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Excelling Role of Small Ruminants in the Economy of Balochistan-Pakistan; Potentials and prospects

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ABSTRACT: A study was conducted during the two years period that extends from 2012 to 2013 to identify the impact of livestock potential and prospects through income generation, women participation and job creation to achieve the prosperity and development for the local population of Balochistan province, which is consider as problematic and restraints region of Pakistan. Present study is mainly focusing on the potential of livestock, especially small ruminants, for the development and prosperity through different factors including poverty reduction and better living standard of Balochistan. The results indicated that potential and prospects had a direct positive influence on prosperity and development through various variables. Income generation ability and job creation were also found to have a strong positive impact on livestock potential and prospects. Women participation in livestock rearing activities is also positively related to livestock potential and with the prosperity and development. Hence, income generation with saving ability, job creation, women participation and poverty reduction were positively associated with potential and prosperity of livestock. They played more vital role in prosperity and development outcomes in the study.

Keywords: small ruminants, role of women, Economy, development, Balochistan

INTRODUCTION

Balochistan is located in southwest of Pakistan, constituting approximately 44% of the country's total land mass (Geological Survey of Pakistan, 2005), and the smallest in terms of population, being home to less than 5% of the country's total population (Population and Housing Census of Pakistan, 1998). Most part of Balochistan is highly arid zone of the country, so crop cultivation is considered very difficult in major parts of Balochistan, due to low annual rainfall, creating a shortage of water resources. The low rainfall varying from 50 millimeter in coastal areas of Makran and Chagai district to 400 mm in the North Eastern Parts of Lorelei and Zhob districts (Balochistan Sub Strategy, 1999) provides scanty facilities for undertaking widespread crop culture operation. Consequently, hardly two (2) per cent of the entire area is under crop culture earnings (Livestock & Dairy Development Department, government of Balochistan, Quetta, 2006). rest of 98 per cent of Balochistan is comprised almost 35 million hectares of wastelands is fit for cropping (Ministry of National Food Security & Research, 2012) but scanty grazing for livestock is available throughout the year.

It is estimated that only 15 per cent of this Rangeland is located in areas having more than 250 mm annual rainfall (Balochistan Sub Strategy, 1999), which can support perennial grass and shrubs.

Almost 93% of the province is rangeland area, i.e. having a very low amount of grass on it (Geological Survey of Pakistan, 2005). A last population survey held in 1998, revealed that 6.5 million people inhibit in Balochistan and the total area of 348,189 Square kilometers that constitutes 43% of the country (Geological Survey of Pakistan, 2005).

If livestock sector is developed with its full potential, the province can overcome unemployment (Zia, 2007) and can generate major economic activities to several people (Islam *et al.*, 2006). Due to lack of industrialization, patchy infrastructure development and almost absence of private sector in major parts of Balochistan, government sponsored jobs are the only way for livelihood (Economic survey, 2003-04). Livestock provides the livelihood as it is the substitute of government employment in the rural areas of the province (Haider, 2008).

