss two main benefits assumed to happen after the implementation of HPRS and the afterwards rangeland management policies.

6.1.1. Increase of pastoral household income

The living standard of pastoral households has been definitely improved after the implementation of HPRS. Primarily pastoralist's income has been increasing since 1980, especially from 1990 to 2000 (see figure 6.1.). Pastoralists also averagely earn more than farmers, even though it is always lower than the urban residents. HPRS did promote economic efficiency of the rangeland and enhance the wealth of pastoralists in the formative years. Interviews have affirmed the opinion that pastoralists indeed got rich very fast in the first years of reform and generally they were much richer than farmers and those people working in towns. Their improved living standard also reflects on the possession of most

home appliances and transportation tools, which were mostly purchased around 1990.

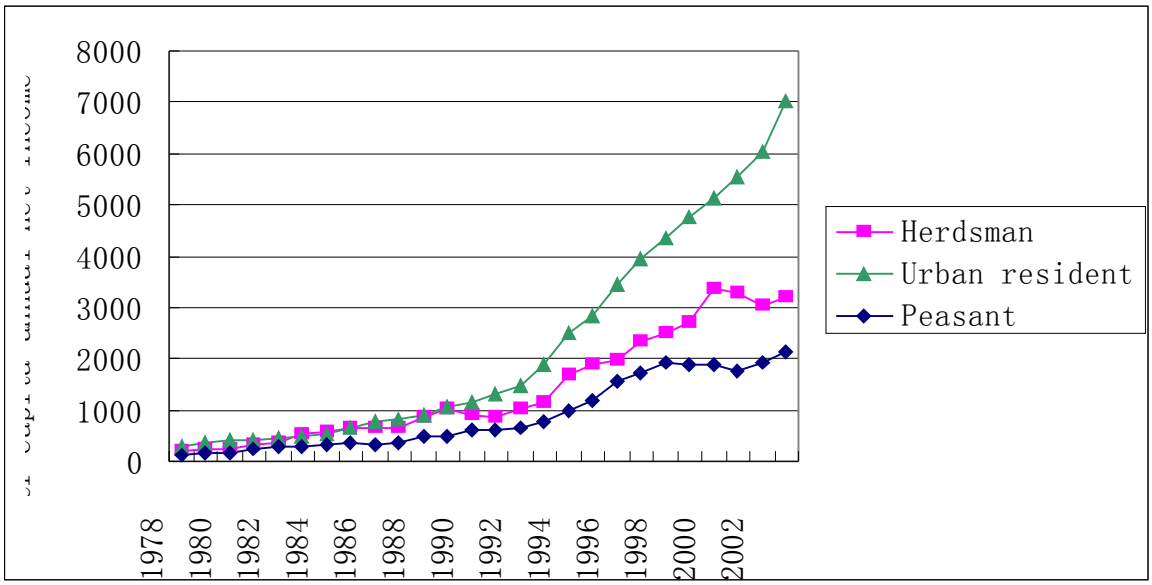


Figure 6.1. Comparison of annual average net income of per herdsman, peasant and urban resident of IMAR[63]

However, the income of pastoralists has been in stagnant since 2000. The slow, and even negative increase of pastoralists' income in recent years has put them far behind the living standard of the urban residents. This trend is in compliance with the more unfavorable weathers and degraded rangeland conditions after fencing. Since animal husbandry is still the dominant source of income for pastoralists, the quantity of animals can generally represent the household economic situation. After the implementation of strict stocking rates in late 1990s, the number of animals dropped (see figure 4.2) and pastoralist income dropped accordingly after two or three years. Interviews in northern banners even found that the wealth situation has been reduced to the level at the beginning of animal allocation. For example, to measure with animals, in a *gachaa* of East Ujumchin Banner, each person was allocated 50 animals including 25 sheep, 3 cows and 2 horses at the beginning of de-collectivization; but in 2005 each person had 60 animals on average.

At the micro-level, a simple way to observe the change of their living standard is by looking at their daily food consumptions. Visits to most households found that meat had become a

[63] Based on statistics in Inner Mongolia Yearbook 2004: 246-247.

precious food that could only be eaten in important occasions; milk tea was diluted or controlled to drink because of priority to milk lambs or calves; other milk products were less made and consumed. At the macro-level, most pastoral banners are still the poorest areas in China. Among the counties of Shilingol League, there are two "national level poverty county", Taipusi Banner and Duolun County, and three "provincial level poverty county", West Sunite Banner, Zhenglan Banner and Xiangbai Banner. The distribution of income among pastoral households is also very imbalanced. According to the calculation done by Pan (2003), the Gini coefficient of pastoral household income has increased from 0.31 in 1986 to 0.43 in 2001[64].

