



**FACTORS AFFECTING SMALL SCALE PIG PRODUCTION AND MARKETING IN
ASURET SUB COUNTY, SOROTI DISTRICT**



ERECHU JOHN KOKAS

REG NUMBER BU/UG/2011/930


E-mail: erechukokas@ymail.com

**A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND
ANIMAL SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE AWARD OF A BACHELORS DEGREE IN ANIMAL PRODUCTION AND
MANAGEMENT OF BUSITEMA UNIVERSITY**

JULY, 2014

DECLARATION

I **Erechhu John Kokas**, declare that this dissertation is original work and has not been submitted to any university or institution of learning for any academic award.

Signature.....  Date..... 21-07-2014



APPROVAL

This dissertation has been submitted for examination with the approval of

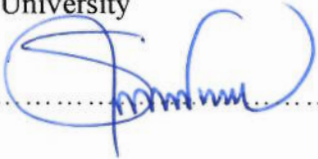
Dr. Ekou Justine (BVM, Msc, Cert. PAM, Cert. Admin. Law),

Lecturer and deputy Dean

Faculty of Agriculture and Animal Sciences,

Busitema University

Signature.....



Date.....

21/7/2014

DEDICATION

This dissertation is dedicated to my wife Ms Akareut Faith, my children Opolot Elisha and Amoding Alvin Nolline.

ACKNOWLEDGMENT

I would like to thank God almighty for his love, guidance and protection upon me. My sincere appreciation goes to Dr Ekou Justine for his tireless guidance and technical support, Dr Abura Samuel for his moral and financial support, Mr Erechu Michael for his brotherly and unconditional assistance and to my parents Opolot Emmanuel, Adeke Mary and Alweo Teresa for their spiritual help and raising me up. All their contributions made this work a success.

TABLE OF CONTENT

DECLARATION	i
APPROVAL	ii
DEDICATION	iii
ACKNOWLEDGMENT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT	x
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background	1
1.2 Problem statement	1
1.3 Main objective	2
1.4 Specific objectives	2
1.5 Research questions	2
1.6 Justification of the study	2
1.7 Significance of the Study	3
1.8 Scope	3
CHAPTER TWO	4
2.0 LITERATURE REVIEW	4
2.1 Introduction	4
2.2 The pig industry in Uganda	4
2.3 Factors affecting small scale pig production.	4
2.4 Problems affecting common systems of rearing pigs	5

2.5	Problems of marketing of pigs in Uganda -----	7
CHAPTER THREE -----		9
3.0	MATERIALS AND METHODS -----	9
3.1	Study area-----	9
3.2	Study population-----	9
3.3	Sample size determination -----	9
3.4	Sampling Procedure and Data collection -----	10
3.5	Data analysis -----	10
3.6	Data presentation -----	10
3.7	Ethical Consideration -----	11
CHAPTER FOUR-----		12
4.0	PRESENTATION OF RESULTS -----	12
4.1	Socio-economic characteristics of the respondents-----	12
4.2	Pig management practices in Asuret Sub County-----	12
4.3	Problems Affecting Common Systems Used For Rearing Pigs in Asuret sub county. --	13
4.4	Marketing of pigs in Asuret Sub County-----	15
4.5	Challenges faced by producers during marketing of pigs in Asuret Sub County -----	17
CHAPTER FIVE -----		18
5.0	DISCUSSION OF RESULTS -----	18
CHAPTER SIX -----		22
6.0	CONCLUSIONS AND RECOMMENDATIONS -----	22
6.1	Conclusions -----	22
6.2	Recommendations -----	22
REFERENCES-----		23
APPENDICES -----		29

LIST OF TABLES

Table 1 showing challenges to pig rearing systems in Asuret sub county.	14
--	----

LIST OF FIGURES

Figure 1 showing different marketing channels for the grown-up pigs reared for slaughter in Uganda (Tatwangire, 2013)	8
Figure 2 showing Pig management systems in Asuret sub county	13
Figure 4 showing primary market outlets for grown pigs	15
Figure 5 showing price setting for pigs during sale	16
Figure 6 showing challenges in marketing of Pigs in Asuret sub county	17
Figure 7 showing map of Soroti district showing Asuret sub county	35

