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COMPARISION OF AGRO-BASED INDUSTRYOF THARPARKAR AND BARRAGE AREA OF SINDH

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Abstract

This study is about comparison of agro-based industry of Tharparkar and barrage area of Sindh, and eighth chapter of the thesis of Ph.D submitted in 2002. Demographic, social and economic conditions are compared with reference of primary and secondary data in detail. Purpose of the study was to give the complete picture of comparison so that valuable findings be drawn and recommendations made to policy maker for prosperity. On the completion of this comparative study it has been observed that: demographic condition shows that the growth of population is showing decreasing trend in 1998 as compared to the census of 1981, in both the areas of Thar and Barrage area. The Agro-based industries, in Barrage area of Sindh, are suitably developed. In this area irrigation is dependent on river Indus, but some times due to lack of rainfalls it suffers a little as happened during 1999-2000. But in terms of economy livestock in this area is constant due to availability of fodder. Thar lacks all these things. Tharparkar, with more rangeland, is much more suitable for livestock industry. Tharparkar requires further development of its livestock. Peoples need awareness about conservation of natural vegetation for their livestock.

Keywords: Comparison; Agro-Based Industry; Livestock; Rangeland Plantation; Tharparkar; Barrage Area of Sindh

JEL Classification: D13;D18;D24;D31;D33;H24;N30;N50;Q15;P51;R13;R23

CHAPTER-VIII**COMPARISION OF AGRO-BASED INDUSTRYOF THARPARKAR AND BARRAGE AREA OF SINDH****I. Pattern of Economy**

Soil of the barrage area is clay like, at some places, mountains are there and at some places it is somewhat rocky too, but mostly it is plane land. Land is hard which can store water for some days. It is flat, water of stream flows easily from place to place. There is easy to store water for fish farms and for small pond for the drinking water for animals. They do not depend on rainwater totally. Rainwater gives them additional help but without rain through river Indus water, land is going to be irrigated.

Thar consists of a tract of small hills (dunes resembling the waves of troubled sea generally running east and west and generally higher in the western than eastern part of the district. It is a sandy area except some area of Nagarparkar Taluka. But the land of Sindh barrage area is flat and so harder than Thar. In this soil water runs easily through canal to the place wherever it is required. In Thar rain are only source of water for agriculture and every kind of vegetation. In Thar rain is rare at interval of three years and maximum rainfall is recorded up to 3 inches only, with the result that the local Tharies are always in the state of nomad tribes. Besides uncertain fate, famine is inherited by Tharies. This area is one of country's disadvantaged regions.

At the same time barrage area is advantaged area of country with the grace of God, River Indus runs through it. Through the network of canals and its branches land is being irrigated. The people of barrage area are not in the nomad tribes. But poor farmers migrate from one place to other place in barrage for the purpose of change of landlord and in search of merciful and honest landlord. In the barrage area due to presence of water main profession is agriculture, especially crops and at the same time livestock is on the second hand.

In Thar as they depend on rain, in rain natural vegetation grows and people sow crops of the season of monsoon. It is observed that Tharies depend on livestock but not on grain (crops) and it is popular saying of Tharies, from this, it is clear that in Thar man source is livestock, second is agricultural crop. But agriculture depends upon rain hundred percent. Livestock at this time depends on rain nearly hundred percent directly or indirectly, but it is possible to raise livestock without regular rainfall. If alternate fodder source are searched and managed then it is possible to raise livestock for the prosperity of Thar.

The dug well is the only source of drinking largely brackish with limited sports of sweet water. The depth of water-wells ranges from 60 feet in the southwest to 300 feet in the north easts. The land of Thar is unable to store the rainwater everywhere easily because of sand. It becomes automatically stored in the areas where land is hard with clay or under ground rocky stones. That is used by Tharies for drinking, for people and livestock with thanks of God. Sand of the Thar absorbs the rainwater after the few hours of stops of rain, so Tharies have to plough the land since next day till few days. In Thar tube well for agriculture purpose will not be successful at great level but if they are arranged, then for people and livestock it will be enough. This type of arrangement will save the time and energy of people and they will remain more energized. Tube well system will prove better in the area of Vat because of sweet water and low depth. If the tube wells would be arranged according to suggestions of SAZDA then will be successful for fodder too.

In the barrage area under ground water is not so deep and peoples use tube wells for the irrigation purpose. It needs some proper attention.

From above discussion we come to know that in the barrage area agriculture is reliable source of income and in Thar crops agriculture is not a reliable source of income generation. Tharies also depend on the barrage area. They come over there and work on farms, kilns (furnace of bricks), and other labour work for income generation they also bring their livestock to barrage area in the drought condition. In barrage area, for livestock, there are no so much free meadows as compared to Thar. So in Thar meadows are free and livestock is free to wander freely and it goes up to 1-6 miles in search of food except the monsoon season. Such a facility is not available in barrage area due to crops in all seasons. In barrage area grass is available everywhere but one have to purchase. In Thar if natural vegetation is good due to rain than it is too easy and cheaper to keep livestock so through livestock Thar can get prosperity, if suggested steps would be taken.

II. Types of Agro-Based Industry

A. Crops

Crops in Thar are not reliable source of income generation, because of low rate of rainfall. It is rare, at interval of 3-4 years and maximum rainfall is recorded up to 3-4 inches only. Due to these reasons and long droughts agricultural activity in the desert has reduced considerably (APPENDIX-21) local villagers feel that agriculture will not go back to the pre 1987 position as people have found alternative sources of income and have started considering it as a subsidiary activity. However the older generation definitely feels otherwise and has a strong attachment to farming. (1) From this it is clear that agricultural activity in Thar is not confirming reliable source of income.

In the barrage area due to River Indus agriculture activity is reliable sustainable source of income generation. So many crops and fruits are grown in the barrage area. From these we meet the needs of our country and also export surplus commodities and earn foreign exchange. Tharies also meet their need from barrage area during the drought and in other conditions; they come to barrage area and do labour work at kilns, canals, farms and other daily wages work.

From this it is clear that comparatively barrage area is suitable for agricultural crops and reliable source of income generation and in Thar, it not reliable and sustainable source.

B. Rangeland/Non-Crop

Those crops, which are not actually cultivated but naturally grown and give productions, these are shrubs and trees. Which partially depend upon rains but without rains they can live alive for some years till monsoonal rains comes after 3 -4 years or alternative year, giving productions regularly in own seasons. Such type of plants are khejdi (propos ginerasia) khabar, keer, kombat, gugrani etc. The example of gugrani is also in Blochistan, which give the production just like gum, when plant is injuired.(2) There are some other plants like ber called jungly ber, which are now grafted successfully. Therefore it is necessary that there is a need of protection, of these plants and at the same time planting of these plants in proper way. Examples of these plants are as under: khejdi (propos ginerasia) , Salvadora oleoides (Salvadora oleoides (Khabar), Capparis aphylla (kirur), Acacia senegal (kombhat), gugrani and other indigenious plants.

Besides the plants, there are so many types of grasses, which are grown during monsoon season due to rainy water. After the rainy season theses grasses become dry but they are fodder for whole year till next monsoon. If rainfall is not enough for better crops but it is some what enough for naturally grown grasses. Shrubs and trees get help from low rate of rainfall too. All these things give support to livestock as a fodder and these things give the fruits to the local villagers without cost. There is no proper arrangement of protecting these things. If this vegetation is protected then it is too much fodder for livestock and its' fruit may be the good source of income generation. At this time all this vegetation is free to harvest for every body, , no matter where they are, except khejdi (propos ginerasia) it. In rare cases few landowners protect Khejdi (propos ginerasia)

In barrage area the landlord use their land for crop manufacturing at the same time, if there is scarcity for water for irrigation of whole land than they leave some portion of it for livestock. But it is not confirm meadow because they use this land in the next season for the purpose of crops

From the above discussion it is concluded that in Thar non crops is more easy and sustainable for live stock in that year when rain is enough for crops or some what less than that but it is enough for natural vegetation. There is not proper arrangement of protecting the dry grass, they protect the dry grass by traditional methods by which 1/2 or 1/3 portion of it becomes spoiled by rain water and Tharies cut the trees and shrubs to make shelter for dry grass. This technique itself destroys more vegetation, other thing is that they do not care for

plants in proper way and there is no proper ethno forestry. But what is protected that is due to Local organization system and somewhat fear of government formalities.