The on-going projects in seek of sustainable use of rangeland greatly influences the amount, type and source of pastoral household income. The state plans to give compensation or subsidy to the affected people according to the land area concerned. The compensation or subsidy can be in the form of grain, money and animal feedstuff. The pastoral household income is greatly determined by the implementation of such policies. Many complaints about the delay of payment and insufficient subsidies have been heard during fieldwork and those in debt especially felt the pressure of returning loans. Generally most pastoralists feel that household income is much less and unstable than before.

6.1.2. Situation regarding land degradation

The above discussion has given a clear clue of grassland degradation in Inner Mongolia. Immigration accompanied rangeland reclamation was the historical reason; the implementation of HPRS provided the very base of the "Tragedy of the Commons"; and the free grazing of poor households' unenclosed lands after fencing of rich households' allotments made partial rangeland conditions worse.

After governmental strict requirement on fencing, fence has become the typical scenery of the Mongolian steppe at present. However, fencing protection of contracted rangeland actually

[64] Gini coefficient is a measure of social distribution equality. It ranges from 0 to 1. 0 means totally equality and 1 means extremely unequality. The present social recognized standard is that number below 0.3 is good, 0.3-0.4 is normal, above 0.4 enters warning status and above 0.6 means the society is at the edge of possible turbulence.

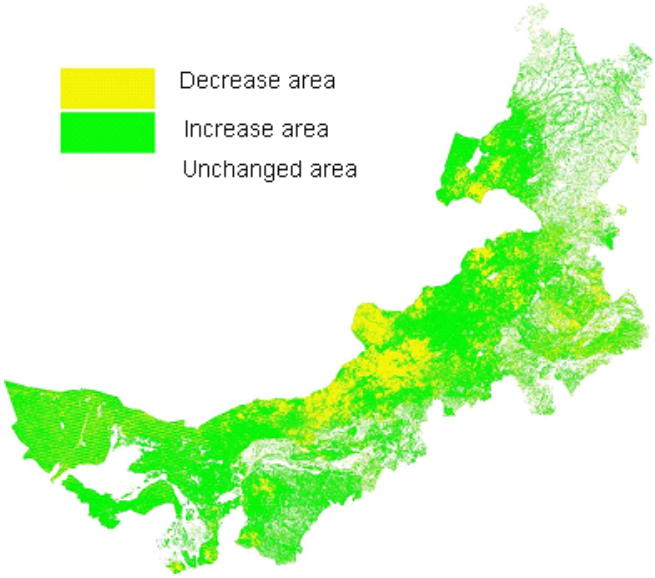
increases the grazing pressure of any unfenced areas. It has been seen during the fieldwork that most herders would like animals to graze any available forage along the roads. Every day when animals are driven to the contracted rangeland, they graze continuously the grass along the way, which are actually formed by fences. Another severe grazed area is the settlement area, especially around the wells. Centralization of sedentary pastoral households has caused the concentration of livestock and overgrazing near settlements. In the southern part of Shilingol League, pastoral households in a *gachaa* live in quite close houses, distant around 50 meters from each other; in the northern part, households belonging to the same *gachaa* are located more distant, around 1km to 1.5 km from each other. Hence, it was seen in the southern *gachaa*, land around settlements had little vegetation becuase it was trampled and grazed by whole *gachaa* animals at least two rounds a day. In the northern *gachaa*, the situation was much better because of different routes going to their contracted rangelands.

Within the fenced household rangeland, land degradation has not been halted as it was assumed. Statistics show that the percentage of degraded rangeland in usable rangeland of Shilingol League has rised from 48.6% in 1984 to 64% in 2000; the vegetation coverage has decreased from 35.5% to 27.2%; the average vegetation height has lowered from 40.9cm to 26.1cm, and the average grass production per *mu* has dropped from 33.9% to 21.24% (Aorenqi eds. 2004: 105). Though knowledge gaps exist, regarding rangeland ecology dynamics, both interviewed pastoralists and several scholars (Williams 1996, Liu 2004, Longworth & Williamson 1993, Aorenqi in Erdunzhabu eds. 2002, Richard et. al. 2003) agree that limited mobility within contracted rangeland lead to repeated animal grazing in most part of the year and the rangeland is indeed in worse conditions than before. Some radical scholar indicates that the present land use policies have actually accelerated the very ecological problems that the reform was intended to bring under control (Williams 1997: 775).

