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Institutional Change, Resource Use, and Economic Performance: A Study of the Pastoral Nomads of Balochistan

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Abstract

The paper is based on a study of two groups of animal raising tribes who own common-tribal rangeland resources along the Suleiman mountain ranges of the Balochistan province of Pakistan. The two groups share the same physical environment, natural resource base, and animal farming technology, but differ in their systems of property rights, and in resource use related aspects of tribal, family, and religious institutions. The paper looks at the impact of the two types of institutional arrangements on resource use and productivity..

An analysis of institutions shows that while traditional institutions provide incentives to limit resource use and avoid depletion, no such constraining incentives exist under the changed institutional environment. It is concluded that one way to alleviate the situation would be to strengthen traditional resource use related institutions where they have weakened and build structures that hold the traditional concepts of cooperation where the same have disintegrated.

Introduction

This paper discusses the impact of institutional changes on resource use and productivity in a traditional subsistence economy.

The paper is based on a study of traditional and changed institutions of groups of nomadic pastoral Baloch tribes living in the Sulaiman mountain ranges of the Balochistan province of Pakistan.

The tribesmen raise animals mainly sheep and goat on communally owned tribal rangelands and have traditionally managed the use of their rangeland resources according to customary rules and regulations. In recent decades outside political and economic influences have penetrated in the traditionally remote and

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inaccessible areas resulting in the weakening and, in some cases, disintegration of the traditional institutions. The study hypothesized that weakening and disintegration of traditional institutions has resulted in overuse and depletion of the commonly owned rangeland resources resulting, in turn, in lower range and animal productivity and lower living standards.

The relationship between institutions and economic outcomes in this discussion is based on the assumption that variations in institutions cause variations in range resource utilization rates and variations in utilization rates cause variations in range forage and animal productivity. Range management scientists (Gray, 1968, Stoddart, 1943) recommend that utilization levels should not exceed the carrying capacity of the ranges. If the current levels of utilization exceed the carrying capacity, production in subsequent years will be reduced, because the vegetation would have lost its ability to produce leaves, roots and seeds at the same rate as before. At these levels any increase in stocking rates normally leads to decreases in productivity, and conversely any reduction in stocking rates normally leads to increases in productivity.

The existence of certain physical and economic indicators as well as empirical studies of rangelands in Balochistan, (Ali 1966, Bhatti 1970) show that, in general, stocking rates over the rangelands of Balochistan tend to be at levels beyond their carrying capacity or at levels where higher numbers of animals per range area would, normally, lead to lower productivity while a downward stock adjustment would lead to increased economic productivity. It follows, therefore, that any institutional arrangement that limits stocking rates over rangelands is economically more efficient than an institutional arrangement that fails to constrain an individual tribesman's stocking/use rate and profit maximizing behavior.

The paper is divided into three parts. A brief literature review in the first part describes the views of anthropologists and economists about the importance of social institutions in determining economic

outcomes. In the second part Baloch traditional and changed institutions and their role in determining range utilization rates and productivity are analyzed and discussed. The third and final part includes a summary of conclusions and recommendations.

Do Institutions Effect Resource Use and Productivity? A Brief Literature Review:

Godelier (Godelier, 1972), talking about the applicability of the laws of economics to different types of societies, says that since incomes in many traditional economies are not dependent upon the sale of products in markets, the maximizing of money gains by individuals is not the only rational attitude possible. According to Wantrup (Ciriacy-Wantrup, 1976), customs and traditions, "habit patterns" are very important in influencing individual behavior towards resource use, conservation and productivity. George Dalton (Dalton, 1967) in writing about production in primitive economies notes that production in these societies is controlled socially by kinship, religion, and political heads". Sahlins (Sahlins, 1972) says that most traditional societies are characterized by subsistence form and no accumulation of wealth and no permanent class divisions. B.S. Yamey (Yamey, 1964) says that value systems and personal motivations and aspirations have an important influence on economic performance. Jeremy Swift (Swift, 1979) says that traditional tribal societies used their resources in ways consistent with principles of conservation, sustainable productivity, and equality for all. He says, "Adverse consequences are being faced as a result of penetration of market economies into the previously subsistence nomadic economies". Helen Ware (Ware, 1979) writes about recent changes in nomadic areas in Sub-Saharan Africa. She believes that the effect of colonial "peace making" was to destroy the political authority of the chiefs who had the power to enforce conservation measures with respect to rangelands." Philip Salzman (Salzman, 1976) who carried out field research for his doctoral dissertation among some Baluch (Baloch) tribes in the Iranian province of Baluchistan (Seistan Baluchistan) during 1967-68, 1972-73, and 1976 thinks that the Baluch traditional ways of life were equalitarian in terms of resource allocation and distribution. He

points out that in the traditional tribal system of the Yarahmadzai (name of the Baloch tribe he studied) "there existed no political domination, economic exploitation, or tyranny among members of the tribe"