In the barrage area there is protection by mud layer that is successful up to much level. But there is fresh grass also available for the purpose of fodder. There are some forests they are also good meadows for livestock. The forest besides this gives the other products e.g. gum, wood for furniture and fuels purpose. Comparatively the timber of barrage area is of good quality in comparison of timber of Thar. Timber of Thar is of low quality except Rohiro tree (lohiro tree). It is used for making Katcha (mud made) house and fuel.

From above discussion it is concluded that present non-crops is good at barrage area and it comparatively is bad in Thar. But it can be improved by taking proper arrangement through ethno forestry involving local organization and awareness by proper way. (For detailed suggestions, study the ethno forestry from Appendix-8). For the improvement of this sector tree plantation is compulsory, which is described as bellow:

Tree Plantation

In Thar tree plantation is equal to zero. Natural growth in trees is found at the some extent that is why there are natural plants in Thar and people look after these natural trees. Now -a day some active NGOs are working about it. Out of these NGOs some are prominent. They brings awareness in some villages in their own project areas PVDP is also working about it and according to Allah Bux member of PVDP Islamkot, 2000 plants of khejdi (propos ginerasia) are planted and in the year 2001 other 4000 plants of khejdi are to be planted. Due to ethno forestry plants are in existence. Further progress about it may be due to only ethno forestry with some support of forest department and NGOs.

In barrage areas landlord cultivate some types of plants ethnotially and they use these things for animal as a fodder for the purpose of timber. Mostly plants are grown for the garden of fruits. Some plants are grown like Shisham near the watercourse and boundary line of land, where there is path to pass. Some grasses (jantar) and some Eucalyptus are grown to get ride of saline. Due to different ways plants are cultivated and naturally grown are also looked after. In this way mostly everywhere we find plants and big trees.

From the above it is clear that comparatively in barrage areas trees are too much and facilities are also too much. In barrage areas purposely people plant the trees.

C. Livestock

1. Situation of livestock

The population of livestock in Thar was 3.43 millions in 1986 and it increased with annual growth rate 22.6 % and projected in 1991 is 3.88 millions. It is 3.66 millions in census report 1996. and decreased with annual growth rate 0.188 %. This decrease is due to drought of 1990, 1993 and 1996. Again there is drought in Thar in 1999-2000 declared as calamity stricken on 26th April 2000. (3) If we project the animal population with the same above rate then it will be 3.44 millions in 2001. But according to news reports the mortality rate was high. So may be projected population vary in between 3.00 millions to 3.44 millions. All this happens due to shortage of fodder.

As we know that the rainfall is not enough for agriculture without rain growth of grasses is impossible but with somewhat rain grasses grows and give help for 2-3 months. And the trees and shrubs get much help from it; the roots of these plants are deep so these are good source of fodder for livestock. Now a-days people are doing agricultural activity less than previous ten years. The land of Thar is good for natural vegetation and for the livestock. At this time Tharies depend upon livestock at first level and at the second level they depend upon non-crops, which is free for every body that is why they don't recognize and at the third level they depend on crops. Tharies villagers keep the cows, goats and sheep for milk purpose. Every body wants at least to have 3-4 goats for milk purpose. Buffaloes and sheep are in low quantity. And every family has at least 3-4 goats. At the time of need they sale it and make both end meet in emergency cases, other animals like horses are used for the purpose of riding only. Camels are used for riding and loading because it is the ship of Thar. Now days a jeep and taxi jeep are in much use. But in previous ten years and before only camel was the source of riding in small villages. Still at this time in small villages camel is only source of traveling. At this time more work is taken from camels like: farming and carrying load to home and from farmland to nearest market.

Those who are rich only they can have camels and about 10 % people have one camel. Mostly poor people have at least one or two donkeys for farming and carrying load, these figures are calculated by census report of 1996. This is the cheapest animal of Thar, easy to maintain. It requires less care about fodder. It

eats every type of fodder, which other animals do not eat. Only few people have kept sheep. Every people keeps goats, overall approximately 3.44 heads of livestock are in Thar according to projected population for 2001.

In barrage area livestock is at first level, for income generation and agricultural corps is at second level. In this area animals, which are first kept by poor farmers are at least 2-3 goats. If they can afford than have at least one cow. Only few people keep sheep. Those who are rich keep buffaloes and cows in to much quantity as an informal diary farm. They sale milk, butter and ghee in the market and earn income. In the barrage areas it is easy to keep livestock because the fodder is available easily. For landlords it is grown, in their own farms. The poor farmers get grass from webs and unnecessary grass, which are taken from farm to save the crops properly.

From above discussion it is concluded that for the livestock abandoned sources of fodder are available in barrage area. But in Thar only in the monsoonal season if rain is enough for grasses and natural vegetation then fodder is available, without labour work comparatively. In the year of drought there is scarcity of fodder for livestock and need fodder at home; and it becomes costly, so, comparatively barrage area is more suitable for livestock. If some alternate arrangement is made then it is very easy to rear animals in Thar because of, lot of meadows freely available.

2. Livestock Sustainability

For the sustainability of livestock, three things are essential; one is fodder and other is animal husbandry and third is market.

At this time only at tapa level husbandries are available in district but out of them only few are properly working. Mostly they are not facilitated by medicine properly and at the same time personal working over there, are not so much talented according to local people. Traditional methods are working more than that according to some people.

In barrage area comparatively lot of animal husbandries, are properly working. The numbers of husbandry is also more than Thar.

In both places mostly farmer themselves do cure for animals by traditional methods only in serious cases they took their animals to husbandry.

3. Fish farming

Fish farming is not in Thar because of lack of storage of water and in barrage area, it is in practice by some landlords and is successful.

4. Poultry Farming

Poultry Farms are not in Thar and less than 1- % villagers keep the desi (local/domestic) hen for the meat and egg purpose. In Thar there is no meat market so, when guest comes they need meat. Those who have got hen or egg sell at their own rate according to demand.

In barrage area, people manage poultry farms at big level according the needs of local market. Only few big farms are over there, which supply egg and hen for cities, and nearby towns. As Tharies are poorer than people of barrage area this is also one reason of not having poultry farm. Other is the season of the area, which is too hot, so without electricity it is difficult to look after it. Third reason is that roads are not available so it is very difficult to supply it to cities. Therefore no body will get proper benefit from it.

In barrage area people are richer and have more sources of income, that is why, they buy meat more in comparison of Tharies.

From the above discussion it is concluded that, in barrage area, poultry farming is properly arranged and is one income-generating source and in Thar, it is not in practice.

D. Dairy Products

Livestock is very important factor for Tharies. Tharies villagers depend on it. The products, which they get from it, are milk, butter, ghee, meat, furs, bones, hairs from these products milk, butter and ghee are called dairy products. In Thar people keep cows, goats and sheep for the purpose. Mostly 93 percent Tharies have their own animals (see table-7.18), for the purpose of milk; that is why, there is no market for these products on big scale, for purpose of income generation. At talukas and big villages levels there is need of milk, and people only buy milk but not other things. In over all there is no proper arrangement of sale of these products. Income at much level can increase, if proper arrangement is made and awareness is brought in villages. At this time it is at bottom level for income generation. Bones, furs and hairs are sold at very cheapest rate, in local market due to lack of availability of market.

A Comparative Study of Agro-based Industry of Tharparkar with Canal Barrage Area Sindh (1988-2000). Suggested Techniques Leading to an Industrial Economy, PhD Theses, Department of Economics, University of Sindh, Jamshoro, April, 2002, Chapter-8. By: Gobind M. Herani

In the barrage area, dairy products are more than Thar. Main reason is that there are more facilities for livestock e.g. fodder and water. There are also markets for the product at suitable rates comparatively e.g. sale of milk and meat, etc

In barrage area there are few farms, which are at big scale. But over all farms for livestock are not separately arranged for the products but they are along with crops. These products are at small scale sold in market. But this is big scale if we compare it with Thar. These informally arranged livestock produces many products through milk e.g. butter, ghee and sweets from milk. People get income from these products too. There is no preservation arrangement for milk, butter and ghee. These livestock give also meat; furs and bones, which are sold at market and farmers, earn income from these too. Mostly in barrage area people keep cows and goats in much quantity and some people have buffaloes and sheep. In barrage area all the villagers and farmers mostly keep at least 4-5 goats.

From the above discussion it is concluded that comparatively to much livestock is in barrage area and it give more dairy products. At the same time there is market of these things too.

E. Edible Oil

There are some crops, which are sown and from them oils are crushed. This type of crushing is not available in Thar at this time but it was in practice 10-20 years back, another thing is that now days crushed oil from barrage area is easily available comparatively due to this reason, this practice is stopped now a days. There are some non-crops from which oil was taken but now days they are only used as fodder for animals.