The measures in sustainable use of rangeland directly reduce the grazing pressure of the rangeland and give the time for rangeland recovery[65]. Hence, the below comparison of

[65] Even though some scholars like Liu (2004) argue that some grazing instead of complete forbidding grazing is more favorable to rangeland recovery.

vegetation production in 2005 with the previous five year's average (see map 6.1.), shows that rangeland in most part of Inner Mongolia has improved productivity.



Map 6.1. Comparison of vegetation production in 2005 with the previous five-year average in IMAR[66]

Nevertheless, some practices subordinated in the measures are rather controversial. The promotion of planting fodder in a small portion[67] of contracted rangeland is planned to solve the fodder shortage, but its construction involves several questions such as the source of irrigation water and the soil condition. The seemingly small portion of each household's land, can together impact the rangeland because the land itself is inseparable. Several scholars (Dalintai et. al., Erdunbuhe both in Erdunbuhe eds. 2002) have warned the tendency of another round of converting rangeland to farmland. The policy requests that as long as the land is cultivated, it cannot be left fallow and fodder has to be planted each year following the year it is started (Sun 2005: 84). However, degradation of land is a common experience after a few years' cultivation on the rangeland. If the household patches of cultivation are abandoned in future, it means more extensive desertification. Additionally, most pastoralists, especially those in pure pastoral areas, they have not fully mastered the techniques of weeding, fertilizing, loosening soil, irrigation, harvest and storage, so that without less care, the production of fodder becomes less and not efficient.

Another example is the "Returning Farmland to Forestry" project. After nearly five years

[66] Cited from Xing (2006)
[67] This fodder area varies from banner to banner but is generally within 10 *mu*.

growth, the project achieves a general green coverage, however, it does not show a sustainable future. Several problems undermine the prescriptive objectives of the project. Visibly, most of the trees do not fully grow up after years and weeds dominate many of the fenced grassland. Botanic specialist Jiang (2006) summarizes three troubles of tree plantation on rangeland: (1) trees can hardly survive in the arid region with an annual rainfall of less than 300 mm. Hence, excessive trees absorb precious groundwater on rangeland; (2) tree plantation intensifies land aridity. Without grass coverage, the evaporation increases; (3) trees do not provide a shield against sandstorms as previously thought. Observation in early spring when serious sandstorms occurs shows that the sands move just as much as before plantation of the woods. In addition, Jiang and other specialists[68] argue that aero-seeding, an efficient technology in planting grass, can only plant more seeds in soil, but cannot improve the conditions for grass growth. Additionally, exotic species are encroaching the indigenous species and will affect biodiversity in the long run.

Actually there is a strong link between ecological system deterioration and regional poverty. Aorenqi (in Erdunbuhe eds. 2002) has proved such relationship in the poor west China, where most of the rangeland is located. The deterioration of natural environment definitely has negative impact on the pastoral economy and thus reduces their income; reversely, less income limits the ability to invest in rangeland maintenance.

6.2. Cost of implementing new institutions

Institutional transformation involves several costs. The costs elaborated hereafter not only include the cost of establishing the new institution, but also the benefits of the old institution, which means the opportunity costs of further exclusion. The costs of transacting that derive directly from a society's formal and informal institutions are the key to understanding the performance of economies (Arhen 2002: 69). Hence, an evaluation of such costs can give an insight into the appropriation of the new institution and the values of the old institution. The evaluation below is based on some main hypotheses of the New Institutional Economics: transaction cost, enforcement mechanism, opportunistic behavior and path dependence. Their

[68] Other specialists like Liu, Shurun, and Dalintai, they have criticized the aeroseeding in several circumstances.

importance is on reflection of the characteristics of the rangeland and the contrast between the old and new institutions.

If we see the establishment of HPRS as a contract between the government and the household, the transaction included two aspects of costs[69], the governmental costs and the private household costs. The government costs include administering a detailed cadastral survey, establishing and maintaining a comprehensive land registration system, and the resolution of disputes through formal adjudication channels (Banks 2003: 1234). Household costs include enforcing the rangeland contract, abiding the responsibilities and claiming exclusive use right of the contracted area. Nevertheless, the extensive and spatial disperse characteristics of rangeland greatly increased costs of such a transaction. Because of the plenty of resources involved in surveying the rangeland, fixing household area and boundaries, organizing allotments and coordinating dissatisfactions, this new institution took several years to accomplish.