There are a number of livestock investment opportunities available not only for local investors but also for foreign investors' e-g Investment opportunities at Gwadar Sea port which is located in a strategic position. It can open many employment opportunities to livestock sector of Balochistan especially for small ruminants. The government has reserved a large piece of land for livestock rearing activities (Economic survey, 2003-04). This will be a great opportunity regarding the export of small ruminants to Saudi Arabia and other Middle East countries (Baig, 2005). Completion of mega projects Dam/ Canal projects can procure great opportunities especially for livestock (Baig, 2005). Jobs are available in export of organic meat sector. Red meat of Balochistan has a significant demand due to its delicious taste and distinct nutrients which are found in the red meat especially in mutton. Balochistan has the potential to export the meat production in the regional countries (Afzal, 2008). The private sector can step into this business for massive profit taking in Job opportunity by the Establishment of feedlot for export. There are thousands of jobs can be created in meat packaging industry, processing of skin and hides and in Ostrich farming in Khuzdar, Kalat, Nushki, Jaffarabad, Musakhail and Zhob (Livestock & Dairy Development Department, 2006). Establishment of ostrich farming will bring more job opportunities and revenue from the export of ostrich meat in Middle East Countries and to some European Markets. Employment in Sausage industry will bring more jobs as Europe and other important developed countries of the world have great demand for the intestine. Wool industry has the potential to export to neighboring countries quite easily (Haider, 2008). Livestock can open the ways for cottage industry Balochistan. There is also potential in Establishment of milk decontamination plants, and Peri-urban dairy production can get the market if machines are installed in the area. Life of milk can be extended and it can be transported to far areas as well. As a matter of fact, the following important sectors of livestock may bring the prosperity and economic development, such as; employment in Milk and dairy products, Modern slaughter houses employment, Propagation of beef breeds, Poultry sector employment, Establishment of feed mills, Livestock rearing provides multi-dimensional participation of the whole family (Khushk and Hisbani 2004). It is so common that every member of family takes active participation in rearing activities, such as: men, women and children are adaptive to take part in the livestock rearing activities on a daily basis (Afzal, 2008). However, in agro pastoral societies of Balochistan, women manage and control the livestock especially small ruminants (Niamir-Fuller, 1994). They perform dual responsibly by working at home odd jobs and outdoor activities diligently. In fact, there is a fabrication and faux in tasks performed by women real potential in order to assist men's exertion (UNICEF, 1995).Therefore, due to very low rainfall in major part of the Balochistan, most population here is depending on cattle farming, so livestock sector can be considered as the backbone of the economy of Balochistan province. Study provides guideline to help policy makers, livestock holders and all other stake holders to better understand the livestock potential and prospects in the way to development and prosperity. Topic carries its significance because of no industrial development in the province and due to reliance of major population on livestock development in Balochistan. The rationale to emphasis on sheep and goat is due to their large share in Balochistan economy; they are the main livestock type in the province. Therefore, present investigation will serve as guideline and foundation for other studies in future. Furthermore, our study will also be valuable to the investors to invest in livestock, which can lead to substantial improvements in the quantity and, more importantly, the quality to export livestock in the region. Rangelands of Balochistan set up (93) per cent in the province of Balochistan.

Table 1: Livestock population in number in million(s) since 1955 to 2012.

Animal species	1955	1960	1972	1976	1986	1996	2006	2012
Cattle	0.295	0.643	0.482	0.684	1.157	1.341	2.254	3.348
Buffaloes	0.026	0.026	0.022	0.033	0.063	0.161	0.320	0.562
Sheep	1.157	2.564	3.859	5.075	11.111	10.841	12.804	14.248
Goats	0.702	1.596	3.238	4.441	7.299	9.369	11.785	13.735
Camels	0.070	0.086	0.185	0.212	0.349	0.339	0.380	0.415
Horses	0.014	0.010	0.019	0.023	0.029	0.043	0.060	0.077
Asses	0.061	0.099	0.171	0.244	0.370	0.383	0.472	0.011
Mules	0.002	0.004	0.001	0.001	0.004	0.006	0.0063	0.544
Poultry	0.283	0.454	1.183	1.958	3.295	4.637	5.911	6.885
TOTAL	2.610	5.482	9.160	12.671	23.677	27.120	33.00	32.94

Source: Livestock census, (2006); Dairy Development Department, Government of Balochistan, Quetta, (2013)

Table 2: Main sources of feed for the livestock.

S. No.	Type	Source of feeding	
		Ranges (Percentage)	Agriculture (percentage)
1	Sheep	90	10
2	Goats	95	5
3	Camels	95	5
4	Donkeys	95	5
5	Cattles	40	60
6	Horses	10	90
7	Buffalos	-	100

Source: (Livestock Sub Strategy Balochistan, 1998).