There are only two crops from, which oils can be crushed.

1. Till
2. Seed of Water Million

There are two non-crops from which oil can be crushed.

1. Tooho
2. *Salvadora oleioides* (pilo).

In the barrage area of Sindh there are so many types of seed of crops and they are used for oil crushing e.g. cotton oil seed, Jambho, mustard (*Barassica compestris*) and so many other seeds.

From the discussion it is clear that in the barrage area edible manufacturing is best and in Thar it is negligible, because, it depends on rainfall; the rainfall is not regular and confirm source for irrigation.

F. Mills (Those Industries, Which are not in Thar)

Rice milling, wheat milling, sugar making, Oil crushing, Cotton ginning and fish Farming, all these are not in Thar. Because rice, wheat, sugarcane, cotton and fish are not produced in Thar due to lack and scarcity of water and its farming. All these are available in barrage areas. In barrage areas these things are major income generation sources.

III. Social Services

1. Roads

In Thar one road is up to district headquarters via Naukot and one via Umerkot. From Umerkot to Chachro is near to being completed in 2001. From Umerkot to Chelhar is completed in 2001. From Chelhar to Mithi is completed, from Mithi to Chachro is in the process and made up to Chelhar. From Mithi to Nagarparkar is reached near to Islamkot. Now days in these villages, towns' transport is better than previous decade. We can say that from district headquarter to Taluka head quarters transport is better in these days. There are only four Taluka in Thar; out of these one Taluka Umerkot is half in Thar and half in barrage area. There are 2350 villages in Tharparkar and roads are comparatively very low. But at this time CE has taken keen interest in solving this project through "Khushal Pakistan " programme and so many plans are in process. The details of such projects are in chapter one and two. From this it is looking that, in next five years network of roads will spread mostly in all over big villages.

In the barrage area network of roads is too much better. At the same time land is clay so it is somewhat hard. Due to this hardness from cycle to busses and trucks are being used in much quantity and railways service is also available. But car, camel carts, tangas (horse carts) are also in practice. There are so many roads from farm to market for the facility of farmers. They are not enough for, but comparatively too much better than Tharparkar; the speed of roads construction is faster comparatively.

From the above discussion it is clear that in barrage area transportation is comparatively better. Barrage area naturally without roads is also better than Thar due to the plane land surface and hardness of the land. In Thar roads are too much required.

B. Electricity

In Tharparkar electricity is supplied up to Taluka headquarters. Chachro, Mithi, Diplo and Nagarparkar, one town Islamkot and six villages, Sanyasar, Misri Memon, Phangario, Harchand Kolhi, Sokhroo (4).

In barrage area electricity is supplied to all the Taluka levels, Tapa levels and into small villages too. It is not supplied to every village but it is supplied mostly all big villages. Reason of it is that mostly in barrage area, big landlords have political influence and at the same time they do approach for the need, which they want to have it.

From the above discussion it is clear that in barrage area electricity supply is too much better. And in Thar at the same time it is at the scale of bottom.

C. Support of Government

In the barrage area of Sindh Government gives loan to farmers and at the same time it gives loan to big landlords. From the government what ever they are getting, it is not utilized. One thing is that it is given in such away that so many formalities and political influential pressure are used and deserving people are kept away from their due right. Another thing, which is behind it, is that when these landlords get loans and do not utilize it in agriculture sector but they use same amount in any other business or what ever they need at priority basis. Third main thing is that they get it "write off" by government due to their political affiliation and personal sources and on the basis of bureaucratic malpractices. The given loan is improperly utilized is one main factor of non-uplifting of agro based industry and at the same time getting of "write off" is hindrance in it. Real and deserving small landowners were inherited from, for not receiving this facility due to non-awareness, lack of proper guidance and bureaucratic tricks and political influences. But over all government gives loans for the purpose. There is no proper use of these loans.

In Tharparkar ADBP is giving loans. It is good thing but these loans are given to farmers at small scale. These loans are given to poorer farmers. The poor farmers are already poor and they have already some livestock and they say that they have bought this livestock by this loan and they use this amount in their own use. This practice does not increase the livestock and business at required level. But at least these poor farmers get ride from landlords and from high rate of interest. This thing is also positive for Tharies. By doing this practice farmers at least do not sale their own livestock at cheaper price in emergency. By this they improve their status at some level better than previous. One demerit of this loan is that big landlords by the influence of politics get these loans. They actually do not need this loan in real case easily.

From the above discussion it is clear that government is giving loan according to their national budget what ever it is. This budget is not sufficient; it depends upon national budget and estimation of the economy of country. But what ever is given, it is urgently needed that it should be given to small farmers. By doing so, Tharies will get more benefit from this policy. Every body will keep livestock and income level will increase at the same time, they will remain healthier by eating yogurt and milk. This is necessary for better thinking. It is saying that sound mind, lives in sound body.

D. Research

Research Programme only for the analysis of drought conditions in Thar was managed. At this time some more active NGOs are working in Tharparkar. They have done lot of work. They are generating awareness at grass root level. But work is only in selected villages what ever they have done that is good but it is not enough. There is need of such awareness for Thar. At the government level, there is no proper arrangement of research, for social and economic problems; and for their solutions, except SAZDA; which has done, lot of working, in the field of water supply; and research of its aquifers. Thardeep is working especially for awareness and giving know-how according to their experience as study. In Thar more than fifty NGOs are working, out of them only four are registered. Out of them Thardeep, Baanh-belli and PVDP are prominent. All their work it self is one type of research and they all have more need of some experts in this field.

In barrage area, which gives more income, is under consideration for the government. In barrage area research works is being done on different subjects for example pesticides, seed quality, and fertilizers, cutting, budding and layering. People of the barrage area are practicing these things. There is more need of re-

search work according to new demands of modern age. It is observed that every day new re-search is happening in the world according to new demand of modern age.

E. Village Organization

Village organization is must for the progress. Before last four decades there was good system of village organization. Now days every people, is thinking that every body is independent. Due to this type of thinking there are so many benefits but previous Local organization system was also too good. There were some faults of monopoly. Thinking of independence nature of people automatically finishes the monopoly. In these days again there is need of local organization system in well modern organized ways. In Thar now days some active NGOs are encouraging it. They are working in proper way and generating awareness in their project areas. Present government system is also the same base nearly.

In barrage area it is also in practice but still there is more need of awareness. In barrage area so many NGOs and welfare are working. Politically and non-politically people of the barrage area are more aware than Thar.

From the above it is clear that in any shape local organization exists in Thar and barrage area but they are not properly managed. There is need of modernize these things according to the need and situation of area.

IV. BASIC FACTS ABOUT THARPARKAR AND BARRAGE AREA

TABLE-8.1 REGARDING DEMOGRAPHIC STATUS

HEADINGS	THARPARKAR	SINDH
Total Area	19,638 Sq. K.M	140,915 sq. km
Number of villages	2,350	21,278
Number of Dehs	166	6,103
Tapas	18	1,430
Total Population	914,291. --Both	29,991,161 whole 15,329,329 Rural"
Men	499,859 --Both	15,823,097 whole Sindh 08,030,598 Rural
Women	414,432 ---Both	14,168,064 whole Sindh 07,298,731 Rural
Population with Age above 10 years	581,435	20,838,400 whole 05,294,823 Rural
Population with age above 65 years	34,140	00786,949 Whole Sindh 00441,778 Rural
Density of Population	46.6 per /Sq. K.M	216 per/sq. km (Whole Sindh)
Population Growth Rate Per Annum.	3.13 %	2.80 % for whole Sindh

Source: National Census Report, 1998, Provincial Census Report, and Tharparkar Report and Sindh Government

Website, Sindh at a Glance

(Secondary Data Researched, Tabulated And Reframed)