Traditional Institutions and Resource Management in Balochisan:

The Baloch tribes of the Sulaiman mountain ranges, as the Baloch elsewhere, traditionally have a hierarchical tribal organization and leadership with Sardar or Tumandar (chief) at the top followed by sectional heads (Malik, Mokaddam, Takari, Kahuda, or Wadera) down to the clan or extended family head (Safed Rish). Tribal and local Jirga (council of elders) that includes the Chief, the Maliks, and the Safed Rishes settle disputes between individual members of the tribe, clan or section and decide about the use and allocation of commonly owned resources. The Jirgas ensure that annual closing periods are observed, rotational grazing is practiced, and tribal, religious, and kin contributions are paid. Traditional Baloch tribal political organization contains, relatively, strong elements of democracy and rule of law. It is relatively democratic because the chief rules only with the consent of the tribe, is required to follow tribal customs and traditions, and must consult lower chiefs on all important matters concerning the tribe. If the chief violates the tribal laws, customs, and code of personal conduct and behavior, the tribe can remove him from his position.

The Baloch pastoral economy is subsistence oriented and, in most areas, goat and sheep are the only types of animals traditionally raised for a living. In a subsistence economy goats, compared to sheep, are hardier animals and require less feed and care but fulfill important subsistence needs of milk, cheese, and equipment making more than sheep. Goats usually pick up leaves of thorny bushes and trees like acacia without damaging or hindering the growth and future productivity of the trees and bushes and new leaves are produced after each rainfall. Also, vegetation in Balochistan, in general, is sparse and the rangelands are spread over large areas with only a few watering points. Because the goats are faster and more

mobile they can reach to the far corners of the rangeland during the day and return in the evening. A better and more balanced utilization of rangeland resources is, therefore, achieved more with goat herds than with sheep or cattle.

Animal raising is a risky undertaking under most circumstances, but the type of environment in which the nomads of Balochistan live makes it even more risky. Uncertain and unpredictable rainfall and associated risk of drought, possible loss of animals through stealing, consumption of animals by wolves and other predators, and occurrence of epidemics and diseases in general all make animal raising highly risky. A murder ransom, a bridal payment, or a piligrimage to Makkah could also take away all or a major portion of one's wealth in just a short period of time. The very high degree of risk means that a very wealthy animal owner can become very poor in just one year needing the help of his section and tribe fellows. The traditional institutions of family, tribe and religion are adopted and designed to take these risks into consideration. Kin and tribal assistance to the needy, animal loaning, animal sacrifices and food distribution, and the custom that food must be provided to the strangers even in preference to the family members, provide a great degree of future security to an individual and ensure him against risks of starvation. By maintaining the family and tribal relations and by himself following the institutional requirements, an individual is provided more security, than any economic means such as raising excessive numbers of animals. This means lower stocking rates and less depletion of commonly owned rangeland resources.

Under the subsistence economic system and the physical environment of Balochistan, normally, it is not possible to accumulate surpluses. The animals that are surplus to the immediate requirement are used for economic purposes as insurance systems through the loaning of animals and for social purposes as sacrifices and contributions towards the tribe and the religion. Also, accumulation of surpluses is not possible as the institution of property rights provides equal use rights to all in the tribe, including the chief and the sub-chiefs. Therefore, there exists more equality among the tribesmen. These findings were earlier confirmed about

another Baloch tribe. Philip Salzman (Salzman, 1976) concluded about Yarahmadzai of Iran that Baluch nomadic tribes were egalitarian as there was an equal distribution and allocation of means of production among the tribe members and no surpluses and economic classes existed.

Wants in the Traditional tribal areas are few and mostly limited to the basic necessities of life. A large portion of these wants is fulfilled from products obtained from within the range lands including those from animals and their by-products. Since there is more or less equal distribution of wealth within the tribal society, no class structure exists and no internal and external demonstration effects influence, to any significant extent, or change people's wants to put adverse pressure on their resources.