The efficacy of an institution needs to be basically capable of enforcing compliance with the agreed upon rules among the involved parties (Arhen 2002: 55). To private households, the use right of rangeland was principally guaranteed, but the characteristics of pastoralism made it vulnerable in practice. If the private households wanted to assure exclusive use right of contracted rangeland, they needed to put great energy in monitoring and enforcing their boundaries. The afterwards fencing reduced the energy of monitoring, but it is such an expensive investment (around RMB7 per meter), that only rich households could afford it. Even though fences are mostly built nowadays upon government requirement, poor households' simple construction needs maintenance work and also cannot always prevent free grazing. Besides, fencing is actually not sufficient to ensure exclusion. Seasonal pastures are very possible to suffer from encroachment when they are not used in other seasons. In some remote areas, since the total length of the boundaries is so long, it is also hard to avoid unmonitored encroachments.

[69] Transaction cost including the costs of drafting, negotiating and safeguarding an agreement, it also contains the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements. Arhen (2002): 54.

As discussed in 5.2.1, division of rangeland has fundamentally changed the relationship among pastoral households. On one hand, the loss of cooperation both in herds and in labors among families was also a loss of the scale economy benefit in pastoral management. And also, the on the other hand, division of rangeland has created more conflicts between neighboring households and frictions among the family members in seek of their own interests. To find solutions to such disputes is obviously an extra cost.

More management cost arises when the perception and discourse of various levels of governance are inherently inconsistent. At the time of implementing land use policies, misconceptions and misinterpretations of policy can both increase the cost of this new institution. This trend also becomes more pronounced in more heterogeneous environments where policies are either more flexibly interpreted or ignored (Richard 2003: 252).

The efficacy of an institution depends a lot on its structural design. The stocking rates policy, for instance, proves to be a costly system. Estimating animal quantity on a household base itself means a lot of work annually. Since miscalculation of the stocking rates will directly affect the pastoralist's interest, a lot of sources also need to be put into the training program of involved officers and to secure comparatively accurate estimations of animal quantity and vegetation. The efficacy of an institution is guaranteed by the capability of enforcing compliance with the rules agreed upon (Arhen 2002: 51). Stocking rate is a clear example of institution relying on external mechanism. It is not a self-enforcing institution because the pastoralists have no incentive to abide by the rules. Its enforcement more relies on the restrictive mechanism. It is observed that if the pastoralists comply with the stocking rates, it is because of the severe penalty stipulated by this policy instead of voluntary self-restriction. Because of the present declining income and the perceived high stocking rate, most households actually prefer to take the risk of having more animals than regulated. They generally worry more of the present life than the long run rangeland degradation. Or their behaviors can also be seen as the "opportunistism". Williamson defines opportunism as the incomplete or distorted disclosure of information, especially calculated efforts to mislead,

distort, disguise, obfuscate, or otherwise confuse (Williamson 1985: 47). Pastoralists may be inclined to conceal some animals at the time of inspection, and so the actual pressure on rangeland is not relieved as it is planned.

The forbidding grazing policy also lack internal incentives of compliance and depend on external enforcement mechanism. In the forbidding grazing area, many pastoralists still try to herd animals on rangeland whenever possible. Those grazing in day-time has higher chance of being caught and getting severe punishment; so most people choose to herd animals at night. Rich households with better transportation can also transport animals to graze in another banner. The central agency does not have complete information about the actions of the herders so that it cannot assign punishments for all violations (Bijoor 2002: 33). The opportunistic behaviors have very harmful economic consequences and make individual action less predictable (Arhen 2002: 55) and the policy-breakers actually externalize their costs to be shared by others. Obviously externality of livestock breeding can worsen grassland degradation. Statistics have shown that the externality of livestock breeding occupies 17% of the total income from stockbreeding. This environment cost is much higher than the average level of 5% in some developing countries (Bijoor 2002: 59). On the other end of the policy are the executors. They have great power of punishment upon pastoralist's violation of the stocking rate or herding during the forbidden period. However, the execution of punishment is a flexible matter. It depends on several flexible conditions, like the relationships between the violators and the executors, the mood of the executors and the attitude of the violators. Hence, there exists the chance for corruption. The pastoralists and the officers can reach underground deal in favor of their violation activities.

