CHINA'S REFORMS OF TIBET, AND THEIR EFFECTS ON PASTORALISM*

G. E. Clarke

University of Sussex

Introduction

In 1986 I was invited to visit the Tibetan Autonomous Region (TAR) of the People's Republic of China to carry out field research. This was at the instigation of the Advisory Group of the State Council on Economic Affairs for Tibet, Beijing; the invitation was extended via the Animal Husbandry and Veterinary Research Institute, Lhasa, and the field-trip was arranged for the summer of that year. In August, together with my assistant and colleague Tashi Lama from Kathmandu, I travelled up the gorge of the Bhote Khosi to the northern border of Nepal, where we were met at Friendship Bridge by our hosts.

I would like to thank the Deputy Director of the Animal Husbandry and Veterinary Research Institute, Dou Yaozong, and Field officer Lotup, for their assistance and cooperation during that month long trip. I would also like to thank Wang Hai, the Deputy Director of the State Planning

---

* This is paper presents original case-studies from recent field research among pastoral communities in south-western and central Tibet. These are supplemented by data from official Statistics and other sources, and considered in the context of the specific natural, social and historical circumstances of the region, I conclude that, while the changes that have taken place since the post-1978 Chinese reforms have allowed a fuller economic use to be made of previously built infrastructure, simple analogies with lowland China, and conventional urban growth modes of development, have a limited application to Tibet.

Commission and of the Advisory Group of the State Council on Economic Affairs for Tibet, Beijing, for making the trip possible, Huang Wenxiu of the Chinese Academy of Sciences and ICIMOD, and all the officials and representatives of the various countries, and the Tibetan people themselves, for their help and assistance, which enabled a large amount of work to be carried out in a relatively short period.

Important social and economic reforms towards decollectivisation have taken place in China since 1978, with the introduction of what is generally referred to as the 'household contract', or the 'responsibility' system. Under these in effect a degree of property rights accrues to the household if not the individual, and open-market trade is under certain circumstances encouraged. In principle these changes are a step in a delinkage of the administration from production and consumption, with a corresponding shift from direct towards indirect controls in planning.

The scale and heterogeneity of the area within the polity of China is such that actual implementation of this policy can only be known by a number of empirical investigations. This paper is an attempt to describe the situation as it existed in 1986 in certain areas of the Tibetan Autonomous Region (TAR), between the High Himalaya, the ranges of the north-west Tibetan plateau and Central Tibet.

It is a description and interpretation of the effects of these policies in the context of the natural and social conditions of Tibet. As such it takes account of ecological particularities, national characteristics, the economic structure of the region and the living conditions of the people as they are, and brings these factors together in the explanatory context of their particular historical situation.

One could go further to consider comparative theories about whether technical or social factors, or endogenous or exogenous features, were of paramount importance in explaining developmental changes. Indeed such theorising has itself been of importance to the recent developmental history of the Chinese polity. But this is not my purpose; moreover in this analysis neither the experiences of other countries nor of inner China, nor the concepts of various theories of development and modernisation, are followed blindly or rigidly. Rather, I see a descriptive classification and holistic assessment of these general features relevant to efficiency, equity and balance as a necessary preliminary to any further abstraction.

The centre of this account is a presentation of original field research in the form of case-studies on households and communities. In that this is, to my knowledge, the first such field material to be presented from Tibet in recent times, I have included more descriptive detail than I would otherwise have. Moreover, I have included some data in the knowledge that it gives only part of the picture: in an ideal world this would be backed by other material. The case-studies are mainly of pastoral communities in southern and central Tibet, in particular the Lake Namtsho area on the south-east fringes of the Changthang plateau, and in the Shigatse prefecture. These are considered in the context of the ecological and a wider institutional framework, one that includes both traditional and wider administrative features. This account is then interpreted in the context of recent and continuing institutional and economic changes, which is rounded off by some practical conclusions and implications for applied research.

Method

Working from books, documents and records is one thing; being able to give an account of how they tally with activity in the real world is quite another. In principle a lengthy period is required for an outsider to begin to see the signifcant features of a society, let alone to describe or understand them from the inside.

A month in the field travelling from place to place, often accompanied by and perceived as a government official, is not exactly the intensive ethnographic method of anthropology; yet if one has previous in-depth field experience from culturally related areas, and the contacts are favourable, the paradigm is not by any means uniformative, and enables one to sample or survey a wide number of disparate localities quickly. Such a period is far longer than is often allowed for a field investigation in applied development work. There primary data have been supplemented by comparative and secondary source data, both from a number of years research on the people and history of the Himalaya, and from more recent knowledge of pan-China factors.

Some of the problems of fieldwork in China today have been detailed by others; I was in far more fortunate circumstances than they in that I had good direct access to the field, (Pasternak and Thurston 1983). Working with an assistant whom I had known for ten years and who had an exact

knowledge of the Southern Tibetan patois, and through an official who had many years sympathetic experience of these communities, was invaluable.

I gathered data by general discussions with officials and others in the context of daily observations, together with in-depth and open-ended interviews of households. This constitutes a conventional field-technique; the ability to enter such notes and interviews directly on a small 'laptop' portable computer is more novel, and aided greatly in the data collection and processing.

Unless otherwise stated, the secondary source statistics have been gathered from local departments, or are from official publications of the State Statistical Bureau. Those presented here focus more on the situation today rather than on possibly suspect longitudinal comparisons, and it would not be wise to jump to conclusions about changes in land use and production from comparing such data as exists in Table 1 and 2 for 1979, 1982 and 1984.. Caution applies even with current data, as the definition of labels, mode of collection, and cross checks are unclear.[1]

Overall the figures in the Tables have been provided more to give some idea of orders of magnitudes, and for comparative purposes within the polity, rather than as absolute and unambiguous records. At one level they permit the distinction to be made between changes and policies which are general for all of China, and particular differences such as urban/rural, topographical contrasts, Autonomous Regions and other regional areas, down to particulars such as their application in the TAR compared to other regions.

Early absolute historical data on grain production and livestock from the region are not taken at face value by officials within the TAR; neither are they here. It seems that in the 1960s, certain levels of administration, in their wish to show the successful effects of new policies may have been somewhat over-optimistic in their figures.

It follows that increases of output were recorded even though at times there were shortages of these commodities, such as in the period post-1966.

---

[1] A key example is in the terms *drog-pa* and *sa-ma drog*, which in some areasrepresent the opposition pastoralist/agriculturalist, and in others nomadic/sedentary. While often correlated these are not always the same.

Higher up the chain, officials had little option but to forward data which they suspected were inaccurate to higher levels. For example, according to such figures the amount of grain grown in the TAR would have tripled between 1952 and 1980, and livestock would have increased 2.5 times in the same period, (Epstein 1983).[2]

Since Implementation and monitoring were carried out by one and the same body, which was at the same time the line ministry and regional authority, there was no independent check on these records. It also follows that recent grain and livestock production increases may actually be for *larger* than figures indicate, and that some agricultural production targets are not as conservative as they might on the face of it appear, given that reality has had to catch up with myth.

Regional Demography

In writring about the region one has to distinguish between various definitions of Tibet and Tibetan. The culture and language are a unity; but while the state was as unified as any traditional Asiatic polity, Asiatic states did not operate according to the bureaucratic or western model of the 'nation state', that is with fixed rules and absolute boundaries. The boundaries of the topographical area of Tibet, the Tibet of western travellers up to modern times, the Tibetan Autonomous Province of the People's Republic of China, and the areas where Tibetan nationals reside, are not by any means at all the same thing.

This is clear from the standard demographic data. A breakdown of the 1982 third national census indicates the following: there are more people classified as Tibetan nationals who live in the areas immediately adjacent and east of the administrative borders of the Tibetan Autonomous Region, than those who reside within it. Of the 3,864,388 people of Tibetan nationality and culture within the polity of China, 2,076,733 live immediately to the north and east of the TAR; this is in the areas of western Szechuan (922,024); Qinghai (754,254); Gansu (304,540); and Yunnan (95,915) (1982 census and figures, PRC Yearbook, 1985). In many earlier

---

[2] In Inner China good weather and proper feritliser use did increase yeields in 1978/79 (World Bank 1984). But it is realised now that in the TAR grain yields dropped off after 1977 as the soil was depleted from the new types of wheat; according to one (uncorroborated) source 1979 was an extremely bad harvest.

western sources these general areas are referred to as Kham (the far northern areas of Yunnan Province and far western Szechuan Province); and to its north Amdo (being most of Qinghai Province, part of Gansu Province and including a small part of north-western Szechuan Province).

The slightly anomalous community of 1,111 Tibetan nationals recorded in Shaanxi to one side, the current administrative system recognises traditional Tibetan residents in areas contiguous to the TAR. These areas are Tibetan Autonomous prefectures and counties. In total there are five prefectures and 77 counties within the Tibetan Autonomous Region; there are nine prefectures with 66 counties outside of the TAR itself, which also are Tibetan Minority Nationality Autonomous Areas.[3]

Overall within the Chinese polity the independent nationality status of Tibetans as one of over 53 minorities has long been recognised (Fei Hsiao Tung 1981). The situation of Tibetans within the TAR is that they form the majority, that is 94 per cent of the population of 1,892,393 (1982 figures, 3rd National census). Han nationals and other resident in the TAR were only 105,849; a figure which has dropped to 76,300 in the 1984 statistical records.[4]

In the provinces beyond the eastern border of the TAR, Tibetan nationals at the present-day are a minority; even in Qinghai they form only 19 per cent of the population. Here within the TAR itself, the role of the regional localisation of these national groups within the minority nationality areas, and the more general recent history of settlement in these regions, should be taken account of to give an explanation of these figures.

For purposes of reference I reserve the term Tibetan Autonomous Region (TAR) for this central and official area on which statistics are collated and published. I use the term Tibet in the conventional way it has

---

[3] Five of the eight prefectures of Qinghai (Haibei, Huangnan, Hainan, Golog, and Yushu), a total of 25 counties, are Tibetan Autonomous areas; Haixi is a mixed 'Mongolian-Tibetan Kazak' Autonomous Prefecture. One of the 10 perfectures of Gansu (Gannan) is a Tibetan Autonomous Area of seven counties. Two of the 18 administrative areas of Szechuan (Garze and Aba) are Tibetan Autonomous areas with a total of 31 counties. One of the 15 prefectures of Yunnan is a Tibetan Autonomous area of three counties.

[4] The other case where there is a large single minority is Xinjiang, where Uygurs approach 50 per cent of the population.

been used in western publications to refer to a wide topographical, national and cultural entity.

There is one statistical artefact that this classification gives rise to. The TAR being a high altitude and desert region of the centre and west, less of the more prosperous and developed areas to its east are included than might have been by other boundary classifications of Tibet. The statistics on the TAR are of a remote and traditional life at high-altitude: hence they represent a more impoverished base for Tibet than they would have been had a more extensive definition of the region been taken. *The sample of Tibet is biased towards the poor*; if one could correct the statistical picture to include the Tibetan Minority Nationality Areas to the east of the TAR, the standard of living for Tibetans as measured by material productivity, and access to goods and services would undoubtedly be higher than they are as indicated by the TAR statistics here.

Topography and Productive Economy

In most of inner China people live and their economic activity focusses not on the highlands, but on the great plains, valleys, and river delatas that support agriculture and promote trade. Yet this total cultivatable area of about 100 million hectares is only 11 per cent of the total land area, and it is concentrated to the east and south. To the west is plateau area: the desert and steppe of the Tibet or TAR-Qinghai plateau, along with the plateaus of Yunnan-Guizhou, and the desert and steppe land of Xinjiang and Inner Mongolia, comprise nearly half the land-mass of the polity of China. Yet if China is roughly halved from West to East, only 10 per cent of the population lives in the western half that includes these regions.[5] Certainly there are not that many people in the TAR: the figure given for 1984 is 1,966,000 people over 1.2 sq mn kms, and a population density of 0.61 of a person per sq km compared to China as a whole with a density of around 105 people per sq km.

Traditional farming in inner China is said to have shown both a high productivity and a high population density on the land, similar perhaps to

---

[5] In Tables 1 and 2 I have given data on the TAR Qinghai, Gansu, Yunnan and Xinjiang as in some sense forming a 'western area'; but it must be remembered that Yunnan and parts of Szechuan are not, by and large, part of this system, and in many ways more closely resemble the steep-valleyed mountainous Himalayan areas to the south-west.

the 'agricultural involution' noted by Geertz for Java (Huang 1975). By contrast the western plateau areas, away from some isolated valleys, have until recently been thought of as economically marginal, and in the words of a recent report...' these areas can only support marginal economic activities; they are thus sparsely populated, mostly by minority nationalities whose language and culture are very different from those of the Han nationality who mainly live in the rest of China....' (World Bank 1981:2).

From the figures in Table 2 agriculture is obviously of great importance in the economy of Tibet: it forms over 98 per cent of the Gross Output Value of the Economy as a whole for 1984, compared to figures of under 50 per cent for *all* the other western provinces. But given the low population densities and altitude, one would not expect the kind of intensive crop production that takes place in inner China and elsewhere in south and east Asia to occur in the TAR.

The total grain output in 1979 was recorded as 437 mn kg, and was a little over 42 per cent of the Gross Agricultural output Value for 1984; the production figure is around 250 kg per capita (1984),[6] and the figures for the yield of grain on this arable land approach 2,000 kg/hct, which is far from marginal. However, overall the TAR's agricultural production is not primarily or solely based on crop production. These crops are grown mainly in the south and east, which, like a microcosm of the polity of China as a whole, have higher population densities than the north-west. But this arable land of 2,300 sq km constitutes only 00.12 per cent of the land area of the TAR.

In most of the region the economy is dependent on animal husbandry, which approaches 50 per cent of the Gross Agricultural Output Value of the TAR as a whole. The overall importance of pastoralism is a point that was stressed in the title of one work on the region, *Fields on the Hoof* (Ekvall 1986). It is a commonly quoted statistic on Tibet that animals outnumber people by 12 to one. This is borne out, more or less, by the official record which, in 1979 gave the figure of around 22.9 mn cattle, sheep and goats, with the human population under two mn. The Dingri County and Shigatse Prefecture data give similar ratios (Table 3). But for China as a whole, the

---

6 Figures on grain available for consumption in the province have not been given as they take no account of interprovincial trade.

ratios by this crude measure are much lower, at around 0.4 animals per capita, and the main animal is the pig, which is unusual in this area (Hanxian 1985).

The pastoralism of Tibet is not the commercial cattle production of the developed world in which grain production is chained to livestock: there is no production of crops mainly for animal feed; mechanisation and intensification have only recently begun on agricultural land. Rather, in nearly all but its trade and marketing, pastoralism is still primarily traditional, and based on open grazing on the extensive grasslands.