The overextended Baloch family system is conducive to the conservative use of rangeland resources as it limits the number of animals on the range and the number of flocks that a family raises. The extended family owns just one flock of sheep or goats with maximum number of 100-150 animals. The family normally has one house made of tree trunks and reed/grass and one room or hut for animal wintering, and has just one hearth. The above mentioned are important for reasons of economies of scale, because not only fodder for animals but all of a family's building and energy (cooking and heating) sources are harvested from the common rangelands.

The Muslim people of the tribal areas have interpreted and adjusted certain aspects of the religious laws in such a way that serves the purpose of conserving the rangeland resources. Animal sacrifices are offered to alleviate conditions of drought and human and animal diseases; and on occasions of birth of sons, marriages, festivals, funerals, and death anniversaries. The major method of treatment of all sicknesses involves sacrificing a sheep or goat and encasing the patient in animal's skin (Post) for up to twelve hours. Cutting of certain trees and grazing of certain specified patches of rangelands is considered sinful and avoided. The above result in continuous

reduction of flock size and in relative conservation of the rangeland resources.

Effects of Institutional Changes on Resource Use and Productivity

The change in institutions in Balochistan, as elsewhere, is gradual and on-going and it is hard to draw a clear line of demarcation among tribal communities with traditional and changed institutions. The Baloch tribes that experienced the most drastic changes in this area (Barkhan-Musakhel) live within 10-20 miles of the only road system that passes through the area and first built over one hundred years ago. The beginning of changes in Balochistan in general, can be traced back to changes in the tribal political organization of the Baloch that began one hundred and fifty years ago. The British empire of India developed interest in Balochistan in the latter half of 19th century in order to bring Afghanistan under its influence and thus be able to stop the Tsarist Russian advances south towards the Arabian Sea and the Indian Ocean. In order to send their land forces from India to Afghanistan the British needed to pass through Balochistan. The start of the First Afghan war between the British and Afghans in 1839 was also the beginning of the Baloch contact with the outside world in modern times. Over the next fifty years the Baloch resistance to British indirect rule was overcome and a mutually beneficial relationship between the Raj and the tribal chiefs of Balochistan was established. The chiefs would be responsible for law and order and security of the government means of communication and transportation within their tribal territories. In return, the government would recognize them as "official chiefs" which would entitle them to payments and rewards. To a large degree this symbiotic relationship between most Baloch tribal chiefs and the government has continued to this day. The new contacts and arrangements had far reaching social, economic and political consequences for the Baloch and Balochistan.

As among other nomadic groups, the Baloch tribes lived and managed their resources under a whole set of institutional arrangements. A change in one component of the set resulted in changes in all. As Dalton (Dalton, 1967) mentioned, external

influences, first introduced through colonialism, destroyed the nomadic-pastoral culture and society of which the local economy was an "inextricable" part. In the discussion that follows, the effects of changes in tribal-social organization, in the economic system, and in family and religious institutions on resource use and productivity are analyzed and interpreted.

Effects of Changes in the Tribal Socio-Political Organization:
The tribal political organization was the first to be affected by outside contacts and influences. The tribal chiefs, for the first time, started deriving their strength from a source other than the tribe that they headed. Under the new arrangements and once the tribe was no longer the source of power and authority, the chief's attitude towards tribal laws, including the laws of resource ownership and use, was bound to change. Sure of external government backing, the chiefs, in many cases, started appropriating the most productive parts of the common rangelands for their exclusive use. This way, the chiefs violated, with impunity, the most important law of common ownership of rangelands where each tribesman including the chief was a co-equal owner and no tribesman could be excluded from the use of any part of the common tribal rangelands. This violation of traditional laws resulted in overgrazing and depletion of rangelands as increasingly larger numbers of animals were raised on ever contracting rangeland areas. In addition, the chief's family members, other relatives, and friends as well as sub-chiefs, started following the chief's example, grabbing most productive areas of the rangelands for their exclusive use, all at the cost of the ordinary tribesmen.

The chief's dependence on external forces, violation of tribal laws, and loss of interest in tribal affairs has also resulted in the collapse of his (and sub-chief's) power and authority to enforce resource use related regulations including annual closing periods and rotational grazing. This aspect of changes in the traditional societies when outside influences penetrate nomadic lands was also discussed by

Helen Ware (Ware, 1979) in her work on Africa. She pointed out that the effect of colonizing the previously nomadic societies was to destroy the political authority of the chiefs who had the power to enforce conservation measures with respect to rangelands. This is true of the Sardars of Balochistan.