LIST OF ABBREVIATIONS

FAO:	Food and Agriculture Organisation
WHO:	World Health Organisation
UBOS:	Uganda Bureau of Statistics
SPVCD:	small holder pig value chain development project

ABSTRACT

Pig production has increasingly become an important activity in Uganda. The sector is largely informal with poorly organized markets, limited access to technology, information and services. Cross Sectional Survey was conducted in Asuret Sub County to establish the common factors affecting small scale pig production and marketing. A total of 100 households were interviewed using structured questionnaires through random sampling. The challenges affecting common systems of rearing pigs in Asuret sub county were diseases (45%, n=71; 33%, n=18; 45.5%, n=11), feed scarcity and shortage (23.9%, n=71; 5.6%, n=18; 18%, n=11%), lack of good quality breeds of pigs (7%, n=71, 16%,n=18), uncontrolled pig movements(1.4%,n=71; 27.8%,n=18) space limitation (4.2%,n=71; 18%,n=11), lack of extension services (16.9%,n=71;5.6%,n=18; 9%,n=11) and expensive veterinary drugs (1.4%,n=71; 11%,n=18; 9%,n=11). Low prices (27%), Lack of market information, especially on output prices for different market outlets and location is indicated by 13% of pig producers, distant buyers 13%, lack of market opportunities 11%, lack of capacity on pig live-weight estimation 21% and examination of pigs for tape worms 15% have been reported to be challenges affecting the marketing of pigs. The study concludes that diseases and parasites, feed scarcity, lack of quality breeds, lack of extension support, and expensive veterinary drugs are challenges to pig production. The challenges in marketing were; low prices, lack of capacity on live weight estimation, distant buyers, and examination of pigs for tape worms, and limited market opportunities. Proper disease control measures like vaccination, biosecurity should be properly observed. The government should provide farmers with improved breeds of pigs to address the problem of low quality breeds. Farmers should be trained on how to estimate the weights of their pigs during sale, Cooperative markets for pigs should be established in soroti district and farmers should be availed with market information

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Pig production has increasingly become an important activity in Uganda with pig population rising in the last three decades from 0.19 million to 3.2 million pigs (UBOS, 2009; FAOSTAT, 2011). Uganda has the highest per capita consumption of pork in sub-Saharan Africa with a 2011 estimate of 3.4 kg/person/year representing a ten-fold increase in the last 30 years. More than 1.1 million families, about 18% of total households in Uganda own pigs (UBOS, 2009). As result pork has recently been quoted to be the most popular source of animal protein in the world (Perze, 1997). The World Health organization (WHO, 2010) report for developing countries indicates that there is a very big deficit in the supply of animal protein with 6.1 million Ugandans nourished and 40% of children deaths below the age of five due to malnourishment (WHO, 2010).

A well-managed pig industry would bridge such glaring animal protein deficit. This is especially so because of pigs' high fecundity rate, high feed conversion efficiency, early maturity, short generation interval, relatively small space requirement and their ability to produce maximally under varied management systems without sophisticated bio-safety measures (Lekule & Kyvsgaard, 2003). Households rear pigs because they grow fast, there is a ready market and proven demand and are highly prolific which can result in quick generation of cash (Mutua *et al.*, 2010). Despite these efforts, Uganda's livestock sector grows at a dismal rate of 4% with only 3.2 million pigs in the whole country of approximately 33 million people (UBOS, 2008). With such problem at hand, the research will be initiated with the objective of identifying factors affecting small holder pig farming in Asuret Sub County.