The land classification figures clearly indicate the importance of the grasslands as a resource. Some 67 per cent to 69 per cent of the TAR is grassland, and accounts for 29 per cent of the grassland within the polity of China. And of this 80 mn ha of grassland in the TAR as a whole, 57 mn ha (that is, nearly three quarters), are given over to pasture. This is a figure of around 29 ha (29 sq km) of pasture per person (Wang Hai 1986; Huang Wenxiu 1981).

Much of the 'surplus' of this grain grown in the south-east traditionally has been exchanged with pastoral products and salt from the north-west, for human consumption. A localised form of this divergence can be seen in some of the (provisional) statistics for Dingri County, which to some degree straddles this ecological divide. It is quite clear that most of the yak are owned by the pastoralists who live in the north-west, whose per capita holding is eight as opposed to the general average which is under a half; similarly, the cows and the donkeys are owned by the 'villagers/mixed agriculturalists' rather than by the pure 'pastoralists/nomads' (Table 3).

Hence the overall averages for production for the TAR cover over a spatial imbalance of production, or specialisation and exchange, within the TAR, one that the traditional exchanges linked. The traditional agriculture may have lead to a greater density of people in the south east than the north-west; but this could not lead to a progressive migration to these crop-rearing areas without an abandonment of the basic resource of pastoralism, the grasslands. This is as true today, with modern incentives for urban migration, as for the traditional system of agriculture.

Overall, the one important ecological factor that helps gives rise to this particular pattern is the topography: the country rises from south-east to

north-west with an average altitude in the TAR of over 4,000 metres; these high altitudes are associated with climatic extremes of heat and cold, dryness and wetness, and winds.

Certain parallels can be drawn with the Himalayan areas of Nepal, other mountainous areas such as the Andes, with desert regions such as the southern Sahara, and possibly with the northern America of the plains Indians of the 19th century. Buth the only area which really resembles the Tibet plateau is perhaps the Mongolias: both have open grassland, low population density, and transhumant pastoralism; and both areas have for a millenium been part of extensive (if pre-industrial-and some would say feudal) states, ordered by literate civilisations.

Modern Services

Tibet was a pre-industrial theocracy until the modern Chinese administration began to take effect, and it is generally agreed that it did so in the TAR following on from 1959, that is slightly later than in most other areas. The road structure, telegraphs, electric power production and availability, and other infrastructure has to be seen both in this historical context and in that of the vast area and low population density. The extent of the road network is an impressive achievement, a point we will return to later; here it wil be useful to look primarily at the data on education and health.

The Chinese administration has had in principle (up until the reforms) the ability to mobilise resources through a multi-level structure, in which regional administrative and political organisation are one and the same, down to local institutions. It has been noted too that overall, China has thus succeeded in the elimination of some of the worst aspects of poverty, especially in health.

In practice there have been varying trends in fertility and mortality in China generally in the last 29 years, with great temporal and regional variation. In inner China from 1962 birth rate overall rose then dropped, with this decline being greater in urban than rural areas. In 1982 infant mortality was reduced from 250 to 50 deaths per 1,000 live births; life expectancy has increased from 32 to 69 years.

However, this success has been uneven: people from rural, poor and remote parts of the polity that lack infrastructure and have low educational levels have health conditions closer to those of developing countries than the majority of the citizens of China (World Bank 1984). According to the 1981 statistics, the western areas of China, comprising Xinjiang Qinghai and Yunnan as well as TAR, have a high crude death rate, one of between 7.48 (Qinghai) and 9.92 (TAR), with a mid-point provided by Xinjiang at 8.41 per 1000. While all compare unfavourably with the national average of 6.36 this last figure of 9.92 for the TAR is the highest provincial figure for mortality.

Life expectancy in the TAR, at 61.3 is not significantly different from that of other Western areas such as Xinjiang (62.51) and Qunghai (61.28) and above that of Yunnan (60.56). But again, all of these are well below the national average of 64.93. Another health indicator is tuberculosis prevalence. The standardised TB morbidity rates for Tibet and Xinjiang, at 1202 and 1608 per 100,000 respectively, are well above the national average of 717. They are also well above the figures for Qinghai (647) and Yunnan (364).

Similarly, in 1981 the Western provinces crude birth-rate at between 26.65 (Qinghai) and 31.05 (TAR), with a mid-point provided by Xinjiang at 29.08. Overall, these data would sugggest that the western areas in general and the TAR in particular have not experienced a 'demographic transition', nor have they been able to take advantage of modern health services to the same degree that the industrial society has been capable of offering them elsewhere in the polity of China.

Yet recurrent state expenditure of health for 1981 is high for the TAR, 28.67 (mn yuan) (*per capita* 15.33). This compares to 68.08 (5.29) for Xinjiang; 27.75 for Qinghai (7.25), and 86.79 for Yunnan (2.71). The figure *per capita* for Tibet is far higher than the national average of 3.15, and way ahead even of Qinghai, which is the next largest. However, given the low population density and large area one would expect that service and transport costs would take a large percentage of this expenditure, especially in rural areas.

Overall the TAR has 528 hospitals and 4,261 beds on record, that is 2.3 beds per thousand population, above the national average of 2.0. It may be significant that in Yunnan and Xinjian roughly one third of hospital beds are

commune clinic beds; but in Tibet and Qinghai only one tenth are commune clinic beds. This does suggest a certain lack of facilities in rural areas where the commune was formally the state structure. The non-commune hospitals, which are in the majority, are linked to the towns. Hence an urban bias in health facilities; we will return to this point later.

The literacy, or rather illiteracy, figures give a very clear lead on the distinctive difference of the TAR. In 1982 the national average was 23.5 per cent; that for Xinjiang 37.6 per cent, Yunnan 53.7 per cent and Qinghai 58 per cent. The illiteracy figure for Tibet at 78.3 per cent was the greatest for any province in China.[7] That only 22 per cent of the TAR population has had primary school education is also revealing, in a comparison to other western provinces, where the figure approaches 50 per cent. In part, this last difference can be explained by historical factors.

Generally there is no breakdown of the distribution of these resources within the province, though there are some rural-urban data. These rural/urban differences are an important point we will return to presently. They indicate one porblem in taking these provinces as a whole and contrasting them to 'inner China'. Some of the areas in the south of China around Yunnan and Guizhou are in the same range; and in part Qinghai appears closer to the 'inner China' pattern than the other western provinces. *Intra-provincial variation may be greater than the inter-regional variation.*

No doubt more sophisticated analysis of the available statistics would reveal some interesting and significant results here. But there may well be other dimensions of difference, and general patterns of variation, besides those measured in these surveys. Our main purpose here is not to clear up the variance in extant statistical tables; though they are suggestive they have clear limitations: the task is to discover what processes are at work in the area which, inter alia, would in turn allow us to suggest what statistical bases it might be useful to collect.

One way to discover the qualitative form of these differences is by considering specific cases, and it is to such field-research that we turn in the next section. This proceeds by illustrations, which are mainly from case-studies at the household and neighbourhood levels.

---

[7] Whether this refers solely to literacy in Chinese or not is not clear.

Case-Studies

The case-study at Lake Namtsho, with comparative material from another five locations at Dingri and Xixangpangma, forms the focus of this account. Lake Namtsho is only six hours drive from Lhasa: one follows the main north-eastern Qinghai highway to Damxung (which used to be the site of Lhasa's airport), then off the highway over a north western pass to the south-eastern edge of the Changthang plateau. Namtsho then, while ecologically it represents the northern plateau, is at the same time a hinterland of Lhasa, and by Tibetan standards within relatively easy reach of the capital by road. As such the economic changes that pastoralism is undergoing there may well be in advance of that in more inaccessible locations, such as the north-western Changthang.

From one standpoint Namtsho, possibly with two of the Dingri sites, because they are close to towns and roads could be considered as 'leading-edges' of modernisation, that is locations that embody changes that will eventually take place throughout the region. From another standpoint they would be 'positive-poles' in a process of socio-economic differentiation between newly modernising and rich, and dependent and poor, areas.

The group at Namtsho is a transhumant community in the 'sub-county' (*cheu)* of Namtsho; they are now known as 'Village-Neighbourhood No. 2'; when I visited them in the summer they were on the southern side of the lake.

At Xixangpangma the research focussed on Silong-chu, a settlement of 42 houses that with equivalent settlemments of Shelkar and Petse constitutes a 'township' (*xiang)* within Nyenam County; like most townships here it has around 100 houses (98). Each of these three villages in formal terms constitutes more than one 'neighbourhood'. Both in Old Dingri and at Xixangpangma the townships are topographical units, and cover contiguous areas that can communicate with each other fairly easily.

Whereas both Namtsho and Xixangpangma are enough to be predominantly pastoral, there is some limited cultivation in the Dingri area. In Dingri County work was divided between three locations. First Shelkar, a township adjacent to the County Headquarters for Dingri, also known as 'New Dingri', second, Pimuthang, the pasture in the valley above the

village of Pi north from the highway; and third, what is termed 'Old Dingri', the small market town and sub-county level administrative centre of Gang-gar that now, together with the villages of Gnyen-ba and De-sa, form a 'township'.[8]

The Household Economy

The settlement was made up of 22 tents or 'households', which are considered, both formally, to be one group. It comprised over 100 people in 15 extended families, with a similar number of herds. The tent or 'household' to be looked at in detail at Namtsho is smaller than most as it was only formed in 1981 at the time of decollectivisation, when the present household head split off from his father's tent. It is made up of a young man, his wife and their two small children, that is just two generations, and it is at an early point of the developmental cycle of the domestic group.

While he and his four brothers each received on paper their *per capita* assignment of livestock at decollectivisation, the other brothers remained in the parental tent and their livestock is kept as one herd. Even though this brother set up a separate domestic unit, for many managerial reasons the livestock are still often 'counted in' with those of the parental family.

At the beginning of the developmental cycle of the domestic group, that is at the time of division of the property in 1981, they had in all 17 yak, 60 sheep, 20 goats, and one horse - 98 animals with a total value at 1986 prices of 16,050 yuan. This redivision seems quite general: even at Old Dingri, which was before collectivisation in many ways more of a trading and administrative town than a farming village, the livestock was allocated at the rate of three sheep per capita; the number at the household I interviewed had risen from 30 to 50.

Now five years on since division after decollectivisation he has 30 yak, 100 sheep, 20 goats and 2 horses - 152 animals with a value of 26,500 yuan. Over this period since individual allocation of the collective property,

---

[8] Gang-gar is a traditional market town and administrative centre, the principal trading town to Nepal on the plain of Dingri. Being the sub-county headquarters and on the main road it still has this distinction, but unless the accounting system or boundaries have changed markedly, the number of households for Gang-gar, reported at around 80 may now be fewer than the 230 reprted from this earlier period; see Aziz 1978.

there has been an increase in value or effective size of herd of over one third. This is not from purchase or re-allocation, but from natural increase (locally estimated at 25 per cent per annum) minus the number sold for slaughter over that period. This illustrates the point that both the absolute numbers of livestock, and the numbers produced for trade and market, are said to have increased in recent years.

Altogether at this neighbourhood at Namtsho they had 960 yak, 3,700 sheep, 800 goats, and 45 horses. Per household that is an average of 44 yak, 168 sheep, 36 goats and 2 horses. At 1986 sale prices in Lhasa these would have a value of around 37,000 yuan per household, that is 8,000 yuan *per capita*. Hence the value of livestock for the above household is below the average for this neighbourhood.

The figures for a wealthy household from the Xixangpangma area are 80 yak, 300 sheep and goats, and 2 horses. That village, which is said to have 18,000 sheep and goats and 2,000 yak distributed among 42 houses, would have a rough average of 48 yak and 430 sheep and goats per household. As one would expect since both are near the same altitude (*circa* 15,000 ft.) and have pure pastoral bases, these figures are roughly comparable to Namtsho.

This contrasts to the picture from Old Dingri, where a poor household has only 50 sheep and goats, two cows, two bulls and one horse. This latter area is slightly lower in altitude (circa 13,000 ft.) and can grow crops, has few yak because of the absence of suitable pasture, and has a market.

The products from the livestock are meat, milk, wool and skins. Sheep are kept mainly for meat and wool. A normal sheep will yield around half a kg of wool per annum; hybrids with Australian and New Zealand sheep can give up to two to three kg - goats are kept primarily for their milk, for which they are far more reliable than sheep.

Milk can of course be processed into butter. However, something like 80-90 per cent of the total milk production is consumed locally, either by calves in young flocks or by the people themselves; only 10-20 per cent is traded. This house is said to produce only 20 kg of butter per year, which they consumed themselves.

The general absence of a large surplus of butter for trade was noted elsewhere: the published production figures for Dingri prefecture were of 100,000 kg butter per annum, of which ony 10 per cent was held to be traded; there is also some corroboration from the case study in Pemuthang at Dingri (even though we have no figures on how much milk is consumed by calves). At Pemuthang there is a large seasonal variation of milk production. However, each *dri* on average is said to produce 5 to 10 kg of butter per annum. One household with 15 *dri* is said to produce a total of 75 kg of butter per annum of which half is consumed and half traded.

Both traditional and recent taxation used to be in butter. At Namtsho it was 3.5 kg butter per milk animal before 1959; and it is alleged to be 10 kg of butter and 12 kg of cheese per milk animal per annum between 1959 and 1981 in some parts of Lokha in southern Tibet (Choedon 1978:45). Taxation in butter would be, of course, an incentive for under-reporting production.

Obviously a more detailed empirical investigation of milk productivity is called for here. However, one other explanation for low milk and butter poduction is that the herd is oriented towards beef rather than butter production. The main purpose of the females in a beef herd is to reproduce the male beef stock: in this case one would expect the milk production to be relatively low, and to be mainly for 'investment' in the form of feed for rearing young calves and for essential domestic purposes, and not for conspicuous consumption and trade.

The demographic structure of the herd should indicate whether this Namtsho herd is oriented towards milk or beef production. A beef herd has more males, as these are bigger and fetch more money on the market than females (see Table 4). But for a traditional herd from Namtsho it is said that the males would be used only for trade and carrying the tents; in which case there would be an excess of females over males and the herd would often be oriented towards milk production. According to one informant, it would have something like the following profile: perhaps 90 animals, of which 50 would be female and 40 males; around 60 animals would be above the age of five, there would be 15 calves and 15 others under the age of five. In the above Namtsho case-study household there are 19 males and 11 females: this is the reverse asymmetry that suggests a beef rather than milk herd.

Age distribution is also an indicator of the productive purpose of the herd, as males were said to tend to grow to their full size at around their sixth year. Hence, unless the costs of feed outweighed the benefits, there would be no point in slaughtering before that age. By contrast, in a non-market herd females will not be sold or slaughtered as long as they give milk; males would be used for carrying, and not sold before ten or eleven years unless they were sick.[9] In this case the ages (excepting calves) were reported as follows:- females 12, 11, 9, 8, 7, 5, 4, 3, 2, 1; males - 9, 8, 7, 7, 6, 6, 5, 5, 4, 4, 4, 3, 3, 3, 2, 1, 1. There are an excess of immature males over females, which suggests that there is some culling of males above the age of six or seven, and also that perhaps young females are not valued in the same way as males.