Because these new policies are lack of incentive mechanism of abiding by, and so they generally rely on local government monitoring. The actual pastoral production model under HPRS (see figure 5.7) has shown that pastoral households are rather subjected to the government policies and measures. The local governments or the policy executors are empowered to interfere household production management, so that they are exposed to chances of making their profits. For example, in the "Returning Farmland to Forestry" project,

usable rangeland was even integrated into the program for tree plantation, in seek of program funding.

There are also new costs brought by the new institutions. A good example of it is that on the list of pastoral household expenditure, purchase of fodder has come on the top (Aorenqi eds. 2004: 253). Additionally, some institutional arrangements have triggered short-term behaviors. The pastoralists who would like to migrate to the town tried to get the utmost profits in short terms from livestock production, leading to overstocking; those who rented pastures from others without being transferred the use right, tended to use the rangeland in an exploitive manner.

The institutional transformation takes time and several components of the old institutions persist to operate in the new institutions. Path dependence is just a way of saying that history matters. Path dependence has critical implications for policy in that the institutional legacies of the past determine the set of feasible options for institutional innovation as well as the actions for both private sector activities and public policies that are available in the present (Arhen 2002: 56). Importantly, because of the Zigzag in policies (Humphrey & Sneath 1999: 97) from distribution of land, to collectivization and to decollectivization in the past 50 years, pastoralists feel uncertain or insecured of the future and this is indeed another kind of cost.

6.3. Rangeland right encroachment caused by complex administration and defect legal institutions

Mongolian steppe is rich in several kinds of minerals and its exploitation used to be carried out only by the related state organizations. Nowadays the promotion of resource driven industry development, has also involved private companies. If mining in compliance with the Rangeland Law (2002), the mining party needs to provide enough protection to the vegetation of the surrounding rangeland and when it involves the household contracted rangeland, it should be allowed by the rangeland user[70]. However, those procedures definitely increase the operation cost. Therefore, to attract "investors" (because local government aims to collect

[70] Item 50 of the Rangeland Law (2002).

enterprise tax), several mining companies have been approved by the local governments to operate without any protection measure of rangeland and even without consultation of the contracted rangeland users[71]. Such encroachment of rangeland use right also happened on collective seasonal pasture, which was rented out by *sum* government to businessman or farm operators, without the knowledge of the *gachaa* members. Some contaminated industrial factories, also settled on rangeland because of loose environmental protection standard. Usually the victim rangelands were contaminated with sewage, animals were poisoned by the exhaust gas, and the drink water was polluted. Besides, the pollution factors can be influential in a considerable period of time. This means that the pastoral household needed to pay a high cost for this encroachment. Interviews of such victims found that they need to appeal their cases to several different organizations and different level of organizations to find a resolution. Its time-consuming has a lot to do with the administrative complexity discussed in 4.4.because different organization would kick the ball to each other. There were also some pastoralists bringing the cases to the court[72], but it took even longer time. Even if some of the pastoralists could win the case, the execution of the result was less than satisfactory.

For a long time, many of the legal rules existed only on paper and had little direct influence on the people at the grassroots level for whom they are meant. For example, it is stipulated in the 41st item of Inner Mongolia Rangeland Management regulation that "each level of government should strengthen the management of rangeland ecological environment and prohibit any contamination of rangeland from sewage, exhaust gas, waste feces and other sources". The absence of laws on grass root level is mainly because of the local institutions' tolerance of the violators.

The root of such a possibility for local government to assist encroachment of private use right of rangeland lies in the separation of the ownership and use-rights. According to the

[71] For example, in East ujumchin banner, there opened a private mining factory in 2000 on one piece of collective pasture without any license.

[72] Three successful court cases have been exhibited on http://www.cy.ngo.cn/go1_courtdecision20040809.htm. One (Inner Mongolia High Court 2004-No.82) concerns contamination of household contracted rangeland by paper factory, one concerns three pastoralists suing mining factory for occupying collective and partial household pastures; and another one (East Ujumchin 2003-No.23) is about the illegal cultivation of other's contracted rangeland.

Grassland Law, the rangeland ownership belongs to the state or collective *gachaa*. But there is no such an organ impendent from the government to safe guard the ownership. Moreover, the use-right contract is signed between the pastoral household and the local *sum* government so that when local government wants to release the household contracted rangeland to some investors, they can just halt the household use-right, as if they are in the place of land owners. Therefore, under such a situation, the use of household rangeland is not secured. Nevertheless, the Land Management Law (1998) already claimed that the collective ownership certificate of the *gachaa* rangeland should be issued in 1999, most of the banners have not issued such legal document to the *gachaa* committee, which can represent the *gachaa* members' interests. Presently, several *gachaas* start to ask local governments for this ownership certificate and so they can essentially secure their rangelands.