TABLE-8.1 (a) REGARDING DEMOGRAPHIC STATUS

HEADINGS	THAR	SINDH
Total Area Sq. KM	19,638	140,915
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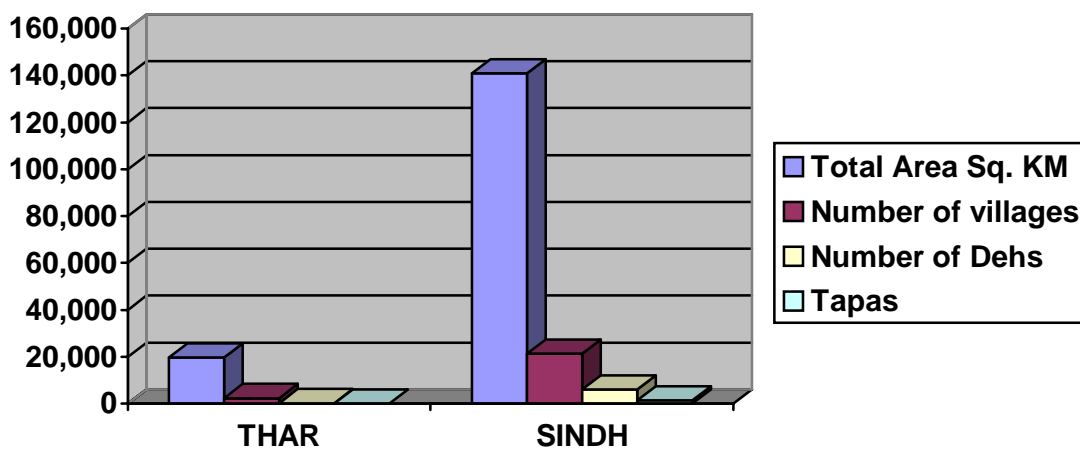


Chart-8.1 (a)

TABLE-8.1 (b) Population

	THAR	SINDH
POPULATION		
Population with Age above 10 years	581,435	5,294,823
Population with age above 65 years	34,140	441,778

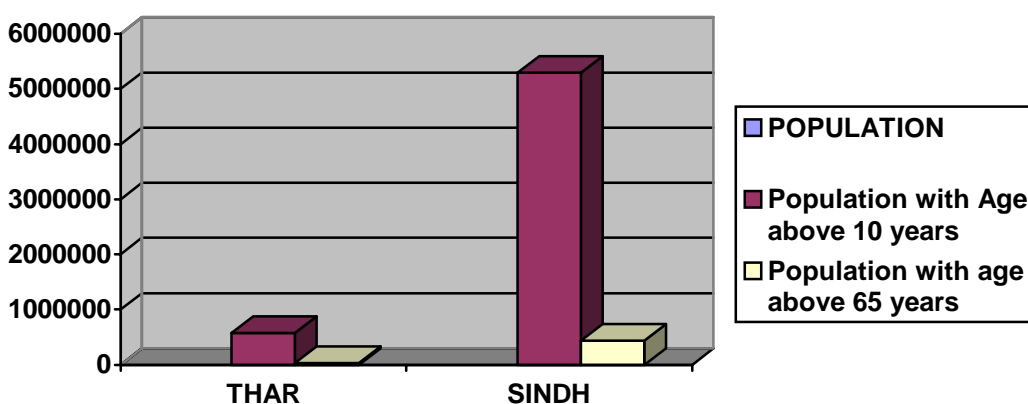


Chart-8.1 (b)

TABLE-8.1 (c) Density and Growth Rate

	THAR	SINDH
HEADINGS		
Density of Population SQ.KM	46.6	216
Growth Rate Per Annum. %	3.13	2.8

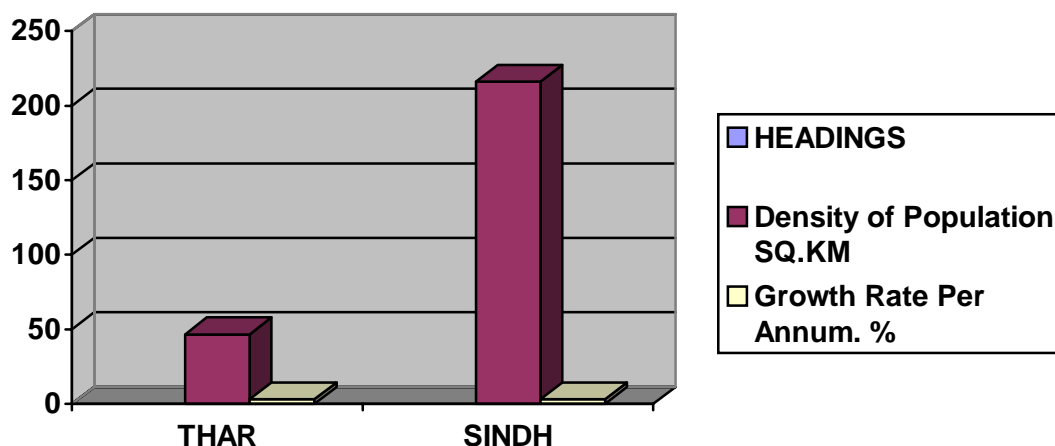


Chart-8.1 (c)

TABLE-8.2 REGARDING LIVESTOCK STATUS

HEADINGS	THARPARKER		SINDH BARRAGE AREA	
		Growth rate (1986-1996)		Growth rate (1986-1996)
Livestock	3,656,933	112.4%	16,535,758	103.4%
Cows	048513	88.20 %	3,873.883	141.00 %
Buffaloes	0039842	20.96 %	3,220,094	174.40 %
Goats	1970852	148.00 %	6,755,234	144.00 %
Sheep	898542	67.56 %	2,615,984	141.00 %
Horses	008132	271.00 %	00075,850	82.89 %
Camels	103057	686.00 %	00217,853	103.00 %
Donkeys	150834	751.70 %	00500,160	138.80 %

Source: National Census Report, 1998, Provincial Census Report, and Tharparkar Report and Sindh Government Website, Sindh at a Glance

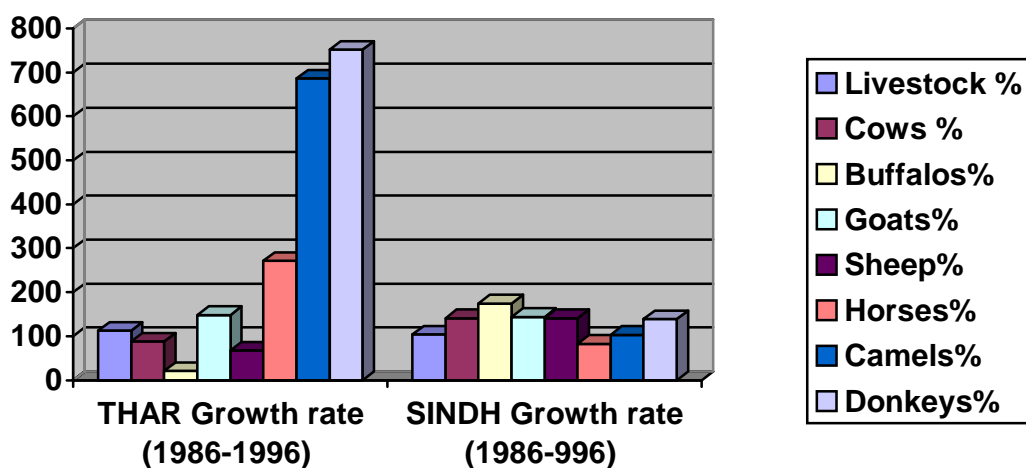


Chart-8.2

TABLE-3 REGARDING CROPS AND MINERALS PRODUCTION

A Comparative Study of Agro-based Industry of Tharparkar with Canal Barrage Area Sindh (1988-2000). Suggested Techniques Leading to an Industrial Economy, PhD Theses, Department of Economics, University of Sindh, Jamshoro, April, 2002, Chapter-8. By: Gobind M. Herani

Crops	Bajra (millet), Jowar, Cluster bean, Mung, Moth, Sesame	Wheat, rice, sugarcane, cottons, jowar, bajra, maize, rapeseed, mustard and grams.
Minerals	Coal, Granite, China Clay	(Shale), clay, limestone, coal, and dolomite

Source: National Census Report, 1996, Provincial Census Report, and Tharparkar Report and Sindh Government Website, [sindh_at_a_glance](#)

TABLE-8.4 REGARDING INFRA STRUCTURE

HEADINGS	THARPARKER	BARRAGE AREA SINDH
HEALTH		
District Civil Hospital	1 at Mithi	<u>In each district</u>
One hospital bed for	7000	1100-4000, Average of Barrage Sindh (For details see chapter-1)
Civil Hospitals	2	Hospitals 322 (includes RHC/BHC)
Rural health Centre	3	N.A
Basic Health Units	21	N.A
Dispensaries	38	1808
LITERACY STATUS		
Both Literacy Rate	18.32%	45.29 % all areas 25.73 % Rural
<u>Men Literacy Rate</u>	<u>28.33%</u>	<u>54.50 % Whole Sindh</u> 37.89 % Rural
Women Literacy Rate	6.91 %	34.78 % whole Sindh 12.23 % Rural
PEOPLE LITERATE		
Below Primary Level	16.70%	15.56% all areas 21.36 rural
Primary Level	31.7 %	27.14% all areas 36.46 rural
Middle	16.29%	19.20% whole 15.19% rural
<u>Secondary</u>	<u>17.29%</u>	<u>17.84% Whole Sindh</u> 14.28% rural
Intermediate	7.98 %	9.00% all areas 6.53% rural
<u>Graduates</u>	<u>3.04%</u>	<u>7.43% all areas</u> 3.54% rural
Masters	1.47%	2.65% all areas 1.80% rural

Source: Census Report, 1998 (Tharparkar and Province of Sindh)

TABLE-8.4 (a).