Under the changed conditions, there is less interest among all tribesmen in fulfilling obligations towards the kin, the tribe and religion as these are regarded more as individual acts rather than a social necessity. Social contributions are limited and few, and no strong sanctions exist for not fulfilling the same. Serving food to strangers is not a strong social obligation and not as common as before. Resources from timber trees to dwarf palm are not only used at will, but also cut and transported for sale outside of the tribal areas as firewood or as raw material for baskets, mats and rope making etc. The net result of the above mentioned changes is overstocking and depletion of the rangeland resources

Tribal systems of cooperation, sharing, and risk avoidance are also adversely affected as the traditional systems are weakened. What Jeremy Swift (Swift, 1976) said about the Somali nomads, is also true of Baloch nomads. Ever since establishing outside relations the Baloch Sardar, Malik, and Safed Rish themselves do not feel the need for tribal solidarity and therefore do not want to contribute to it. The poor tribesmen, on the other hand, are no more able to seek help based on traditional tribal, section, or clan solidarity and are, therefore, less able to escape their poverty and suffering.

Effects of Changes in the Economic system

A major change in the tribal economy has occurred as more animals are produced for market and less for subsistence. As a consequence there has been a major switchover from the production of high subsistence value goats to high market value sheep. The average market price of a three year old sheep has remained about 30 percent higher than a goat of the same age at least for the last three decades. Production of more sheep has adversely affected both human nutrition and subsistence needs as well as the state of conservation of the rangelands. The sheep are intensive grazers and feed mostly on

grass and smaller plants which hold the very thin layer of soil in the semi-arid conditions of Balochistan. Under overstocked and dry conditions the sheep, unlike the goat, completely remove the vegetation cover and expose the soil to the eroding forces of wind and water. Additionally, over the long run, by eating to the roots and destroying the palatable species of grass, the species composition of the grass and other vegetation changes so that in the end unpalatable and invaluable species remain. In the institutionally changed tribal areas the above conditions are widespread and obvious. Also, the range vegetation, in general, is sparse and the rangelands are spread over large areas with only a few watering points. The sheep are slow movers and less mobile hence the rangelands with more sheep herds than goat and camels seem to be more unbalanced in grazing. This means that the areas near the watering points and camping areas become overgrazed and areas farther away in the range remain un-grazed.

An individual tribesman in Balochistan is constantly faced with situations of risk, uncertainty, and starvation. A major portion of his animal wealth could be lost due to conditions of drought, epidemics and diseases, and as he pays required tribal contributions and ransoms. Under the traditional institutional regime, tribal solidarity and assistance to the needy, food sharing, and periodic animal sacrifices provided a great degree of future security to an individual and ensured him against risks of starvation. Since under the changed circumstances some degree of disruption has taken place in all these institutions, an individual animal raiser cannot expect the same level of security as before. An individual looks to other means of future security for himself and for his family. The easiest and most practical, from an individual animal raiser's point of view, is to increase his stocking rates. So that even if a portion of his animals is lost due to the risks some can still survive and provide sustenance to the family members

Institutional change has also resulted in relative inequality and in emergence of classes among the traditionally egalitarian Baloch

nomadic society. Outside contacts enabled the tribal chiefs, sub-chiefs, and their relatives and friends to violate tribal laws of equal use of resources, and occupy most productive parts of the common tribal rangelands for their exclusive use. The tribal elite are also able to appropriate and sell commonly owned resources of timber, firewood, and construction material in markets for personal gain. These and other extractive methods used by the local tribal elite with the backing of the government have resulted in accumulation of wealth, class divisions, and inequality.

In the institutionally changed tribal areas, the wants of the tribesmen have increased due to internal and external influences and demonstration effects. Many subsistence needs that were traditionally obtained from the local rangeland resources now must be purchased from outside. While only a few decades ago commodities like sugar, tea, and tobacco were unknown, today among many tribal communities, some of these, have become necessities. During the 1998-2000 period, the average annual expenditure of Rupees 6604.1 on basic necessities in the ten institutionally changed tribal areas was about 40 percent higher than the ten traditional tribal territories studied where such expenditure stood at 4752.3 Rupees. Increased wants to require raising increased number of animals. This accompanied by laxer or no social and tribal controls on animal numbers raised, has resulted in overstocking, overgrazing and depletion of rangeland resources. Also, since animals are raised mainly for the market, prices in remote markets and fluctuations in the same negatively affect the animal raisers.