Nowadays another pressing form of rangeland destruction is related to pasture renting. At present there are two kinds of renting, one with the transfer of contract rights, and the other not. The rented pasture in the latter kind has great risk of being destructed. To improve the legal protection of the pastoralist' access and use of rangeland, is very important to the future of rangeland.

6.4. Change of context and consequences for Mongolian material culture

The components of Mongolian pastoralism have fundamentally changed because of the external governance policies. The way of conducting pastoralism is far from the Mongolian tradition because the setting is now so different. Even though traditional resource management knowledge can still be found in daily operations now and then, it is not any more a systematic knowledge that a pastoralist must be equipped with. The new generation's understanding of pastoral practices is generally based on the present institutions, which means their perception of the rangeland, the knowledge of pastoralism and the role of a pastoralist in this process have shifted. Moreover, there is a severe detachment of Mongolians from pastoralism. Many Mongolian pastoralists have become semi-pastoralists or farmers and nowadays many are moving or being moved to town. In a survey done by Inner Mongolia University together with Inner Mongolia Social Sciences Academy, nowadays there is only

one pastoralist in twenty Mongols in Inner Mongolia[73].

Pastoralism is an essential part both of Mongolian identity and of Mongolian material culture. Hence, the transformation of pastoralism not only means the change of a way of life, but also implies changes regarding ethnic symbols. Although nowadays as long as a Mongol conducting animal husbandry in the pastoral area, no matter if the breeding is done on rangeland, or in pens, or in the milk-cow village, he is called a Mongolian pastoralist, it is a very different from its original meaning. It was observed in the fieldwork that pastoralism is more conceived like an occupation, which can be separated from a cultural body. However, the situation is not totally pessimistic. In the northern banners of Shilingol League, because of the less population with bigger contracted land, traditional nomadic pastoralism is still carried out to some extent. Several interviewees expressed their appreciation of traditional Mongolian pastoralism, not only the old people but also the youths who still had memory of nomadic life in childhood. Especially the young generation was increasingly aware of their identity as a Mongol and they thought a revival of traditional practices of pastoralism was the key to be a real Mongol.

6.5. What kind of development is needed

From the initial growth development policy, to area development and sustainable development policies, the pastoral management policies are always subordinated to the general development policy. Development is an ambiguous concept but it is possible to distinguish the development process and the development outcome. Development process refers to the means through which social structures change while development outcome is expected to be the improved well-being of people. This is an important distinction because most policies discussed above have referred to development process, and rather less to development outcome. Many claim that in the modern world, development process typically occurs through the making of capitalist methods of production: the emergence and generalization of markets, the creation of capital and the making of a working class. Additionally, this process is identified with the process sometimes called as modernization

[73] http://www.desert.org.cn/zccg/xx_021.htm

(Dickinson & Webber 2004: 2). The analysis of Mongolian pastoralism transformation shows that it has followed the same route. The welfare aims like income, access to a variety of services and equality has been achieved only partially, or in some case, the welfare is just in short run, like the HPRS. In other case, it is not optimistic like the resettled milk cow village. Cernea's (1997) risk and reconstruction model has recognized that all resettlement projects entail some impoverishment risks of landlessness, joblessness, homelessness, marginalisation, increased morbidity, food insecurity, loss of access to common property resource, increased morbidity and social disarticulation (Dickinson & Webber 2004: 3). However, the reconstruction work under project like the "Close Rangeland and Resettle Pastoralists" is such a unified model of development process that it does not take the pastoralists' culture, previous activities and other background into consideration. So far the reconstruction work is regretfully just a sophisticated form of compensation, subsidy or loans.

If a project promises to improve the average well-being, but the displaced people have their livelihoods simply reconstructed, then they can hardly be said to have shared the benefits of the project (Dickinson & Webber 2004: 3). A successful institution requires a high degree of collaboration among a variety of stakeholders, from the local herder to the policy maker. In such a situation, policies and programs can be flexible and responsive to local needs and aspirations, in an environment of mutual respect and effective organizational cooperation, a situation that is far from the current reality in Inner Mongolia. Thus insight in the socioeconomic context is needed, otherwise people involved in the project will be further marginalized and through interaction with the environment, may cause anther round of environmental degradation (Richard 2003: 251).