	THAR	SINDH
HEALTH		
One bed for persons	7000	1100



Chart-8.4 (a)

TABLE-8.4 (b)

	THAR	SINDH
HEALTH		
Hospitals	26	322

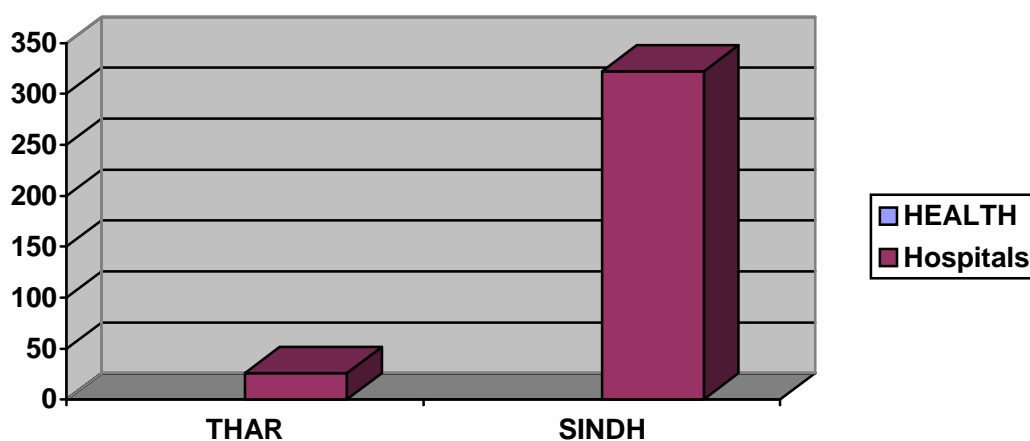


Chart-8.4 (b)

TABLE-8.4 (c)

	THAR	SINDH
HEALTH		
Dispensaries	38	1808

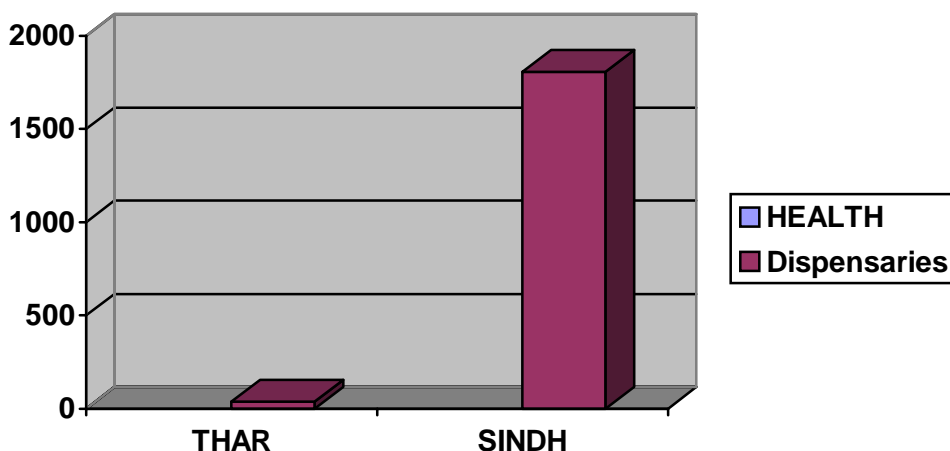


Chart-8.4 (c)

TABLE-8.4 (d)

	THAR	SINDH
LITERACY STATUS		
Both Literacy Rate%	18.32	25.73
Men Literacy Rate%	28.33	37.89
Women Literacy Ratio%	6.91	12.23

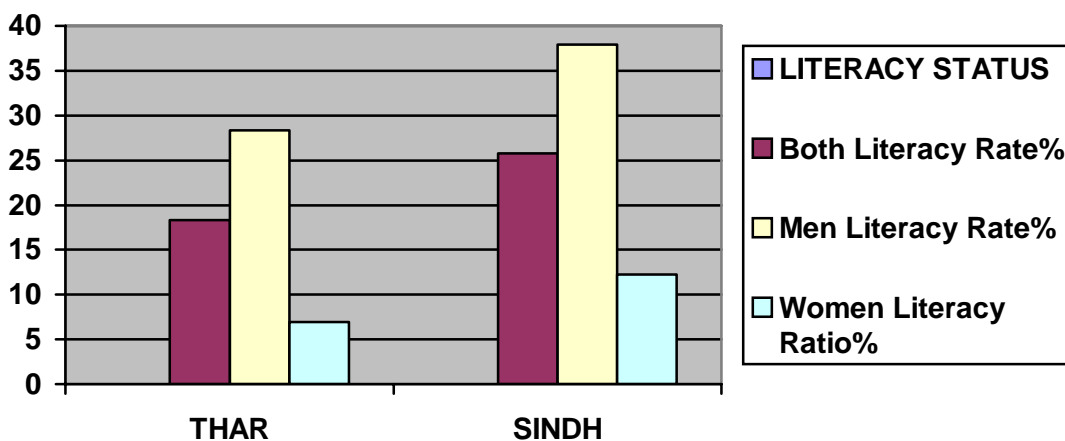


Chart-8.4 (d)

TABLE-8.4 (e)

	THAR	SINDH
PEOPLE LITERATE		
Below Primary Level%	16.70	21.36
Primary Level%	31.7	36.46

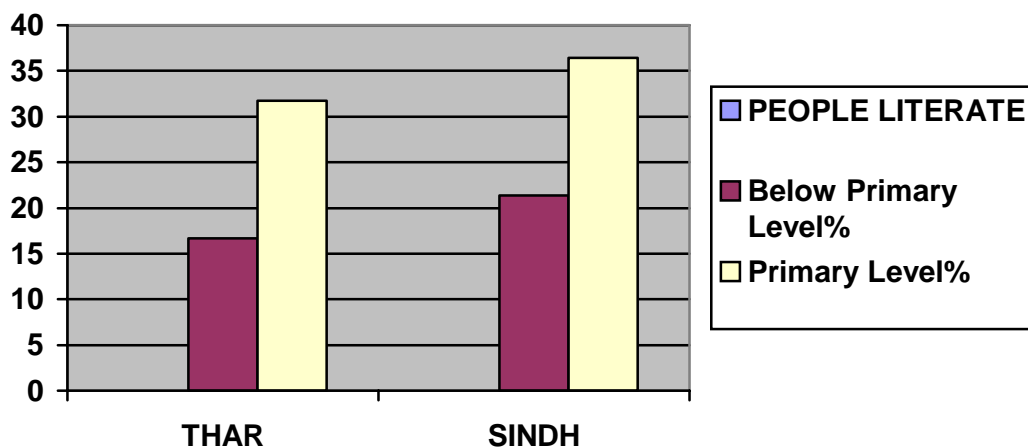


Chart-8.4 (e)

TABLE-8.4 (f)

	THAR	SINDH
PEOPLE LITERATE		
Middle%	16.29	15.19
Secondary Level %	17.29	14.28
Intermediate Level %	7.98	6.53



Chart-8.4 (f)

TABLE-8.4 (g)

	THAR	SINDH
PEOPLE LITERATE		
Graduate Level %	3.04	3.54
Masters Level%	1.47	1.80



Chart-8.4 (g)

PRIMARY DATA ABOUT AGRO-BASED INDUSTRY AND SOCIAL SERVICES

TABLE-8.5 REGARDING AGRO-BASED INDUSTRY

HEADINGS	THARPARKAR	BARRAGE SINDH
Crops	Not sustainable source	First level sustainable source
Non-crops	Range land is second level sustainable for livestock	Rangeland is sustainable at third level, because. Of deforestation.
Livestock	First level sustainable source	Second level sustainable source.
Dairy products-	In future may be sustainable source	At present sustainable source
Mills	At present not in practice	Sustainable source