1.2 Problem statement

Economic studies have shown that the traditional production system is wasteful and unprofitable due to high mortality rate, low off take, absence or minimal health care, supplementary feeding and proper housing (Lekule & Kyvsgaard, 2003). Most of the smallholder pig farmers invest

REFERENCES

- Ampaire, A. and Rothschild, M. F. (2010): Pigs, goats and chickens for rural development: Small holder farmer's experience in Uganda, Livestock Research for Rural Development.
- Anderson, S. (2003). Animal genetic resources and sustainable livelihoods, *Ecological Economics* 45: 331-339.
- Chiduwa, G., Chimonyo, M., Halimani, T.E., Chisambara, S.R. and Dzama, K. (2008). Herd dynamics and contribution of indigenous pigs to the livelihoods of rural farmers in a semi-arid area of Zimbabwe. *Tropical Animal Health and Production* 37: 333-344.
- Chikwanha, O. (2006). Evaluation of the feed resources and analysis of body condition scores of local pigs in a semi-arid smallholder farming area of Zimbabwe. MSc Thesis, University of Zimbabwe, Harare, Zimbabwe
- Chimonyo, M., Bhebhe E., Dzama, K., Halimani, K. and Kanengoni, A. (2005). Improving smallholder pig production for food security and livelihood of the poor in Southern Africa. *African Crop Science Conference Proceedings* 7: 569-573.
- D'Mello J. F. P. (1995). Leguminous leaf meals in non-ruminant nutrition. Pages 247-282 in *Tropical legumes in animal nutrition*. D'Mello, J. F. P. and C. Devendra ed. CAB International, UK.
- FAO. (1999). *The global strategy for the management of farm animal genetic resources*. Rome, Italy.
- FAO. (2007). *The state of the worlds animal genetic resources for food and agriculture*. In: Rischkowsky, B., Pilling, D. (Eds.), FAO, Rome, Italy.
- FAOSTAT (2011). FAO Statistics Division: Food and Agriculture Organization of the United Nations.

Food and Fertilizer Technology Centre (FTC), (1995). Commercial Livestock Production by Smallholders. An International Information Centre for Farmers in Asia Pacific Region. <http://www.fftc.agnet.org/library/article/ac1995c.htm>

Glatz, P. & Ru, Y., (2004). Developing free range Production Systems. A report for the Rural Industries Research and Development Corporations. Publication No. 04/058, Project No SAR-30A.

Halimani, T.E., Muchadeyi, F.C., Chimonyo, M. and Dzama, K. (2010). Pig genetic resource conservation: The Southern African perspective. *Ecological Economics* 69 (5): 944-951.

Holness, D. H. (1991). Breeds and breed improvement. In *The Tropical Agriculturalist: Pigs*. Coste, R. and A. J. Smith ed. Pages 23-48. Macmillan Education Limited, Wageningen.

Holness, D.H. (1991). The tropical agriculturalist – pigs. 2nd Edn. In: *Tropical Centre for Agricultural and Rural Co-operation*. McMillian Education Ltd Publishers, the Netherlands. pp. 150.

Huynh, T.T.T., Aarnink, A.J.A., Drucker, A. and Verstegen, M.W.A. (2007). Pig production in Cambodia, Laos, Phillipines, and Vietnam: a review. *Asian Journal of Agriculture and Development* 4 (1): 69-90.

Kagira, J. M., Kanyari P W, Maingi N, Githigia S M, Ng'ang'a, J. C., and Karuga J. W. (2010), Characteristics of the smallholder free-range pig production system in western Kenya. *Trop. Anim. Health Prod.* 42 (5): 865-73. Doi: 10.1007/s11250-009-9500-y.

Kanengoni, A.T., Dzama, K., Chimonyo, M., Kusina, J. and Maswaure, S.M. (2002), Influence of level of maize cob inclusion on nutrient digestibility and nitrogen balance in the Large White, Mukota and F1 crossbred pigs. *Animal Science* 74: 127-134.

Lemke, U., Kaufmann, B., Thuy, L.T., Emrich, K. and Zárate, A.V. (2007). Evaluation of biological and economic efficiency of smallholder pig production systems in North Vietnam. *Tropical Animal Health and Production* 39: 237-254.

Ly, J. (2000). A short review on digestive processes in the Cuban Creole pig, *Cuban Journal*.