Effects of Changes in Property Rights System

The appropriation of parts of rangelands for private use by the chiefs, sub-chiefs and their relatives, and their inability to enforce vital resource use laws, have changed the basic character of the property rights system. The rangeland areas available for common use have contracted and annual closing periods and rotational grazing practices have been all but abandoned. Both of the

preceding conditions have resulted in overgrazing and depletion of resources. During 1998-2000 the average duration of annual closing periods was only about ten days in the institutionally changed areas, while the same was over 3 months a year in the traditional tribal territories. Movements within the tribal rangelands or rotational grazing either do not take place at all or do so to a very limited extent. Only ten percent of the institutionally changed tribal lands observed some form of limited rotational grazing during 1998-2000.

Effects of Changes in the Family System

In many cases the traditional extended family system has become less so and has, to a degree, been replaced by a nuclear family system. The difference from the traditional system is that, whereas in the traditional system the sons either never established an independent household of their own as long as the father lived, or did so at an age of 35-40 years. Now, in most cases, a son after getting married at the age of 16-20 years immediately receives some patrimony and establishes his own flock and household and leaves his parents home. This necessitates each son building a house of his own, which is done by felling a few dozen commonly owned trees, buying or borrowing more animals to add to the patrimonial flock to have a more economic unit of a flock, and having his own animals like camels and donkeys which are a basic capital requirement for each household. These changes have greatly increased pressure on rangelands.

Effects of Changes in the Resource use Related Religious Institutions

As elsewhere, modernizing influences have weakened the hold of religion to a certain extent. Taboos and beliefs regarding the use of resources have, for the most part, disappeared. Fewer people go to the Mulla for human and animal ailment cures and amulets. Instead of encasing the patient in a sheep or goat skin, elementary modern medicine is obtained from the nurses and doctors in some farming or

roadside village. In most cases, an area's previously sacred trees or patches of the rangelands are not considered sacred any more. The net result of these changes is more animals per unit area of rangeland and more severe depletion of the resources.

Conclusions and Recommendations:

The institutional analysis points to the fact that the traditional institutions provided incentives to individual tribesmen to limit their stocking rates to such levels that were consistent with range carrying capacity, long term human survival, and relatively higher living standards. The changed institutions, on the other hand, seem to have provided incentives to individual tribesmen to maximize their uses of commonly owned resources adversely affecting the long term productivity of the rangelands. The strong influence of institutions on use/stocking rates and thus economic productivity lends credence to our hypothesis that the original institutions were designed to fulfill the tribesmen's basic subsistence and survival needs and that when the institutions have partially or completely disintegrated and have not been replaced by other suitable institutions, overuse and depletion of resources has taken place.

Institutions and institutional change are matters of great significance not only for the tribesmen of Balochistan but for a major portion of the populations of the less developed countries of the world. The analysis with regard to changes in institutions may create a false impression that since the institutional changes have resulted in resource overexploitation and unequal income distributions, therefore any institutional changes are bad. One way to avoid such misunderstandings would be to clearly distinguish between the concept and the structure of an institution, as Wanthrup (Wanthrup, 1975) has pointed out. When it is stated that certain institutional arrangements are more conducive to resource conservation, the reference is always to the concept of institutions, not necessarily to their structures. Any political structure, tribal organization, a trust or a cooperative, holding such concepts may be able to achieve the objectives of resource conservation. As Wanthrup further explained, various economic and social institutions which were developed by

the people as an adaptation to their environments and to cope with problems of scarcity worked efficiently until some outside forces disturbed the traditional system. Resource depletion was the result of the disturbance and disintegration of the concepts of resource conserving institutions as no new structures were built to hold those concepts.

The governments have, in the past, played an important role in weakening and disintegration of the traditional Baloch institutions and in the creation of conditions that resulted in resource depletion and low productivity. The government can play a very important role today in protecting and preserving the resource base of hundreds of thousands of Baloch tribesmen throughout the province. While the government can invest in new technologies to improve rangeland productivity, it can also help in building new institutional structures that will hold the traditional Baloch concepts of cooperation and shared benefits and responsibilities. At this stage the tribesmen need external help to improve the productivity of their rangelands, manage their meager resources in more conservative ways, and improve their living standards.