CHAPTER VII Joint Use of Rangeland - A Sustainable Future?

7.1. Induced new institution-voluntary joint use of rangeland

Although animal husbandry is operating within the framework composed of various governmental organizations and rules, traditional Mongolian resource management knowledge are still robust in the daily practices. The vigorousness of the indigenous knowledge is a sound evidence of its usefulness in such an ecological system. Observed in my fieldwork, such kind of knowledge is rather fractional in the southern part of Shilingol League, but more systematic in the northern part of it, which reflects their different conditions to satisfy the basic premises of Mongolian pastoralism, namely mobility and flexibility. Actually there have been the endeavor from the pastoralists to use such kind of knowledge whenever possible. Joint use of rangeland is just such a case. Aware of the degradation trend in the contracted rangelands, pastoralists in northern banners initiated a new arrangement of using rangeland. Several close pastoral households with neighboring household rangelands dismantled the fences and used the pastures jointly. They redivided the joint rangeland into different seasonal pastures and tried to move the joint herds between and within those pastures by shared labor. Under such an arrangement, they keep their respective use rights of the rangelands, but use them jointly.

This local initiated institution is a clear example of an induced institution. Different from the imposed institution, it is a "voluntary change introduced and executed by private individuals or groups, which respond to profitable opportunities caused by institutional disequilibria". It reflects the demand for the benefits, which can be realized thereafter. It is also "typically driven by individuals or members of particular groups who expect a change in rules to yield net benefits for distributional and efficiency reasons" (Lin 1989: 5).

7.2. Arrangement and advantages of joint use of rangeland

In the case of Inner Mongolia, members of the cooperative institution were pastoral households with relatively even conditions. Hence, through informal negotiation, they easily reached the agreement to combine the production. However, mostly when the pastoral

household members have different areas of rangelands with varied qualities, different numbers of animals, different compositions of animals and different need of labor that can be contributed to the group work, proper arrangements of several issues are crucial to establish and sustain such cooperation. A case from Maqu county of Gansu Province[74] shows that up to ten households in size pooled their pastures together and fenced the outer boundary. The total number of stocking units that can be grazed on the joint pasture was calculated first, and then each household share of it was calculated. Households grazing more livestock than the estimated stocking rates paid the other households grazing fewer accordingly.

This cooperative institution directly reduces the cost of fencing to the general outer boundary, and the monitoring cost against encroachment is also reduced. Several other advantages embodied in this arrangement originate from the indigenous resource management knowledge. Firstly, the rotating pastoralism becomes practicable; secondly, seed animals are shared and the structure of animals is improved, which is also favorable to the rangeland; thirdly, scale economy is enjoyed; fourthly, labors are shared and saved in cooperation. Additionally, this cooperative institution is helpful to halt wealth gap. Poor households are integrated into the arrangement, and they can earn the supplementary income paid by rich households with more herds. This institution not only guarantees their access to the bigger rangeland, but also keeps them involved in a pastoral economy.

7.3. Options of potential rangeland management institutions

The above arrangement is an example of promising institution in sustainable use of rangeland and development of pastoral economy. Moreover, it is also practical within the framework of the present laws[75]. Rangeland is a heterogeneous landscape and so the local institutions composed of the land tenure and management systems should be flexible to accommodate the different context. Making use of the table created by Richard (2004), we can locate these institutions into the different models in a matrix composed of the different land tenures and

[74] This model is analyzed in Richard (2003).

[75] Item 13 of the Rangeland Law (2002) stipulates "collective owned rangeland can be contracted for operation by local household or household group"; Item 42 of the Rural Land Contracting Law stipulates, "to develop agricultural economy, the contractors can voluntarily invest their contracted land rights together as shareholders to conduct agricultural production".

management arrangements (see table 7.1.). The extreme model 1 represents the typical situation of Inner Mongolia where HPRS has been in place for around 20 years. The voluntary emerged institution is a clear example of model 2, in which group management replaces household one but land tenure is kept. Examples in Model 3 and model 6 also exist on Tibetan plateau[76]. At present, the land tenure has two choices, household or household group, and management arrangement is more flexible with three levels of choices. For the situation of Inner Mongolia, the author thinks that the change of land tenure is rather difficult because of the substantive economic and social costs related. However, the pressing need for an institutional change can find a channel through changing local management arrangements. Therefore, model 2 is the most possible choice at present; in small villages, model 3 is also possible.