Source: Primary Data, Questionnaire Compiled in Tables in Chapter 7

TABLE-8.6 REGARDING SOCIAL SERVICES

HEADINGS	THARPARKER	BARRAGE SINDH
Roads	Not good	Better
Electricity	Needed	Much better
Education	Less at primary level and at secondary level increases	Better at primary level, after that decreases up to intermediate
Employment	Less availability	Better, if searched
Remittance economy	Less	Better
Animals population ratio	Less	Better
Housing facilities	Less	Better
Water	Less available/by wells	Reverine source

Source: Primary Data, Questionnaire Compiled in Tables in

TABLE-8.7 PRIMARY DATA, QUESTIONNAIRE COMPILED IN TABLES IN CHAPTER 7

ATTITUDE/OPINION/CHOICE FOR THE AGROBASED INDUSTRY	THARPARKER	BARRAGE AREA OF SINDH
Depend on agro based	81%	66%
Attitude to ward agro based	95%	67%
Livestock is more sustainable	92%	80%
N. Crops are more sustainable	82%	20%
Crops are more sustainable	39%	70%
Want to keep Goat	95%	78%
Want to keep Sheep	91%	0.5%

A Comparative Study of Agro-based Industry of Tharparkar with Canal Barrage Area Sindh (1988-2000). Suggested Techniques Leading to an Industrial Economy, PhD Theses, Department of Economics, University of Sindh, Jamshoro, April, 2002, Chapter-8. By: Gobind M. Herani

LIVESTOCK FOR BETTER INCOME		
Goats	99%	94%
Sheep	95%	39%
HAVE OWN LAND		
Have own land	58%	33%
Have no land	42%	67
DO AGRICULTURE		
Own Farm land	39%	22%
Do not do agriculture	11%	33%
Do agriculture at all (on others farmland)	35%	25%
LANDLORD BOUNDED FARMING AGRICULTURE		
With interest	62%	44%
Helpless do it	38%	18%
Do not search alternate of agriculture in drought as permanent profession	78%	21%
Want to search alternative of agriculture but are not aware.	22%	31%
Say remittance enough to needs	11%	34%
PRESENT STATUS OF LIVESTOCK.		
Have livestock and meet needs 100%	23%	15%
Have livestock only for nutrition	48%	28%
Have livestock and met needs 50%	22%	38%
Have no livestock	7%	19%
DEBT STATUS		
Farm bonded loaner	09%	12%
From money lenders on interest	23%	10%
Not loaner at all	20%	21%
Loaner to shopkeepers	26%	53%
Loaners from friends/relatives	22%	04%

TABLE-8.7 (a)

	THAR	SINDH
CHOICE FOR THE AGRO BASED INDUSTRY.		
Depend on agro based %	81	66
Attitude to ward agro based %	95	67

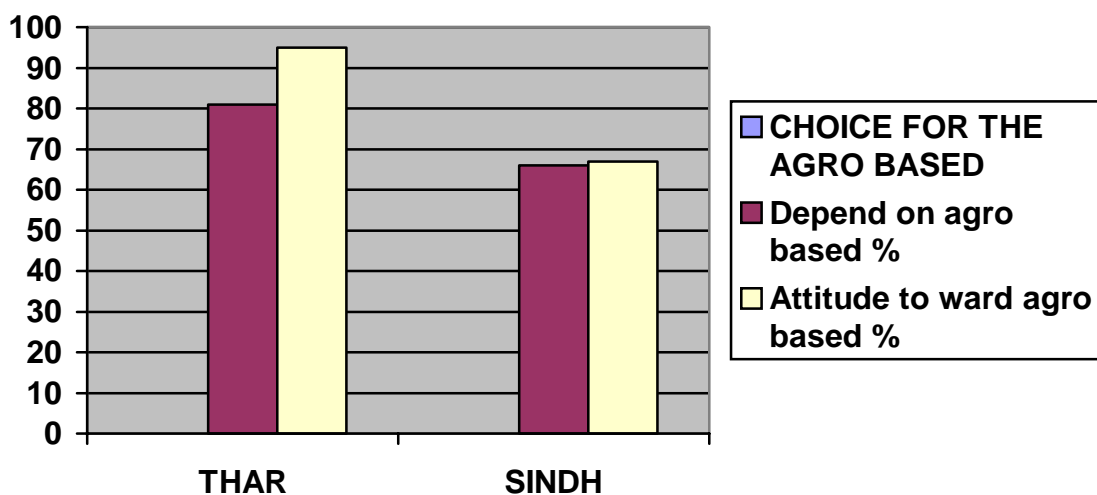


Chart-8.7 (a)

TABLE-8.7 (b)

	THAR	SINDH
CHOICE FOR THE AGRO BASED		
Livestock is more sustainable %	92	80
Non-Crops are more sustainable %	82	20
Crops are more sustainable %	39	70

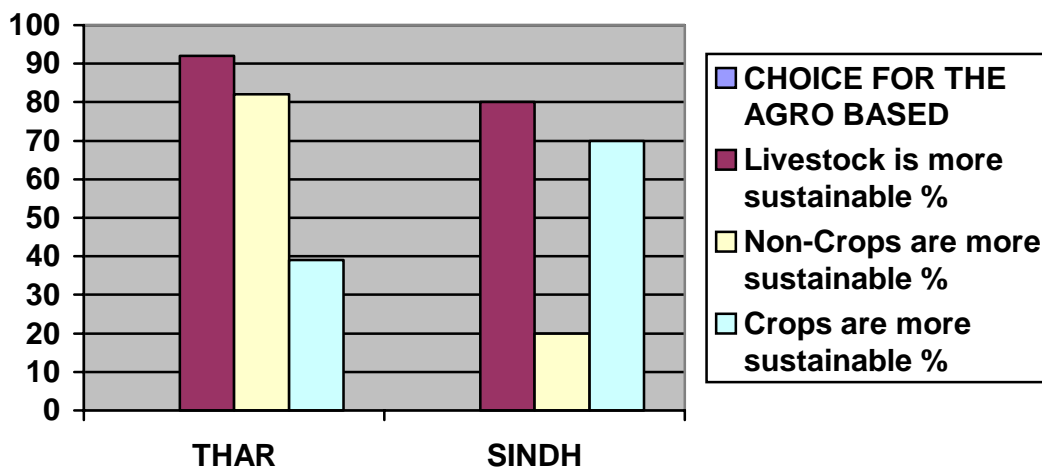


Chart-8.7 (b)

TABLE-8.7 (c)

	THAR	SINDH
CHOICE FOR THE GOATS AND SHEEP		
Want to keep Goat %	95	78
Want to keep Sheep %	91	0.5

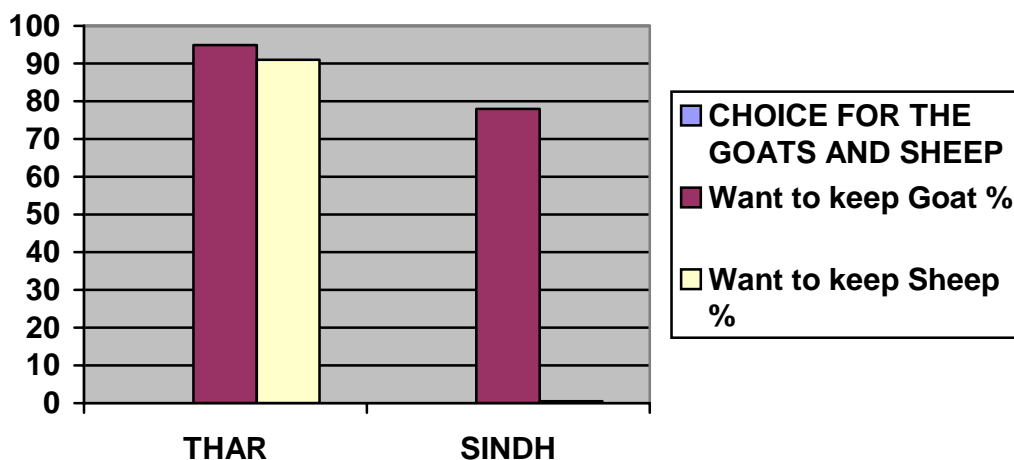


Chart-8.7 (c)

TABLE-8.7 (d)