Only (28) per cent of the rangelands are considered fair to good, around 36 per cent of the ranges are considered poor, 30 per cent unproductive and 5 per cent under-grazed (Forest Department, Government of Balochistan, Quetta, 2012). If grazing quality is considered, Balochistan can be divided into two zones (SMEDA, 2012), more potential and productivity make the upper and lower highlands the best. On the other hand, southern plains do not yield more grass and herbs and consider the poor; support only 25 percent of livestock (Giles & Baig, 1992; Farooq & Ali, 2002). Due to vast rangelands in the major parts of Balochistan, potential of small ruminants' production can be capitalized. The importance of small ruminants' for the economy of Balochistan can better comprehend through the Table 1 as Balochistan has vast rangelands almost 93%, where small herbs and shrubs are available. It suits to the growth of small ruminants because of their largely dependency on rangelands.

On the basis of literature review, the following objectives are framed:

(i) To describe the nature and status of livestock in the economic development of Balochistan.
(ii) To explore the potentials and prospects of livestock for the economy of Balochistan
(iii) To examine various aspects which have influence over the livestock directly or through other means.
(iv) Potentials and prospects of livestock, especially small ruminants for the economy of Balochistan
(v) The Livestock, especially small ruminants support the livelihood of people of Balochistan.
(vi) Importance of livestock to the development and prosperity of Balochistan.
(vii) The role of woman participation in livestock rearing activities for development and prosperity.

MATERIALS AND METHODS

Concentration of this study focused on livestock in Balochistan, having deliberated on potential prospects with special reference to small ruminants during the two years period from 2012-2013. Income generation, saving ability, job creation mechanism in livestock sector are important dimensions to be studied. On the other hand, poverty reduction, improvement in living standard and potential of participation of women in the sector also the areas where the potential and prosperity will be evaluated

Sampling

Convenience sampling method was used so that to give representation to each portion of the livestock holders/herders available in the different areas to get the factual opinion from them. Target population consist of those who attain the age of 18 relating to nomadic, transhumance, sedentary families and other common (men and women) who involve in livestock rearing activities. Target population also included all stakeholders i-e farmers, herders, livestock traders, private and government servants, teacher or any one involve in livestock rearing activities. Using SPSS-19 and amos-19 statistical tools were employed to test study and its hypotheses. The control variables consist of district, age, number of livestock, marital status, occupation, time span in livestock business, and monthly income from livestock business. To highlight the major participation of women in livestock sector, a section of questionnaire was designed to evaluate the role of women in livestock. The research has the practical implication and form the type of data gathering a descriptive (non-empirical) and casual. Questionnaire development and results analysis were performed by adopting the due process. Data collection was conducted red questionnaire with help of well-structured questionnaires and structured interview and in the light of the objectives administrated.

Measures

Several measures were included to analyze the variables such as; the potential and prospects, prosperity and development. Measures planned to gather demographic information regarding the subjects, including Age, Education, Occupation, type of livestock and their number of each type of livestock. Thus, research has the practical implication regarding the subject matter and establishes the type of data gathering which was descriptive and casual. Process of data collection started with the help of self-administered, well-structured questionnaire. It was taken the form of structured interview schedule as majority of livestock holders were illiterate or less educated.

Questionnaire was prepared in the light of available literature. Design and implementation of survey was to ensure about the generality of the results. The response scale had been five point Likert-type scale ranging from one (strongly disagree) to five (strongly agree). Measure which was used in the study was different from other measure in the prevailing study (Gary, 1990). Measure was quite significantly revising form the 2 points (Danserreau, *et al.*, 1975), it was also depicted quite significant differences from 4-point (Linden & Graen, 1980) and from five item (Graen, Linden & Hoel, 1982).

Before constructing the measure several scales were closely studied. Therefore, 5-point Likert-type scale was borrowed and adopted for the study. Moreover, the Cronbach alphas are consistent in the study. Thus, the 5-item Likert scale ranging from (1) "strongly disagree" to (5) "Strongly Agree" were used in the study.

Table 3: Means, Standard Deviation, and Correlations of data.