Certainly one case-study can be no more than suggestive, and other factors such as climatic variation can affect calving; moreover the recency of the household responsibility system's introduction could not in itself be responsible for the excess of older males over females. However, the demographic structure of this herd is not discordant with the idea that it is being raised for beef rather than for milk production.

There also appear to be market incentives for beef production. This small tent has a total livestock value at market prices of around 26,000 yuan, and a declared cash income and expenditure of over 1,000 Y per annum (see Table 5).[10] The open market selling price in Lhasa in 1986 (seasonal variation to one side) was 600 yuan for a yak and 90 yuan for a sheep (see Table 4). Hence the stated household cash expenditure can more than be met by the sale of two yak. While our data do not allow any accurate reconstruction of the economics of a milk herd, it is clear that raising two calves per annum for six years will more than meet the cash income needs of the household. Quite obviously there is some economic incentive for raising beef for market.

---

[9] One critical point here for both males and females was that they had their teeth, and hence could graze properly.

[10] Official figures for 1983 would indicate that the per capita income for 'peasants and herdsmen' in Tibet was on average only 200-300 yuan (PRC Yearbook, 1985); that overall for the TAR was in 1986 (for 1985?) given as 352 yuan (Kulessa 1986). However, the assumptions behind this data collection are not clear and the figures should not be used for a longitudinal comparison with that presented here.

The householder himself regarded his livestock as the main item for trade, not dairy products. He stated that he sold five or six sheep, and one male yak, per year for slaughter (1,000 yuan). He also sells perhaps 25 to 30 kg of wool (220 yuan) and three skins (40 yuan) per year, that is, a cash income of around 1250 yuan (see Table5).

Against this, he has to purchase barley, wheat and rice, and oil. His household consumes 75 kg of grain per month, which he obtains from the sub-country office and from Lhasa, sometimes paying with cash and sometimes in wool. He also makes cash purchases of tea, cigarettes and cloth from the sub-county offices, his expenditure roughly balancing with income.

A need to carry out long-distance trade outside of the area to obtain grain is a sign of a mainly pastoral productive economy. This is a general distinction beyond Tibet and Central Asia too, and the role of the yak in many ways is parallel to that of the camel. The herding of many species of livestock normally dovetails with some form of agriculture, short movements and seasonal dispersal; long distance trade tends to be divorced from agricultural production and to involve fewer species (Swift 1986).

Such a pastoral economy is connoted by the Tibetan term *drog-pa,* which also can have the sense of nomad, and contrasts to the *sa-ma drog* who carry out a mixed agriculture and pastoralism, for whom long-distance trade is not necessary to obtain basic grain. Whereas the people of Namtsho and Xixangpangma are termed *drog-pa, the people of Namtsho and Xixangpangma are termed drog-pa,* the people at Old Dingri and Shelkar are mixed agro-pastoralists.

For example, at Old Dingri barley, mustard-seed, potatoes and radishes are grown by the poor husehold of our case-study. Whereas our Namtsho household with two adults and two small children have to obtain 900 kg of grain per year, this house, with four adults and two children, has only to obtain a maximum of 500 kg of grain per annum. At Shelkar the main crops are barley, wheat, mustard-seed and beans. Our case-study, a relatively well-off farmer with irrigated land (of a size that needs 390 kg of seed), grows enough grain for the seven adults in his household from his land, and also produces enough stubble for fodder for winter feed for his livestock (three cows, one yak-cow crossbreed and one donkey).

In the traditional economy thers was for subsistence a *local* integration of trade for the mixed agricultural/pastoralists; for the pure pastoralists subsistence needs are tied up with this long-distance trade. Even up until very recently some of the youg men of such pastoral communities carried out long distance trade, in order to obtain and deliver salt and grain. It would be normal for a group of the men and load-carrying yak from the village, to be away for months at a time carrying these goods from one area to another. Such traditional trading links, which also involved the sale and delivery of salt to their more sedentary partners, were the way in which the surplus grain, grown in the south-east of the country, was traded for livestock products and salt from the Changthang in the north-west. Village communities and houses within village communities used to have their traditional exchange partners, this relationship persisting between the households over a number of generations.

At the present day livestock from Namtsho can be sold on the open-market in Lhasa. Those familiar with the trade carry it out on behalf of their neighbours and kinsmen; the meat is sold by licensees in Lhasa. This household, together with eight others from this neighbourhood group and the adjacent group, took a loan together to buy a lorry with which they can operate such a service.

The loan was of 9,000 yuan. No security beyond their word has so far been needed, though they say there should be; in practice the sub-county office writes a letter to the bank, and they give out the money. Money can be borrowed from the sub-county office, application first being made in person to the township headquarters. People generally borrow during the first three months of the year and make return payments on the tenth month. 1986 is the first year in which interest has had to be paid.

This trade is also carried out to other areas besides the capital. Border trade with Nepal is still very important in both the Nyenam and the Dingri area. In the former the difference in prices between those for Nepal and those within the community itself is institutionalised (see Table 4). Horses, mules, goats and sheep are sold to Nepalese, and yak/cow cross-breeds are purchased back, together with cloth and rice. In Old Dingri loans have been made available to encourage this border trade. In one example a householder with two others borrowed 3,000 yuan from the sub-county office to invest in this trade. Nepalese still come from Solu/Khumbu with buffalo leather, dyes, snuff and biscuits, and return with salt, sheepskin

and wool; also people from Dingri, whose kin connections cross the border, move back and forth between Kathmandu and Old Dingri carrying out this petty trade and marketing in clothing and other manufacturd goods from South and South-East Asia in return for primary products from Tibet. However, the number of crossing and trading points has been reduced from traditional times, which again focusses trade at what may become urbansing centres.

There are perhaps three principal differences between the traditional trade within Tibet, and the current trade in livestock and associated products. First, due to the road network, less time is taken in travelling and more in negotiations at one's destination. Second, the travelling focusses more on the cities; it is becoming urban-rural rather than rural-rural. Third, today a transaction is more the sale of a commodity, that is a market relation with a cash nexus and the aim of maximisation, than the traditional exchange that is expressive of a continuing relationship between houses.

While the move from reforms is in that direction, this trade is not just a question of open-market forces. The system can be described as a socialist 'mixed economy'; but both the political history and more traditional Asian model of patronage and existence of such relatively open markets is quite recent, and does not by any means have a uniform spatial impact in the TAR. Up until 1979 there were no private shops, and in some places even in 1984 food could only be purchased with a ration card as well as money. At the present day there are still clear differences in prices on the 'open-market' between one place and another, which reflects the fact that the movement of goods and people between areas is not without its restrictions (compare Lhasa and Nyenam in Table 4). State-controlled sale and distribution through the sub-county offices, for which permits or rations cards are needed, continues parallel to the new private trading.

In Lhasa the two are known as the 'inside' and the 'outside' prices respectively. Outside prices are twice the inside prices; some commodities, for example barley, are not available on the 'inside'. Some goods, especially meat, tend to fluctuate in seasonal price on the market. For selling on the 'outside' a licence is required, and these licences, while bearing a photograph of the licensee and usually for an open volume of goods, are not always straightforward to obtain. We are not so much in an 'open market' situation as a political economy, one in which there is a

hierarchy of customary rights of purchase and sale. These rights too can also be treated as commodities.

One further effect is that a certain individualism and separation of interest between purchaser, agent and vendor may occur. Furthermore, the role of trader may not be so much egalitarian, in the sense that it is a stage passed through by most young and single men in a village, as a permanent status linked to urban migration. Hence, while initialy such urban-rural links may decrease differences in wealth between town and country, there is the long-term possibility of a rural socio-economic differentiation, with an urban migration by the new rural elites.

Here we have focussed on the individual household as an economic unit in the context of new market forces and opportunities, and the possibilites for security and investment that come from the availability of licences, quotas of grain, banking and loans, and local markets. The present form of centralised distribution stands alongside both the newly introduced market forces, and the traditional community-based forms of insurance and assistance, that exist within this group as a whole. The changes themselves allow the technological modernisation of traditional ways of trade, with roads and trucks replacing yak-caravans.

These forms of integration, control and insurance supplant and contrast with the community-based forms of self-help. It is to an examination of these traditional modes of association, and the ways in which they assist both with the efficient continuity of the households and the herds, to which we turn now.

Traditional Associations

As a whole this group of 22 tents is known as a *dongseuh*, which can be translated as 'village', 'collection', or 'neighbourhood'. Such a territorial group should consist, it is said, of between 20 to 30 tents or households. There are two correlated ordering principles here: kinship, that is descent, marriage and the family; and location or territory, the fact that people occupy the same neighbourhood or household. Kinship and marriage, in the creation and transformation of families, maps individuals onto households, and so maintains them and the neighbourhood over time.

At an every-day level it is often found that rights and obligations, maintained by the statuses that link people together in the domestic and work areas, are couched in terms of kinship. While being a neighbour and friend are sufficient grounds for cooperation, such of these links that are local and territorial within the group tend to be reinforced by marriage. In other words, whatever else it may be, a marriage is an expression of a common social and economic interest.

Over their development cycle the tents can move from nuclear to extended families, that can contain three or more generations. Because they live in the same location and because of the 'amity' nature of kinship links, the *de jure* division of the property of the households over the domestic cycle is a gradual and ambiguous affair, rather than a once and for all movement.[11]

In traditional Tibetan social organisation as a whole, rules of marriage and residence which result in the much-noted practices of polygamy and polyandry, together with the possibility of residence as a subordinate in one's wife's families' household (matrilocality), centre around the continuity of the household and its landholding rather than the local-lineage. In other words the tent or household *per se,* rather than the rights of the individual or patrilineage, are what is preserved over time. The very variability of the working out of these rules in practice, are hence ways in which demographic variations are absorbed within the general pattern of continuity of the household.

This is unlike kinship in South Asia among Hindu peoples, where rights devolve to families rather than to households. A few studies have compared ethnic Tibetan and Hindu groups in similar ecological conditions on the southern slopes of the Himalaya (Levine 1977). These suggest that the Tibetan practice avoids sub-division of land on inheritance between equal members of the same generation. This promotes rational land use, as it keeps landholdings in economic sizes linked to semi-permanent households, albeit at the expense of individual rights.

---

[11]The exception here, of course, is for those who marry in from outside, and under normal circumstances these would be women rather than men.

However, one would expect nomadic pastoral organisation to emphasise the lineage at the expense of the house; to what degree in general is this subordinated to traditional Tibetan household organisation? There seems to have been some distinction between farming and pastoral groups in their treatment by the traditional state. Whereas for farming groups taxation was by the household, moreover by fixed and registered houses in which rights to land were vested (*talpa*), the taxation of pastoralists seemed to be according to the numbers of head of livestock. Hence while the administrative apparatus buttressed the household as the social unit in sedentary areas, this does not appear to have been the case for pastoralists in quite the same manner.

At Namtsho, while not all local-lineages are named, in this group of 22 tents there are six families or local lineages. Here kinship is usually subordinate as a principle to the household. For example, at Namtsho there were only 16 tents in 1961 as opposed to the 22 today, and in all the case-studies looked at here there has been a stated increase in the number of households since 1959. However, the fundamental dislocations since that time have been such that it would be inappropriate to look for empirical expressions of a rather sophisticated social rule. Beyond this the current investiture of rights of the individual in property, rights tantamount in the length of their lease to ownership, together with the individuating properties of the market system, would not at first appear to promote the revival of the household as a unit.

At the same time, despite implementation of the responsibility system in the formal act of allocation of property to individuals in 1981, land, livestock, and contracts, are in a *de facto* sense held by households rather than by individuals. At least in the case-study at Shelkar, in the event of a death the land and property is not reallocated by the state, but remain with the household, that is, are inheritable.

Land is not taken from one house to another on change of residence at marriage but remains with the household; in fact the marriage system, with occasional matrilocal residence, seems still to operate in the traditional manner. The only exception is held to be that sons could decide to leave the household and have land allocated to them - this appears to be a traditional local variation away from the theme of the corporate household, one that now no longer has any direct taxation penalty (Aziz 1978). But overall the practices here suggest, at least in the mixed agriculturalist/pastoralist

villages, that the traditional household/extended-family is once again the corporate unit. Indeed, one may well ask to what degree in practice it ever ceased to operate at all.

Livestock Management

Potential group size, in the sense of day to day management, is a separate issue from recognised common ownership, or the flock size that can regenearate itself from year to year despite ecological and climatic variation. Daily management tends towards efficiency of alocation of labour, and during the daylight hours they prefer to keep animals clustered in flocks or sub-flocks within the larger groups. These management groups are of 17 or 18 for yak, and 100 to 150 for sheep and goats. One or two people can supervise such groups which are relatively easy to direct for pasture and water. These numbers are roughly the size of the herd of our case study. However, most household herds are bigger and are subdivided in this way for supervision during the daytime.

The upper limits for control of a herd could be as many as 450 for sheep and 140 for yak, but one rarely sees this. Nor does the number of acknowledged herds correspond directly to the number of tents: though there are 22 households there are acknowledged to be 15 groups of yak, and 13 groups of sheep. These groups or units are large enough to be stable and recover their size properly after a year of drought: this is around 300 for sheep and 60 for yak. In practice the size tends to rise and fall between 150 to 270 for sheep and goats and between 50 to 70 for yak. This is well in excess of the size of our case-study household from Namtsho, but roughly in-line with the size of the larger tents that contain extended families.

This does not present a problem for our smaller tent, as security and insurance, notwithstanding the separation, are vested in the extended family that includes his and her parental tent. One can see overall that the mobilisation of these kin obligations outside of the immediate tent allows compensation for the effects of demographic fluctuations, that is of the labour production/consumption ratio changes over the life-cycle of the domestic group that, *pace* Chayanov, one would expect to affect economic efficiency of the domestic group.

There is usually a division of labour by gender in which milking is carried out by the women, and trade with livestock by the men; general supervision can be carried out by both. Sheep and goats are often looked after separately by youths and children; these animals are divided into male and female groups to reduce the fighting among the males. Watering is normally carried out directly on small rivulets on the pasture, and does not require the special labour with buckets from wells as in Northern Africa.

For example, in the case above at Namtsho the householder can leave his animals and go away to trade in Lhasa because of the extended family. Indeed, this is a circumstance in which the local lineage, in the form of the extended family, encompasses the household unit. His livestock here is counted in with his father's who will supervise them, his wife has the option of taking refuge at her in-laws' tent pitched 100 metres from their own, or of returning to her parental tent and village near Damxung while her husband is away.