	THAR	SINDH
LIVESTOCK FOR BETTER INCOME		
Goats %	99	94
Sheep %	95	39

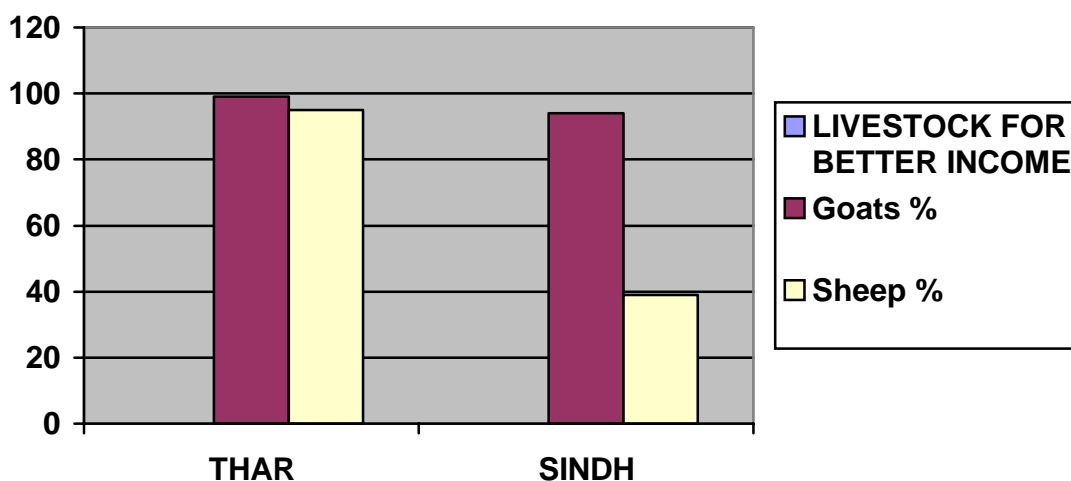


Chart-8.7 (d)

ABLE-8.7 (e)

	THAR	SINDH
HAVE OWN LAND		
Have own land %	58	33
Have no land %	42	67

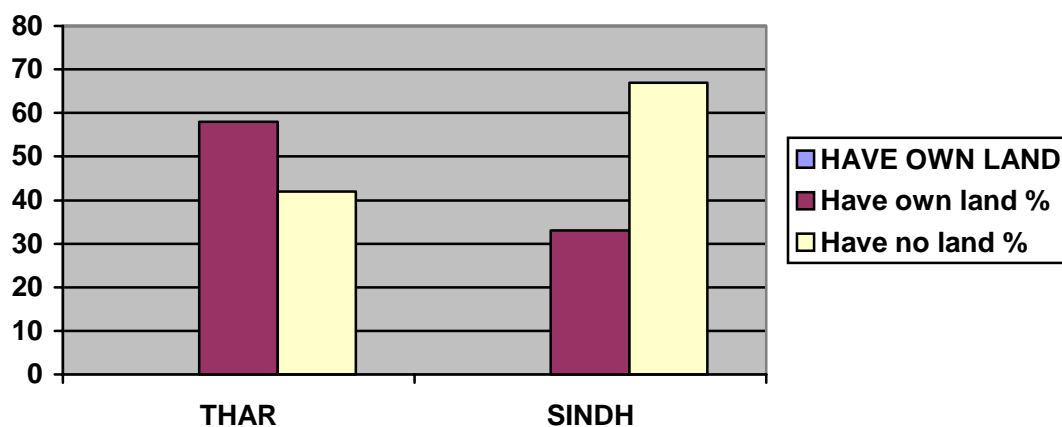


Chart-8.7 (e)

TABLE-8.7 (f)

	THAR	SINDH
HAVE OWN LAND		
Have own land %	58	33
Have no land %	42	67

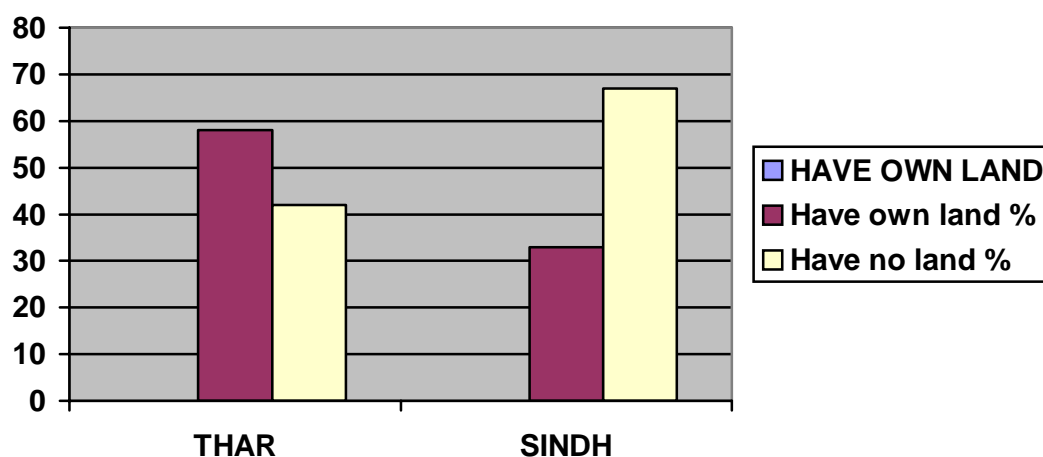


Chart-8.7 (f)

TABLE-8.7 (g)

	THAR	SINDH
DO AGRICULTURE		
Own Farm land %	39	22
Do not do agriculture %	11	33
At all on others farmland %	35	25

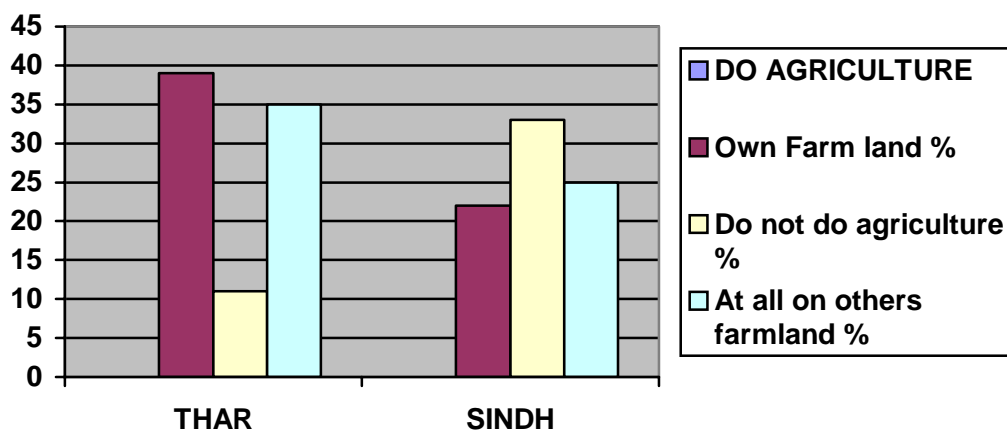


Chart-8.7 (g)

TABLE-8.7 (h)

	THAR	SINDH
LANDLORD BOUNDED FARMING AGRICULTURE		
With interest (happily) %	62	44
Helplessly do it %	38	18

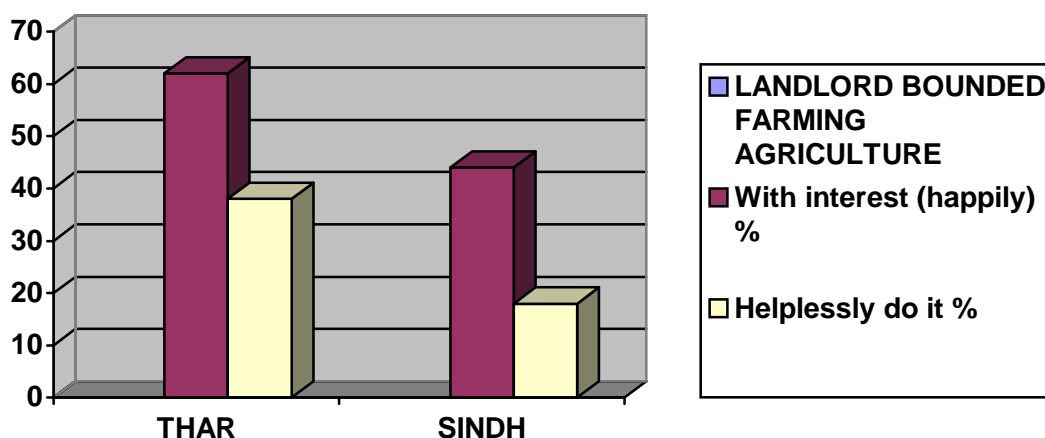


Chart-8.7 (h)