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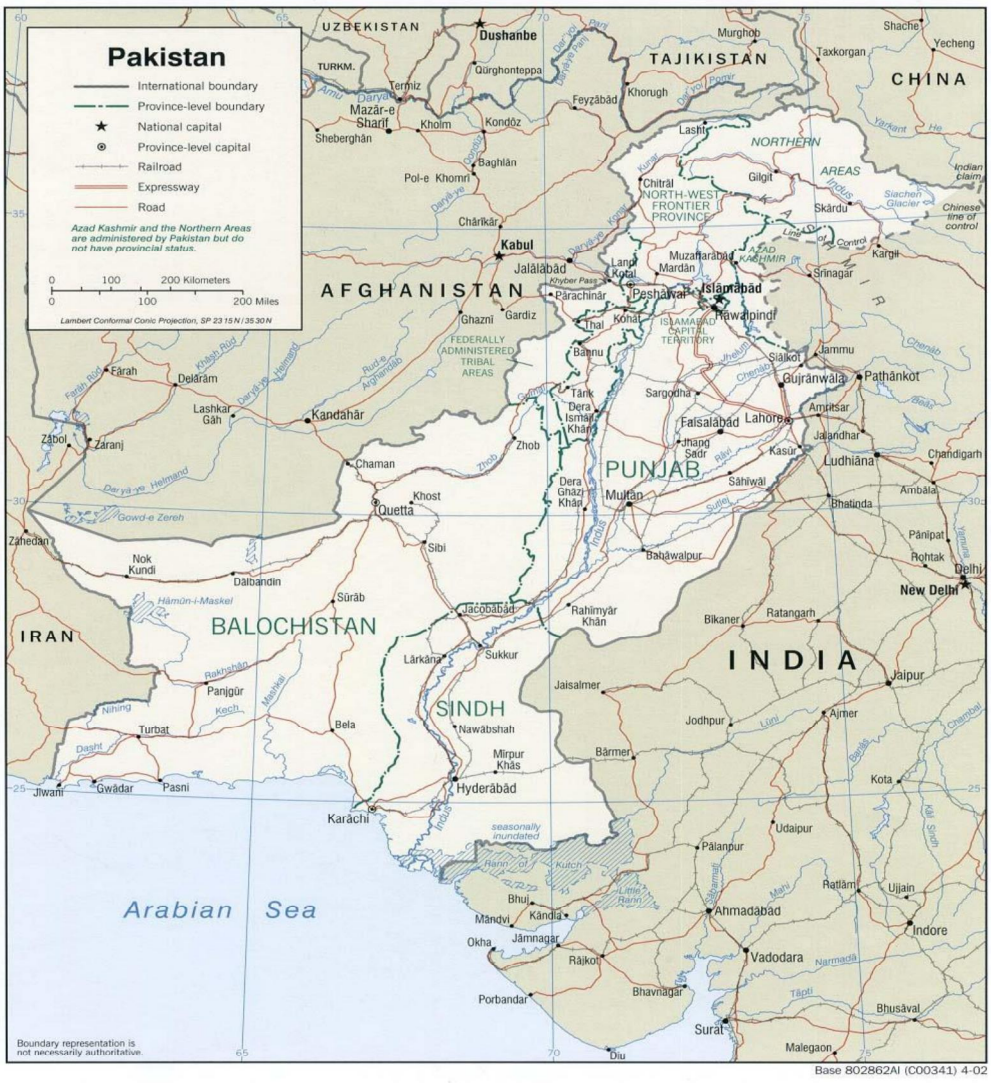

Appendix

Table 1. Stocking/Use Rates and productivity Indicators of Mean Annual Animal Birth/Survival Rates and Annual Adult Death Rates