While being a neighbour may itself be sufficient grounds for co-operation, the households that combine to look after their animals jointly are generally extended families. The *de jure* division of the flocks is not relevant to season to season management.

Some comparative material shows that this traditional notion of management control as defining the unit is not just limited to Namtsho. For example, in old Dingri the village keeps all its cows (*circa* 200) together in one flock as they did during and before collectivisation. Prior to 1959 cash or grain payments were made to the shepherd; now the households take turns in contributing labour to look after the herd, weighted by the number of animals they have put into it. The sheep are kept in groups of up to 300, this being the number owned by upwards of two houses, depending on their wealth. Again the houses which co-operate in this way generally do so because of kinship or because they come from the same neighbourhood. And whether it is the cows or the sheep, it is the young rather than the elderly and senior who supervise the grazing livestock. In these cases the size of the pasturing unit is a function of the efficient use of labour. In all cases the animals are now milked separately by household.

In Shelkar there is co-operation within the neighbourhood in the form of labour exchange between houses, or the bringing together of yak-cow hybrids from different houses as ploughing teams to be used alternately on

each other's land. Fodder can be obtained individually from plots on hillside where houses have particular rights, or by labour on others' land in return for payment in fodder. All the cows are looked after as one group; the amount of time put in looking after them is a function of the number of cattle owned by the household. All the donkeys and female yak-hybrids are now looked after by one sepherd for the whole of the township: he is paid in kind for his service, at the rate of 6 kg of barley per head livestock per annum. This division of labour perhaps is an incipient class division, but much depends on whether recruitment tends to be hereditary or open.

This daily hire is distinct from the traditional system, which still exists, of leaving one's livestock with someone for a season: in this arrangement the milk, meat and new-born calves above the replacement number devolve to the herder as payment.

These practices allow the following conclusions about the joint management of livestock resources. First, there are no cut and dried economies or diseconomies of scale: the herd size of livestock varies depending on whether one is talking about stable size and management units for reproduction from year to year, or flock-size for daily grazing: these are task or context specific clusters rather than fixed and absolute herds.

Second, the notion of ownership, whether couched at the level of collective body, be this the state, household, extended family, or vested in contracts held by the individual, is not sophisticated enough to analyse the various combinations of rights and obligations of use and disposal at play, either within the traditional community or the state 'responsibility system'.

Third, the requirements of these different circumstances straddle the conventional husehold. The primary institutions that respond and accommodate to the requirements of efficient management and security of supply are the local neighbourhood group and the extended family; the state-run institutions only play a secondary role.

Pasture Rights and management

True nomads, in the sense of people on the move wherever their fancy takes them, are rare. Even for the *drogpa* pastoralists there is rather a seasonal pattern of transhumance between pastures in which there are well-

defined land rights, rights which have in all likelihood existed for as long as the state and literate civilisation in this area, that is well over a millenium.

The general movement, especially for the mixed agriculturists/pastoralists, is a dispersal up in the summer to the highland pasture (*yarsa)* on the sides of the mountains, and back down the valley in the winter to the lowest settlements (*gnsa)*, which can be fixed villages with houses. Current efforts at settling pastoralists at Damxung and at Namtsho involve building them permanent winter settlements.

There are also intermediate Spring and Autumn sites in the cycle, and encampments can last for periods of between 15 days up to five months.[12] At Namtsho all these areas are well-defined, with areas 'nested' within the administrative hierarchy. Each level has exclusive use of a certain territory, and the 'neighbourhoods' within the same 'township' have contiguous pasture, and the four 'township' pastures so constituted from the 23 'neighbourhoods' of the sub-country, while not being a group for production, also are exclusive areas. As far as the neighbourhoods are concerned, these territories would appear to be roughly the same as those of the traditional land rights.

Within the territory of their own neighbourhood they can in principle pasture their animals anywhere; but in practice the custom is that two officers of the neighbourhood decide which areas the livestock may graze. The individual who allocates pasture within this group at Namtsho is a man in his late-twenties with polio in both legs. While he was elected two years ago for a term of four years, he actually carried out this work for 10-15 years, that is during the peirod of collectivisation. There are continuities in change.

He tries to give people an allotment of pasture that balances out over the four seasons: good pasture for everyone for four months, and bad for 2/3 months. In the event of disagreement there should be discussion that involves all the parties concerned; it was said that up until this time people

---

[12] This general pattern of 'vertical' seasonal transhumance is common among the culturally congnate groups on the steeper southern flanks of the Himalaya; however, in these cases clustering into village groups tends to take place in Spring and Autumn at the time of harvests and festivals, with descents and dispersal to the lower and warmer altitudes which the gorges of the southern Himalaya offer during winter; see Clarke, 1980.

have not gone beyond this neighbourhood group to resolve internal pasture disputes.

The principle on which he allocates pasture is by parity according to the number of head of cattle, rather than parity by tents or numbers of individuals. Hence while different neighbourhoods might have differnt densities of livestock per unit pasture, within its area the local community should exert uniform pressure on its grassland.

At Xixangpangma where the productive economy similarly depends exclusively on livestock, we were told that rights to areas of pasture are traditional and vested in households, and are the same from generation to generation. The village pasture as a whole borders on that of the other two villages that make up the same township.

At Pemuthang east of Shelkar, herds graze on areas traditional to their household and extended family groups, within that valley that was and is available to the village community as a whole. Here, as at Namtsho, the exact area a household uses can rotate within the village from year to year, depending on the committee; if people cannot agree they hold an intra-village lottery.

In formal terms the system explained to us is as follows. The 'long grass' is managed by the pastoralists directly, rights to areas being vested by the County onto the 'townships'. Hence each of the 41 townships of Dingri County has an area of pasture, and each of these townships is said to have its own 'long-grass company', or committee, to allocate the rights in grassland further to the 'village neighbourhoods' which can be less than the actual villages in size. In practice rights to specific areas would seem to devolve in the traditional manner to particular villages, at which level there is an officer or representative who can make decisions, as at Namtsho. Within the villages again rights devolve to particular households.

To summarise, overall in these areas there is a similarity in the manner in which rights to pasture are allocated. In law they follow the administrative structure; in practice they follow the traditional pattern of village or neighbourhood allocation of pasture and boundaries. Within these communities rights fall to local extended families or herds again according partly to tradition, and partly according to an egalitarian rotation.

These rights are managed by one of the elected or otherwise appointed officers of the neighbourhood.

The Administrative Framework

Besides human and animal organisation on the pasture, the form of managing livestock also depends to a degree on the wider administrative order of which the community is a part. For example, the allocation of rights to pasture between two communities may reflect internal factors, such as descent; but it is not a putative descent backed up by some competitive display of arms, but by the existence of the state. This is a traditional truth for Tibet; it is even more true, perhaps, today, when there is a modern infrastructure and appointed posts in the administration that reach down to the sub-county level. In this section we shall follow the links upwards through this administrative structure, in particular as they affect production and institutions for pastoral development.

At Namstho the particular group of tents is not just a neighbourhood, but is known as No 1. *dongseuh* or 'neighbourhood/village'. This is an administrative unit in which the local people are elected and serve as officials. In formal terms elections are run by the sub-county each two years, by ballot, for the offices of neighbourhood representatives, known as the 'collectors', one of whom is an asistant. In practice though there was an election five or six years ago, there has been no formal election since, though there should be one now.

As in most areas, in principle six 'neighbourhoods' constitute a 'township'; the 23 'neighbourhoods' of the area, or the four 'townships', make up the sub-county of Namtsho. In principle there are 20 to 30 households in a 'neighbourhood', these neighbourhoods very often being co-extensive with the old 'production teams'. If a household wants to transfer elsewhere to a different 'township' or 'sub-county' then it must obtain a permit from the 'township'.

The 'township' is an administrative division rather than a corporate body or unit of production; however, at a popular level it is still equated with the old commune. There are in both three administrators, two officers and a secretary. One person from this neighbourhood is on the higher level township committee.

As is indicated by this equation, and perhaps because of the recentness of the transition, there is often some unclarity about how the township links to the sub-county office (*cheuh*). Many people regard the township as being subordinate to the sub-county, simply because it covers a smaller area, and in a *de facto* sense in some cases this may be so.

Present-day Organisation

However, in principle the distinction between the township and the sub-county embodies a distinction central to the reforms of the Chinese administration. The commune was both a unit for governance and production in a single chain of command; in the current system production and governance are separated (Wu Qi 1986). Whereas the old communes had a role of regional economic co-ordination, especially for land use, the present function of the 'neighbourhood' and 'township' officers is the collection of data for forwarding upwards for collation at the county level, and internal management of primarily jural issues among the households of the neighbourhoods. Rights in land and livestock are now held within households under the responsibility system and are not accounted for collectively (White 1987).

In Tibet there still are controls, but they are indirect and act as much through incentives and informal pressures as through pricinng on subsidised goods or other means. As was noted above, grain and other goods are available through the sub-county office; this is the office at which bank loans are approved, and for these loans collateral has not been necessary and, according to a Namtsho informant, 1986 was going to be the first year in which interest was payable.

It is from the sub-county office that demands for fertiliser are forwarded upwards, and through it that agricultural inputs, training programmes, and extension work come down to the neighbourhood. In the same way, veterinary care, services for health and education are co-ordinated if not delivered by the sub-county office, not the township. Technical officers from central offices, are attached and operate at the county or sub-county level, not through the township. In other words, the apparatus of the state that serves production, including the delivery of inputs, and capital investment by the state, is channeled down to the sub-county office, in principle quite separate from legal governance. The examples here largely concern agricultural investment.

Rural Investment

At Shelkar, which is next to the Dingri County headquarters, there is irrigation work from two small canals. These were planned at the sub-county administrative level, who applied with a design and budget to the county level. It was built with local labour, for which a sum of 6,000 yuan was allocated centrally.

Also at this location there is irrigation for agricultural land of two 'townships', that is around 300 households. This has been planned at the county level, involves the county engineer, and has a budget of more than 10 mn yuan. It should both improve the irrigation to land presently under cultivation, and reclaim new land. This land will be mono-cropped, and the plan is that this water will increase the yield from 2 kg to 6 or 7 kg of grain from 1 kg of seed.

A further example comes from the distribution of improved varieties of seeds. These come from the prefecture Research Station at Shigatse and the linked unit for seed multiplication that has recently been established close-by at Namling. Twenty truck loads. That is, 200,000 kg of seed grain were distributed from Shigatse in 1984. These went mainly to Gyantse, Shigatse, Male and Penag, and also to Namling. From the county headquarters, distribution became primarily the responsibility of the sub-county offices, though the townships did also in practice play some role.

In 1985 Namling made separate contracts for seed distribution with each of the 18 counties of the prefecture. The procedure used was outlined in two stages as follows. First, the centre will contact the county headquarters to inform them what the farm will be producing and how it can be used. Secondly, county officials will come to see the officer at the centre, or he will visit the county, to assess with them what their needs are. The demand is higher than the production at the moment, and when the centre allocates the amount they take into account the efficiency of the county, and their capacity for management of water.

The prefecture offices are not the only source of inputs, but they are the only source of inputs that are already budgeted for. If a county office wishes to it may, as may a private body, purchase inputs from outside the area. But these have to be paid for outside of the prefecture budget. This

effective subsidy is one likely reason for the high demand for agricultural inputs from the prefecture stations.

Growth and Ecological Balance

The single most important question for applied research on pastoralism is to discover the upper limit of the carrying capacity of the pasture. It could be that at some critical juncture the changes in the pasture become, if not irreversible, then only reversible at great cost, that is, lead to a relatively permanent ecological degradation. Degradation has been recorded elsewhere in central Asia. In the 1970s in the north-east of China, the deforestation of the Da Xingan Ranges affected the Hulan Buir grasslands to the detriment of livestock breeding (Fei Hsiao Tung, 1981:89); there are also questions at the present day about ecological degradation of the Inner Mongolias from over-grazing.

Certainly the recorded statistics from the earlier period indicate a doubling in numbers of livestock between 1959 and 1976 (Epstein 1983:308). However, for a number of reasons already referred to, one cannot take the figures of that period at face value. Beyond these, there is a major problem in obtaining extensive quantitative data *directly* from nomads, who move over vast areas of difficult terrain away from infrastructure and have a very low population density. It is significant that at the present day the priority of the Animal Husbandry and Veterinary Research Institute is to mount a livestock census.

Our own data, both directly from Namtsho and from general comment, suggest an increase in flock size, perhaps of the order of 25 per cent since 1981. Again, there can be over-reporting as in the earlier period. As one informant put it, 'now that we have more livestock'. Either for or against this, the number of livestock was actually said by some to have dropped over the past few years in other areas where the household responsibility system has been operative. For example, at Pemuthang we were told that the numbers had dropped from 4000 to 1000 sheep and 400 to 200 yak in the years between 1982 and 1987.

There could be a number of reasons for this. First, there are the above reasons to do with realibility and way of reporting of statistics. Obviously, there could be an under-reporting to officials. The above 'reduction' could also be merely a tempering of earlier unreliable statistics with a touch of

reality. More substantively, the three recent years of bad weather with not enough rain and less lush pasture may have led people to slaughter more livestock for market than they otherwise would have. This is not the type of data one can easily obtain, and more in-depth case-studies would be needed to establish the general pattern or patterns.

There is also a traditional attitude that the pure accumulation of livestock itself is of value, an expression of well-being and prosperity, a form of wealth. This is borne out in popular speech among pastoralists on the Changthang plateau, in which the common generic term used for the yak and the female, *nor*, literally has the sense of wealth. Curiously, the existence of the communes and production teams of earlier years is said to have maintained these attitudes more clearly than do households at the present day, both because they had no pecuniary advantage from the slaughter, and because money and markets were not the dominant force in a command economy.

The equation of livestock with wealth is common among traditional pastoral peoples in other areas, such as East Africa. In Tibet it is still held by those nomads in the remoter areas who have not been influenced to any great degree by the growth of markets in the past few years. These are people for whom the world is still constituted by goods rather than by commodities. Cash is seen by them as another item or good, rather than as a baseline medium of exchange and store of value. Outside of particular transactions within limited spheres, its purpose appears symbolic and expressive, and it is said to be displayed on the horns of yak and in bags at the poles and entrances to the tents; much, perhaps, in the way that jewellery is used in other cultures.

There is cultural resistance to the slaughtering of livestock, with strong Buddhist prohibitions against killing. This is admitted to have two main effects: first, the people who work on the government livestock farms try to take leave when the time comes around in Autumn for slaughter; second, the pastoralists themselves often do not cull the herd early in the season when the price is high, but hold on until much later, perhaps coming near to degradation of the pasture, and only at the end, in winter, when the price has fallen, do they slaughter the animals.

The market-pricing process makes people more aware of the possibilities inherent in slaughtering livestock earlier in the season.