Items	Mean	SD	X1	Y1	Y2	Y3	Y4	Y5
X1. Potential & Prospects (PP)	5.8	1.4	1.00					
Y1. Income Generation& Saving (IGS)	5.8	1.6	.851	1.00				
Y2. Job Creation (JC)	5.4	1.9	.896	.845	1.00			
Y3.Women Participation (WP)	5.3	1.8	.807	.812	.861	1.00		
Y5. Poverty Reduction (PR)	5.3	1.5	.667	.847	.893	.850	.1.00	
Y6. Development and prosperity (LDP)	5.7	1.4	.892	.675	.892	.866	-.326	.1.00

*. All items are Correlated significant at the α = 0.05 level (2-tailed).

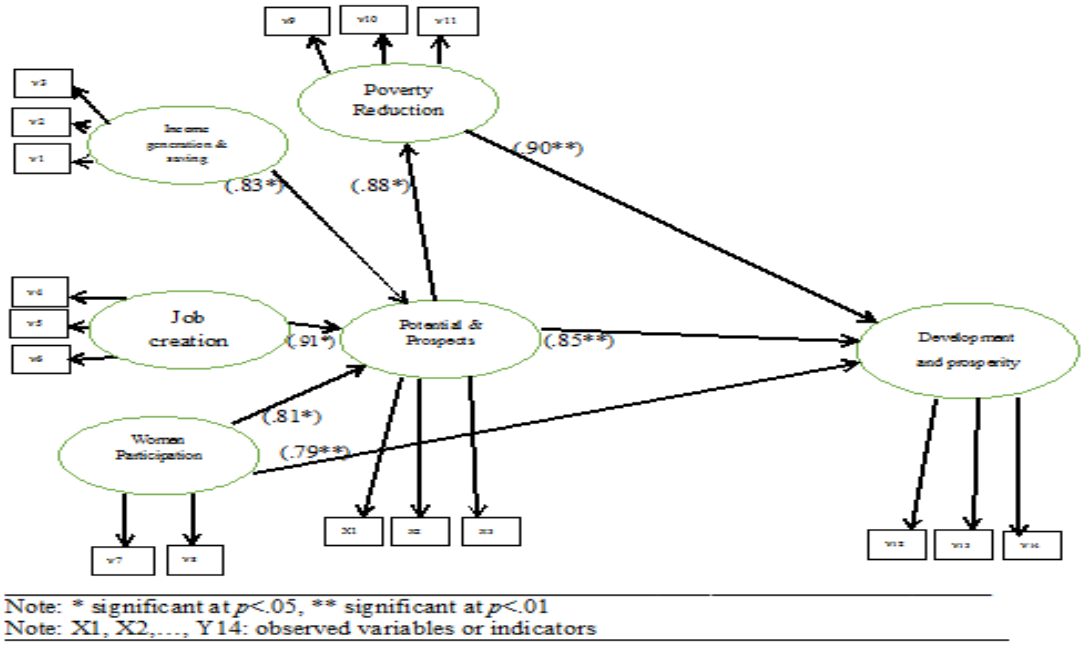

Fig. 1. Theoretical structural Method.

RESULTS AND DISCUSSION

Results indicate significant positive co-relationship. Potential and prospects (PP) regarding development and prosperity evidenced significant and positively supports to its objective. Hypotheses investigated the relationship among poverty reduction (PR), job creation (JC), and women participation in (WP) and income generation with saving abilities. Multiple regression was calculated to predict whether the hypotheses are supported by the study or not. It is observed that PP (β = .85), has a significant and positive relationship with Development at 0.01 level. Job creation (β =.91), and women participation and income generation and saving (β = .79), have significant effect on development and prosperity.

Development (.000) and PP (.000) are significant predictors (or related significantly) of overall development. The standardized beta tells the strength and direction of the relationships among the variables. The positive coefficient (correlation) for potentials and prospects suggest that high value on this variable correspond to higher scores on the dependent variable (i.e. small ruminants development in terms of increase net proceed).