Range	Herd Size Animals/FA	Breeding animals	Birth/Survival Rates	Adult Death Rates	Stocking Rates
Non-traditional Area (Institutionally changed areas)					
1.	121	106	65.09	0.05	7.156
2.	145	118	61.86	0.07	6.151
3.	128	110	65.45	0.04	7.397
4.	114	104	54.80	0.03	23.057
5.	143	122	62.29	0.06	13.191
6.	97	89	65.17	0.03	4.072
7.	152	136	69.85	0.05	12.774
8.	88	82	58.54	0.02	12.733
9.	81	75	66.67	0.02	9.606
10.	133	114	62.28	0.06	5.323
Mean	120.2	105.6	63.20	0.04	10.146
Traditional Areas (Institutionally unchanged areas)					
1.	132	122	92.62	0.03	2.145
2.	115	102	67.65	0.10	6.290
3.	129	114	89.47	0.02	3.966
4.	156	140	91.43	0.03	1.103
5.	140	127	56.69	0.06	10.654
6.	109	98	88.77	0.03	4.190
7.	117	106	85.84	0.03	3.383
8.	118	100	82.00	0.03	4.681
9.	105	97	74.22	0.08	5.800
10.	146	132	62.88	0.05	8.092
Mean	126.7	113.8	79.16	0.05	5.030

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Table. 2. Use/Stocking Rates and Productivity Range Indicators of Gross Returns Per Acre, Gross Returns Per Animal, and Gross returns Per Rupee Invested.

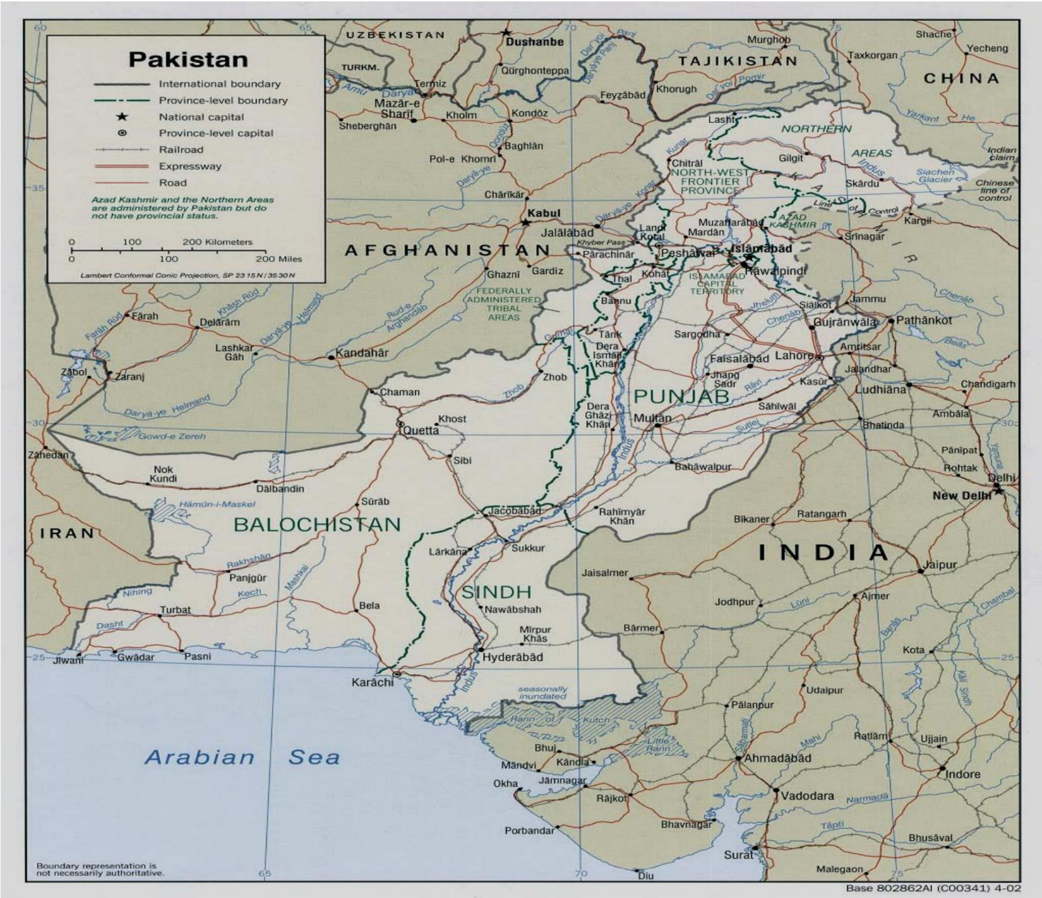
Tribe/ Stocking Rate Range /Rupee	Average Herd Siz Animal/FA	Total Acrs. Available	Initial Invest.	Gross Ret. Total	Gross Ret. /acre	Gross Ret. /animal	Gross Ret.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) (9)
Non-traditional Areas (Institutionally Changed Areas)							
1.	121	1258	29161	18333	14.57	151.50	
	0.63	7.156					
2.	145	858	33496	19629	22.87	135.37	
	0.59	6.151					
3.	128	1310	32149	15657	11.95	122.30	
	0.49	7.397					
4.	114	705	29054	11764	16.69	103.19	
	0.40	23.057					
5.	143	1241	32960	20036	16.15	140.10	
	0.61	13.191					
6.	97	1209	24219	15681	12.97	161.65	
	0.65	4.072					
7.	152	1343	37914	17234	12.83	113.38	
	0.45	12.774					
8.	88	781	21523	9883	12.65	112.30	
	0.46	12.733					
9.	81	777	23594	12576	16.19	155.26	
	0.53	9.606					
10.	133	1484	33982	17588	11.85	132.20	
	0.52	5.323					
Mean	120.2	1096.6	29805.2	15838.1	14.87	132.73	
	0.53	10.146					
Traditional Areas (Institutionally Unchanged Areas)							