TABLE-8.7 (i)

	THAR	SINDH
AGRICULTURE		
Do not search alternate of agriculture in drought as permanent profession %	78	21
Want to search alternative of agriculture but are not aware. %	22	31
Say remittance enough to needs %	11	34

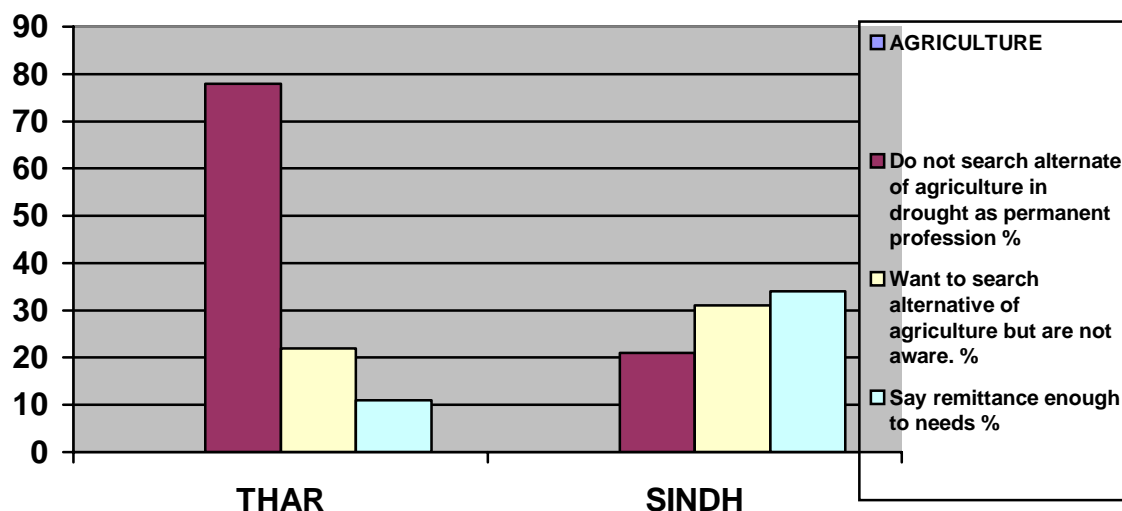


Chart-

8.7 (i)

TABLE-8.7 (j)

PRESENT STATUS OF LIVESTOCK	THAR	SINDH
Have livestock and meet needs 100 %-	23	15
Have livestock only for nutrition %	48	28
Have livestock and met needs 50 %	22	38
Have no livestock %	7	19

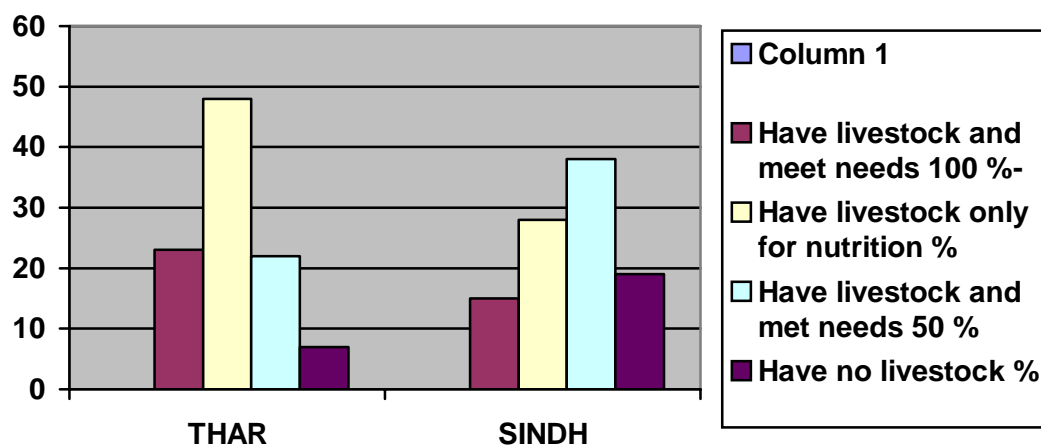
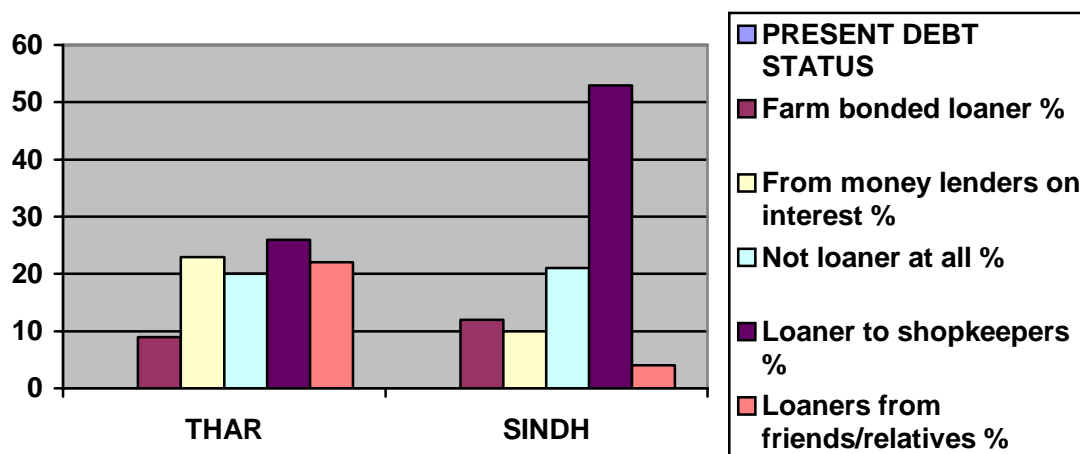


Chart-8.7 (j)

TABLE-8.7 (k)

PRESENT DEBT STATUS	THAR	SINDH
Farm bonded loaner %	09	12
From money lenders on interest %	23	10
Not loaner at all %	20	21
Loaner to shopkeepers %	26	53
Loaners from friends/relatives %	22	04



V Conclusion

On the completion of this comparative study it has been observed that:

1. Demographic condition shows that the growth of population is showing decreasing trend in 1998 as compared to the census of 1981, in both the areas of Thar and Barrage area.
2. The Agro-based industries, in Barrage area of Sindh, are suitably developed. In this area irrigation is dependent on river Indus, but some times due to lack of rainfalls it suffers a little as happened during 1999-2000. But in terms of economy livestock in this area is constant due to availability of fodder. Thar lacks all these things.
3. Tharparkar, with more rangeland, is much more suitable for livestock industry.
 - i). The growth of goats shows an increasing trend. Imported Camel's stock is also available.
 - ii). Cattle stock shows decreasing trend but it can be reared up however, its inhabitants essentially require knowledge about rangeland and conservatory methods. In order to overcome the drought problem, they need to fence their farmland and planting new indigenous and exotic plants in it.
4. Crops in Barrage area are conserved by installing tube wells but the income level is low. The installation of tube wells in Tharparkar is difficult due to very high installation cost.
5. There is a great decline in the education field of Thar at the primary level. At middle to intermediate level it is much better than Barrage area. At graduate and postgraduate level barrage area is little better than Thar.
6. If observed on the basis of minerals stocks then both the areas are rich in different sectors. The coal, granite, china clay and other available minerals are in large quantity in Thar as compared to Barrage area. The semis and geological surveys of Thar are essential. Mineral wealth requires to be further explored by the Government
7. To conclude, the Barrage area of Sindh is comparatively better than Thar, in every respect:
 - i). Infra-structure facilities,
 - ii). Physical, social and economical facilities
 - iii). Information and communication facilities, and
 - iv). Other income generating facilities.
8. Tharparkar requires further development of its livestock. Peoples need awareness about conservation of natural vegetation for their livestock.

References:

- 1 Arif Hassan, Dr. Fiona A. Hardy, Tharparkar rural Development Project (TRDP) Evaluation 1993 (Government of Sindh, United Nations Children's Fund (UNICEF) Save the Children Fund (SCF)-U.K, May 1993) p.19
- 2 PTV program (About gugrani plant, time could not note, but talking about plants and its benefits)
- 3 <http://www.un.org.pk/drought/sindhreport.htm> {More results from: www.un.org.pk/}
- 4 DAWN - National, 26 June 2000. The US Immigration Department announced on Friday. . Complete Story, WAPDA not providing electricity to Tharparkar MITHI, June 25: Inhabitants of Thar are <http://www.dawn.com/2000/06/26/nat.htm> [More results From: www.dawn.com]