Pastoralists now in effect own the livestock themselves, and in the hinterland of urban areas there clearly is an open market in livestock. Livestock can be converted into an income above and beyond that contracted with the state, and this does appear to alter people's attitudes towards breeding for market.

However, encouraging the slaughter of livestock does not necessarily reduce the pressure on pasture if people are specifically breeding them for slaughter. One cannot make *a priori* assumptions about what raising livestock for beef production is actually going to do to the total numbers grazing, the rate of slaughter, rate of birth, and number of years to maturity being the critical parameters. And if the Namtsho case study has generated reliable figures, it suggests that breeding for beef with the current structure of incentives implies a greater number of grazing animals on the pasture than previously. Economic self-interest in the urban hinterland may reinforce the traditional attitudes towards accumulation in remote areas, and against slaughter in the state-controlled sector; it may also increase the number slaughtered privately for market, all of which may be incentives to increase the number of grazing livestock.

The quantitative position on livestock is not clear; nor is the question of the carrying capacity of the pasture. But the introduction of individual or household contracts evidently does raise problems about collective resource management. One has to ask whether the present structure gives enough incentive to preserve this resource, or whether it is 'rational' for pastoralists to maximise their immediate return and that the creation of markets may serve quite literally to clear the ground in a 'tragedy of the commons' scenario.

Pasture Problems and Research

Shortage of fodder in winter (reported to be 1 to 5 kg per capita livestock on the northern side of the Himalaya) and spring grazing is said to be one of the main constraints on increasing the production of livestock. While we have no direct figures on grassland productivity, secondary source figures indicate yields that vary from under 200 kg/ha to over 4,000 kg/ha, with an average between 375-750 kg/ha (Huang Wenxiu *et al*, 1978). The pasture improves from west to east, as the altitude decreases, with a corresponding increase in humidity and temperature.

Wind, altitude and water are said to be the main variable factors in this border area, as soil is said to be in most areas of the prefecture. There has been typological work on the grasslands of TAR, resulting in a classification into eight types with 15 sub-types and 40 sections (Huang Wenxiu 1986).

Research on hybrids for altitudes up to 4,000 metres is continuing, with grasses such as *Elymus nutans Griseb., Elymus sibiricus L., Roegneria kokonorica Keng., Puccinella tenuiflora Sribn. et Merr., Poa Pratensis L., Bromus inermis Leyss., Lolium perenna L., Hordeum sp., Avena sativa L., Avena sp.; and the Legumes Astragalus sinicus L., Vicia villosa Roth, Trifolium pratense L., Medicago sativa L., Melilotus officinalis L.* (Kulessa 1986).

At Dingri around five and a half hectares of trial pasture were to be planted with improved seed from the prefecture seed multiplication unit at Namling, using an ammonia based fertiliser. But the costs of fertiliser make the benefits of its use on pasture debatable. Furthermore, in conditions of drought the present hybrids either die or revert to their original natural form; they tend not to breed true above around 4,000 to 4,500 metres, but degenerate back to their natural form. The natural seeds, while of course they will not grow without water, do not die in seed form but will germinate the following year.

However, in most parts of this Prefecture, and the Changthang, the problem is stated to be simply one of lack of water. Without enough water there is not enough pasture, as at Pemuthang last year where what little grass there was, was then attacked by insect pests. This southern area receives some rain from the Indian monsoon, but this weather has been unpredictable in the last four summers. Water shortage is formost in people's thoughts as in 1982, 1983 and 1984 there was not enough water, and the rain that did come, came late, from August onwards.

At old Dingri there are also problems from seasonality, that is, drought followed by flood. They need water control and management, irrigation and drainage, for the water that comes from the Himalaya in the south. While they have plans in preparation, water management works in this area would require major capital investment that would have to be subsidised centrally.

Yak are susceptible to disease on waterlogged pasture, and hence it is only towards the sides of the plain, where the village neighbourhoods have rights to the surrounding hill-pasture as well as the low-lying plain, that herds of yak can be kept with great economic success. Hence the household of the case-study at Old Dingri (Gang-gar), which is on a part of the plain susceptible to waterlogging, had no yak but sheep, cows, bulls and horses; the people of Gnven-beh, at the side of the plain, take their animals up and down the hillside and are said to have greater numbers of yak.

A further problem is that the pasture is infested with marmots, which burrow in the land and eat the roots of the grasses. It is not known whether this problem is getting worse or has always been the same. To some degree it has been dealt with by poison, and around 11,200 hectares have been so treated.

The Animal Husbandry and Veterinary Research Institute, whose main office is in Lhasa, employs 130 people. The office was founded in 1963, and began work in 1965. The deputy director has been there since 1963. It was established with only 20 people, and gradually employed more and more up to the present level. From the mid 1970s when the administrative system changed the workload increased.

In 1983 the Institute started to register the livestock of Tibet, sub-county by sub-county, and sent out its staff to the local county headquarters. The inspection was done by the office itself rather than by local officials; that is, they carried out monitoring independent of the production and administrative organisation, which is a main change away from the recording system of the centralised command economy. Differences in north, south, east and west have been recorded, not only in number but in the physiognomy of the animals.

Work is also undertaken on hybrids: they have produced crosses with Australian and New Zealand sheep, and with exotic bulls, from which they have used artificial insemination successfully in Lhasa; these have been introduced to raise the yields: hence much of their work appears in research and monitoring, as well as the promotion of extension work and seed multiplication which we have discussed above.

The agricultural research station for the prefecture is at Shigatse. It began work in 1983/4, before which work on grasslands, irrigation and veterinary problems was carried out at the veterinary hospital in Shigatse, at which time the senior specialists of the station worked there. There are two grass specialists, one working on the effects of fertiliser on grass, and the other on grass seed use. There is also one animal specialist for the livestock, to see the effects of different types of grass on milk production.

At Shigatse new varieties were said to be produced by irrigating natural grassland. The three original types were a mountain garlic, a wild pea (?) and a fodder; another three appeared: a grassland lawn, a forest grass, and another type of fodder. They took seed from all six grasses, and planted them in separate plots, with the high irrigation levels, grew all the grasses up to knee height with high irrigation levels. They distributed them all, as they thought they were better than the natural varieties, according to which was suited to the local climate.

They also sent 1,000 kg of seed and allocated 150,000 yuan to develop Namling as the prefecture seed multiplication farm, with research focussing at Shigatse. Namling is just north of the Tsangpo at Shigatse, and the farm is named Yemagang Chu Namling Shen Jong. It employs two officers and 17 workers; the latter come from Yemagang Village which is nearby, and have been employed for 11 months. The deputy officer acts as the manager, and the principal officer is also the main officer of the above Agricultural Research station at Shigatse. Namling was open land before the centre was established in 1984. Some irrigation canals were dug and trees planted in this area in 1972, but the main work for irrigation on the land (50 hectares) was carried out in 1984.

Both carry out linked research on other topics, presently: how to kill marmots and insects; how much fertiliser to put on natural grassland; and how to put up wire fences to prevent degradation from overgrazing. So far they have managed to fence in nearly 20,000 hectares of grassland, that is around 0.25 per cent. Namling also has 30 sheep and 20 cows, brought in in 1986 for research on how they graze on the various grasses, and to test their nutritional value.

Other seed research has been carried out at Namlign, as follows. In one plot they planted seed *(Astragalus adsurgens)* among the normal grass with

'normal' amounts of fertiliser [$P_2O_5(N_2)$] but irrigated it twice only, when the seed was 1 cm., and then when it was 10 cm. high.

In a second plot adjacent, which was really the end strip of the above, they had natural grass without fertiliser. In a third plot there was neither irrigation nor fertiliser and here they just grew Daghestan Sweet Clover (*Melilotus abus Desr).* This crop grew well, and it can survive up to around 4,300 to 4,600 metres; above this altitude it will die in winter and has to be replanted. In a fourth plot they planted, with normal irrigation and the above quantities of fertiliser, Willarye (*Clinelymus nutans (Griseb.) Nevski)* and Daghestan Sweet Clover. The Willarye should be of use on high grassland, but as of yet they have not tried it *in situ.*

For production new types of grass seed have been planted since 1985. In 1986 they were producing two main varieties: *Onobrychis viciaefolio Scop.,* and Alfalfa. These two varieties were selected as they breed true and are good fodder, and grow well in this Shigatse area, that is on 'moderate' elevations on the irrigated pasture land close to the fields of the farmers who are the target group (below 4,000 metres).

Namling's principal role is, of course, seed multiplication and extension work. As of 1986 none had been distributed as it takes two seasons to produce the seeds, but they plan to distribute 10,000 kg of the first, and 50,000 kg of the second this season (one *mu* of irrigated farmland here is said to produce approximately 200 kg of seed - that is around 7,400 kg/ha). This present and planned production is encouraging giving that it has only begun since 1985.

But in terms of *impact* of extension it has to be considered within the following context. There are a total of nearly 8,000,000 hectares of grassland in the prefecture as a whole, of which 26,661 hectares, that is around 0.33 per cent, is irrigated (Table 3). By their calculation the present programme reaches only 0.008 per cent of the pasture. They predict that with the present rates and amounts it will be ten years before the demand for these types of seed is met, but even then the demand does not represent the real level of need.

Some county authorities already purchase seed from Gansu and Qunghai provinces to supplement that available locally. One important difference is that the seed supplied by Namling does not cost the local

county anything directly, as it is budgeted for in the cost of the unit from the central government to the prefecture headquarters. By contrast, seed purchased from another province requires a further payment above the central subsidy that has been made for the prefecture itself. The seed that does not have to be paid for will be preferred.

One way forward would be to multiply the seed at a more local level with local farmers. And while in the short-term it may well be a rational allocation of resources, one important question is to what degree the development of seed for well-irrigated land can have an impact on grassland productivity in this area.

The Colllective System

In the Namtsho area the production team was, in *de jure* terms., the corporate unit for production and distribution from 1970 up until the introduction of the responsibility system in 1980/81. There is a continuity in change, and the present 'No.1 Neighbourhood' at Namtsho is the same group that was known as 'No. 1 Production Team'. At the time of the collective one would not have noticed any difference in the layout of the tents and movements of livestock to that observable today. For example, the household head of our case-study above said that he knew where to go with his flocks at different times of the year because the system of allocation of rights to pasture is the same now as it is said to have always been, even before collectivisation. Beyond this there are even the same individuals as leaders of the neighbourhood.

There are two normal terms in local use, both at Namtsho and to the south, to refer to the commune structure. The first is *ru-ga,* which can be translated as 'production team'; the second is *mi-mang chi-kang,* usually contracted to *mi-mang*, literally 'many people, which refers to a higher level of commune structure. The first is used for the local villages or neighbourhood groups; the second is used for the few larger groups, small towns like Shelkar, that is groups which could be divided up into production teams. One other difference is that *ru-ga* has the sense of a local group, but the term *mi-mang* often connotes the presence of government, the state and the party.

In practice throughout the colllective period at Namtsho the neighbourhoods were the real functioning indigenous organisation: no

higher populist commune structure existed, except perhaps on paper, and the commune or *mi-mang* was indetified with the appointed CCP state officials of the coauntry and su-country office. The obligation of this neighbourhood group was to deliver quotas and taxes specified from that office. In the sense of carrying out work, in the words of some, the local people *were* the team, the commune, the township. Apart from the county headquarters and the neighhbourhood groups, and the occasional government agencies that passed through the areas, there were few local administrative institutions.

Three officers or leaders were one of five groups of people divided up according to their tasks or labour; the other four were herdspeople, traders, milkwomen and those who were only able to carry out light work. The leader of the officers allocated people to work; his assistant was responsible for collecting and distributing goods such as meat, butter and grain; the secretary kept the records (he had also been the keeper of the records previously when taxation was paid to monastic estates at Lhasa). The formal organisation of the production team was as follows:-

work	*type of people*	*number*
admin	men	3
light-work	old people & youths	10-15
milking	women	12-15
herding	men and women	34
trading/building	men	4-7

Light work, such as spinning wool, was reserved for the group of old people or children. Women, as is the custom, were responsible for the milking of livestock. The main group of herdspeople was made up both of men and women. They looked after the flocks and herds of goats, sheep, and yak. There were 10 flocks of sheep, and 7 of yak, divided into males and females, with 2 people looking after each flock, giving a total of 34 people.

The last group carried out trade for the group in the traditional way. These were the two groups of men who went away from Namtsho to bring in the grain on the backs of the load-carrying yaks. These journeys were first north-west to collect the salt from the dried lakes of the Changthang, and then south down to their trading partners in the Lhoka region, near to the Indian and Bhutanese border, with the salt, dairy produce, meat and

wool, to trade for grain. The round trip would take two months. These men would also carry out the odd jobs such as building walled enclosures, repairing fences, and cutting fodder, since only two people were needed to look after these animals when they were 'in residence'.

People were allocated goods partly on a *per capita* basis, partly on the basis of their 'stars' (work-points), which were awarded on the normal 1-10 scale. The system was egalitarian in that most had nine per day. Taxes had to be paid to the sub-county office, which included an annual tax per head of livestock (the most recent rate being 0.9 yuan per yak, 0.2 yuan per goat or sheep); quotas of livestock had also to be delivered at fixed prices, and others were sold above the quota for cash to pay the taxes. The goods that remained were redistributed within the group: 40 per cent was allocated according to the star rating, and the rest equally, as was quite normal for 'basic consumption grain' throughout the Chinese polity.

The data from the other case-studies are as follows. Pemuthang is a village of 25 households, with an average of over 8 people per household. Collectivisation, that is joint ownership and distribution by the allocation 'stars', began in 1968 and lasted until 1979. The village was one production team, and the present village secretary was the leader of the team. The livestock was divided up into four herds for management under four 'committees', these being the same as the four traditional groups of livestock which had their traditional allocation of pasture, and were moved much as today, up and down the valley according to season. Though each household was allocated to a herd, families could be split up, especially if one member had a different function, such as driving a horse and cart. Taxation and quotas to one side, links to the higher lelels, that is the commune and sub-county, were not over-evident to my informants, and the village continued with its own long-distance trade of livestock produce and salt for grain with its traditional trading partners. The same is true for trade for salt and meat for grain between the pastoralists of Xixangpangma and the traders and farmers of the Old Dingri areas, which continued throughout this period with traditional trading parthers irrespective of the administrative system.

Shelkar is today a township next to the county headquarters, made up formally of 60 houses. Prior to 1981 it was a commune made up of eight or ten production teams, with three to ten households per team. The commune had five officers, a senior and junior and senior head, two storemen and a

secretary. Stars were awarded at three rates, six, eight or ten. The commune was in principle responsible to the county office.

Collectivisation and Change

The first contact witht the collective system at Namtsho came from an officer from the Animal Husbandry and Veterinary Research Institute, who had been sent ot the area in 1961 and 1963 to solve problems of food production and supply. From 1966 'the commune' was in formal terms the production, distribution and accounting unit: in principle it had to authorise movements of everything - livestock, houses, people. The low popuation density and difficult communications made the establishment of an indigenous collective body with such functions quite impossible. Very understandably, the people resisted such collectivisation.