- Mashatise, E., Hamudikuwanda, H., Dzama, K., Chimonyo, M. and Kanengoni, A. (2005). Socio-economic roles, traditional management systems and reproductive patterns of Mukota pigs in semi-arid north-eastern Zimbabwe. *Bunda Journal of Agriculture, Environmental Science and Technology* 3: 97–105.
- Mota, D., Ramirez-Necoechea, R., Alonso-Spilsbury, M. & Garcia-Contreras, A. C., (2002). Characterization of the productive performance in family pig farms located in Ayotzingo, State of Mexico. *Livestock Research for Rural Development* 14 (1).
- Muhanguzi, D., Lutwama, V. and Mwiine, F. N., (2012), Factors that influence pig production in Central Uganda - Case study of Nangabo Sub-County, Wakiso district, *Vet World*, 5 (6): 346-351, doi: 10.5455/vetworld.2012.346-351.
- Mutetikka, D. (2009). *A Guide to Pig Production at Farm Level*, Makerere University, Kampala-Uganda, Fountain Publishers, Kampala.
- Mutetikka, D., Atwebembeire, P. & Kugonza, D. (2009). *Characterization of the Local Pig/Pork Marketing Chain in Uganda*. Department of Animal Science, Collage of Agricultural Sciences.
- Ouma E., Dione, M., Lule, P., Kristina, R., Danilo, P., (2013). Characterization of smallholder pig production systems in Uganda: constraints and opportunities for engaging with market systems. Invited paper presented at the 4th International Conference of the African Association of Agricultural Economists, Hammamet, Tunisia
- Petrus, N. P., Mporu, I., Schneider, M. B, and Nepembe, M. (2011), The constraints and potentials of pig production among communal farmers in Etayi Constituency of Namibia. *Livestock Research for Rural Development*, 23 (159). Retrieved June 26, 2013, at: <http://www.lrrd.org/lrrd23/7/petr23159.htm>.
- Pezo, D. & Waiswa, C. (2012). *Farming Systems Perspectives: Lessons for managing health risks in smallholder pig systems*. Paper presented in the South-South Symposium “Managing Risks in Emerging Pork Markets”. Hanoi, Viet Nam 23-25 April 2012; International Livestock Research Institute (ILRI) and Makerere University Kampala, Uganda.

Phiri, I. K., Ngowi, H., Afonso, S., Matenga, E., Boa, M., Mukaratirwa, S., Githigia, S., Saimo, M., Sikasunge, C., Maingi, N., Lubega, G.W., Kassuku, A., Micheal, L., Siziya, S., Krecek, R. C., Noormahomed, E., Vilhena, M., Dorny, P. A., Willingham III, A. L. (2003). The emergence of *Taenia solium* cysticercosis in Eastern and Southern Africa as a serious Agricultural problem and public health risk. *Acta Tropica*, 87:13-23.

Rushton, J. and S. N. Ngongi. 1998. Poultry, women and development: old ideas, new applications and the need for more research. *World Animal Review* 91-1998/2. Available: www.fao.org/docrep/w9980t/w9980t07.htm.

Rutebarika, C. and Ademun A. R. (2011), African swine fever Diagnostics, surveillance, epidemiology and control in Uganda. Identification of researchable issues targeted to the endemic areas within sub-Saharan Africa., Fairview Hotel, Nairobi.

Santos-Ricalde, R. H. & Lean, I. J., (2000). The effect of tropical ambient temperature on productivity performance and grazing behaviour of sows kept in an outdoor system. *Livestock Research for Rural Development* 12 (2). <http://www.cipav.org.co/lrrd/lrrd12/2/rical122.htm>

Scherf, B.D. (1990). Effects of improved management practices on traditional smallholder pig production in Zimbabwe. Annual research report. Department of Research and Specialists Services Newsletter, Ministry of Agriculture, Zimbabwe.

Shiferaw, B., Obare, G. & Muricho, G. (2006), rural institutions and producer organizations in imperfect markets: Experiences from Producer Marketing Groups in semi-arid eastern Kenya. CAPRI Working Paper 60. Also jointly released as ICRISAT Socioeconomics and Policy Working Paper Series No. 23. Patancheru, Andhra Pradesh, 1-34.