1.	132	2524	17561	29127	11.54	220.60
	166	2.145				
2.	115	1261	21166	13971	11.08	121.48
	0.66	6.290				
3.	129	1355	20700	23598	17.42	182.93
	1.14	3.966				
4.	156	1857	20144	30246	16.29	193.88
	1.50	1.103				
5.	140	1328	25296	12593	9.48	89.95
	0.50	10.654				
6.	109	1575	18300	18600	11.81	170.64
	1.02	4.190				
7.	117	1558	16911	22415	14.39	191.58
	1.33	3.383				
8.	118	1363	19348	18165	13.32	153.90
	0.94	4.681				
9.	105	1165	17429	15639	13.42	148.90
	0.89	5.800				
10.	146	1433	23938	16826	11.74	115.25
	0.70	8.092				
Mean	126.7	1541.9	20079.3	20118	13.05	158.91
	1.03	5.030				

Table 3. Overstocking and Economic Productivity in the Traditional and Non-Traditional Tribal Areas of Balochistan (Difference Between Means Test)

Tribe	Overstocking Per FA	Percent Birth/ Survival Rate	Gross Returns Per. Animal	Gross returns Per. Rupee
Non-Traditional Tribal Areas (Institutionally Changed Areas)				
1	3.266	65.09	151.50	0.63
2	2.261	61.86	135.37	0.59
3	3.507	65.45	122.30	0.49

Nek Buzdar				
4	19.167	54.80	103.19	0.40
5	9.301	62.29	140.10	0.61
6	0.182	65.17	161.65	0.65
7	8.885	69.85	113.38	0.45
8	8.843	58.54	112.30	0.46
9	5.716	66.67	155.26	0.53
10.	1.433	62.28	132.20	0.52
Mean	6.256	63.20	132.73	0.53
Traditional Tribal Areas (Institutionally Unchanged Areas)				
1	-1.75	92.62	220.60	1.66
2	2.40	67.65	121.48	0.66
3	0.08	89.47	182.93	1.14
4	-2.79	91.43	193.88	1.50
5	6.76	56.69	89.95	0.50
6	0.30	88.77	170.64	1.02
7	-0.51	85.84	191.58	1.33
8	0.79	82.00	153.90	0.94
9	1.92	74.22	148.90	0.89
10.	4.20	62.88	115.25	0.70
Mean	1.14	79.15	158.91	1.03
T value	2.58	19.79	1.83	9.934


Pakistan
International boundary
Province-level boundary
National capital
Province-level capital
Railroad
Expressway
Road
Azad Kashmir and the Northern Areas are administered by Pakistan but do not have provincial status.
0 100 200 Kilometers
0 100 200 Miles
Lambert Conformal Conic Projection, SP 23 15 N / 35 30 N
UZBEKISTAN
TAJIKISTAN
CHINA
AFGHANISTAN
IRAN
INDIA
BALOCHISTAN
SINDH
PUNJAB
NORTH-WEST FRONTIER PROVINCE
NORTHERN AREAS
AZAD KASHMIR
FEDERALLY ADMINISTERED TRIBAL AREAS
ISLAMABAD CAPITAL TERRITORY
Arabian Sea
Kabul
Islāmābād
Peshāwar
Rāwalpindi
Lahore
Quetta
Karāchi
Hyderābād
New Delhi
Boundary representation is not necessarily authoritative.
Base 802862AI (C00341) 4-02