This same officer visited the area regularly for a period of five or six years, also subsequently. The systems of collective production for the neighbourhood as a production team described above was brought into practice in 1970, after the main effects of the cultural revolution passed. One single individual acted as leader and head official of the group from then up until the disbanding of the system in 1980/1981.

The majority of pastoral areas are more remote than a day's travel from Lhasa. From organisational problems that still exist with the administration of such nomad groups, it is clear that less constructive work could be carried out for collective reorganisation at that time with these than in the case considered here. If Namtsho had little communal structure above neighbourhood level, then even less did it exist for most of the remote pastoral groups.

In the TAR the attempts at collectivisation started with the policy of the introduction of Mutual Aid Teams in the hinterland of the capital city, Lhasa, from 1959. According to one source, on paper, in 1959 there were nearly 5,000 such teams; this number rose to over 15,000 in 1960 to over for farmers and to over 4,000 teams (1,500 permanent, 2,500 seasonal) for pastoralists in 1964 (Epstein 1983).

Originally there was no clear policy for the general creation of full communes; however from 1982 it appears that they were introduced on a trial basis around the two towns, that is Lhasa and Shigatse, and also to the

south near the Bhutanese and Indian border in areas such as Lhoka. These areas were critical for administrative order and security, and the commune was not only in principle the highest level of the rural collective system but also the lowest level of the state apparatus.

To the east and north, the history of the Tibetan Autonomous Districts and Counties within Qinghai, Szechuan, Gansu and Yunnan is that of those provinces and inner China itself, with collectivisation both before and after 1959. In Central Tibet the policy for the overall introduction of full communes dates from 1964, and 130 communes were created on the formal foundation of the TAR in 1965. However, the implementation of this policy became bound up with the disturbances of the cultural revolution that took hold the following year, that is from August 1966.

Even so, from that time in the southern area taxation was levied according to an initial head-count of livestock and land, this system being fully implemented by 1969. This taxation was not just in cash but in kind, and involved the delivery of farm produce. The commune was involved with the collection and forwarding of these taxes to the sub-county office, but labour for road construction and maintenance from local communities was arranged by the government directly with the production team, which was paid in cash. Few large-scale communal units were functioning properly, and most pastoral collectivisation took place after the main effects of the cultural revolution, that is in the period of 1970-72. By this time the system was changed to take account of the difficulty of forming full-size communes, and so this collectivisation consisted of the formation of production teams. The neighbourhods or corporate villages that already had recognised existence became the units for production, contract and distrbution. In inner China collectivisation began earlier and was carried out more thoroughly. Overall, collectivisation in the TAR not only has lagged behind that of inner China, but was then overtaken by the reverse policy process, a development of production authority to smaller and smaller units, from commune to brigade to team and, ultimately, to household if not individual. Hence in the TAR full collectivisation for pastoralists at the commune level was rarely carried out, in part because of the time lag in policy implementation.

A general picture of what the reorganisation of collectivisation implied internally for a neighbourhood in the TAR at this time is suggested by these comparative and historical data. The village might have been one unit or

subdivided into parallel neighbourhoods, each of which was a corporate group for production and distribution. It would not be surprising to discover that locality and kinship to some degree underpinned these intra-village production teams. Such a picture of villages divided into a few production teams is perhaps not that different from the norm for the polity of China in this period.

Beyond this there seems to have been little more than a nominal adjustment to the collective order for production at the neighbourhood level. What appears as atypical in the TAR is the absence of vertical links, that is higher order groups outside of the direct state structures that laid down guidelines for production, land-use, and received the delivery of farm-produce in the for of taxation, quotas and other purchases.

Trade and Services

It is significant that it was the local village neighbourhood that functioned as the corporate group for purposes of external trade between these communities, not the commune or a state body. The trade of essential grain, salt and livestock produce seems, at least in this relatively central region, to have been conducted in the traditional 'horizontal' manner between villages.

The rates of purchase and exchange for grain and salt were of course fixed by the goverment. Before 1977 the exchange rate for salt against grain was one to one, with a 5 kg bonus per capita being paid by the village of the purchasers for the labour of the group. Other sources report restrictions on barter between villagers and nomads in the Lhoka region from that period, with priority being given to supply to the state (Choedon 1978); however, it is not clear that this strategic border area was typical. Between 1977 and 1980 the rate of exchange was 0.9 to 1.0 for grain (wheat or barley) against salt.

Such trade in grain might be considered to be 'private' up until the production teams became the accounting body in 1969/70; in formal terms it might not have been strictly legal without the authority of the communal body, which may have had only a nominal existence. Such local initiative was not unheard of in inner China, either, where a significant amount of materials was exchanged directly between enterprises and outside the official process of planning and allocation (World Bank 1981). However,

here the traditional system of exchange between villages was not a sideline or corrective to the state or commune system, but the basic process of distribution itself.

At Namtsho at any rate, grain was not distributed in any volume at all through vertical commune, state-farm, or other government agency links. The present sub-county buildings were constructed in the past five years, prior to which some administrative work was carried out at an office where the road to Namtsho descended to the plain just above Damxung town. For Namtsho at that time, rather than there being a participatory commune or other state-collective directing supplies to them, it was, on the contrary, their own procurements that made supplies available for such administration as existed above them.

There are published figures on vertical links through the collective structure (see Table 1). In 1979 the TAR had 10,000 production teams and 2,060 communes, and no intermediary level of brigades (World Bank 1981). Normally a production team would have perhaps 100 to 150 people, that is perhaps 8 to 15 households in Tibet: hence on average a 'commune' would have under 1,000 people. In inner China these 150 people of a production team woud be perhaps 30 or more nuclear families, a part of a village. Seven or eight such teams together would constitute a brigade of around 1,100 people, and 13 to 15 brigades would make up the commune with a population of around 15,000.

It is not clear that there is any reason, apart from administrative uniformity, to gloss the upper level as 'commune' rather than as 'brigade'. The same term is used for both in Tibetan, and there is no logic in the TAR having nearly 50 per cent more communes than Yunnan when it has under 6 per cent of its population. If population size were the critical feature the TAR would have had only around 200 not 2,000 communes; the nominal 'communes' were in terms of population little more than the size of brigades.

However, in terms of land area covered they were far bigger than communes elsewhere, and the low population density necessary in high-altitude pastoralism meant that such organisation was not easily feasible. This has since been recognised by the TAR Government, and one point of the economic reforms announced on June 20th 1980 was that production

brigades which were too big, where households were spread over a large area, could be divided up into smaller groups.

Whereas the provinces of Yunnan, Qinghai and Xinjiang had three levels of collective, the TAR only had two. And it is likely only in the cases where there are large concentrations of population, such as around the towns or county centres that are traditional administrative centres, that this two-tier commune structure had a corporate rather than nominal existence. This has a parallel with parts of inner China, where brigade enterprises could become communes around cities and in coastal provinces where the size of their enterprises justified such changes. However here we have a scaling down rather than a scaling up. Again, it is the vertical links upwards to the commune, or matter their general absence, that differentiates the TAR from the more populous provinces to its east.

This is more than merely a semantic issue, as the provision of health services and education and small-scale industry were conventionally carried out at the brigade level in China at this period. Auxiliary health workers in production teams were supposedly responsible to the brigades; if these functions were not handled at the brigade, then they should have been cared for at the next level up. Did this happen in the TAR? If it did the resulting organisation would in principle be even less equipped to deliver services given the low population density.

According to one source, from the early 1970s the communes were clustered into groups of four for health care and education, and around seven for banks and general stores. On the above figures, this would give around 500 schools and health centres and 300 stores and banks in the TAR. Another secondary source refers to 160 state-trade depots and 800 supply and marketing cooperatives as being operative in the region as early as 1965 (Epstein 1983); given the present figures from the published statistics on rural infrastructure and the general problems of longitudinal data here, it is difficult to take these second figures as more than nominal.

Official figures for education at the present day are 10 times as high as such clustering would suggest; and again there are other reports of the substance of these health and educational services available to be taken into account. While the exact position is uncertain, it is clear that as a whole the structure would at that time have implied a low level of such services outside of urban areas in the TAR.

This problem of services is not just unique to the TAR, but one that exists generally for all nomadic groups of pastoralists, as much in Africa as Asia. In the Red Sea area it has been noted that a low population density, combined with mobility and a lack of governmental understanding similarly make the provision of such services difficult (Swift 1986).

Social Differentiation

Attempts to raise these levels can produce further inequities, this time between town and country rather than inter-regional. In 1979 in China on average 13 per cent of the population were urban, and *per capita* incomes were 2.2 times higher than in the rural areas. In 1982 the China average was 20.6 per cent, but only 9.5 per cent of the population of the TAR is classified as living in urban areas, compared to 28.4 per cent for Xinjiang, 12.7 per cent for Yunnan and 20.5 per cent for Qinghai (1982 figures).

Inner China contributed doctors, teachers, administrators and engineers to the TAR, as to other minority areas; according to one estimate the 200 factories that existed in 1980 were staffed mainly by Han nationals of whom there were estimated to be 96,000 such workers in the TAR by 1982. In 1982 the figures indicate that this number was reduced to 76,300 non-Tibetans, a figure temporarily increased (by some estimates by 60,000) in 1985 to help undertake construction projects in Tibetan towns and provide tourist facilities.[13]

At a first level of analysis their impact might be thought to be just positive. However, the clustering of such groups in what are by definition urban locations, together with the provision of different levels of goods and services, may generate schisms. According to one estimate in 1980 the population of the capital, Lhasa, was 120,000, of which 50,000 were of Tibetan nationality, that is 42 per cent; this is somewhat lower than the overall figure (1982) for Tibetan Nationals in the TAR of 94 per cent. So ethnic or national differentials, in the large part between Tibetan and Han have been correlated with the rural/urban distinction.

---

[13] It is likely that these estimates refer to the civilian population.

This is by no means a uniquely Chinese or Tibetan experience: it is as much a part of the modernisation carried out by the west, and as true in Africa as in Asia. The following comment is fitting:

> A multi-national country, in trying to close the gap with the developed countries, may find that the gap between its own nationalities at home has widened. This is not unfeasible. Examples exist of nationalities which using their priority status in a country, monopolise science and technology to build up their own economies in areas inhabited by other nationalities. The original occupants are either excluded from the new modern industrial or agricultural undertakings on their own land or deprived of the right to participate in them on a fair and equitable basis. The result is not only a bigger gap in benefits but also wider distinctions between town and country, industry and agriculture and physical and mental labour. Thus a new national inequality has been generated in the process of modernisation, leading to many new problems.
>
> (Fei Hsiao Tung 1981:86)

Up until the last few years the urban population of the TAR, namely in Lhasa, Shigatse and Gyantse, was provincial, in the sense that there was little evidence of a general 'urban' identity for Tibetan nationals that cut across regional identity and affiliation.

Towns in a number of ways have potential access to a higher standard of living than rural areas; in many sectors a delivery system is, almost by definition, urban: this means that any development exacerbates differentials. Moreover, in China as a whole large-scale industrial investment tended to be linked to towns and be financed from central resources; but the general policy for poverty reduction programmes, which tended to be linked to the countryside, was that they should be financed and initiated from local resources. Such investment policies would not work to eliminate general rural-urban differentials in living standards.

This urban/rural difference exists over all China. For example, the quality of health and education and the consumption of food, consumer durables and quality of clothing, all appear to be much superior in urban than in rural areas. From the 1982 Census Figures, the rural birth-rate over all China is twice that of the urban. In 1975 life-expectancy in urban areas was ten years longer than in rural areas, a difference that is increased by an

extra five years in poor rural areas. This rural-urban difference is greater in China than in most developing countries (World Bank 1984).

Given this and the inherent difficulties described above of providing services in nomadic areas with low population densities, one would expect the rural/urban difference to be even more marked than on average within the polity. We have little in the way of a clear breakdown on this division, but the available data indicate a greater polarity in the TAR than in inner China, or the western provinces generally.

For example, out of a total of 120, TAR has only 11 rural post-offices; this rural figure compares to 159 for Qinghai and around 1500 for Yunnan, and in these other provinces the 'rural post-office' figure is uniformly above 65 per cent of the total in the province. Another case is rural power consumption, which *per capita* is only 20 per cent of that in Qinghai or Yunnan. And construction of general hospitals implies that by 1979 the rural commune level 'hospitals' had only around 20 per cent of the total of 4343 hospital beds for the TAR. With these urban-rural inequities, the low relative level for general indicators of goods, services, and health indicators for the TAR as a whole (referred to in the first section of this paper) take on a deeper significance.

Decollectivisation and Reform

The implementation of reform, like much policy implementation in the Tibetan Autonomous Region, has lagged behind that of inner China. In Tibet these changes date largely from investigations in 1980 in Tibet by the Central Committee of the Chinese Communist Party. Along with ethinc and national issues, these covered problems of poverty and economic stagnation, and referred to the extreme inappropriateness of the application of uniform central policies to an area with such particularities as Tibet; it was said that the problems had lasted later in Tibet than in other areas. Reforms were laid out in aireport, the *Summary of a Forum on Work in Tibet,* Central Committee, CCp. This put forward the central goal as being, in unity, with people of Tibetan nationality as the mainstay, to proceed to improve the material and cultural well-being of people of various nationalities and step by step to make Tibet prosperous (PRC Yearbook, 1981).

A subsequent directive from the CPC Central Committee recognised that the Tibetan people had been subject to much hardship and suffering, as was the case with people in other parts of the country, and referred to eight principles in meeting the goals and objectives of the Report. Amoung other points, these referred to the need for:

1) a recognition of the importance of local conditions and circumstances in carrying out policies, whether natural of social;

2) the need to have the support of local people of all levels in setting policies, and allowing adaptation and diversity in methods of implementation according to circumstance;

3) the right of and need for institutional bodies in Tibet to take account of local circumstances in the interpretation of policy;

4) the importance of training people of Tibetan nationality to take the main responsibility for development, and specifically to bring in only senior technical and administrabtive personnel to help;

5) the need for central departments to support Tibet, taking its special needs into account.

Similar principles were to be extended to Qinmghai and Gansu. More specific policy remedies, summarised in eight guidelines, covered the following points among others:

- the replacement of directives from above for production or enforced quotas by decisions at the work-group concerned;
- the corporate work-group level to be decided locally;
- a degree of private ownership of land, trees and livestock by households;
- protection by law of goods, labour and resources of the work-group against seizure;
- negotiated and fair payment for labour and animal haulage required by government agencies;

- a two year tax holiday - since extended twice;
- government grants for primary schools;
- encounragement of sideline enterprisees, external contacts, local fishing, and hunting and gathering;
- contracting, and permission for small traders and peddlers to contiue their itinerant business.