The R^2=.604, R^2 change =; .06 is the proportion of variation in the dependent variable (small ruminants' development) that is explained by the independent variable. All items encumbered significantly (> .50) on their respective factors which was an indication of reliability. Cronbach's alpha (1951) values for all scales exceeded the minimum verge level of .80 thus indicating the reliability of all scales used in this study (Table 3). Study discovers that substantially large population rears small ruminants (97.7%) as a source of income and survival. Only 7% livestock holders have buffalos in under study area whereas 27% people have cattle at their homes. Camel, horses, Mule, donkey and other livestock are also rare in the sample area. As discussed earlier, research on livestock potential and prospect suggests several constructs, such as; income generation, saving ability, job creations and net proceeds for livestock holders. Moreover, in group contents of the constructs show the relationship with each other. The final phase of the study depicts the development of livestock sector in shape of more income and more prosperity. The results of the study revealed that livestock potential and prospects is positive predictor of prosperity and development as it has been hypothesized. Furthermore, the dream of prosperity and development at provincial level provides to accelerate the livestock rearing activities particularly in Balochistan, where Livestock is considered the backbone of the economy. As majority of population consists of pastoral living hood, hence, livestock is included in their part and parcel. Study results are closely associated and supportive towards the past research and findings on the potential of livestock in Balochistan, particularly small ruminants which substantiates the notion that the livestock generates ample income at every level and to capacitates the livestock holders to consolidate saving abilities. Proposed hypotheses received considerable support. Research was practically indigenous and it was descriptive and causative in nature. Hence, results verified the past researches as small ruminants' production has significance role for the economy of Balochistan. Present study has the significance implication for the economy of the province due to its large amount of production in the province. Furthermore, agrarian economy of Balochistan, largely depend on small ruminants rearing. Past researchers also verified that the small ruminants' of Balochistan have great potentials for the development of livestock economy which have a tremendous impact on overall economy.

The table 1 shows the whole livestock population in numbers. It clearly highlights the importance of small ruminants. Balochistan has the largest population of small ruminants' in the country. It is because of its climate and indigenous environment which support the growth of small ruminants. In those years when small ruminants are reared in large numbers, Balochistan economy also expanded. Hence, Table 1 is a better evidence for suitable environment for small ruminants' production.

CONCLUSIONS

The primary purpose of this study was to develop and to test a model that examine the relationship of livestock potential and prospect with prosperity and development in livestock sector of Balochistan especially small ruminants. The results of this study provide considerable insight into the livestock potential and prospect that may promote the livestock rearing activities in the province of Balochistan. Hence, the test of model indicates that the livestock has the potential for prosperity and development of common people especially dwellings living in rural areas. Once these factors are identified and rationally prioritized, it would accelerate the pace of development. Result of the study also reveals that potential of livestock is interrelated to prosperity and development in Balochistan. The study also indicates empirical evidence of the impact of livelihood of people in the province. This means the quality of livestock activities will promote prosperity in the lives of inhabitant of Balochistan. Thus, the study provides guidelines to help decision makers to better understand how to improve the livestock rearing activities and what the loop holes are in this regard. This study may provide better understanding in decision making about the outcomes and end results.

REFERENCES

Afzal M. (2008). Investment opportunities in livestock sector in Pakistan, Director General "The Daily News" Rawalpindi / Islamabad, Lahore and Karachi on September 18, 2006.

Aujla, K. M Jasra, A.W. Muneir, M, (1997). Socio-economic profile of Camel Herders in South western Mountainous Areas of Pakistan, proceedings of the third annual meeting for animal production under arid condition, Vol. **2**: 154- 174 National Arid land Development and Research Institute, National Agricultural Research Council P. O. Box. 1031, Islamabad, Pakistan.

Baig, I. A. (2005). Repot on meat in Balochistan. Daily Jang, Quetta.

Balochistan Sub Strategy, (1999). Government of Balochistan, Quetta

Cronbach, L. J. (1951). Coefficient Alpha and the internal structure of tests. *Psychometrika*, **16**(3), 297-333.

Danserreau, F., JR., Graen, G., & Haga, W. J. (1975). A vertical dyad linkage approach to leadership within formal organization: A longitudinal investigation of the role making process. *Organizational Behavior and Human Performance*, **13**, 46-78.