Shrestha, N. P., Edward, S. A., Robertson, J. F. (2002). Factors affecting reproductive performance in the Nepalese Pakhri-bas pig: effect of nutrition and housing during gilt rearing. *Asia-Australian Journal of Animal Sciences* 15 (1): 72-78.

SPVCD (2013). Smallholder Pig Value Chain assessment – Producer level: IFAD/SFFF Project. Draft Report Smallholder Pig Value Chain Development Project. Kampala, Uganda: International Livestock Research Institute (ILRI), Kampala, Uganda.

Tatwangire .A. (2013), Successes and failures of institutional innovations to improve access to services, input and output markets for smallholder pig production systems and value chains in Uganda. Smallholder Pig Value Chains Development Project in Uganda:-The International Livestock Research Institute (ILRI).

Tatwangire, A. (2012), The Conditions within which the Smallholder Pig Value Chains Operate in Uganda: An overview of past trends, current status, and likely future directions. Smallholder Pig Value Chains Development Project in Uganda:-The International Livestock Research Institute (ILRI) - Markets, Gender & Livelihoods. Kampala, Uganda.

Tatwangire, A. (2012). Situation analysis of smallholder pig value chains in Uganda, Unpublished report. Available at <http://livestock-fish.wikispaces.com/VCD+Uganda>

Taylor-Powell E. (1998), Sampling program development and evaluation, Texas agricultural extension service, the Texas A and G University System College, Texas.

Tekle, T., Tesfay, A., and Kifleyohannes, T. (2013), Smallholder pig production and its constraints in Mekelle and southern zone of Tigray region, north Ethiopia. Livestock Research for Rural Development. Volume 25, Article #184. Retrieved November 13, 2013, from <http://www.lrrd.org/lrrd25/10/tek125184.htm>

UBOS. (2008). A summary report of the national livestock census. Ministry of Agriculture Animal Industry and Fisheries, Entebbe, Uganda. In Anonymus (eds.) Kampala.

Uganda Bureau of Statistic (2010), Statistical Abstract

Uganda Bureau of Statistics (2009). National livestock census report. UBOS.

Uganda Communications Commission, UCC. (2010). Rural communications development fund, RCDF projects in Soroti district.

W.H.O. (2010). Global Database on Child Growth and Malnutrition. WHO child growth standards. Geneva

Wabacha, J. K., Maribei, J. M. Mulei, C.M., Kyule, M. N., Zessin, K. H., and OluochKosura, W. (2004). Characterization of smallholder pig production in Kikuyu Division, central Kenya. *Preventive Veterinary Medicine*, 63: 183–195.

Wanzala, W., Zessin, K.H., Kyule, N.M., Baumann, M.P.O., Mathias, E. and Hassanali, A. (2005). Ethnoveterinary medicine: a critical review of its evolution, perception, understanding and the way forward. *Livestock Research for Rural Development* 17(11): <http://www.cipav.org.co/lrrd/lrrd17/11/wanz17119.htm>.

Zoli, P. A., Puedat, N.S., Voudou, L., Assan, E. & Geerts, S., (2001). *Taenia solium* cysticercosis: an under-recognized public health problem in Cameroon. *Livestock Community and Environment. Proceedings of the 10th Conference of the Association of Institutions for Tropical Veterinary Medicine*, Copenhagen.

Karimuribo E D, Chenyambuga S W, Makene V W and Mathias S (2011) Characteristics and production constraints of rural-based small-scale pig farming in Iringa region, Tanzania. *Livestock Research for Rural Development*. Volume 23, Article #172. Retrieved May 11, 2014, from <http://www.lrrd.org/lrrd23/8/Kari23172.htm>

Ikwap K, Jacobson M, Lundeheim N, Owiny D O, Nasinyama G W, Fellstrom C and Erume J (2014) Characterization of pig production in Gulu and Soroti districts in northern and eastern Uganda. *Livestock Research for Rural Development*. Volume 26, Article #74. Retrieved May 11, 2014, from <http://www.lrrd.org/lrrd26/4/ikwa26074.htm>