Also there were measures to promote border trade, and, most significant, a directive for government departments at all levels to help to restore and develop the traditional internal exchange between pastoral and agricultural areas, and rural markets. Hence these reforms have recognised that technical forms and economic forces do not necessarily just depend on the espousing of any one ideological notion, such as the relations of production, but on particular ecological and cultural conditions.

At Namtsho, these reforms were implemented in varying degrees from 1980/81. Internally they took the following form. There was an allocation of livestock according to two principles. First, 70 per cent went on a *per capita* head count among those between 15 and 50; secondly, the other 30 per cent was allocated to the younger people and also to others who could work hard. Children and old men received a little bit less; I was told that there was no difference in allocation between men and women.

The division was made by the officers of the production team. At Namtsho then there were three officers, just as there are today for the neighbourhood, the secretary performing roughly the same function now as then in keeping records, except that he is now also the representative on the higher level 'township'. Today the officers' function, apart from his personal authority and standing, is little more than the allocation of pasture, and decisions on movement.

Previously they were responsible for the direction of the group as a whole. In practice this control by a local leader, apart from some attempt at increasing the efficiency of day labour in terms of a common production system, and promoting egalitarianism in individual distribution, largely supported and promoted the rational aspects of the traditional local order.

The collective period was, then, in some ways very much a case of 'old wine in new bottles'.

Hence some of the changes were and are little more than nominal alterations to a system of production that perhaps has not changed that markedly from before collectivisation to the present day system of 'individual responsibility'. The allocation of pasture rights, and the priority of the neighbourhood and the household/tent and extended families as corporate units for consumption and reproduction, would be cases in point.

Today the capital holding group is again the traditional unit of the tent or household. Now there are quantitative differences in numbers of livestock and the type of herds. They say that the good point from that old system was that everyone had to work; the bad point was that no-one took as much care over animals: Fewer die at birth than before, and fewer die or are killed off when they cannot graze. The personal responsibility that goes with ownership has meant a better husbanding of the livestock, so it is said.

More generaly, people refer to changes in incentives, in terms of seeing rewards for one's work within one's local group, the household, rather than in amorphous 'stars'; the possibility of trading privately outside the work plans means that there is also an opportunity to act for oneself or the household.

It is not that the current market ideology means an absence of collective controls and the state. Land is, at least in a formal sense, in the possession of the collective and leased out; while measures are not clearcut, there are restrictions on the sale of rights in land that has been contracted by the state to individuals, and on hiring labour directly; people contract to fill voluntary quotas before trading a surplus for themselves directly on the market; permission still has to be obtained to travel outside of the county or prefecture.

At a more individual level, people's recent memories reveal a conservative strategy of decision-making; all adults have seen changes and reversals of policy in the past. According to Myrdal, the recent history of China can be characterised by cycles of rigid collective controls that have focussed on social relations, with mass campaigns and central accumulation, followed by periods of decentralisation, increased production and distribution. The 'Great Leap Forward' (1959-1960) was

followed by a more open period (1962-1965); the Cultural Revolution (1966-1975) was followed again by a more open period (1975-1978) to which the present reforms, postdating 1979, are the heir. Others, too, have referred to a pattern in Maoist, if not Chinese, thought, in which development and change is not linear but a spiral marked by apparent reversals (Stiefel and Wertheim 1983).

In Tibet, however much the 'voluntary' nature of contracts and absence of quotas is stressed as the present *de jure* position, there is still the habit of responding to suggestions, if not guidance, from higher levels and the state. These are now linked to the availability of subsidies, loans, agricultural inputs and other material facilities. The history of contols and the real deprivation is too close for the population to view the present move from state controls to market forces as a stable development.

General Changes

Changes that have occurred in TAR have come about at least in part from the same material and ideological forces that have had their impact over the whole area of the Chinese polity. The type of exchange between the TAR and inner China has changed fundamentally as modern institutions and techonology have been introduced. Prior to 1959 the material culture of China primarily affected the lives of the Tibetan elites; all that was imported were a few titles to office, and what an economist would perhaps regard as luxury items of clothing and food, basically for the relatively small nobility.

In the period from then until recent times the building of infrastructure in communication and transport stands as the main positive achievement. More recently there appears to have been an influx of goods, ideas and people on a scale that has materially altered life at a populist level, at least in the south and east of the region. These have accompanied the recent administrative changes towards deregulation and a cash economy that are similar to those elsewhere in the Chinese polity.

One major difference in the economic history of Tibet is that there has been a time lag in the enactment of policies compared with inner China. The administrative presence of China was relatively low-key until after 1959: hence Tibet escaped the initial period of collectivisation that accompanied the 'Great Leap Forward' in other areas of China.

The growth of the private cash economy has come about since the reforms. There has also been a large-scale investment by the state, at least in the central Yarlung-Tsangpo area. Official figures indicate an investment of 9 bn yuan between 1959 and 1975.[14] In 1958 the 43 civil projects had a budget of 480 mn yuan; also by 1981 there were 800 small hydro-electric projects.

These have general 'knock-on' effects. For example, at Namtsho at the time of the cultural revolution there was only the rough track that led up from the Qinghai-Lhasa highway; the widening of the road took place in 1971. The road was black-topped on its lower stretch, that is the main Lhasa north-east section, in 1980. The salt/grain caravans stopped when good black-topped roads were introduced. As detailed above, eight households at Namtsho, including that of the case-study, have clubbed together to buy a truck. This is a new common property resource. The absence of the salt/grain trade today is given as one justification for having to sell more livestock, that is produce beef cattle for market.

An open-market pricing structure seems to be developing, parallel to the regulated or subsidised state economy, at least in the hinterland of Lhasa. The commoditisation and monetisation of areas of the economy, such as traditional trading exchanges, seems to have led to or been accompanied by a rapid increase in some prices. While longitudinal figures for meat prices are not available, from 1984 to 1986 the purchase price of wool at the factory in Lhasa has risen from 2.4 yuan per kg to 8.4 yuan per kg. In 1986 the producers received between 3.2 and 3.5 yuan per kg.

The responsibility system may have been necessary for such changes to occur, but it is not a sufficient explanation: there have been major changes in infrastructure from a period prior to the reforms, especially in communications and transport. The programme of construction of roads and telegraphs from 1961: by 1981 this has resulted in a road network of over 21,000 km. Their original purpose may well have been governance, but latterly they have served to promote the economy.

Overall, the removal of controls and disincentives on open market trading has allowed a taking up of potential slack in production and trade by

---

[14] It is not clear whether this includes administrative and service/forces costs, or not.

small-scale producers, who can now use the modernised infrastructure formerly the monopoly of the state. The 'small-scale producer' is encouraged by the responsibility system, as beyond any direct individual incentives its reforms allow the recognition of the traditional Tibetan social and household taxation the unit (*talpa)* of the state in Tibet. These appear as some of the main factors behind the 'springback' in the economy.

Policy Issues and Applied Research

This general integration of pastoralism into a market economy, together with the policy of using local nationals, while it may not be the most advantageous policy for short-term economic growth, should 'unlink' the urban/rural dichotomy from an ethnic or national division and create a basis for a more equitable and hence stable long-term development.

At the same time the incorporation of pastoral nomadism into a market structure still creates questions of 'dependence' along the rural-urban divide. As was noted earlier, the urban-rural divide in material standards that exists throughout the polity of China is likely to have had a particularly sharp contrast in the TAR. In the traditional structure the 'horizontal' links between small-scale groups of agricultural and pastoral producers promoted a complex network of exchange, between the north-west and south-east, in which there were few monopolies of power. While present policy acts for this traditional exchange and the promotion of local markets, there is still the possibility that commercial marketing may promote a vertical structure with trade focussed in a few urban centres, which themselves may become the foci for rural-urban differentials.

The key question is the future nature of the urban-rural linkage for pastoralism, and the distribution of benefits. At a first level income for beef production would accrue to rural areas; however, there is the possibility of a rural division of labour between those who herd and those who market; if such agents become resident in the town, this would reduce rural investment and accentuate rather than reduce urban/ rural differences. This is by no means an inevitable scenario; indeed the singular traditions and the ecological particularities of the pastoral way of life argue against any push from the nomads themselves for such a simple 'urban-migration and growth' model of development.

Conventional sedentarisation is likely to be accompanied by a wish for migration to *existing* urban centres, which will accentuate these urban/rural differentials. If policies do not artificially accentuate the benefits of sedentarisation, but the traditional/positive aspects of nomadism, then seasonal urban-rural links and rural-rural trade patterns may be maintained, and so prevent a rural/urban polarisation.

As the same time, on general comparative grounds it has to be recognised that due to the vast area and low population densities, the provision of rural services is unlikely to be cost-effective, and that standards are likely to be lower than in inner China, unless decentralisation, self-help and use of local resources come to the fore. Some applied research on the best way to help remote groups, using comparative experience and taking account of modern techonology, might be helpful here.

One policy issue is the best direction for applied research. Given changes from central control to indirect planning, the *monitoring* of production parameters and their effects - such as the size and organisation of flocks on pasture utilisation - that formerly were under more direct administrative control, takes on great er significance.

There are perhaps two types of monitoring: passive monitoring, in which existing extensive local government institutions and statistical bases are used; active monitoring, in which intensive, thorough, and holistic data are directly collected in the form of specific case-studies and sample surveys.

Active monitoring should sample and focus on specific field-sites for intensive research, rather than try to cover the whole province *in depth* with limited resources. The locations selected should cover some of the different ecological types and different types of livestock, and they should also cover different types of household farming systems.

Here one could start with simple contrasts between ecological types and farming-systems, rather than attempt an elaborate and comprehensive typology. Distinctions such as: higher altitude north-west/ lower altitude south-east; mixed farming-base/pure pastoralism; fixed-house/nomadic etc., are a practical way of progressing.

Technical research falls logically into three domains, those pertaining to the pasture, the livestock and the herders; applied research usually concerns the interactions between the members of this triad.

Applied topics, such as livestock carrying capacity of the pasture, what happens when this limit is approached in terms of reversible and irreversible changes, are the types of ecological question to be asked. While I am not equipped to make suggestions in the technical domain of grassland research, the livestock carrying capacity of the pasture and improved grass varieties for unirrigated pasture are two areas which clearly deserve some major research effort.

Local market-towns and marketing, and the decision-making process behind this marketing, are one area for investigation. At the household and local community level a central feature would be socio-economic patterns and attitudinal data; another is the options and factors effecting decision-making at the household level.

Table 1 and 2
Comparison of Western with Tibetan Autonomous Regions

Statistical Yearbook of China, 1985 (SYCBS), People's Republic China Handbook 1985 (PRCYBS), National Population Census 1982 (NPCB2), World Bank 1981 (WB81) World Bank 1984 (WB84)

Table 1

	TAR	Qinghai	Gansu	Yunnan	Xinjiang	(all absolute figures in 10,000 unless otherwise stated)	
ADMINISTRATIVE DIVISIONS 1984							
prefectures	7.00	7.00	10.00	15.00	13.00	totno actual	SY C85
counties	77.00	37.00		116.00	73.00	totno actual	SY C85
cities	1.00	2.00	7.00	10.00	4.00	totno city admin. actual	SY C85
communes, 1979	2060.00	399.00	1370.00	1401.00	603.00	totno actual	WB81
brigadges, 1979	nil	3603.00	15872.00	1345.00	7109.00	totno actual	WB81
production teams, 1979	10000.00	15000.00	102000.00	156000.00	330000.00	totno actual	WB81
DEMOGRAPHY (All Province)							
totno 1984	197.00	402.00	2016.00	3362.00	1344.00	totno integer	SY C85
totno 1982	189.24	389.57	1956.91	2355.33	1308.17	totno	NP C82
minorities 1982	180.06	153.57	154.88	1031.90	779.51	totno	PR CY85
minorities % totno	95.15	39.42	7.91	31.70	59.60	%	
Tibetan Nationals 1982	178.65	75.42	30.45	9.59	nil	totno	PR CY85
Tibetan % Total	94.40	19.36	1.56	0.29	nil	including 922,074 Tibetans in Szechuan.	
Tibetan % Minor	99.22	49.11	19.66	0.93	nil	(one per cent Szechuan totno)	
popn. density 1981	1.00	5.00	43.00	92.00	8.00	totno/sq. km., integer	SY C85
popn. density 1984	1.00	6.00	45.00	85.00	8.00	totno/sq. km., integer	SY C85
urban totno 1982	17.92	79.79	300.25	421.61	371.52	tot	NP C82
urban totno 1984	22..00	129.00	415.00	878.00	544.00	totno interger, including serv.	SY C85
urban % 1982	9.47	20.48	15.34	12.95	28.40	%	
urban % 1984	10.15	32.09	20.59	26.12	40.48	%	
(Minority Nationality Autonomous Areas Only)							
totno 1984	196.68	188.37	244.12	1602.38	1344.00	totno	SY C85
mimorities 1984	189.05	106.44	130.60	842.69	810.00	totno	SY C85
minorites % totno	96.12	56.51	53.50	52.59	60.27	%	
auton. area % prov.	100.00	47.00	12.00	48.00	100.00	% *]	
minor auton. area	100.00	66.00	80.00	78.00	100.00	% prov. project from 1982 * 2	
ECON. OUTPUT VALUE. 1984 (100 mill. Yuan)							
Total	8.07	26.20	137.01	185.48	105.38		SY C85
Agricultural & Livestock	7.92	10.50	40.86	77.37	49.89		SY C85
Industrial	1.34	16.22	97.99	104.97	59.87		SY C85
GAOV % GOV	98.14	40.08	29.82	41.71	47.37	%	SY C85
AGRICULTURE BREAKDOWN (100 mill. Yuan)							
crops	3.33	6.30	27.98	48.77	35.55	current price, 1984	SY C84
forestry	0.12	0.19	3.11	5.97	1.74	current price, 1984	SY C84
animal husbandry	3.75	3.79	8.71	15.79	9.79	current price, 1984	SY C84
sideline	0.71	0.20	1.06	6.55	2.73	current price, 1984	SY C84
(value per capita)							
total	417.99	269.01	208.80	236.78	380.76	Yuan	
crops	175.97	161.72	142.98	149.82	271.75	Yuan	
forestry	6.34	4.88	15.89	18.34	13.30	Yuan	
livestock	198.16	97.29	44.51	48.51	71.84	Yuan	
sideline	37.52	5.30	5.42	20.12	20.87	Yuan	

*1 Totno, auton % poor. This is a measure of the size of the population of the autonomous areas compared to the populaiton of the province as a whole.

*2 Minor. auton % poor. This is a measure of the degree to which minorities live in the autonomous regions in the province. Approximately only, error 7.2%.