Several researchers have proposed different models in rangeland management change. Aorenqi (eds. 2004: 109) proposes a model of cooperation among pastoral households to become shareholders of joint rangeland, which is very close to the voluntary institution mentioned before, and he has also initiated such a project in one *gachaa* in the middle area of Inner Mongolia. Bijoor (2002) and Richard (2003) suggest a co-management model. It is in light of the improper but strong government role in resource management and its potential solution of grassland degradation problem. Co-management regime involves "the collaborative and participatory process of regulatory decision-making among representatives of use-groups, government agencies, and research institutions" and so "it has the potential to better serve private herding interests while promoting the public interest more than traditional organizations" (Bijoor 2002: 35). The author thinks that in the situation of Shilingol League, pastoralists of the northern banners with good pastoral economy foundations have more impetus to improve institutional arrangement by themselves. They have come together to forge solutions rather than waiting for other institutions to impose regulations (Ostrom 1990); however, pastoralists of the southern banners may need to be integrated into some forms of co-management project to realize institutional transformation.

[76] Model 3 example is from Zhongdian County of Yunnan Province and model 6 example is from Naqu County of Tibetan Autonomous Region. Explained in Richard (2004).

	Management Arrangements			
Tenure (Contractor)		Household	Household group	Village collective
	Household	Model 1 • Individual household contract • Management by individual household • Each household drives benefits from their own land	Model 2 • Individual household contract • Management by household group • Resources shared communally based on household and livestock population	Model 3 • Individual household contract • Cooperative of individual contract holders for pasture or landscape management •Each household derives benefits from their own land
	Household Group		Model 4 • Group contract • Management by group • Resources shared communally based on household and livestock population	Model 5 • Group contract • Pasture or landscape management by cooperative of household groups • Resources shared communally based on household and livestock population
	Village level			Model 6 • Village contract (no internal land division) •Management by village or collective of villages • Resources shared communally based on household and livestock population

Table 7.1. A typology of potential tenure and management arrangements for rangeland landscapes[77]

7.4. Conclusion

The present situation of Mongolian pastoralism has been reflected through a historical analysis of its transformation. The distinction between external institutions and internal institutions in governance of Mongolian pastoralism indicates that it has been a passive adaptive process of the internal institutions to the external institutions. The external

[77] From Richard (2003).

institutions directing Inner Mongolia pastoral area and Mongolian pastoralism have been mostly top-down policies (imposed institutions) in different political regimes and thus they ignored the inherent rationale of the internal institutions (induced institutions) based on the specific socio-economic and ecological context. Not surprisingly, nowadays when the premises of internal institutions have been pushed to the corner, the external institutions composed of HPRS and other related management policies are not only expensive to enforce but also hard to sustain. Even though government is dedicated to various remedy policies in support of the existing institutions or resorts to "development" projects, these policies have often resulted in outcomes opposite of what was originally intended, leading to increased environmental degradation and the marginalization of pastoral communities (Richard 2003: 251). The author concludes that simply imposition of efficient institutions from another economy or polity, or adoption of standardized policy recommendations, are inefficient and unsustainable if they are in conflict with the internal institutions which evolved in that society over time.

On promotion of the internal institutions of traditional Mongolian pastoralism, the author does not imply the thorough abolition of the present resource management system. But more pastoral friendly policies in consideration of the local environmental, demographic and cultural features are indispensable to walk out the present predicaments in the pastoral Inner Mongolia. The local informal arrangement of joint rangeland use shows the dynamics and importance of the internal institutions in Mongolian resource management in the present context. Hence, an external institutional transformation in favour of reviving the traditional internal institutions is advised to be initiated by the government.

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Acronym

CPT: Common Property Theory

HPRS: Household Production Responsibility System

IMAR: Inner Mongolia Autonomous Region

RMB: *Renminbi*, name of the Chinese currency

NIE: New Institutional Economics

OIE: Old Institutional Economics

Glossary

Ail: a Mongolian pastoral residential unit with important cooperative function.

brigade: village in the People's Commune period

commune: town in the People's Commune period

banner: county

gachaa: village (in Mongolian)

Kuriyen: an ancient big Mongolian pastoral residential unit.

league: prefecture

Mu: land area measure. 1 *mu* equals to 666.6667 m2.

sum: town (in Mongolian)

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