Deere, C.D. (2005). The Feminization of Agriculture? Economic Restructuring in Rural Latin America. United National Research Institute for Social Development, Occasional Paper 1.

Economic Survey of Pakistan. (2012-13). Finance Division, Economic Adviser's Wing, Islamabad

Economic Survey, (2003-04). Government of Pakistan, Finance division, Economic Advisors Wing, Islamabad.

Farooq, U. and M. Ali, (2002). "Combating Micronutrient Deficiency in Pakistan by Increased Vegetable Use". Asian Vegetable Research and Development Centre (AVRDC), Tainan, Taiwan.

Farooq, U., T. Young and M. Iqbal, (1999). "An Investigation into the Farm Households Consumption Patterns in Punjab, Pakistan", *The Pakistan Development Review*, Vol. **38**, No. 3, Autumn 1999, pp: 293-305.

Forest Department, (2012). Achieves record. Government of Balocistan, Quetta

Geological Survey, (2005). Government of Pakistan, Quetta. Government of Balochistan, Planning and Development Department, Concept Eight Year Plan 1993 - 1998, Quetta, Pakistan

Giles, H. Van and Baig, S. (1992). Environmental Program Balochistan, Pakistan. Land Resources and Urban Sciences Department, International Institute for Aerospace Survey and Earth Sciences LARUS-TC, Enschede, the Netherlands and Ecology unit - Soil survey of Pakistan EU- SSP, Lahore, Pakistan.

Graen, G. B., Linden, R., & Hoel, W. (1982). Role of leadership in the livestock withdrawal process. *Journal of applied Psychology*, **67**(6), 868-872.

Haider, A. Tahir. (2008). Balochistan effort to modernize dairy farming- Dawn Article. Karachi: http:// Dawn.com.

Islam, Muhammad. Ahmad, Sarfraz and Afzal Muhammad. (2006). Drought in Balochistan of Pakistan: prospects and management Arid Zone Research Center, Pakistan Agricultural Research Council.

Khushk, M.A. and S. Hisbani. (2004). Rural Women at Work. The Daily Dawn, Islamabad, Pakistan.

Linden, R. C., & Graen, G. (1980). Generalizability of the vertical dyad linkage model of leadership. *Academy of Management Journal*, **23**(3), 451-465.

Livestock & Dairy Development Department (2006). Government of Balochistan, Quetta.

Minten, B. L. Randrianarison and J.F.M. Swinnen. (2009). Global Retail Chains and Poor Farmers: Evidence from Madagascar. *World Development*, Vol. **37**(11): 1728-41.

Niamir-Fuller, (1994). Women Livestock Managers in the Third World: Focus on Technical Issues Related to Gender Roles in Livestock Production, Staff Working Paper 18, Rome: IFAD, December.

Population and Housing Census of Pakistan, (1998). Census Bulletin -5, provisional Results Balochistan, Population Census Organization, Statistics Division, Government of Pakistan.

SMEDA, (2012). "Pre- Study on Purification breed of small ruminants. Small and Medium Enterprise Development Authority, Government of Pakistan

United Nation International Children Education Fund (UNICEF), (1995). An Analysis of the Situation of Women and Children in Balochistan World Bank, (1989). Women in Pakistan: An economic and social strategy, Volume I: main report and volume II: Wpr; d Bank, Washington DC.

Upton, M., (2001). "Trade in Livestock and Livestock Products: International Regulation and Role for Economic Development". Livestock Information and Policy Branch, AGAL, Food and Agriculture Organization.

Watson, R.T., M.C. Zinyowera and R.H. Moss, (1998). The Regional Impacts of Climate Change: An Assessment of Vulnerability. A special report of the Intergovernmental Panel on Climate Change (IPCC) working group II. Cambridge University Press, Cambridge, UK., pp. 517.

Zia-E-Umm (2007). Improved Market Access and Smallholder Dairy Farmer Participation for Sustainable Dairy Development Consultancy Report CFC/FIGMDP/16ft lessons learned study - Pakistan national consultant for milk marketing Islamabad.