Table 2

	TAR	Qinghai	Gansu	Yunnan	Xinjiang		
LAND USE							
agriculture)							
arable area, 1979	23.00	57.90	355.50	278.10	320.00	10.000 hectares	WB81
irrigated area, 1979	15.30	15.40	84.70	91.00	260.00	10.000 hectares	WB81
irrigated area, 1984	11.20	15.90	84.70	96.20	264.30	10.000 hectares	SY C85
tract plghd. area,1984	3.00	13.70	54.90	17.70	193.40	10.000 hectares	SY C85
tractors, totno, 1984	2000.00	5000.00	16000.00	17000.00	24000.000	totno	SY C85
fertiliser use, 1984	61.00	69.10	58.60	96.80	67.10	kg/hct	SY C85
grain output, 1979	4.40	8.30	46.90	80.60	40.00	100 mill. kg. (one dec. figure)	WB81
grain output, 1984	4.90	10.10	53.90	100.50	49.70	100 mill. kg. one dec. figure	SY C85
(per capita)							
arab. Land, (1979 est)	0.12	0.14	0.18	0.08	0.24	hcts.	
irrig. land, 1984	0.06	0.04	0.04	0.03	0.20	hcts.	
grain output, 1984	248.73	251.24	267.36	298.93	369.79	kg.	
arable land, /tractor	15.00	27.40	34.31	10.41	80.58	hcts	
LIVESTOCK							
CATTLE, 1979	4.74	2.37	2.11	5.52	4.89	milln.	WB81
large dom. an., 1984	5.31	6.01	4.72	8.26	5.12	milln.	SY C85
sheep and goats, 1979	18.16	20.15	11.13	7.02	15.96	milln.	WB81
sheep and goats, 1984	16.24	13.99	4.40	13.10	0.76	milln.	SY C85
pigs, 1979	0.25	1.04	4.40	13.10	0.76	milln.	WB81
pigs, 1984	0.12	0.72	44.45	17.02	0.66	milln.	SY C85
(per capita, 1984)							
large domest. anim.	2.70	1.50	0.23	0.25	0.38	ratio	
sheep and goats	8.24	3.48	0.44	0.22	1.82	ratio	
pigs	0.06	0.18	2.20	0.51	0.05	ratio	
INFRASTRUCTURE							
roads	21611.00	15772.00	32531.00	16560.00	22232.00	totno km.	SY C85
freight traffic	46.00	179.00	631.00	1601.00	499.00	10.00 tons	SY C85
post office	120.00	247.00	1115.00	1729.00	1143.00	totno	SY C85
rural post offices	11.00	159.00	928.00	1493.00	911.00	totno	SY C85
letters	600.00	2100.00	7600.00	8000.00	6300.00	totno	SY C85
power produced	2.30	8.20	146.90	70.30	34.20	100 mill. kw/hrs	SY C85
rural power consumption	0.10	0.80	10.30	6.10	5.60	100 mill. kw/hrs	
rural power (capita)	5.64	29.30	64.37	24.50	70.00	ratio	
EDUCATION							
illiteracy %, 1982	78.30	58.00	54.00	53.70	37.60	% above age of 12	SY C85
illiteracy %, 1984	51.80	32.00	35.00	34.00	21.10	% above age of twelve	SY C85
educated %, 1984	21.80	45.60	46.70	42.60	58.40	primary school or above	SY C85
Primary students,	12.40	53.50	269.00	497.50	196.30	totno (10.000)	SY C85
prim stuud per 1000	65.53	137.33	137.46	152.83	150.06	per 1000	SY C85
total higher	2.00	23.70	98.90	103.70	99.40	2ndy, high, Agric. (10.000)	SY C85
high stud per 1000	10.57	60.84	50.54	31.86	75.98	hihger stud./1000 popn.	SY C85
HEALTH							
hospital beds totno	0.50	1.30	3.60	6.60	5.70	totno (x 10,000)	WB84
people bed	394.00	309.23	560.00	509.39	235.79	ratio	WB84
med staff, totno	0.80	2.20	7.20	10.50	8.80	totono (x 10,000)	WB84
med staff/bed	1.60	1.69	2.00	1.59	1.54	ratio	WB84
mortality, 1981	9.92	7.48	5.72	8.60	8.41	crude birth rate, per 1000	WB84
fertility, 1981	31.05	26.65	20.12	25.36	29.08	crude death rate per 1000	WB84
life expenctancy, 1981	61.30.	61.28	n. a.	60.56	62.51	years	WB84
TB morbidity rate	1202.00	647.00	524.00	364.00	1008.00	per 1000	WB84

Table 3

Perfecture and County Crop, Livetock, and Land Use, Shigatse Prefecture, Dingri County, Tibetan Autonomous Region China *1

		All Shigatse Prefecture		Dingri County			
		Number		number	owned by villagers agriculturalist		owned by nomads pastcralist
PEOPLE	pure pastoralist	250000.00*2	50.00	1500.00	4.29		
	agriculturalist	200000.00	40.00	32800.00	93.71		
	official	40000.00	8.00	500.00	1.43		
	others	10000.00	2.00	200.00	0.57		
	tot. people	500000.00		35000.00			
	households			6700.00			
	av. house size			5.22			
LIVESTOCK	yak	421900.00	9.60	15000.00	4.31	3000.00	12000.00
	horse			14000.00	4.02	13978.00	22.00
	donkey (-other)	66000.00	1.50	44000.00	12.64	44000.00	zero
	cows	210900.00	4.80	25000.00	7.18	25000.00	zero
	sheep	25556200.00	58.17	150000.00	43.10		
	goats	11750000.00	26.74	100000.00	28.74		
	sheep & goats	30000.00	0.68	250000.00	71.84	180000.00	70000.00
	total animals	4394000.00		348000.00		265978.00	82022.00
	yak/capita			0.43			8.00
	sheep & goats/		(per capita				
	capita		agri: nomad)	7.14			5.83
	livestock/capita	8.79	6.59 12.30	9.94		8.11	54.68
	livestock/hshld.			51.94			
CRIOS (kg/annum)	wheat			150000.00	1.23		
	barley			7760000.00	63.55		
	peas			4000000.00	32.76		
	repe seed			300000.00	2.46		
	totcrops			12210000.00			
	crop/capita			348.86			
	crops/househods			1822.39			
LAND USE (hectares)	tot.land			2500000.00			
	unused land			849434.46	33.98% total land		
	tot.used land	8075032.38		1650565.54	66.02% total land		
	tot. agritulture	76651.15	0.95	5565.54	0.34 % used lland		
	(irrig. agri.)	43324.56	0.54				
	(unirrig.agri.)	33326.59	0.41				
	tot. past	7998381.22	99.05	1645000.00	99.66% used land		
	nat. grass			875000.00	53.01%		
	long grass						
	(irrig. past.)	26661.27	0.33				
	(unirrig. past.)	7971719.95	98.72				
	agri. land/cap	0.15		0.16		0.17	
	past. land/cap	16.00		47.00 (nominal)			1096.67
	past. land/hse			245.52 (nominal)			

1. Year 1985/1986 (provisional estimates only)
2. definition of pastoralist may include mixed agric/pastoralism, and hence not be directly comparble to Dingri County

Table 4
Prices of some commodities in 1986 (Yuan)

Item	Quantity	Place				
		Lhasa 'inside'	Lhasa 'outside'	Dingri	Nyenam (to Tibetans)	Nyenam (to Nepalese)
sheep	one		90	45	30	70
goat	one				25	65
cow	one				150	300
yak	one		600		250	300
dri	one		300		200	250
dzomo	one small				300	400
dzomo	one large				700	800
horse	one					1000
mule	one					
sheepskin one			11.5			
wool	kg		8.5			
meat	kg	3.1	6.2			
butter	kg	5.0	10.0			
oil	kg	2.0	4.0			
tea	one brick	1.7				
wheat	kg	.5	1.0			
rice	kg	.5	1.0			
barley	kg		.6			
fertiliser	50 kg	25	50	22-50		

Table 5

Namtso Case Study: Household Income/Expenditure (cash)

	Income				Expenditure		
Item	Amount per annum	Selling price Lhasa (Yuan)	Annual income	Item	Amount per month	Purchase price Lhasa (Yuan)	Annual expenditure
sheep	5	90	450	grain	(75 kg)	0.5-1.0 kg	225 (500)
yak	1	600	600	tea	5 bricks	1.7/brick	102
wool	25 kg	8.5	213	oil	40 kg	2-4 per kg	100
sheepskin	3	12	36	cig/Ind.bics			125
				cloth etc.			250
			——				——
		Total	1299			Approx. Total	1302

REFERENCES

Aziz, B.N.,
1978 *Tibetan Frontier Families,* New Delhi, Vikas

Chan,
1984 A., R. Madsen, and J. Unger, *Chen Village: The Recent History of a Peasant Community in Mao's China,* University of California, Berkeley

Choedon, D.,
1978 *Life in the Red Flag people's Commune,* Dharamsalaa

Clarke, C.M.,
1982 *China'a Provinces: An Organisational and Statistical Guide,* National Council for US China Trade, Washington D.C.

Clarke, G.E.,
1980a 'The Temple and kinship among a Buddhist people of the Himalaya', D. Phil Thesis, Bodleian Library, Oxford

1980b 'Three Styles in the study of Tibet' Review Article, *Journal of the Anthropological Society of Oxford,* vol 11 no 2

Dargyay, E.K.,
1982 *Tibetan Village Communities,* Warminster, U.K

Diamond, N.,
1985 'Rural Collectivization and Decollectivization in China - A Review Article', *Journal of Asiatic Studies,* vol XLIV, no 4

Ekvall, R.B.,
1968 *Fields on the Hoof,* Holt, Rhinehart & Winston, New York

Epstein, I.,
1983 *Tibet Transformed,* New World Press, Beijing

Fei Hsiao Tung,
1981 *Towards a People's Anthropology,* New World Press, Beijing

1983 Chinese Village Close-up, New World Press, Beijing

Foreign Language Press (ed.),
1972 *Great Changes in Tibet,* Beijing

Geertz, C.,
1963 *Agricultural Involutural Involution,* University of California press, Berkeley

Goldstein, M. C.,
'Taxation and the Structure of a Tibetan Village', *Central Asiatic Journal,* vol 15 no 1

Hinton, W.,
1983 *Shenfan: the Continuing Revolution in a Chinese Village,* Random House, New York

Hanxian, L.,
1985 *Economic Changes in Rural China,* New World Press, Beijing

Huang, P.C.C,
1975 *The Peasant Economy and Social Change in Northern China,* Stanford, California

Huang Wenxiu,
1979a 'Livestock Breeding Resources in Tibet', *Natural Resources,* Science Press, Beijing

1979b 'Animal Husbandry in the Yalu-Tsangpo Valley of Tibet', *People,* Beijing

1981 *Domestic Animals of Xizang and China,* Beijing

1982 'Ecological Community of Livestock in Tibet', *Natural Resources, Science Press,* Beijing

1983 'Use and Conservation of Animal Breeding Resoreces in Tibet', *Natural Resources,* Science Press, Beijing

1985 'Animal Husbandry and Watershed management in the Himalaya-Hengduan Region', Manuscript, ICIMOD, Kathmandu,

1986 'A Brief Account of the Animal Husbandry in Xizang (Tibet) Autonomous. Region of China', Manuscript, ICIMOD, Kathmandu

et al., 1978, 'Current Approaches to pasture management in Xizang', Manuscript, ICIMOD, Kathmandu

Kulessa, M.,
1986 'Report on A VIsit to Tibet', Manuscript, Beijing

Lan Jin Deing Yiming,
1985 'An Initial Study of Agricultural Labour Forces in the Tibetan Autonomous Region', Manuscript, Institute of Rural Development, Chinese Academy of Social Sciences

Levine, N.,
1977 'The Nyinba population and Social Structure in a Polyandrous Society', ph. D. thesis, Rochester, New York

Madsen, R.,
1984 *Morality and Power in a Chinese Village,* University of California Press, Berkeley

Myrdal, J.,
1984 *Return to a Chinese Village,* Pantheon, New York

Pasternak. B. and A. Thurston,
1983 *The Social Sciences & Fieldwork in China: View from the Field,* Westview, Boulder (Co.)

1981, 1985 *Peoples' Republic of China National Yearbook,*

Reiter, E. R.,
1981 'How Tibet's Weather Affects Other Countries', Natural History, vol 90 no 9

National Population Census and Sample Survey, China, 1982

Scientific Buddhist Association,
1984 *Tibet: The Facts,* Dharamsalaa

Statistical Yearbook of China,
1982-5 vol 4, State Statistical Bureau, PRC, Beijing/Oxford

Stein, R.A., *Tibetan Civilisation,* (trn. Driver, J.)
1972 Faber, London

Stiefel, M. and W.F. Wertheim,
1983 *Production, Equality and Participation in Rural China,* UNRISD/Zed Press, London

Su Wenming (ed.),
1983 *Tibet: Today and Yesterday,* Beijing Review, Beijing,

Swift, J.,
1986 'Rehabilitation and long-term development for Pastoralista in Red Sea province, Sudan', Manuscript, Khartoum

Wang Hai,
1986 'The Economic Development of the Valley Region with the Special Reference to Tibet', Manuscript, ICIMOD, Kathmandu

Watson, A.,
1986 'The Family Farm, Land Use and Accumulation in Agriculture', Manuscript, University of Adelaide

White, G.,.
1978 'Political Aspects of Rural Economic Reform in China', *IDS Bulletin,* vol 8 no 3

World Bank,
1981 *China: Socialist Economic Development,* vols 1-9, Washington D.C.

1984 *The Health Sector in China,* Washington

Wu Qui
1986 'China's Reform of the Economic System', Manuscript, IDS, Sussex

GLOSSARY

cheuh - sub-county office

dongseuh - (*grong gsebs*); village or local neighbourhood

dri, or *dri* - mo (*'bri-mo*) term for female of yak

drog-pa - (*'brog-pa*), pastoralist and/or nomad, see *sa-ma drog*

dzo-mo (mdzo-mo) generic term for female of cross between a cow and yak

dzopkio - (*mdzho-khyo*) generic term for male of cross between a cow and yak found in Northern Himalaya

gunsa (*dgun-sa*) - literaly 'winter-land', meaning a winter settlement for transhumant pastoralists

mi-mang - or *mi-mang chi-kang;* commune

ru-ga - production team

sa-ma drog (sa-ma brog) - mixed pastoralist/agriculturalist, and/or nomadic/settled, see *drog-pa*

talpa (khral-pa), traditionally a tax-payer, a registered citizen

xiang - township, or administrative division size of town

yak - (*gyag*) *Bos grunniens* here used as a generic term for the species as a whole, but in Tibetan used only for domestic males; see dri

yarsa - literally 'upper-land', meaning a summer settlement for transhumant pastoralists

Weights and Measures

1 *mu* =.1647 acre =.0667 hectares

1 *jin* = .5kg =1 *gyamu* = 10 *sang*

28 gyama = 1 khel